

Draft

Low back pain and sciatica

Low back pain and sciatica: management of non-specific low back pain and sciatica

NICE guideline <number>

Appendices K-Q

February 2016

Draft for consultation

*Commissioned by the National Institute for
Health and Care Excellence*

Disclaimer

Healthcare professionals are expected to take NICE clinical guidelines fully into account when exercising their clinical judgement. However, the guidance does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of each patient, in consultation with the patient and, where appropriate, their guardian or carer.

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Funding

National Institute for Health and Care Excellence

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1 Appendix K: Forest plots

K.1 Clinical examination

3 None.

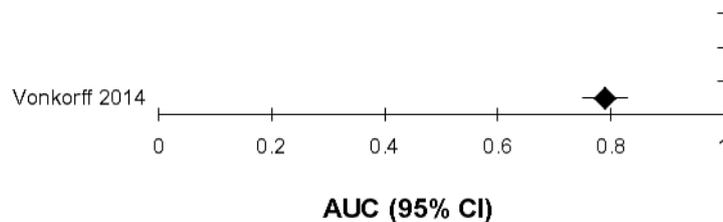
K.2 Risk assessment tools and stratification

K.2.1 Risk assessment tools

K.2.1.1 AUC plots

K.2.1.1.1 Risk assessment tool: Chronic Pain Risk Item

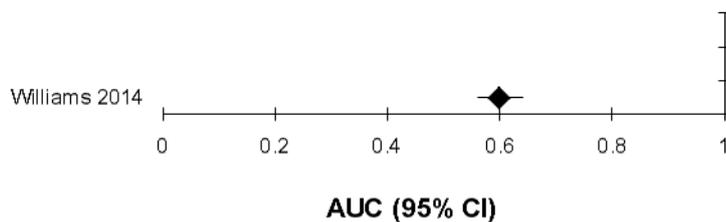
8 **Figure 1: Chronic risk item for predicting chronic pain at 4 months**



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K.2.1.1.2 Risk assessment tool: Hancock clinical prediction rule

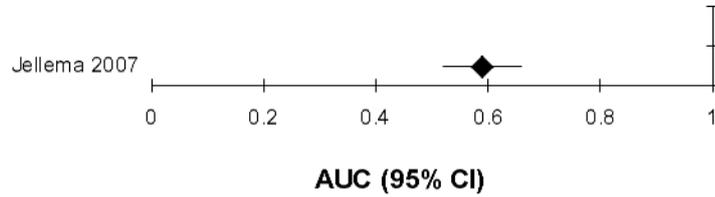
11 **Figure 2: Hancock CPR for predicting recovery from pain at 12 weeks**



12

K.2.1.1.3 Risk assessment tool: low back pain perception scale

14 **Figure 3: low back pain perception scale for predicting recovery at 1 year (self-reported)**

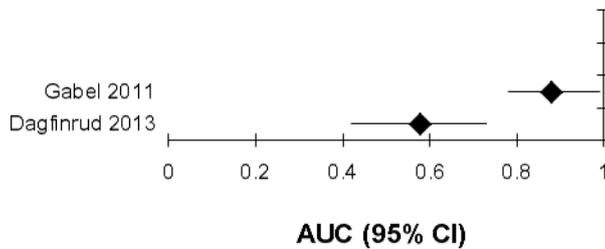


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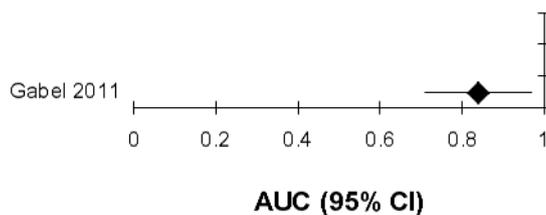
K.2.1.1.7 Risk assessment tool: ÖREBRO

18 **Figure 4: ÖREBRO – ÖMSPQ for predicting functional status at 8 weeks and 6 months**



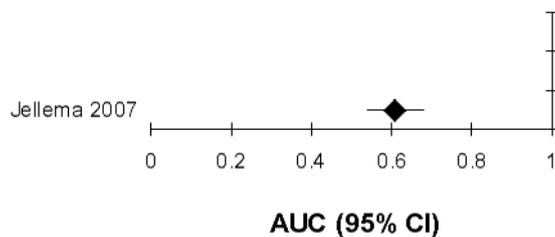
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20 **Figure 5: ÖREBRO – ÖMSPQ for predicting problem severity at 6 months**



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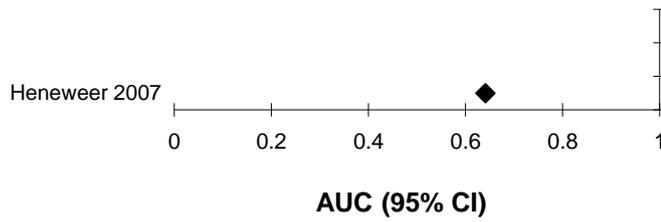
22 **Figure 6: ÖREBRO – ÖMSPQ for predicting recovery at 1 year (self-reported)**



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K.2.1.25 Acute Low Back Pain Screening Questionnaire (ALBPSQ)

25 **Figure 7: ALBPSQ for predicting recovery at 12 weeks**

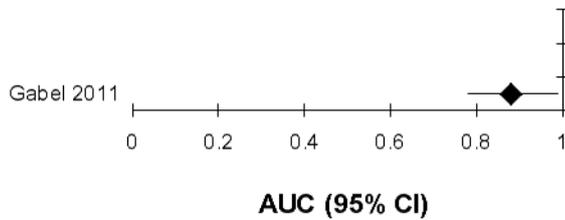


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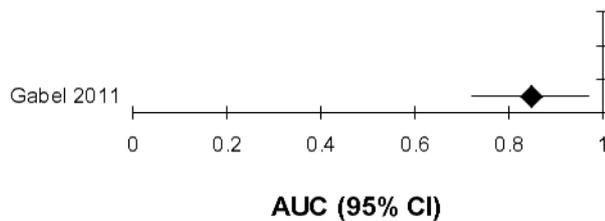
K.2.1.26 Risk assessment tool: Modified ÖREBRO

29 **Figure 8: Modified ÖREBRO (ÖMSPQ) for predicting functional status at 6 months**



30

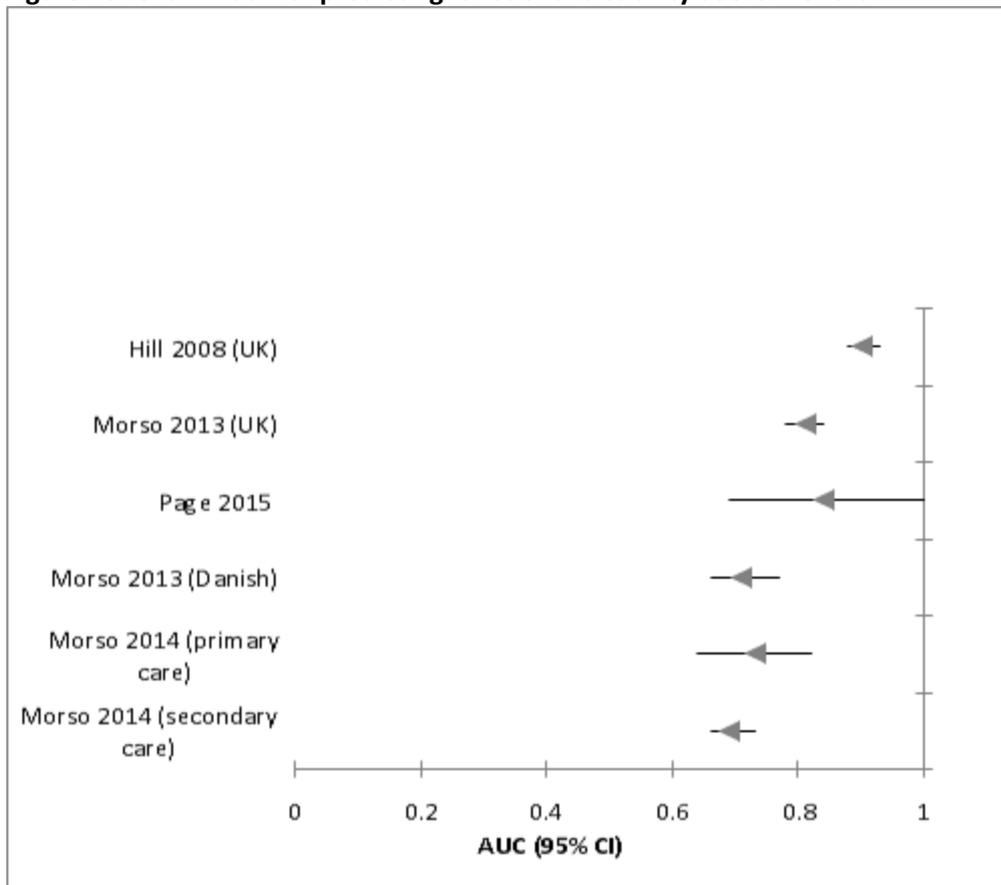
31 **Figure 9: Modified ÖREBRO (ÖMSPQ) for predicting problem severity at 6 months**



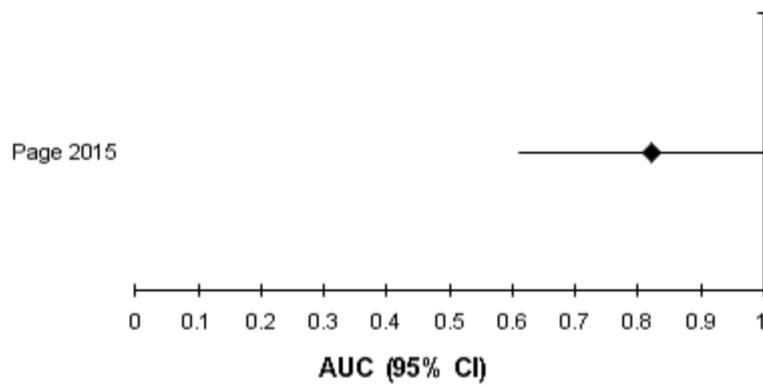
32

K.2.1.17 Risk assessment tool: STarT Back

34 **Figure 10: STarT Back for predicting functional disability at 3-6 months**

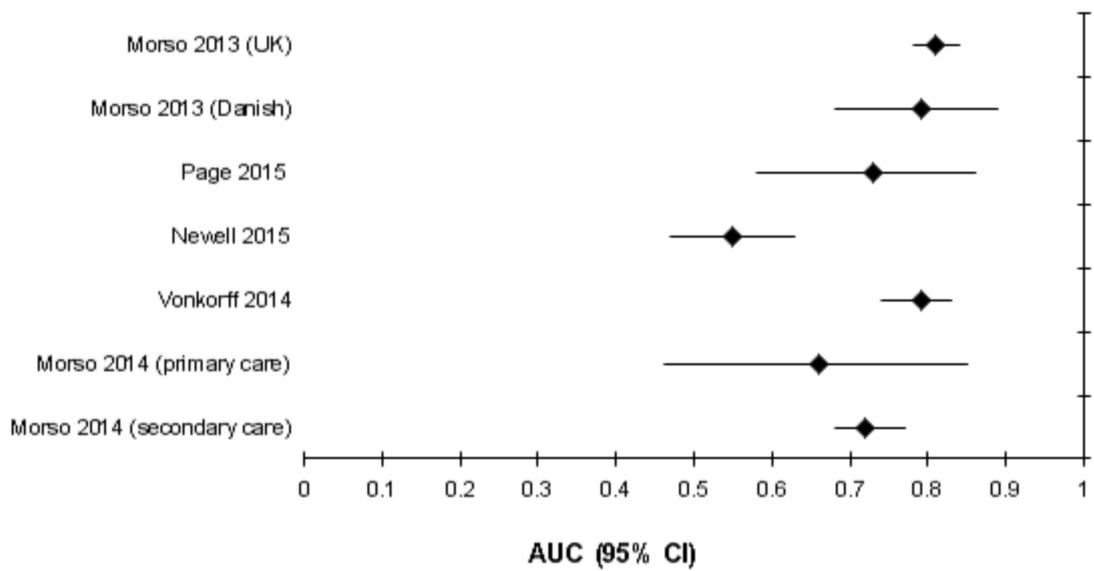


35 **Figure 11: STarT Back for predicting functional disability at 7-12 months**

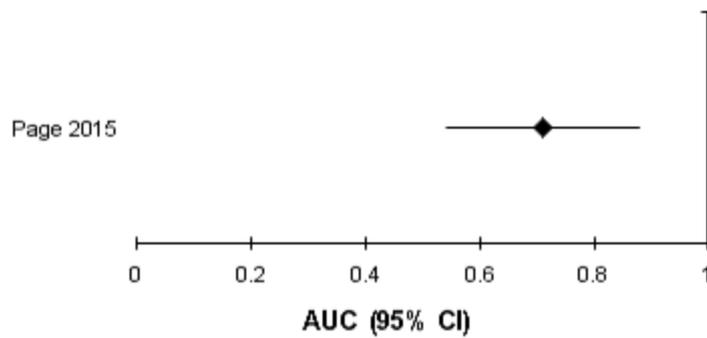


36

37 **Figure 12: STarT Back for predicting pain at 3-6 months**

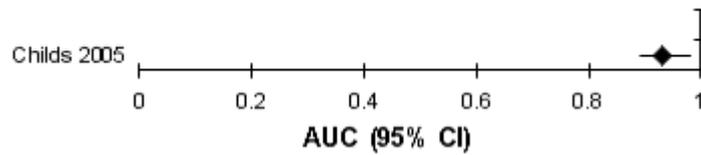


38 **Figure 13: STarT Back for predicting pain at 7-12 months**



K.2.1.18 Risk assessment tool: Functional Rating Index (FRI)

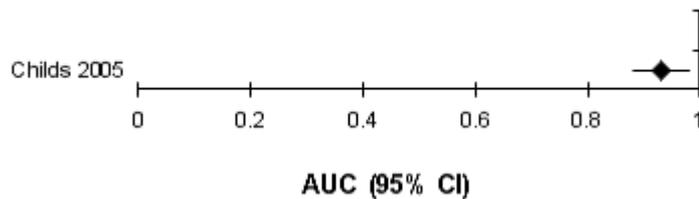
40 **Figure 14: Functional Rating Index (FRI) for predicting functional improvement at 4 weeks**



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K.2.1.19 Risk assessment tool: Oswestry Disability Questionnaire (ODI)

43 **Figure 15: Oswestry Disability Questionnaire for predicting functional improvement at 4 weeks**



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K.2.2 Risk stratification

K.2.2.1 Hicks/Delitto classification versus no risk tool stratification

Figure 16: Quality of life(SF-36,Physical Component Score(PCS),0-100) ≤4 months (4 weeks)

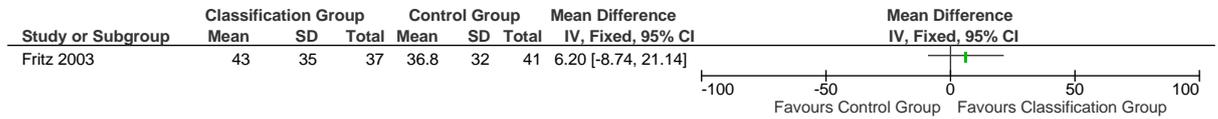


Figure 17: Quality of life(SF-36,Physical Component Score(PCS),0-100)>4 months - 1 year

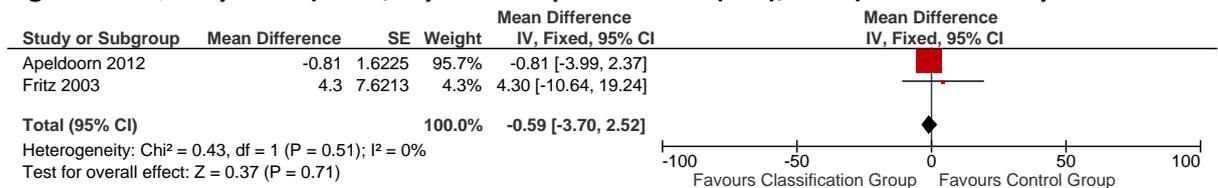


Figure 18: Quality of life(SF-36,Mental Component Score(MCS),0-100) ≤4 months (4 weeks)

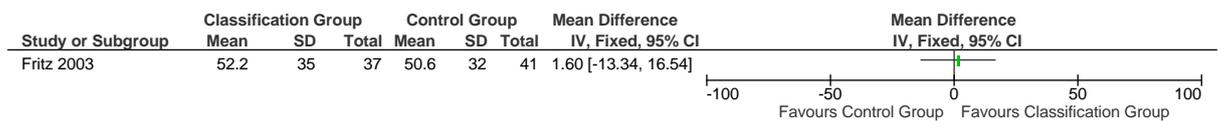


Figure 19: Quality of life(SF-36,Mental Component Score(MCS),0-100) >4 months - 1 year

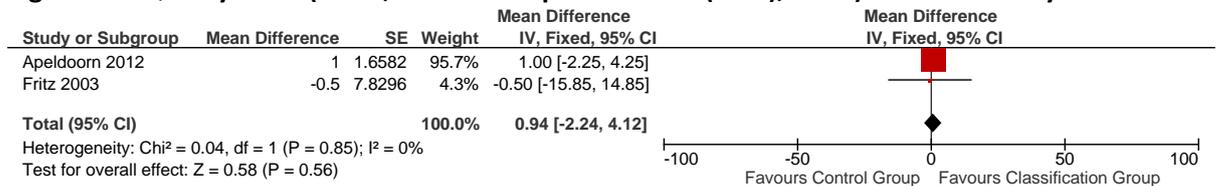


Figure 20: Pain Severity(NRS,0-10) ≤4 months (8 weeks)

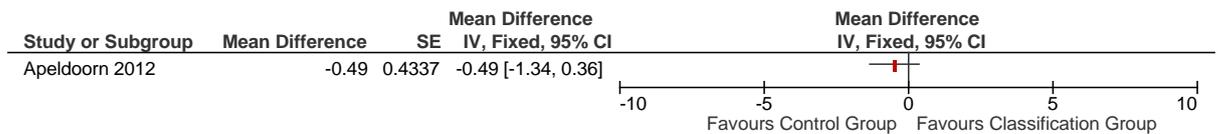


Figure 21: Pain Severity(NRS,0-10) >4 months - 1 year (1 year)

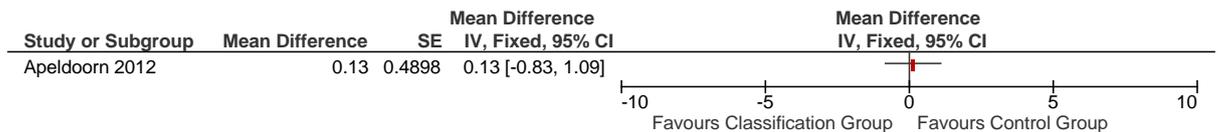


Figure 22: Function (ODI, 0-100) ≤4 months

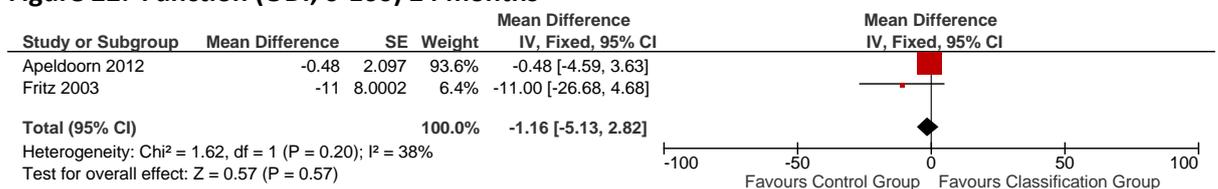


Figure 23: Function (ODI, 0-100) >4 months - 1 year

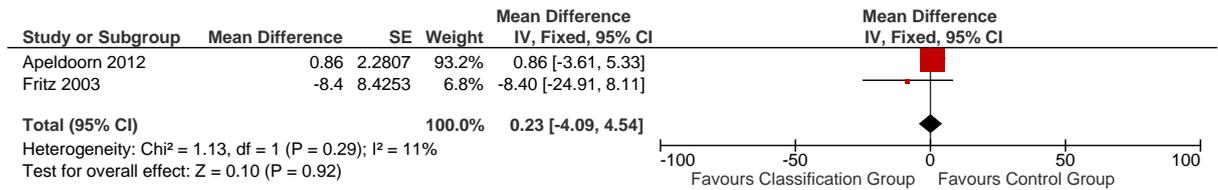


Figure 24: Responder criteria (NRS > 30% improvement) ≤4 months (8 weeks)

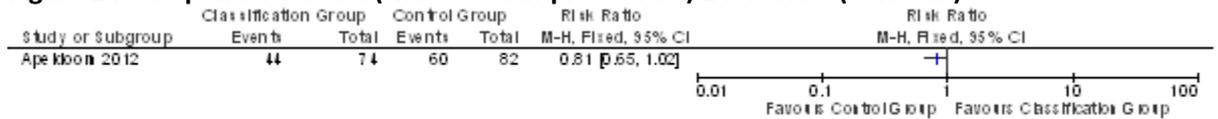


Figure 25: Responder criteria (NRS > 30% improvement) >4 months - 1 year (1 year)

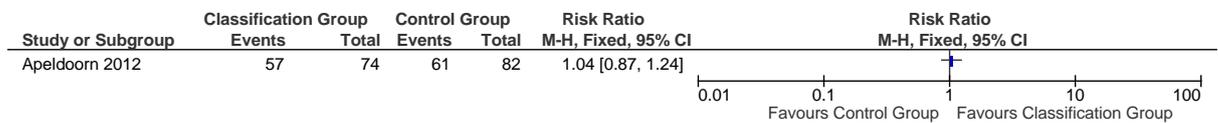


Figure 26: Responder criteria (ODI > 30% improvement) ≤4 months (8 weeks)

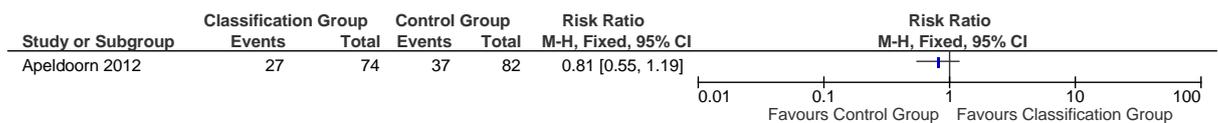
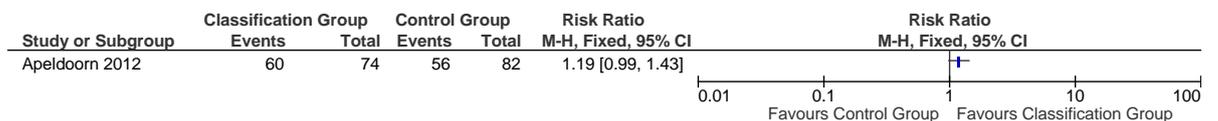


Figure 27: Responder criteria (ODI > 30% improvement) >4 months (1 year)



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Figure 28: Healthcare utilisation (Number of therapy appointments) ≤4 months (4 weeks)

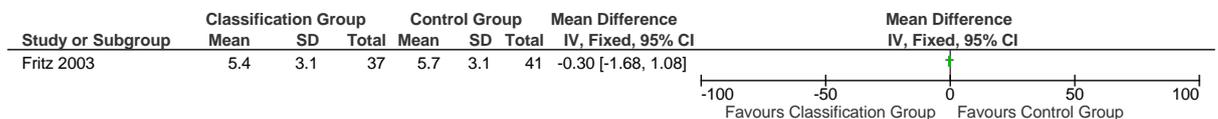
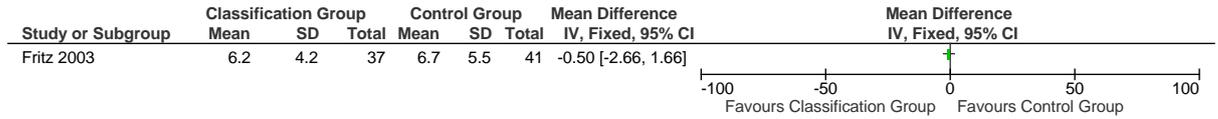


Figure 29: Healthcare utilisation (Number of therapy appointments) >4 months (1 year)



K.2.432 O’Sullivan classification versus no risk tool stratification

Figure 30: Pain Severity(VAS,0-10) ≤4 months (3 months)

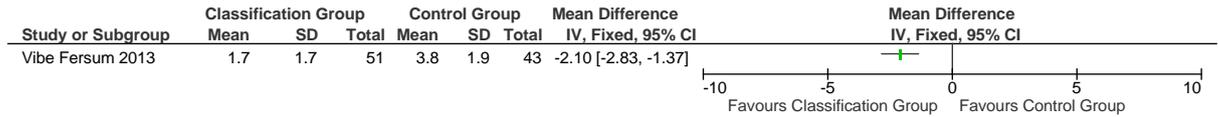


Figure 31: Pain Severity(VAS,0-10) >4 months (1 year)

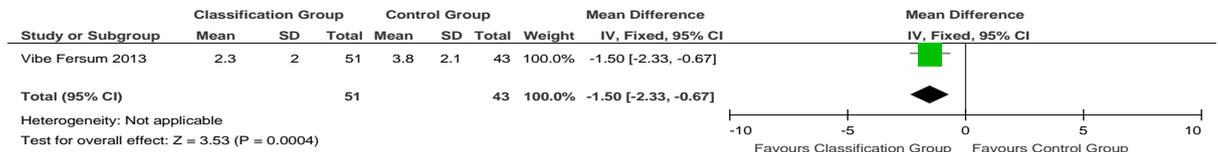


Figure 32: Function (ODI, 0-100) ≤4 months (3 months)

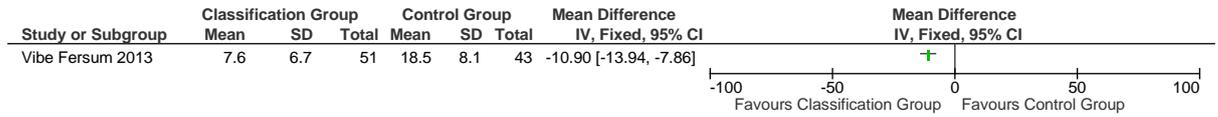
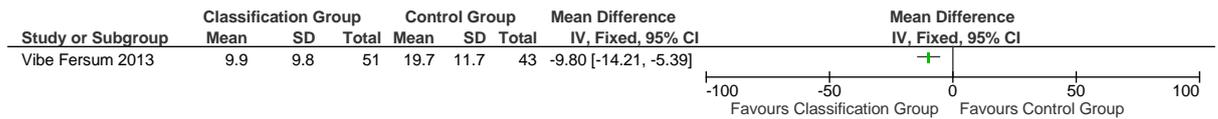


Figure 33: Function (ODI, 0-100) >4 months (1 year)



K.2.433 STarT Back risk tool versus no risk tool stratification

Figure 34: Quality of life(EQ-5D,0-1) ≤4 months (4 months)

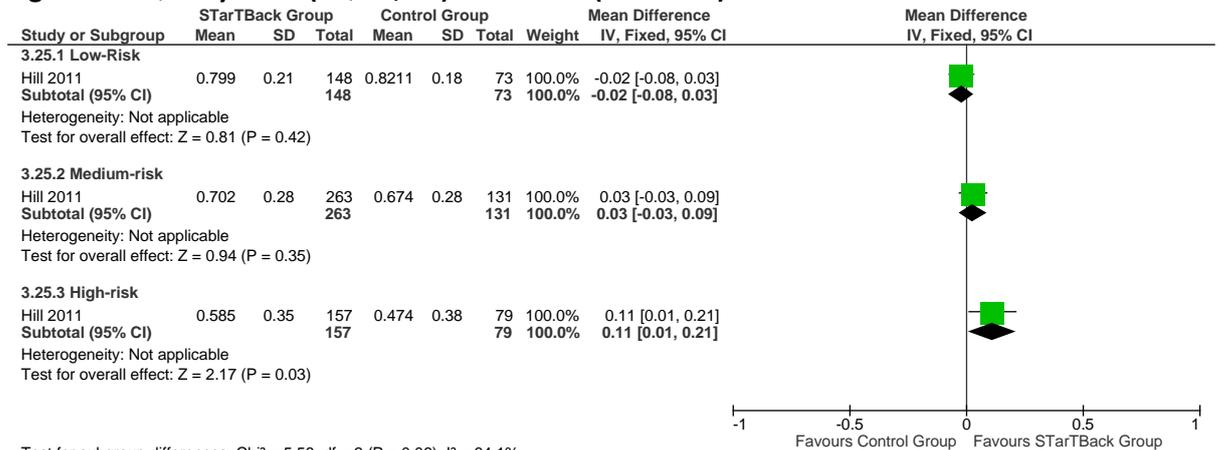


Figure 35: Quality of life(EQ-5D,0-1) >4 months (1 year)

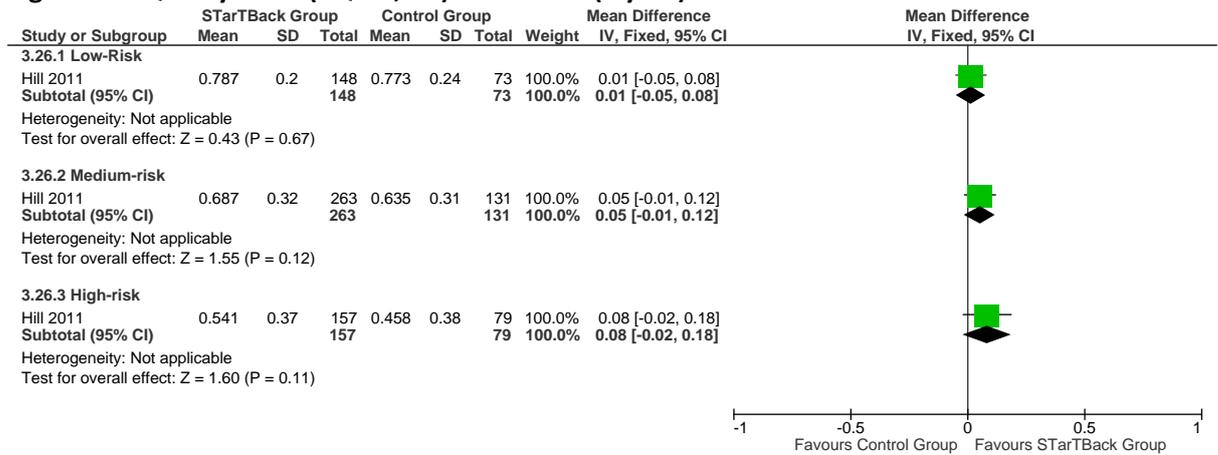
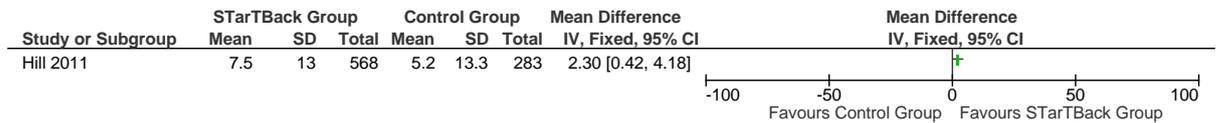


Figure 36: Quality of life(SF-12,Physical Component Score(PCS),0-100) ≤4 months (4 months)



**Figure 37: Quality of life(SF-12,Physical Component Score(PCS),0-100) ≤4 months (4 months)-
STRATIFIED RISK GROUPS**

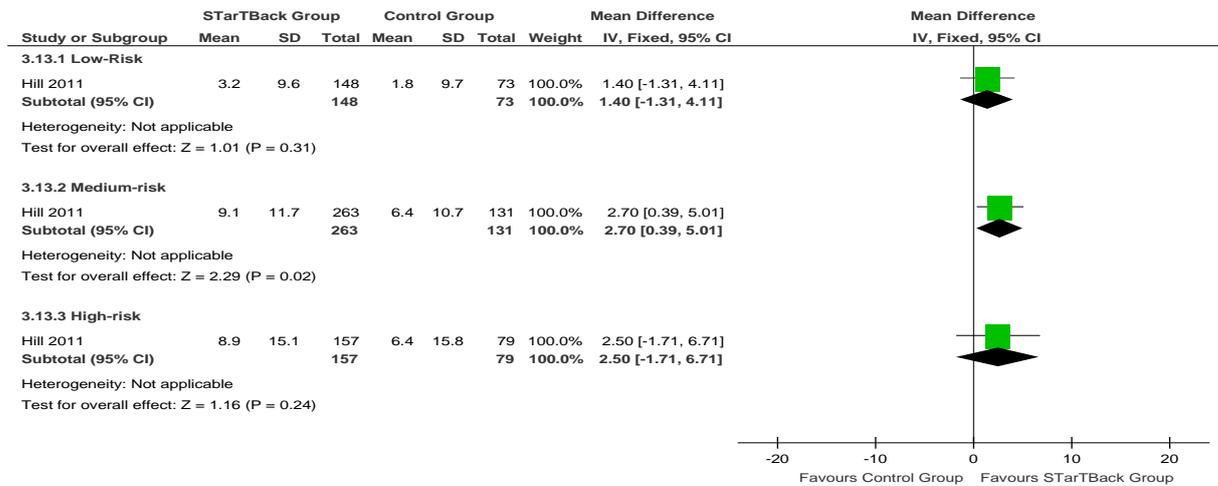
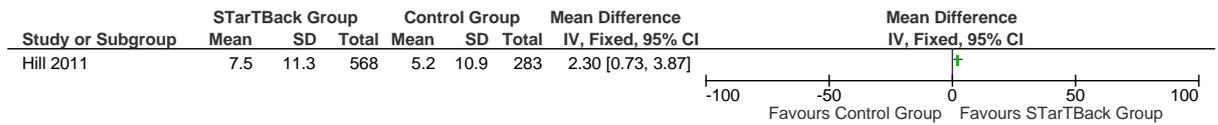


Figure 38: Quality of life(SF-12,Physical Component Score(PCS),0-100) >4 months (1 year)



**Figure 39: Quality of life(SF-12,Physical Component Score(PCS),0-100) >4 months (1 year)
STRATIFIED RISK GROUPS**

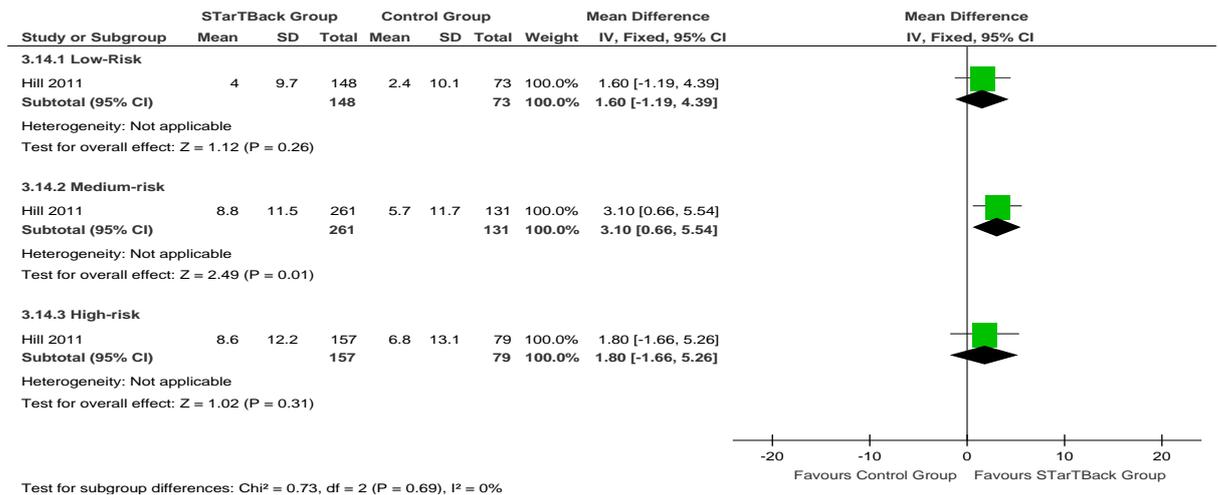
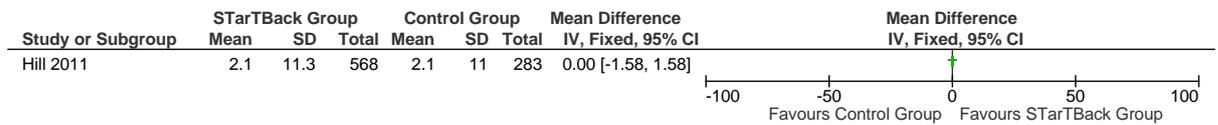


Figure 40: Quality of life(SF-12,Mental Component Score(MCS),0-100) ≤4 months(4 months)



**Figure 41: Quality of life(SF-12MentalComponent Score(MCS),0-100) ≤ 4 months(4 months)-
STRATIFIED RISK GROUPS**

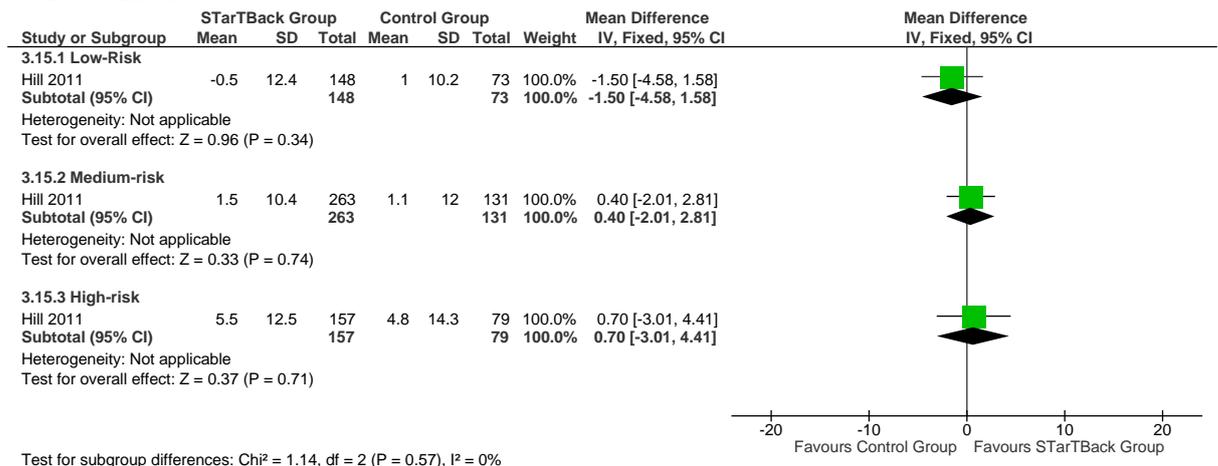
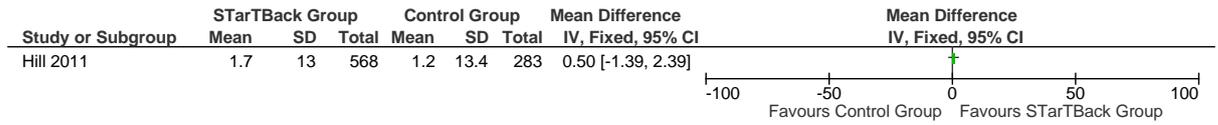


Figure 42: Quality of life(SF-12,Mental Component Score(MCS),0-100) >4 months (1 year)



**Figure 43: Quality of life(SF-12,Mental Component Score(MCS),0-100) >4 months (1 year)-
STRATIFIED RISK GROUPS**

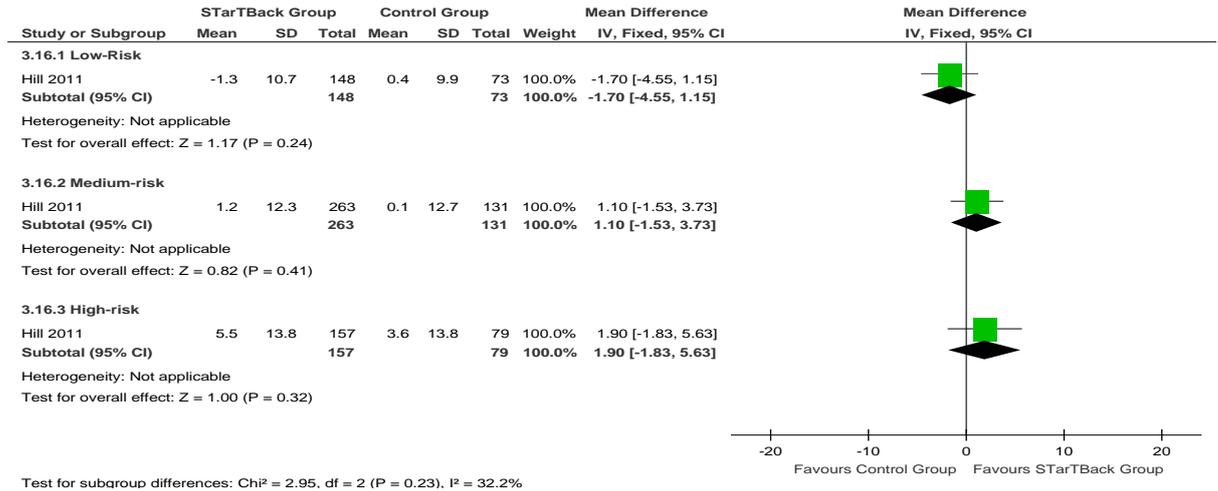


Figure 44: Pain Severity(VAS/NRS change scores,0-10) ≤4 months (4 months)

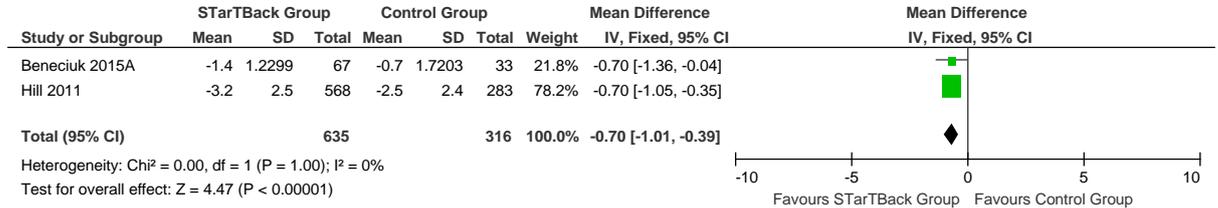


Figure 45: Pain Severity(VAS/NRS, change scores,0-10) ≤4 months (4 months)- STRATIFIED RISK GROUPS

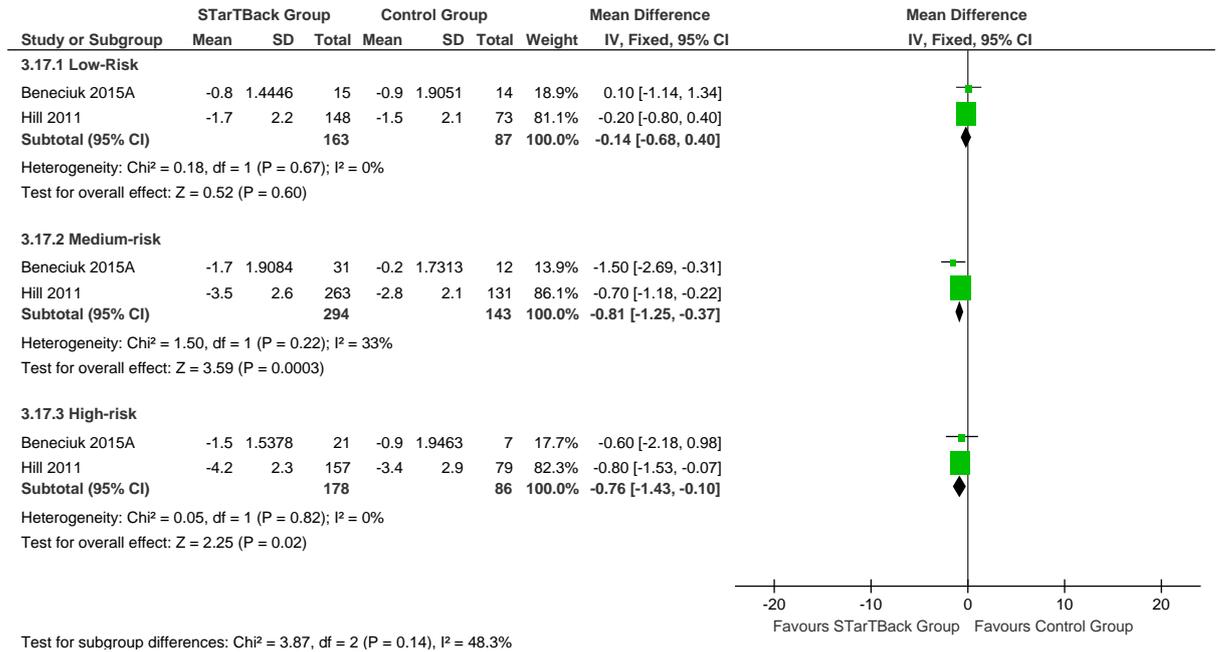


Figure 46: Pain Severity(VAS,0-10) >4 months (1 year)

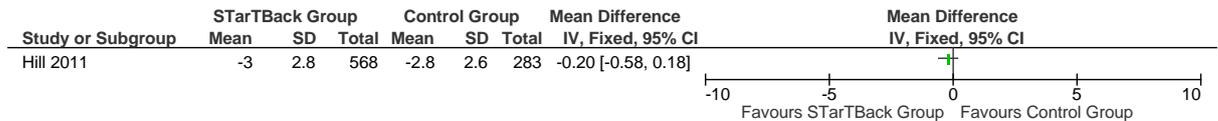


Figure 47: Pain Severity(VAS,0-10) >4 months (1 year)- STRATIFIED RISK GROUPS

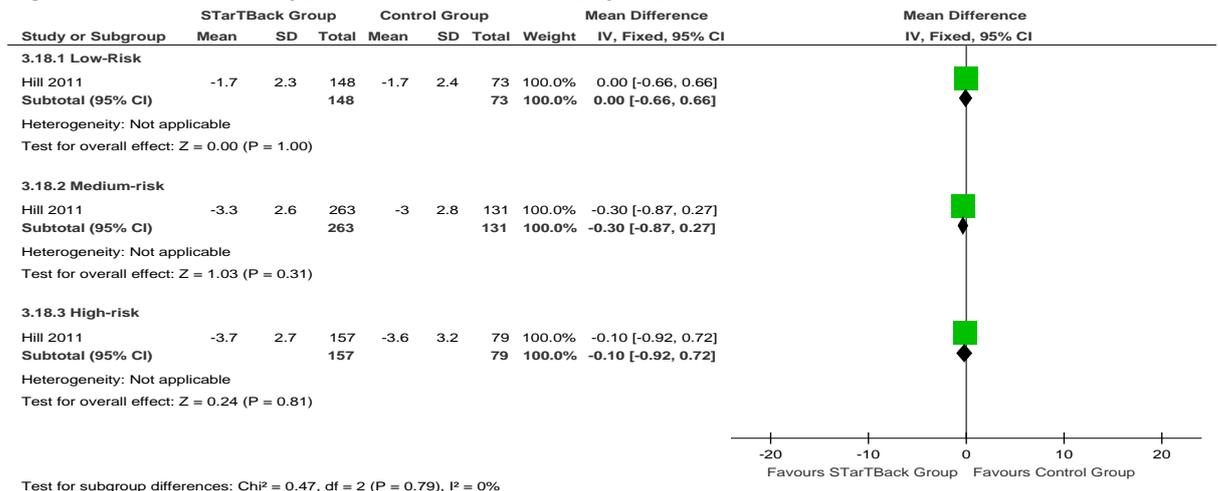


Figure 48: Function (RMDQ, 0-24, ODI, 0-100 change scores) ≤4 months (4 months)

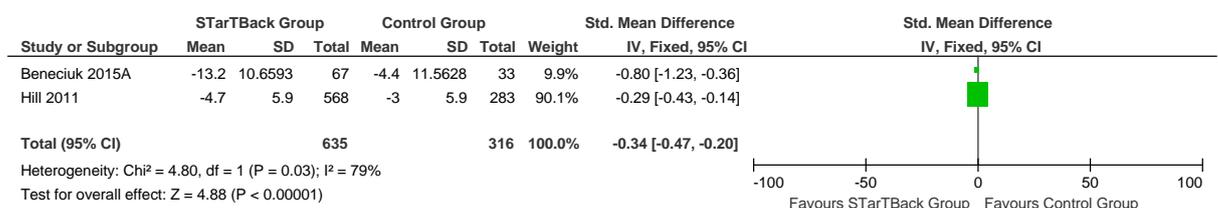


Figure 49: Function (RMDQ, 0-24, ODI, 0-100 change scores) ≤4 months (4 months)- STRATIFIED RISK GROUPS

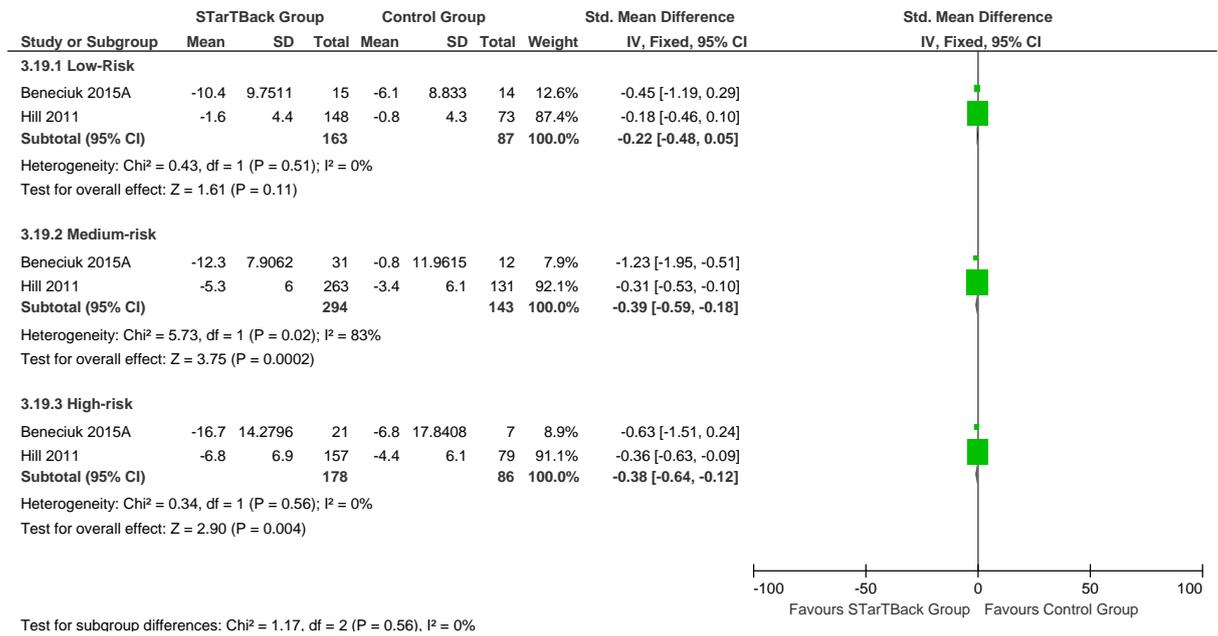


Figure 50: Function (RMDQ, 0-24) >4 months (1 year)

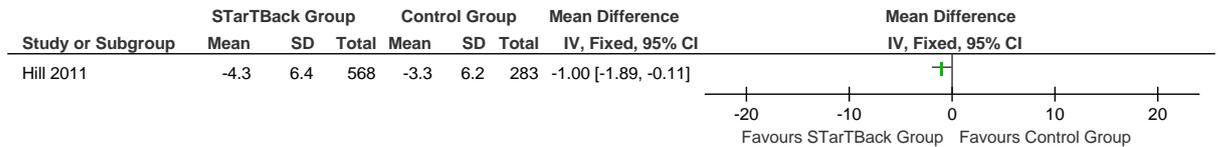


Figure 51: Function (RMDQ, 0-24) >4 months (1 year)- STRATIFIED RISK GROUPS

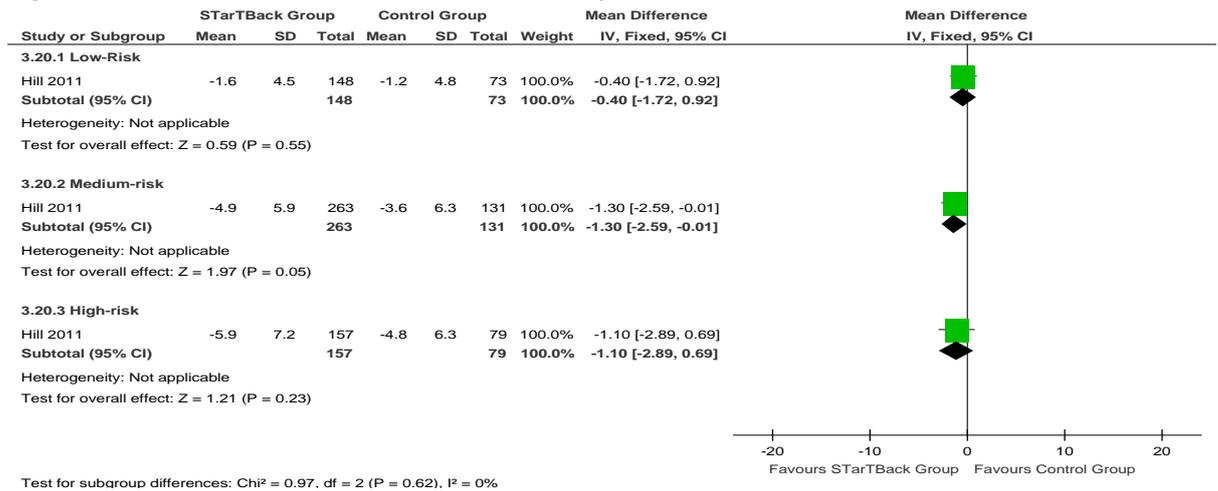


Figure 52: Psychological Distress (HADS, anxiety subscale, 0-21) ≤4 months (4 months)

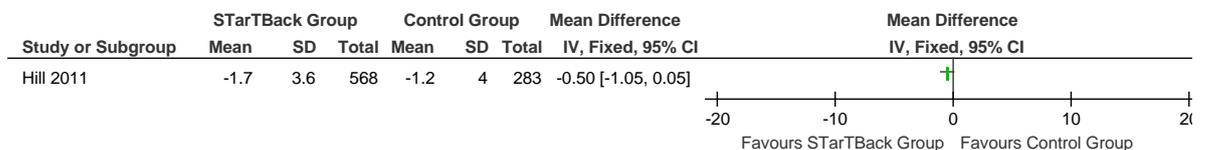


Figure 53: Psychological Distress (HADS, anxiety subscale, 0-21) ≤4 months (4 months)- STRATIFIED RISK GROUPS

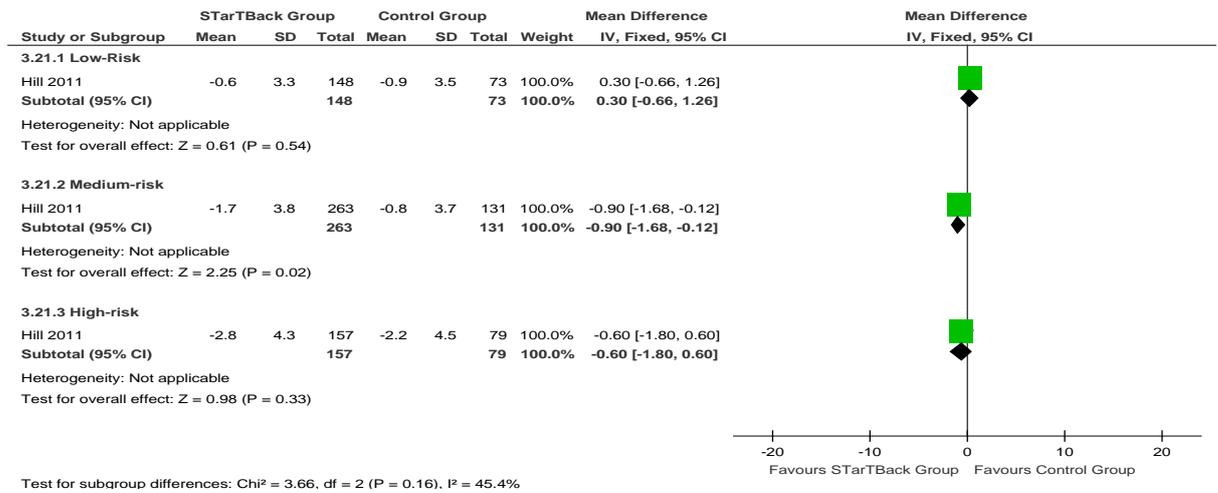


Figure 54: Psychological Distress (HADS, anxiety subscale, 0-21) >4 months (1 year)

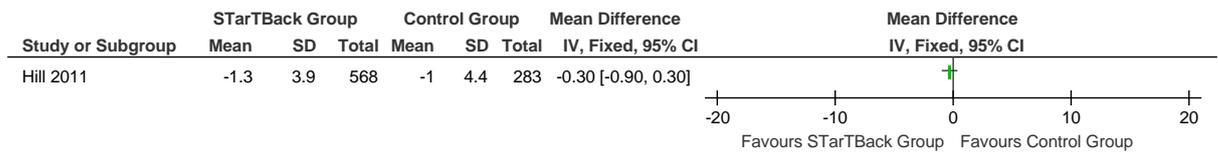


Figure 55: Psychological Distress (HADS, anxiety subscale, 0-21) >4 months (1 year)- STRATIFIED RISK GROUPS

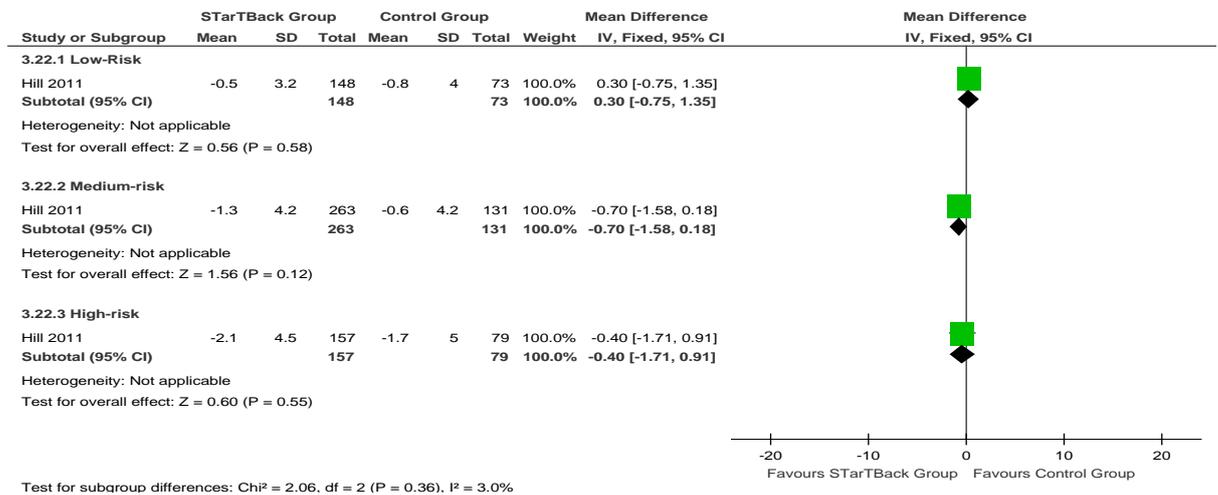


Figure 56: Psychological Distress (HADS, depression subscale, 0-21) ≤4 months (4 months)

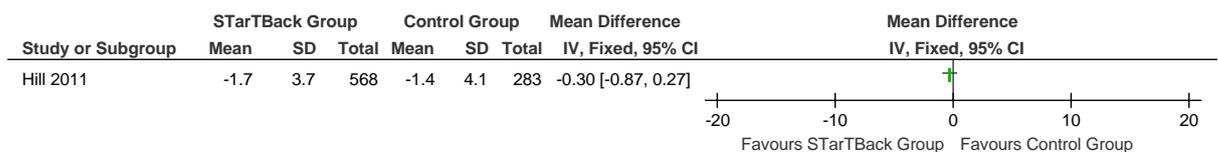
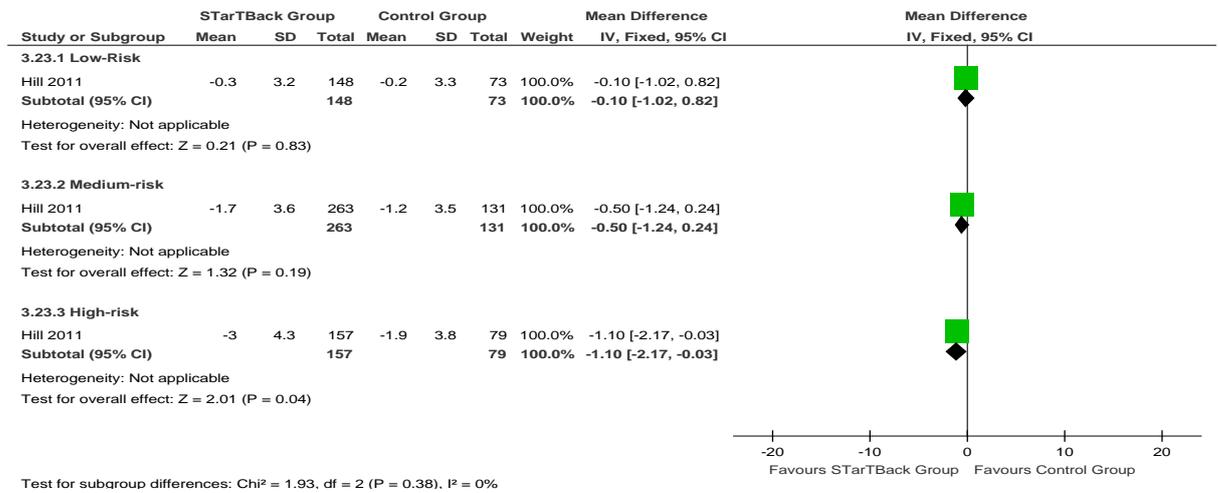


Figure 57: Psychological Distress (HADS, depression subscale, 0-21) ≤4 months (4 months)- STRATIFIED RISK GROUPS



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Figure 58: Psychological Distress (HADS, depression subscale, 0-21) >4 months (1 year)

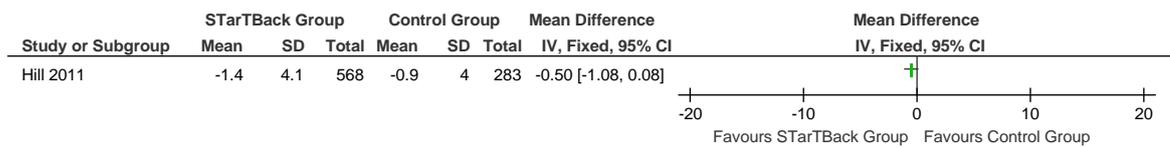


Figure 59: Psychological Distress (HADS, depression subscale, 0-21) >4 months (1 year)- STRATIFIED RISK GROUPS

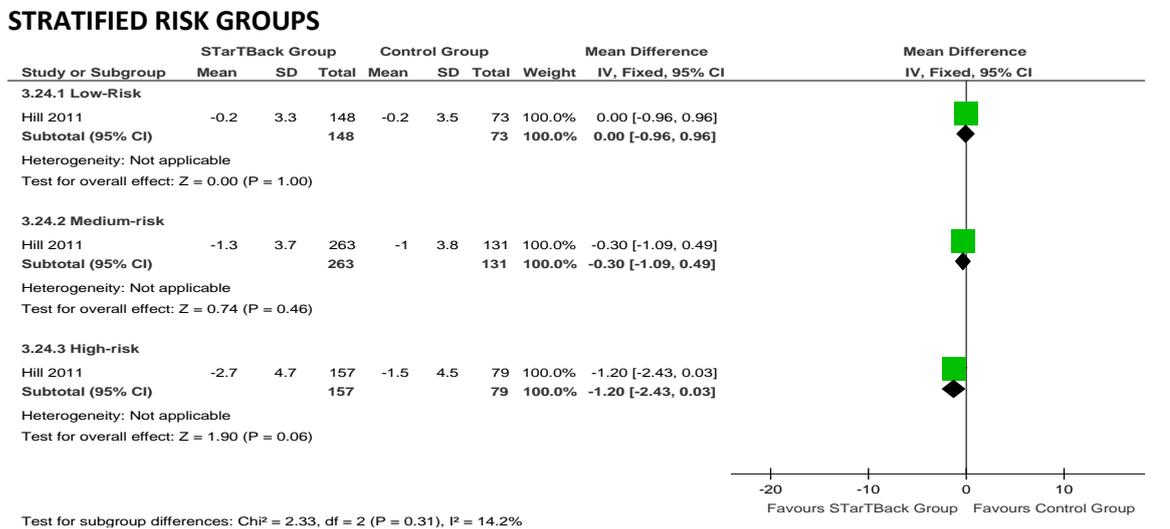


Figure 60: Responder criteria (patients with >30% improvement in pain) ≤4 months-

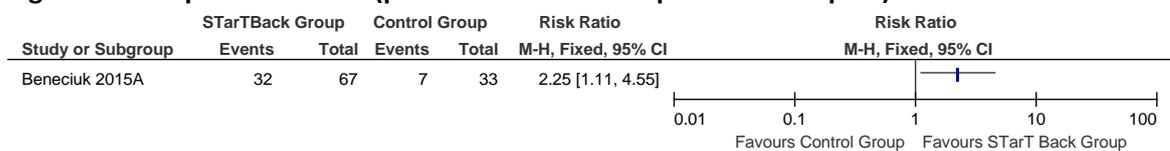


Figure 61: Responder criteria (patients with >30% improvement in pain) ≤4 months- STRATIFIED RISK GROUPS

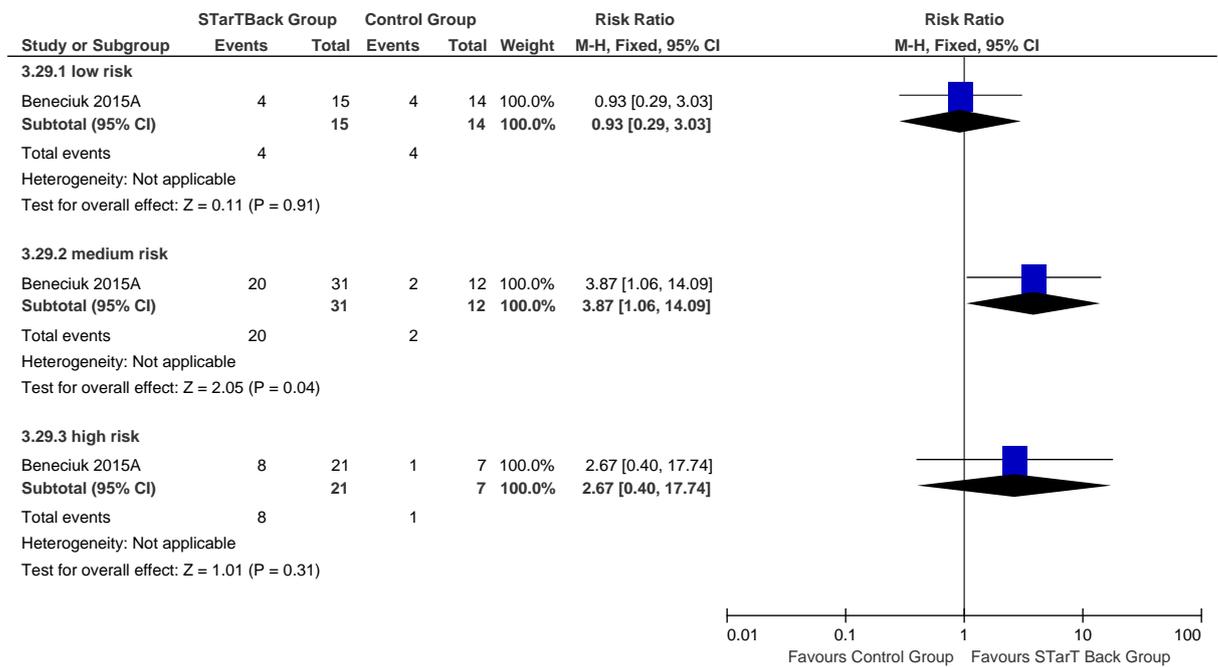
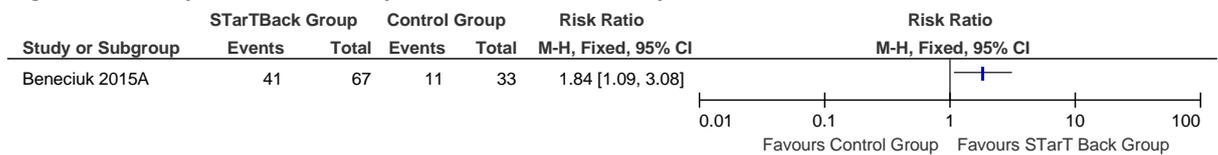
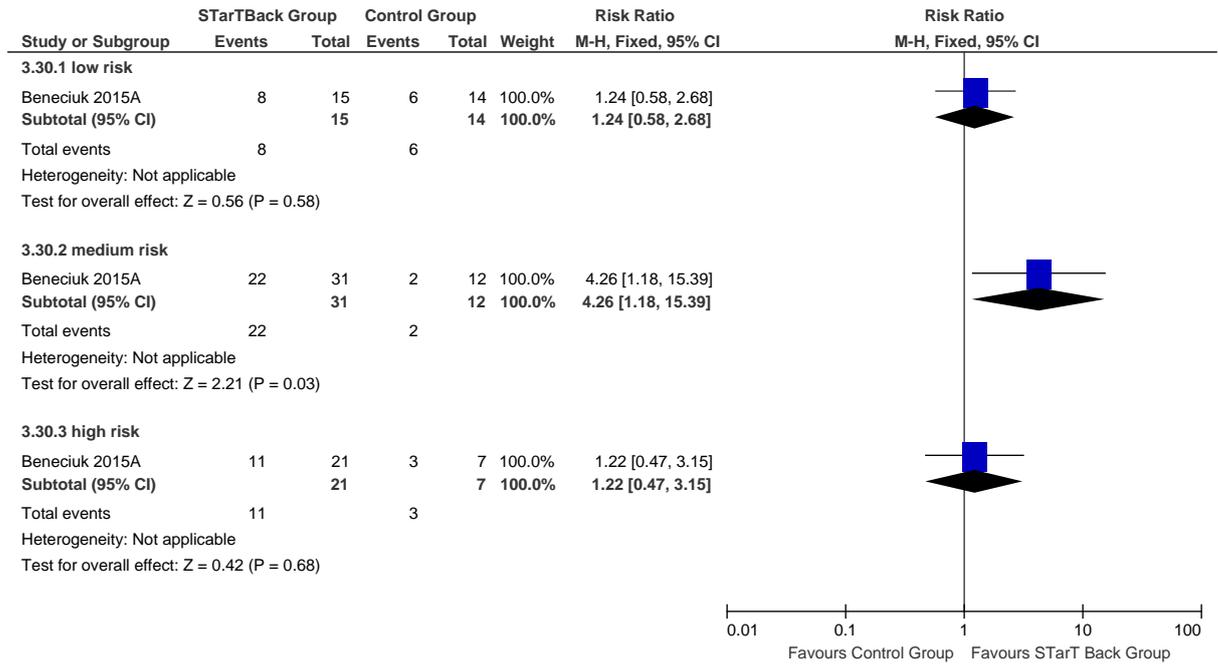


Figure 62: Responder criteria (patients with >30% improvement in function) ≤4 months



**Figure 63: Responder criteria (patients with >30% improvement in function)≤4 months-
STRATIFIED RISK GROUPS**



K.2.54 STarT Back risk tool versus no risk tool stratification (IMPACT cohort)

Figure 64: Quality of life(EQ-5D,0-1) ≤4 months (2 months)

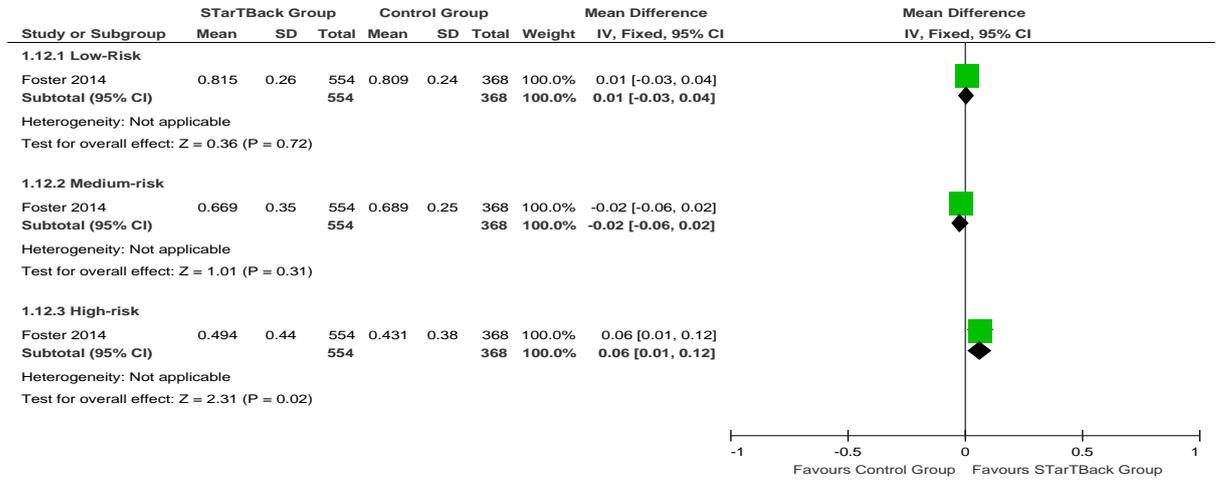


Figure 65: Quality of life(EQ-5D,0-1) >4 months (6 months)

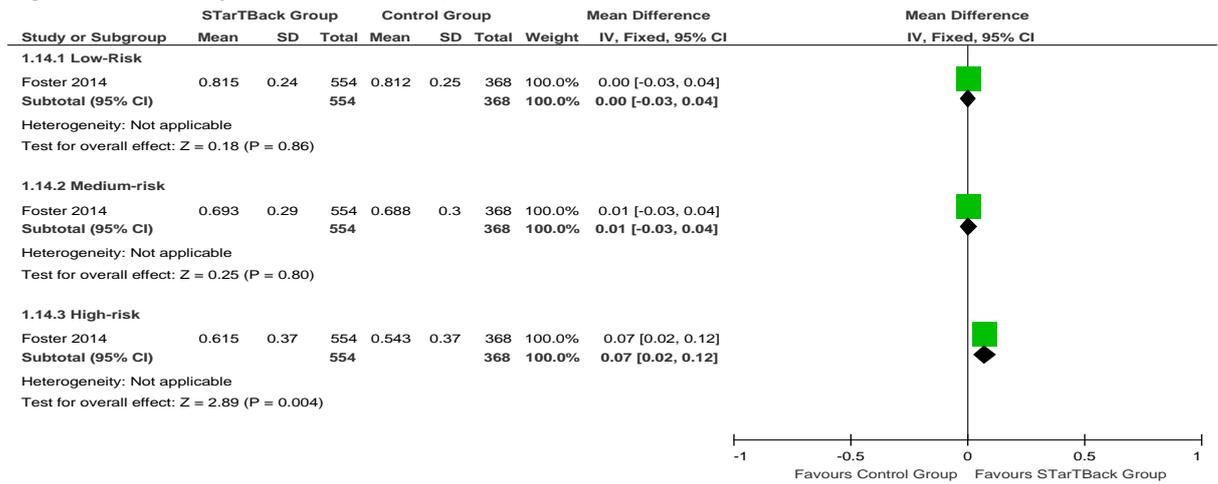
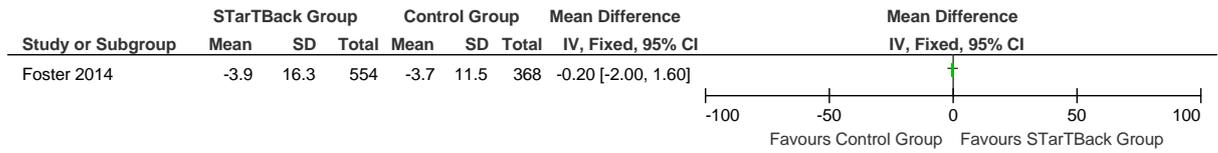


Figure 66: Quality of life(SF-12,Physical Component Score(PCS),0-100) >4 months (6 months)



**Figure 67: Quality of life(SF-12,Physical Component Score(PCS),0-100) >4 months (6 months)
STRATIFIED RISK GROUPS**

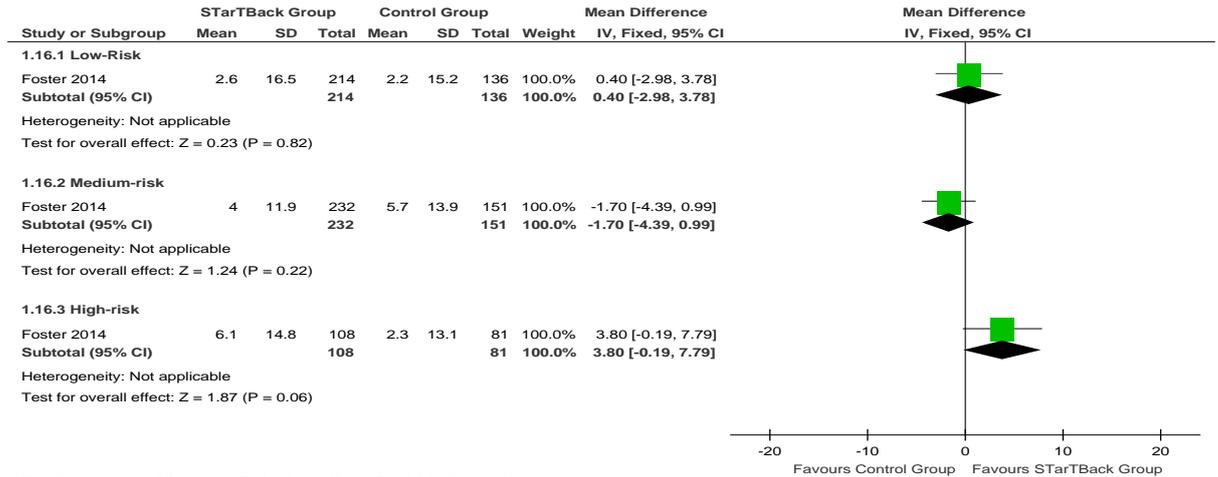
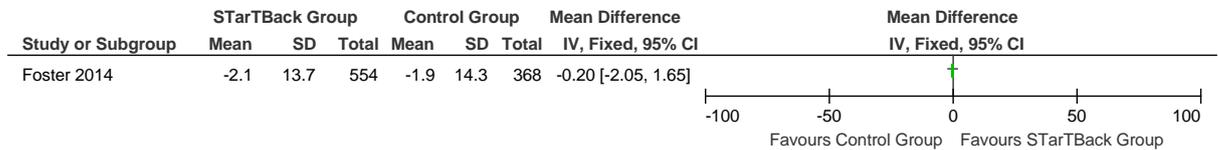


Figure 68: Quality of life(SF-12,Mental Component Score(MCS),0-100) >4 months (6 months)



**Figure 69: Quality of life(SF-12,Mental Component Score(MCS),0-100) >4 months (6 months)-
STRATIFIED RISK GROUPS**

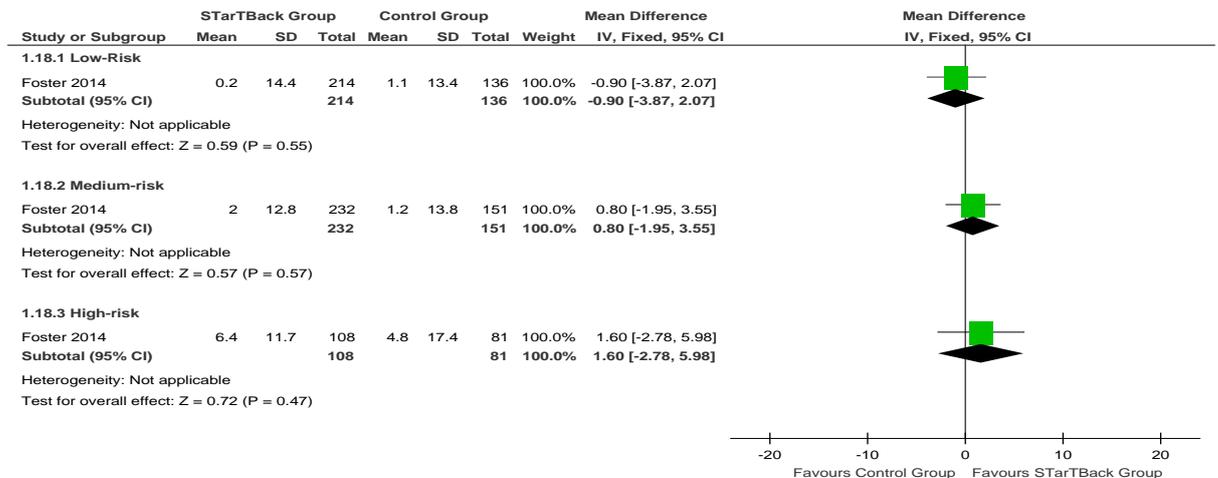


Figure 70: Pain Severity(VAS,0-10) >4 months (6 months)

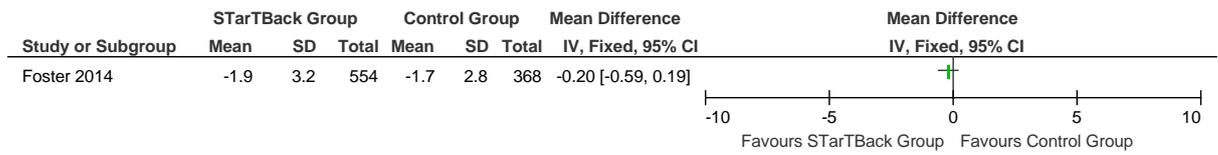


Figure 71: Pain Severity(VAS,0-10) >4 months (6 months)- STRATIFIED RISK GROUPS

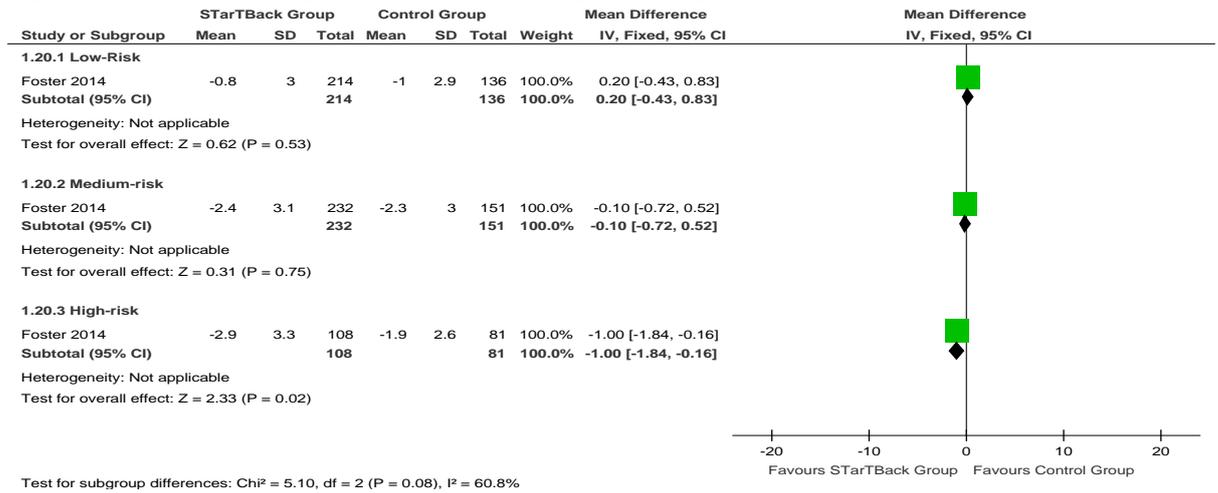


Figure 72: Function (RMDQ, 0-24) >4 months (6 months)

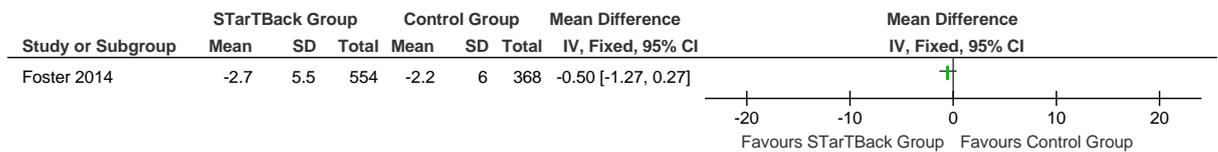


Figure 73: Function (RMDQ, 0-24) >4 months (6 months)- STRATIFIED RISK GROUPS

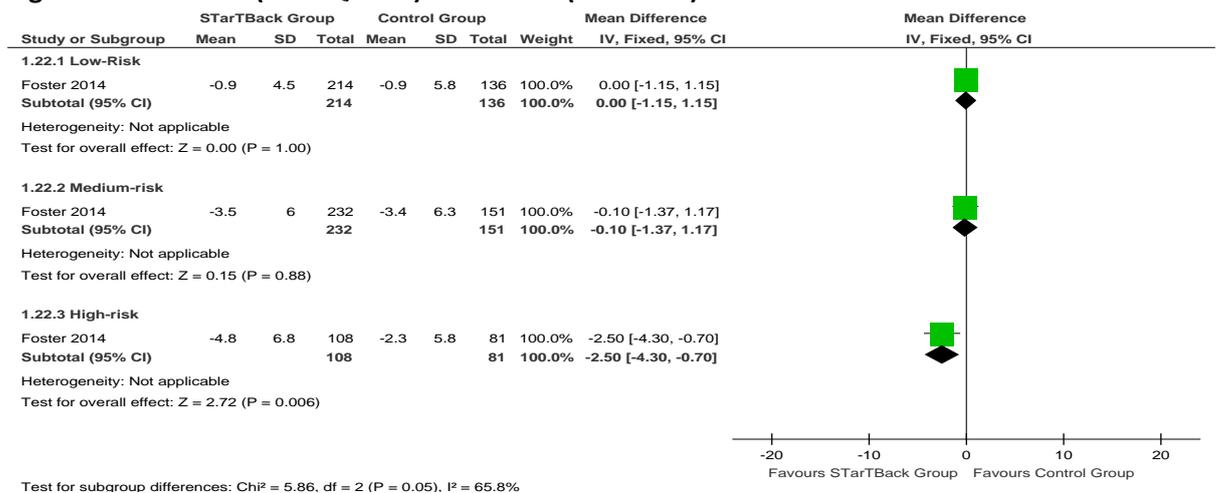
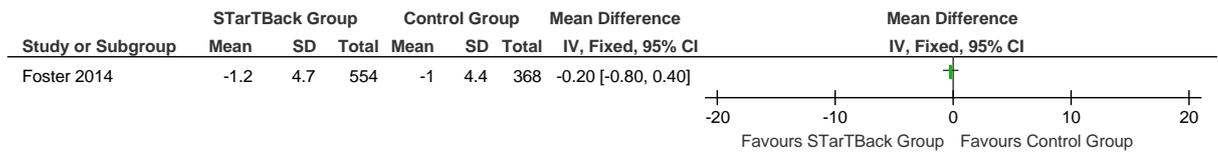
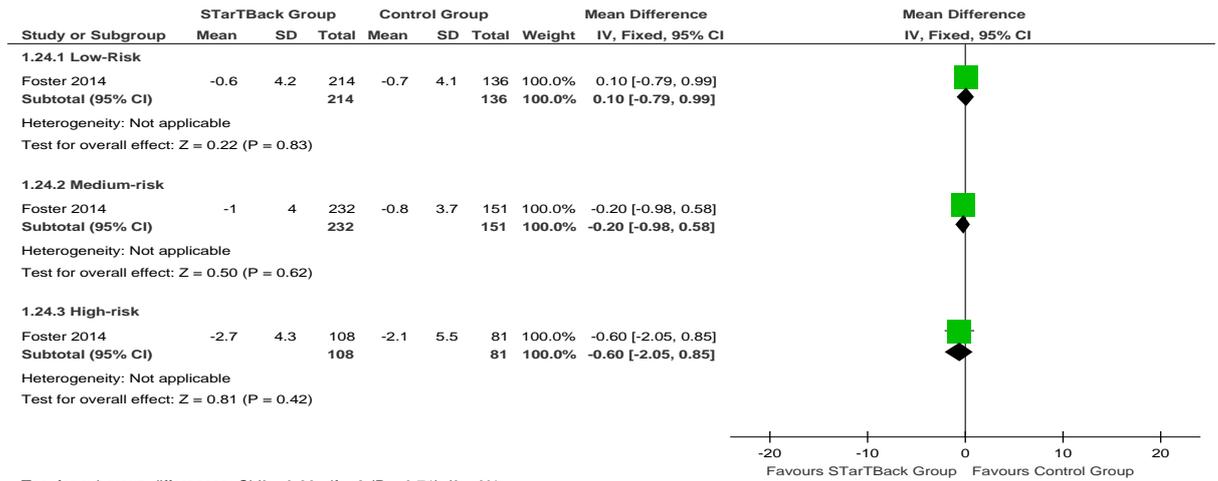


Figure 74: Psychological Distress (HADS, anxiety subscale, 0-21) >4 months (6 months)

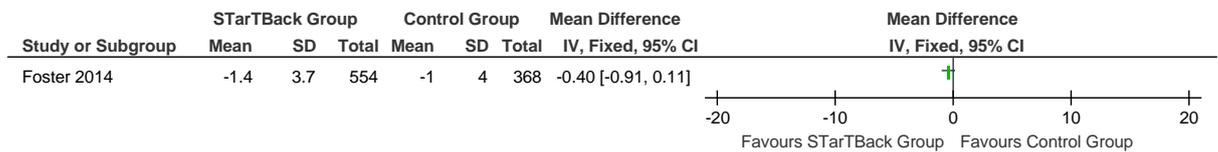


**Figure 75: Psychological Distress (HADS, anxiety subscale, 0-21) >4 months (6 months)-
STRATIFIED RISK GROUPS**

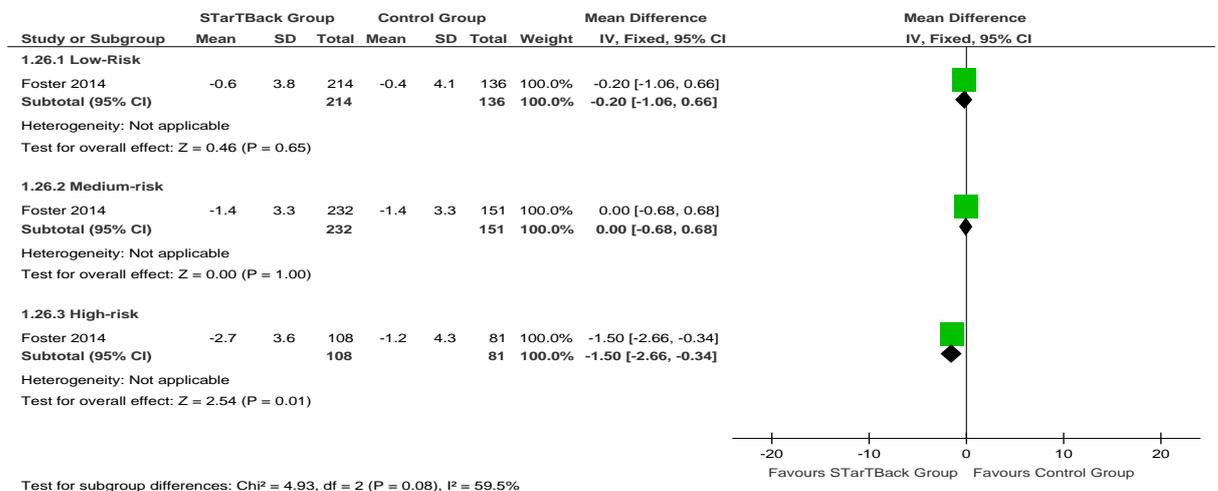


58

Figure 76: Psychological Distress (HADS, depression subscale, 0-21) >4 months (6 months)



**Figure 77: Psychological Distress (HADS, depression subscale, 0-21) >4 months (6 months)-
STRATIFIED RISK GROUPS**



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K.3 Imaging

K.3.1 Imaging versus No imaging for Low back pain with/without sciatica

Figure 78: Health-related quality of life (SF-36, 0-100) ≤ 4 months (RCT)

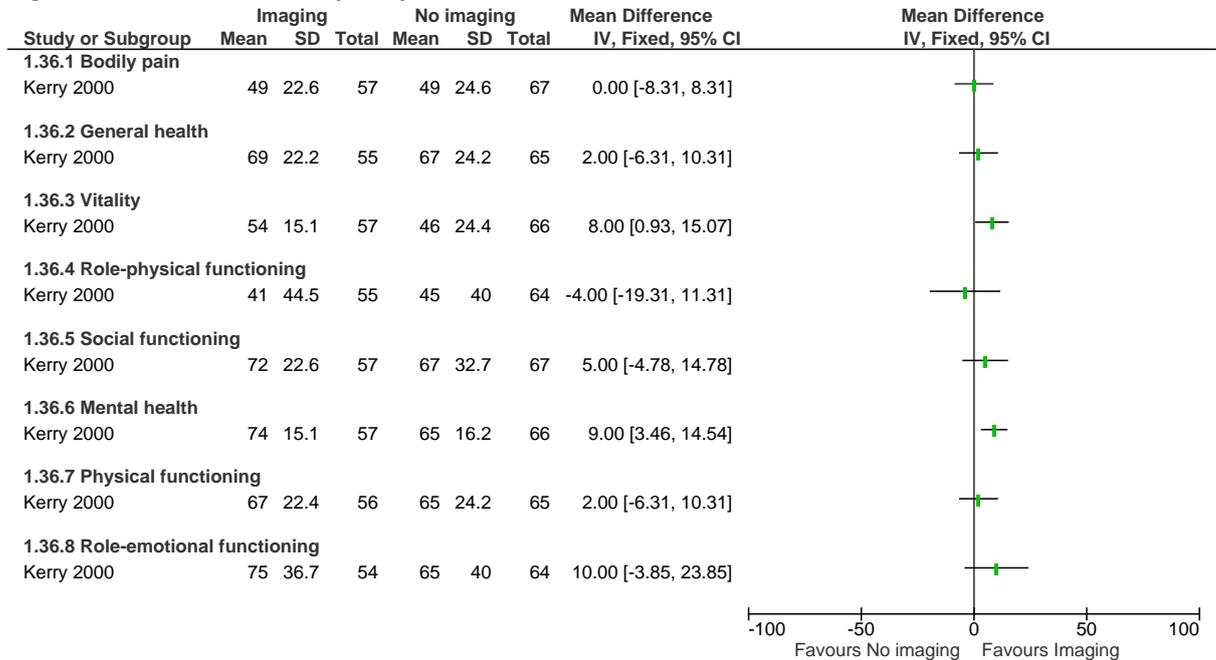


Figure 79: Health-related quality of life (SF-36, 0-100) ≤ 4 months (cohort study)

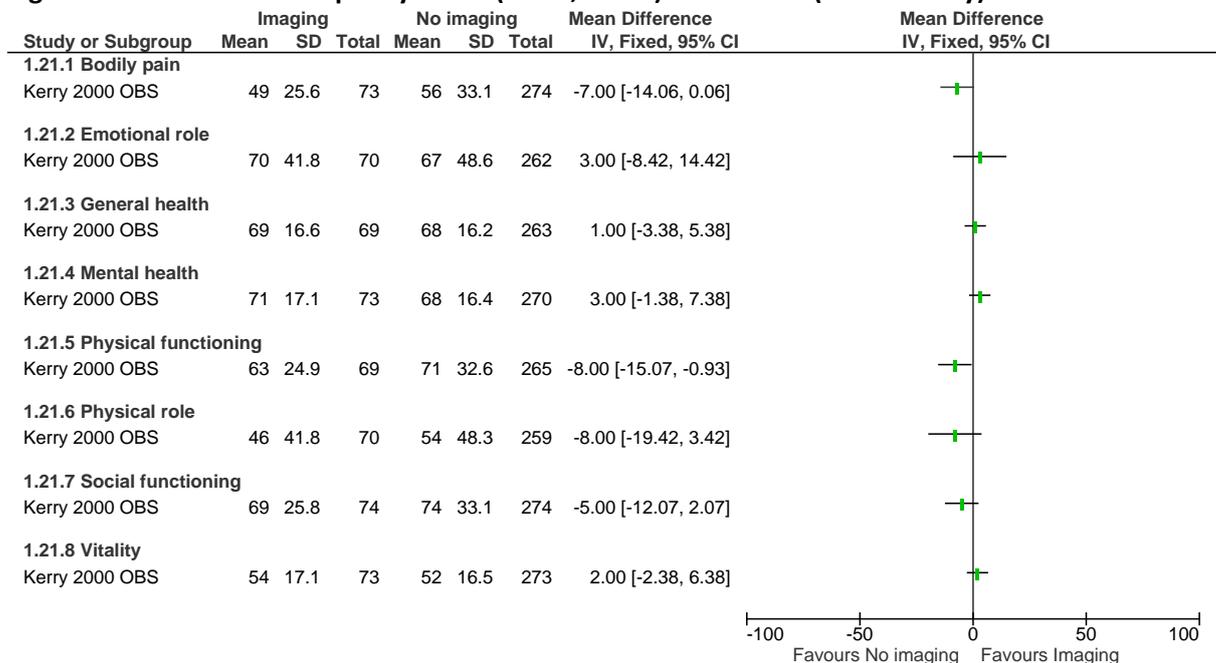


Figure 80: Health-related quality of life (EQ 5D VAS, 0-100) ≤ 4 months (RCT)

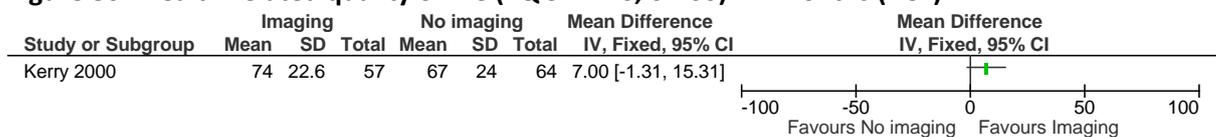


Figure 81: Health-related quality of life (EQ 5D VAS, 0-100) ≤ 4 months (cohort study)

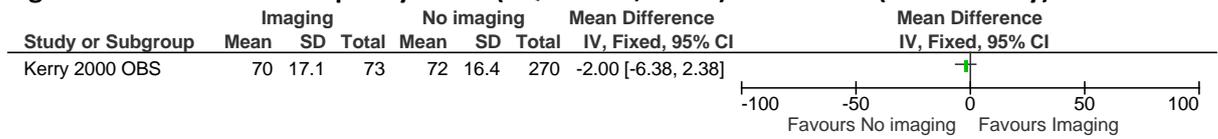
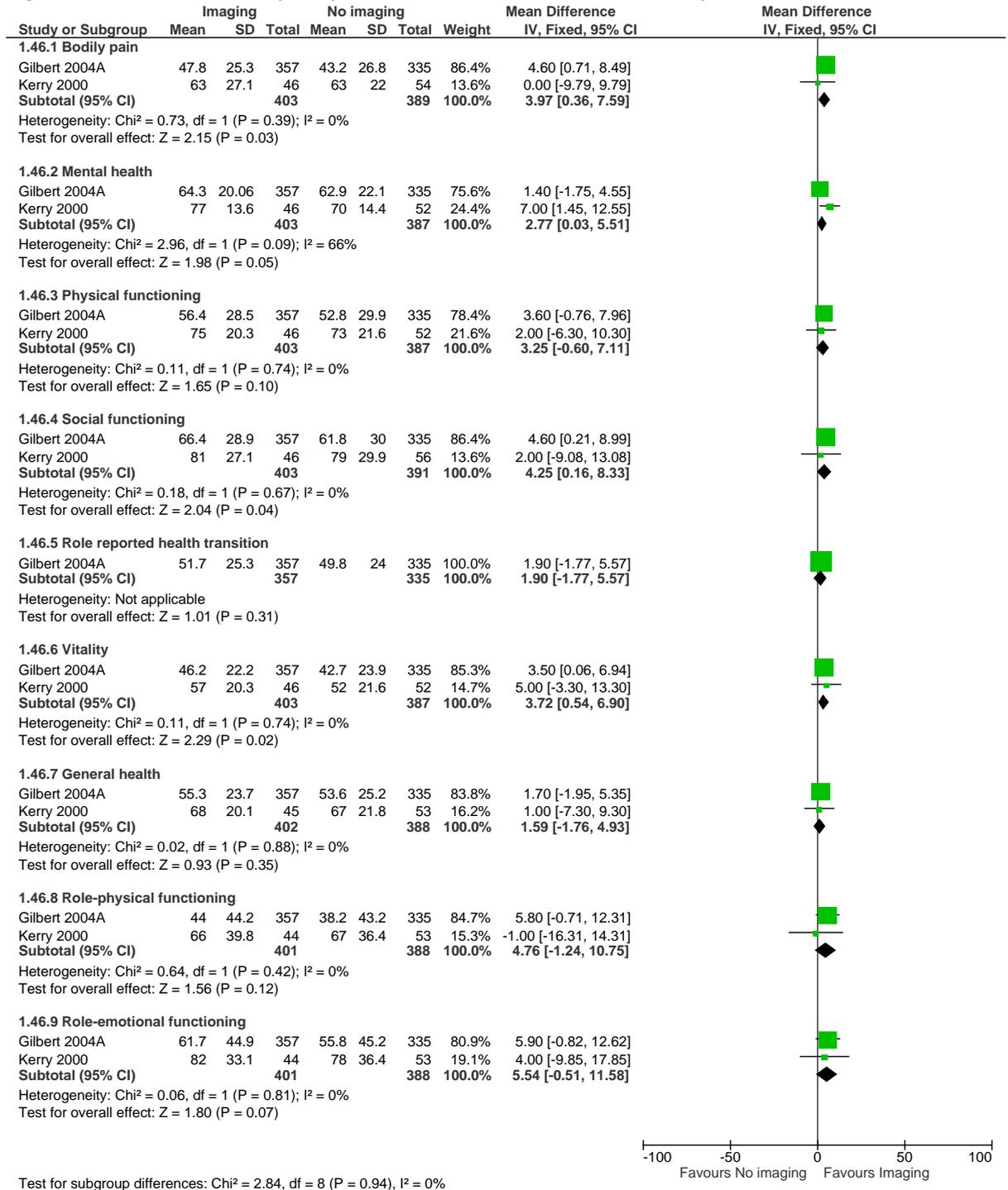


Figure 82: Health-related quality of life (SF-36, 0-100) >4 months - 1 year (RCTs)



Test for subgroup differences: Chi² = 2.84, df = 8 (P = 0.94), I² = 0%

Figure 83: Health-related quality of life (SF-36, 0-100) >4 months - 1 year (cohort study)

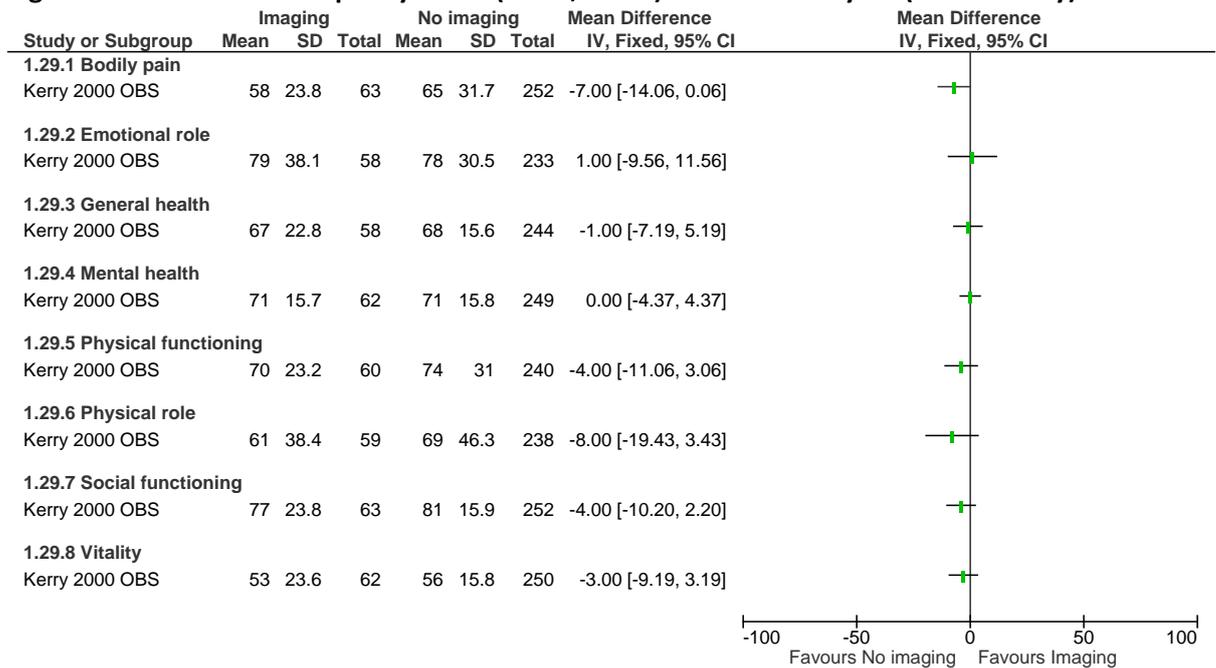


Figure 84: Health-related quality of life (EQ-5D, 0-1) >4 months - 1 year (RCT)

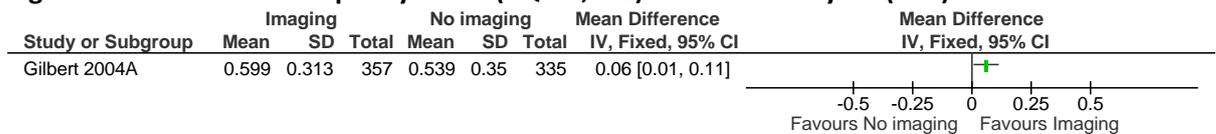


Figure 85: Health-related quality of life (EQ-5D VAS, 0-100) >4 months - 1 year (RCT)

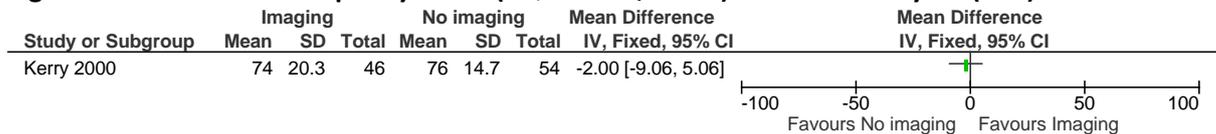


Figure 86: Health-related quality of life (EQ-5D VAS, 0-100) >4 months - 1 year (cohort study)

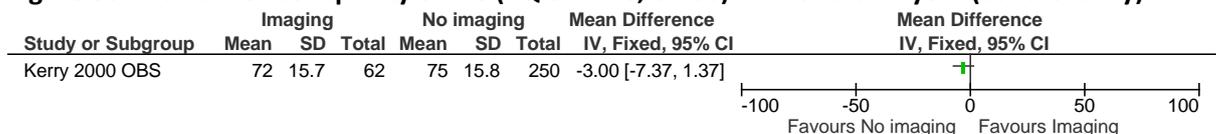


Figure 87: Pain severity (Aberdeen Low Back Pain scale (ALBP), 0-100) >4 months - 1 year (RCT)

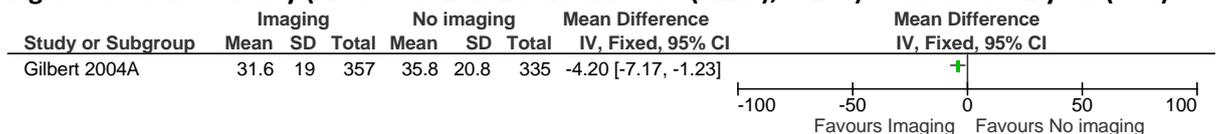


Figure 88: Function disability (Roland Morris Disability Questionnaire (RMDQ), 0-24) ≤ 4 months (RCT)

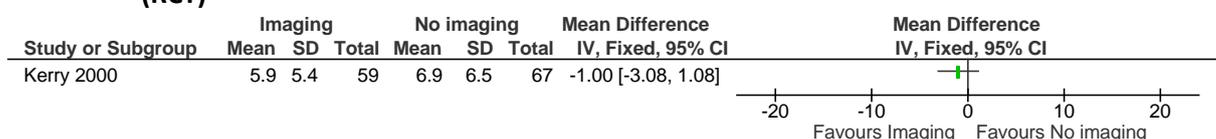


Figure 89: Function disability (Roland Morris Disability Questionnaire (RMDQ), 0-24) ≤ 4 months (cohort study)

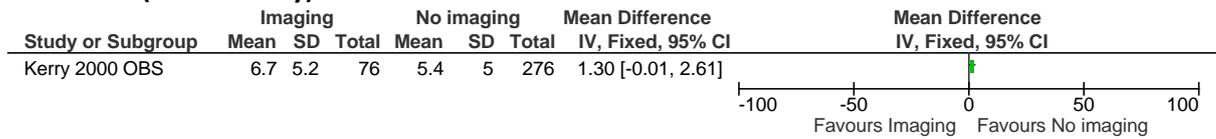


Figure 90: Function disability (Roland Morris Disability Questionnaire (RMDQ), 0-24) >4 months - 1 year (RCT)

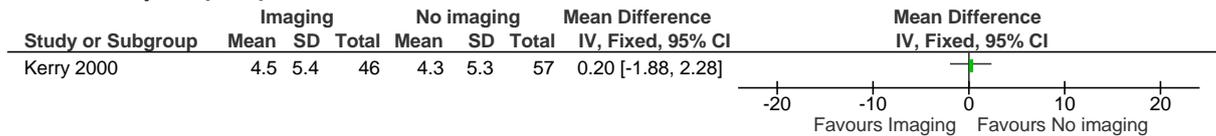


Figure 91: Function disability (Roland Morris Disability Questionnaire (RMDQ), 0-24) >4 months - 1 year (cohort study)

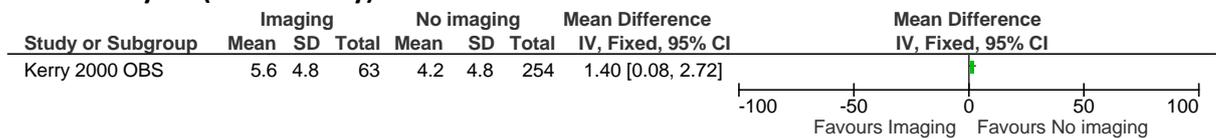


Figure 92: Psychological distress (HADS Anxiety, 0-21) ≤ 4 months (RCT)

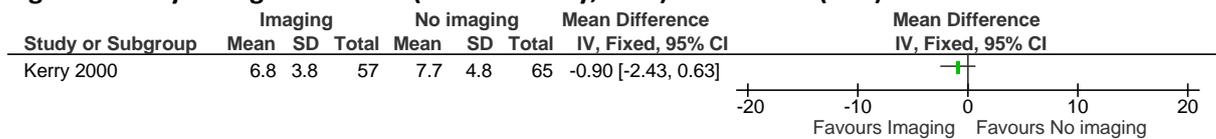


Figure 93: Psychological distress (HADS Anxiety, 0-21) ≤ 4 months (cohort study)

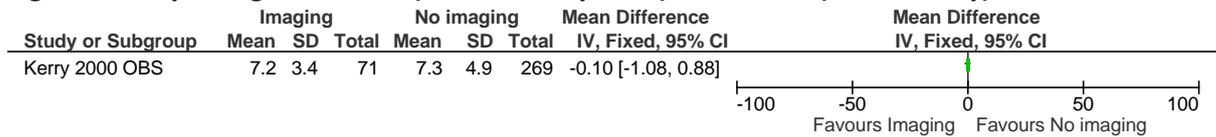


Figure 94: Psychological distress (HADS Anxiety, 0-21) >4 months - 1 year (RCT)

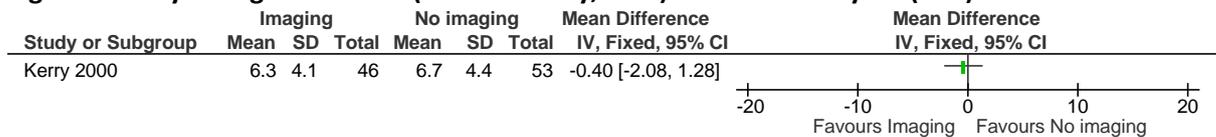


Figure 95: Psychological distress (HADS Anxiety, 0-21) >4 months - 1 year (cohort study)

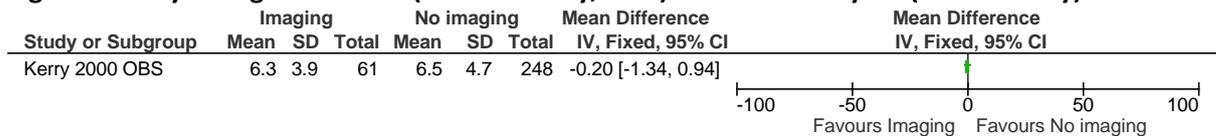


Figure 96: Psychological distress (HADS Depression, 0-21) ≤ 4 months (RCT)

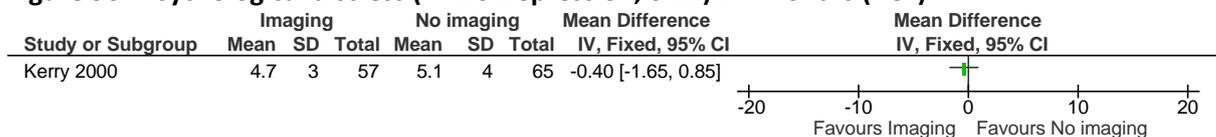


Figure 97: Psychological distress (HADS Depression, 0-21) ≤ 4 months (cohort study)

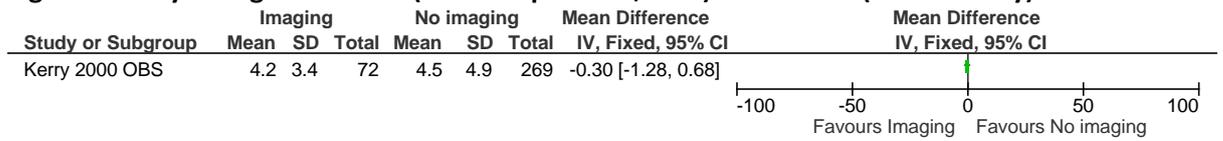


Figure 98: Psychological distress (HADS Depression, 0-21) >4 months - 1 year (RCT)

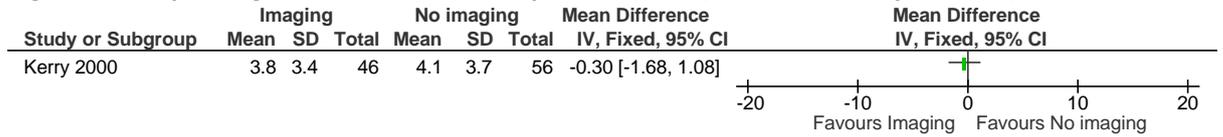


Figure 99: Psychological distress (HADS Depression, 0-21) >4 months - 1 year (cohort study)

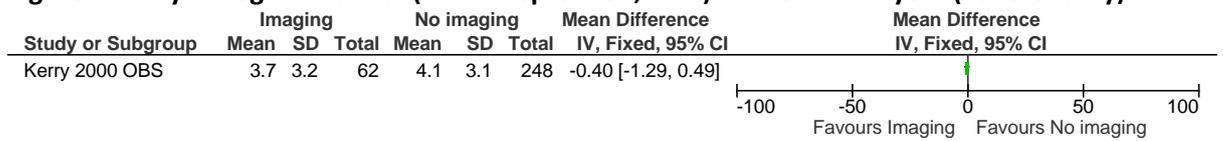
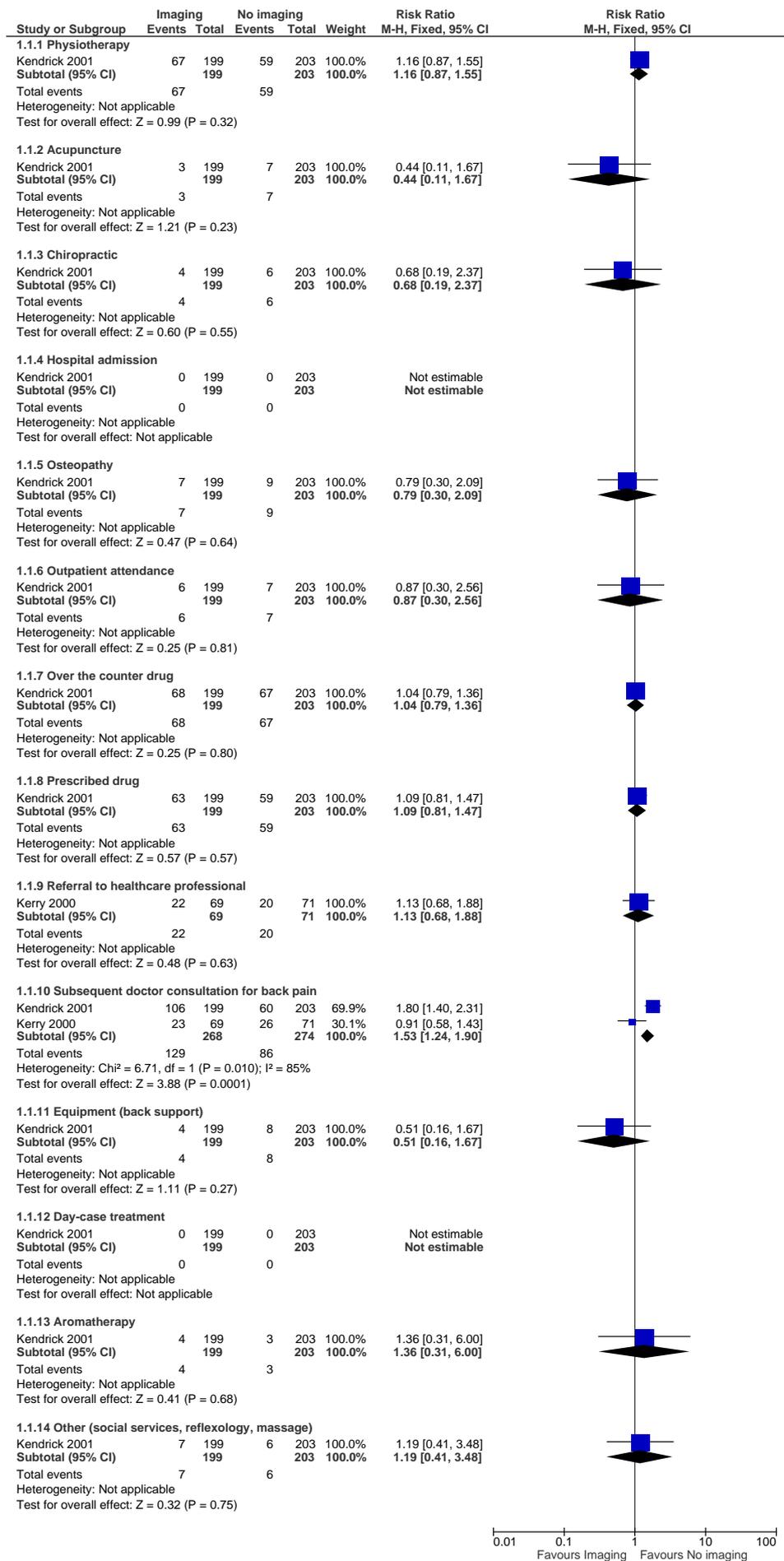


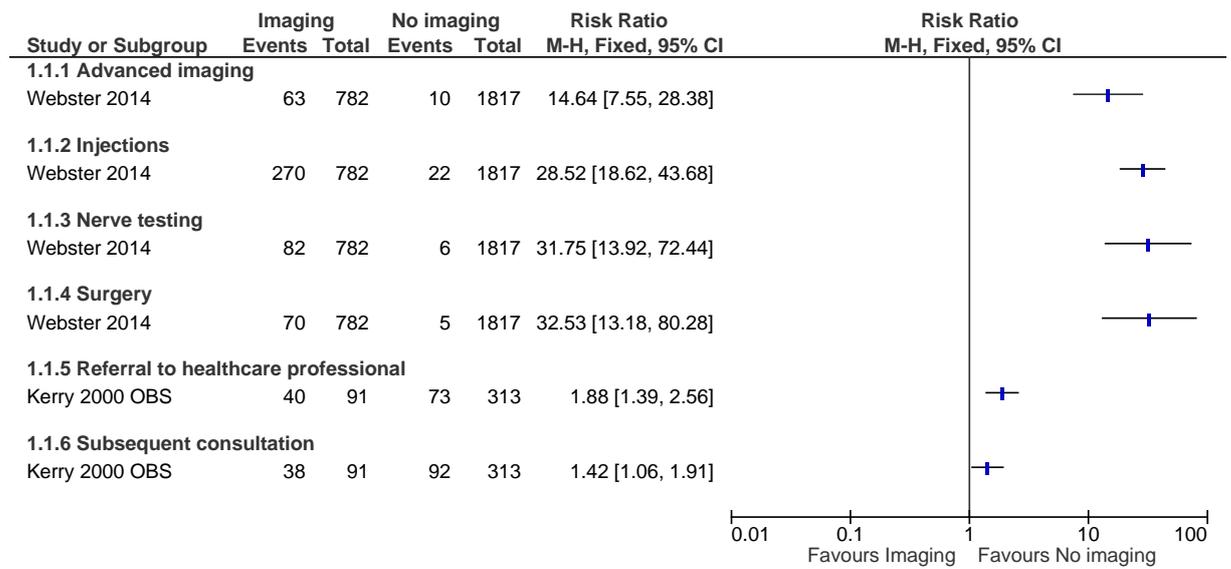
Figure 100: Healthcare utilisation \leq 4 months (RCT)

Low back pain and sciatica

Forest plots



62 **Figure 101: Healthcare utilisation ≤ 4 months (cohort study)**

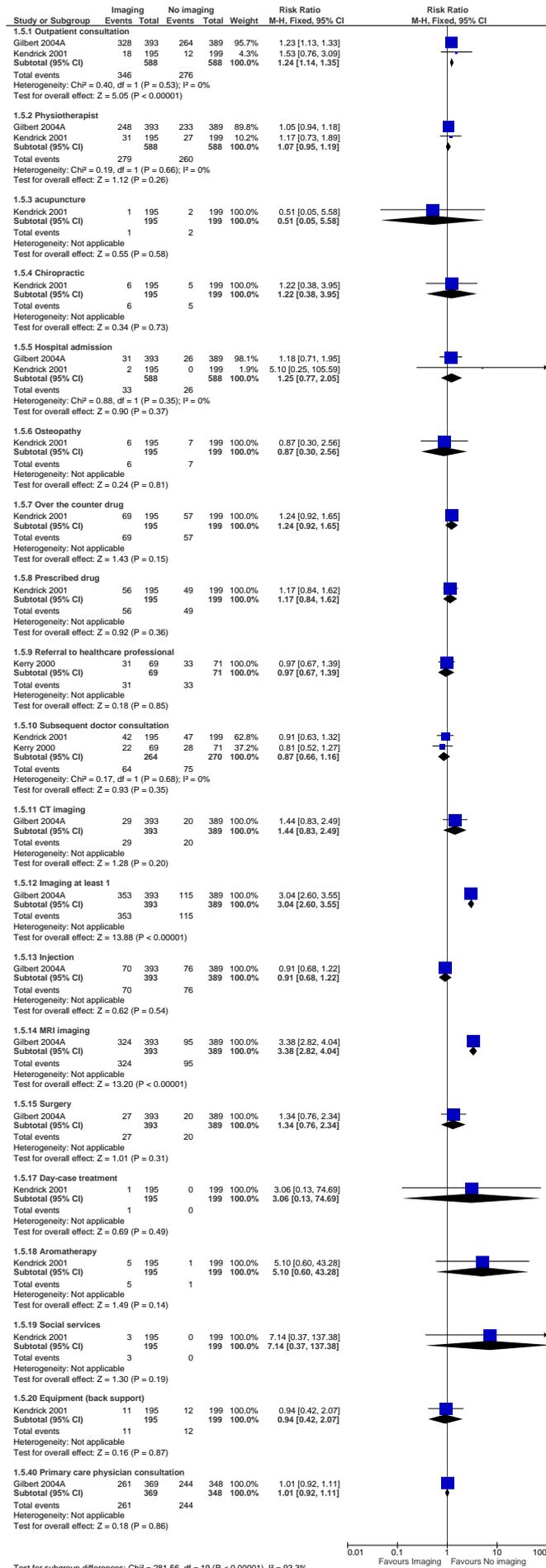


63

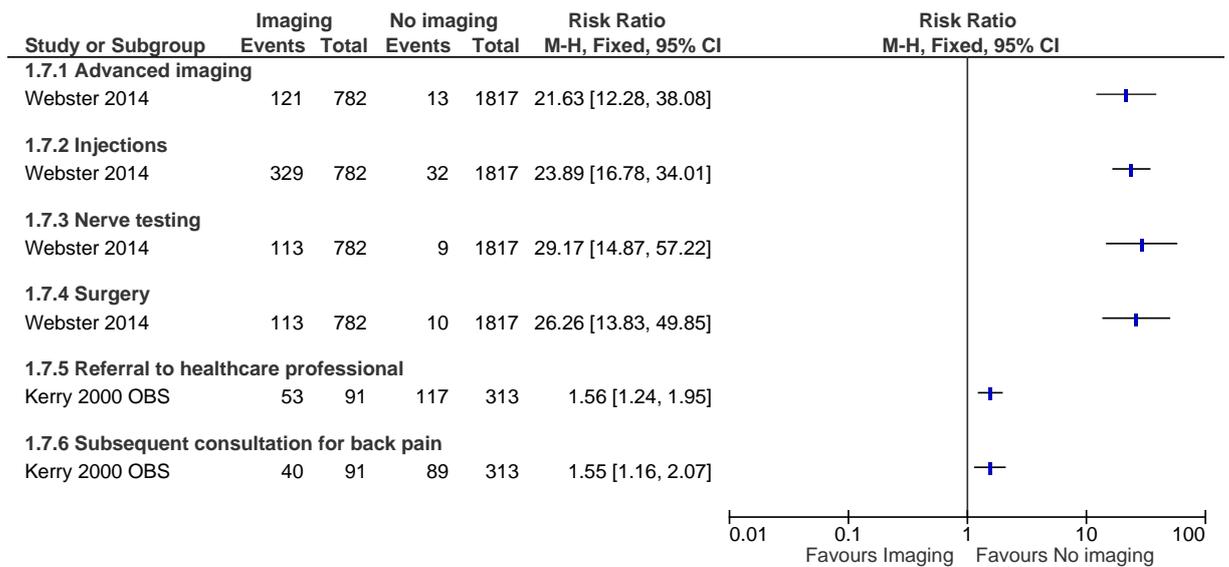
Figure 102: Healthcare utilisation >4 months - 1 year (RCT)

Low back pain and sciatica

Forest plots



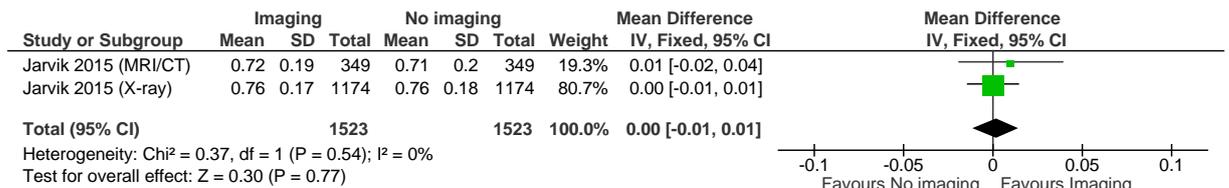
64 **Figure 103: Healthcare utilisation >4 months - 1 year (cohort study)**



65

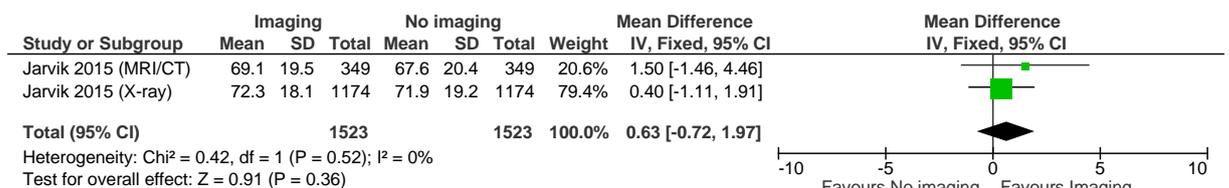
K.362 Imaging versus No imaging or Deferred imaging for Low back pain with/without sciatica

67 **Figure 104: Health-related quality of life (EuroQuol 5D Index, 0-1) ≤ 4 months (cohort studies)**



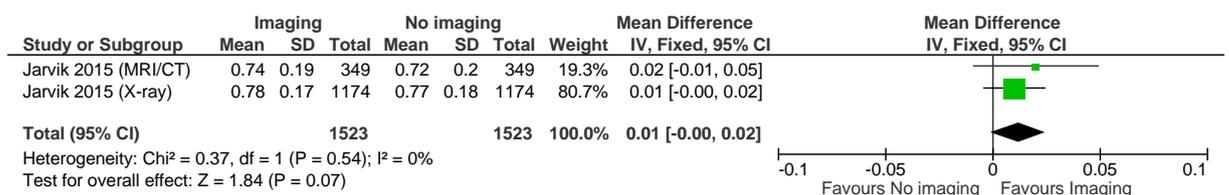
68

69 **Figure 105: Health-related quality of life (EuroQuol 5D VAS, 0-100) ≤ 4 months (cohort studies)**



70

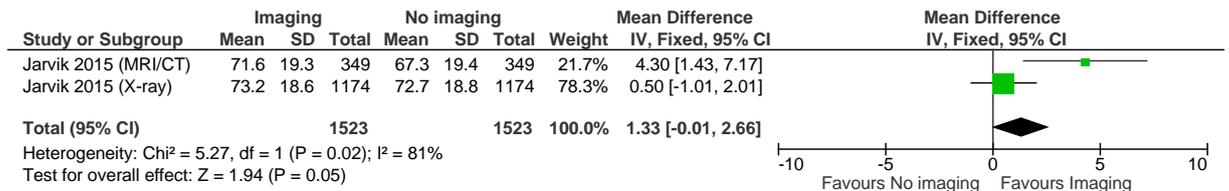
71 **Figure 106: Health-related quality of life (EuroQuol 5D Index, 0-1) >4 months - 1 year (cohort studies)**



73

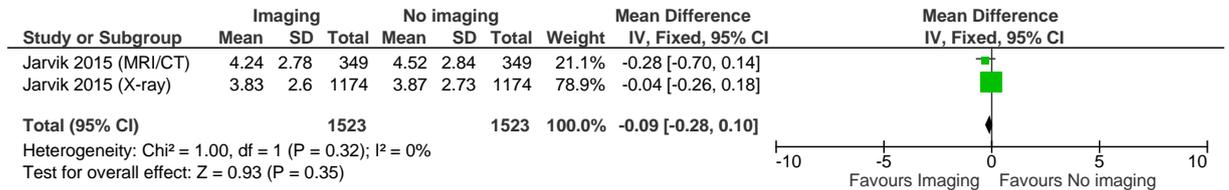
74 **Figure 107: Health-related quality of life (EuroQuol 5D VAS, 0-100) >4 months - 1 year (cohort studies)**

75



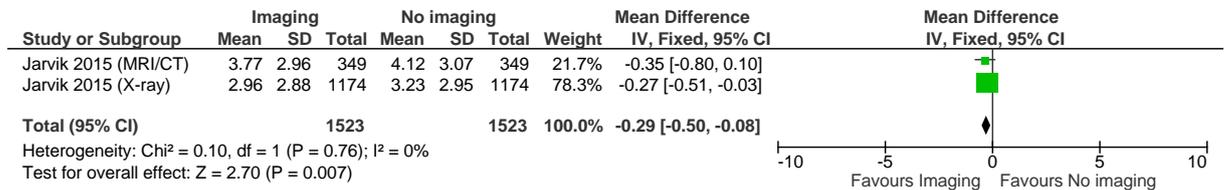
76

77 **Figure 108: Pain severity (Back Pain NRS, 0-10) ≤ 4 months (cohort studies)**



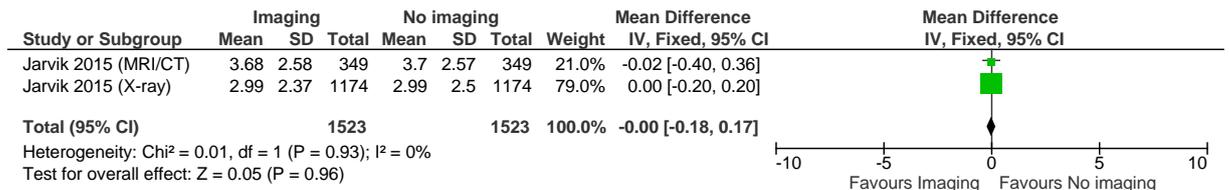
78

79 **Figure 109: Pain severity (Leg Pain NRS, 0-10) ≤ 4 months (cohort studies)**



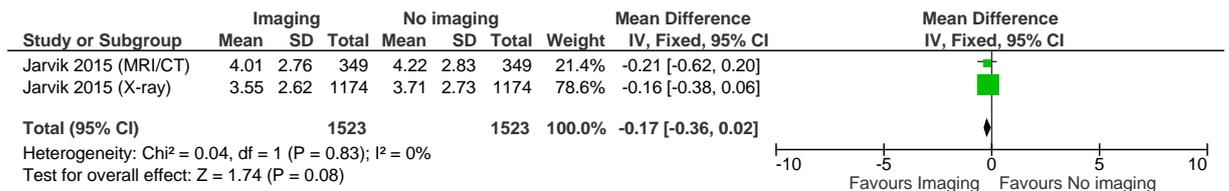
80

81 **Figure 110: Pain severity (Brief Pain Inventory Interference, 0-10) ≤ 4 months (cohort studies)**



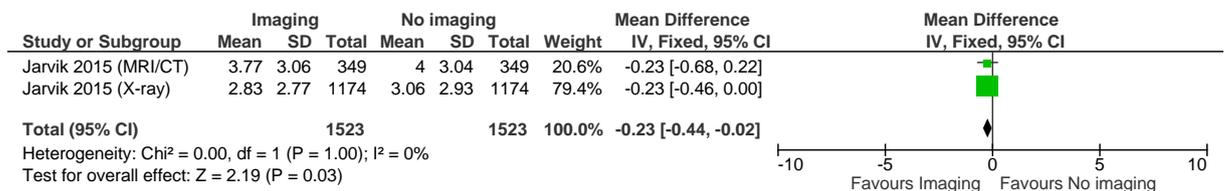
82

83 **Figure 111: Pain severity (Back Pain NRS, 0-10) >4 months - 1 year (cohort studies)**



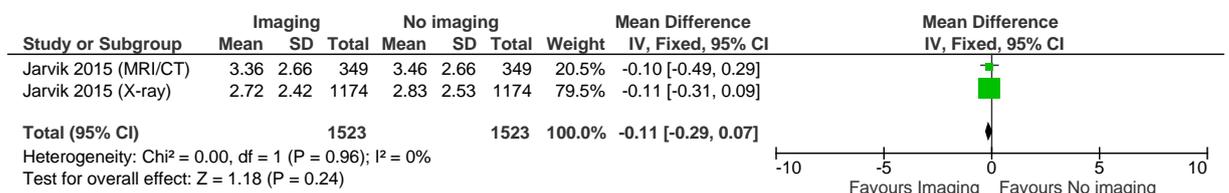
84

85 **Figure 112: Pain severity (Leg Pain NRS, 0-10) >4 months - 1 year (cohort studies)**



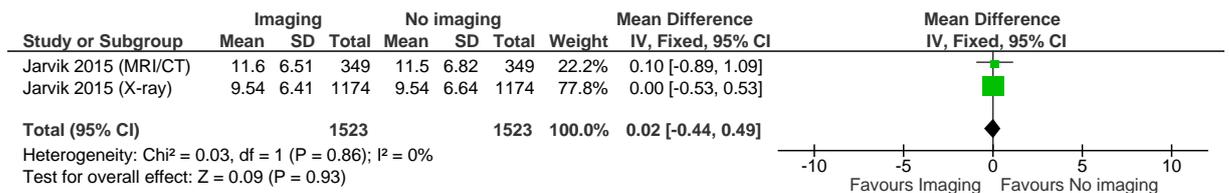
86

87 **Figure 113: Pain severity (Brief Pain Inventory, 0-10) >4 months - 1 year (cohort studies)**



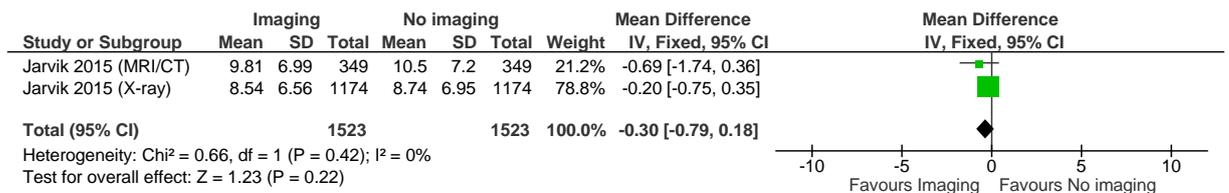
88

89 **Figure 114: Function (Roland Morris Disability Questionnaire (RMDQ), 0-24) ≤ 4 months (cohort studies)**
90



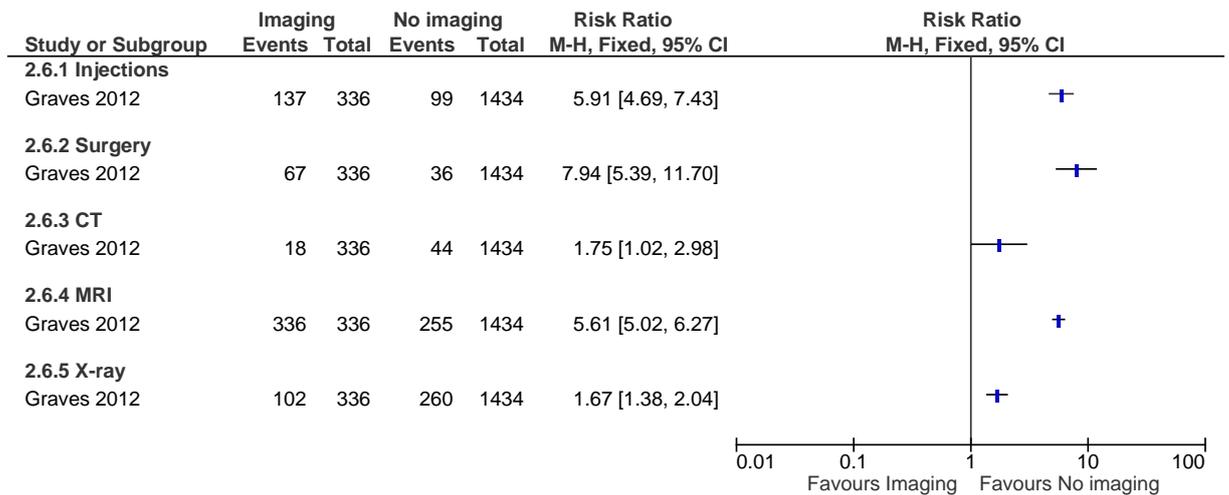
91

92 **Figure 115: Function (Roland Morris Disability Questionnaire (RMDQ), 0-24) >4 months - 1 year (cohort studies)**
93



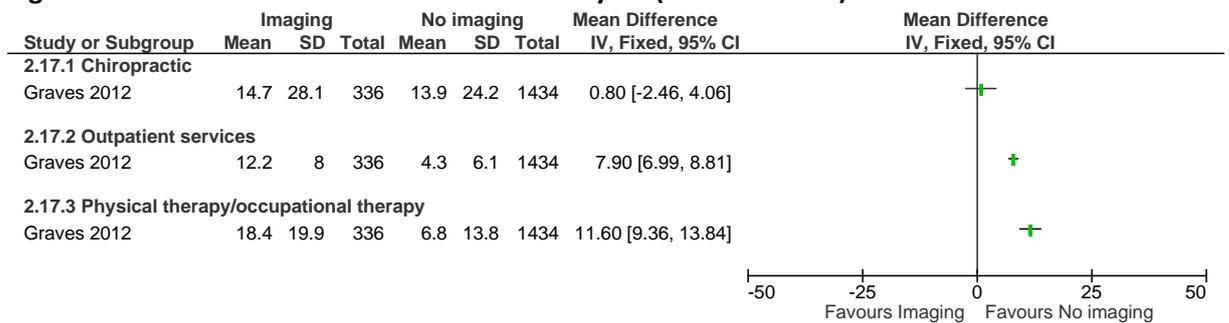
94

95 **Figure 116: Healthcare utilisation >4 months - 1 year (cohort study)**



96

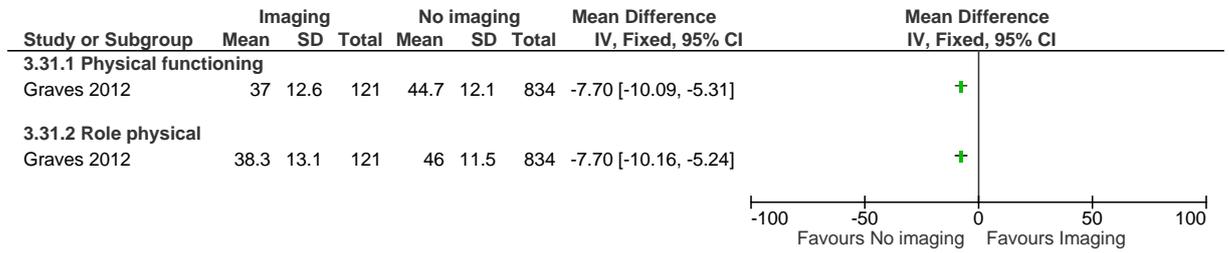
97 **Figure 117: Healthcare utilisation >4 months - 1 year (cohort studies)**



98

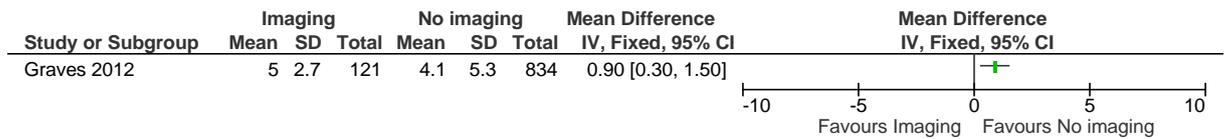
K.93 Imaging versus No imaging or Deferred imaging for Low back pain without sciatica

100 **Figure 118: Health-related quality of life (SF-36v2, 0-100) >4 months - 1 year (cohort study)**



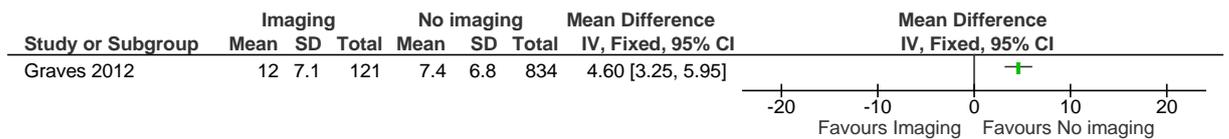
101

102 **Figure 119: Pain severity (Graded Chronic Pain Scale, 0-10) >4 months - 1 year (cohort study)**



103

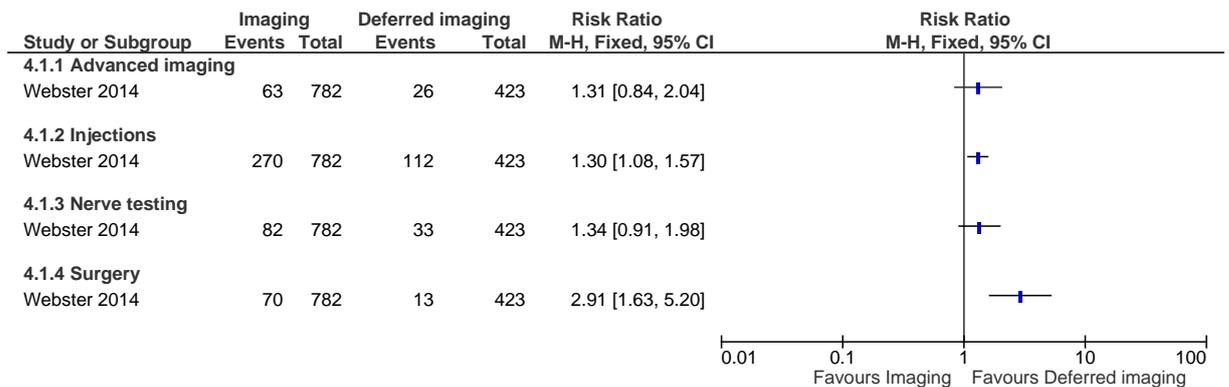
104 **Figure 120: Function (Roland Morris Disability Questionnaire (RMDQ), 0-24) >4 months - 1 year**
105 **(cohort studies)**



106

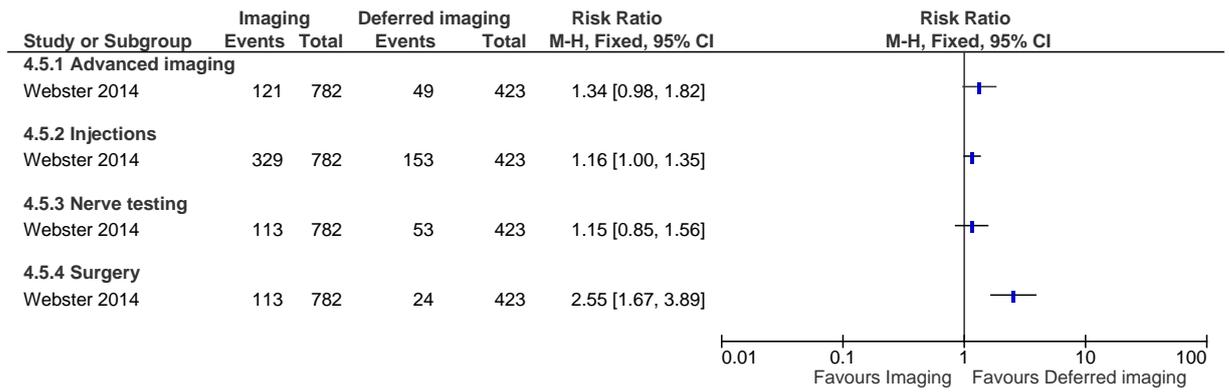
K194 Imaging versus Deferred imaging for Low back pain with/without sciatica

108 **Figure 121: Healthcare utilisation ≤ 4 months (cohort study)**



109

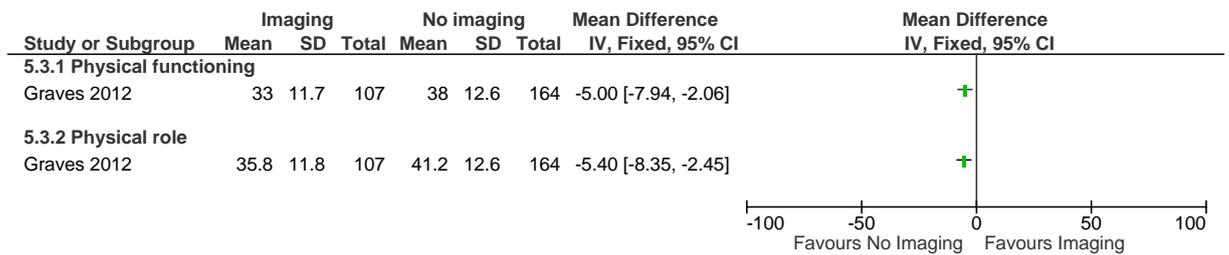
110 **Figure 122: Healthcare utilisation >4 months - 1 year (cohort study)**



111

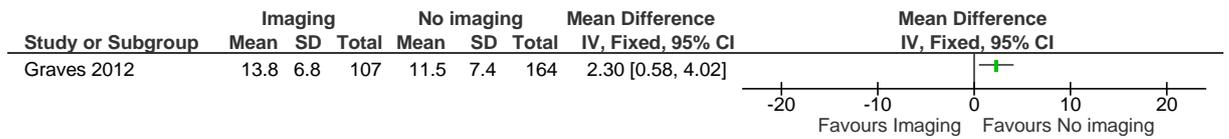
13.5 Imaging versus No imaging or Deferred imaging for sciatica

113 Figure 123: Health-related quality of life (SF-36v2, 0-100) >4 months - 1 year (cohort study)



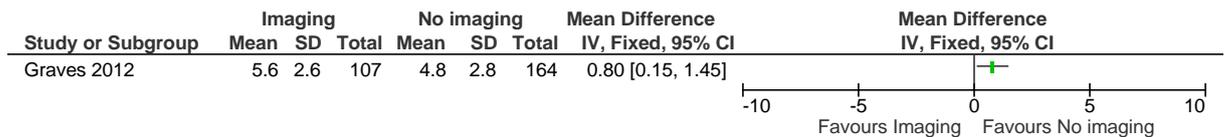
114

115 Figure 124: Function (RMDQ, 0-24) >4 months - 1 year (cohort study)



116

117 Figure 125: Pain severity (Graded Chronic Pain scale, 0-10) >4 months - 1 year (cohort study)



118

K.4 Self-management

K.4.1 Self-management programmes (including patient education and reassurance, such as the Back Book)

K.4.1.1 Self-management programmes versus usual care

K.4.1.1.1 Population – low back pain with or without sciatica

Figure 126: Quality of life (SF-36, 0-100) ≤4 months.

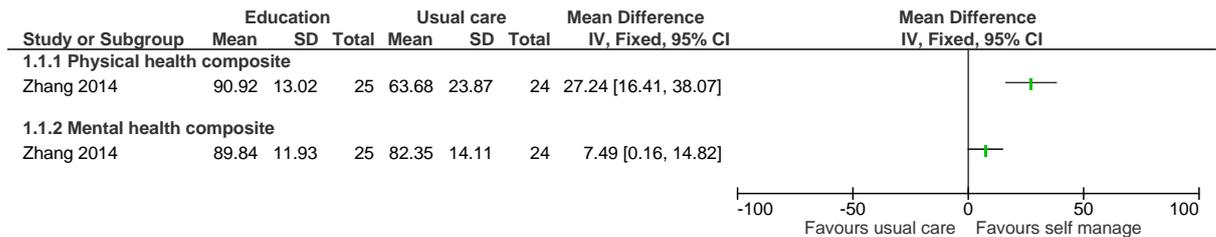
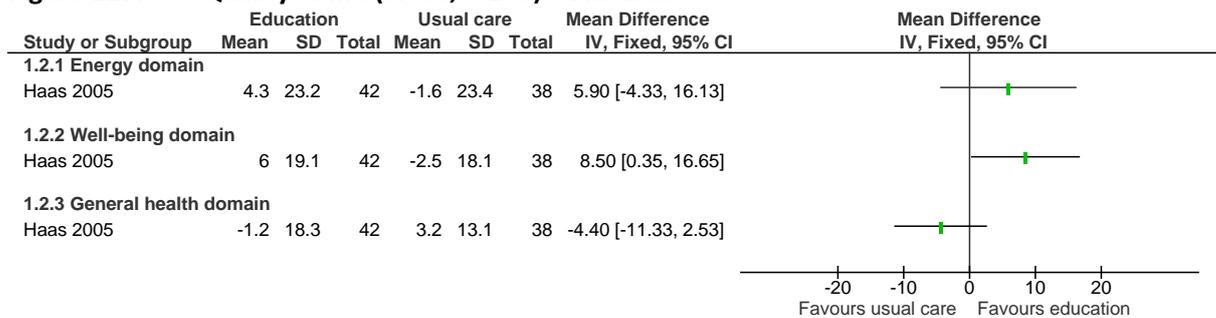
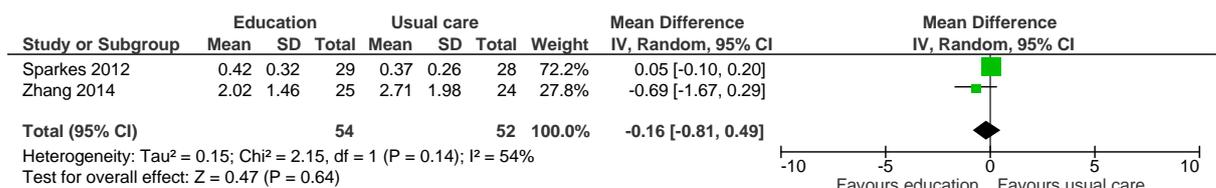


Figure 127: Quality of life (SF-36, 0-100) >4 months



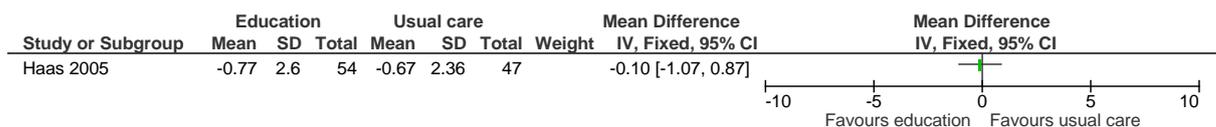
Haas study: Usual care = waiting list control

Figure 128: Pain severity (low back, VAS 0-10) ≤4 months



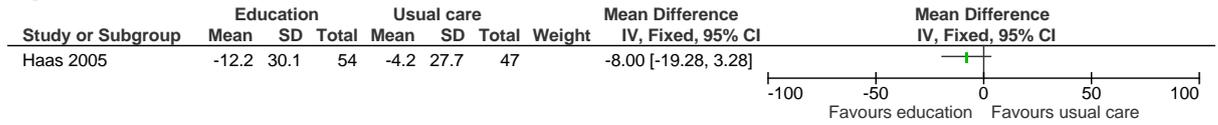
Heterogeneity not explained by subgroup analysis (subgroups do not apply). Sparkes study: Usual care = waiting list control

Figure 129: Pain severity (low back, modified von Korff pain scale 0-10) >4 months



Haas study: Usual care = waiting list control

Figure 130: Function (modified von Korff, 0-100)



Haas study: Usual care = waiting list control

Figure 131: Function (number of people not working) > 4 months

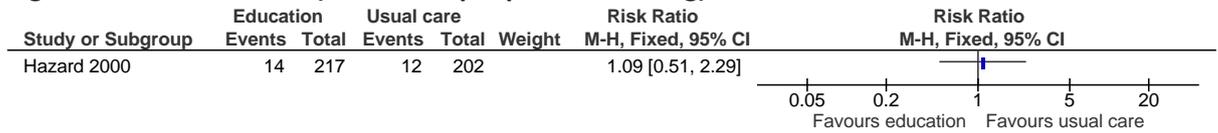
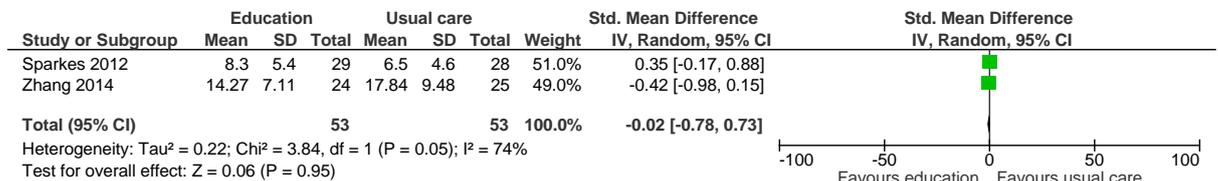
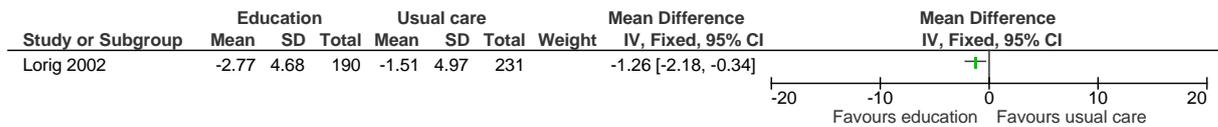


Figure 132: Function (RMDQ/ODI) ≤4 months



Heterogeneity not explained by subgroup analysis (subgroups do not apply). Sparkes study: Usual care = waiting list control.

124 **Figure 133: Function (RMDQ, 0-24) >4 months**



125

Figure 134: Responder criteria (No pain).

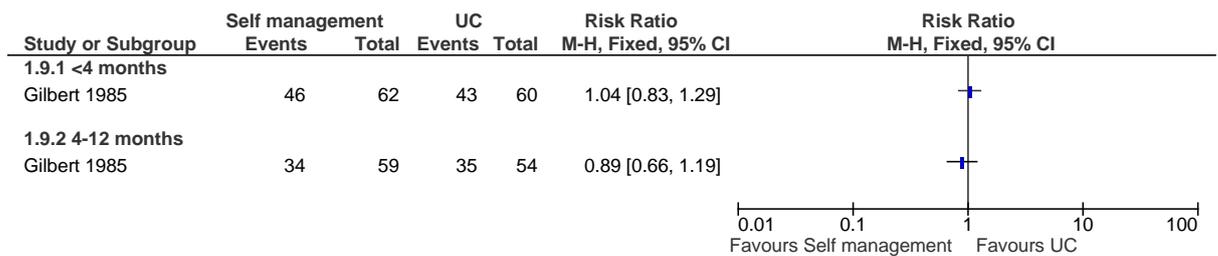


Figure 135: Healthcare utilisation (consultation for back pain) > 4 months



Haas study: Usual care = waiting list control

Figure 136: Healthcare utilisation (hospitalisation) > 4 months

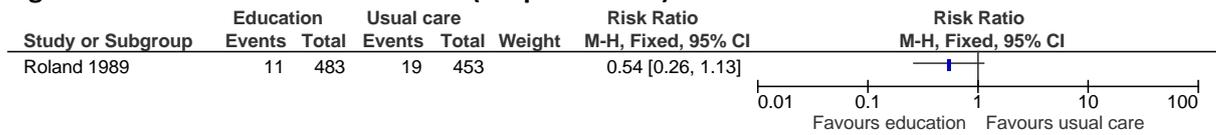


Figure 137: Healthcare utilisation (physician visits for back) > 4 months

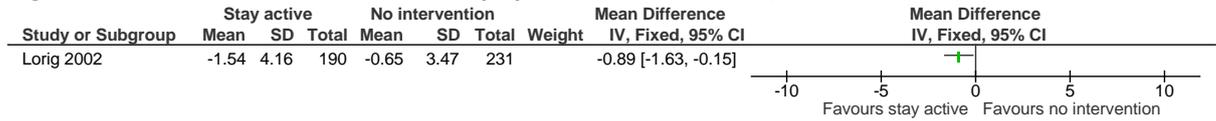


Figure 138: Healthcare utilisation (chiropractor visits for back) > 4 months

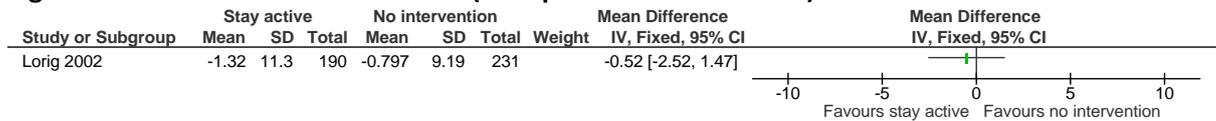


Figure 139: Healthcare utilisation (physical therapist visits for back) > 4 months

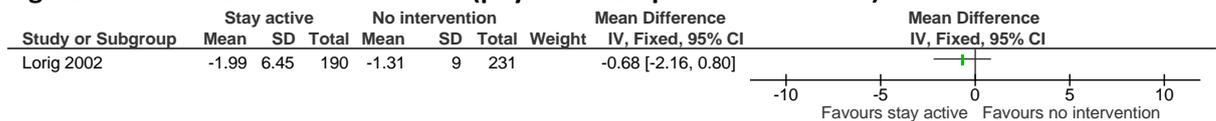
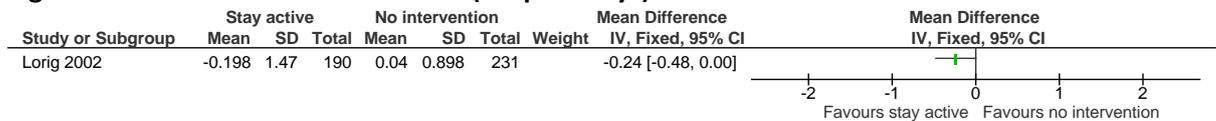


Figure 140: Healthcare utilisation (hospital days) > 4 months



K.4.11.2 Self-management programmes versus sham

K.4.11.2.1 Population – low back pain (with or without sciatica)

Figure 141: Pain severity (VAS, 0-10) ≤4 months.

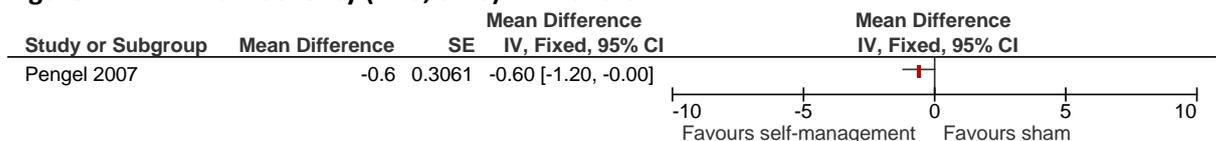


Figure 142: Pain severity (VAS, 0-10) > 4 months

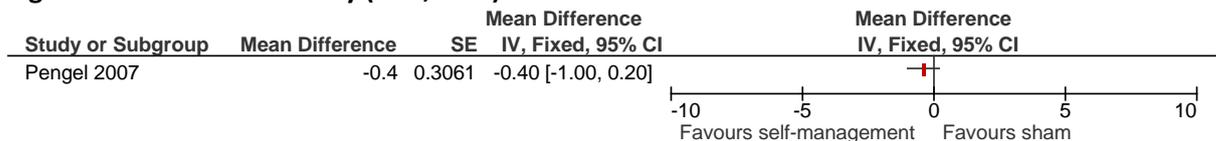


Figure 143: Function (RMDQ, 0-24) ≤4 months.

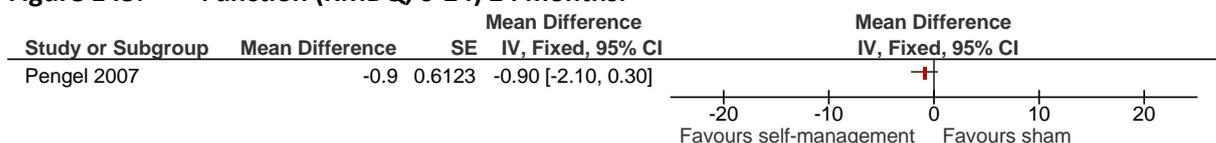
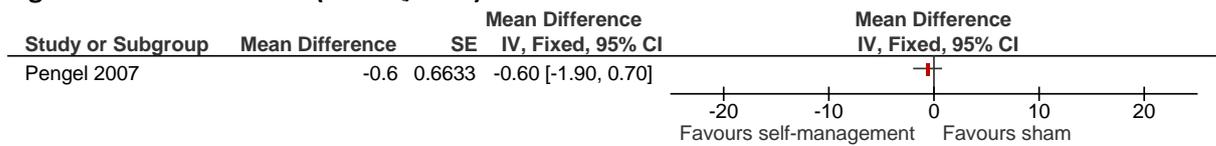


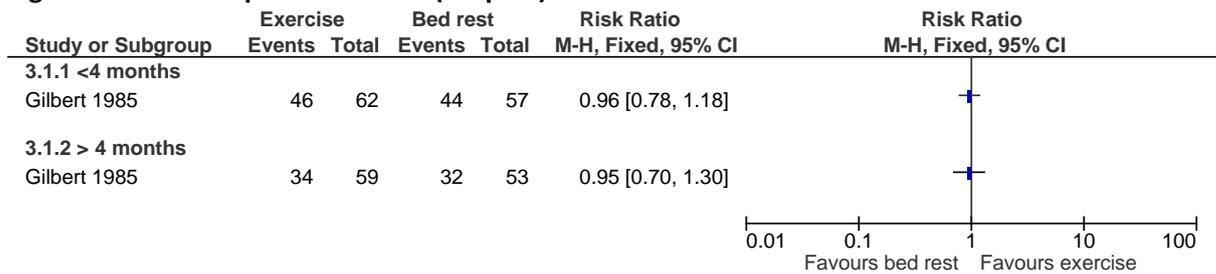
Figure 144: Function (RMDQ, 0-24) > 4 months



K.4.113 Self-management programmes versus bed rest

K.4.113.1 Population – low back pain with or without sciatica

Figure 145: Responder criteria (No pain)



K.4.104 Self-management programmes versus exercise

K.4.114.1 Population – low back pain with sciatica

Figure 146: Pain severity (VAS, 0-10)

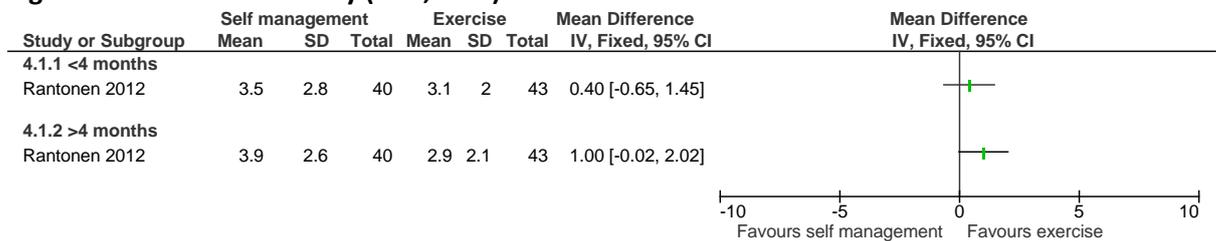


Figure 147: Function (ODI, 0-100)

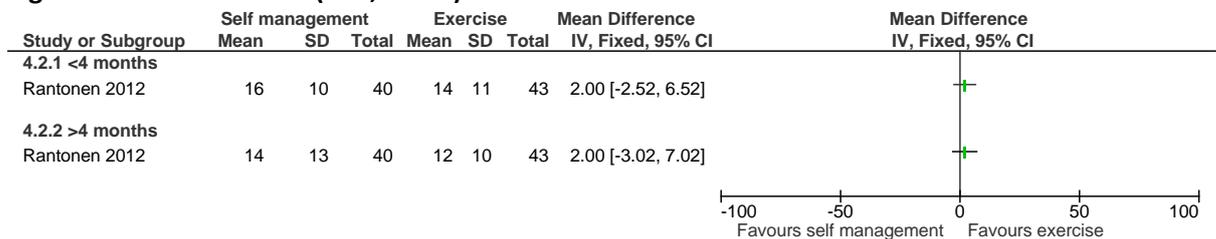
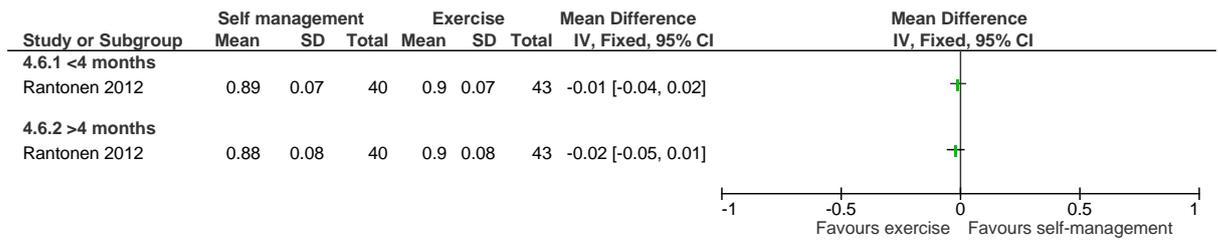


Figure 148: Quality of life (15-D, 0-1)



K.4.114.2 Population – low back pain without sciatica

Figure 149: Function (RMDQ, 0-24)

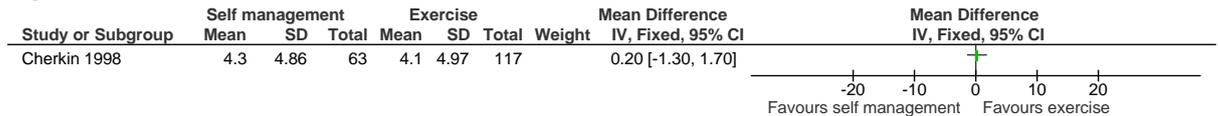


Figure 150: Responder criteria (>50% improvement in RMDQ) ≤ 4 months

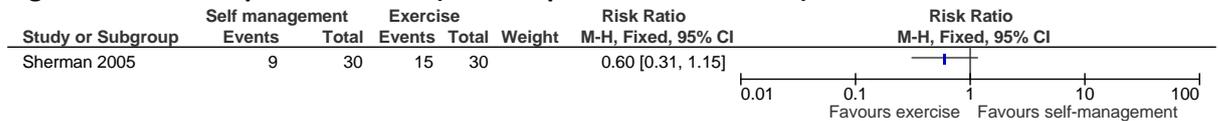
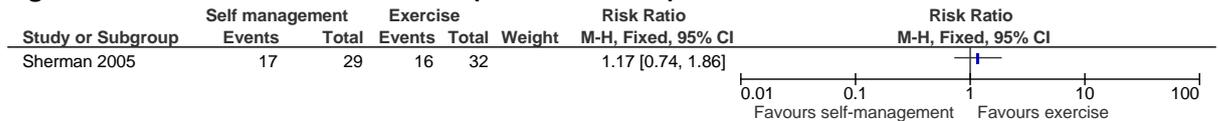


Figure 151: Healthcare utilisation (medication use) > 4 months



K.4.135 Self-management versus massage

K.4.115.1 Population – low back pain without sciatica

Figure 152: Function (RMDQ, 0-24)

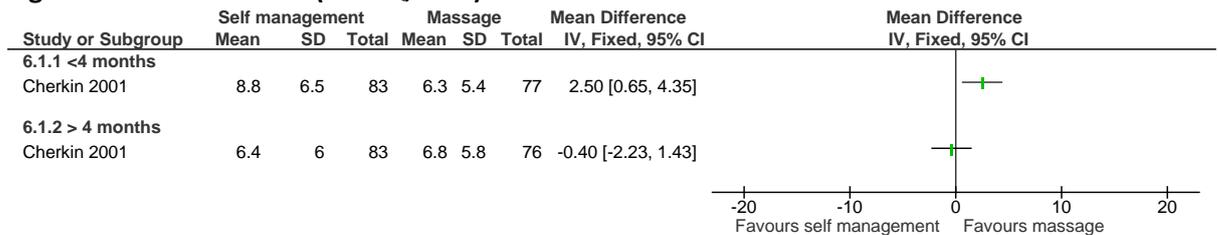


Figure 153: Healthcare utilisation (provider visits) > 4 months

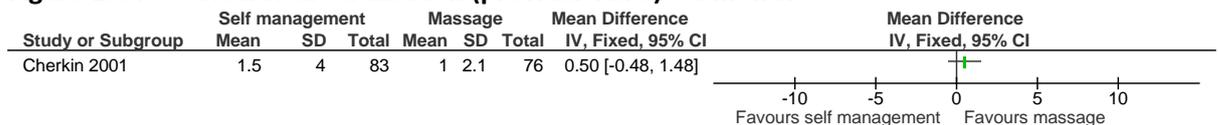
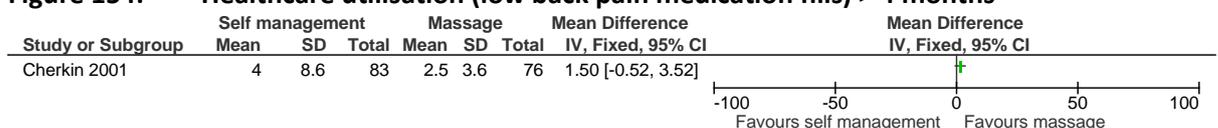


Figure 154: Healthcare utilisation (low back pain medication fills) > 4 months



K.4.1356 Self-management programmes versus yoga

K.4.1181 Population – low back pain without sciatica

Figure 155: Responder criteria (>50% improvement in RMDQ) ≤ 4 months

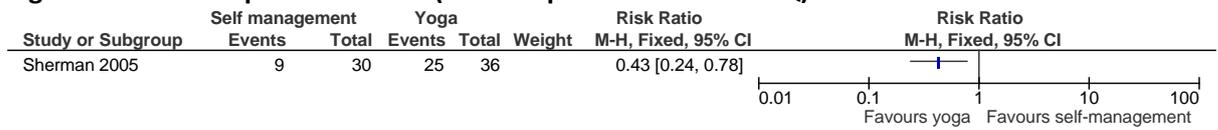
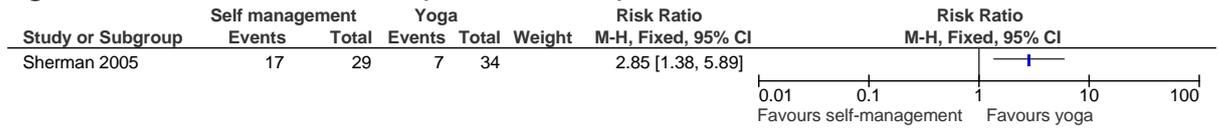


Figure 156: Healthcare utilisation (medication use) > 4 months



K.4.1377 Self-management programmes versus acupuncture

K.4.1181 Population – low back pain without sciatica

Figure 157: 1 Function (RMDQ, 0-24)

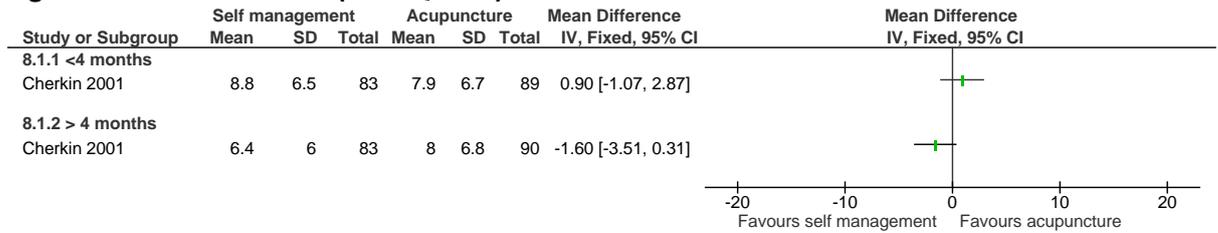


Figure 158: Healthcare utilisation (Provider visits) > 4 months

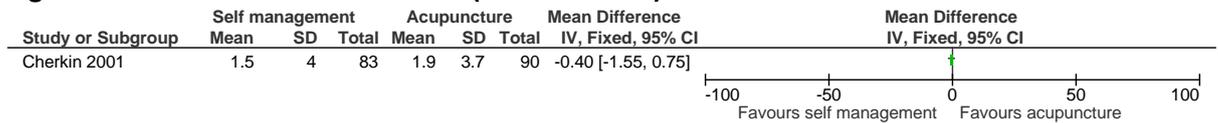
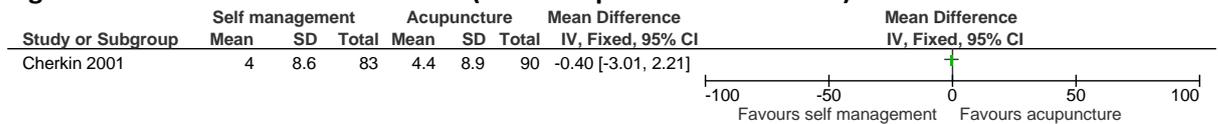


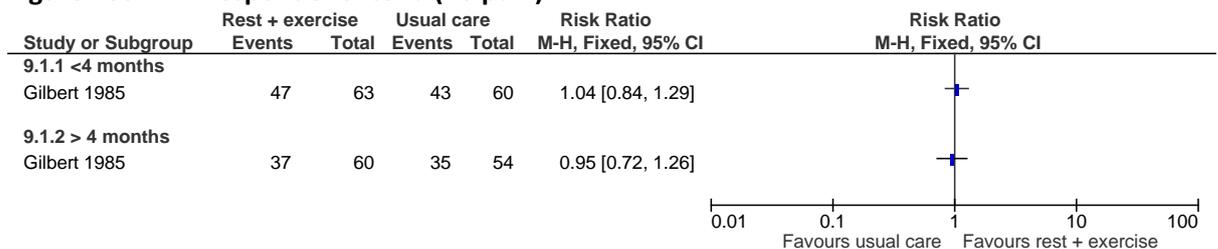
Figure 159: Healthcare utilisation (low back pain medication fills) > 4 months



K.4.1398 Self-management programmes (bed rest plus exercise) versus usual care

K.4.1181 Population – mixed population of low back pain with or without sciatica

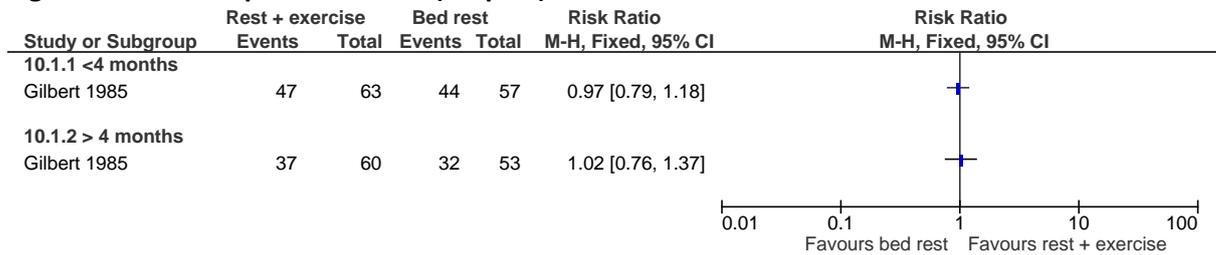
Figure 160: Responder criteria (no pain)



K.4.119 Self-management programmes (bed rest plus exercise) versus bed rest

K.4.119.1 Population – mixed population of low back pain with or without sciatica

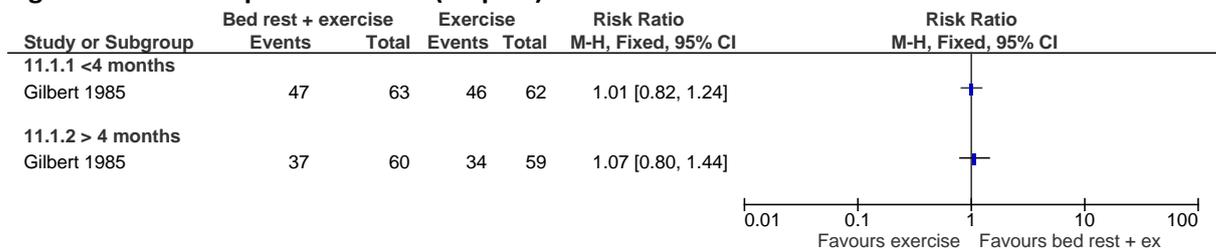
Figure 161: Responder criteria (No pain)



K.4.118 Self-management programmes (bed rest plus exercise) versus self-management (exercise)

K.4.118.1 Population – mixed population of low back pain with or without sciatica

Figure 162: Responder criteria (no pain)



K.4.145 Self-management programme (exercise plus stretching plus booklet) versus mobilisation plus electrotherapy

K.4.145.1 Population – low back pain without sciatica

Figure 163: Function (improvement of ODI)

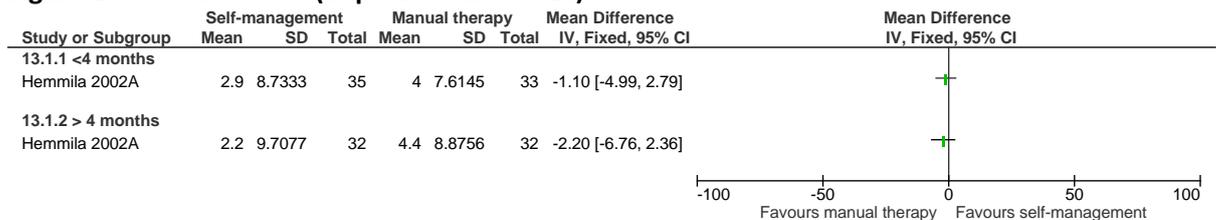
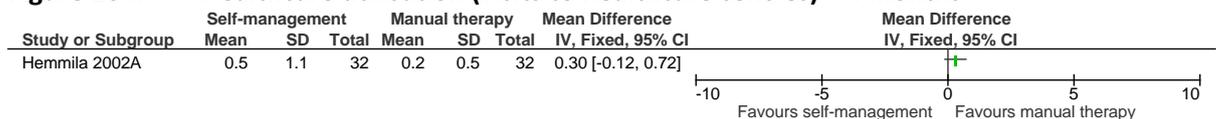


Figure 164: Healthcare utilisation (visits to healthcare centres) > 4 months



K.4.142 149 Self-management programme (exercise plus stretching plus booklet) versus manual therapy (mobilisation)

K.4.1152.1 Population – low back pain without sciatica

Figure 165: Function (improvement of ODI)

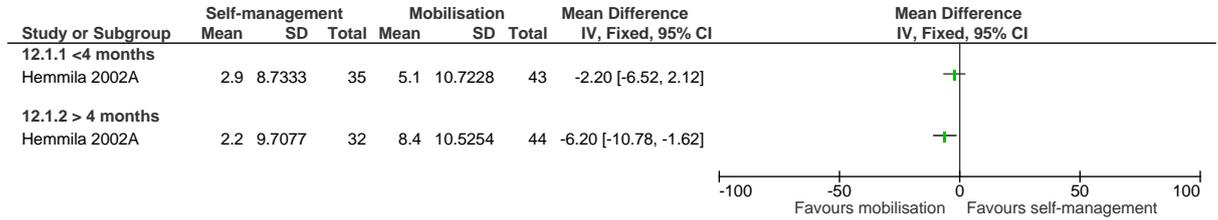
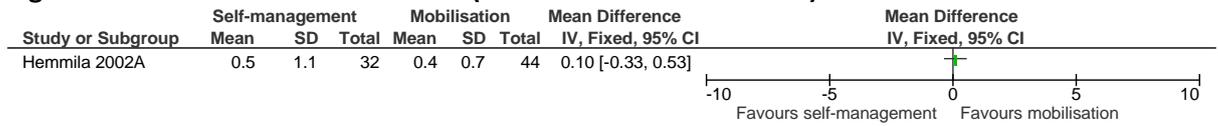


Figure 166: Healthcare utilisation (visits to healthcare centres) >4 months

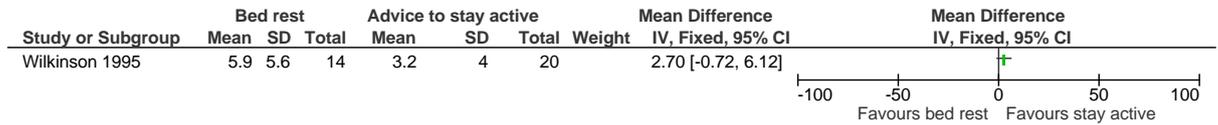


K1412 Advice to stay active

K.4.211 Advice to stay active versus bed rest

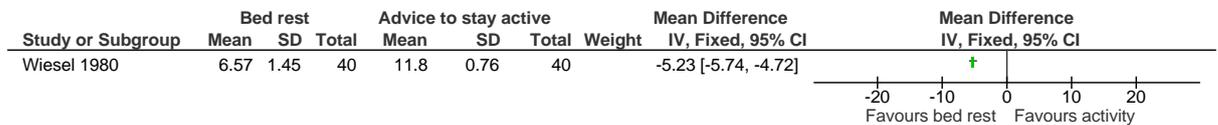
K.4.211.3 Population – mixed population of low back pain with or without sciatica

Figure 167: Function (RMDQ, 0-24) ≤ 4 months



K.4.211.4 Population – low back pain without sciatica

Figure 168: Days to full activity ≤ 4 months



K1413 Bed rest

K.4.311 Bed rest versus usual care

K.4.311.1 Population – mixed population of low back pain with or without sciatica

Figure 169: Responder criteria (no pain)

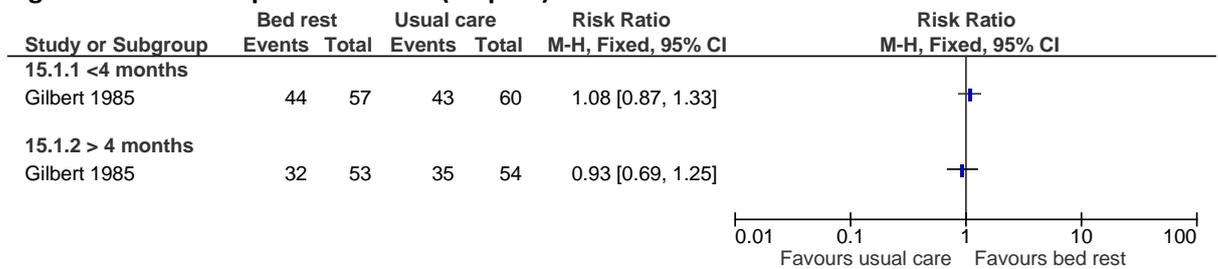
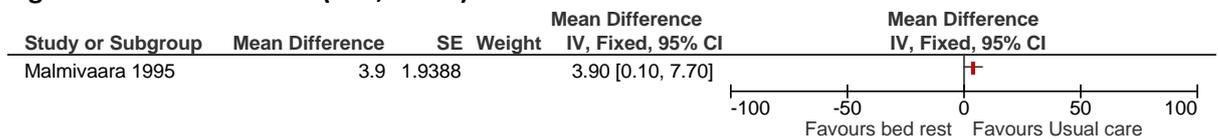


Figure 170: Function (ODI, 0-100) ≤ 4 months



K.4.3152 Population – low back pain with sciatica

Figure 171: Pain severity (Back pain, VAS 0-10) ≤ 4 months.

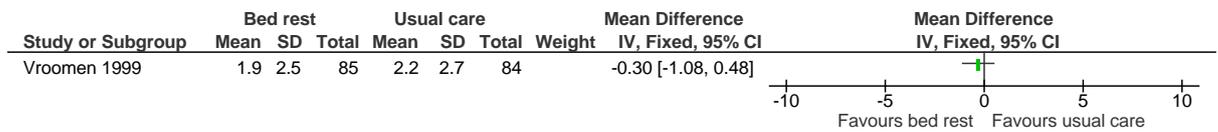


Figure 172: Pain severity (Leg pain, VAS 0-10) ≤ 4 months

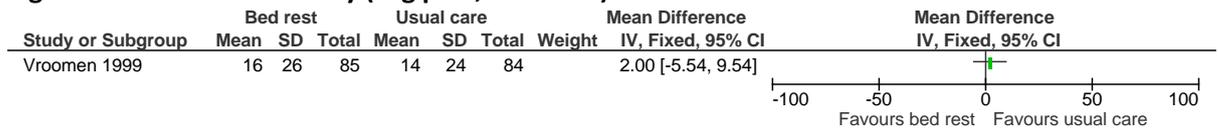
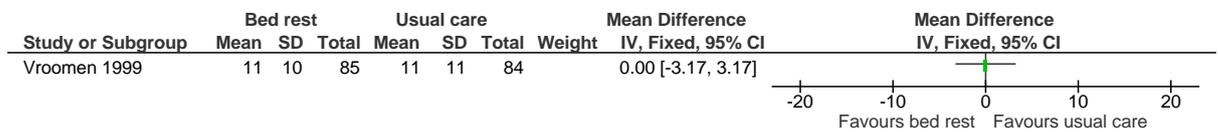


Figure 173: Function (ODI, 0-100) ≤ 4 months



K1494 Unsupervised exercise

K.4.401 Unsupervised exercise versus usual care

K.4.4151 Population – Low back pain without sciatica

Figure 174: Quality of life (SF-36 Physical, 0-100) > 4 months

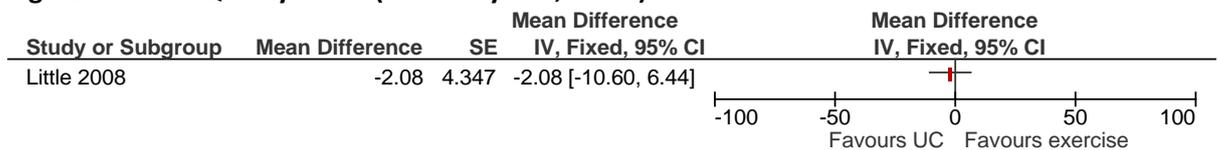


Figure 175: Quality of life (SF-36 Mental, 0-100) > 4 months

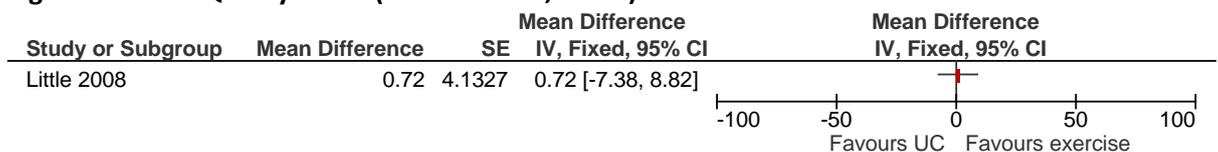
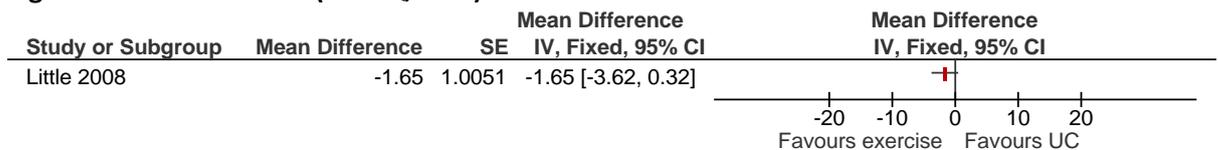
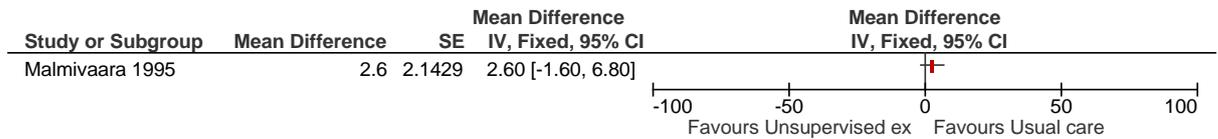


Figure 176: Function (RMDQ, 0-24) > 4 months



K.4.4162 Population – mixed population of low back pain with or without sciatica

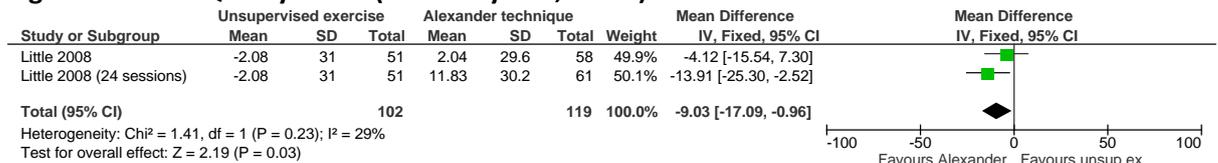
Figure 177: Function (ODI, 0-100) ≤ 4 months



K.4.4163 Unsupervised exercise versus postural therapy (Alexander technique)

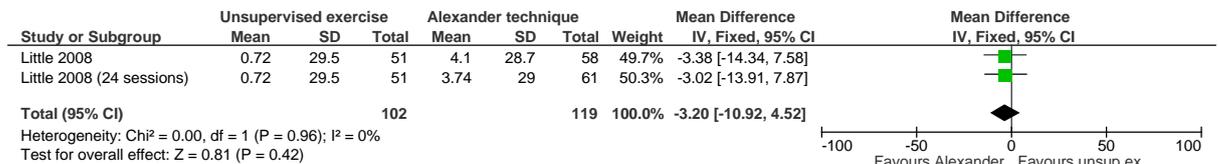
K.4.4171 Population – low back pain without sciatica

Figure 178: Quality of life (SF-36 Physical, 0-100) > 4 months



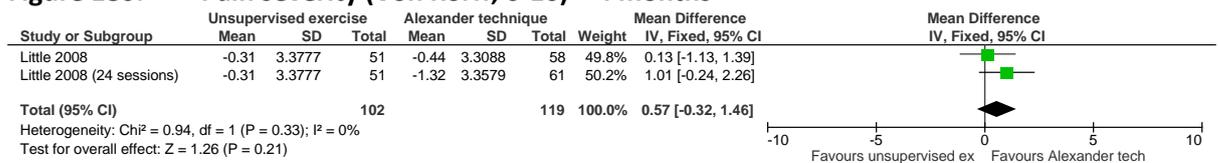
165 Little 2008: unsupervised exercise vs Alexander technique (6 sessions); Little 2008 (24 sessions): unsupervised exercise vs
166 Alexander technique (24 sessions)

Figure 179: Quality of life (SF-36 Mental, 0-100) > 4 months



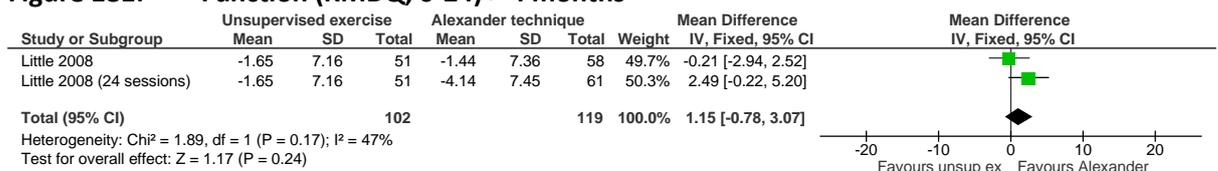
167 Little 2008: unsupervised exercise vs Alexander technique (6 sessions); Little 2008 (24 sessions): unsupervised exercise vs
168 Alexander technique (24 sessions)

Figure 180: Pain severity (Von Korff, 0-10) > 4 months



Little 2008: unsupervised exercise vs Alexander technique (6 sessions); Little 2008 (24 sessions): unsupervised exercise vs
Alexander technique (24 sessions)

Figure 181: Function (RMDQ, 0-24) > 4 months



Little 2008: unsupervised exercise vs Alexander technique (6 sessions); Little 2008 (24 sessions): unsupervised exercise vs
Alexander technique (24 sessions)

K.4.13.1 **Unsupervised exercise versus exercise**

K.4.13.1 **Population – low back pain with or without sciatica**

Figure 182: Pain severity (Back pain, VAS 0-10)

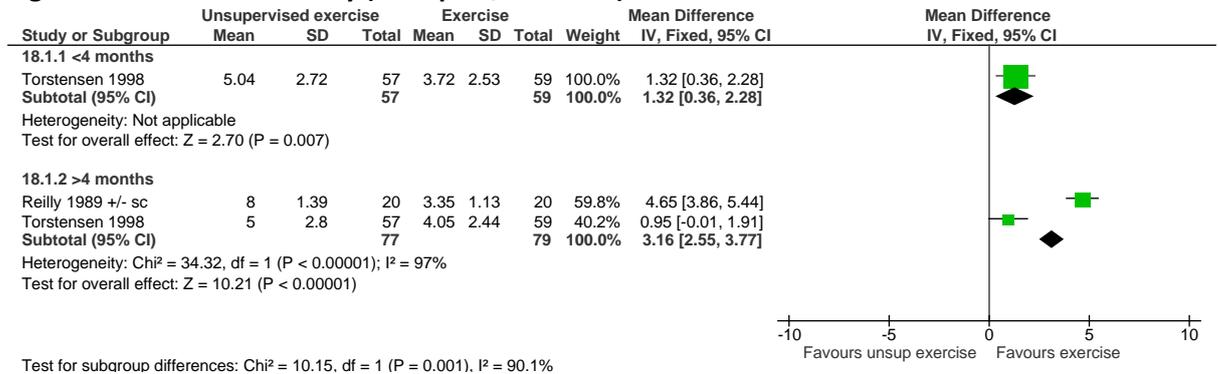


Figure 183: Pain severity (leg pain, VAS 0-10)

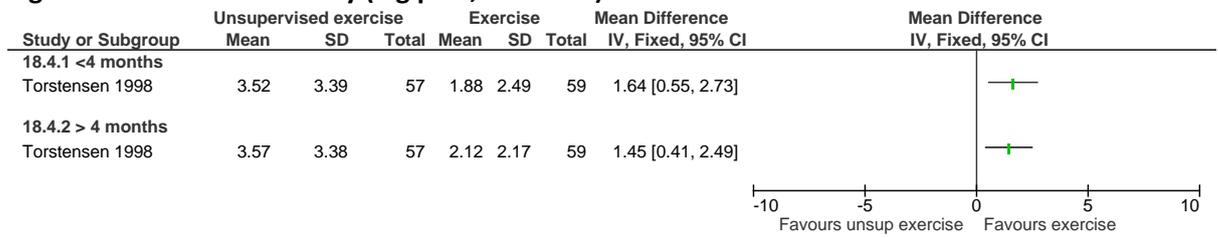


Figure 184: Function (ODI, 0-100)

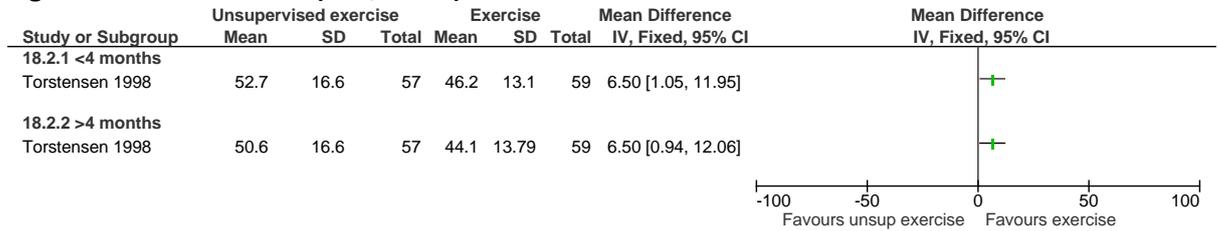


Figure 185: Number of pain relapses > 4 months

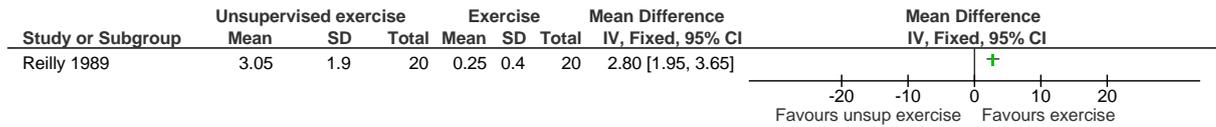
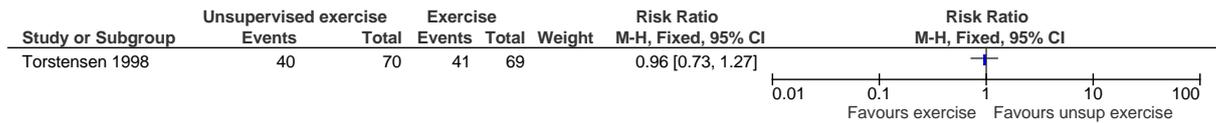


Figure 4186: Return to work > 4 months



K.4.14 Unsupervised exercise versus massage

K.4.14.1 Population – low back pain without sciatica

Figure 187: Quality of life (SF-36 Physical, 0-100) > 4 months

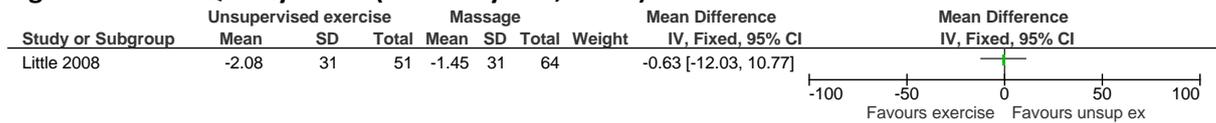


Figure 188: Quality of life (SF-36 Mental, 0-100) > 4 months

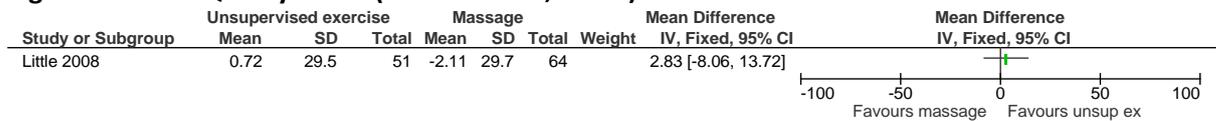


Figure 189: Pain severity (McGill, 0-78) ≤ 4 months

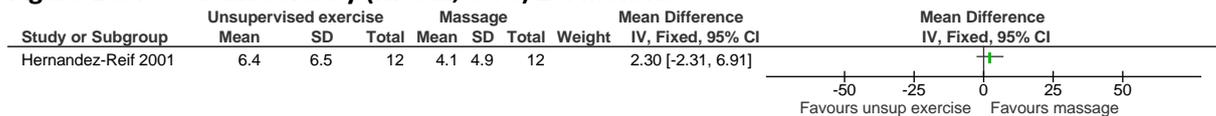


Figure 190: Pain severity (Von Korff, 0-10) > 4 months

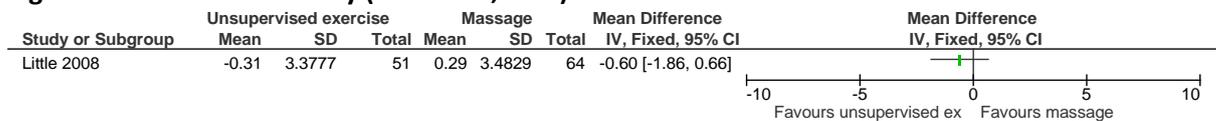
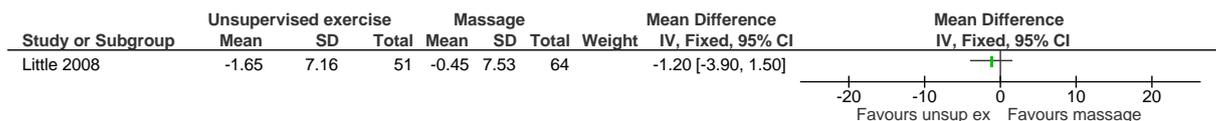


Figure 191: Function (RMDQ, 0-24) > 4 months



K1435 Combination of interventions – self-management adjunct

K.4.141 Low back pain without sciatica

K.4.5173 Self-management (exercise prescription) + Postural therapy (Alexander technique - 6 lessons) versus postural therapy (Alexander technique - 6 lessons)
176

Figure 192: Quality of life (SF-36, 0-100) > 4 months (1 year)

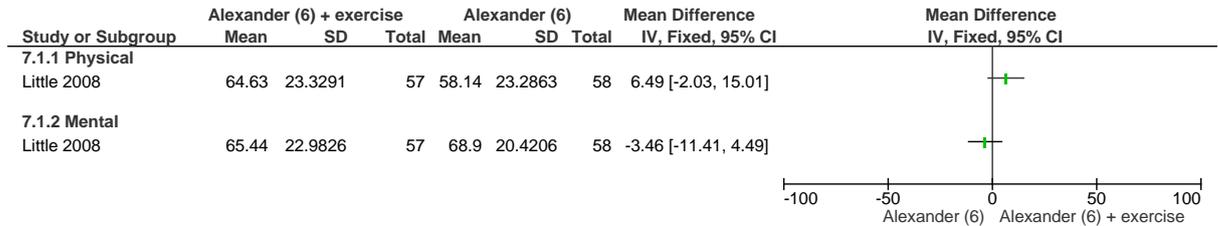


Figure 193: Pain severity (Von Korff pain scale, 0-10) > 4 months (1 year)

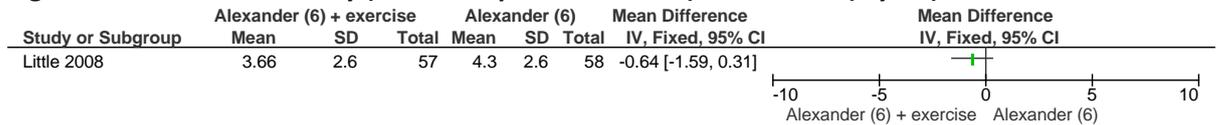


Figure 194: Function (RMDQ, 0-24) > 4 months (1 year)

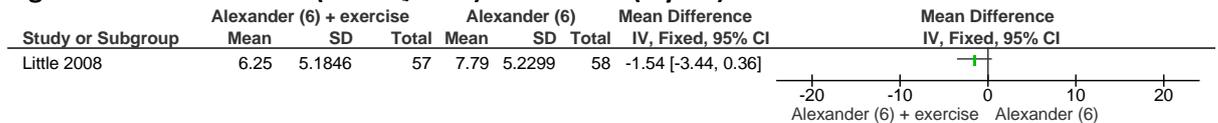
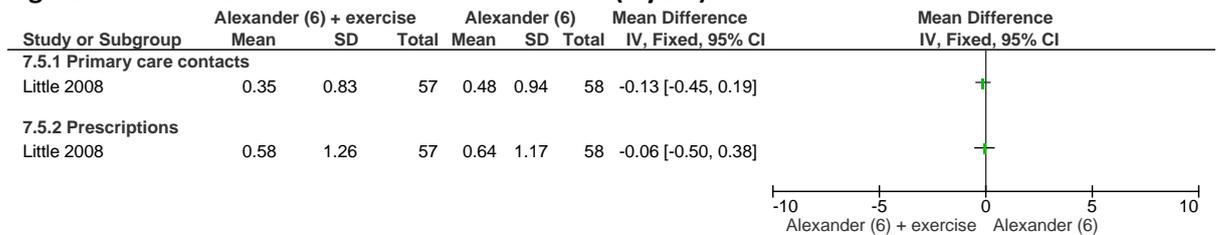


Figure 195: Healthcare utilisation > 4 months (1 year)



K.4.5172 Self-management (exercise prescription) + postural therapy (Alexander technique - 24 lessons) versus postural therapy (Alexander technique - 6 lessons)
178

Figure 196: Quality of life - SF-36 (0-100) > 4 months (1 year)

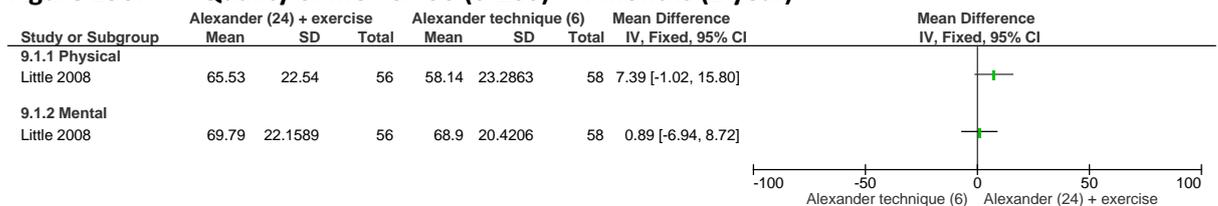


Figure 197: Pain severity – Von Korff pain scale (0-10) > 4 months (1 year)

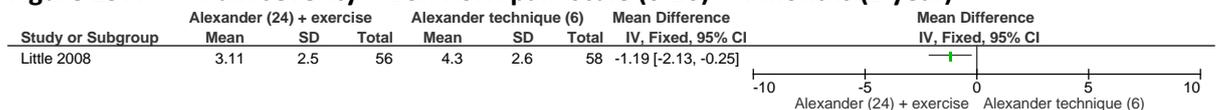


Figure 198: Function – Roland Morris Disability Questionnaire (0-24) > 4 months (1 year)

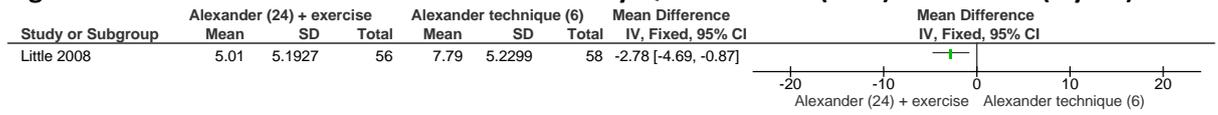
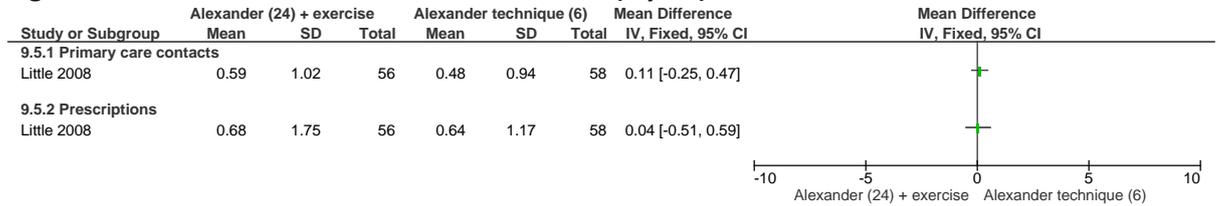


Figure 199: Healthcare utilisation > 4 months (1 year)



K.4.5113
180

Self-management (exercise prescription) + postural therapy (Alexander technique - 6 lessons) versus postural therapy (Alexander technique -24 lessons)

Figure 200: Quality of life (SF-36, 0-100) > 4 months (1 year)

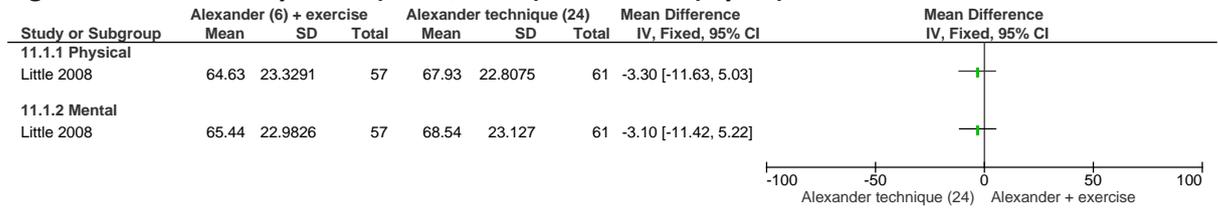


Figure 201: Pain severity (Von Korff pain scale, 0-10) > 4 months (1 year)

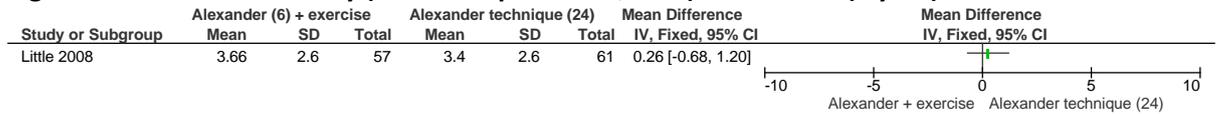


Figure 202: Function (RMDQ, 0-24) > 4 months (1 year)

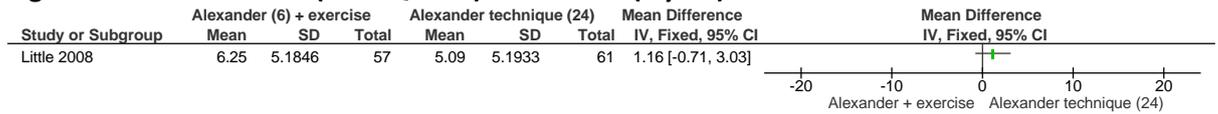
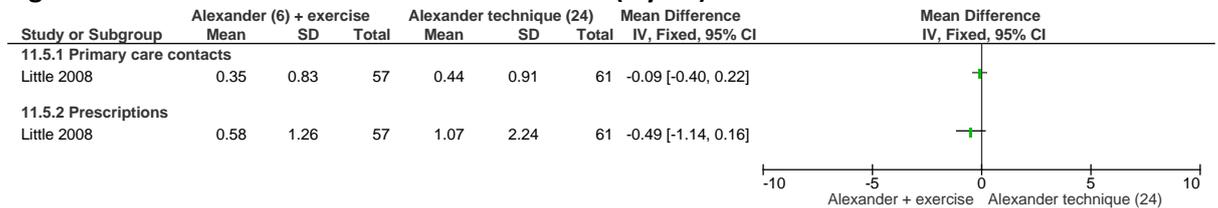


Figure 203: Healthcare utilisation > 4 months (1 year)



K.4.5184
182

Self-management (exercise prescription) + postural therapy (Alexander technique - 24 lessons) versus postural therapy (Alexander technique - 24 lessons)

Figure 204: Quality of life (SF-36, 0-100) > 4 months (1 year)

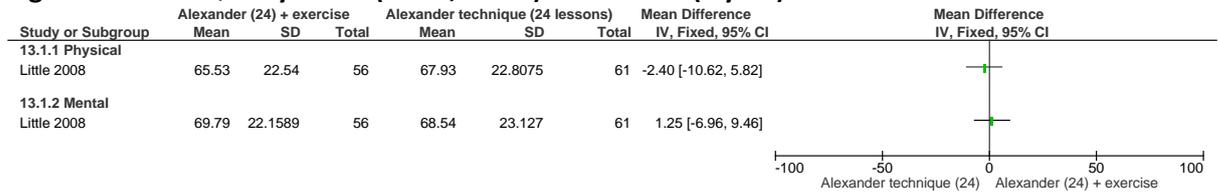


Figure 205: Pain severity (Von Korff pain scale, 0-10) > 4 months (1 year)

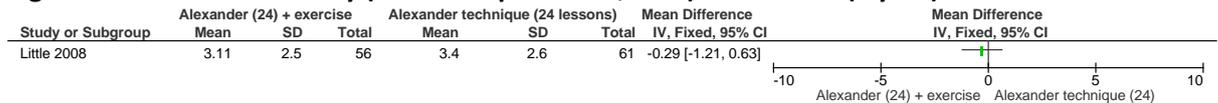


Figure 206: Function (RMDQ, 0-24) > 4 months (1 year)

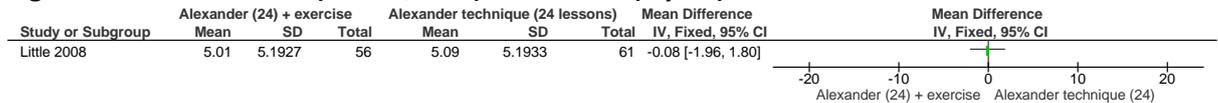
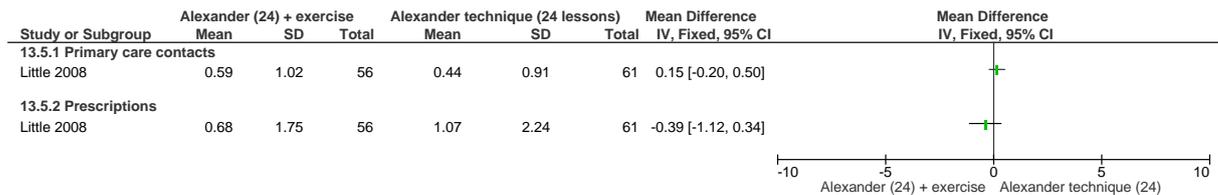


Figure 207: Healthcare utilisation > 4 months (1 year)



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K.4.5185
185
186

Self-management (exercise prescription) + postural therapy (Alexander technique - 24 lessons) versus postural therapy (Alexander technique - 6 lessons) + self-management (exercise prescription)

Figure 208: Quality of life (SF-36, 0-100) > 4 months (1 year)

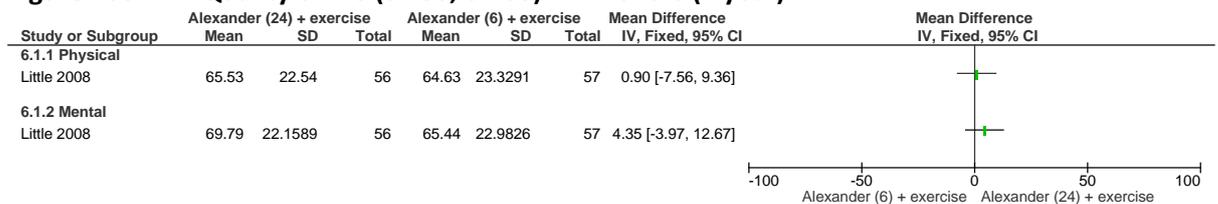


Figure 209: Pain severity (Von Korff pain scale, 0-10) > 4 months (1 year)

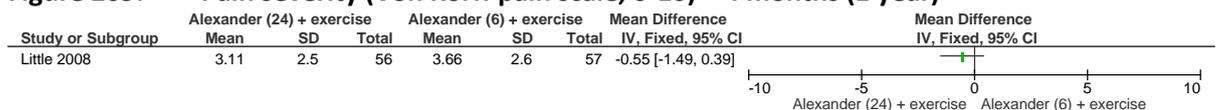
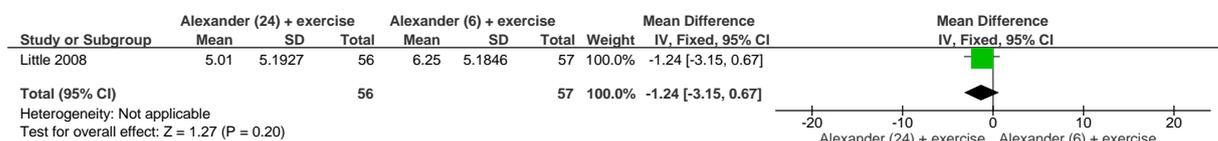
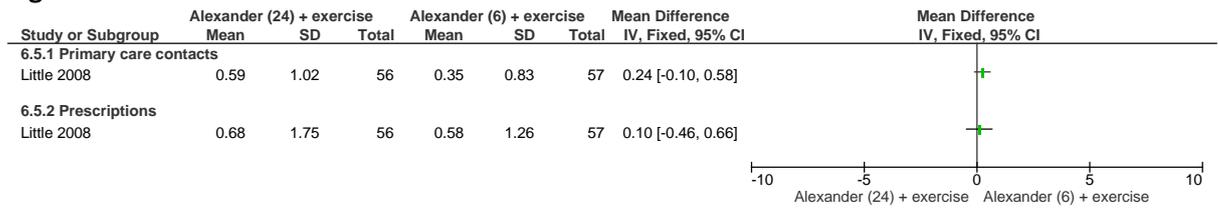


Figure 210: Function (RMDQ, 0-24) > 4 months (1 year)



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Figure 211: Healthcare utilisation > 4 months



K.4.52 Low back pain with or without sciatica

K.4.5129 Self-management (home exercise) + electrotherapy (laser) compared to electrotherapy (laser)

Figure 212: Pain severity (VAS, 0-10) ≤ 4 months

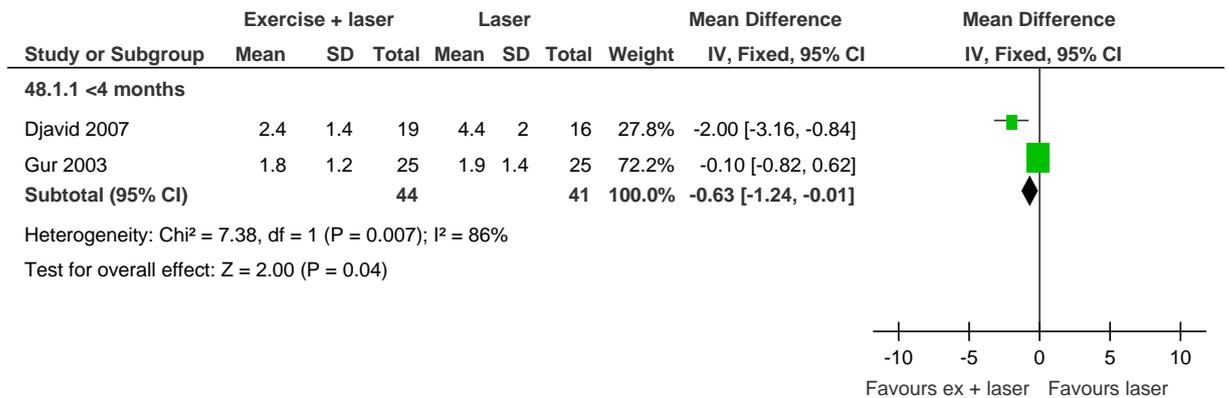
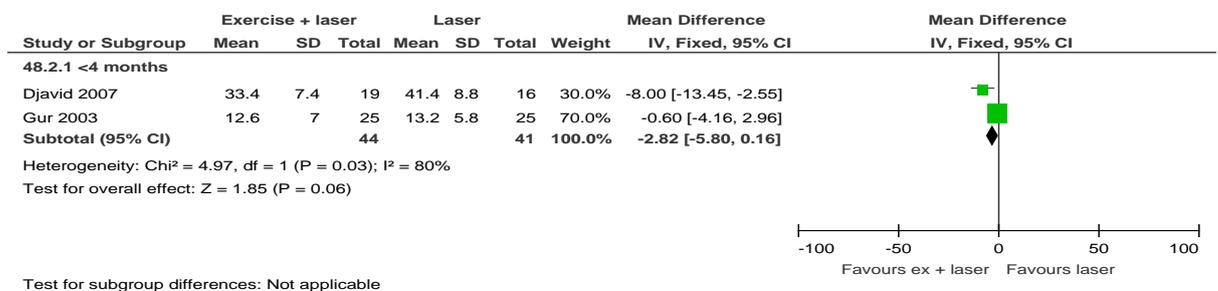


Figure 213: Function (ODI, 0-100) ≤ 4 months



K.4.512Q Self-management (unsupervised exercise) + electrotherapy (HILT laser) vs electrotherapy (HILT laser)
191

Figure 214: Pain severity (VAS, 0-10) ≤ 4 months

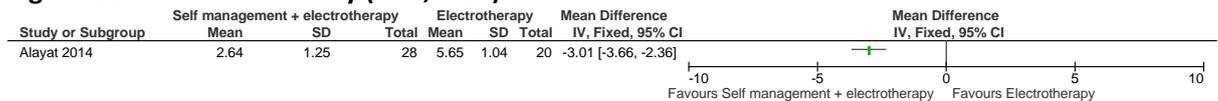


Figure 215: Function (RMDQ, 0-24) ≤ 4 months

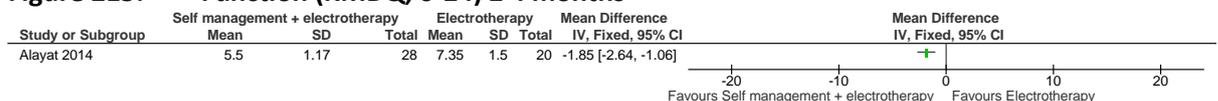
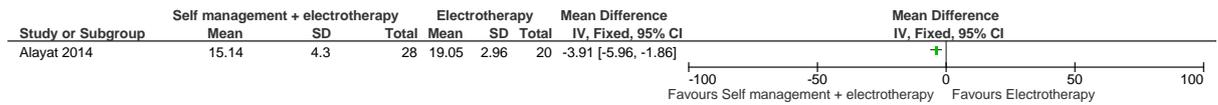


Figure 216: Function (MODI, 0-100) ≤ 4 months



192

193

194

K.4.5123 Self-management (education) + biomechanical exercise vs biomechanical exercise (motor control)

Figure 217: Pain severity (VAS, 0-10) ≤ 4 months

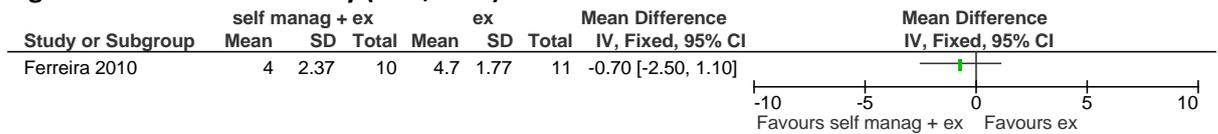
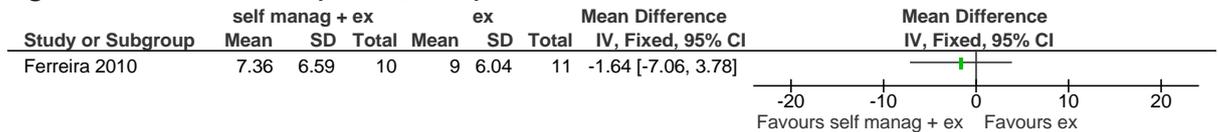


Figure 218: Function (RMDQ, 0-24) ≤ 4 months



K.5 Exercise therapies

K1971 Individual biomechanical exercise versus placebo/sham

K.1981 With sciatica

Figure 219: Pain (VAS 0-10) at ≤4 months

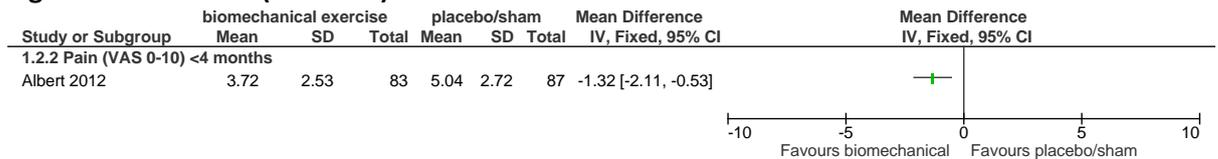
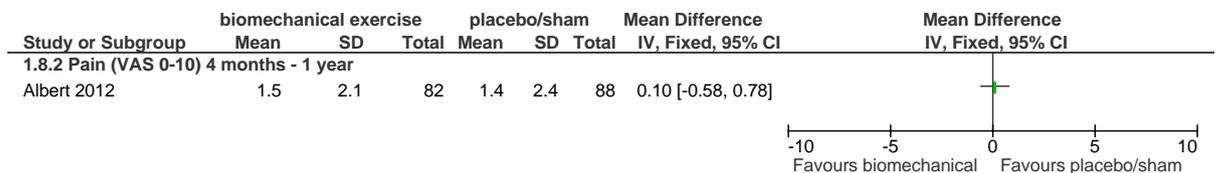


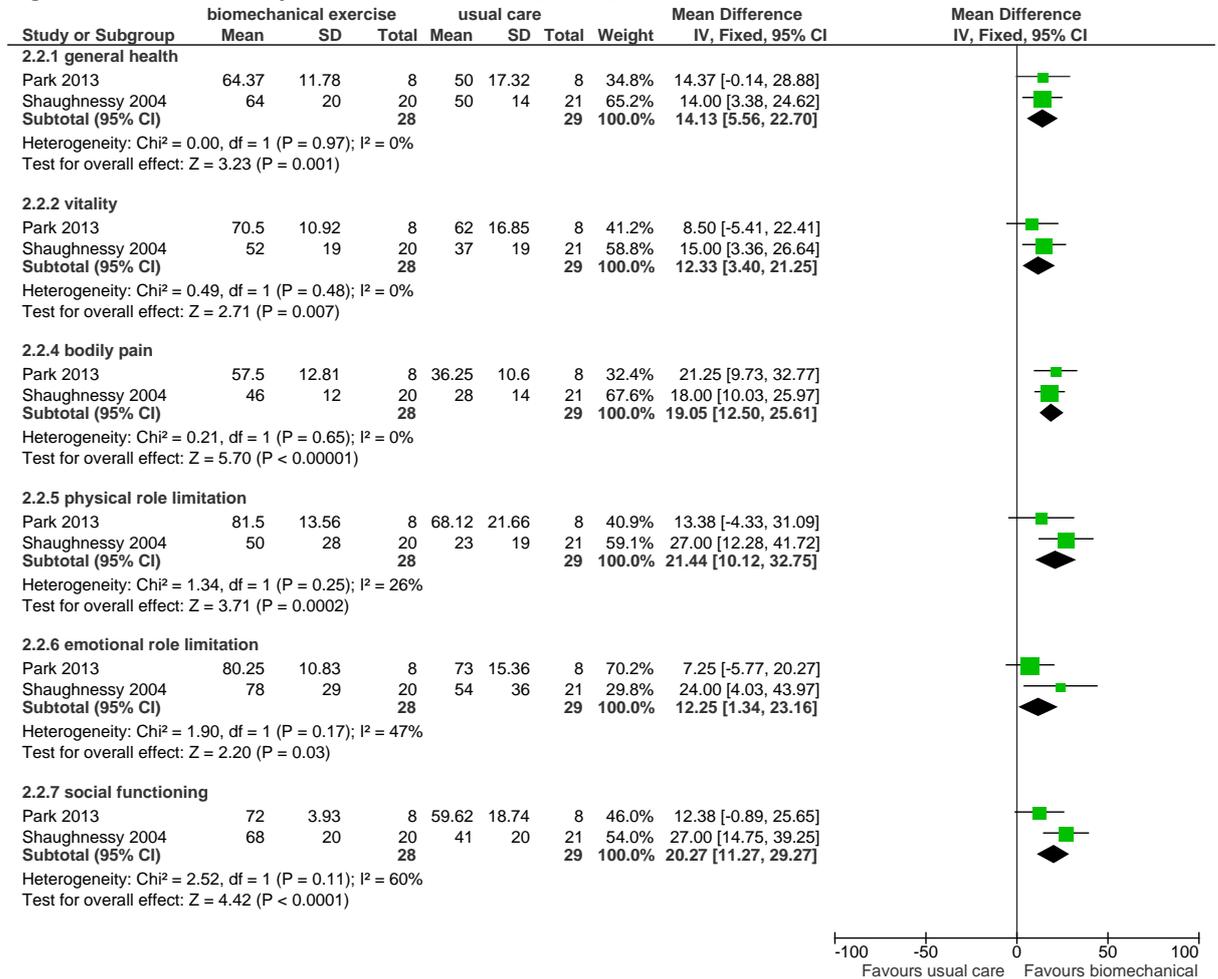
Figure 220: Pain (VAS 0-10) at 4 months – 1 year



K192 Individual biomechanical exercise versus usual care

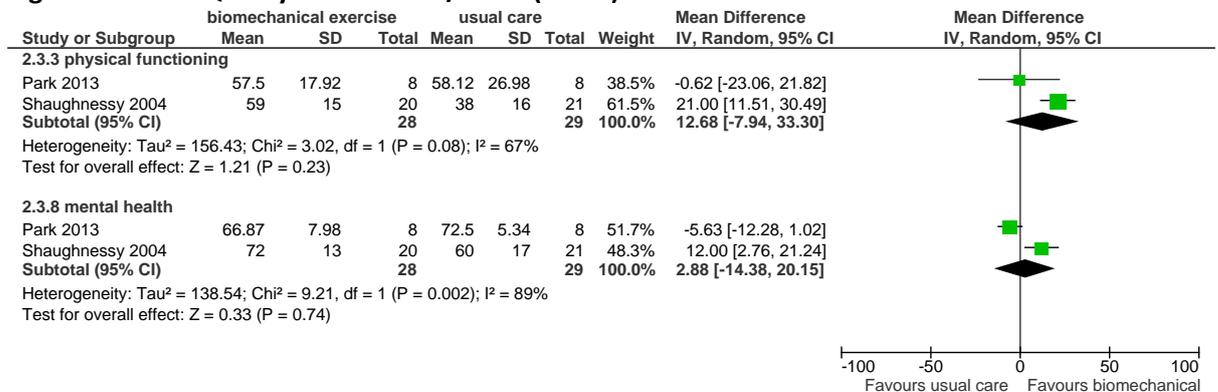
K.201 Overall (with or without sciatica)

Figure 221: Quality of life RAND/SF-36 (0-100) individual scores ≤4 months



201

Figure 222: Quality of life RAND/SF-36 (0-100) individual scores ≤4 months



Unexplained heterogeneity

202

Figure 223: Pain (VAS 0-10) ≤4 months

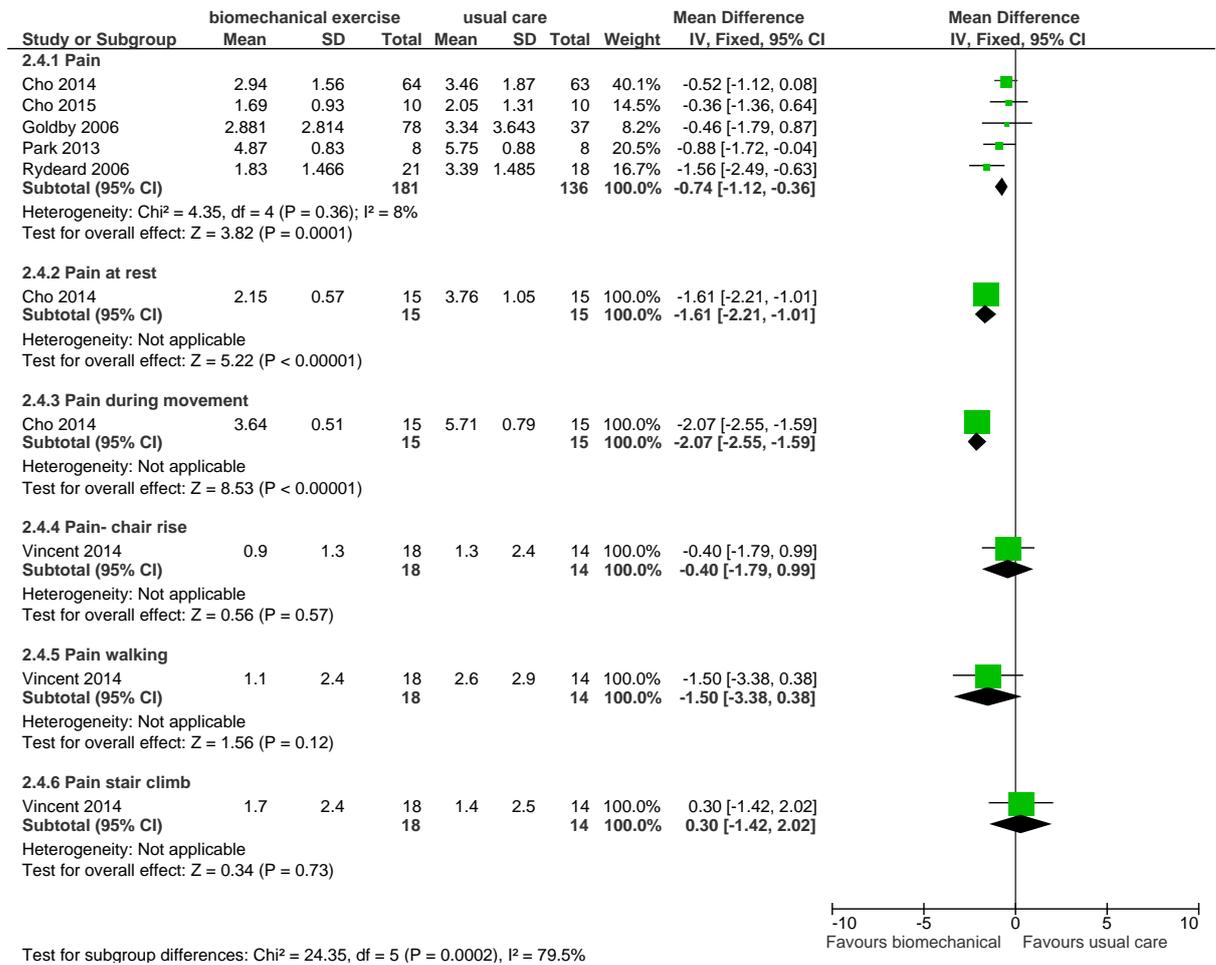


Figure 224: Pain (VAS 0-10) > 4 months - 1 year

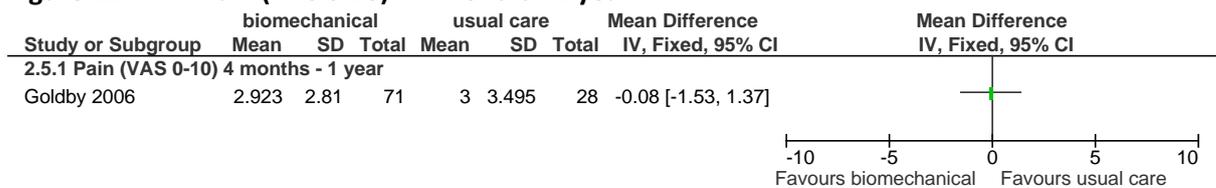
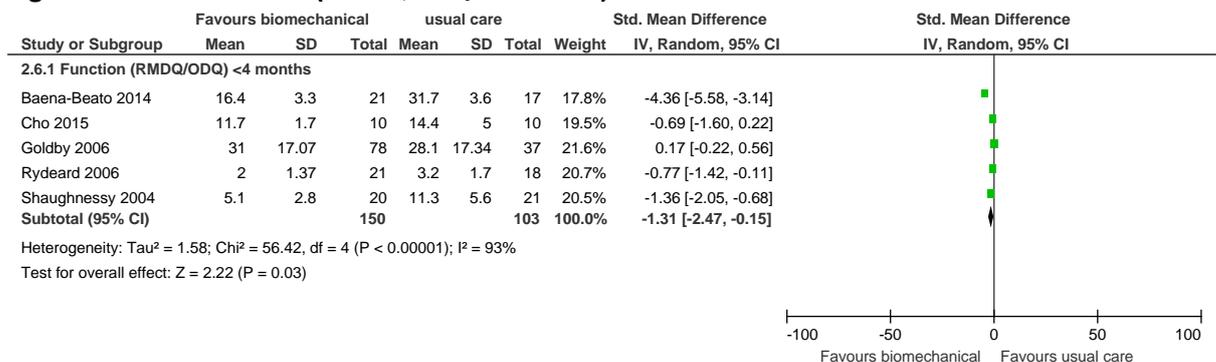
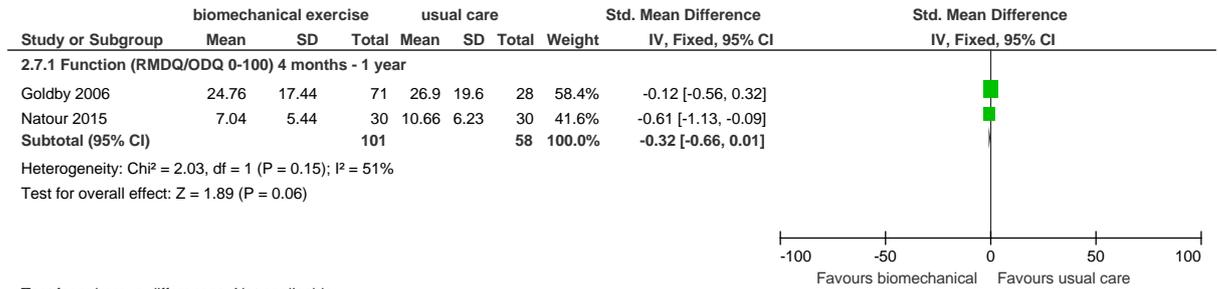


Figure 225: Function (RMDQ 0-24/ODI 0-100) ≤4 months



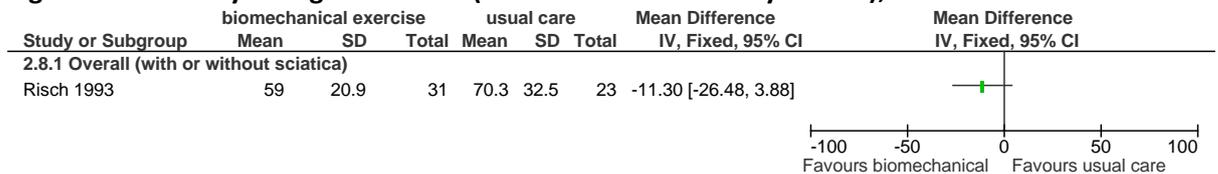
Unexplained heterogeneity

Figure 226: Function (RMDQ 0-24/ODI 0-100) > 4 months - 1 year



203

Figure 227: Psychological distress (mental health inventory 24-142); ≤4 months



K.2.2 With sciatica

Figure 228: Pain (VAS 0-10) ≤4 months

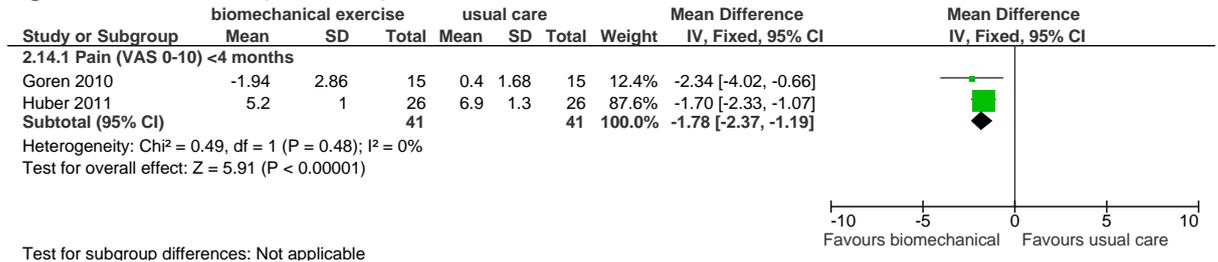
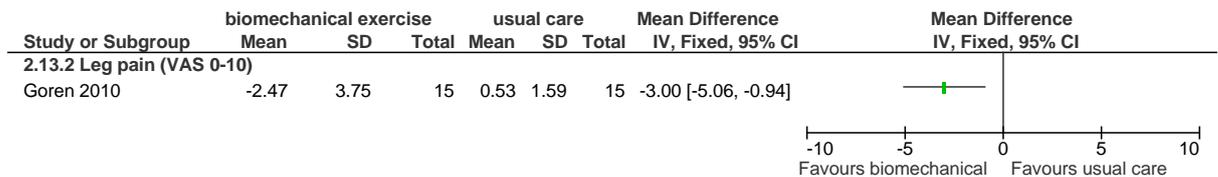
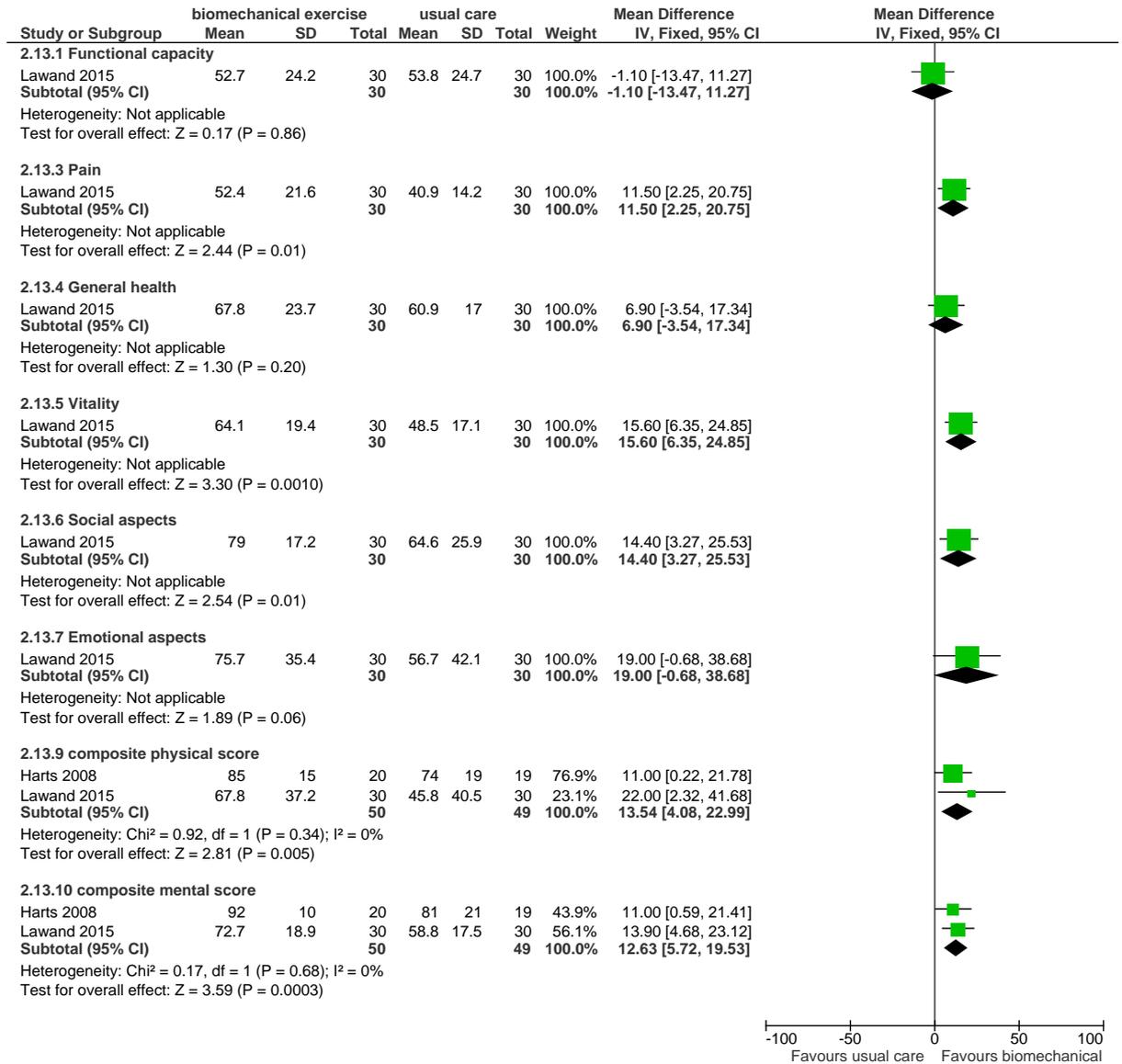


Figure 229: Leg pain (VAS 0-10) ≤4 months



K.203 Without sciatica

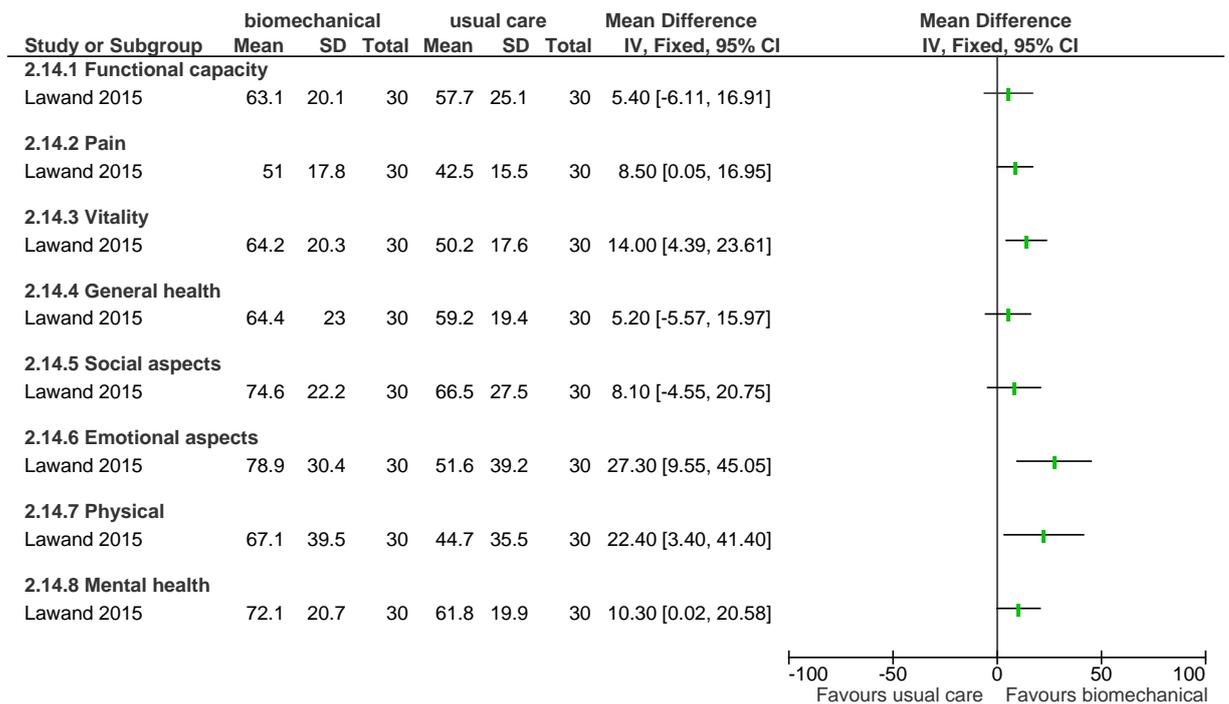
Figure 230: Quality of life (SF-36) ≤4 months



206 *Harts study = waiting list control*

207

208 **Figure 231: Quality of life (SF-36) 4 months – 1 year**



209

Figure 232: Pain (VAS 0-10) ≤4 months

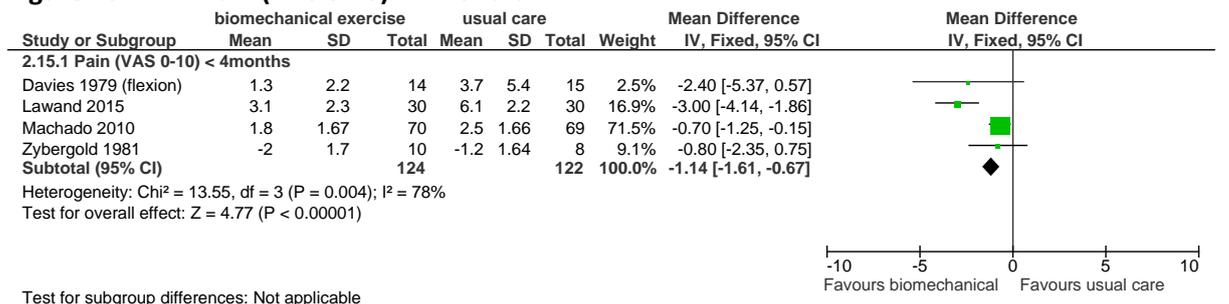
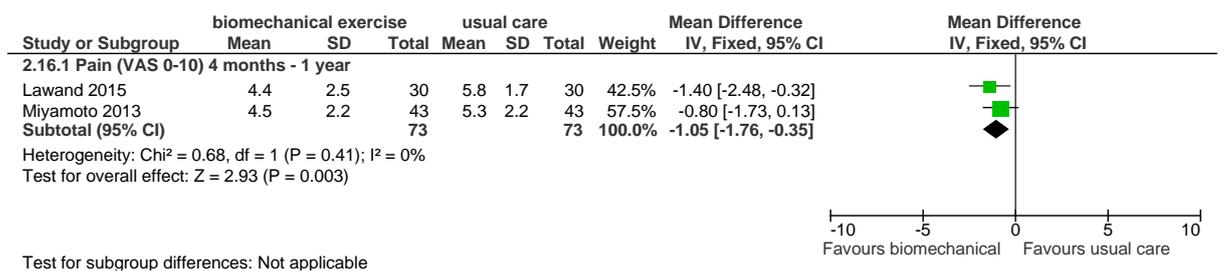
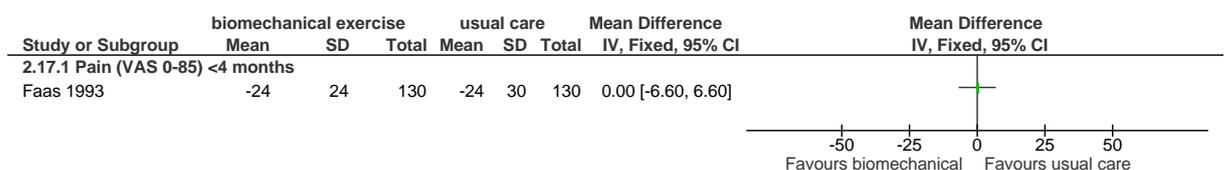


Figure 233: Pain (VAS 0-10) > 4 months - 1 year



210 **Figure 234: Pain (VAS 0-85, change score) ≤4 months**



211

Figure 235: Pain (VAS 0-85, change score) > 4 months – 1 year

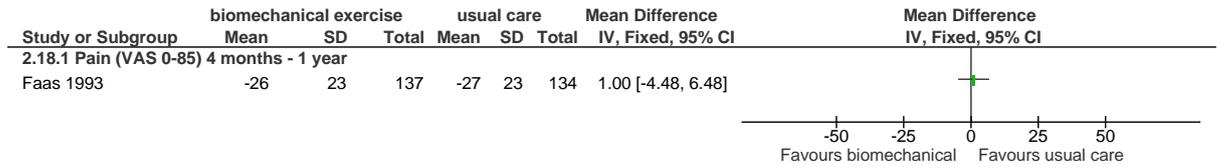


Figure 236: Pain (VAS 0-10, change score) <4 months

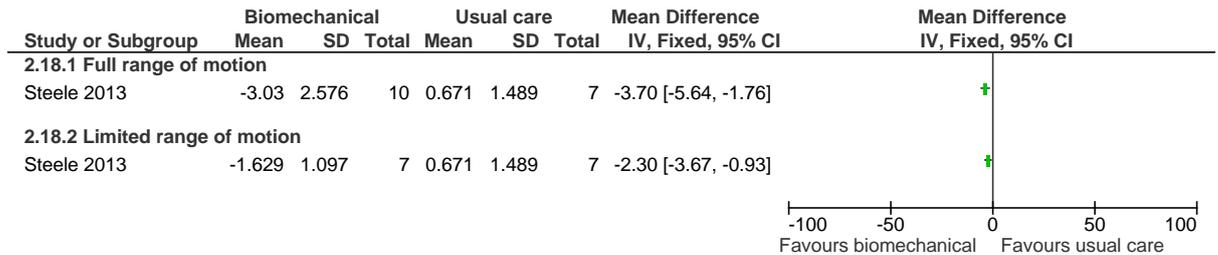
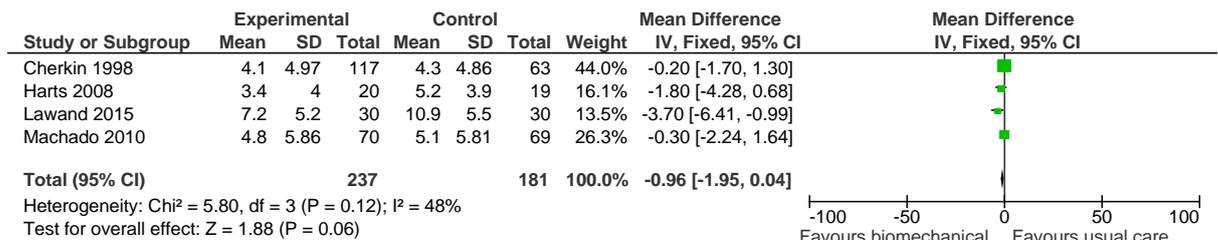


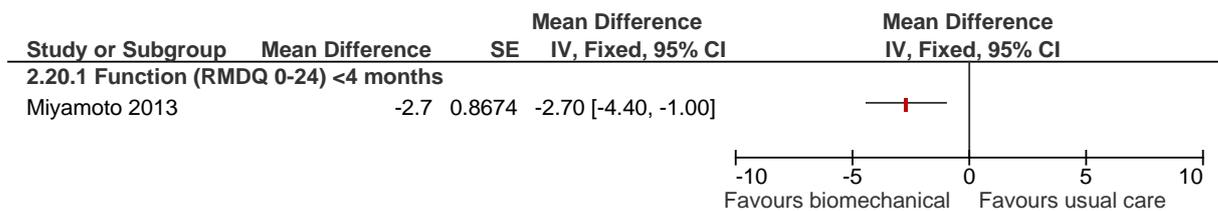
Figure 237: Function (RMDQ 0-24) ≤4 months



212 Harts study = waiting list control

213

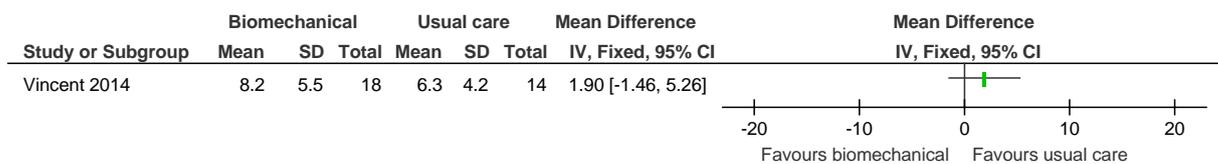
Figure 238: Function (RMDQ 0-24) ≤4 months



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Figure 239: Function (RMDQ 0-23) ≤4 months



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Figure 240: Function (RMDQ 0-24) 4 months – 1 year

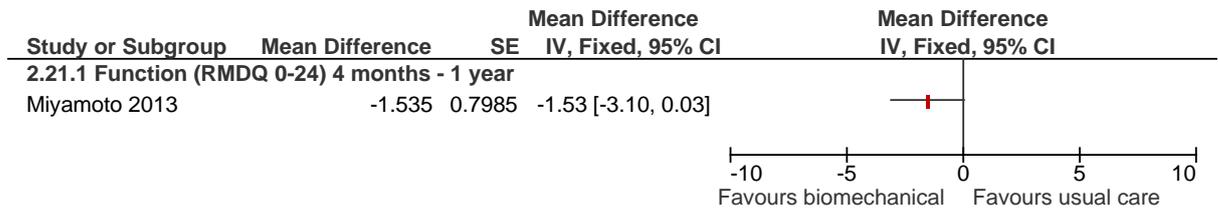


Figure 241: Function (RMDQ 0-24) 4 months – 1 year

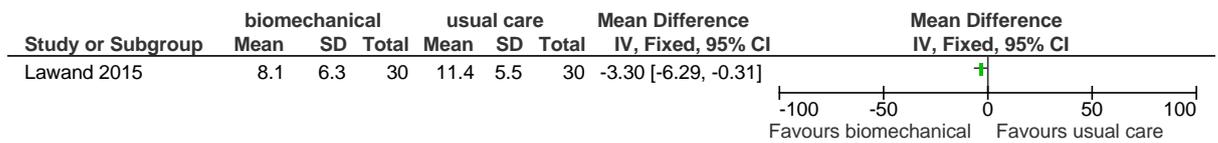
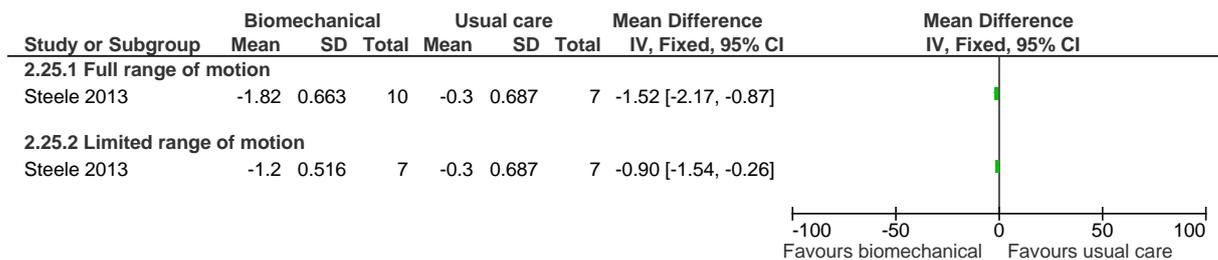
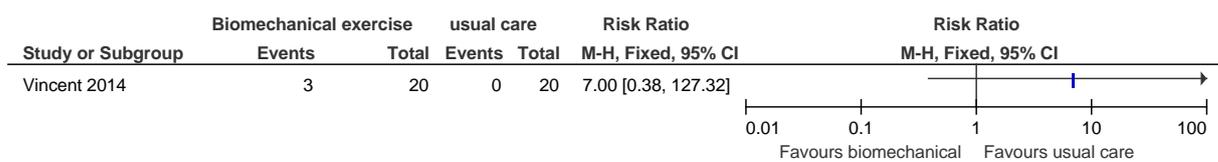


Figure 242: Function (ODI 0-100, change scores) <4 months



222

Figure 243: Adverse events (morbidity) ≤4 months



224

Individual biomechanical exercise versus self-management

Overall (with or without sciatica)

227

Figure 244: Pain (VAS 0-10) ≤4 months

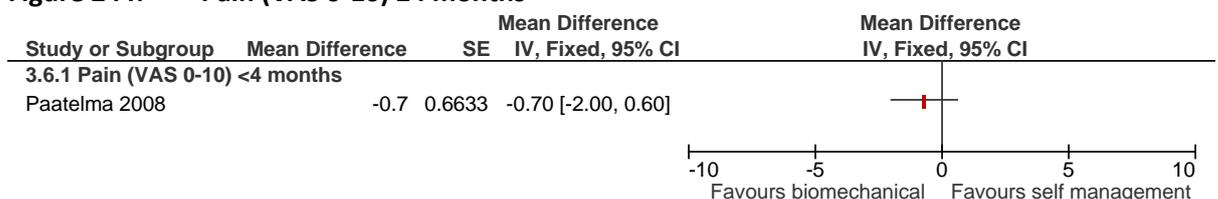


Figure 245: Pain (VAS 0-10) > 4 months - 1 year

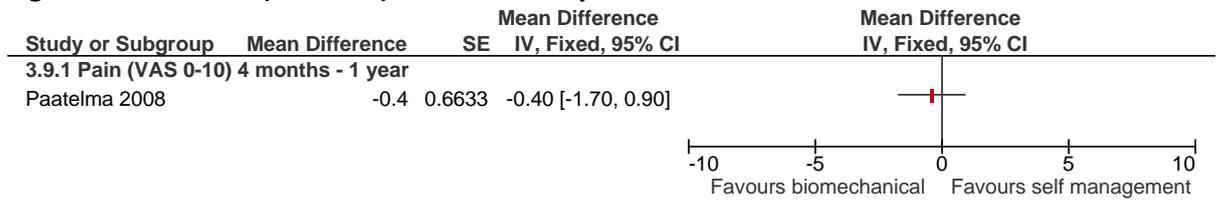


Figure 246: Leg pain (VAS 0-10) ≤4 months

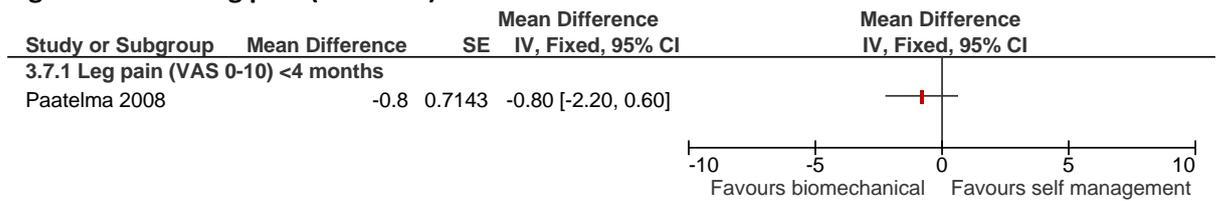


Figure 247: Leg pain (VAS 0-10) > 4 months - 1 year

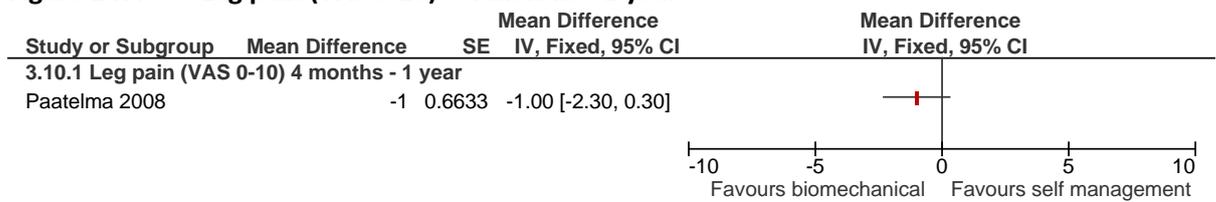


Figure 248: Function (RMDQ 0-24) ≤ 4 months

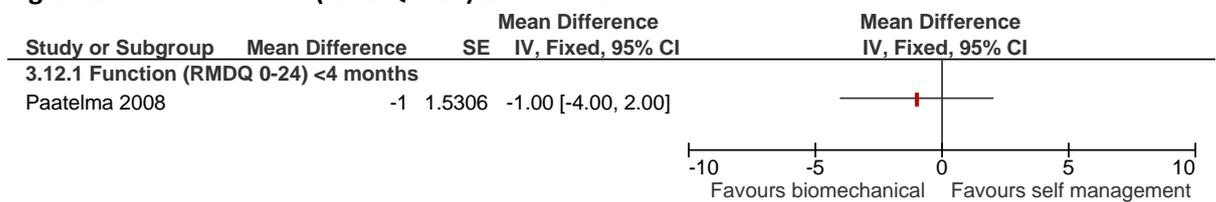
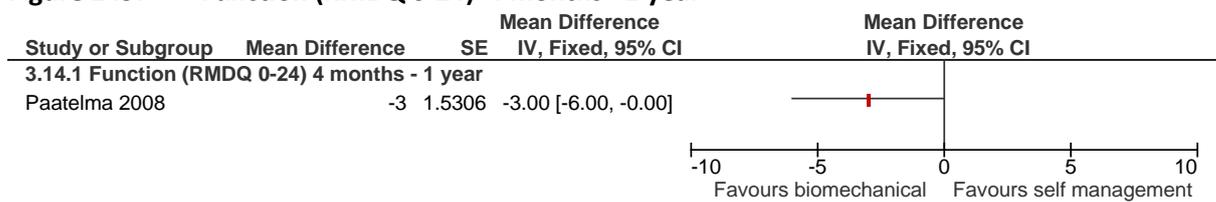


Figure 249: Function (RMDQ 0-24) 4 months - 1 year



K.2.29 Individual biomechanical exercise versus spinal manipulation (low-amplitude high-velocity)

K.2.301 With sciatica

Figure 250: Quality of life (SF-36 0-100) ≤4 months

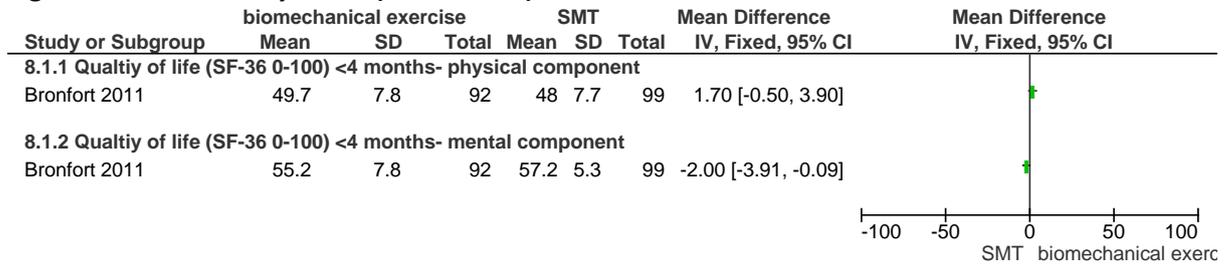


Figure 251: Quality of life (SF-36 0-100) > 4 months - 1 year

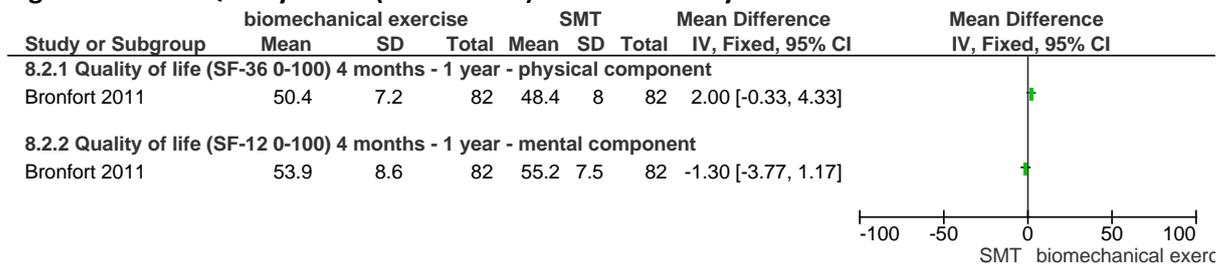


Figure 252: Pain (VAS 0-10) ≤4 months

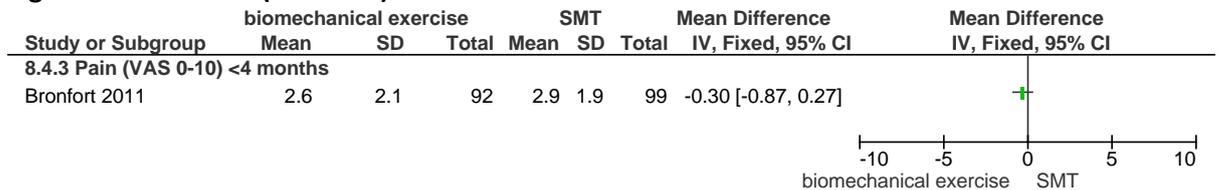


Figure 253: Pain (VAS 0-10) > 4 months - 1 year

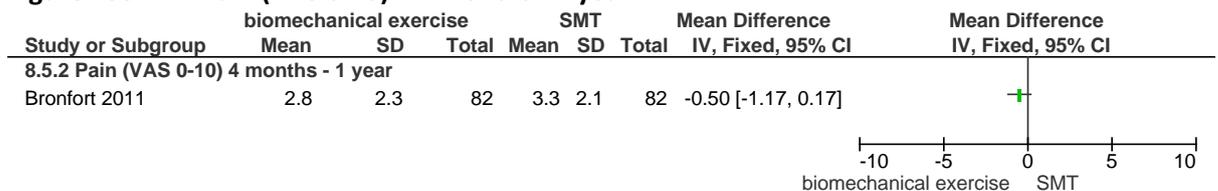


Figure 254: Function (RMDQ 0-24) ≤4 months

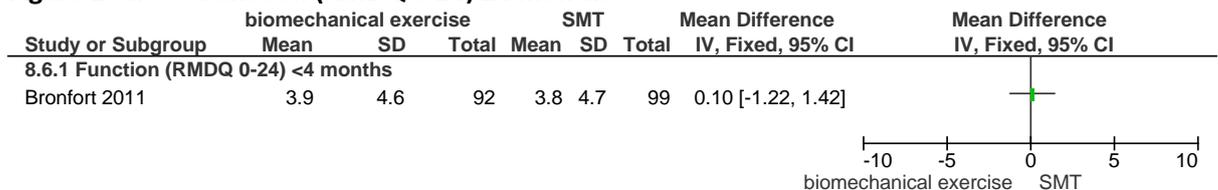
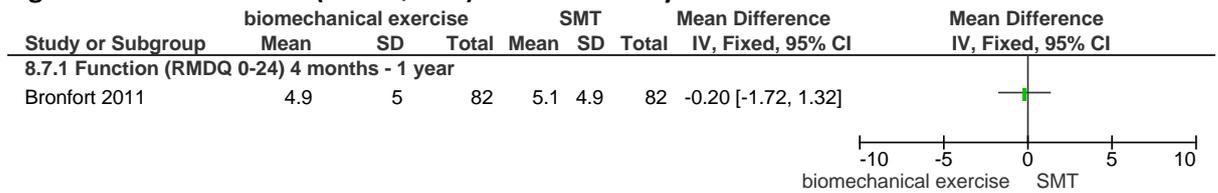


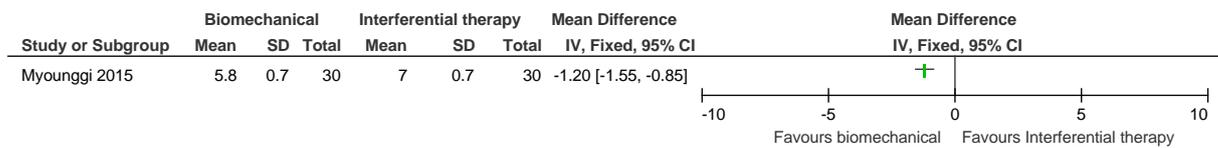
Figure 255: Function (RMDQ 0-24) > 4 months - 1 year



K2515 Individual biomechanical exercise versus interferential therapy

K.2321 Overall (with or without sciatica)

233 Figure 256: Pain (VAS 0-10) ≤4 months



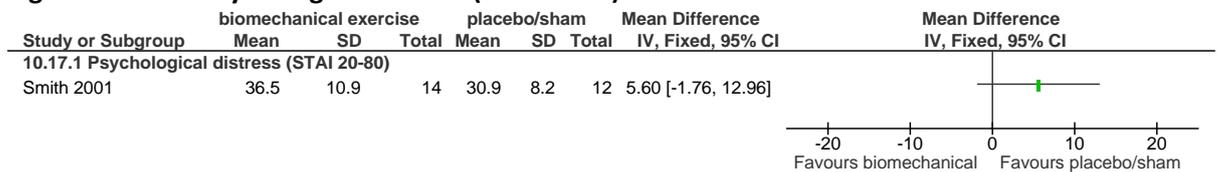
234

235

K2566 Group biomechanical exercise versus placebo/sham

K.2371 Overall (with or without sciatica)

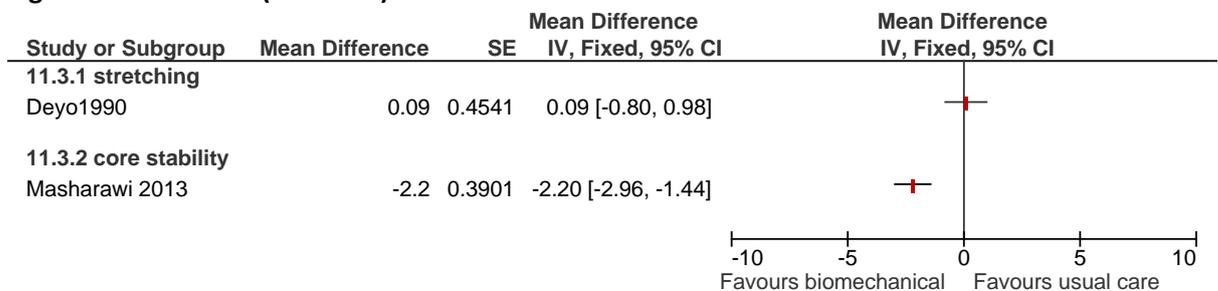
Figure 257: Psychological distress (STAI 20-80) ≤4 months



K2587 Group biomechanical exercise versus usual care

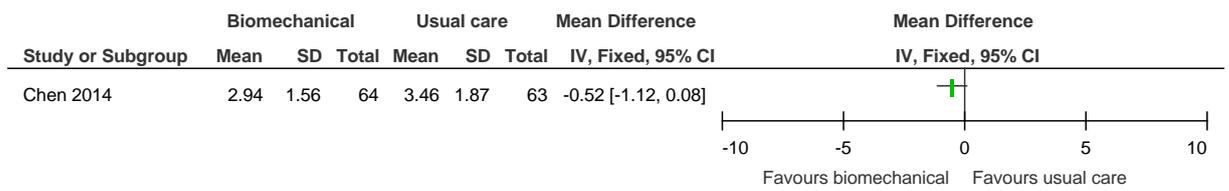
K.2391 Overall (with or without sciatica)

Figure 258: Pain (VAS 0-10) ≤4 months



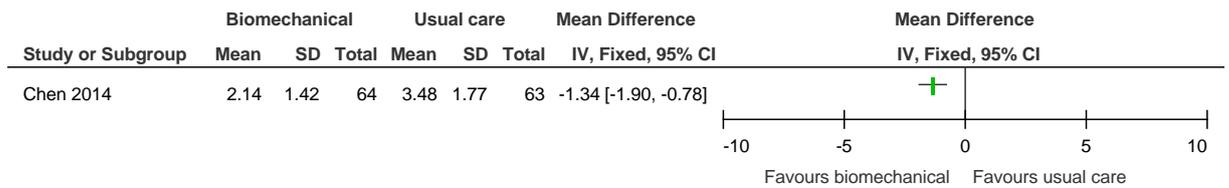
240 *Masharawi study = waiting list control*

241 **Figure 259: Pain (VAS 0-10) ≤4 months**



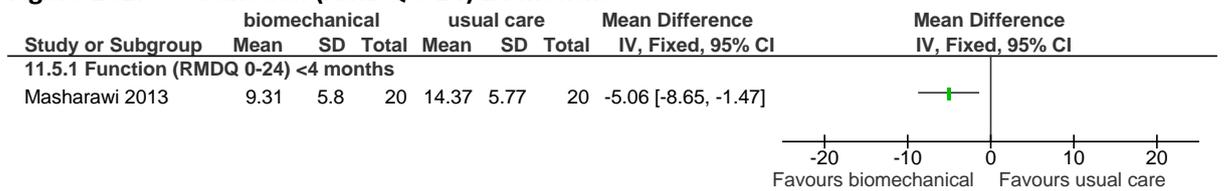
242

243 **Figure 260: Pain (VAS) > 4 months – 1 year**



244

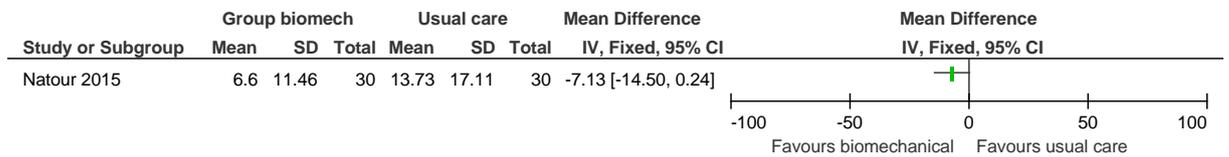
Figure 261: Function (RMDQ 0-24) ≤4 months



245

246 *Masharawi study = waiting list control*

247 **Figure 262: Healthcare utilisation (NSAID use) > 4 months – 1 year**



248

K.2.492 Without sciatica

Figure 263: Quality of life individual scores SF-12 (0-100) ≤4 months

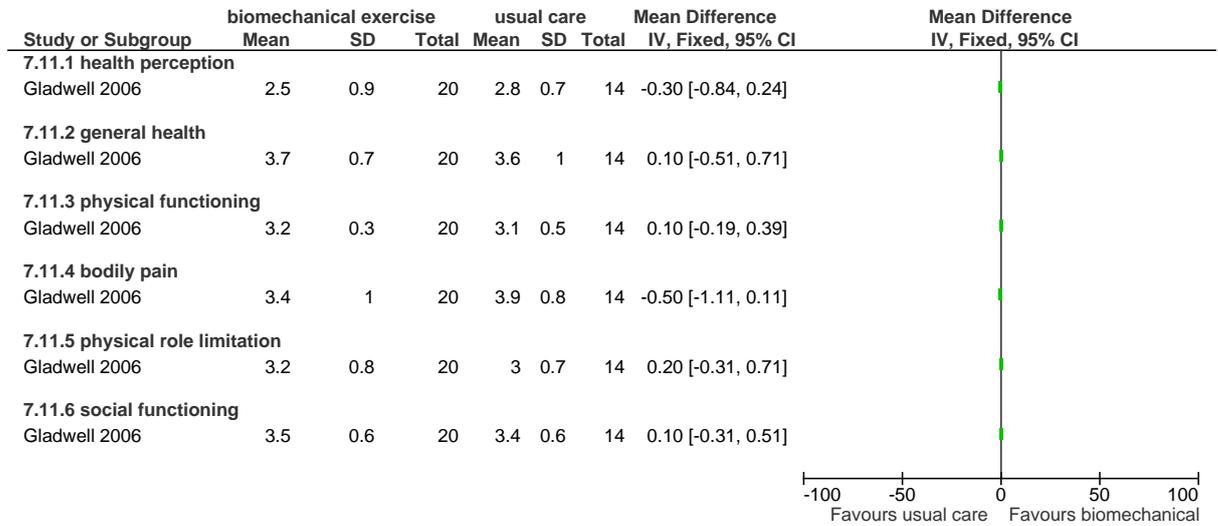


Figure 264: Quality of life composite scores (SF36 0-100) <4months

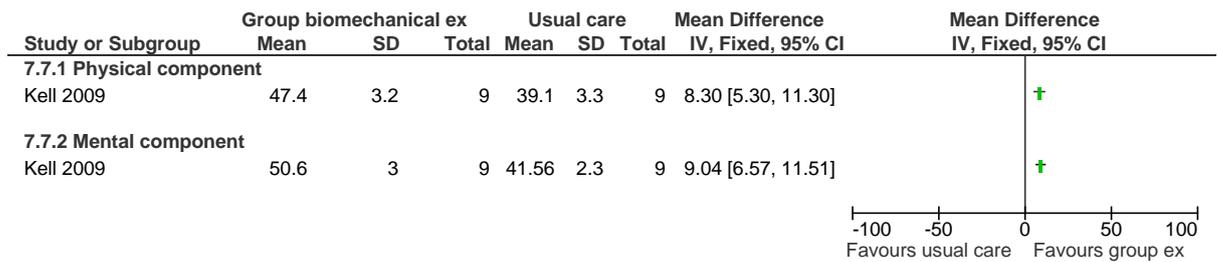


Figure 265: Pain (VAS 0-10) ≤4 months

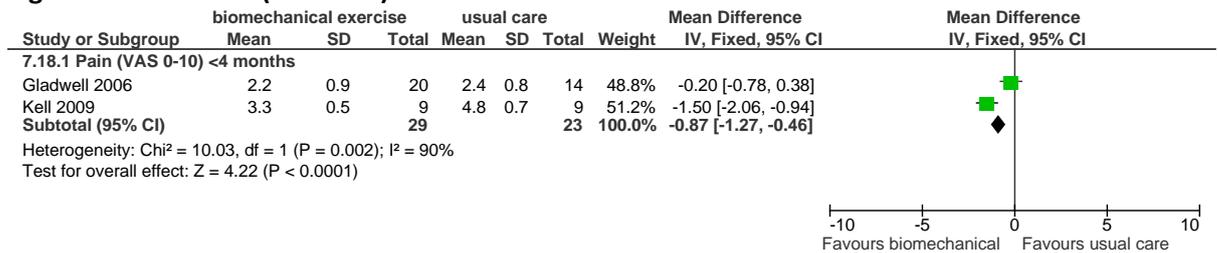
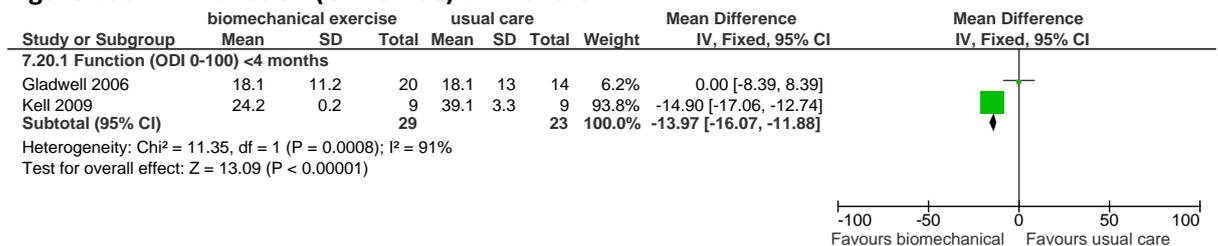


Figure 266: Function (ODI 0-100) ≤4 months



K2508 Group biomechanical exercise versus unsupervised exercise

K.2.5.1 Overall (with or without sciatica)

Figure 267: Pain (VAS 0-10) ≤4 months

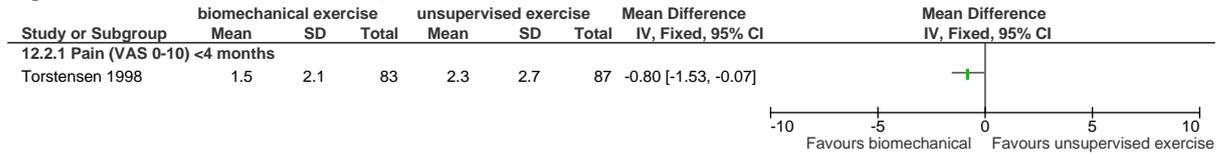
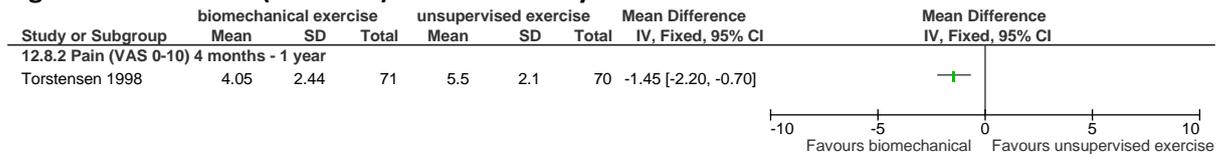


Figure 268: Pain (VAS 0-10) > 4 months - 1 year



K2529 Individual aerobic exercise versus usual care

K.2.5.1 Overall (with or without sciatica)

Figure 269: Pain (VAS 0-10) ≤4 months

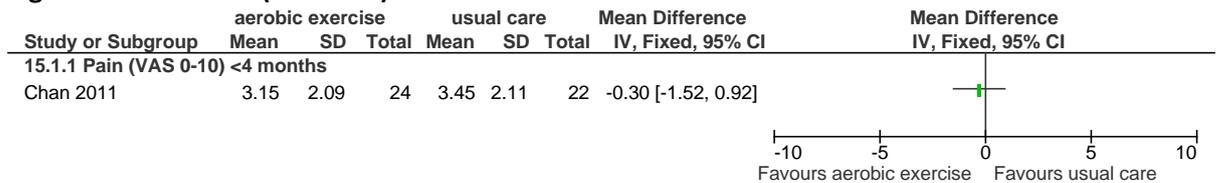


Figure 270: Function (ALBPS 0-100) ≤4 months

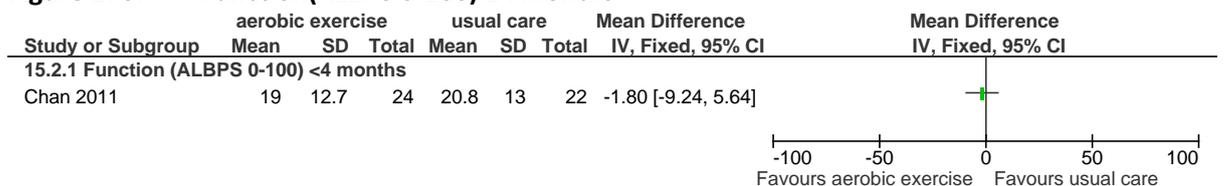
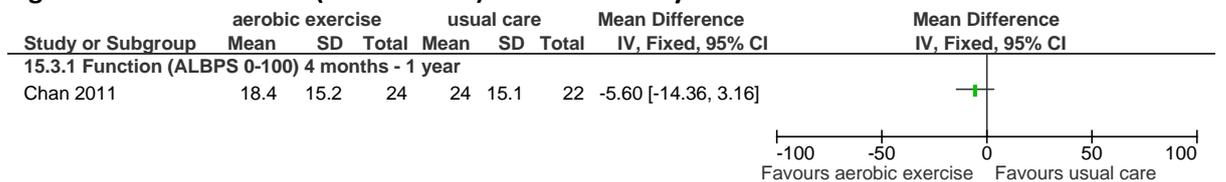


Figure 271: Function (ALBPS 0-100) > 4 months - 1 year



K.2.5.2 Without sciatica

Figure 272: Quality of life (EuroQol weighted health index 0-1) > 4 months - 1 year

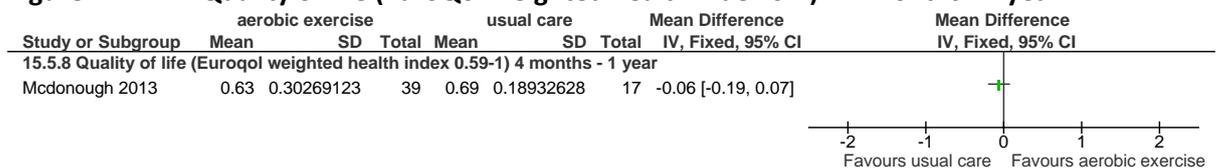


Figure 273: Quality of life (EuroQol VAS 0-100) > 4 months - 1 year

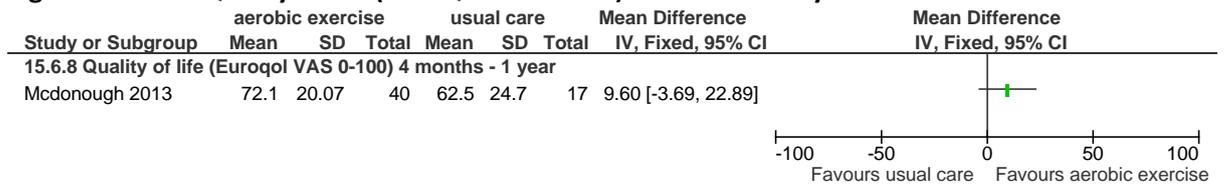


Figure 274: Pain (VAS 0-10) ≤4 months

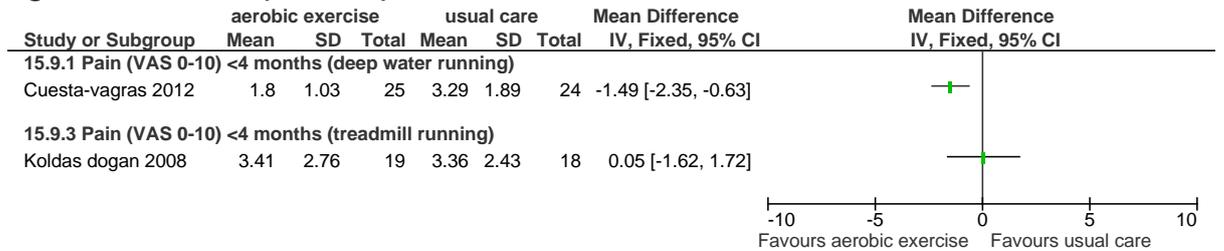


Figure 275: Pain (VAS 0-10) > 4 months - 1 year

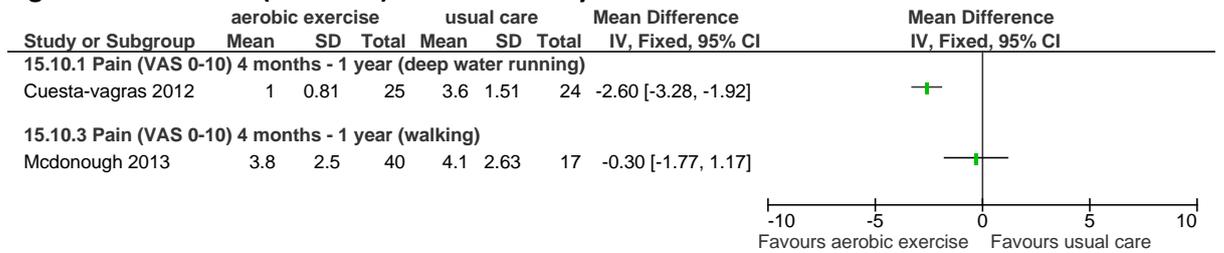


Figure 276: Function (RMDQ 0-24) ≤4 months

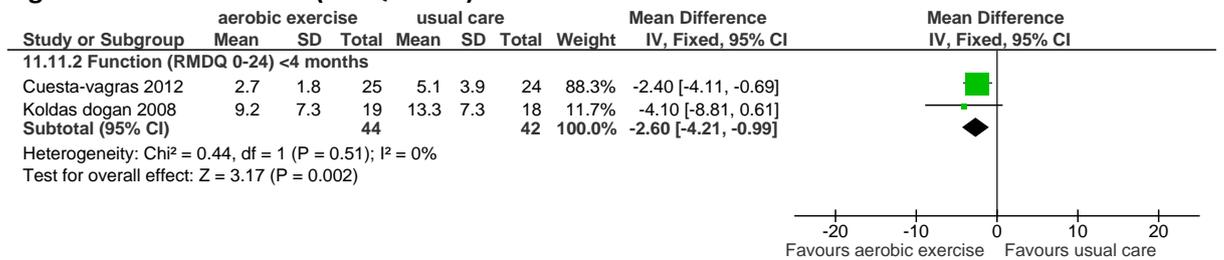
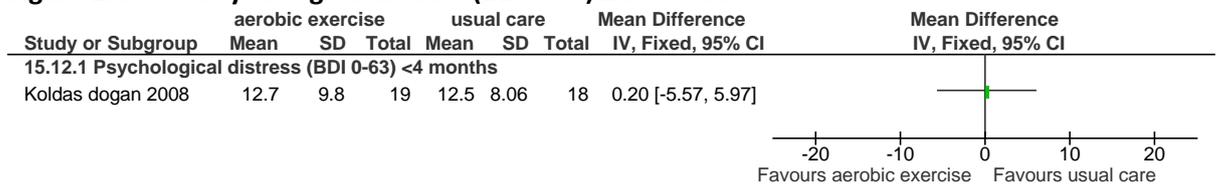


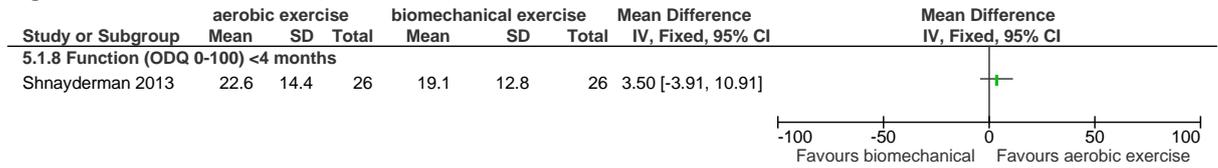
Figure 277: Psychological distress (BDI 0-63) ≤4 months



K.5150 Individual aerobic exercise versus individual biomechanical exercise

K.52061 Overall (with or without sciatica)

Figure 278: Function (ODI 0-100) ≤4 months



K.5171 Group aerobic exercise versus usual care

K.52981 Without sciatica

Figure 279: Quality of life (SF-36 0-100) ≤4 months

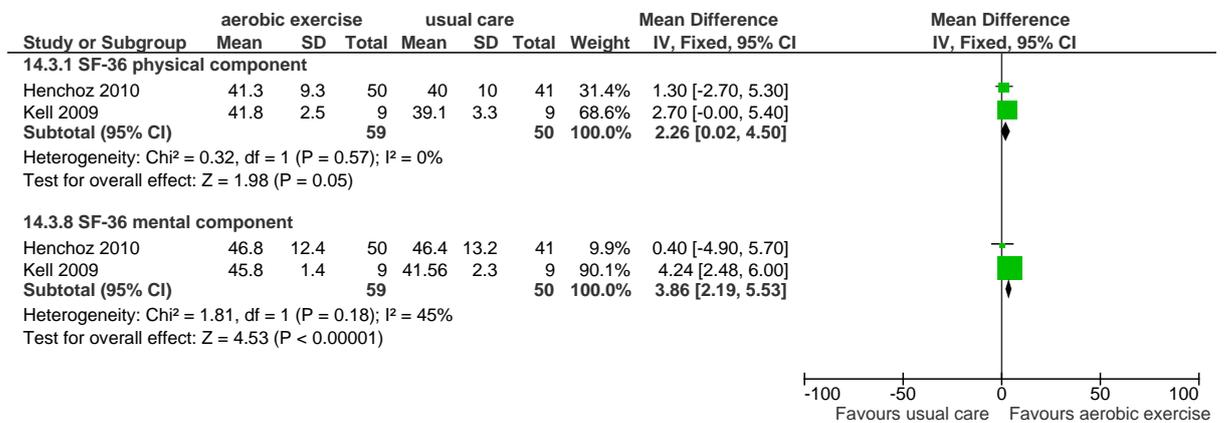


Figure 280: Quality of life (SF-36 0-100) <4 months

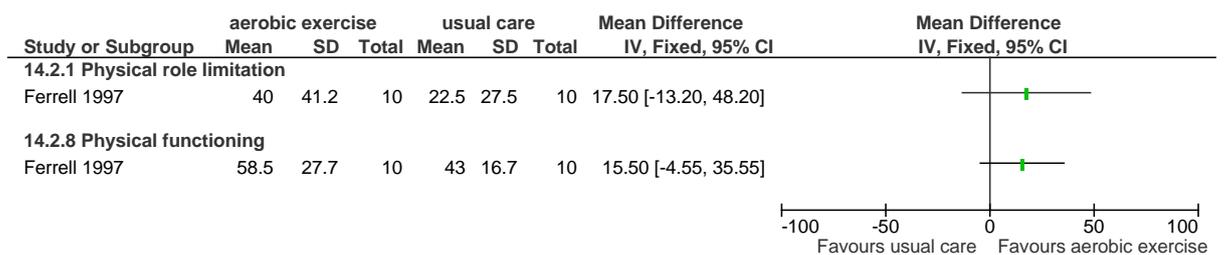


Figure 281: Pain (McGill Questionnaire 0-78) ≤4 months

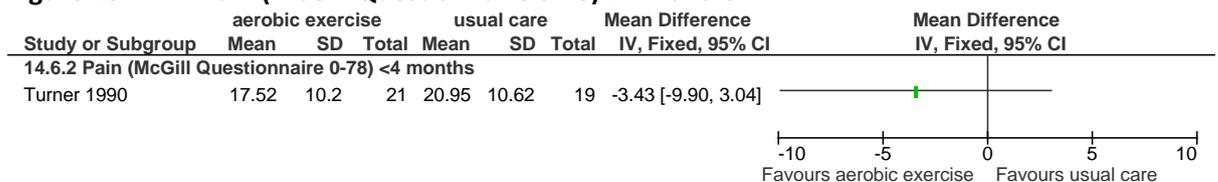


Figure 282: Pain (VAS 0-10) ≤4 months

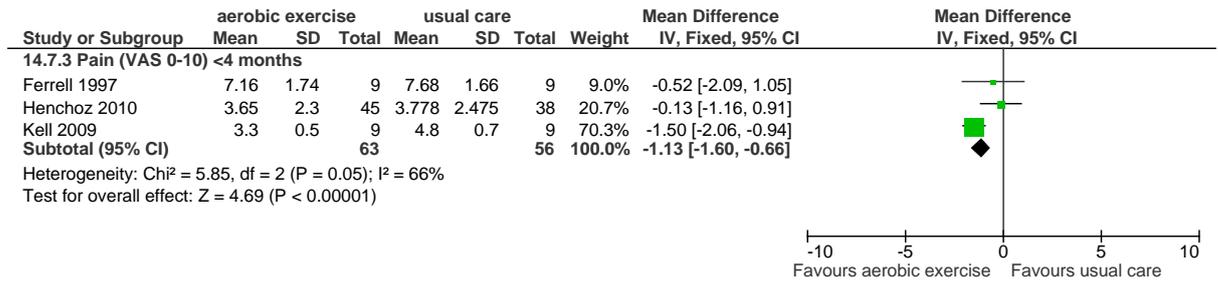


Figure 283: Pain (VAS 0-10) 4 months – 1 year

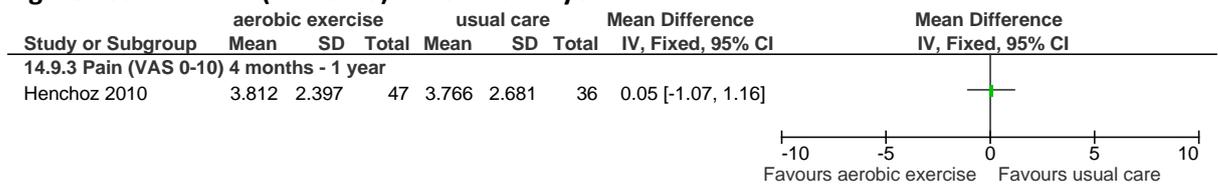


Figure 284: Function (ODI 0-100) ≤4 months

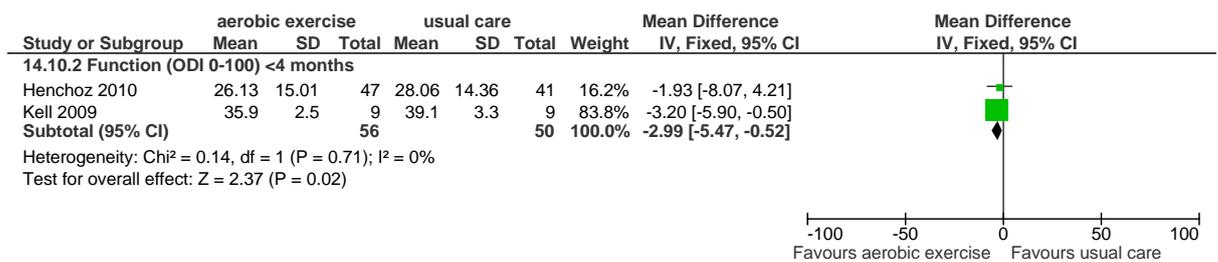


Figure 285: Function (ODI 0-100) > 4 months - 1 year

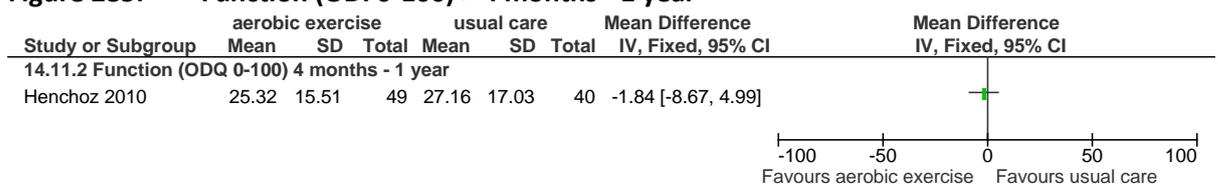
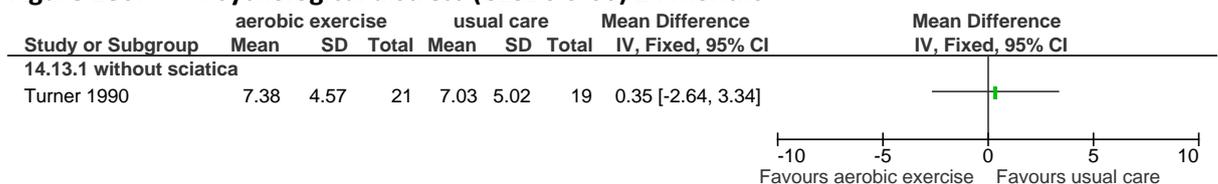


Figure 286: Psychological distress (CESDS 0-60) ≤4 months



K.5.12 Group aerobic exercise versus self-management

K.5.201 Overall (with or without sciatica)

Figure 287: Pain (0-10) ≤4 months

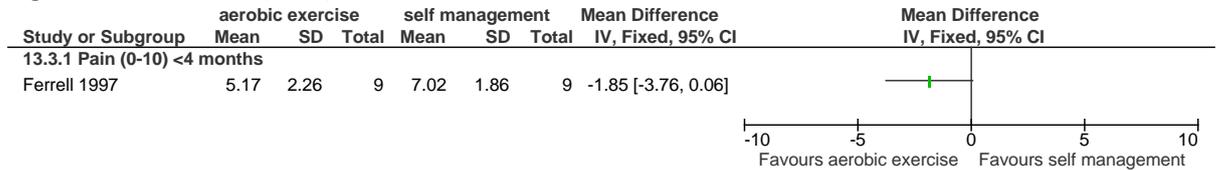
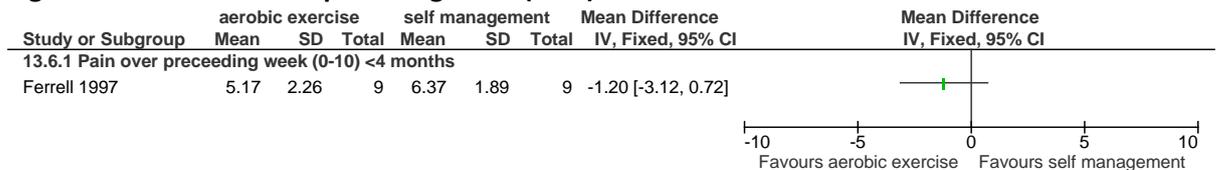


Figure 288: Pain over preceding week (0-10) ≤4 months



K.5.13 Group aerobic exercise versus group biomechanical exercise

K.5.201 Without sciatica

Figure 289: Pain (VAS 0-10) ≤4 months

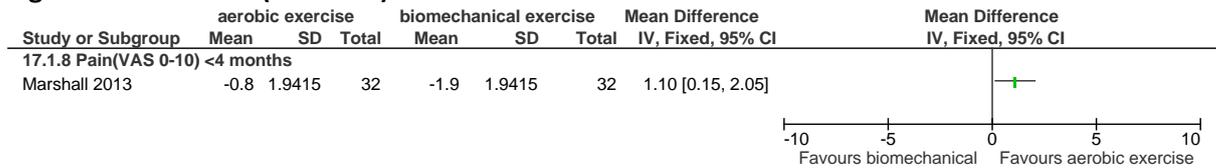


Figure 290: Pain (VAS 0-10) 4 months – 1 year

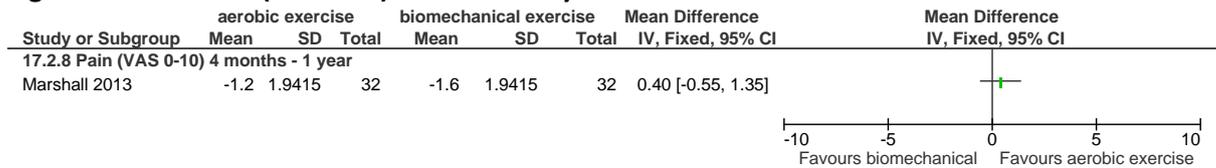


Figure 291: Function (ODI 0-100) ≤4 months

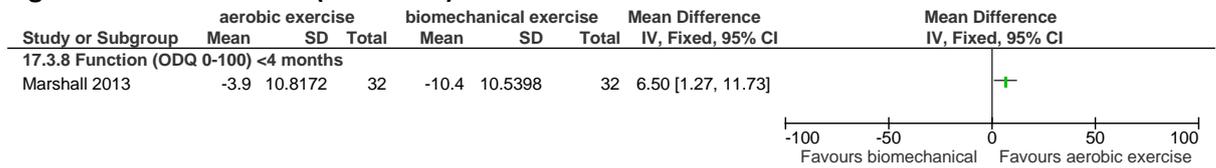
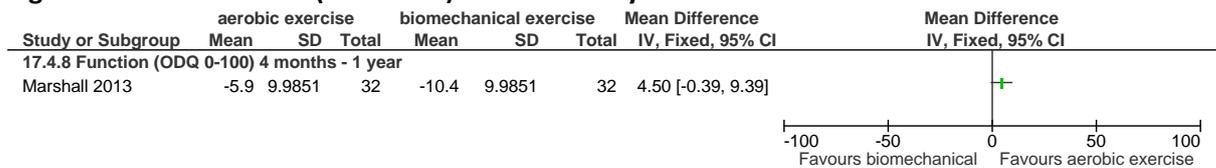
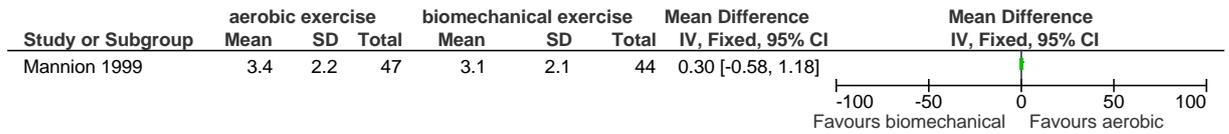


Figure 292: Function (ODI 0-100) 4 months – 1 year



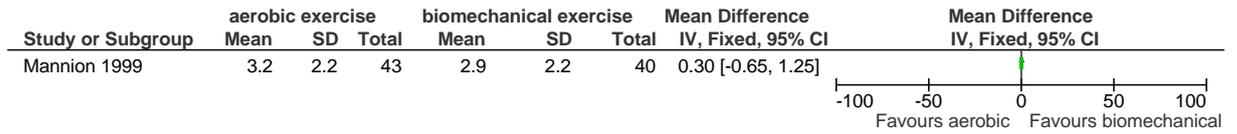
K.5.232 Overall (with or without sciatica)

264 **Figure 293: Pain (VAS 0-10) ≤4 months**



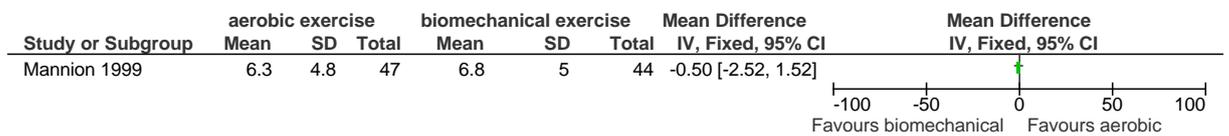
265

266 **Figure 294: Pain (VAS 0-10) 4 months – 1 year**



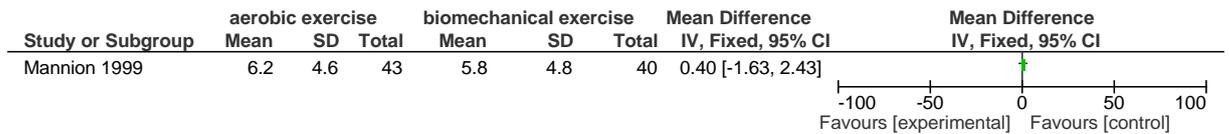
267

268 **Figure 295: Function (RMDQ 0-24) ≤4 months**



269

270 **Figure 296: Function (RMDQ 0-24) 4 months – 1 year**



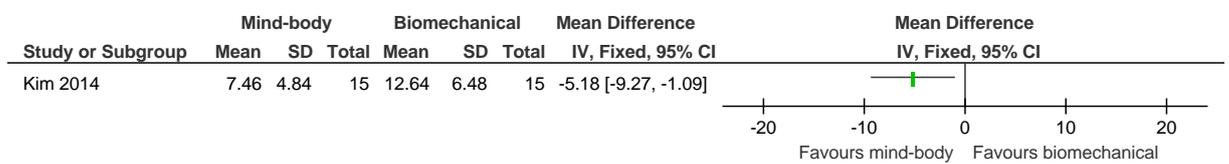
271

272

K.5.234 Individual mind-body exercise versus individual biomechanical

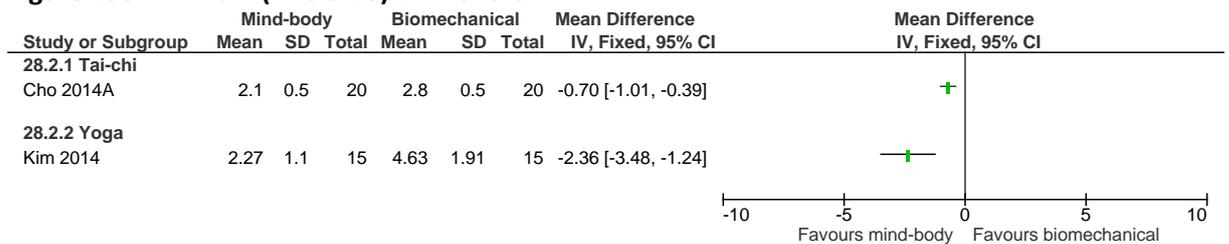
K.5.241 Overall (with or without sciatica)

275 **Figure 297: Function (RMDQ 0-23) ≤4 months**



276

Figure 298: Pain (VAS 0-10) ≤4 months



Data not pooled due to heterogeneity ($I^2=86\%$, $p=0.001$)

277

278

K.5.2.15 Group mind-body exercise versus usual care

K.5.2.15 Overall (with or without sciatica)

Figure 299: Quality of life (EQ-5D 0-1) ≤4 months

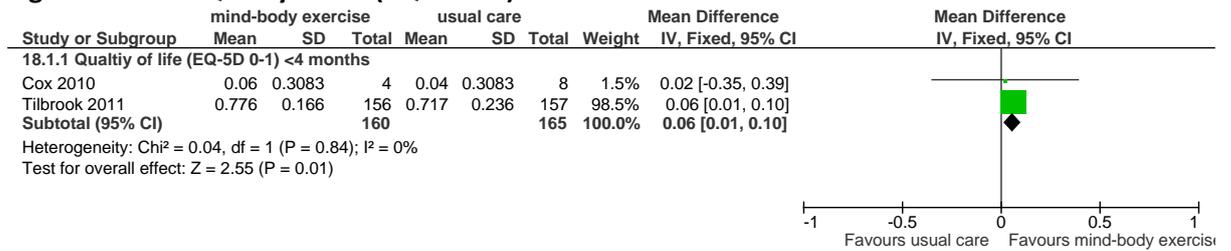
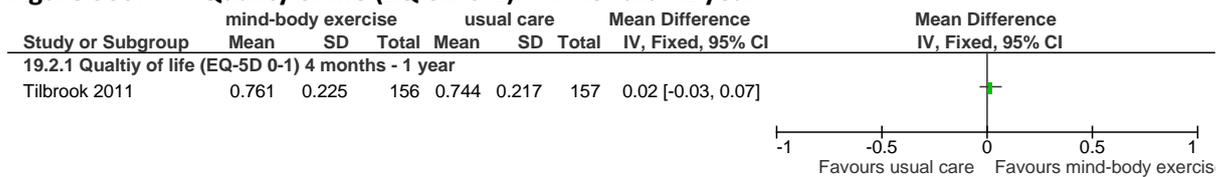
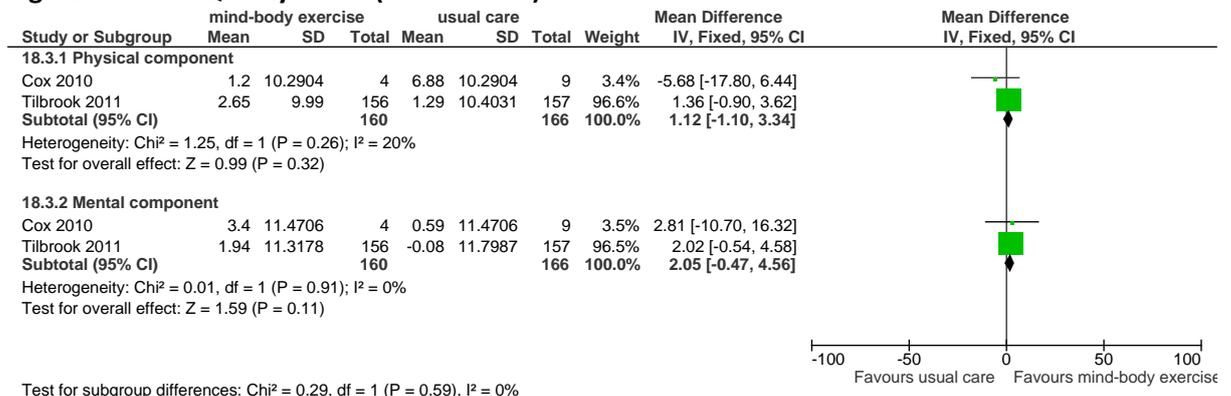


Figure 300: Quality of life (EQ-5D 0-1) > 4 months - 1 year



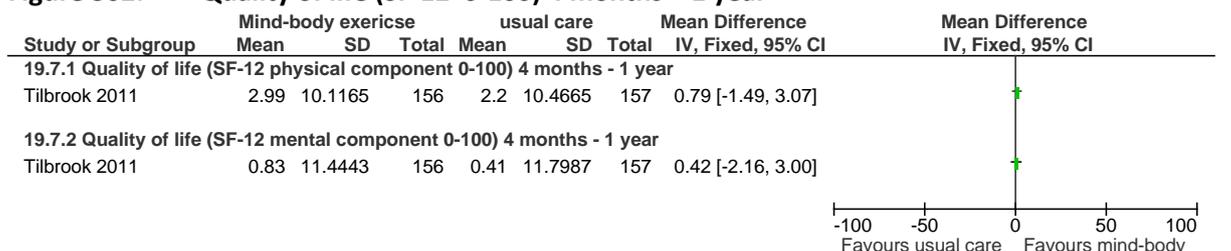
281 *Tilbrook study = waiting list control*

Figure 301: Quality of life (SF-12 0-100) ≤4 months



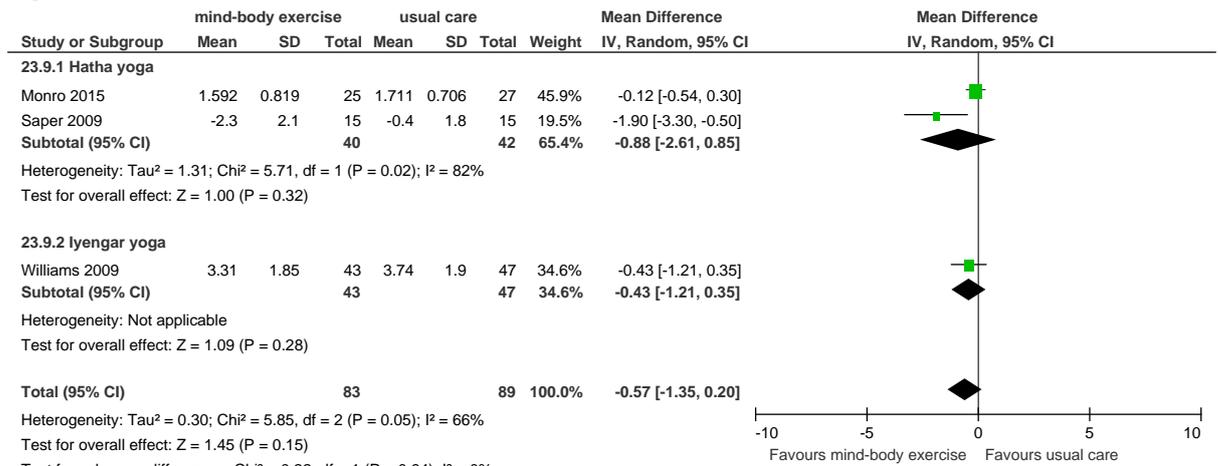
282 *Tilbrook study = waiting list control*

Figure 302: Quality of life (SF-12 0-100) 4 months – 1 year



283 *Tilbrook study = waiting list control*

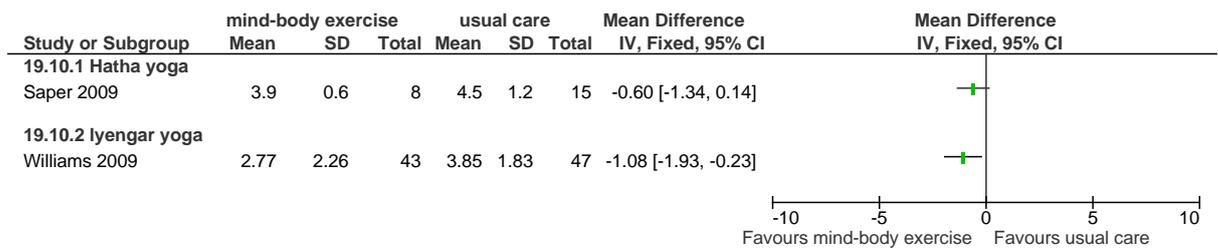
Figure 303: Pain (VAS 0-10) ≤4 months



284
285

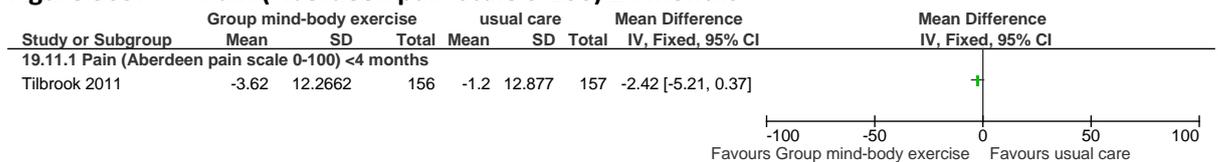
Unexplained heterogeneity. Saper 2009 study = waiting list control; Monro 2015 = specific overall population with presence of at least 1 disc extrusion or bulge

Figure 304: Pain (VAS 0-10) > 4 months - 1 year



Saper 2009 study = waiting list control

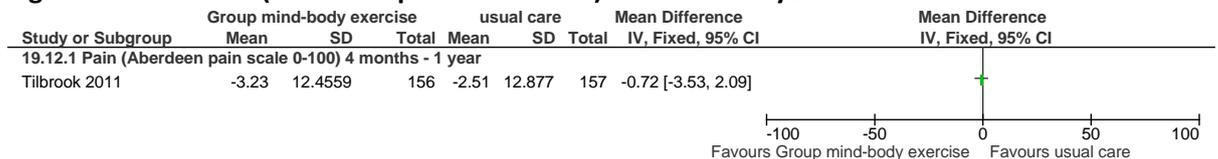
Figure 305: Pain (Aberdeen pain scale 0-100) ≤4 months



286

Tilbrook study = waiting list control

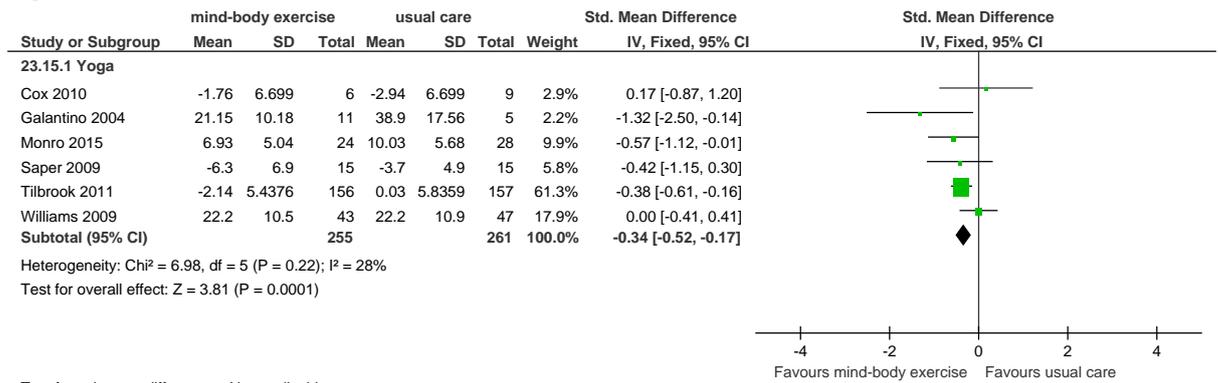
Figure 306: Pain (Aberdeen pain scale 0-100) 4 months – 1 year



287

Tilbrook study = waiting list control

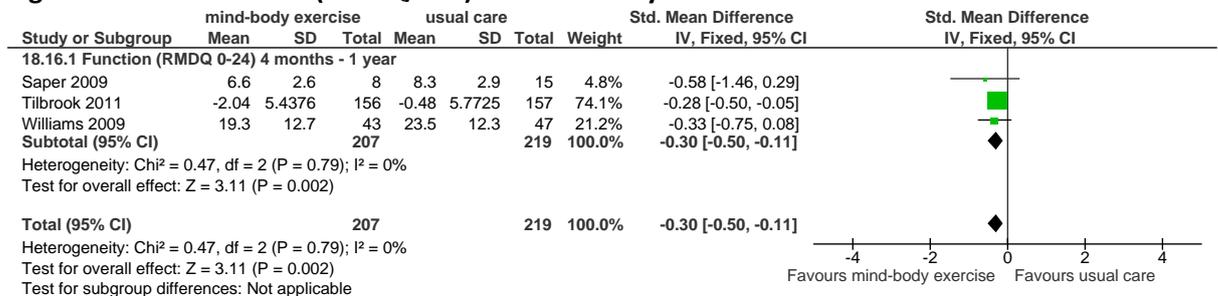
Figure 307: Function (RMDQ/ODI) ≤4 months



288
289

Tilbrook and Saper studies = waiting list control; Monro 2015 = specific overall population with presence of at least 1 disc extrusion or bulge

Figure 308: Function (RMDQ/ODI) 4 months - 1 year



290

Tilbrook and Saper studies = waiting list control

Figure 309: Psychological distress (BDI 0-63) ≤4 months

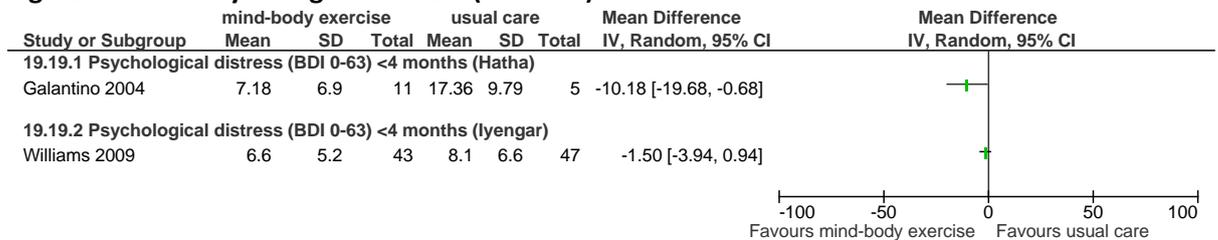


Figure 310: Psychological distress (BDI 0-63) > 4 months - 1 year

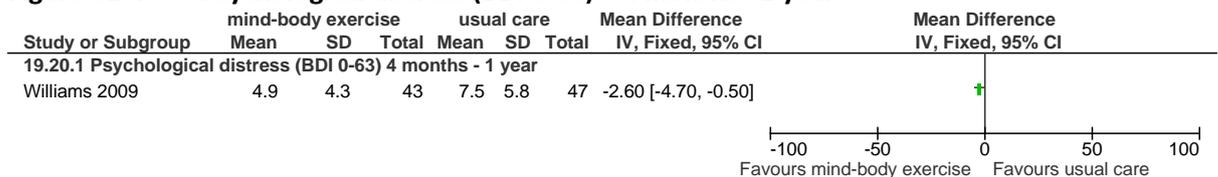
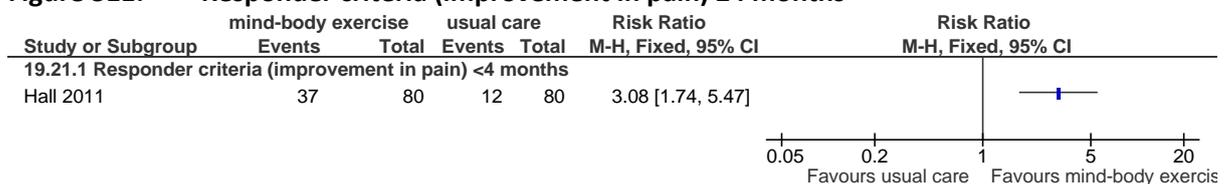
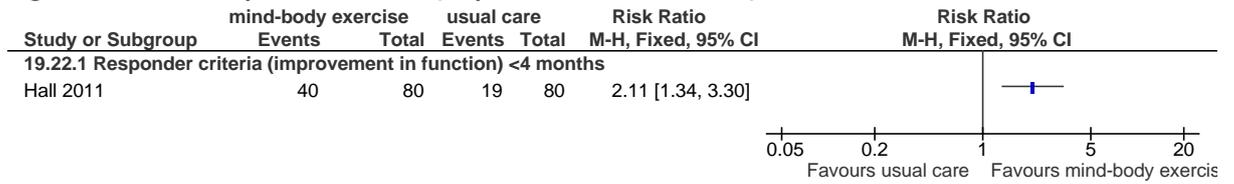


Figure 311: Responder criteria (improvement in pain) ≤4 months



291 *Hall study = waiting list control*

Figure 312: Responder criteria (improvement in function) ≤4 months



292 *Hall study = waiting list control*

Figure 313: Healthcare utilisation - GP visits ≤4 months

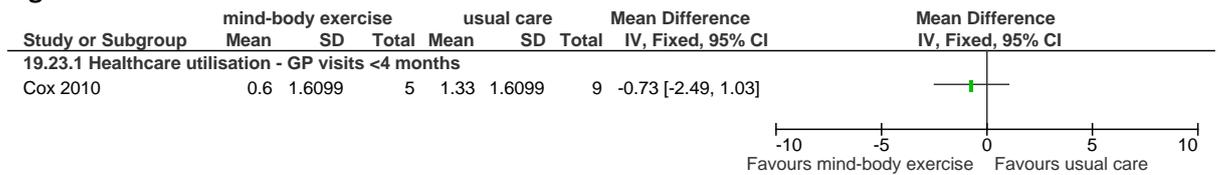


Figure 314: Healthcare utilisation - Practice nurse visits ≤4 months

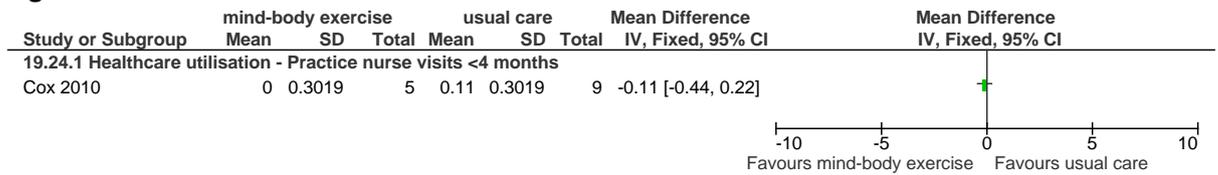


Figure 315: Healthcare utilisation - Physiotherapist visits ≤4 months

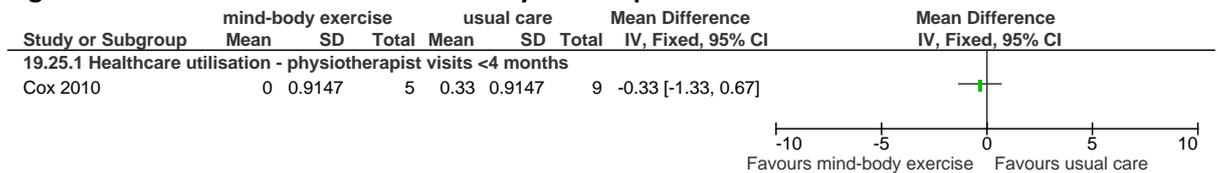
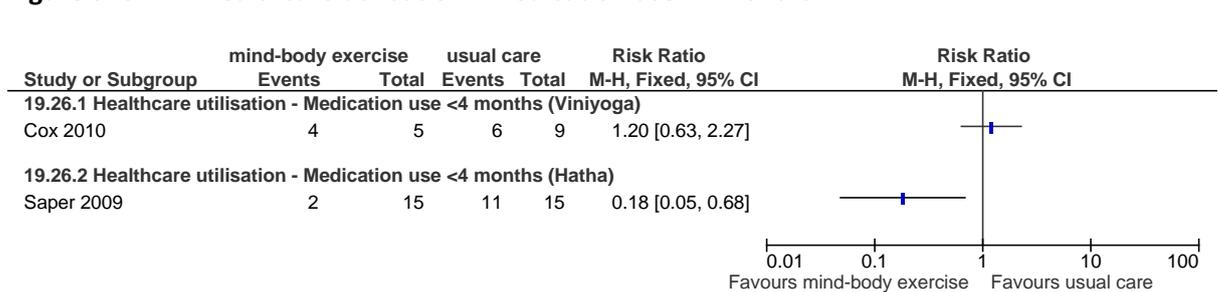


Figure 316: Healthcare utilisation - Medication use ≤4 months



293 *Saper study = waiting list control*

Figure 317: Healthcare utilisation - Reduced or stopped medication ≤4 months

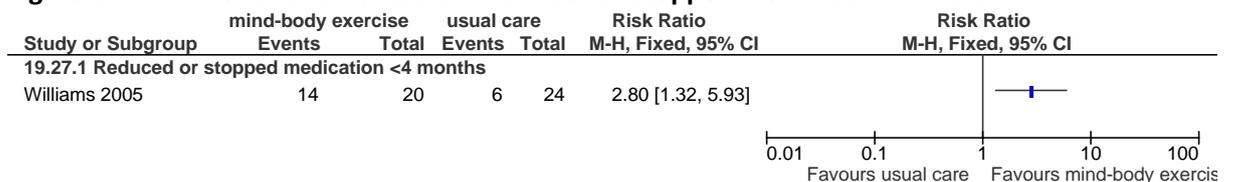
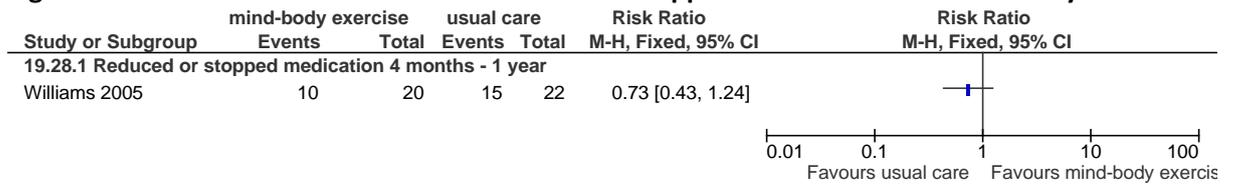


Figure 318: Healthcare utilisation - Reduced or stopped medication > 4 months - 1 year



K.52942 Without sciatica

Figure 319: Pain (VAS 0-10) ≤4 months

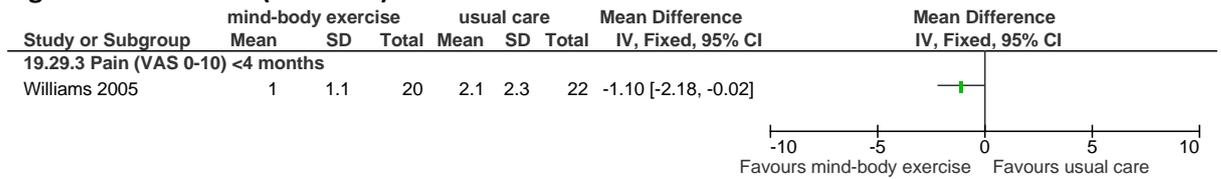
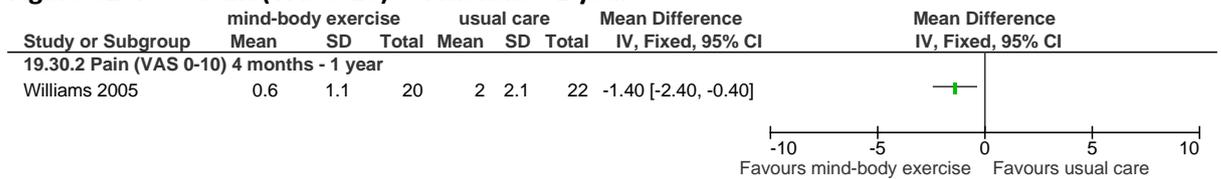


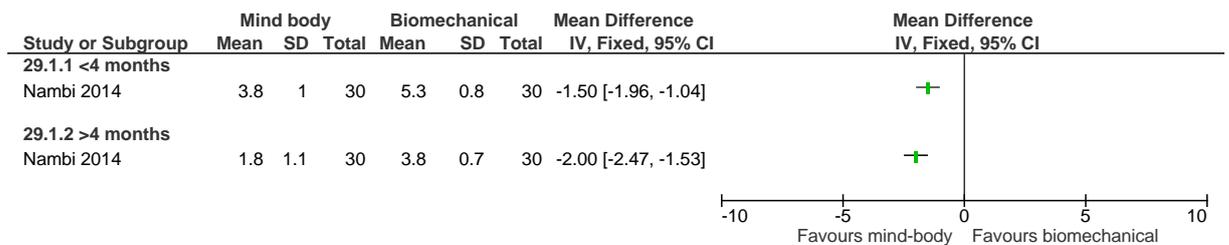
Figure 320: Pain (VAS 0-10) > 4 months - 1 year



K.51956 Group mind-body exercise versus individual biomechanical exercise

K.52961 Overall (with or without sciatica)

297 Figure 321: Pain (VAS 0-10)



298

K.5197 Group mind-body exercise versus self-management

K.53001 Without sciatica

Figure 322: Function (RMDQ 0-24) ≤4 months

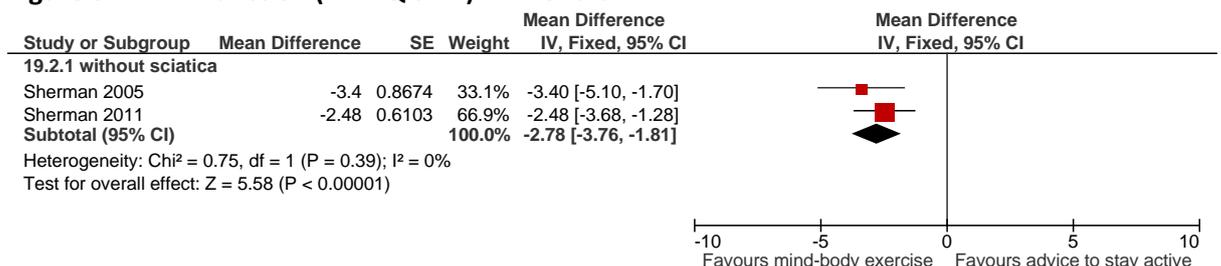


Figure 323: Function (RMDQ 0-24) > 4 months - 1 year

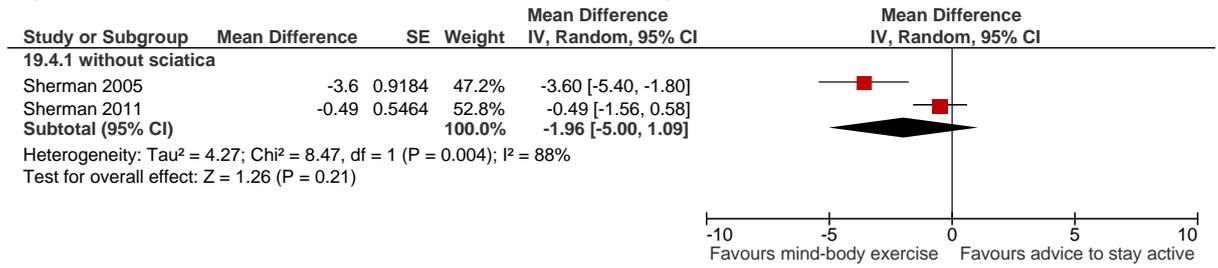


Figure 324: Responder criteria (improvement in function) ≤4 months

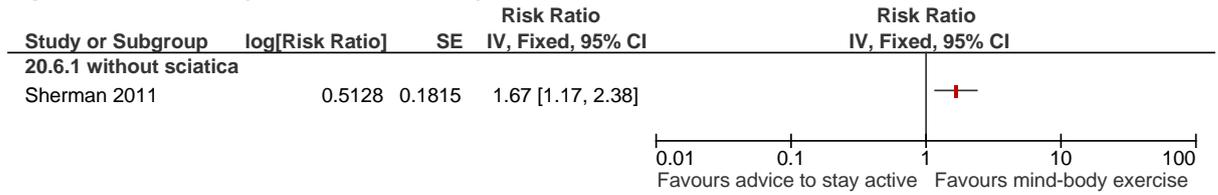
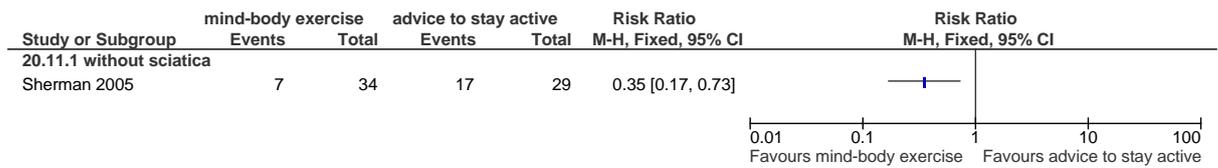


Figure 325: Healthcare utilisation - medication use > 4 months - 1 year



K.508 Group mind-body exercise versus group mixed exercise

K.531 Without sciatica

Figure 326: Function (RMDQ 0-24) ≤4 months

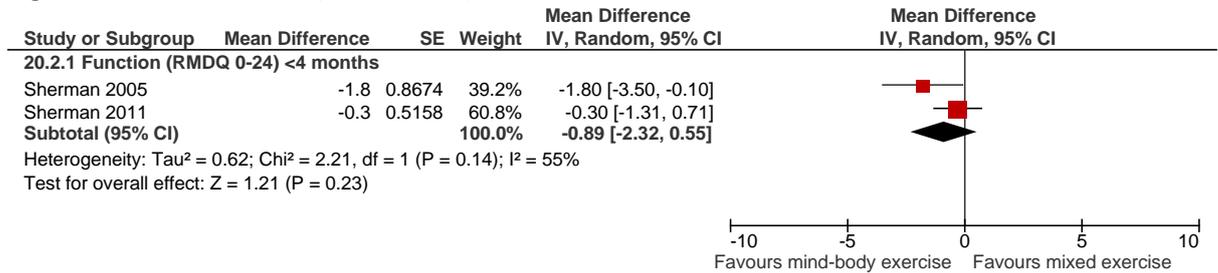


Figure 327: Function (RMDQ 0-24) > 4 months - 1 year

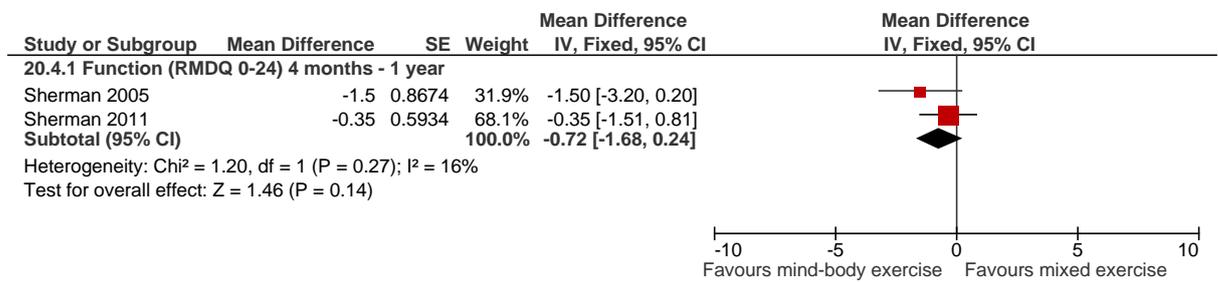


Figure 328: Responder criteria (improvement in function) ≤4 months

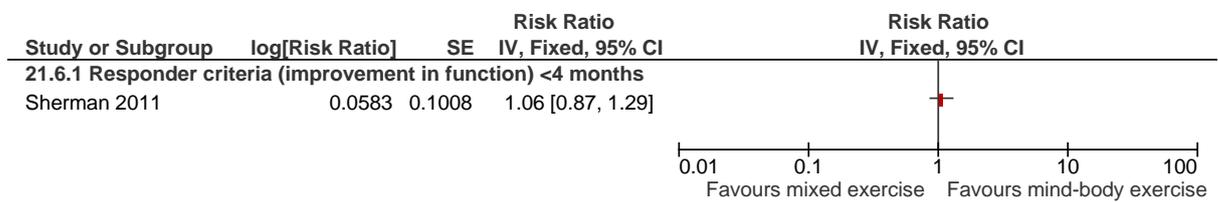
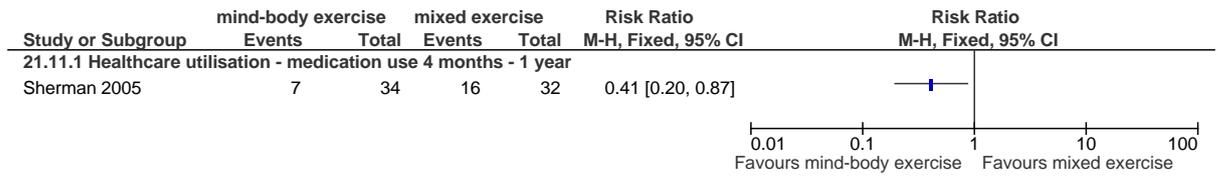


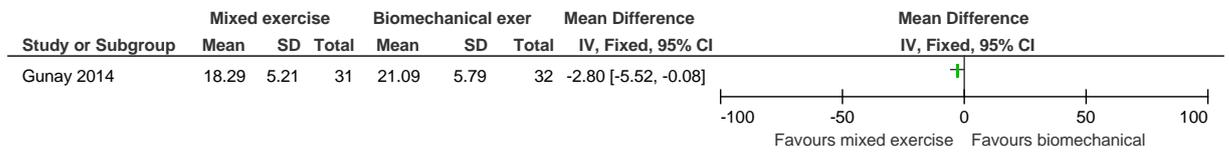
Figure 329: Healthcare utilisation - medication use > 4 months - 1 year



K.5.109 Individual mixed exercise versus biomechanical exercise

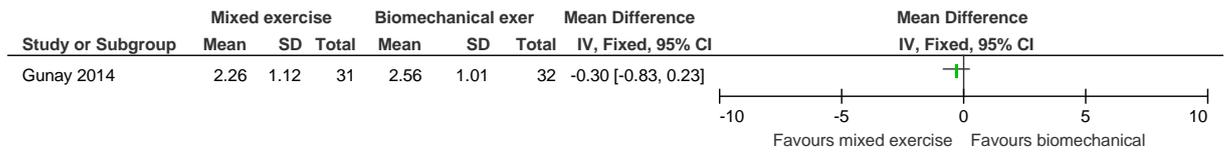
K.5.106 Overall (with or without sciatica)

307 Figure 330: Function (ODI 0-100) ≤4 months



308

309 Figure 331: Pain (VAS 0-10) ≤4 months

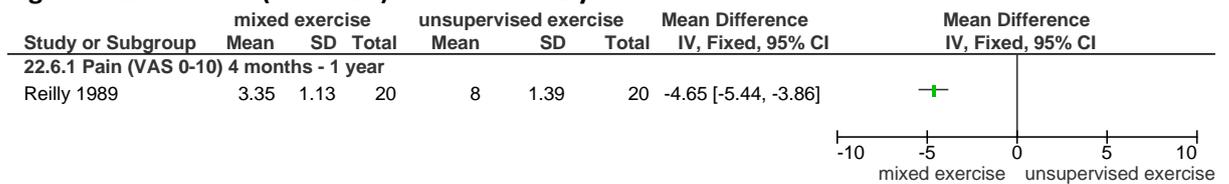


310

K.5.120 Individual mixed exercise versus unsupervised exercise

K.5.121 Overall (with or without sciatica)

Figure 332: Pain (VAS 0-10) > 4 months - 1 year



K.5.121 Group mixed exercise versus placebo/sham

K.5.141 Without sciatica

Figure 333: Pain (VAS 0-10) ≤4 months

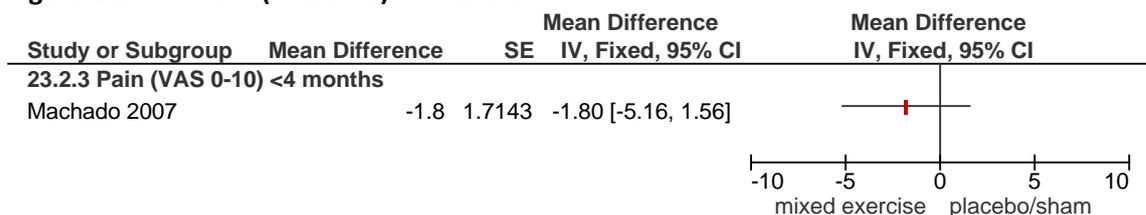


Figure 334: Pain (VAS 0-10) > 4 months - 1 year

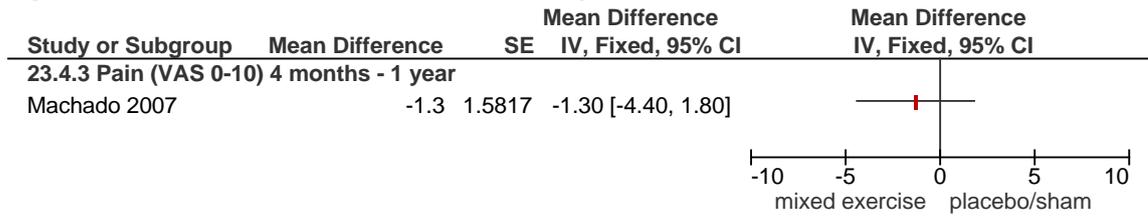


Figure 335: Function (RMDQ 0-24) ≤4 months

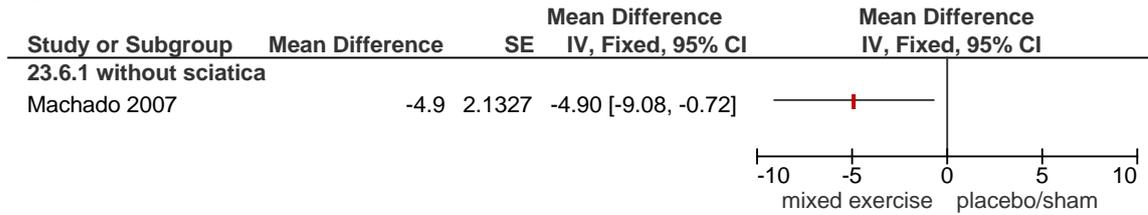
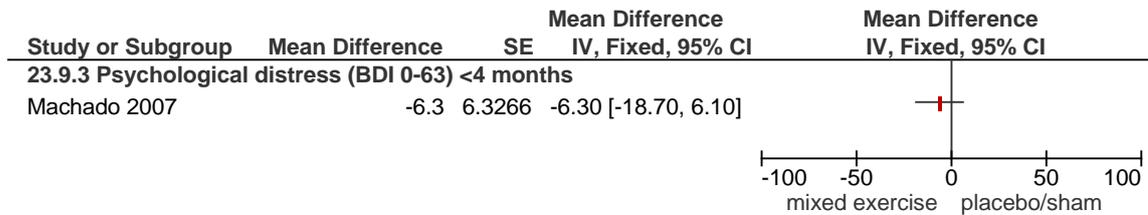


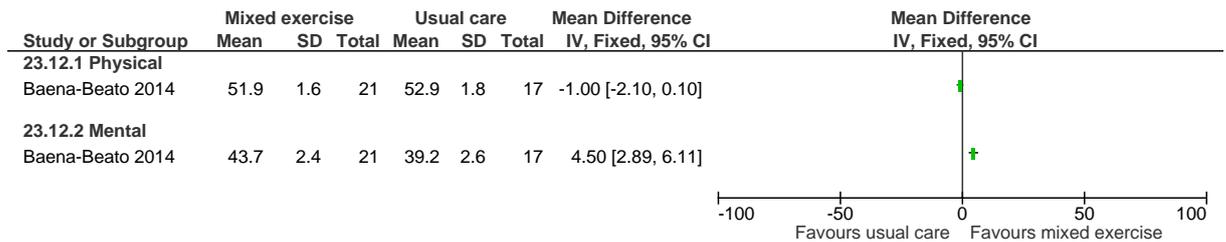
Figure 336: Psychological distress (BDI 0-63) ≤4 months



K.5.12 Group mixed exercise versus usual care

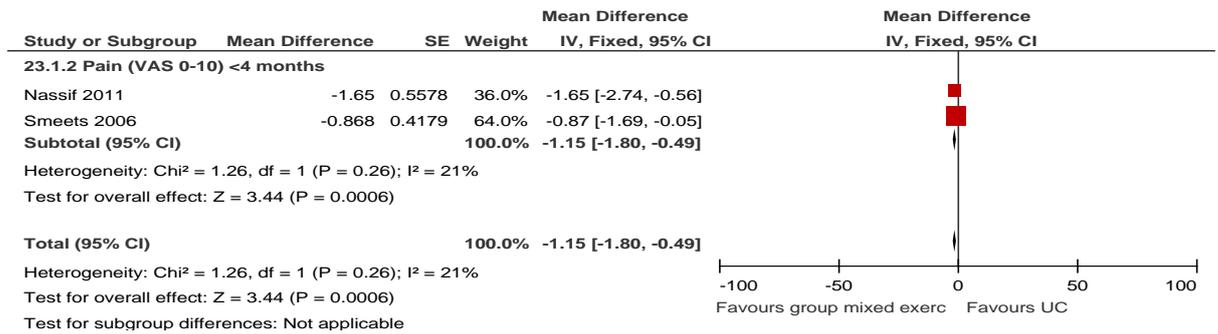
K.5.261 Overall (with or without sciatica)

317 Figure 337: SF-36 (0-100) ≤4 months

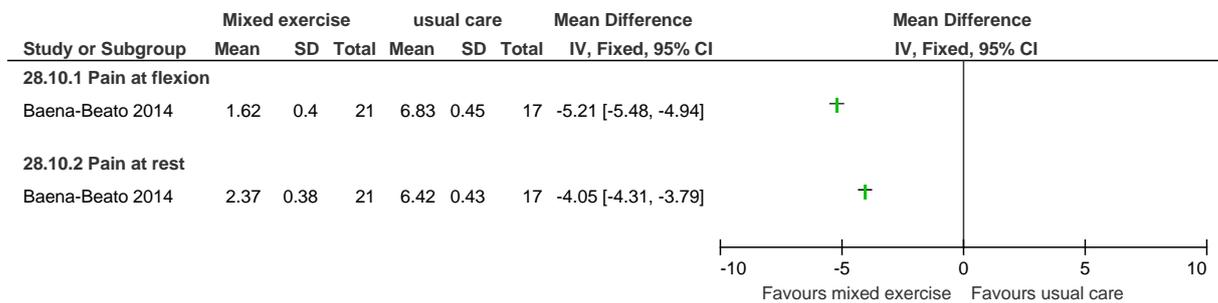


318

Figure 338: Pain (VAS 0-10) ≤4 months



319 Figure 339: Pain (VAS 0-10) ≤4 months



320
321

Baena-Beato 2014: aquatic therapy (resistance exercises, aerobic exercises, stretching exercises) vs waiting list control

322

Figure 340: Pain (VAS 0-10) > 4 months - 1 year

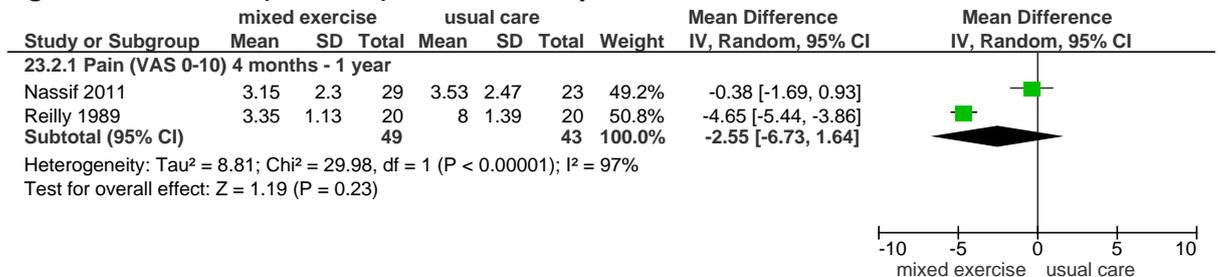


Figure 341: Pain (von Korff 0-100) <4 months [mean difference from control]

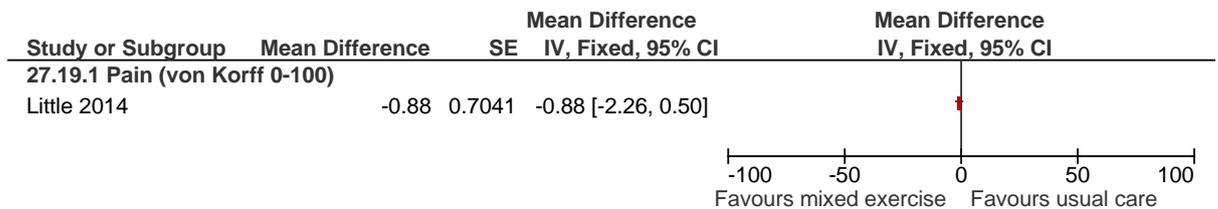


Figure 342: Pain (von Korff 0-100) 4 months – 1 year [mean difference from control]

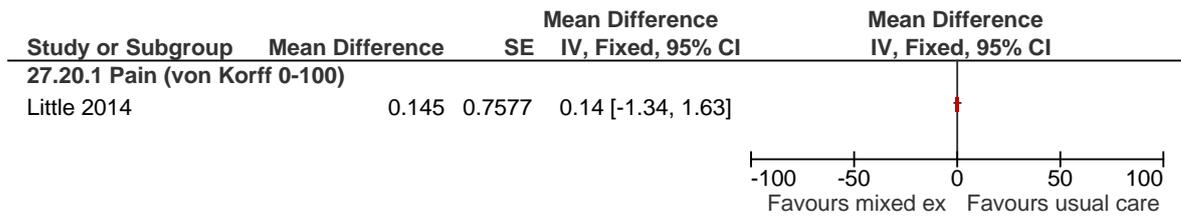


Figure 343: Function (RMDQ 0-24) ≤4 months

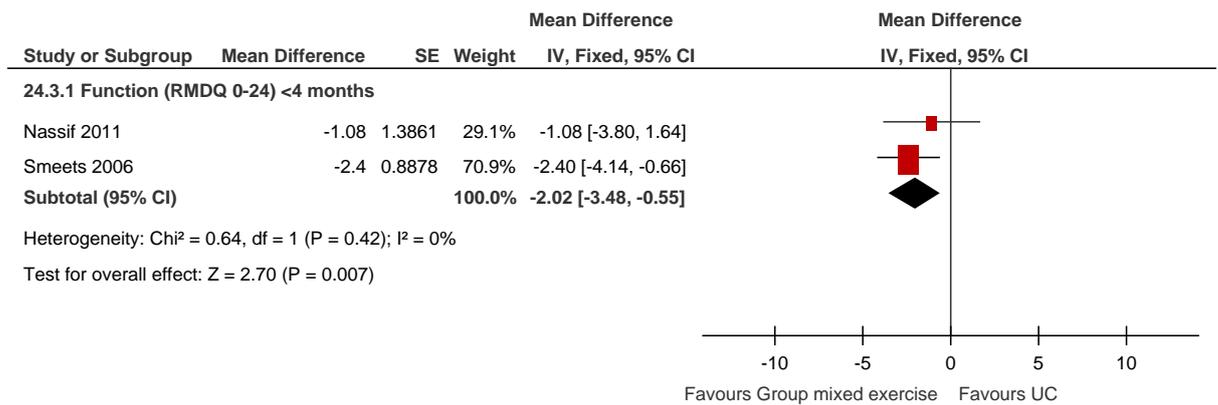


Figure 344: Function (RMDQ 0-24) > 4 months - 1 year

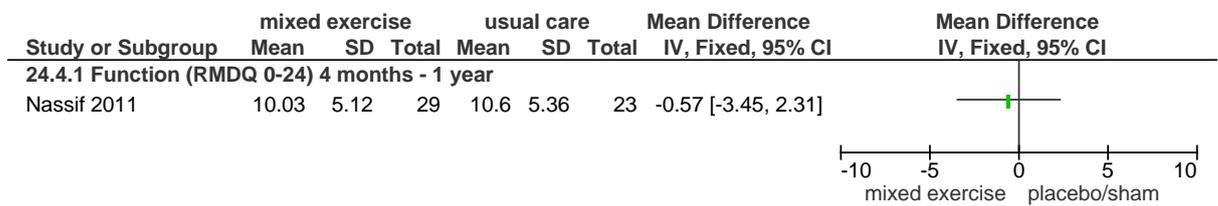


Figure 345: Function (RMDQ 0-24) <4 months [mean difference from control]

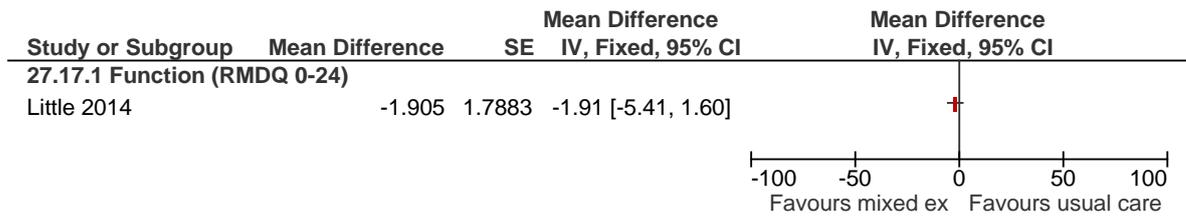


Figure 346: Function (RMDQ 0-24) 4 months – 1 year [mean difference from control]

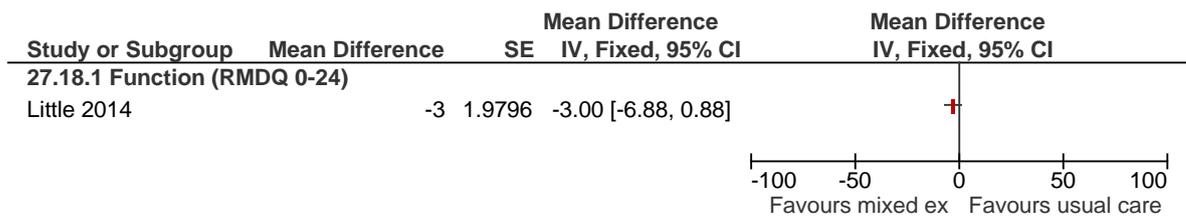
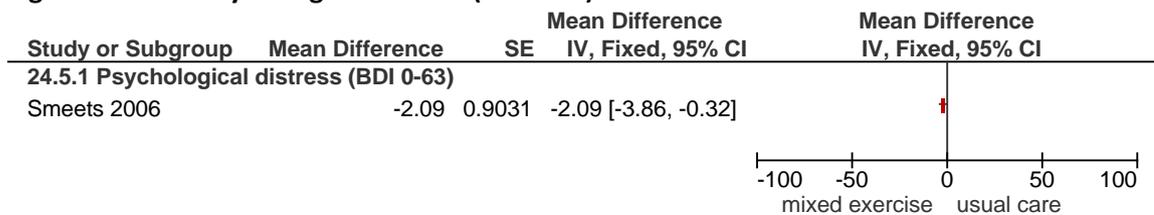


Figure 347: Psychological distress (BDI 0-63) ≤4 months



Smeets = waiting list

K.5.3.2.2 With sciatica

Figure 348: Pain (NRS 0-10) ≤4 months

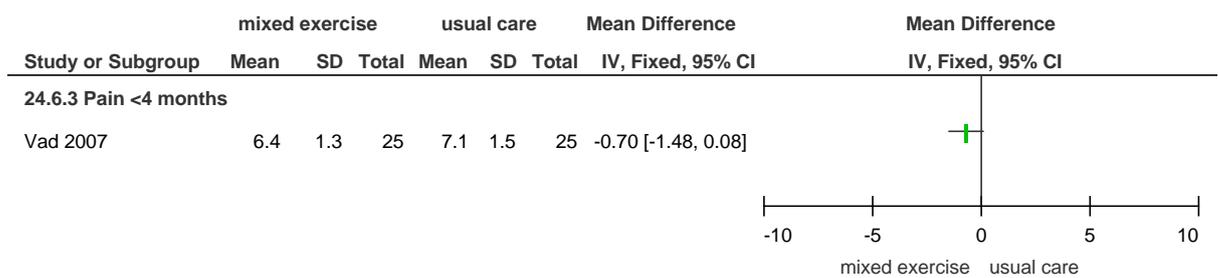


Figure 349: Pain (NRS 0-10) >4 months - 1 year

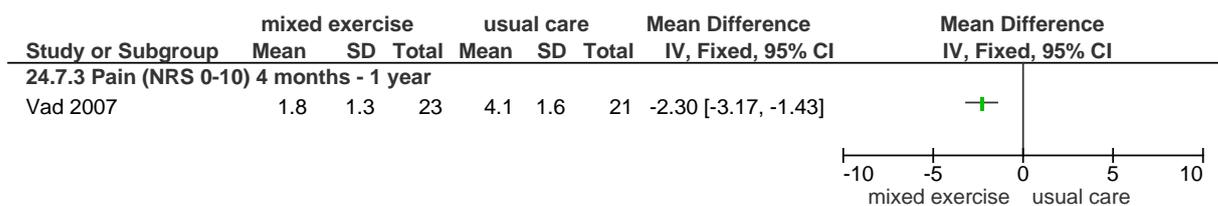


Figure 350: Function (RMDQ 0-24) ≤4 months

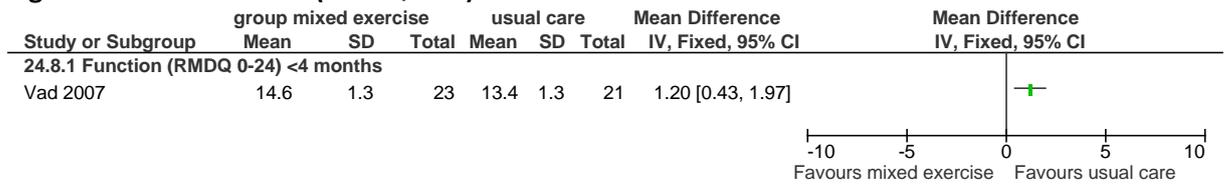
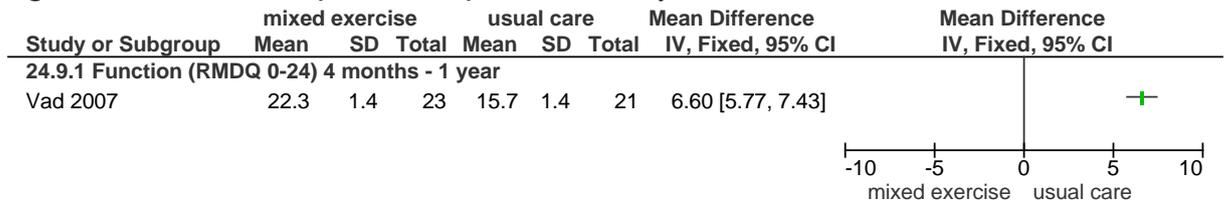
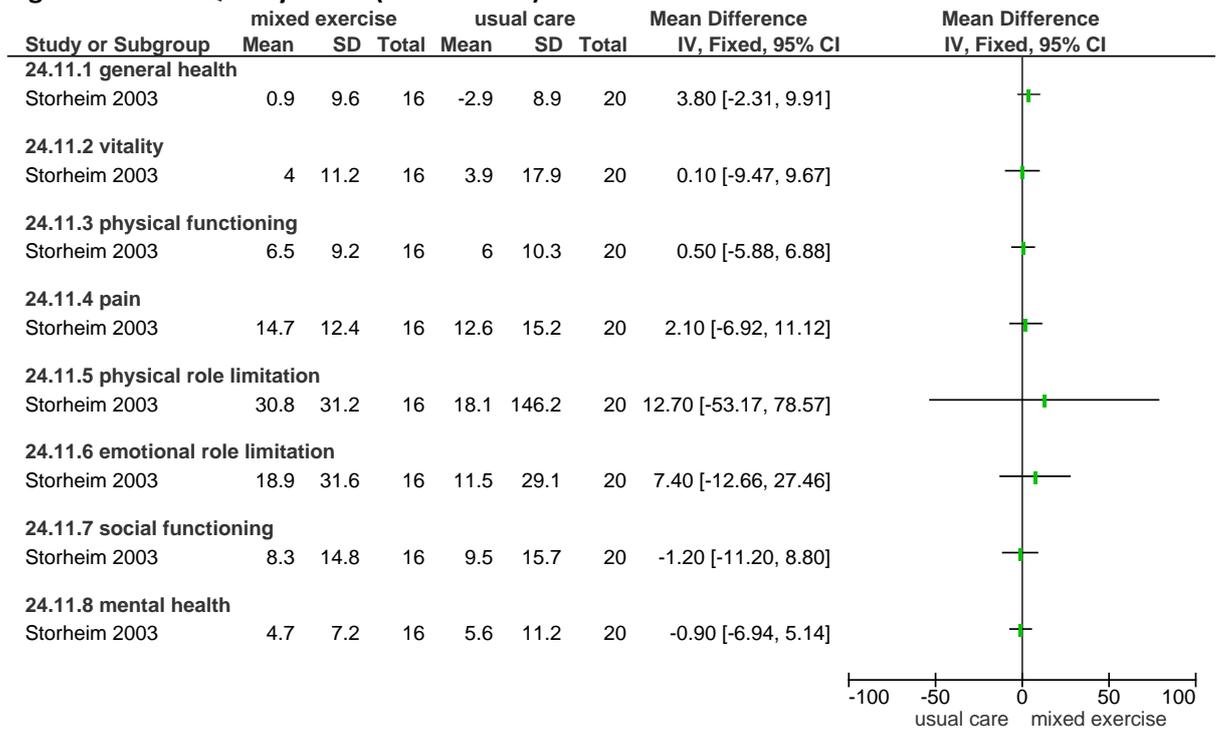


Figure 351: Function (RMDQ 0-24) >4 months - 1 year



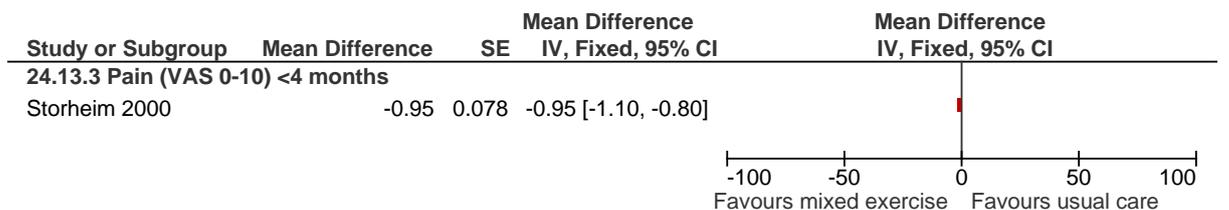
K.5.2.4.3 Without sciatica

Figure 352: Quality of life (SF-36 0-100) ≤4 months



325 *Storheim study = waiting list control*

Figure 353: Pain (VAS 0-10) ≤4 months

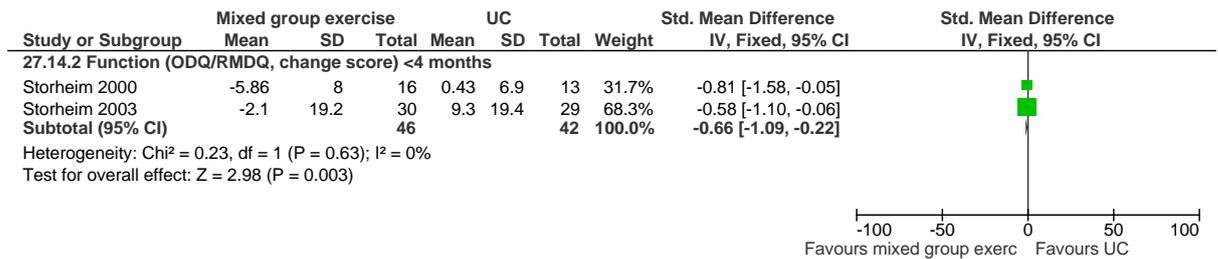


Storheim = waiting list control

Figure 354: Pain (VAS 0-10, change score) ≤4 months

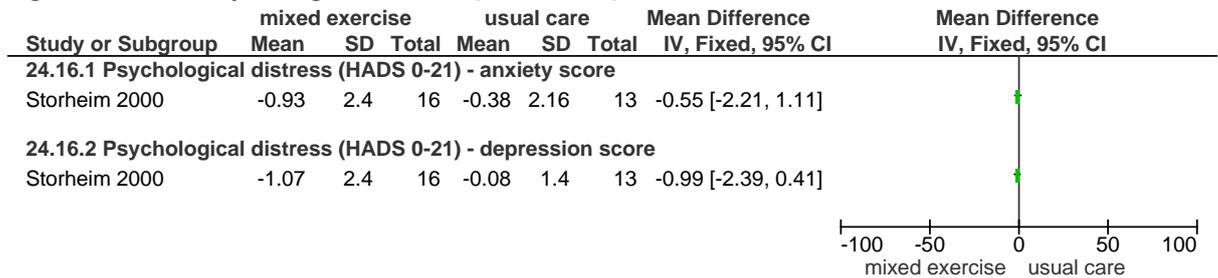


Figure 355: Function (ODI/RMDQ, change score) ≤4 months



Storheim = waiting list control

Figure 356: Psychological distress (HADS 0-21)



326 Storheim study = waiting list control

K.5.23 Group mixed exercise versus self-management

K.5.23.1 Without sciatica

Figure 357: Responder criteria (improvement in function) ≤4 months



Figure 358: Function (RMDQ 0-24) ≤4 months

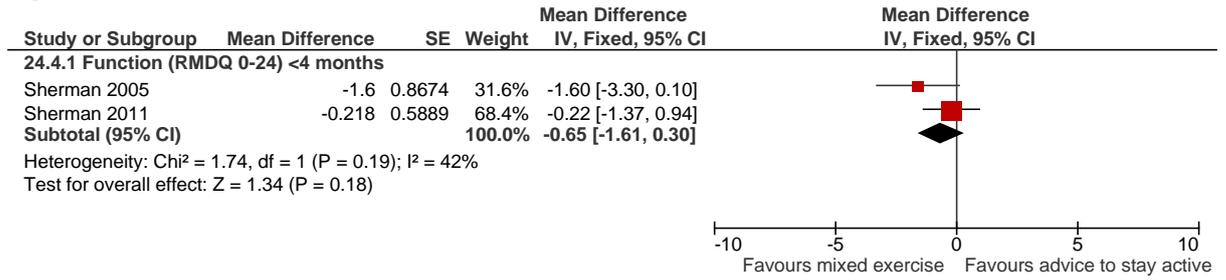


Figure 359: Function (RMDQ 0-24) >4 months - 1 year

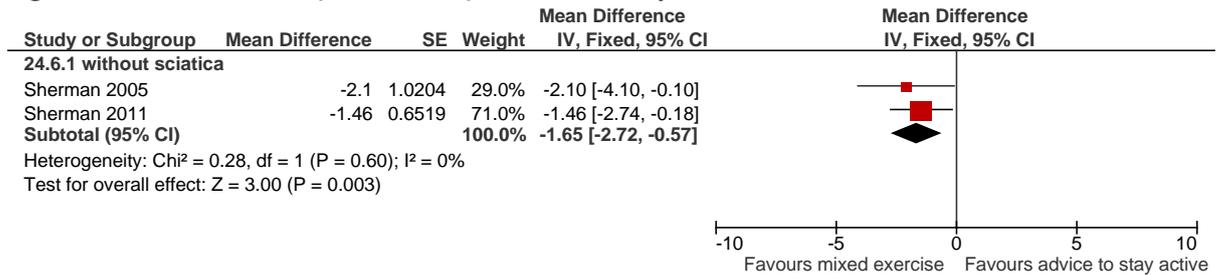
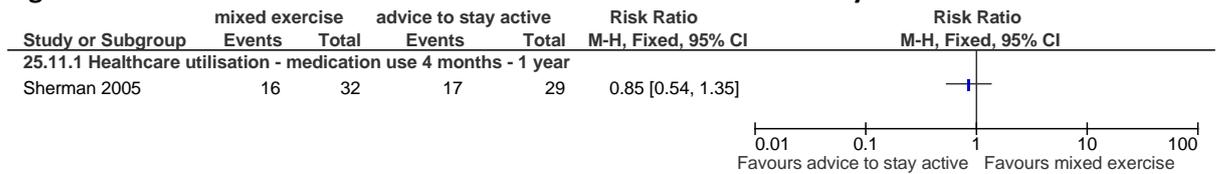


Figure 360: Healthcare utilisation – medication use 4 months – 1 year



K.5.24 Group mixed exercise versus CBT

K.5.24.1 With/without sciatica

Figure 361: Pain (VAS 0-10) ≤4 months

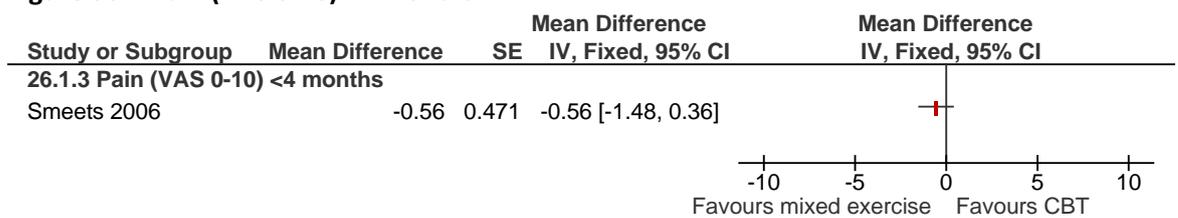


Figure 362: Pain (VAS 0-10) 4 months – 1 year

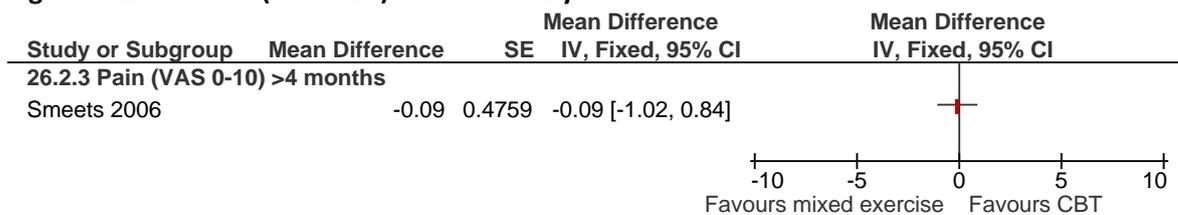


Figure 363: Function (RMDQ) ≤4 months

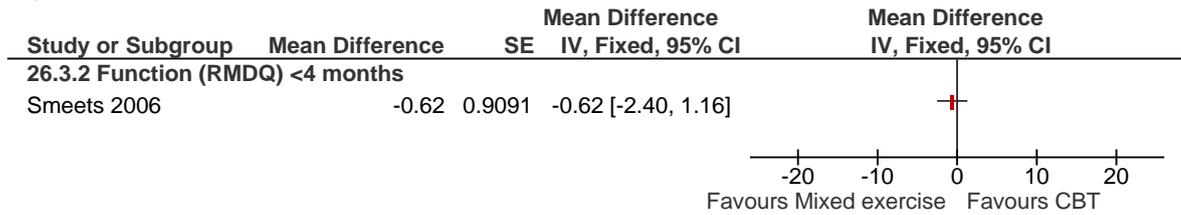


Figure 364: Function (RMDQ) 4 months – 1 year

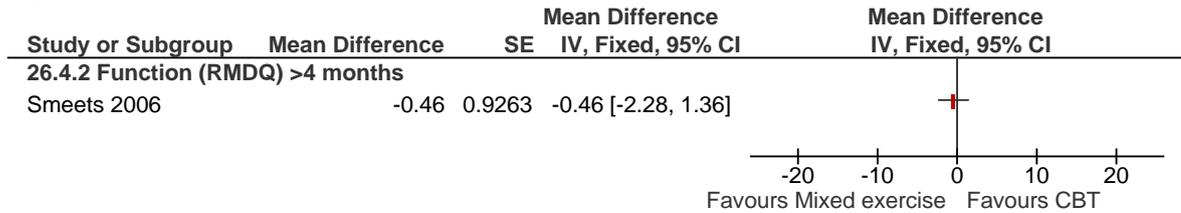


Figure 365: Psychological distress (BDI 0-63) ≤4 months

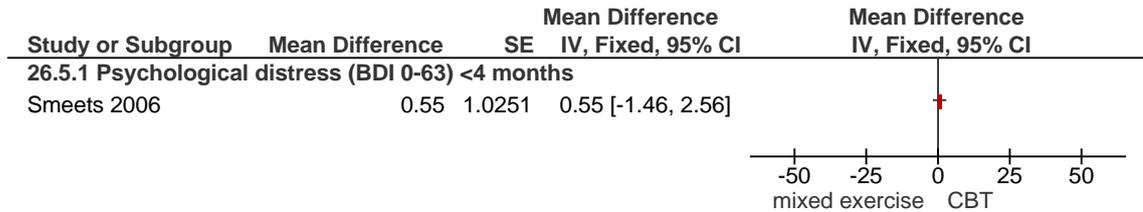


Figure 366: Psychological distress (BDI 0-63) 4 months – 1 year

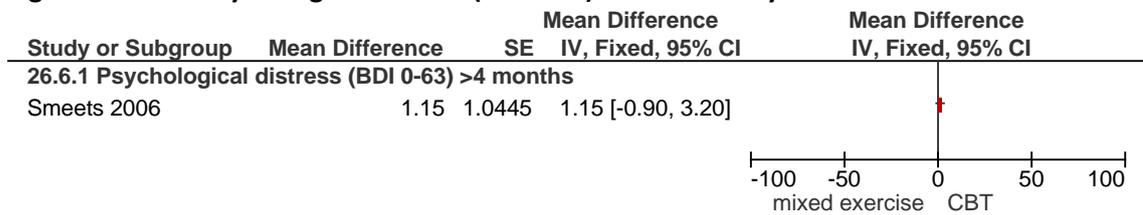


Figure 367: HC use (general practice - visits) > 4 months – 1 year

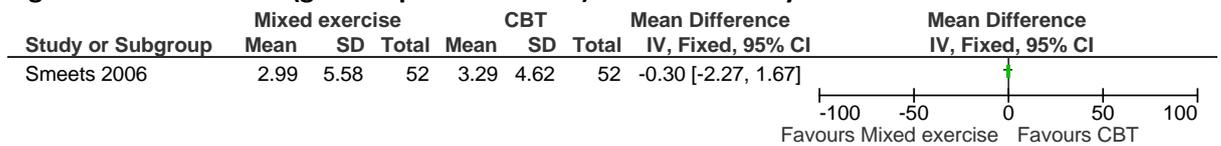


Figure 368: HC use (specialist care -visits) > 4 months – 1 year

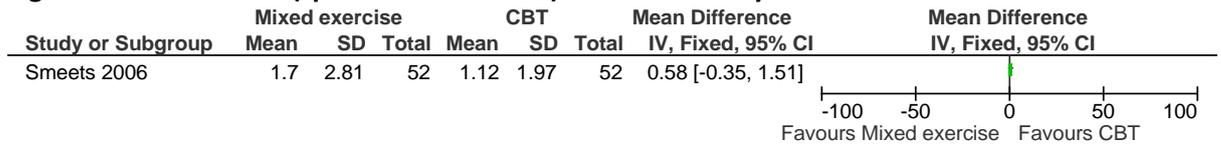


Figure 369: HC use (radiography – visits) > 4 months – 1 year

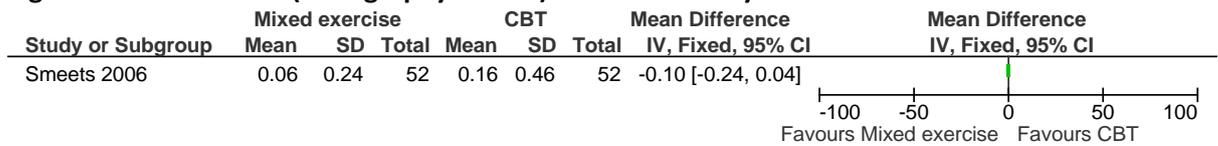


Figure 370: HC use (occupational physician -visits) > 4 months – 1 year

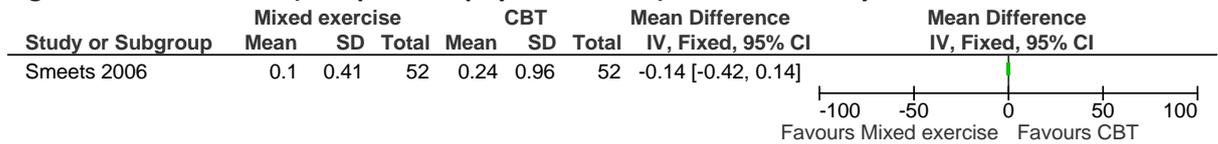


Figure 371: HC use (psychologist -visits) > 4 months – 1 year

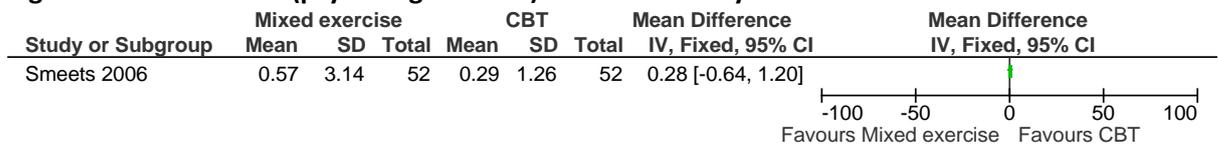
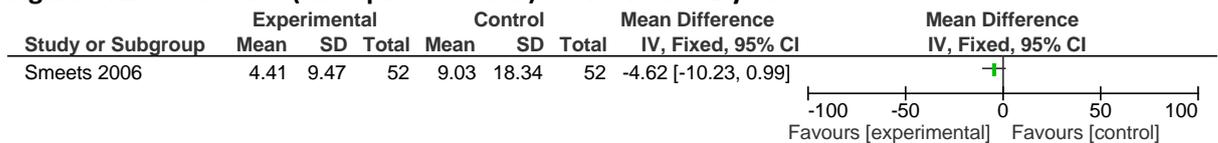


Figure 372: HC use (therapist -sessions) > 4 months – 1 year



K.5.25 Combinations – exercise therapy adjunct

K.5.26 Low back pain without sciatica population

333

K.5.27 Exercise (biomech) + TENS compared to TENS

Figure 373: Pain (Borg verbal pain rating scale 0-10).

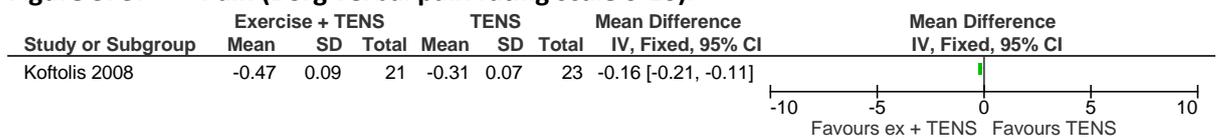
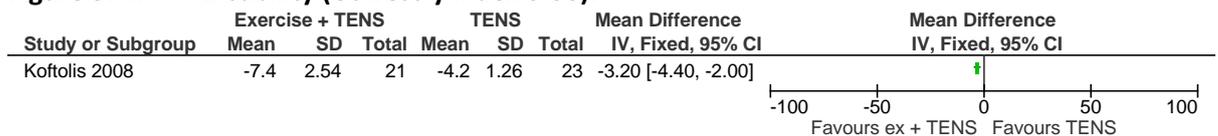


Figure 374: Disability (Oswestry index 0-50).



K.533
336

Exercise (biomechanical + aerobic) + electrotherapy (PENS) compared to sham electrotherapy (PENS)

Figure 375: Quality of life (SF-36, 0-100)

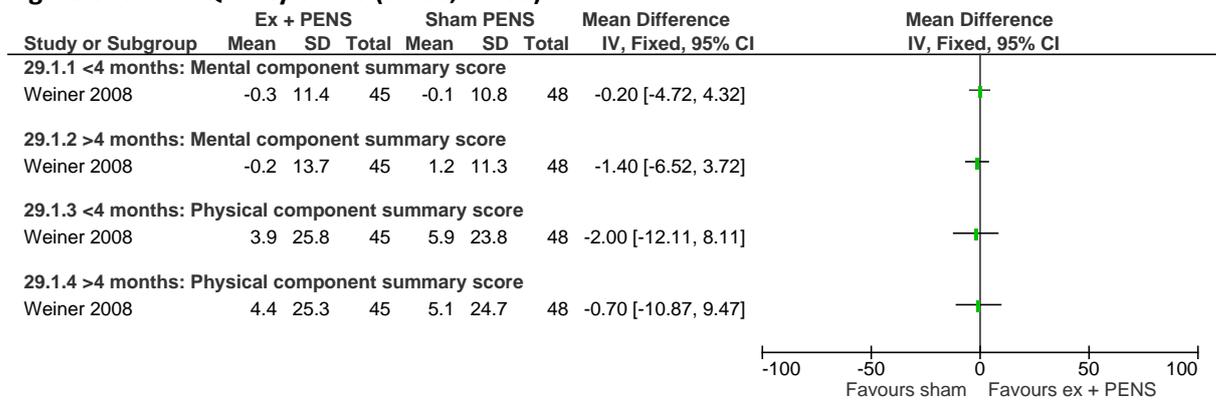


Figure 376: Pain severity (McGill, 0-78)

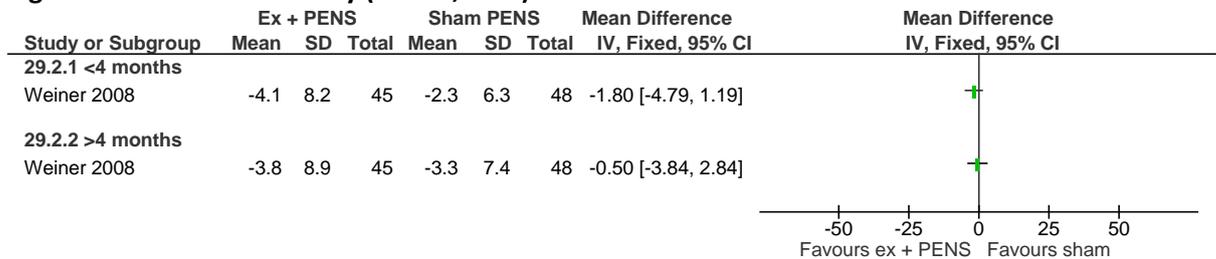
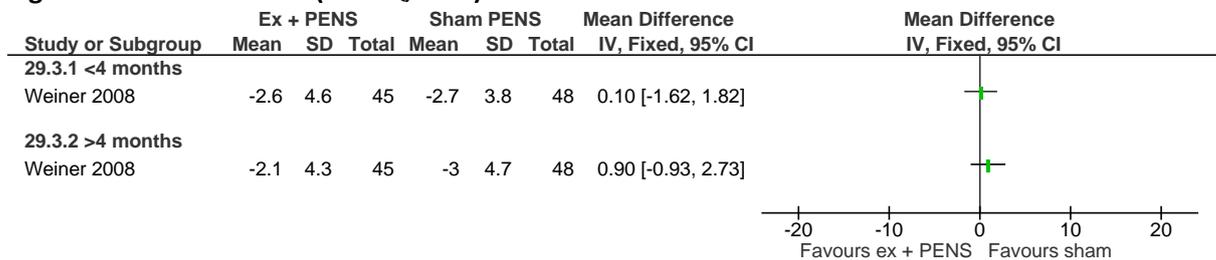


Figure 377: Function (RMDQ, 0-24)



K.5374

Exercise (biomech + aerobic) + electrotherapy (PENS) compared to electrotherapy (PENS)

Figure 378: Quality of life (SF-36, 0-100)

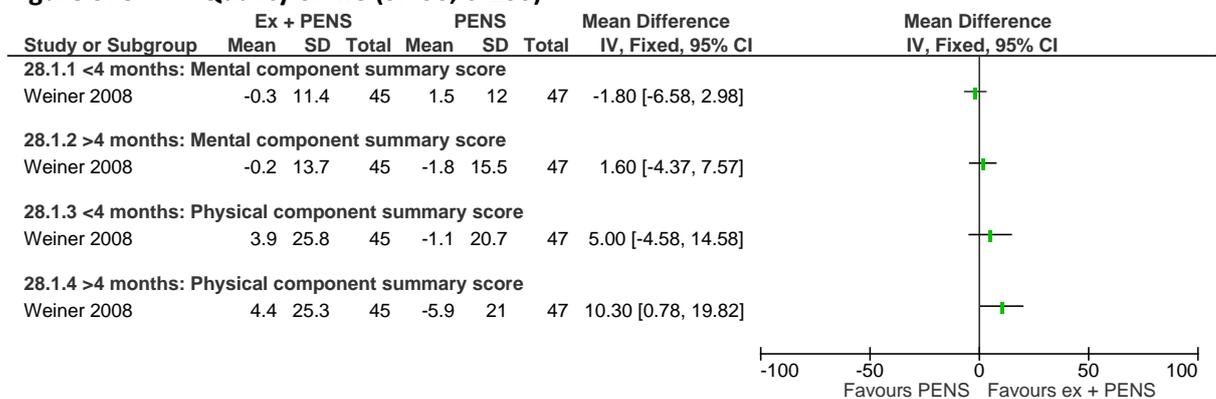


Figure 379: Pain severity (McGill, 0-78)

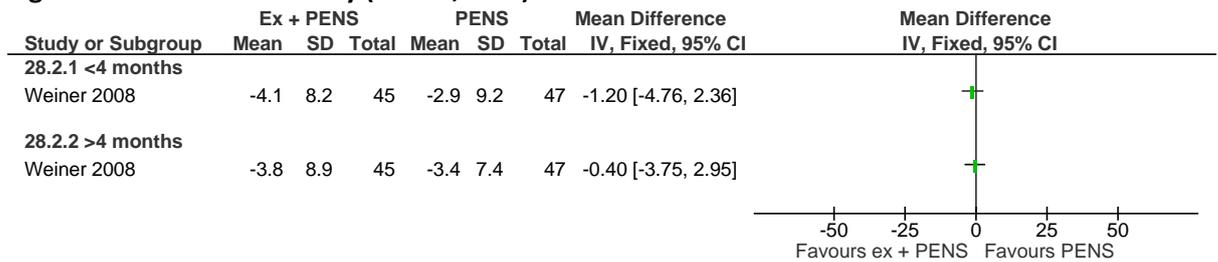
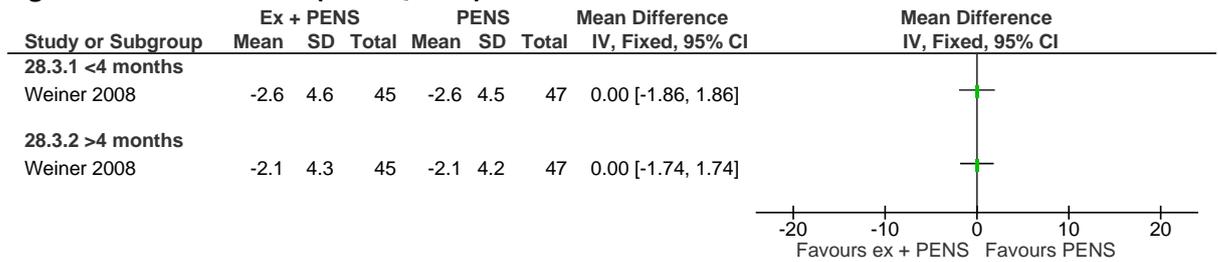
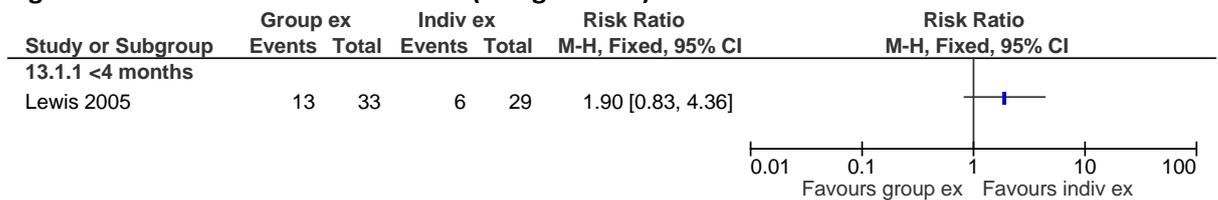


Figure 380: Function (RMDQ, 0-24)



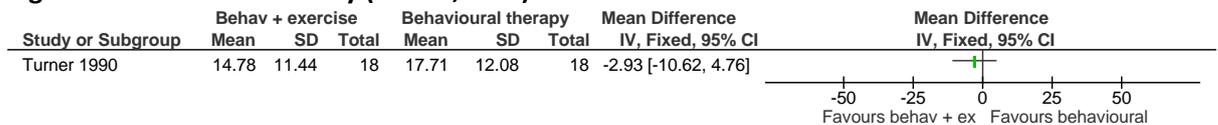
K.5335 **Group exercise (mixed: biomechanical + aerobic) + self-management (education) + manual therapy (manipulation) compared to individual exercise (biomechanical) + self-management (education) + manual therapy (manipulation)**
339
340

Figure 381: Healthcare utilisation (analgesic use) ≤ 4 months



K.5346 **Exercise (aerobic) + psychological intervention (behavioural therapy) compared to psychological intervention (behavioural therapy)**
342

Figure 382: Pain severity (McGill, 0-78) ≤ 4 months



K.5347 **Exercise (aerobic) + psychological intervention (CBT) + self-management (education) compared to psychological intervention (CBT) + self-management (education)**
344

Figure 383: Pain severity (0-100 NRS converted to 0-10) ≤ 4 months

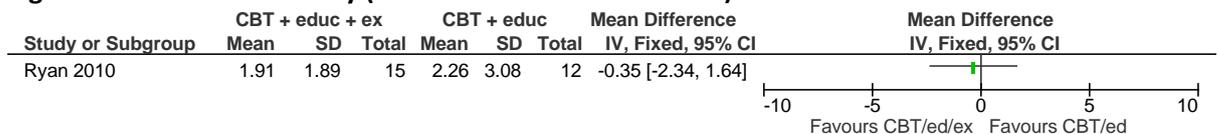
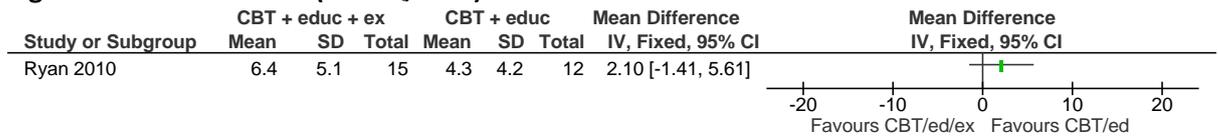


Figure 384: Function (RMDQ, 0-24) ≤ 4 months



K.5.258 346 Exercise (biomechanical - pilates) + self-management (education) + compared to self-management (education)

Figure 385: Pain severity (NRS, 0-10)

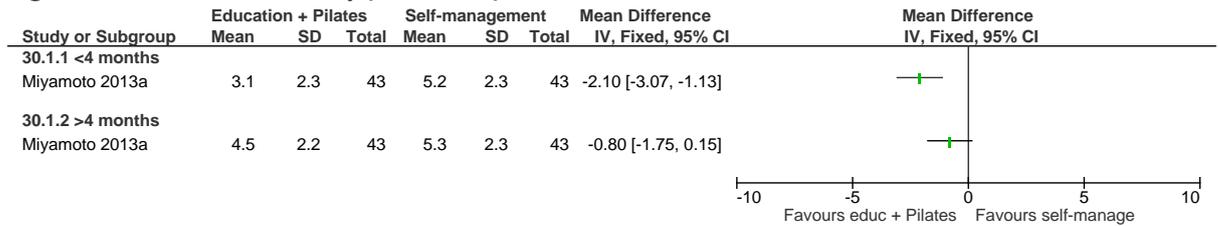
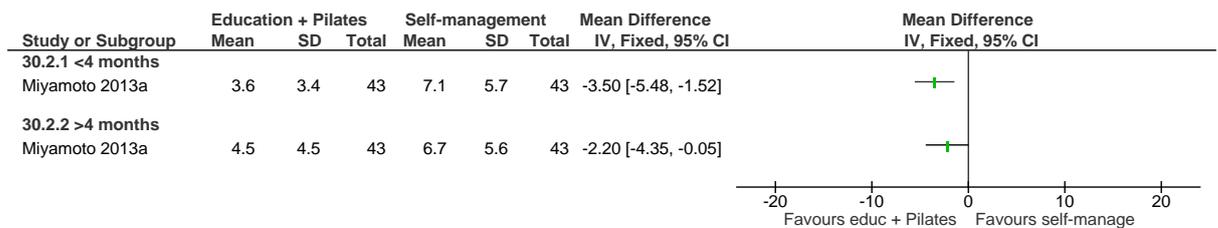


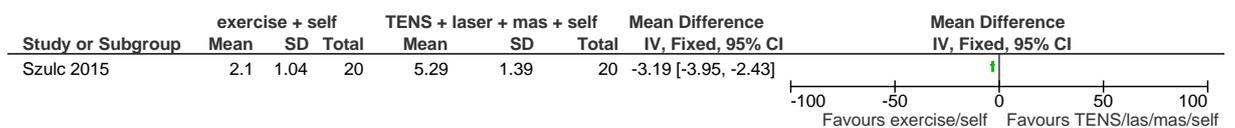
Figure 386: Function (RMDQ, 0-24)



K.5.26 Low back pain with sciatica population

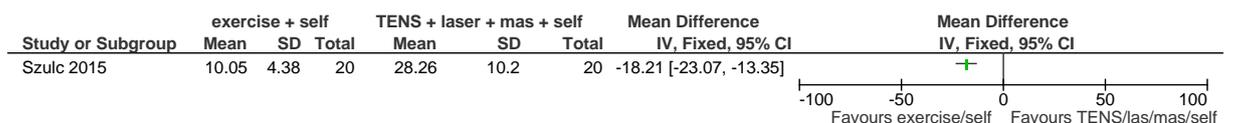
K.5.261 349 Exercise (biomechanical) + self-management (unsupervised exercise) compared to TENS + laser + massage + self-management (unsupervised exercise)

350 Figure 387: Pain (VAS 0-10) <4 months



351

352 Figure 388: Function (revised ODI 0-100) <4 months



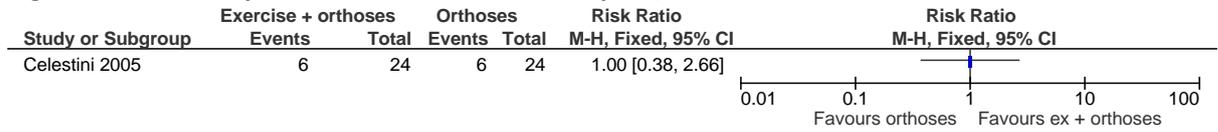
353

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K.537 Low back pain with/without sciatica population

K.53761 Exercise + orthoses compared to orthoses

Figure 389: Responder criteria (remission of pain) > 4 months



K.5372 Exercise + self-management (education) compared to self-management

Figure 390: Number improving on Disability index > 4 months

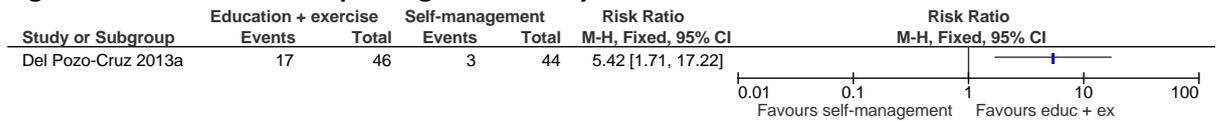
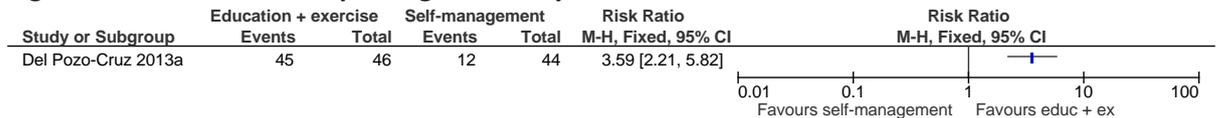
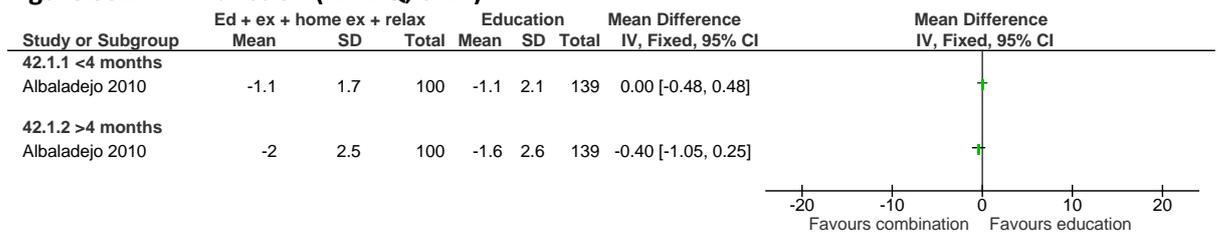


Figure 391: Number improving on Quality of life index > 4 months



K.53783 Exercise + self-management (mixed modality - home exercise + education) compared to self-management (education)
359

Figure 392: Function (RMDQ, 0-24)



K.53704 Exercise (biomechanical) + self-management (home exercise) compared to self-management (self-care advice based on the Back Book)
361

Figure 393: Quality of life (15D, 0-1)

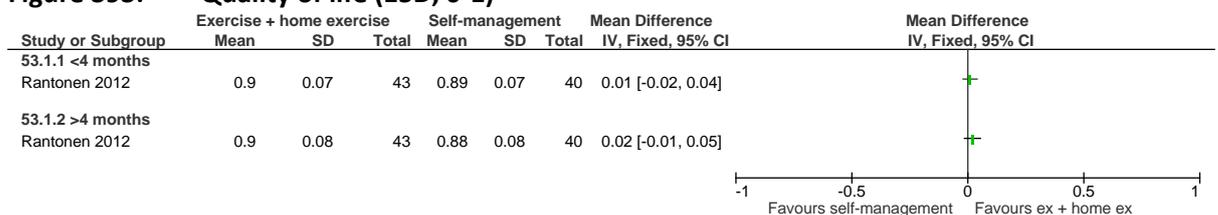


Figure 394: Pain (0-100 VAS converted to 0-10)

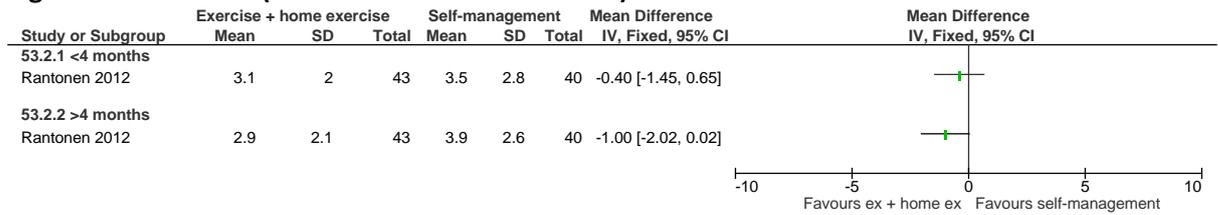
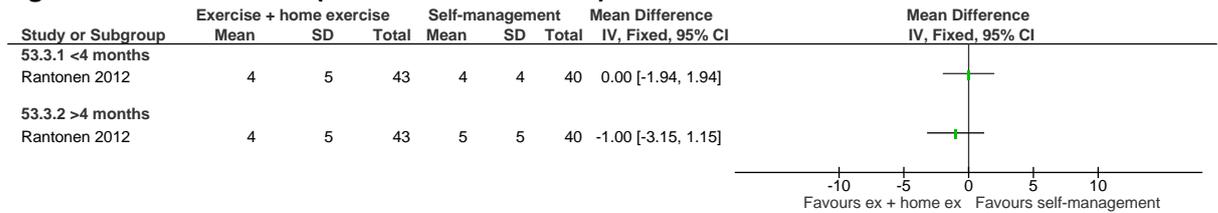


Figure 395: Function (Roland Morris 18 item)



K.5.375 363 Exercise (biomechanical - core stability) + manual therapy (massage) compared to manual therapy (massage)

Figure 396: Pain severity (VAS, 0-10) ≤ 4 months

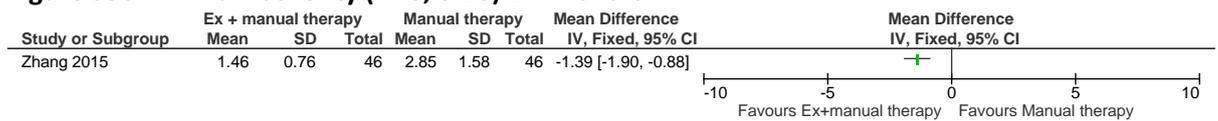


Figure 397: Function (ODI, 0-100) ≤ 4 months

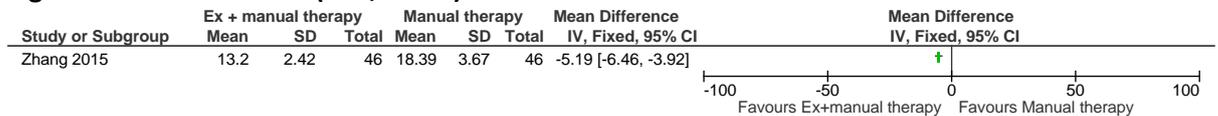
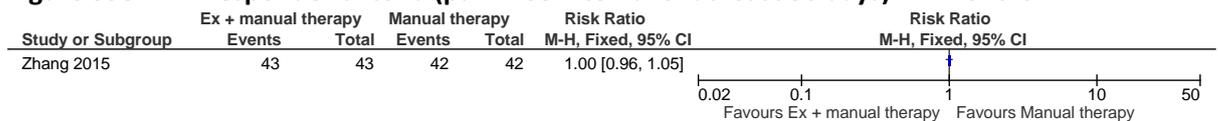


Figure 398: Responder criteria (pain free interval of at least 30 days) > 4 months

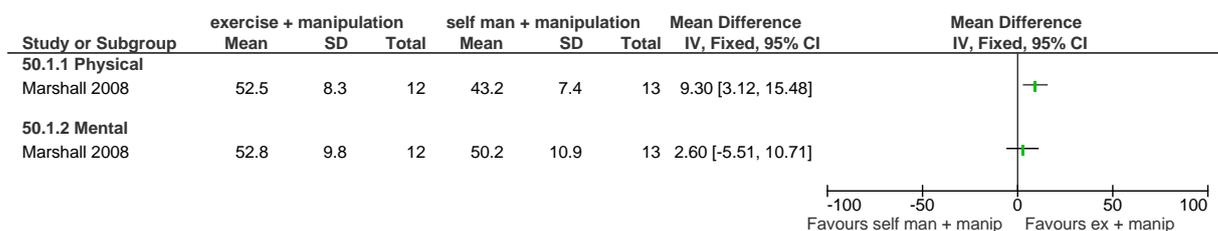


364

K.5.376 366 Exercise (core stability) + manual therapy (manipulation) compared to self-management (advice to stay active) + manual therapy (manipulation)

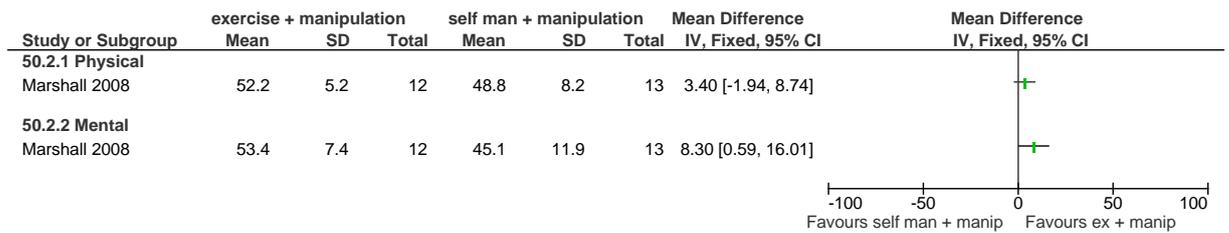
367

Figure 399: Quality of life (SF-12 0-100) ≤4 months



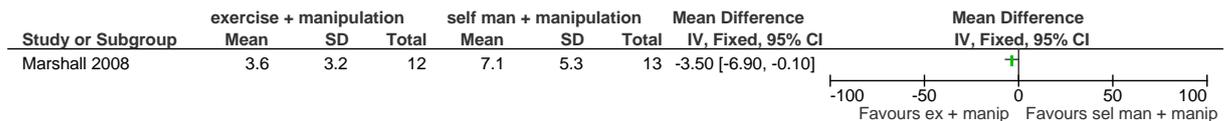
369

370 **Figure 400: Quality of life (SF-12 0-100) 4 months – 1 year**



371

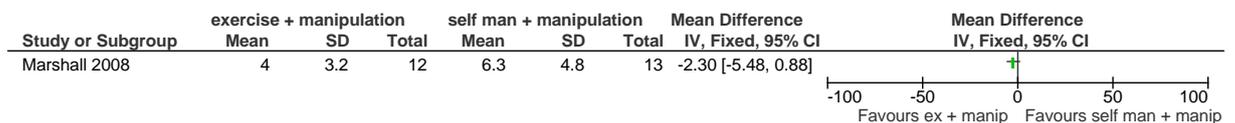
372 **Figure 401: Pain (McGill Pain Questionnaire – sensory 0-33) ≤4 months**



373

374

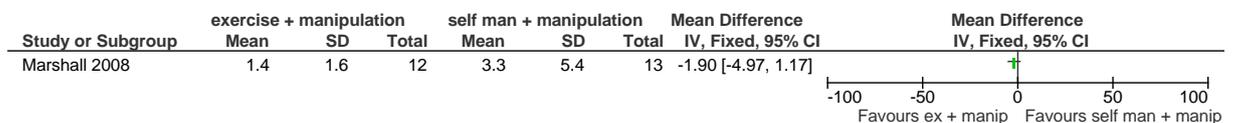
375 **Figure 402: Pain (McGill Pain Questionnaire – sensory 0-33) 4 months – 1 year**



376

377

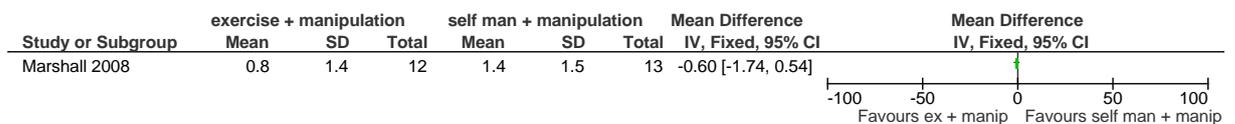
378 **Figure 403: Pain (McGill Pain Questionnaire – affective 0-12) ≤4 months**



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381 **Figure 404: Pain (McGill Pain Questionnaire – affective 0-12) 4 months – 1 year**



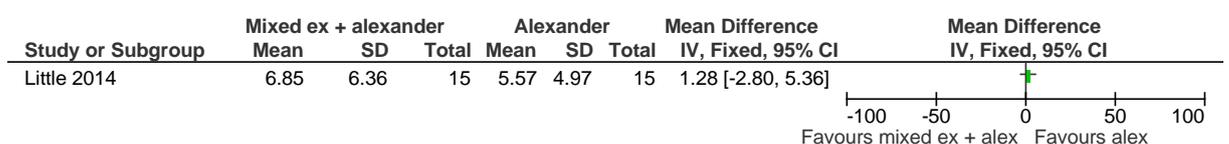
382

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K.53857 **Mixed exercise (biomechanical + aerobic) + Alexander technique compared to Alexander technique**

386 **Figure 405: Function (RMDQ 0-24) <4 months**



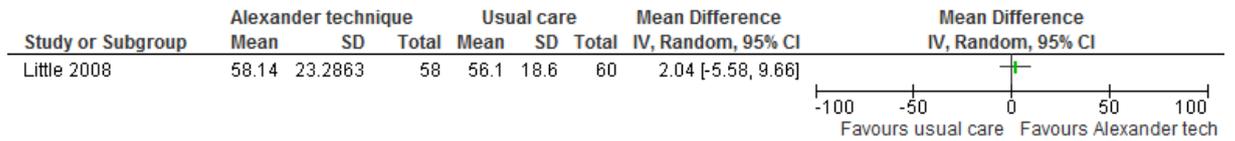
387

388

K&6 Postural therapies

K&6.1 Alexander technique (6 lessons) versus usual care (without sciatica population)

Figure 406: Quality of life: SF-36 Physical (1 year)



391

Figure 407: Quality of life: SF-36 Mental (1 year)

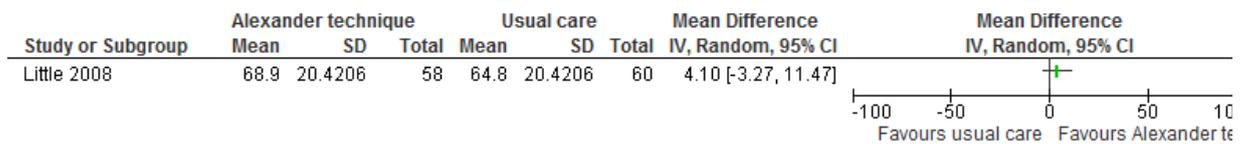


Figure 408: Von Korff Pain Scale 0-10 (1 year)

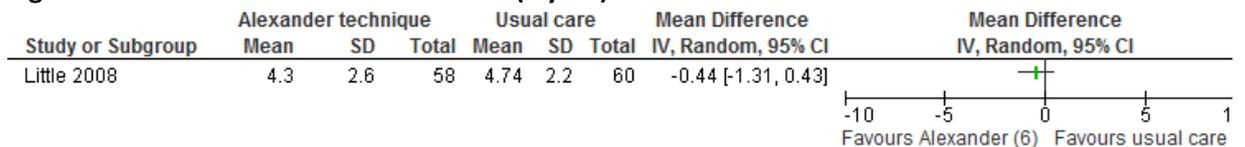


Figure 409: Roland Morris Disability Scale (1 year)

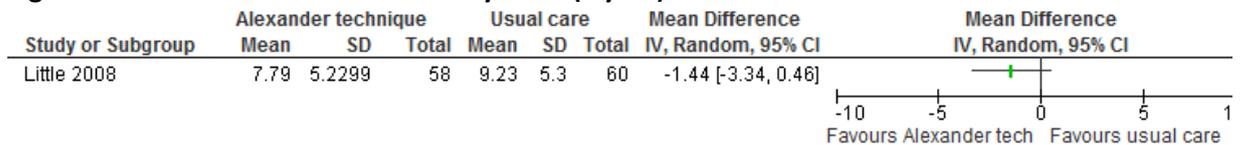


Figure 410: Primary care contacts (1 year)

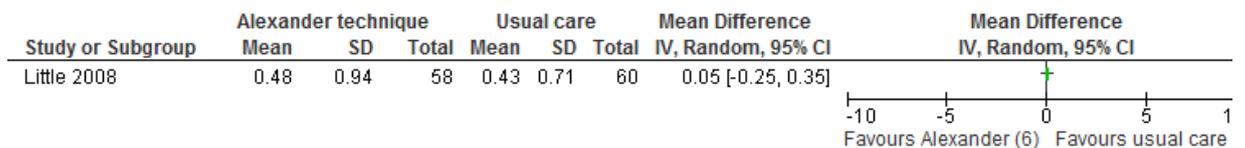


Figure 411: Prescriptions (1 year)



K02 Alexander technique (24 lessons) versus usual care (without sciatica population)

Figure 412: Quality of life: SF-36 Physical (1 year)

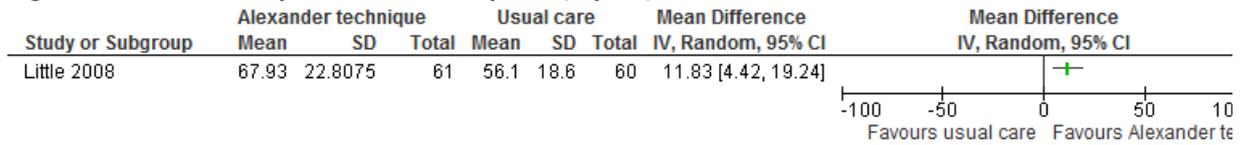


Figure 413: Quality of life: SF-36 Mental (1 year)

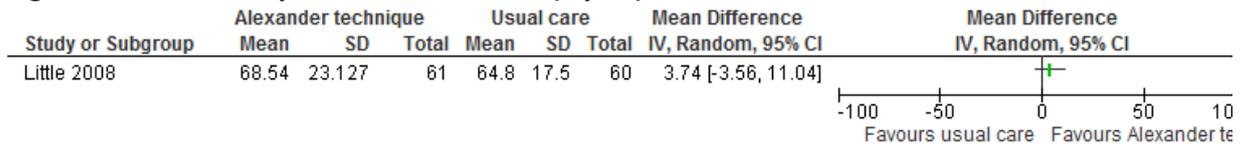


Figure 414: Von Korff Pain Scale 0-10 (1 year)

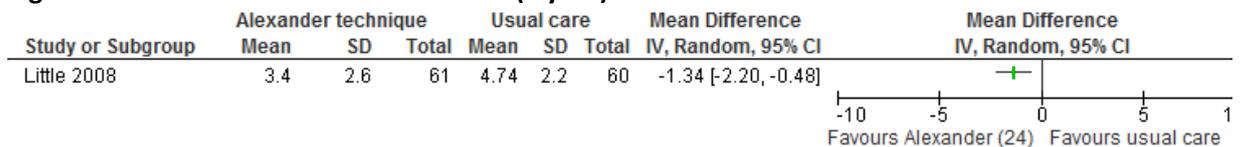


Figure 415: Roland Morris Disability Scale (1 year)

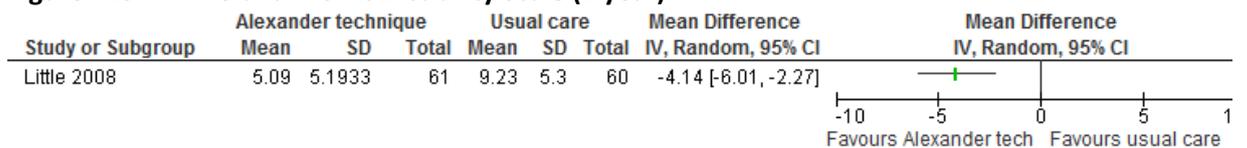


Figure 416: Primary care contacts (1 year)

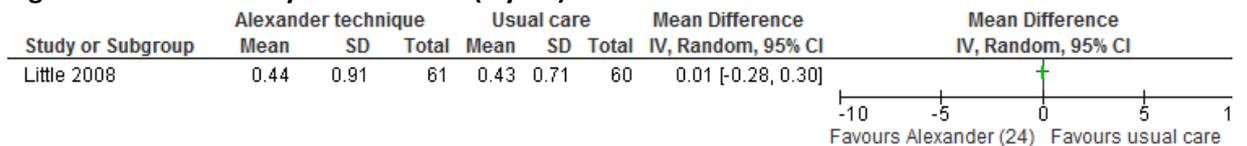
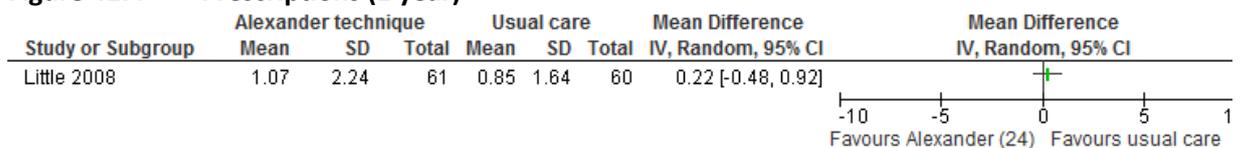


Figure 417: Prescriptions (1 year)



K03 Alexander technique (6 lessons) versus exercise prescription (without sciatica population)

Figure 418: Quality of life: SF-36 Physical (1 year)

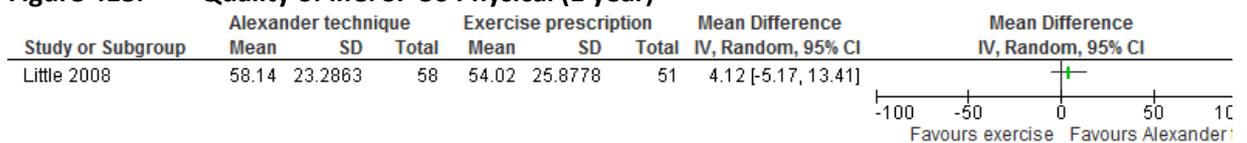


Figure 419: Quality of life: SF-36 Mental (1 year)

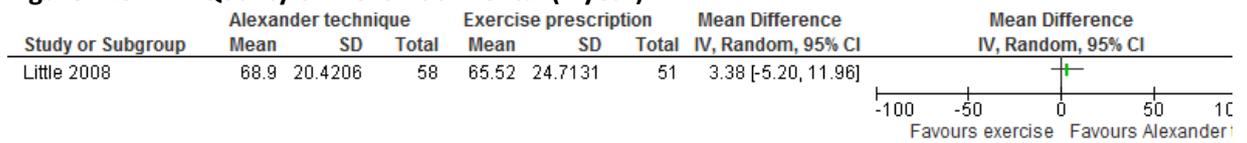
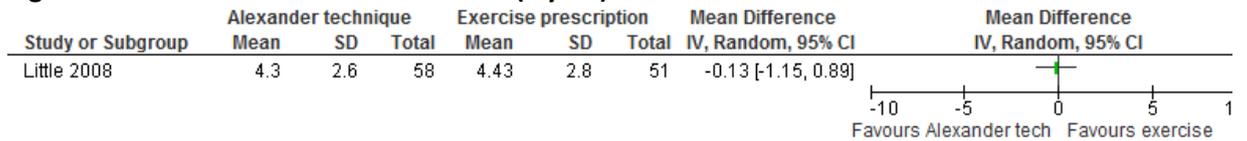


Figure 420: Von Korff Pain Scale 0-10 (1 year)



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Figure 421: Roland Morris Disability Scale (1 year)

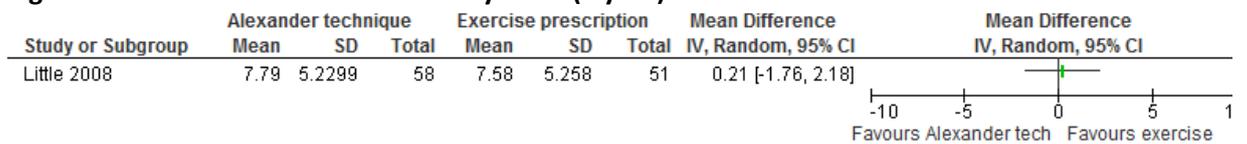


Figure 422: Primary care contacts (1 year)

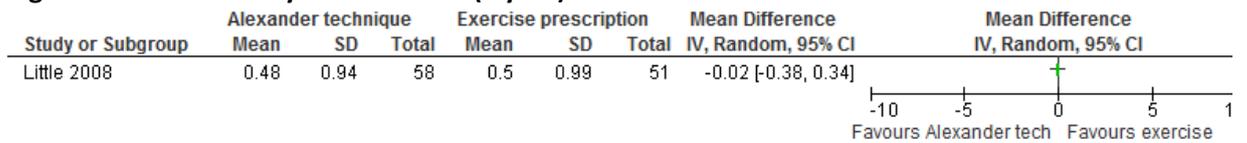
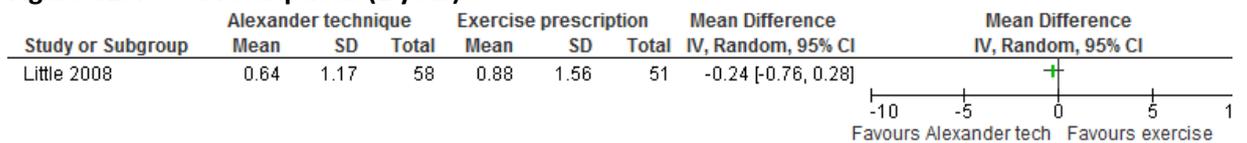


Figure 423: Prescriptions (1 year)



K054 Alexander technique (24 lessons) versus exercise prescription (without sciatica population)

Figure 424: Quality of life: SF-36 Physical (1 year)

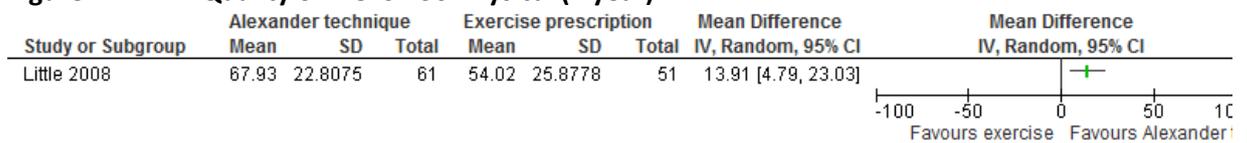


Figure 425: Quality of life: SF-36 Mental (1 year)

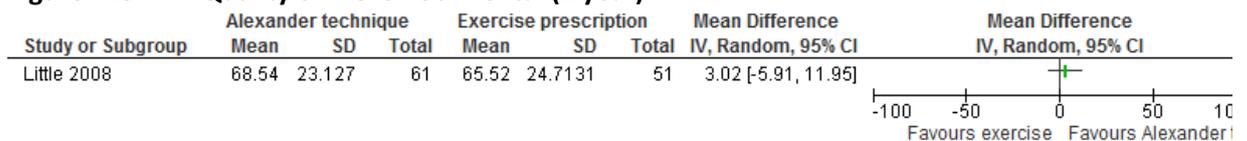


Figure 426: Von Korff Pain Scale 0-10 (1 year)

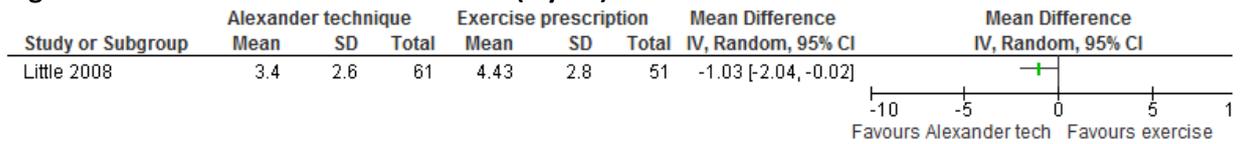


Figure 427: Roland Morris Disability Scale (1 year)

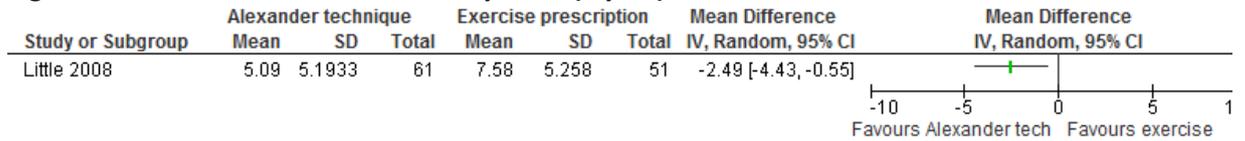


Figure 428: Primary care contacts (1 year)

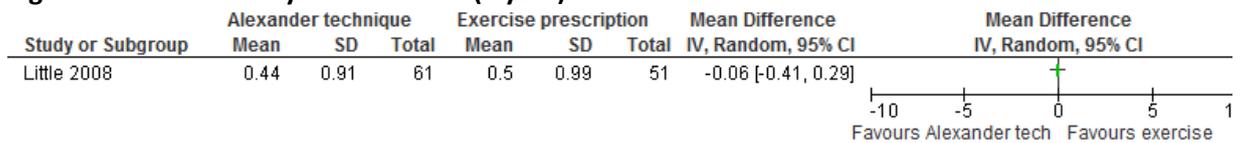
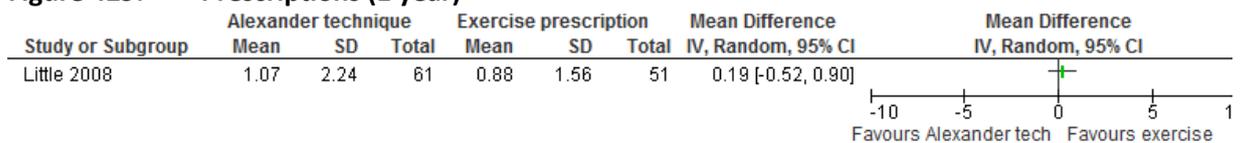


Figure 429: Prescriptions (1 year)



366 Alexander technique (24 lessons) versus Alexander technique (6 lessons) (without sciatica population)
397

Figure 430: Quality of life: SF-36 Physical (1 year)

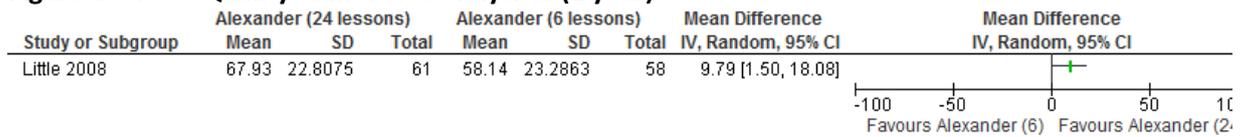


Figure 431: Quality of life: SF-36 Mental (1 year)

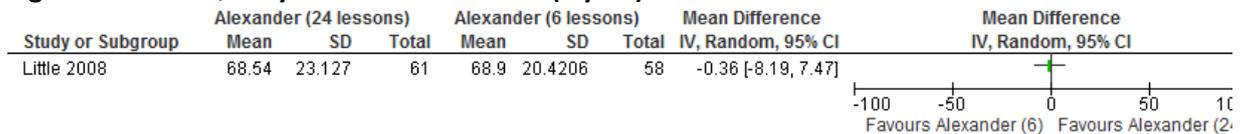


Figure 432: Von Korff Pain Scale 0-10 (1 year)

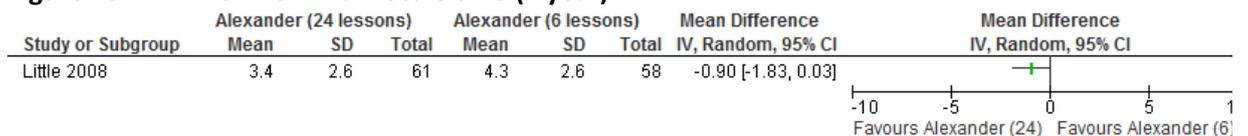


Figure 433: Roland Morris Disability Scale (1 year)

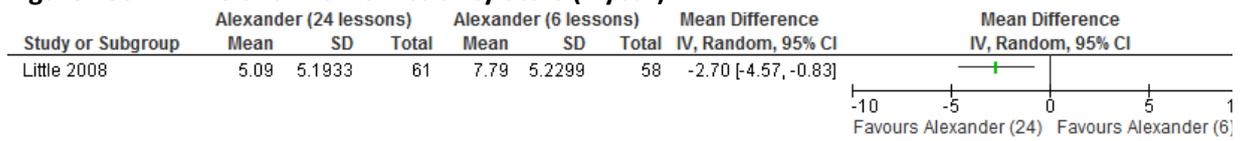


Figure 434: Primary care contacts (1 year)

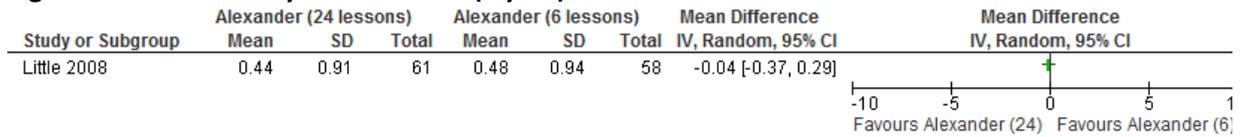
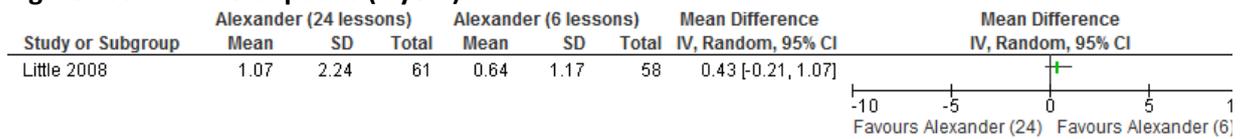


Figure 435: Prescriptions (1 year)



K366 Alexander technique (6 lessons) versus massage (without sciatica population)

Figure 436: Quality of life: SF-36 Physical (1 year)

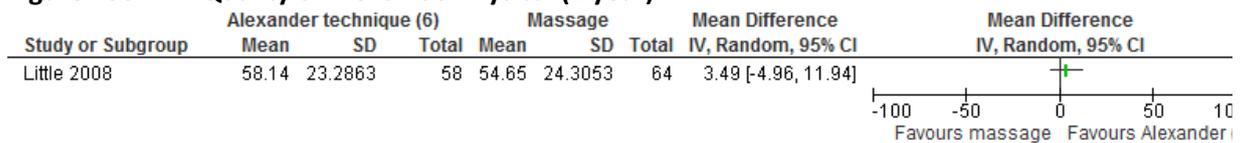


Figure 437: Quality of life: SF-36 Mental (1 year)

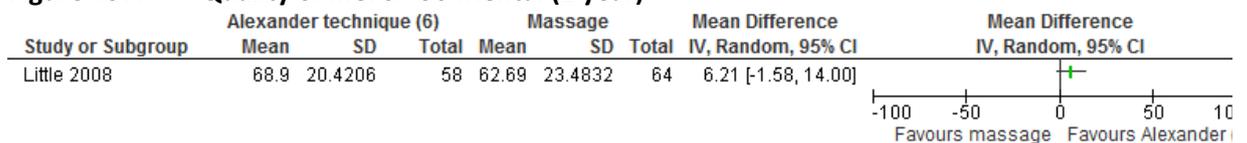


Figure 438: Von Korff Pain Scale 0-10 (1 year)

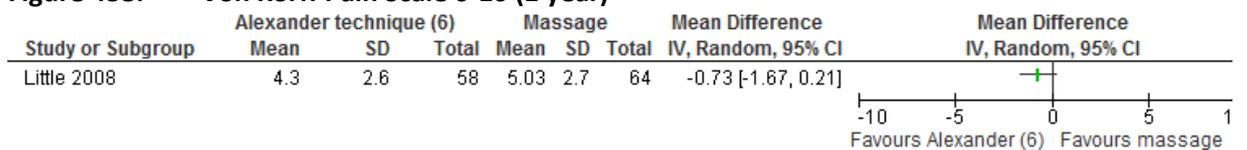


Figure 439: Roland Morris Disability Scale (1 year)

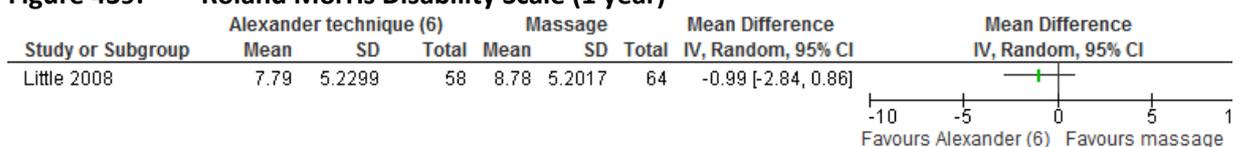


Figure 440: Primary care contacts (1 year)

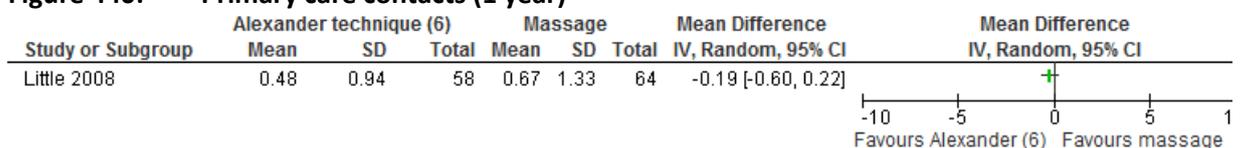
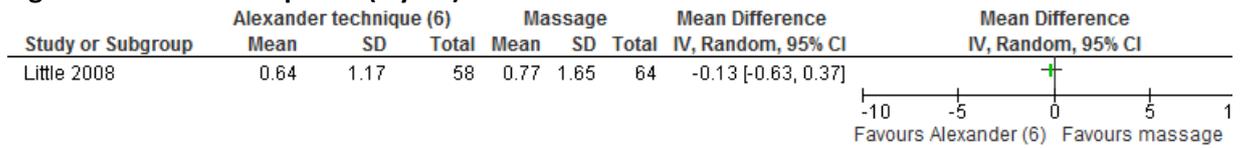


Figure 441: Prescriptions (1 year)



K3697 Alexander technique (24 lessons) versus massage (without sciatica population)

Figure 442: Quality of life: SF-36 Physical (1 year)

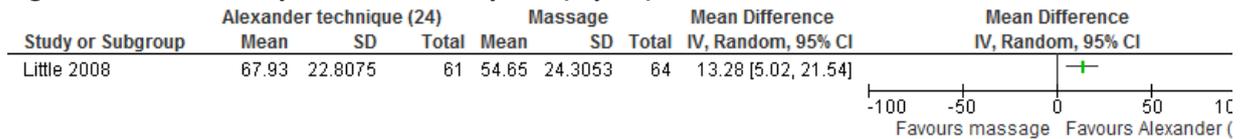


Figure 443: Quality of life: SF-36 Mental (1 year)

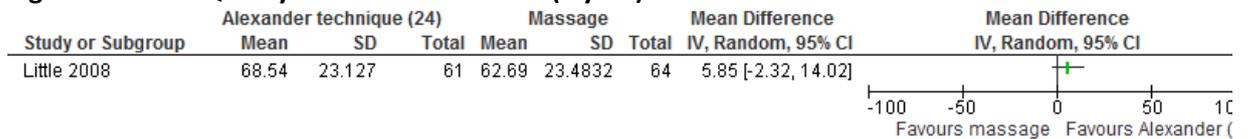


Figure 444: Von Korff Pain Scale 0-10 (1 year)

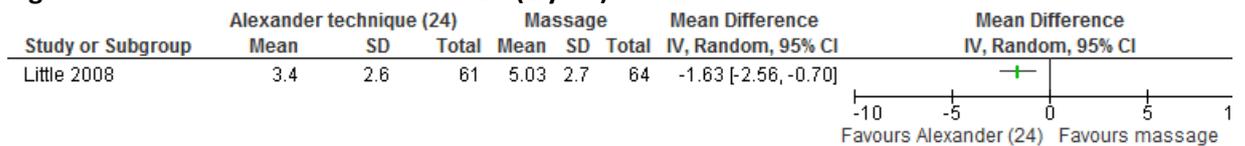


Figure 445: Roland Morris Disability Scale (1 year)

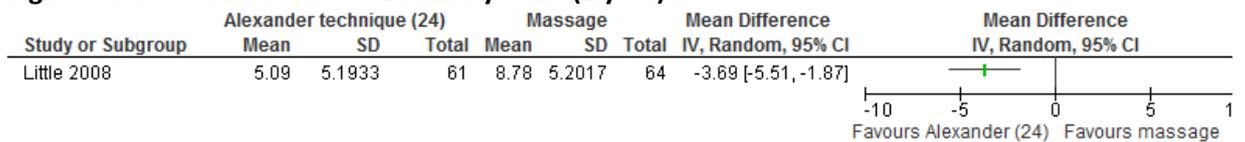
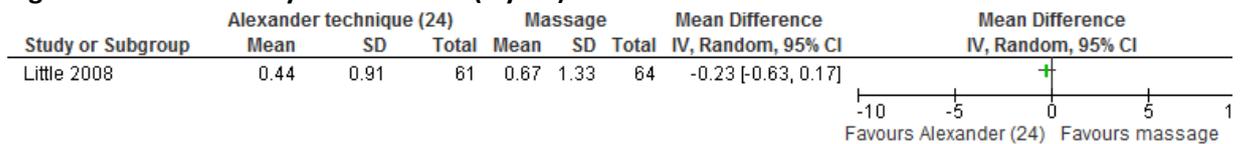
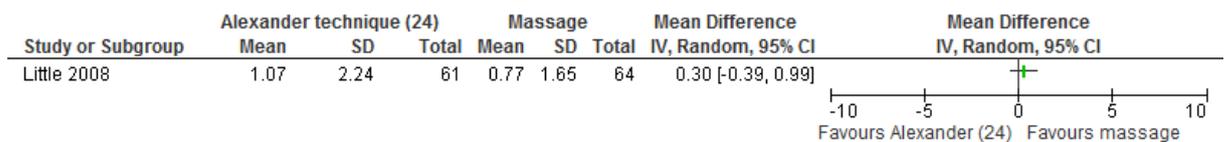


Figure 446: Primary care contacts (1 year)



400 Figure 447: Prescriptions (1 year)



401

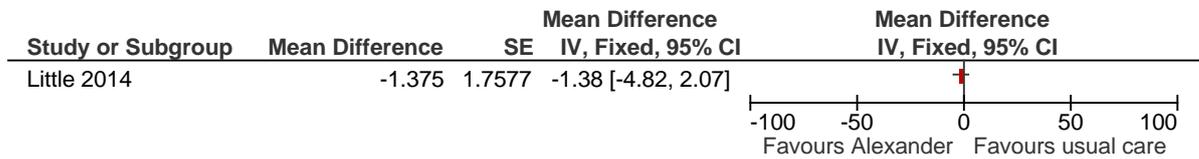
402

403

404 Alexander technique (10 sessions) versus usual care (overall population)

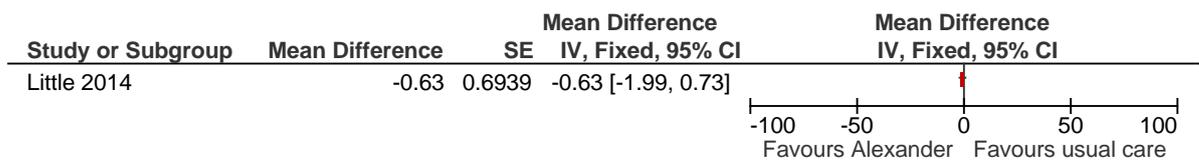
405

406 **Figure 448: Function (RMDQ 0-24) <4 months [mean difference from control]**



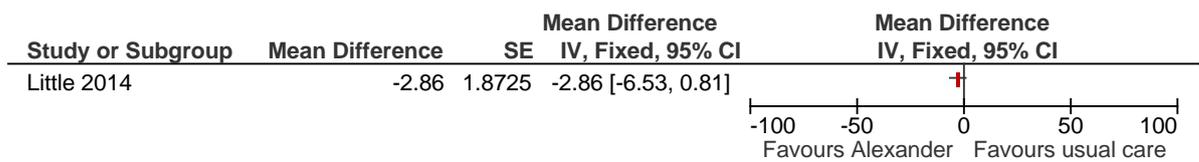
407

408 **Figure 449: Pain (von Korff 0-100) <4 months [mean difference from control]**



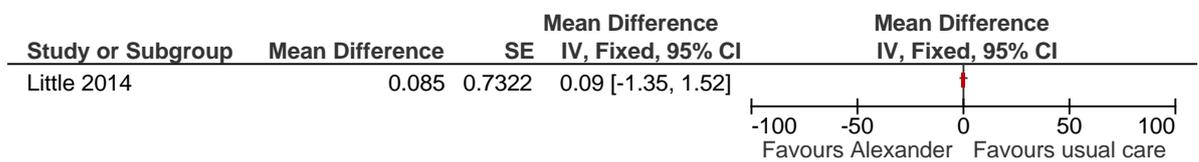
409

410 **Figure 450: Function (RMDQ 0-24) <4 months [mean difference from control]**



411

412 **Figure 451: Pain (von Korff 0-100) <4 months [mean difference from control]**

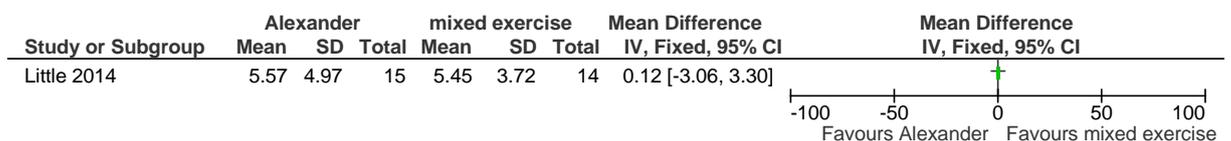


413

414

415 Alexander technique (10 sessions) versus mixed exercise (overall population)

416 **Figure 452: Function (RMDQ 0-24) <4 months**

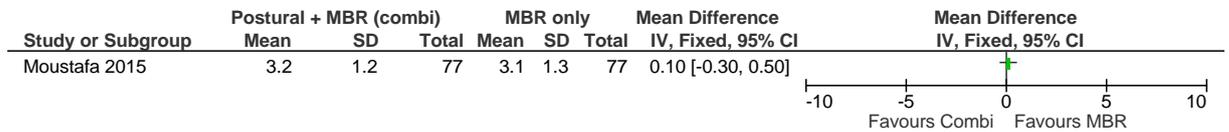


417

K.6.110 Combined interventions – postural therapy adjunct

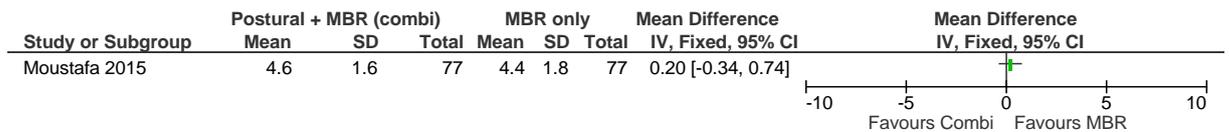
K.6.4091 Postural therapy + MBR versus MBR only (with sciatica population)

420 **Figure 453: Back pain severity (NRS, 0-10) < 4 months**



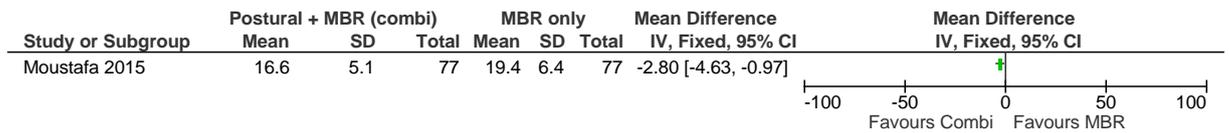
421

422 **Figure 454: Leg pain severity (NRS, 0-10) < 4 months**



423

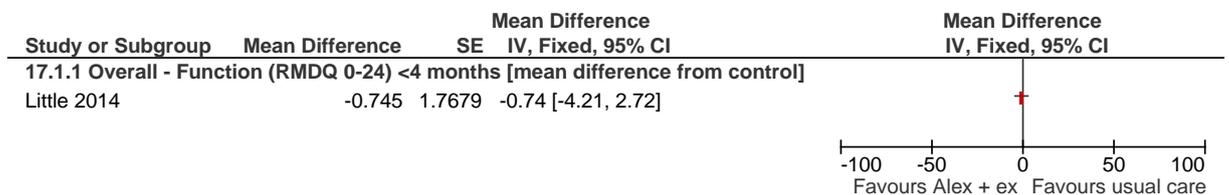
424 **Figure 455: Function (ODI, 0-100) < 4 months**



425

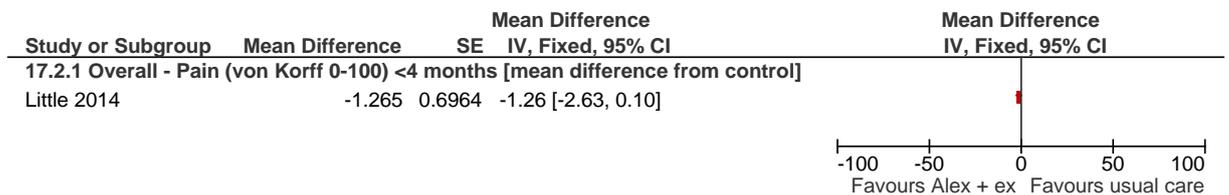
K.6.4092 Alexander technique (10 sessions) + mixed exercise versus usual care (overall population)

427 **Figure 456: Function (RMDQ 0-24) <4 months [mean difference from control]**



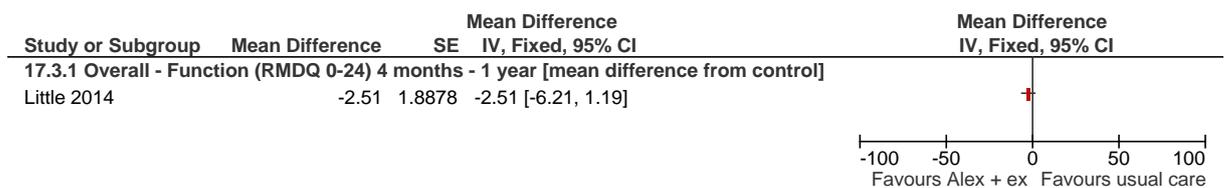
428

429 **Figure 457: Pain (von Korff 0-100) <4 months [mean difference from control]**



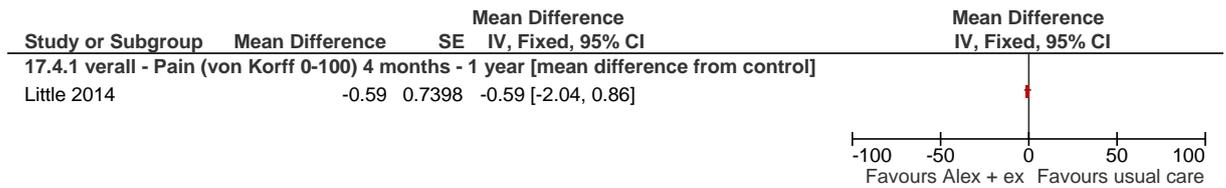
430

431 **Figure 458: Function (RMDQ 0-24) <4 months [mean difference from control]**



432

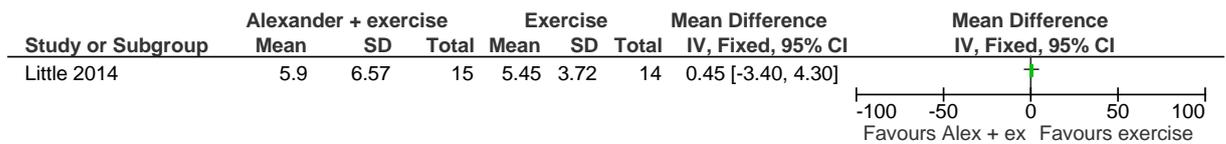
433 **Figure 459: Pain (von Korff 0-100) <4 months [mean difference from control]**



434

K.6435 **Alexander technique (10 sessions) + mixed exercise versus mixed exercise (overall population)**

436 **Figure 460: Function (RMDQ 0-24) <4 months**



437

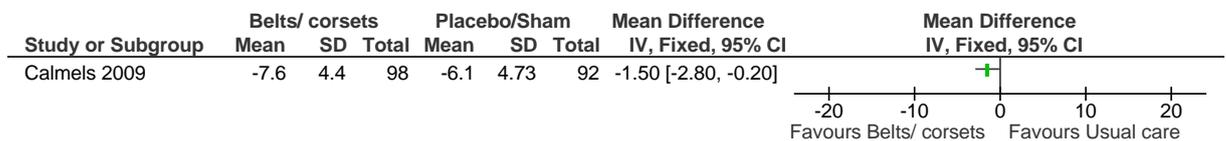
438

K.67 **Orthotics**

K.701 **Lumbar belts versus usual care (low back pain without sciatica)**

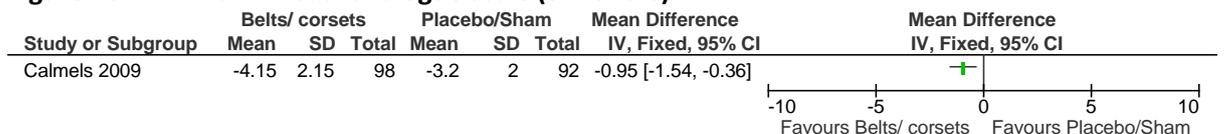
441

Figure 461: Function: EIFEL (Roland Morris disability questionnaire) (3 months)

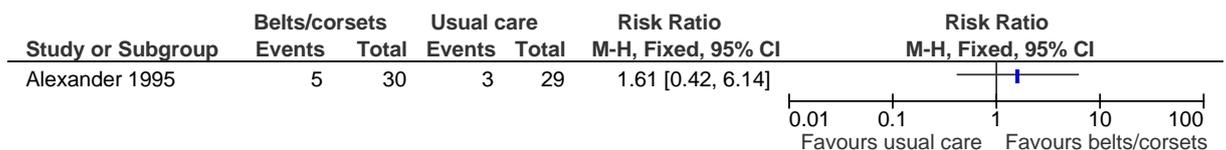


442

Figure 462: Pain: Visual analogue scale (3 months)



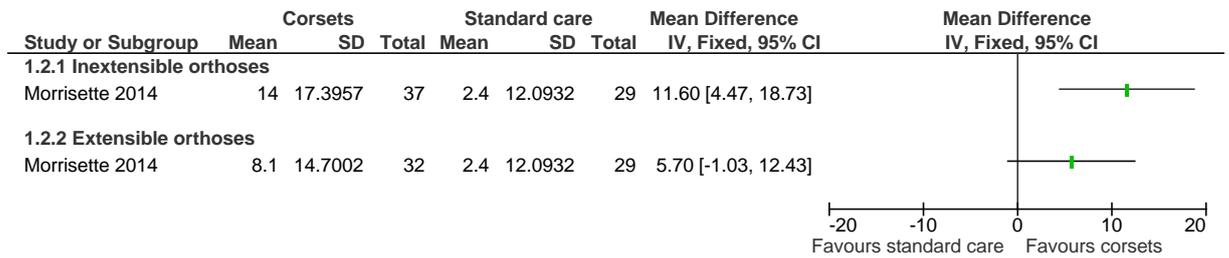
443 **Figure 463: Responder criteria (Pain: completely improved) (3 months)**



444

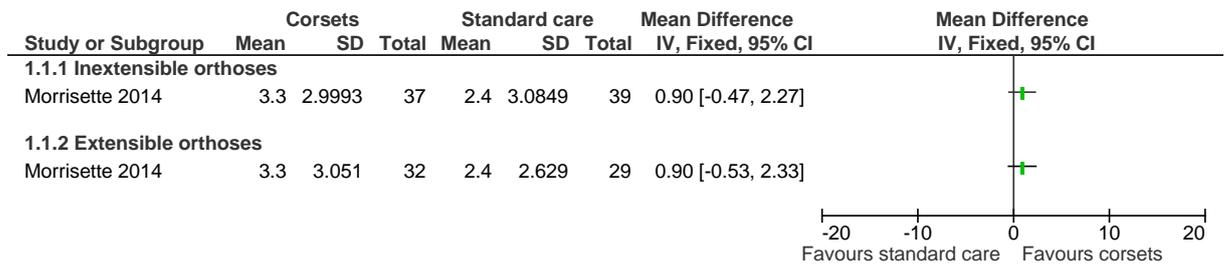
472 Corsets versus usual care (low back pain without sciatica)

446 **Figure 464: Function: improvement in Oswestry Disability Index (2 weeks)**



447

448 **Figure 465: Pain: improvement in Numerical Pain Rating Scale (2 weeks)**



449

473 Belts/corsets versus manipulation (low back pain without sciatica)

Figure 466: Function: ODI (3 weeks)

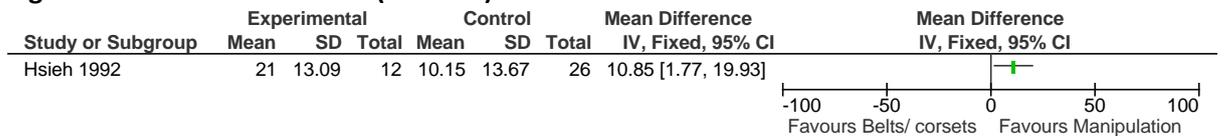


Figure 467: Pain: Visual analogue scale (3 weeks)

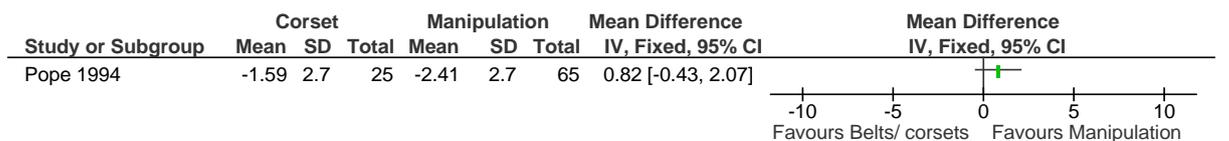
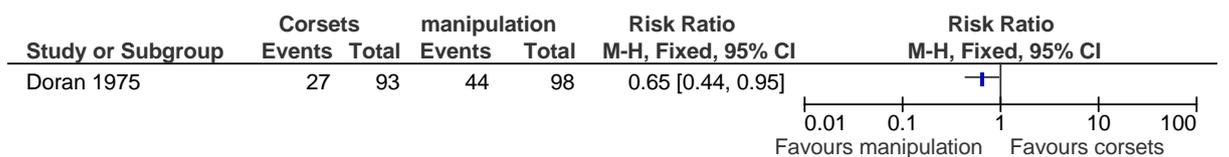


Figure 468: Responder criteria (pain markedly improved and completely improved) (3 months)



K474 Belts/ corsets versus massage (low back pain without sciatica)

Figure 469: Function: ODI (3 weeks)

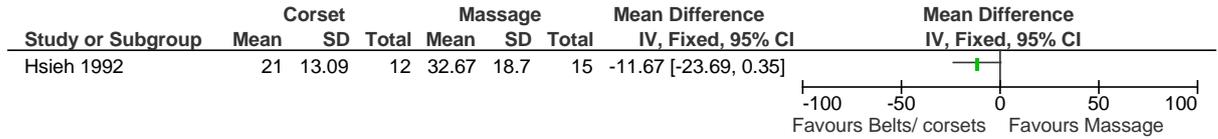
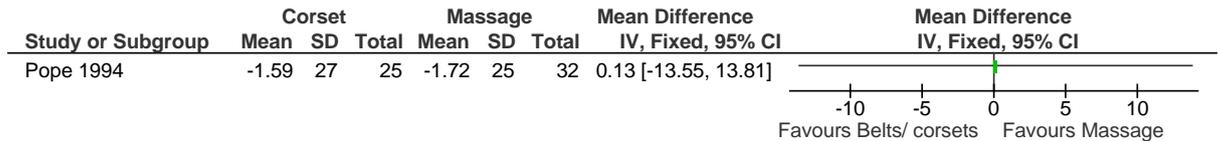
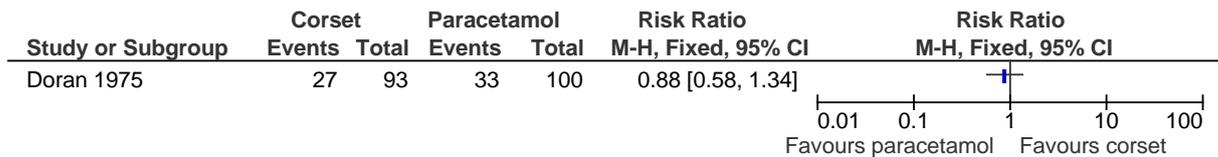


Figure 470: Pain: Visual analogue scale (3 weeks)



K475 Corsets versus non-opioid analgesic (low back pain without sciatica)

453 Figure 471: Responder criteria (pain markedly improved and completely improved) (3 months)



454

K475 Foot orthotics versus placebo/sham (low back pain with sciatica)

Figure 472: Function: ODI (4 weeks)

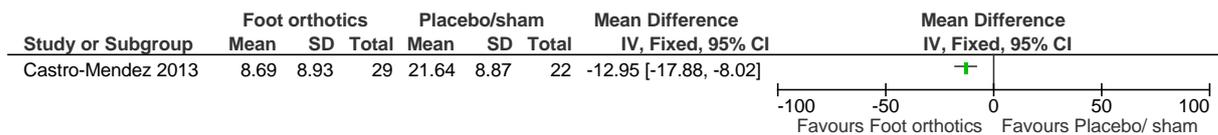
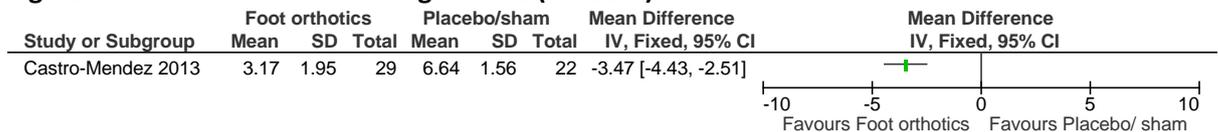


Figure 473: Pain: Visual analogue scale (4 weeks)



Note: Error in the study: reports 0-100 pain scale for pain but should be 0-10

K4767 **Rocker sole shoes versus placebo/sham (flat sole shoes) (low back pain without sciatica)**

Figure 474: Function: Roland Morris disability questionnaire (6 weeks)

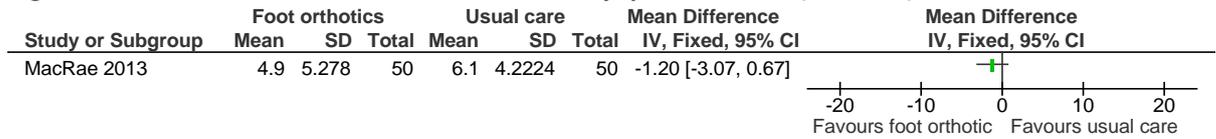


Figure 475: Function: Roland Morris disability questionnaire (12 months)

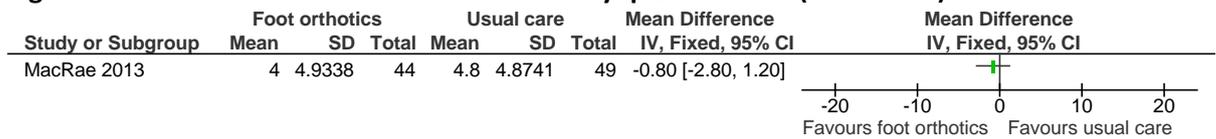


Figure 476: Pain: Numerical rating scale (6 weeks)

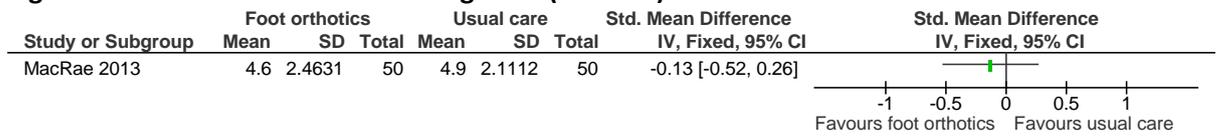


Figure 477: Pain: Numerical rating scale (12 months)

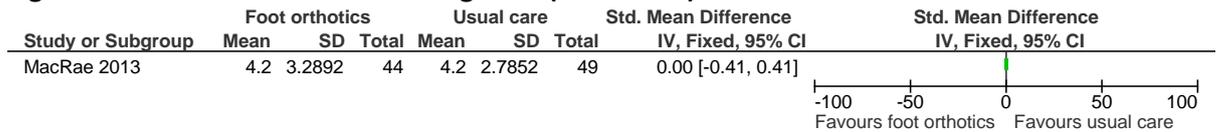


Figure 478: Anxiety: Hospital anxiety and depression (6 weeks)

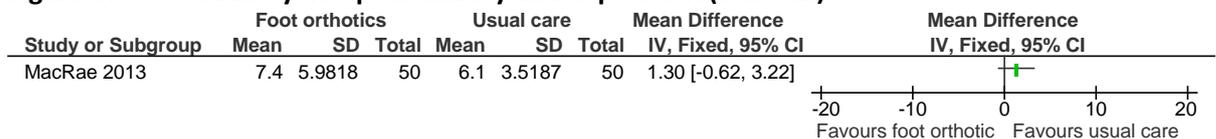


Figure 479: Anxiety: Hospital anxiety and depression (12 months)

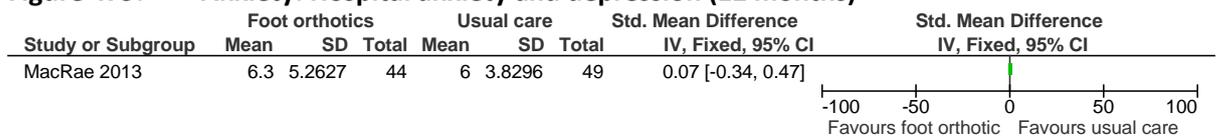


Figure 480: Depression: Hospital anxiety and depression (6 weeks)

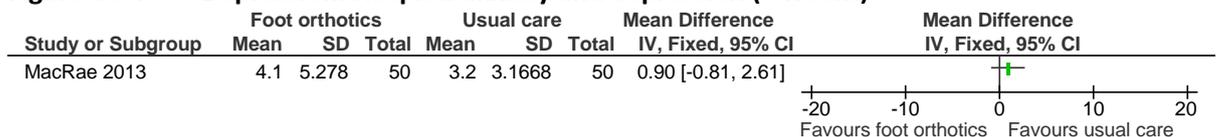


Figure 481: Depression: Hospital anxiety and depression (12 months)

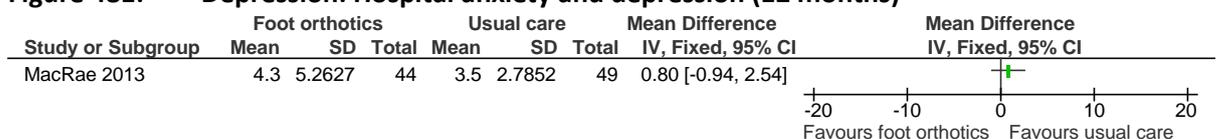


Figure 482: Quality of life: EQ-5D-3L (6 weeks)

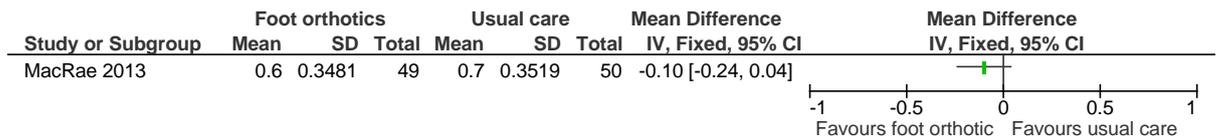
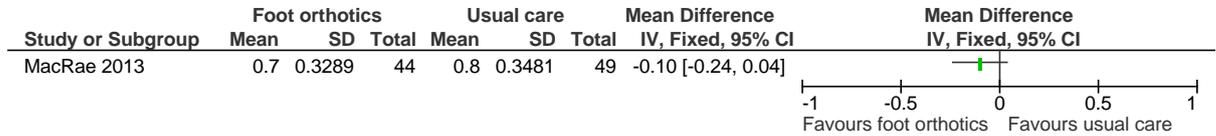
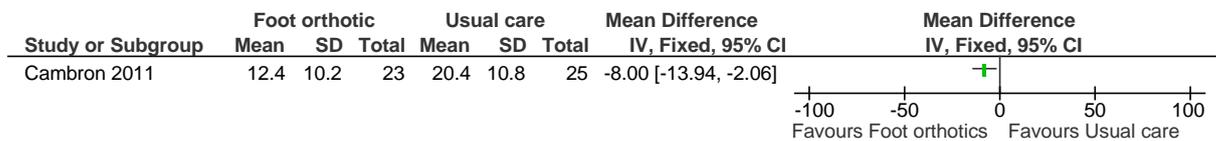


Figure 483: Quality of life: EQ-5D-3L (12 months)



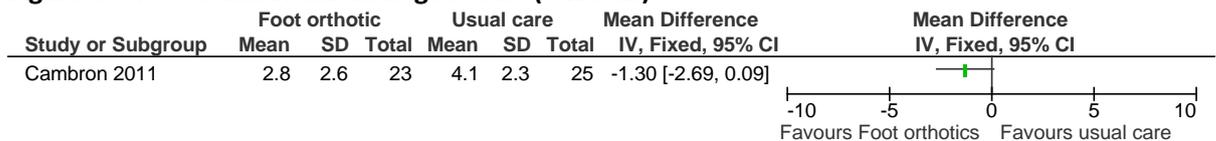
K.7.78 Foot orthotics versus usual care (low back pain with sciatica)

Figure 484: Function: ODI (6 weeks)



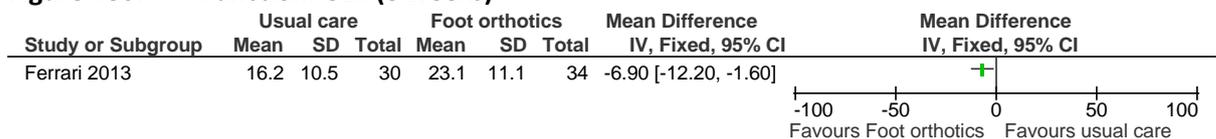
458

Figure 485: Pain: visual analogue scale (6 weeks)



K.7.79 Foot orthotics versus usual care (non-randomised study) (low back pain with sciatica)

Figure 486: Function: ODI (8 weeks)



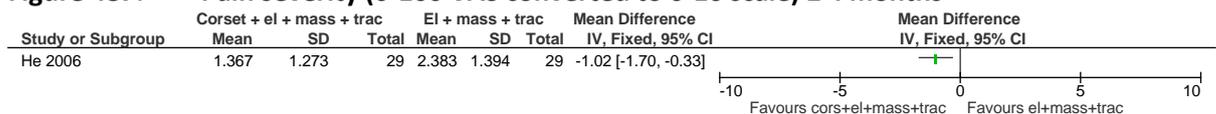
K.7.80 Low back pain with or without sciatica

461

K.7.80.1 Orthotics (corset) + electrotherapy + manual therapy (massage + traction) compared to electrotherapy + manual therapy (massage + traction)

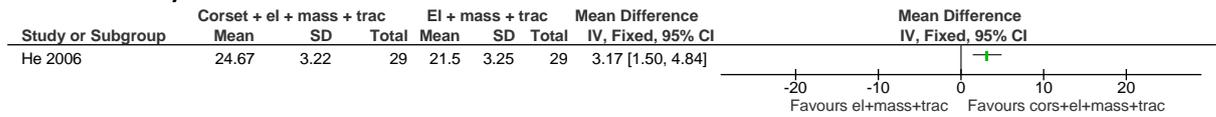
463

Figure 487: Pain severity (0-100 VAS converted to 0-10 scale) ≤ 4 months



464

Figure 488: Function (Japanese Orthopaedics Academic Association lumbar disease grade, 0-29) ≤ 4 months



465

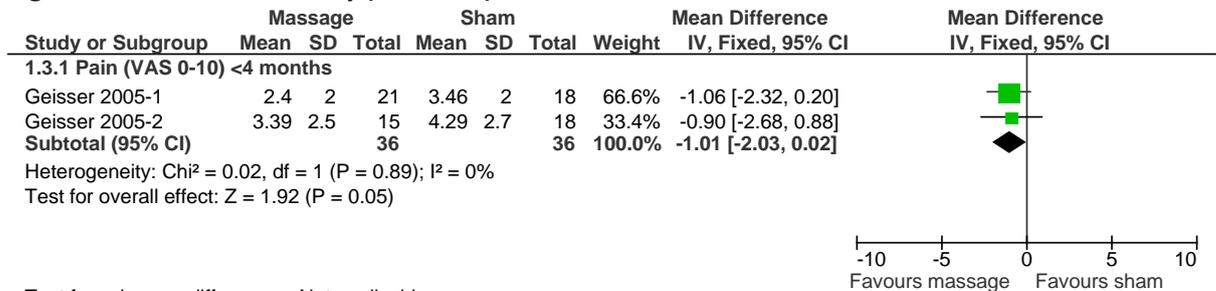
K.8 Manual therapies

K.8.1 Soft tissue techniques

K.8.1.1 Soft tissue techniques (massage) versus sham

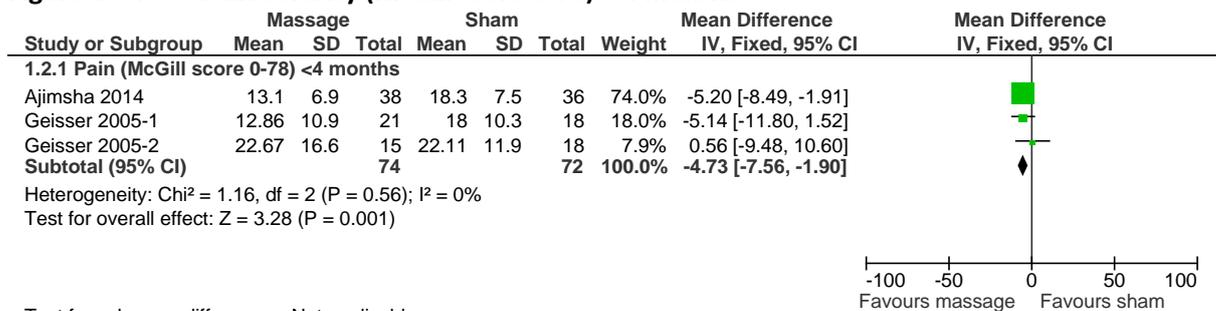
K.8.1.1.1 Population – low back pain without sciatica

Figure 489: Pain severity (VAS 0-10) < 4 months



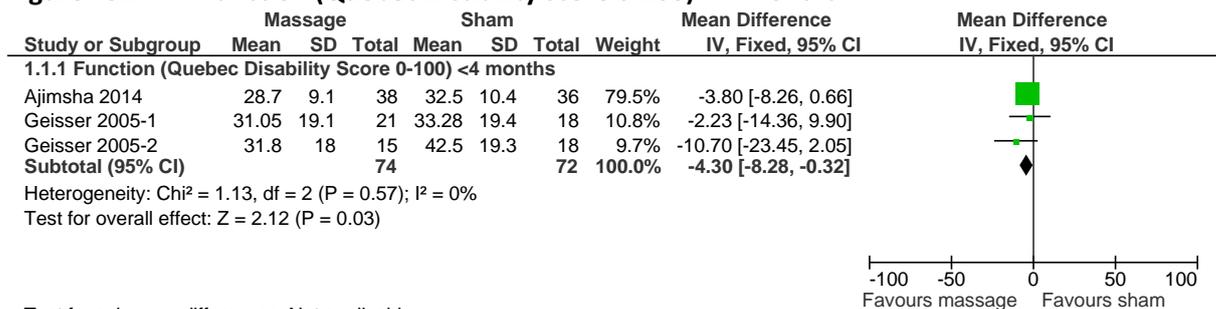
470

Figure 490: Pain severity (McGill score 0-78) < 4 months



471

Figure 491: Function (Quebec Disability score 0-100) < 4 months

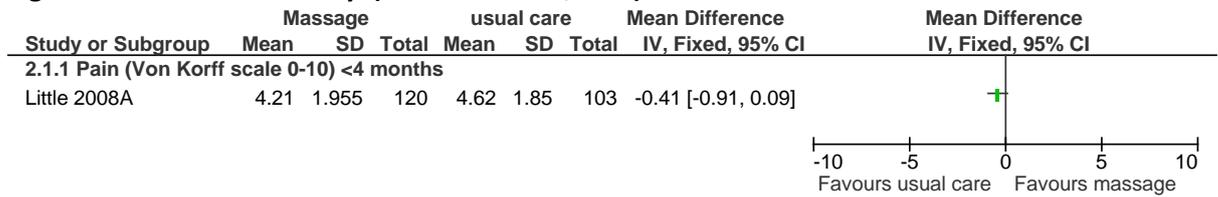


472

K.8.132 Soft tissue techniques (massage) versus usual care

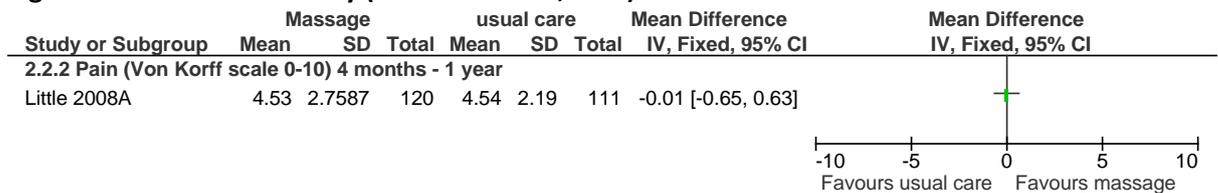
K.8.142.1 Population – low back pain without sciatica

Figure 492: Pain severity (Von Korff scale, 0-10) ≤4 months



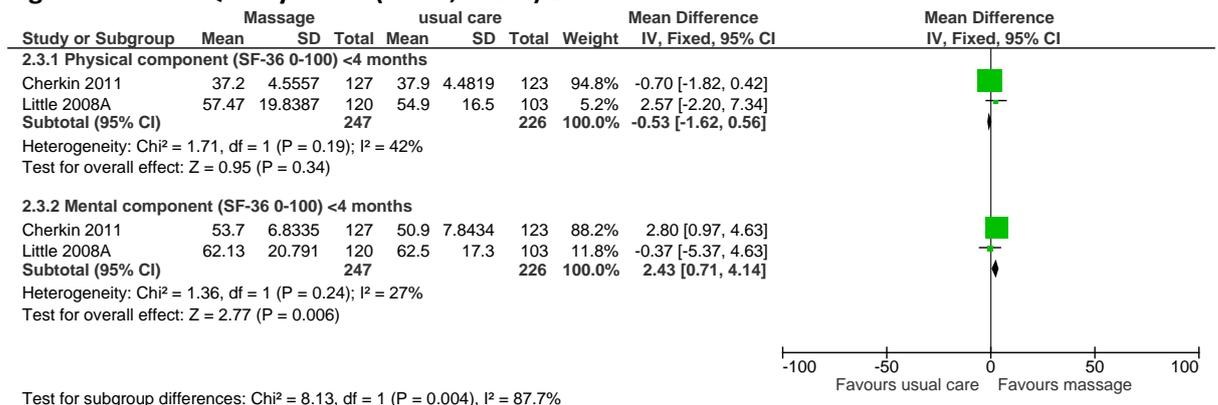
475

Figure 493: Pain severity (Von Korff scale, 0-10) > 4 months



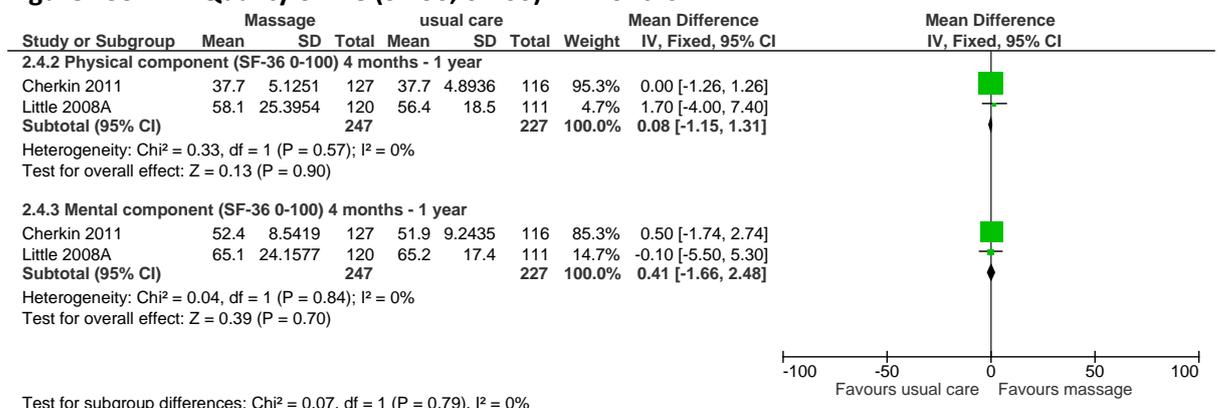
476

Figure 494: Quality of life (SF-36, 0-100) ≤4 months



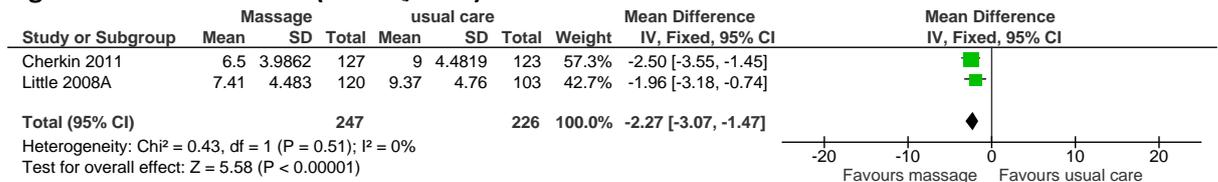
477

Figure 495: Quality of life (SF-36, 0-100) >4 months



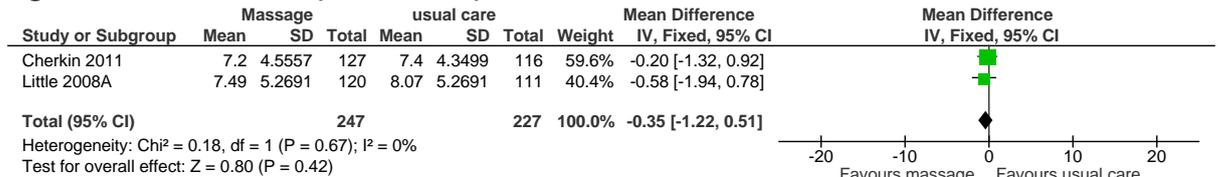
478

Figure 496: Function (RMDQ, 0-24) ≤4 months



479

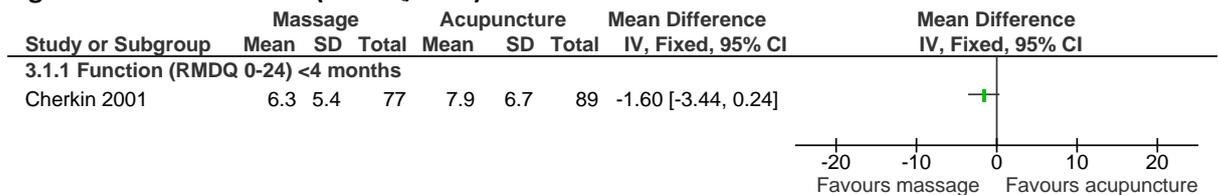
Figure 497: Function (RMDQ, 0-24) >4 months



K.8.103 Soft tissue technique (massage) versus acupuncture

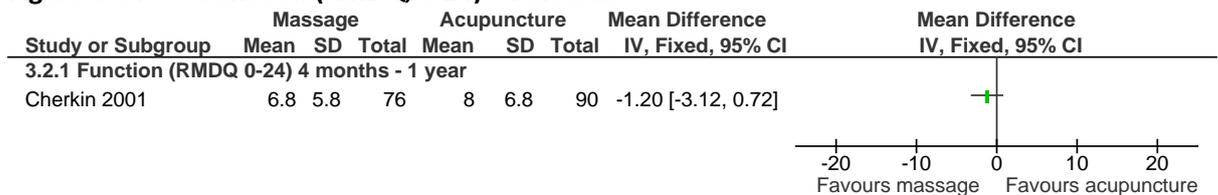
K.8.141.1 Population – low back pain without sciatica

Figure 498: Function (RMDQ, 0-24) ≤4 months



482

Figure 499: Function (RMDQ, 0-24) >4 months

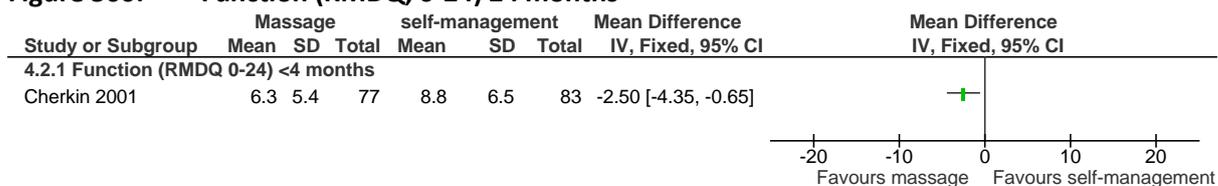


K.8.134 Soft tissue technique (massage) versus self-management

K.8.141.1 Population – low back pain without sciatica

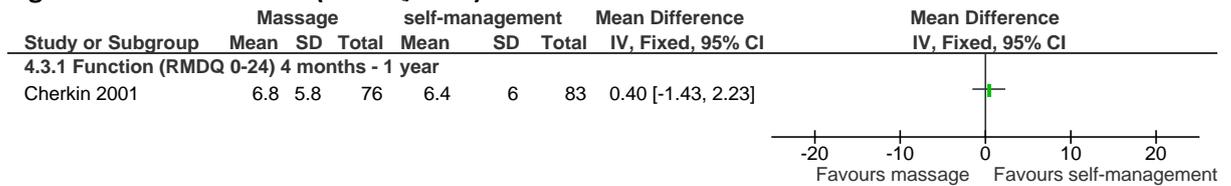
485

Figure 500: Function (RMDQ, 0-24) ≤4 months



486

Figure 501: Function (RMDQ, 0-24) >4 months

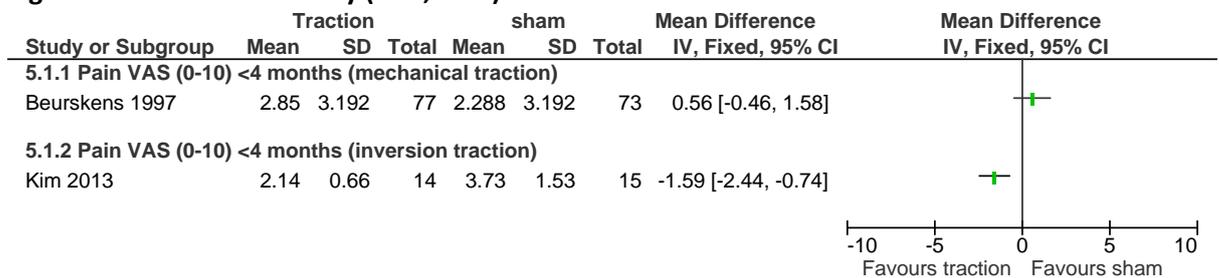


K.8.2 Traction

K.8.2.1 Traction versus sham

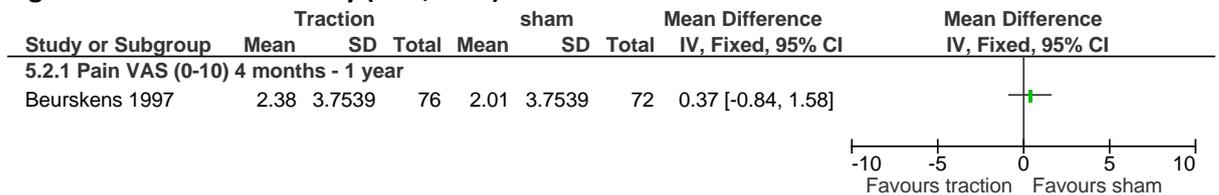
K.8.2.1.1 Population – mixed population of low back pain with or without sciatica

Figure 502: Pain severity (VAS, 0-10) ≤4 months



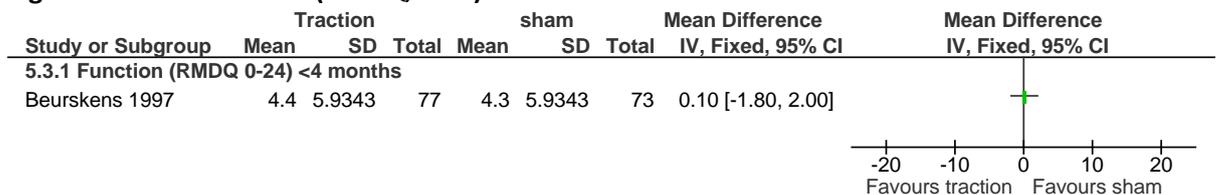
490

Figure 503: Pain severity (VAS, 0-10) >4 months



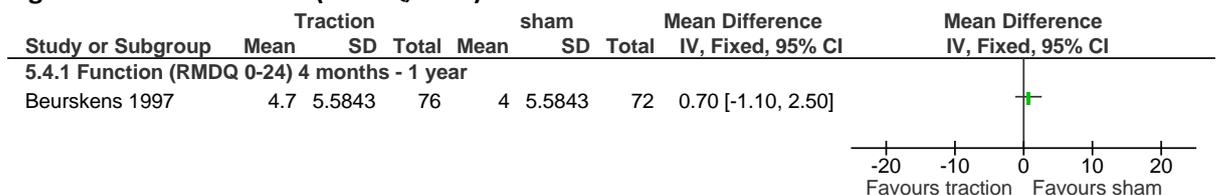
491

Figure 504: Function (RMDQ, 0-24) ≤4 months



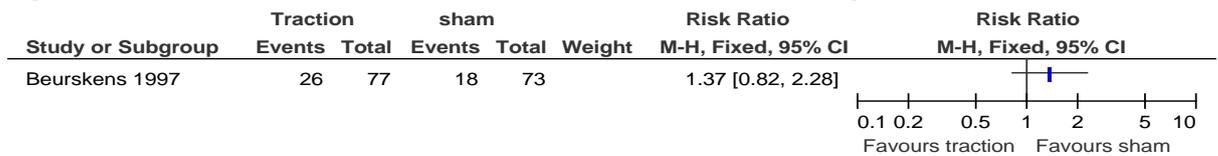
492

Figure 505: Function (RMDQ, 0-24) >4 months



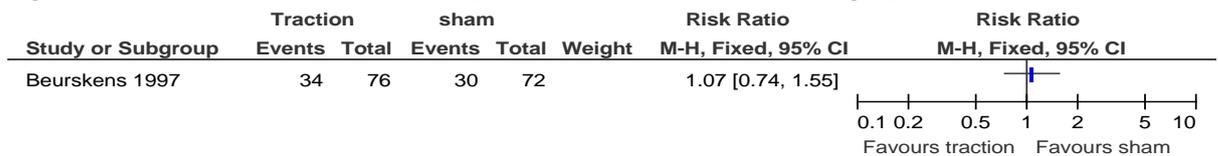
493

Figure 506: Healthcare utilisation (other medical treatment sought) ≤4 months



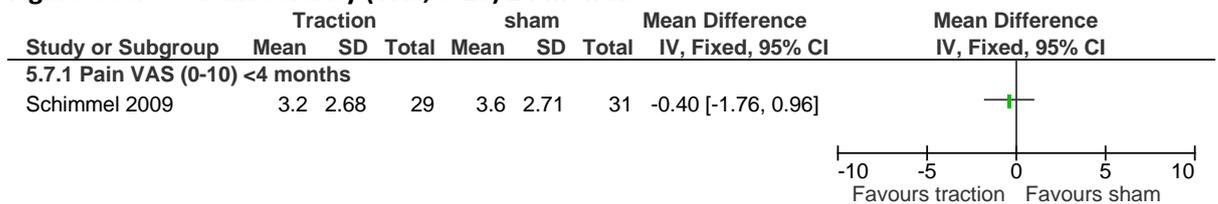
494

Figure 507: Healthcare utilisation (other medical treatment sought) >4 months



K.8.212 Population – low back pain without sciatica

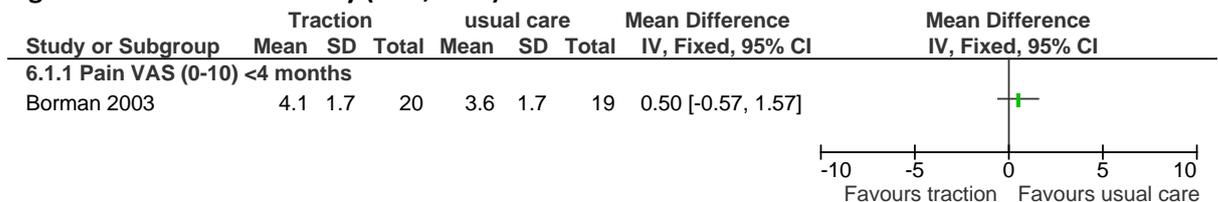
Figure 508: Pain severity (VAS, 0-10) ≤4 months



K.8.212 Traction versus usual care

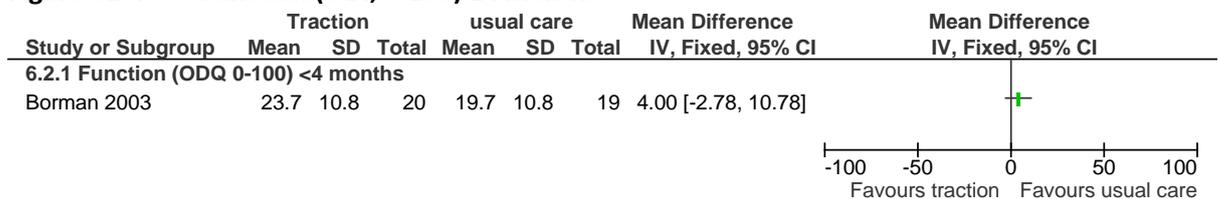
K.8.217 Population – mixed population of low back pain with or without sciatica

Figure 509: Pain severity (VAS, 0-10) ≤4 months



498

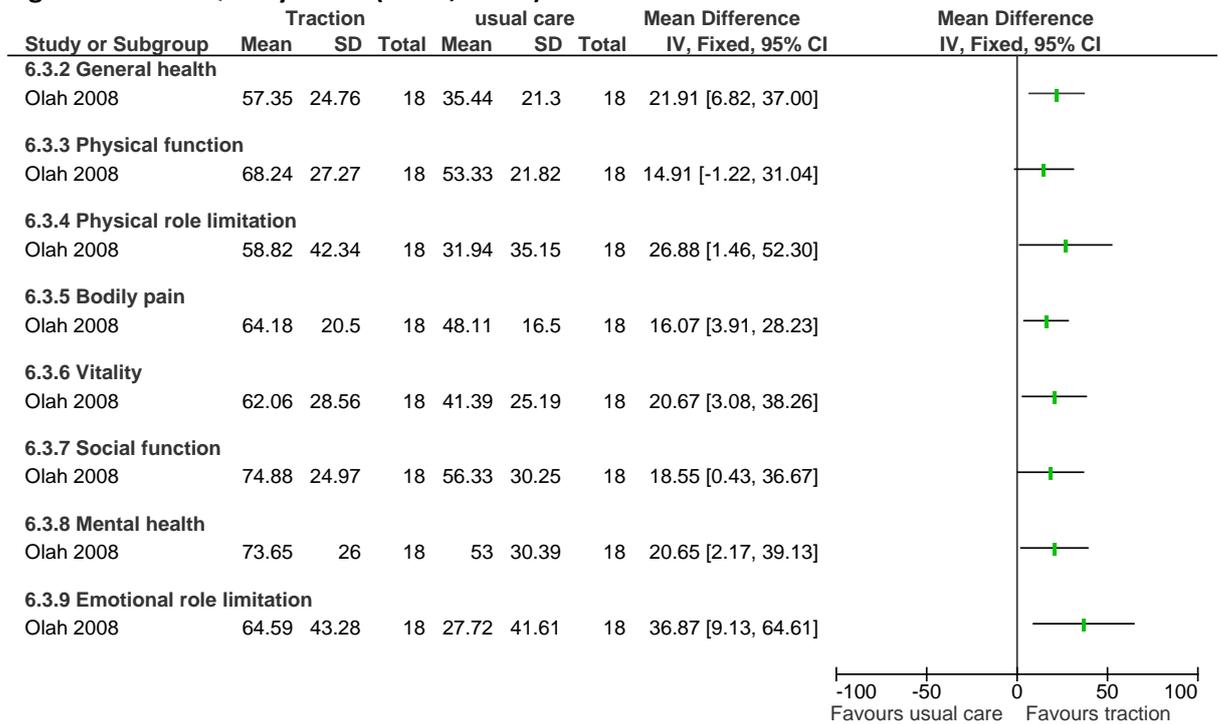
Figure 510: Function (ODI, 0-100) ≤4 months



499

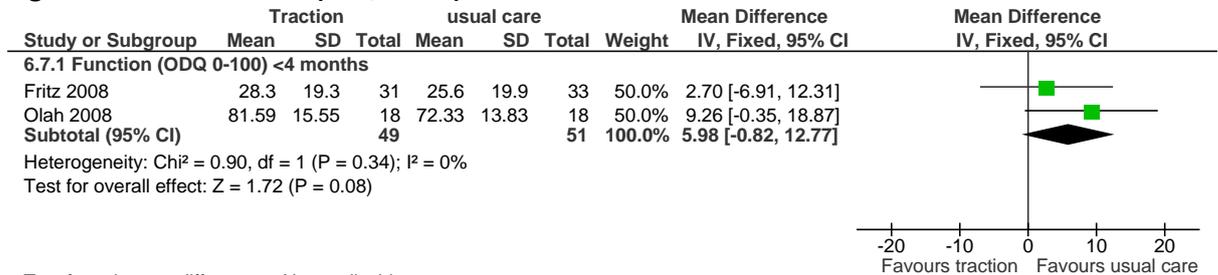
K.8.2.20 Population – low back pain with sciatica

Figure 511: Quality of life (SF-36, 0-100) ≤4 months



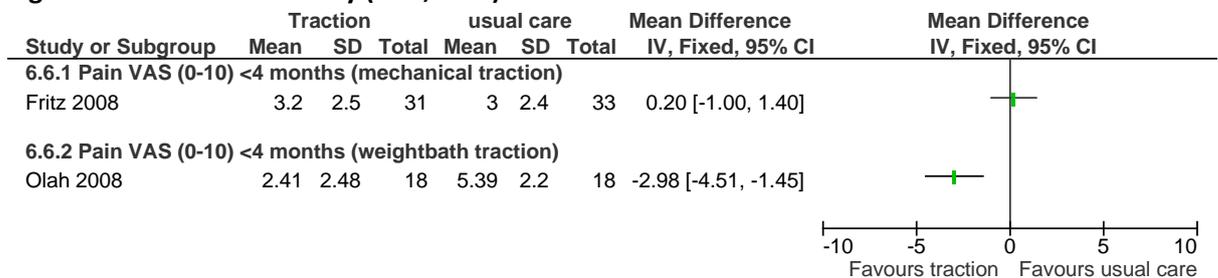
501

Figure 512: Function (ODI, 0-100) ≤4 months



502

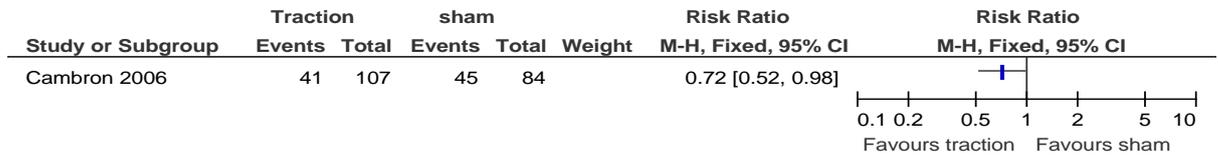
Figure 513: Pain severity (VAS, 0-10) ≤4 months



K.8.23 Traction versus biomechanical exercise

K.8.23.1 Population: mixed population of low back pain with or without sciatica

Figure 514: Healthcare utilisation – visit to other healthcare professionals

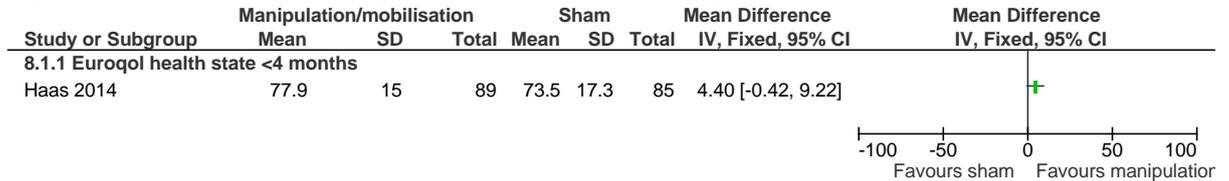


K.8.3 Manipulation/mobilisation

K.8.3.1 Manipulation/mobilisation versus sham

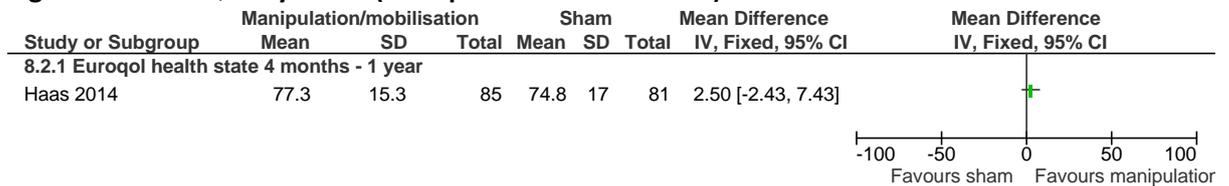
K.8.3.1.1 Population – low back pain without sciatica

Figure 515: Quality of life (Euroqol Health State 0-100) ≤4 months



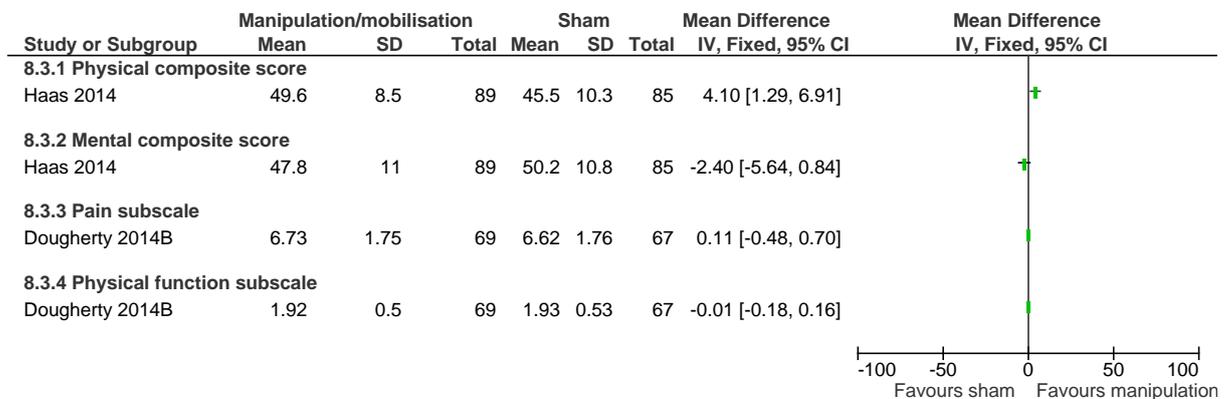
508

Figure 516: Quality of life (Euroqol Health State 0-100) >4 months



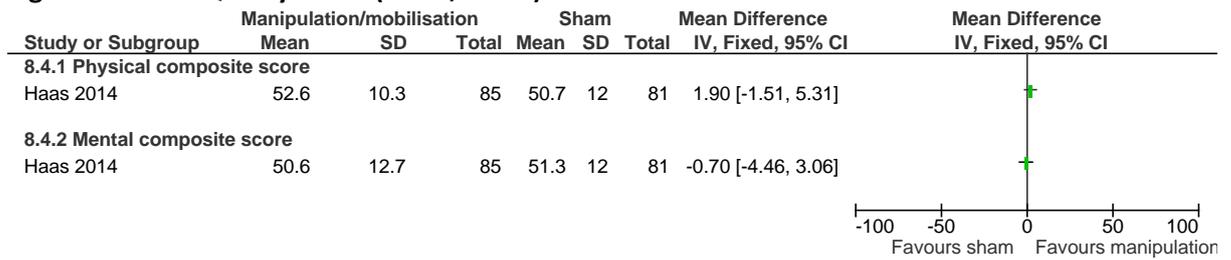
509

Figure 517: Quality of life (SF-12/SF-36, 0-100) ≤4 months



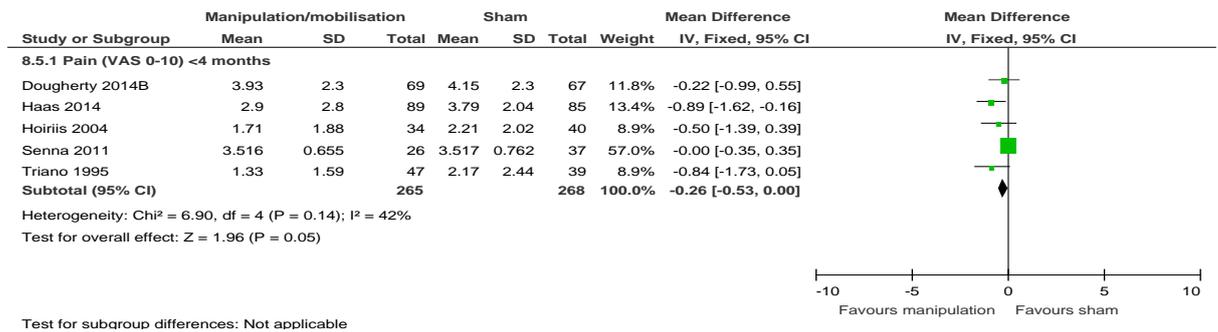
510

Figure 518: Quality of life (SF-12, 0-100) >4 months



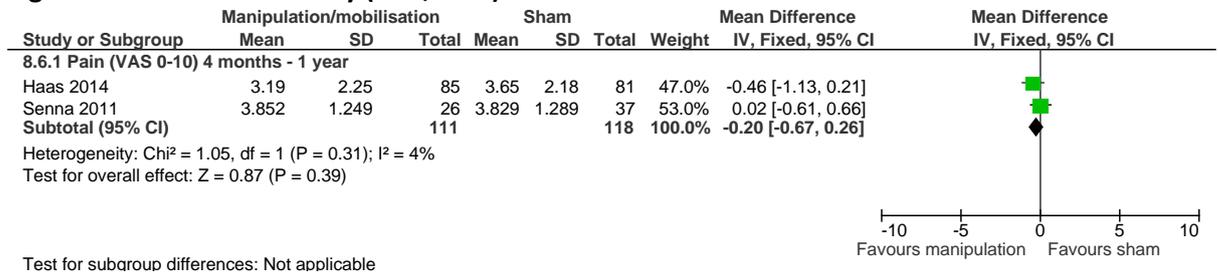
511

Figure 519: Pain severity (VAS, 0-10) ≤4 months



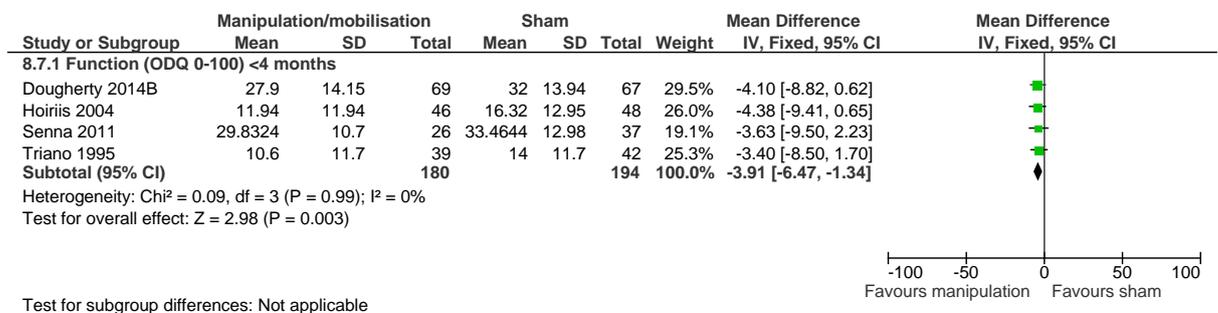
512

Figure 520: Pain severity (VAS, 0-10) >4 months



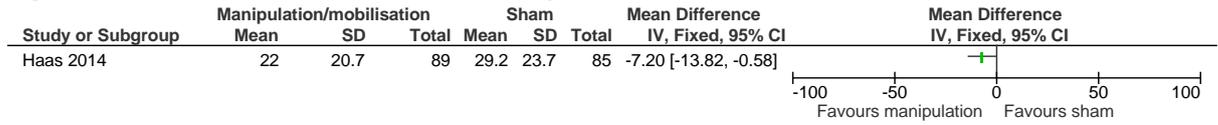
513

Figure 521: Function (ODI, 0-100) ≤4 months



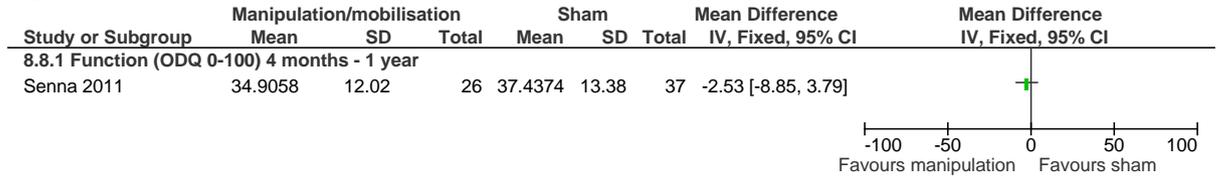
514

Figure 522: Function (Von Korff disability scale, 0-100) ≤4 months



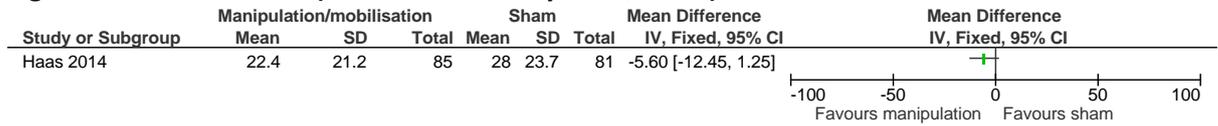
515

Figure 523: Function (ODI, 0-100) >4 months



516

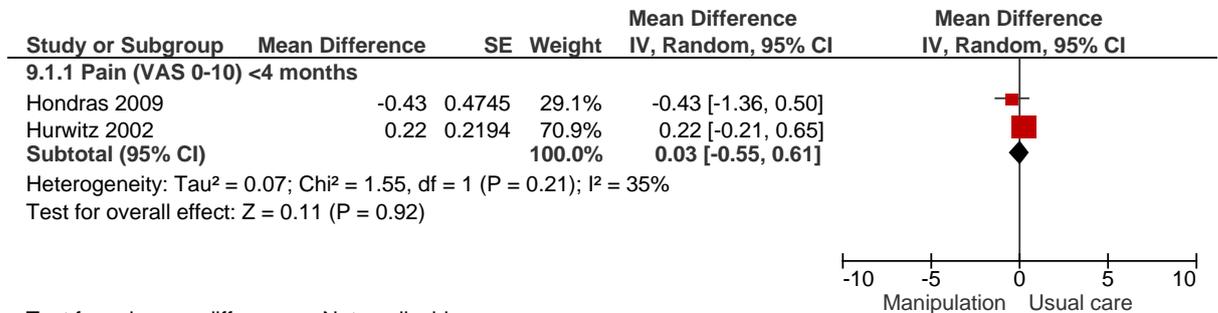
Figure 524: Function (Von Korff disability scale, 0-100) > 4 months



K.8.372 Manipulation/mobilisation versus usual care

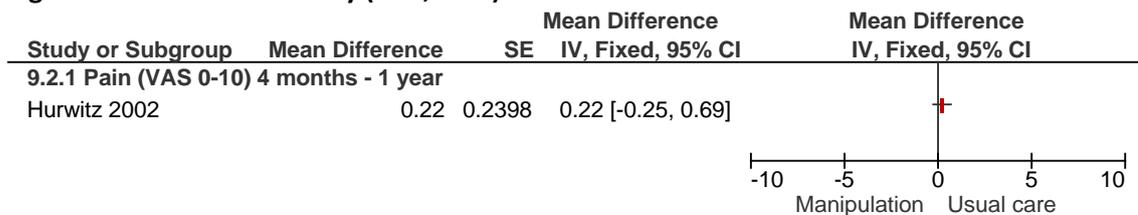
K.8.352.1 Population – mixed population of low back pain with or without sciatica

Figure 525: Pain severity (VAS, 0-10) ≤4 months



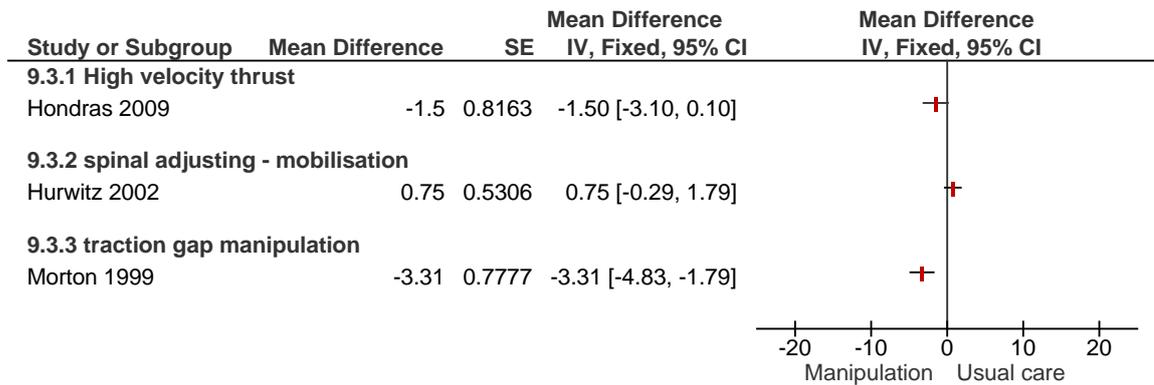
519

Figure 526: Pain severity (VAS, 0-10) >4 months



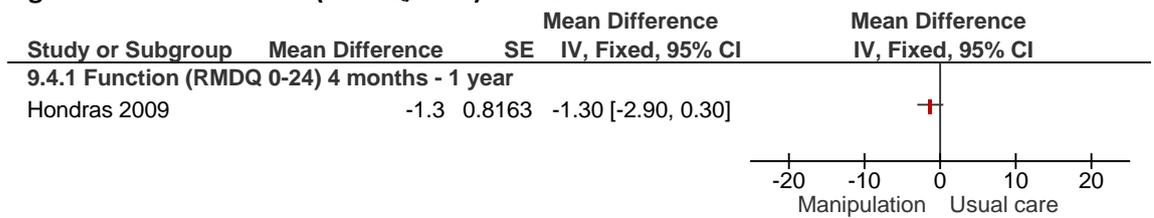
520

Figure 527: Function (RMDQ, 0-24) ≤4 months



521

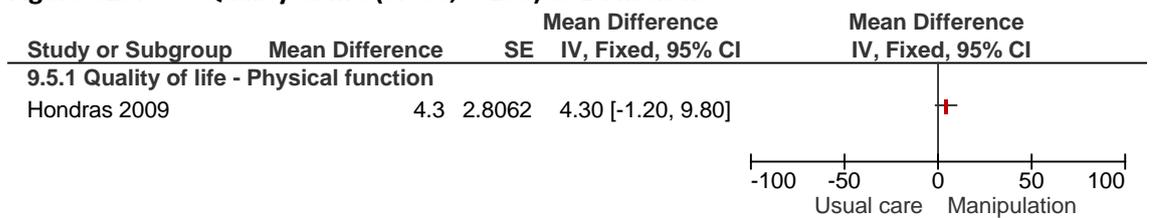
Figure 528: Function (RMDQ, 0-24) >4 months



522

523

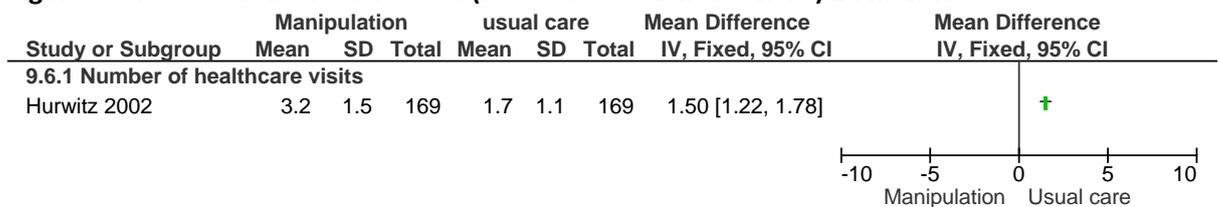
Figure 529: Quality of life (SF-36, 0-100) at ≤4 months



524

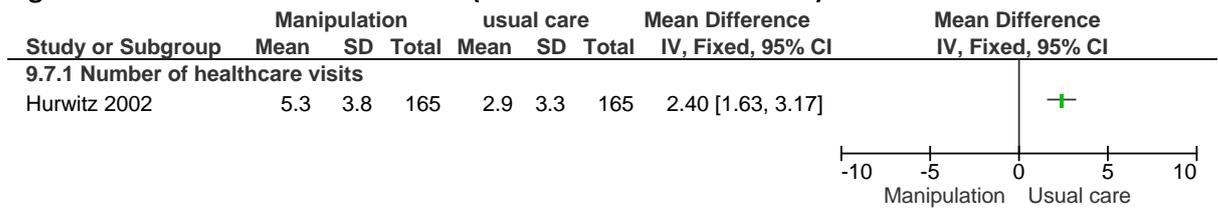
525

Figure 530: Healthcare utilisation (number of healthcare visits) ≤4 months



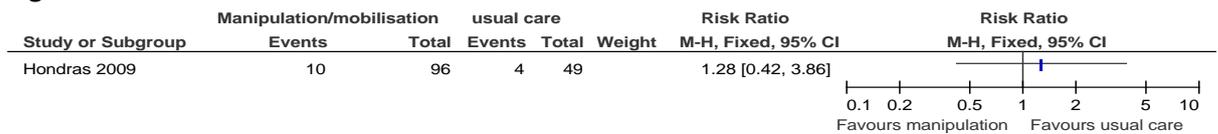
526

Figure 531: Healthcare utilisation (number of healthcare visits) >4 months



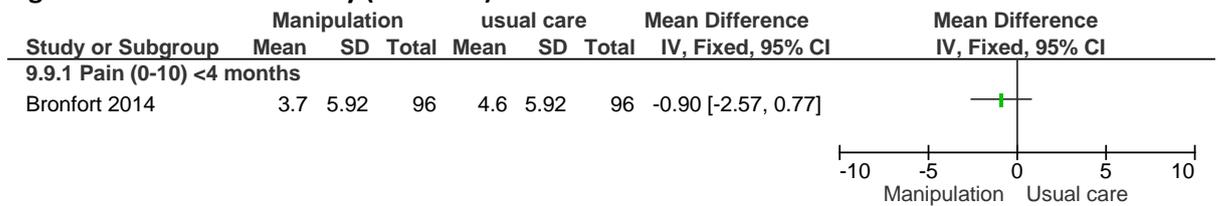
527

Figure 532: Adverse events ≤4 months



K.8.3522 Population – low back pain with sciatica

Figure 533: Pain severity (VAS 0-10) ≤4 months



529

Figure 534: Pain severity (VAS 0-10) >4 months

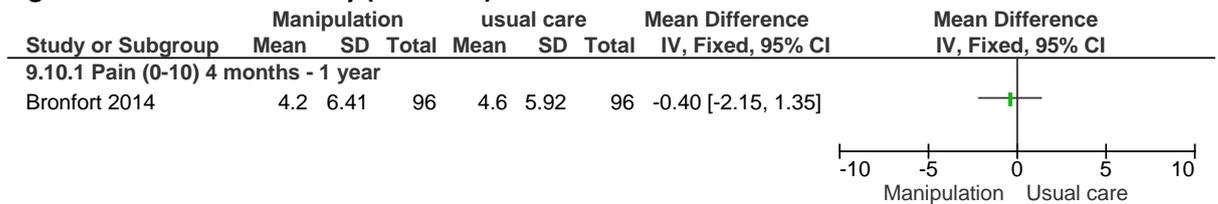


Figure 535: Quality of life (SF-36, 0-100) ≤4 months

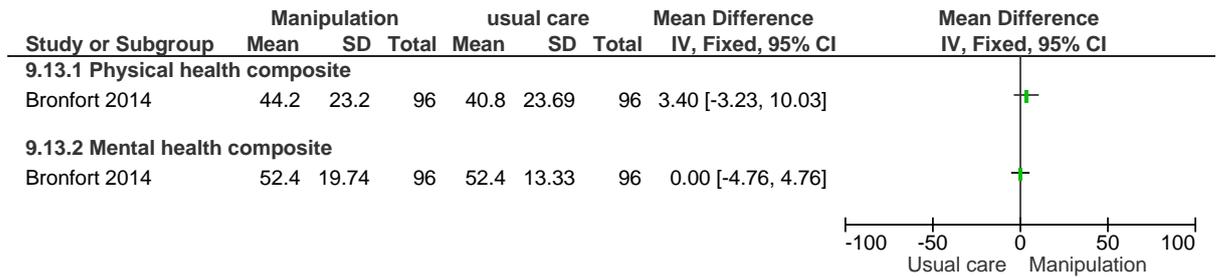
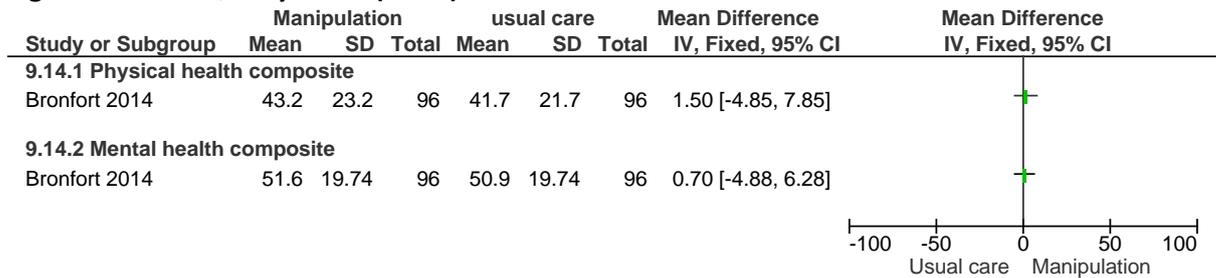
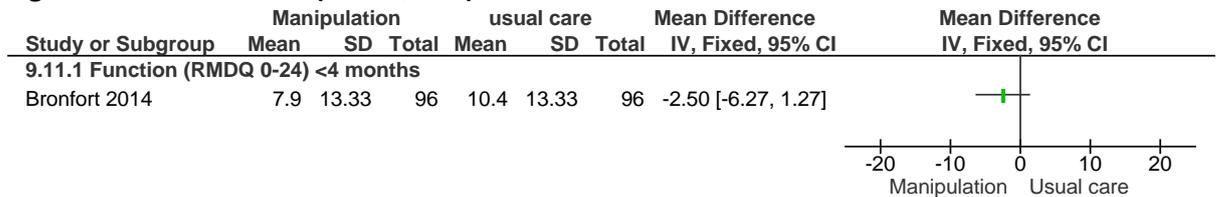


Figure 536: Quality of life (SF-36) >4 months



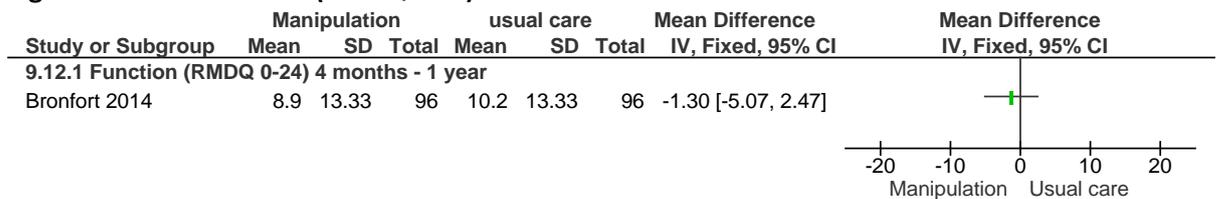
530

Figure 537: Function (RMDQ 0-24) ≤4 months



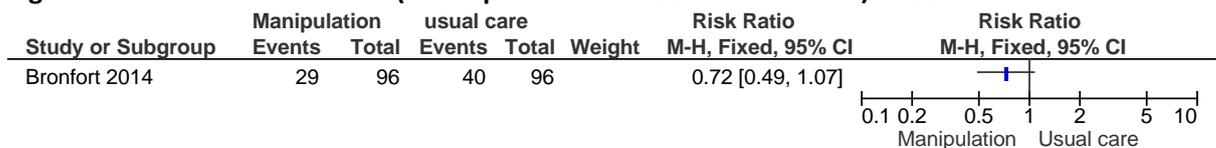
531

Figure 538: Function (RMDQ 0-24) >4 months



532

Figure 539: Adverse events (no. of patients with ≥1 adverse event) at 12 weeks

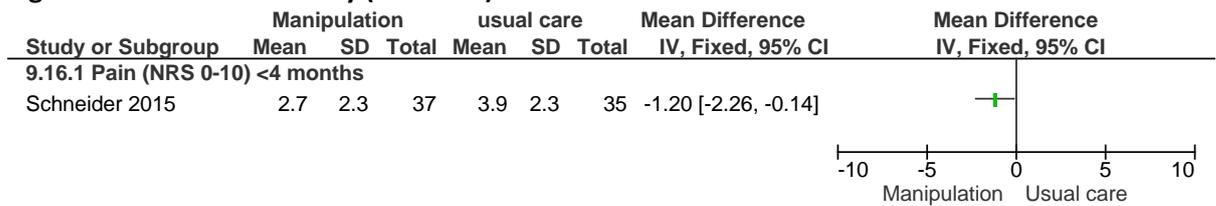


Details of the AEs for this outcome data were not reported

K.8.3.2.3 Population – low back pain without sciatica

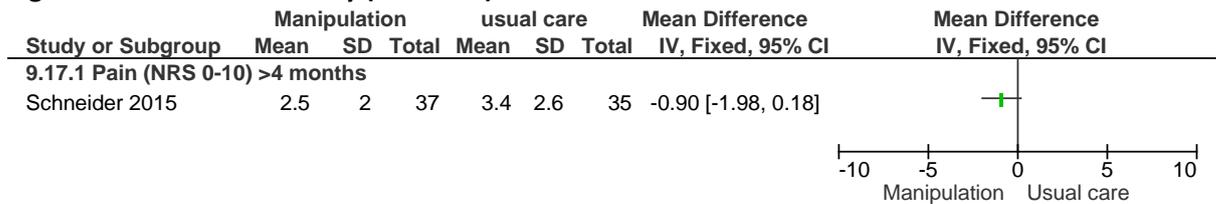
534

Figure 540: Pain severity (NRS 0-10) ≤4 months



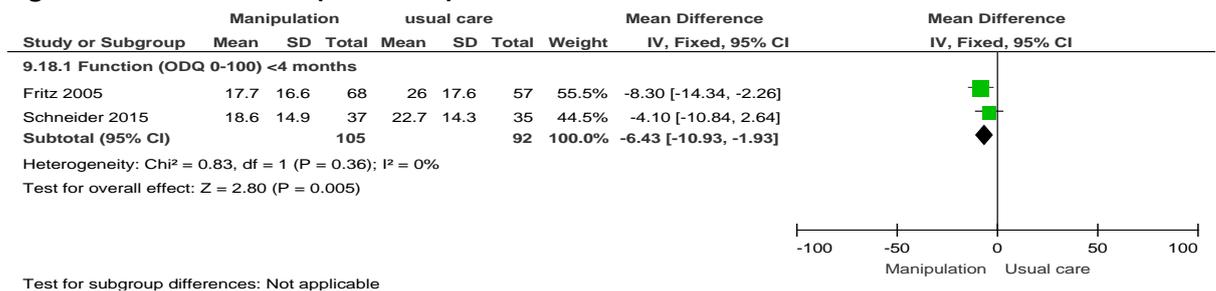
535
536

Figure 541: Pain severity (NRS 0-10) > 4 months



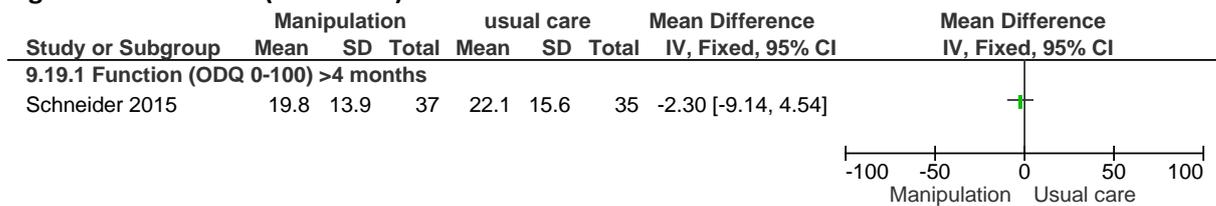
537
538

Figure 542: Function (ODI 0-100) ≤4 months



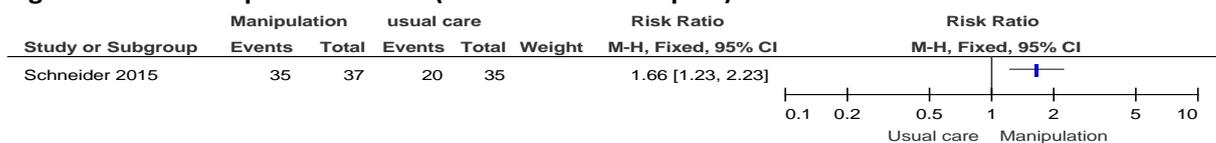
539
540

Figure 543: Function (ODI 0-100) > 4 months



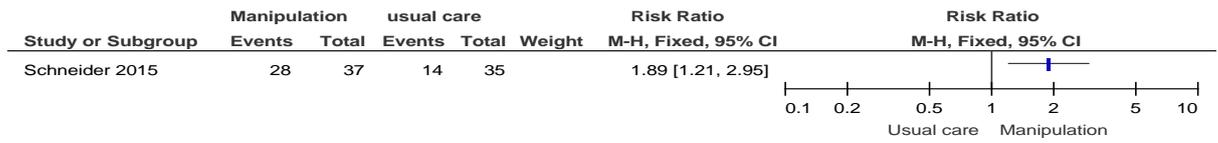
541
542
543

Figure 544: Responder criteria (>30% reduction in pain) ≤4 months



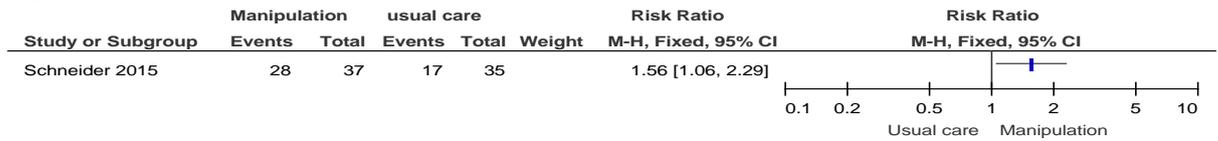
544

Figure 545: Responder criteria (>50% reduction in pain) ≤4 months



545

Figure 546: Responder criteria (>30% reduction in ODI) ≤4 months



546

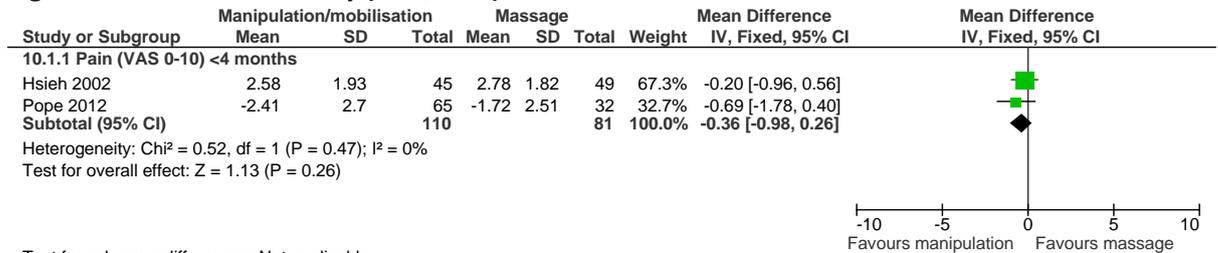
Figure 547: Responder criteria (>50% reduction in ODI) ≤4 months



K.8.473 Manipulation/mobilisation versus soft tissue technique (massage)

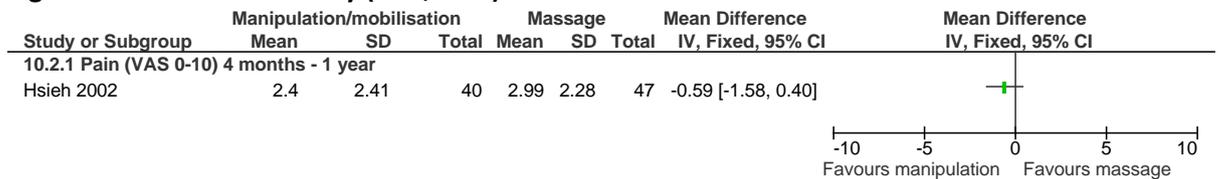
K.8.531 Population – low back pain without sciatica

Figure 548: Pain severity (VAS, 0-10) ≤4 months



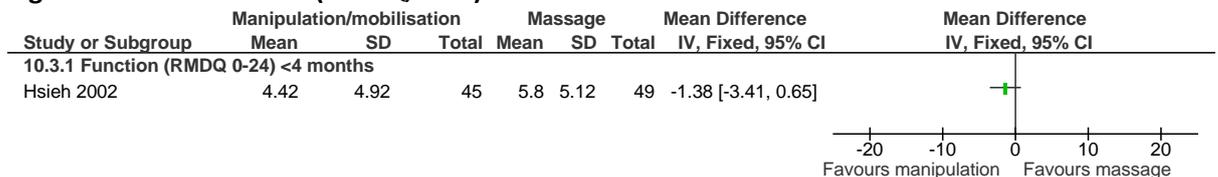
549

Figure 549: Pain severity (VAS, 0-10) >4 months



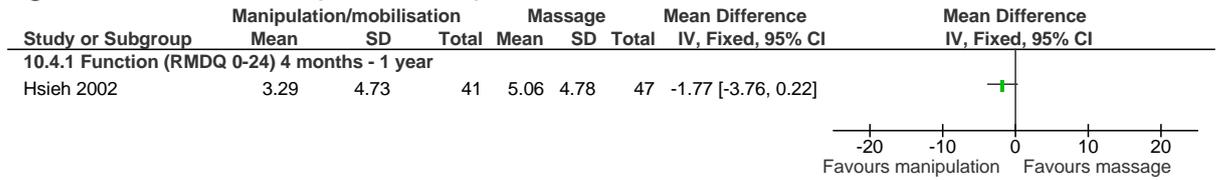
550

Figure 550: Function (RMDQ, 0-24) ≤4 months



551

Figure 551: Function (RMDQ, 0-24) >4 months

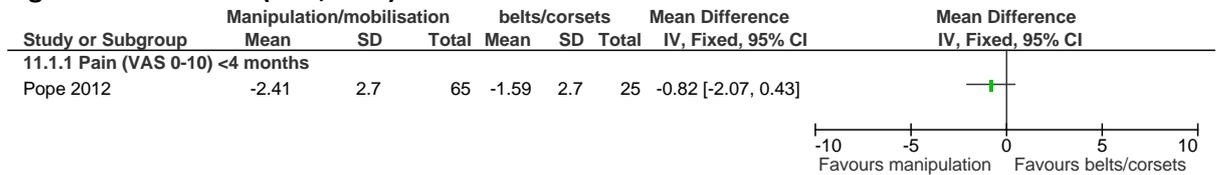


552

K.8.334 Manipulation/mobilisation versus belts/corsets

K.8.341 Population – low back pain without sciatica

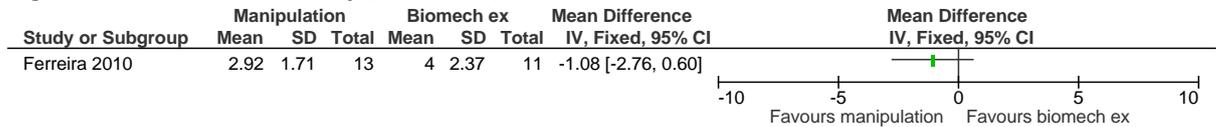
Figure 552: Pain (VAS, 0-10) ≤4 months



K.8.355 Manipulation/mobilisation versus exercise

K.8.351 Population - mixed population of low back pain with or without sciatica

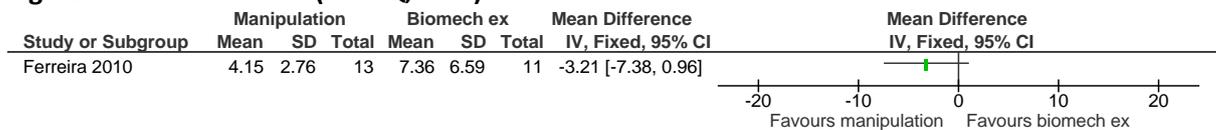
Figure 553: Pain severity (NRS, 0-10) < 4 months



557

558

Figure 554: Function (RMDQ, 0-24) < 4 months

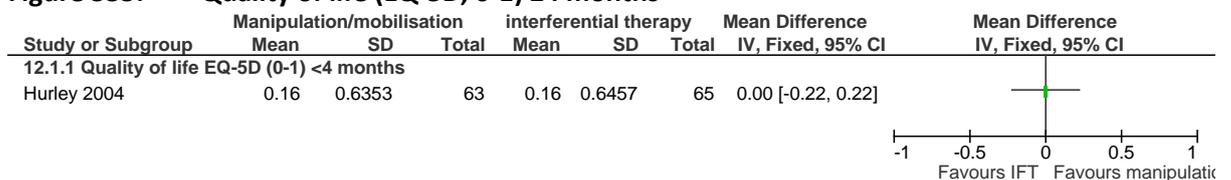


559

K.8.306 Manipulation/mobilisation versus interferential therapy

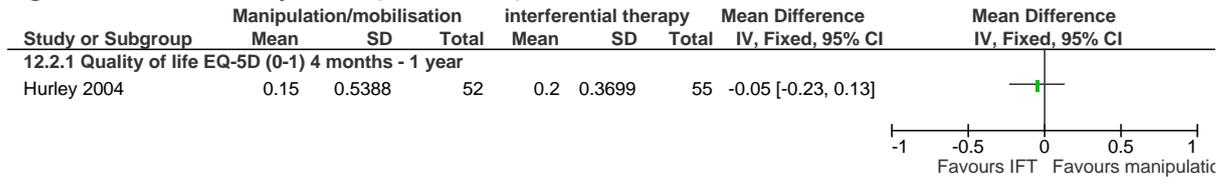
K.8.361 Population: Low back population with or without sciatica (mixed population)

Figure 555: Quality of life (EQ-5D, 0-1) ≤4 months



562

Figure 556: Quality of life (EQ-5D, 0-1) >4 months



563

Figure 557: Quality of life (SF-36, 0-100) ≤4 months

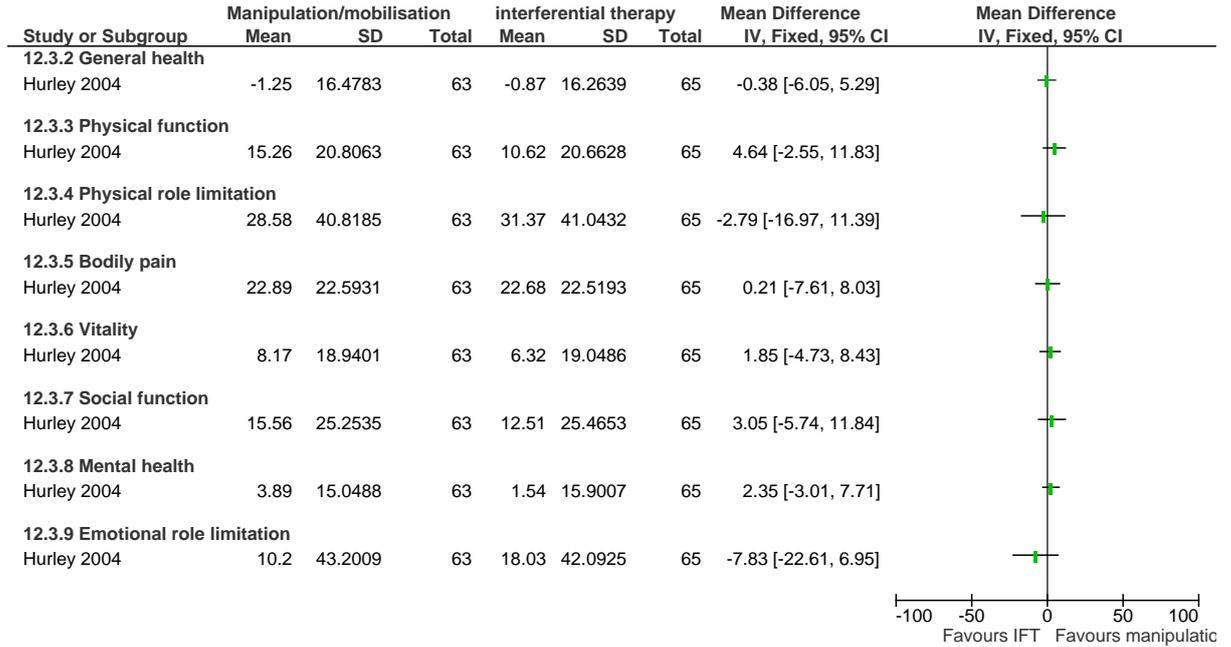
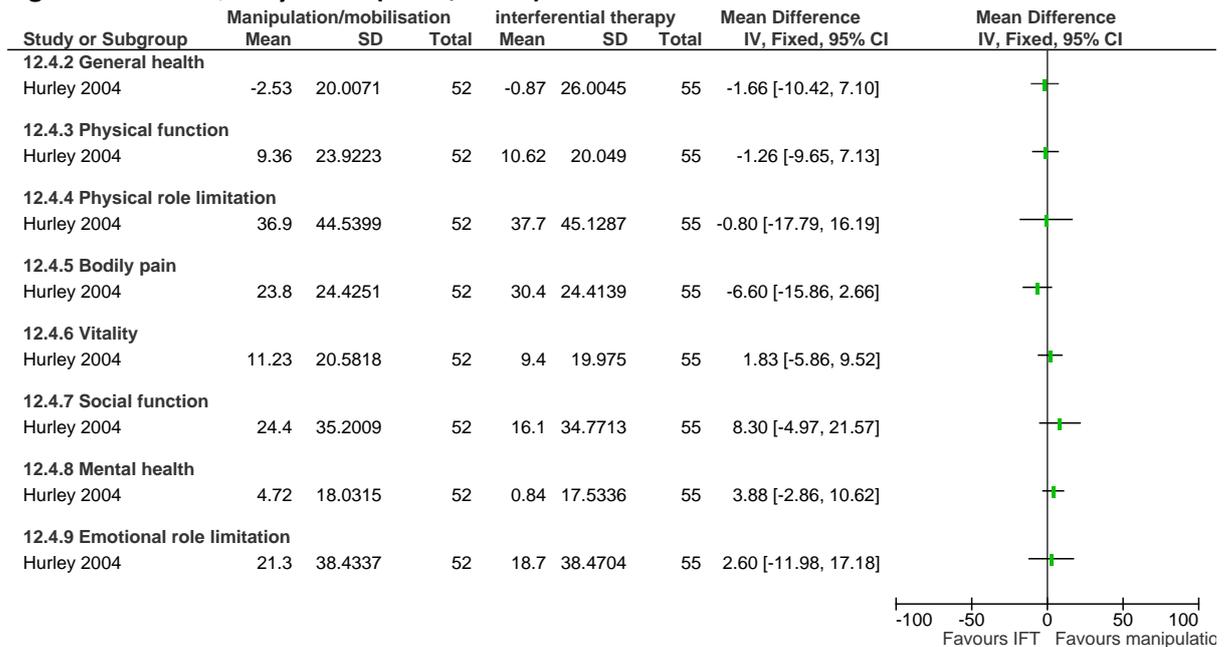
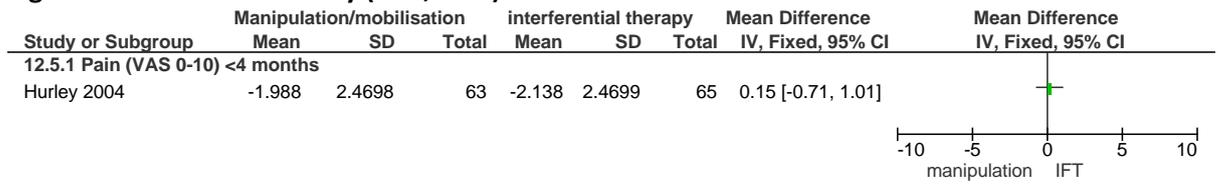


Figure 558: Quality of life (SF-36, 0-100) >4 months



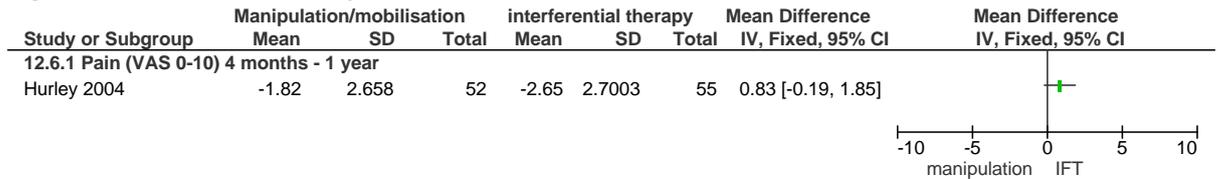
564

Figure 559: Pain severity (VAS, 0-10) ≤4 months



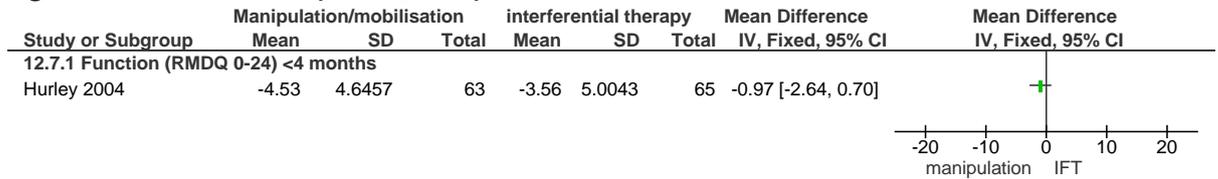
565

Figure 560: Pain severity (VAS, 0-10) >4 months



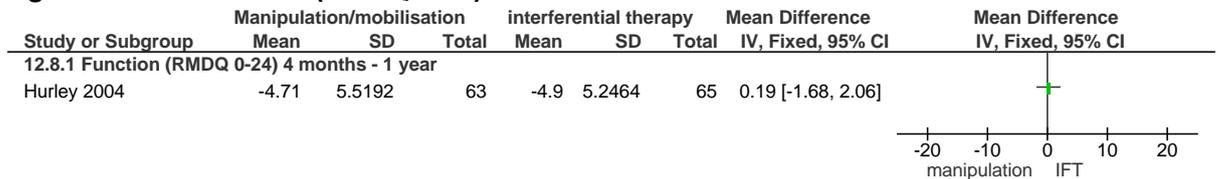
566

Figure 561: Function (RMDQ, 0-24) ≤4 months



567

Figure 562: Function (RMDQ, 0-24) >4 months

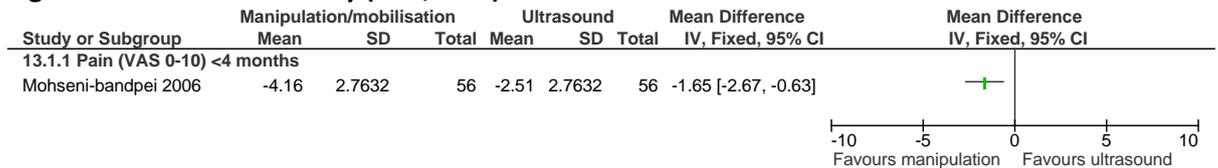


568

K.8.397 Manipulation/mobilisation versus ultrasound therapy

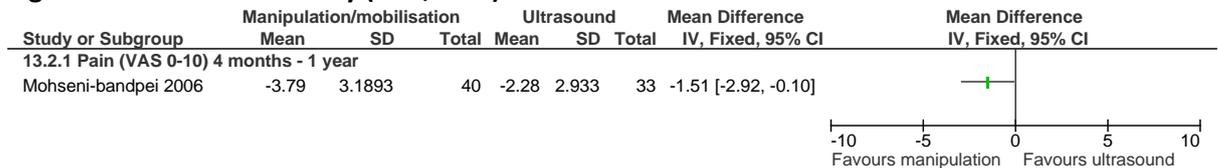
K.8.357.1 Population – low back pain without sciatica

Figure 563: Pain severity (VAS, 0-10) ≤4 months



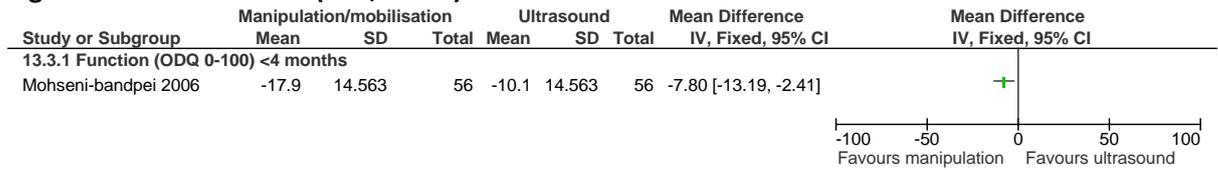
571

Figure 564: Pain severity (VAS, 0-10) >4 months



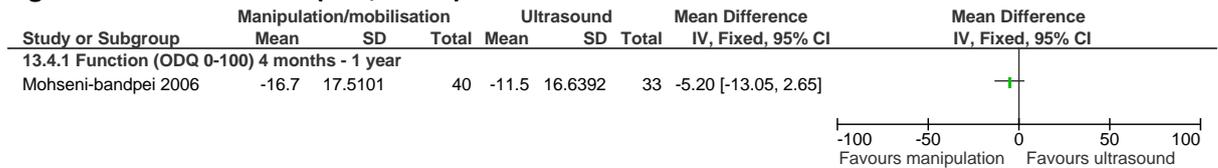
572

Figure 565: Function (ODI, 0-100) ≤4 months



573

Figure 566: Function (ODI, 0-100) >4 months

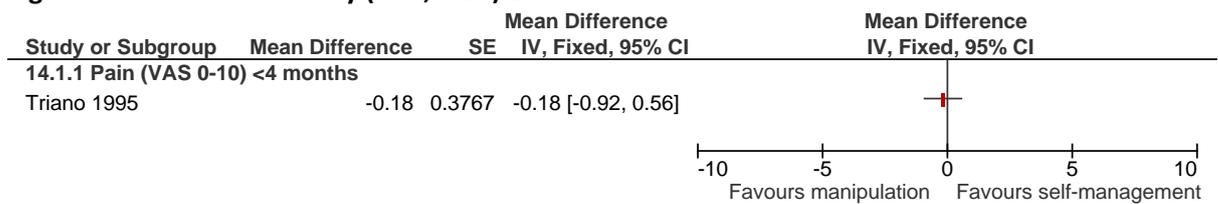


574

K.8.358 Manipulation/mobilisation versus self-management

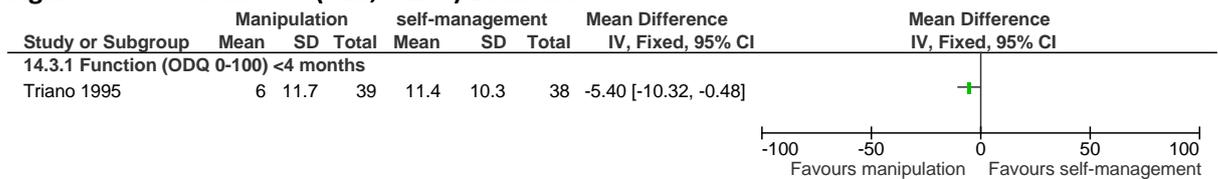
K.8.358.1 Population - mixed population of low back pain with or without sciatica

Figure 567: Pain severity (VAS, 0-10) ≤4 months



577

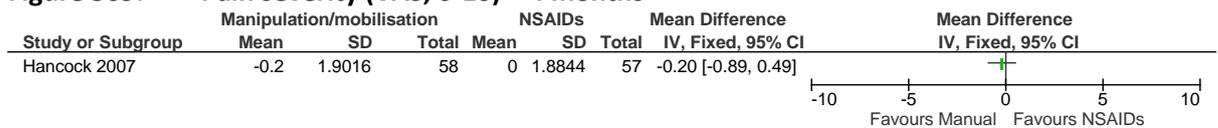
Figure 568: Function (ODI, 0-100) ≤4 months



K.8.359 Manipulation/mobilisation versus NSAIDs

K.8.359.1 Population – low back pain without sciatica

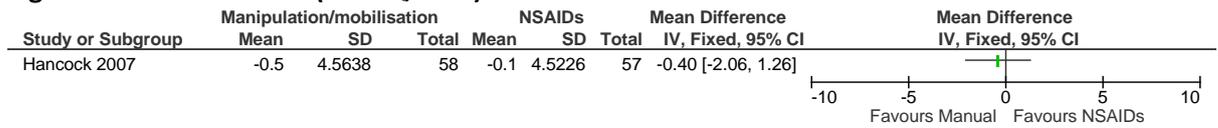
Figure 569: Pain severity (VAS, 0-10) < 4 months



580

581

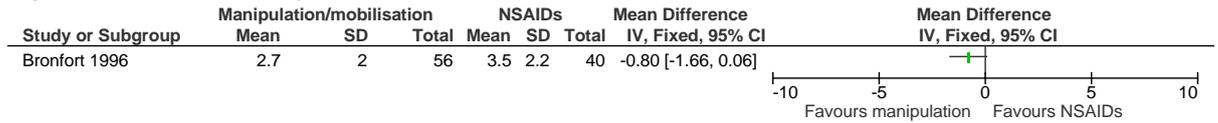
Figure 570: Function (RMDQ, 0-24) < 4 months



582

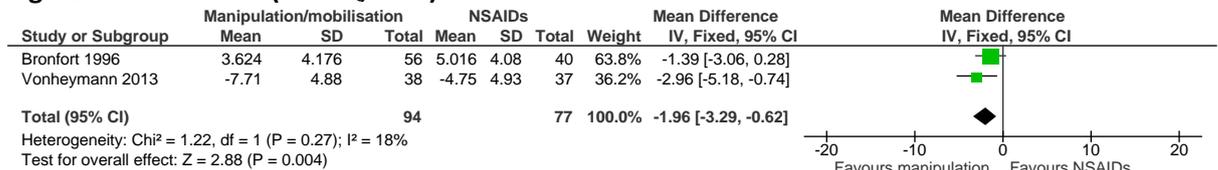
K.8.35.2 Population - mixed population of low back pain with or without sciatica

Figure 571: Pain severity (VAS, 0-10) ≤4 months



584

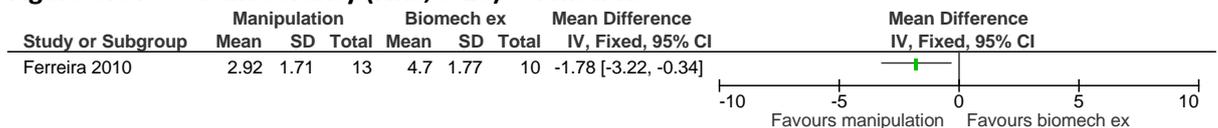
Figure 572: Function (RMDQ, 0-24) ≤4 months



K.8.35.10 Manipulation/mobilisation versus combination of interventions (exercise + education)

K.8.35.10.1 Population - mixed population of low back pain with or without sciatica

Figure 573: Pain severity (NRS, 0-10) < 4 months



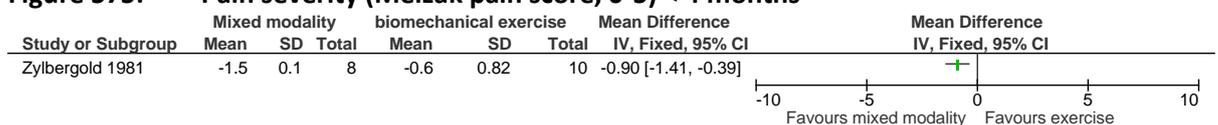
587

K.8.35.11 Mixed modality manual therapy

K.8.35.11.1 Mixed modality manual therapy versus usual care

K.8.45.10.1 Population - low back pain without sciatica

Figure 575: Pain severity (Melzak pain score, 0-5) < 4 months

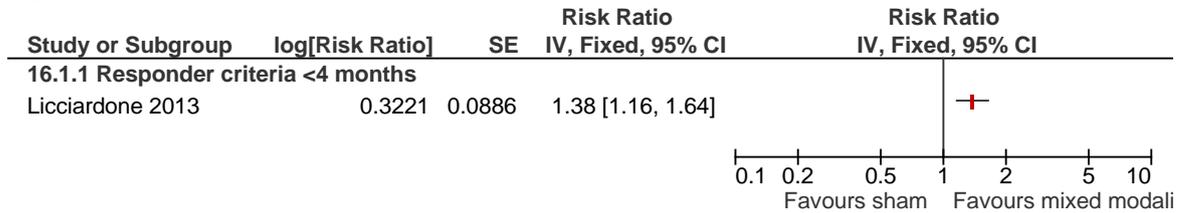


591

K.8.422 Mixed modality manual therapy versus sham

K.8.423 Population – low back pain without sciatica

Figure 576: Responder criteria (pain) ≤4 months



K.8.424 Population – mixed population of low back pain with or without sciatica

Figure 577: Pain severity (NRS 0-10) ≤4 months

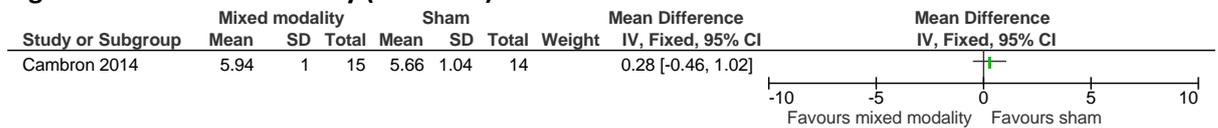


Figure 578: Pain severity (NRS 0-10) > 4 months

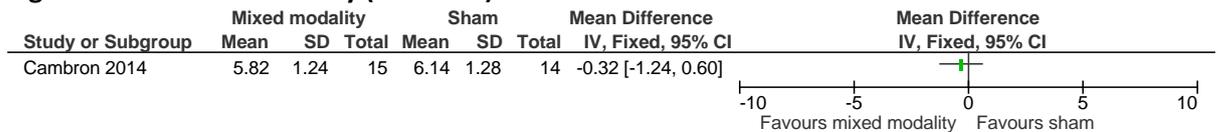


Figure 579: Function (ODI 0-100 change score) ≤4 months

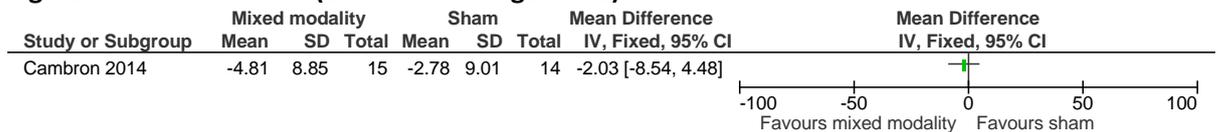
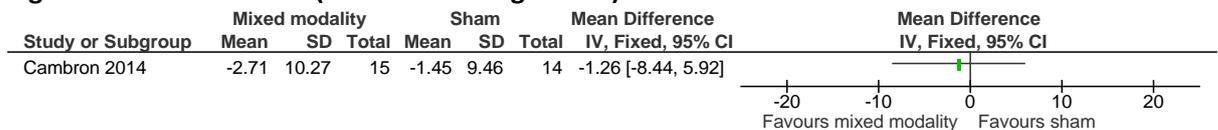


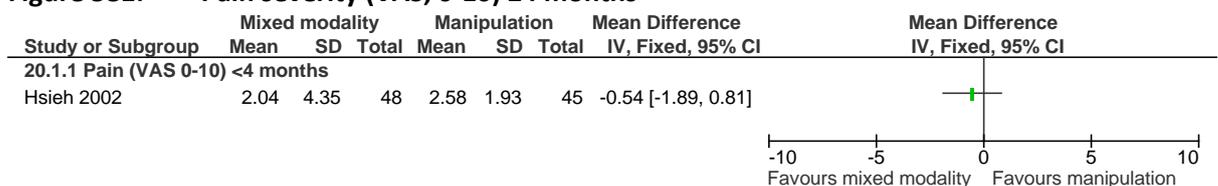
Figure 580: Function (ODI 0-100 change score) > 4 months



K.8.453 Mixed modality manual therapy versus manipulation/mobilisation

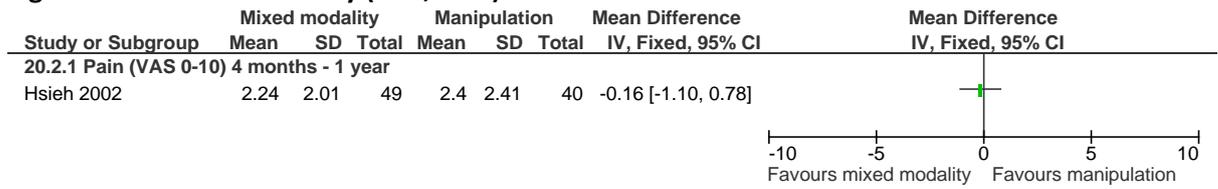
K.8.454 Population – low back pain without sciatica

Figure 581: Pain severity (VAS, 0-10) ≤4 months



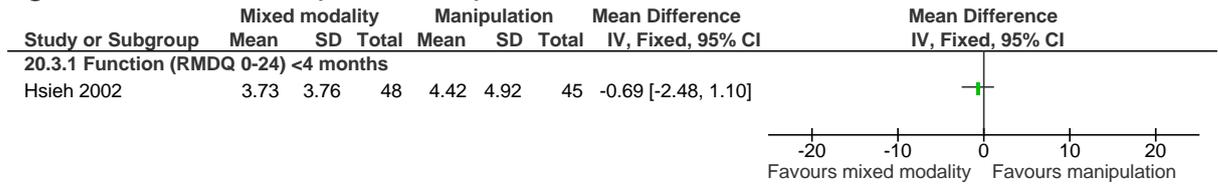
597

Figure 582: Pain severity (VAS, 0-10) > 4 months



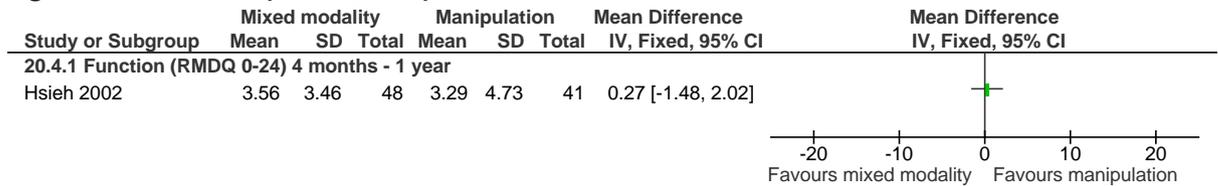
598

Figure 583: Function (RMDQ, 0-24) ≤4 months



599

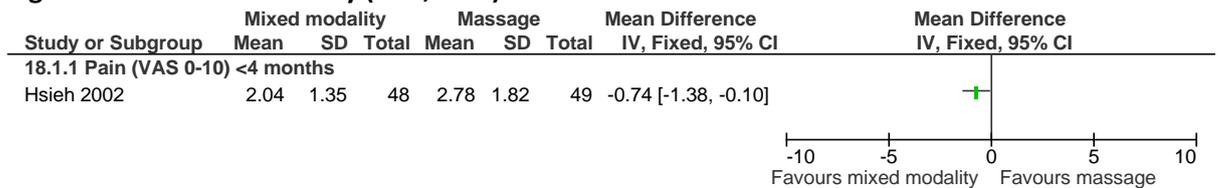
Figure 584: Function (RMDQ, 0-24) > 4 months



K.8.4.4 Mixed modality manual therapy versus soft tissue techniques (massage)

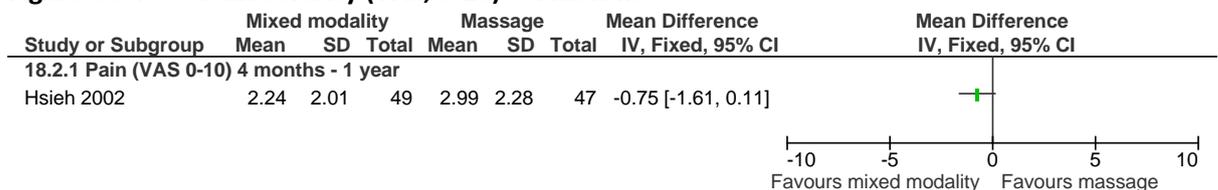
K.8.4.4.1 Population – low back pain without sciatica

Figure 585: Pain severity (VAS, 0-10) ≤4 months



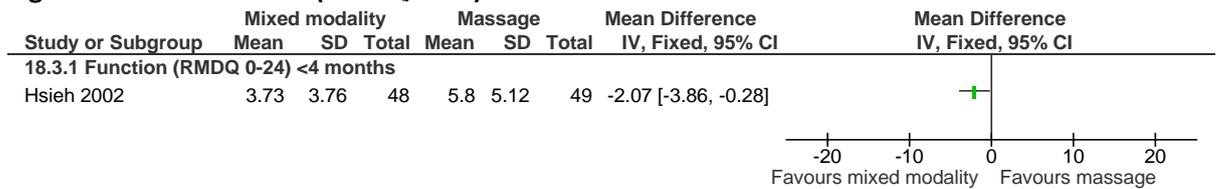
602

Figure 586: Pain severity (VAS, 0-10) > 4 months



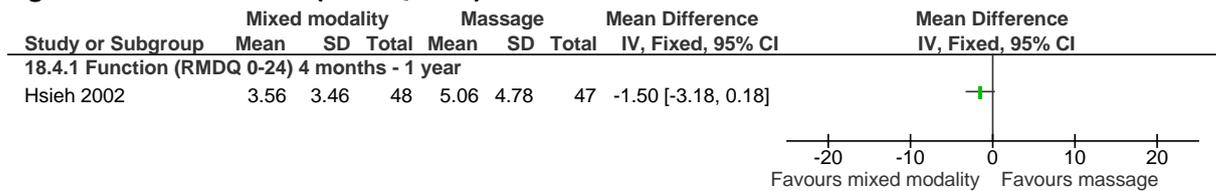
603

Figure 587: Function (RMDQ, 0-24) ≤ 4 months



604

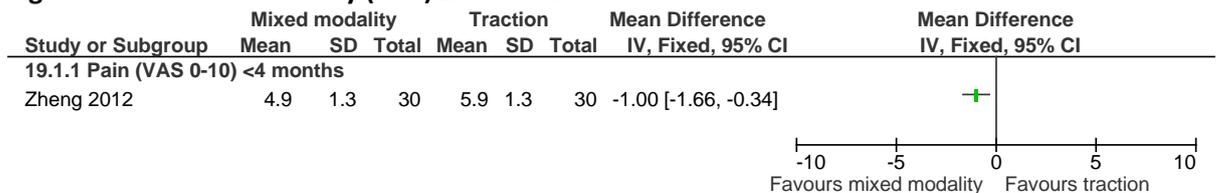
Figure 588: Function (RMDQ, 0-24) > 4 months



K.8.455 Mixed modality manual therapy versus traction

K.8.461 Population – low back pain without sciatica

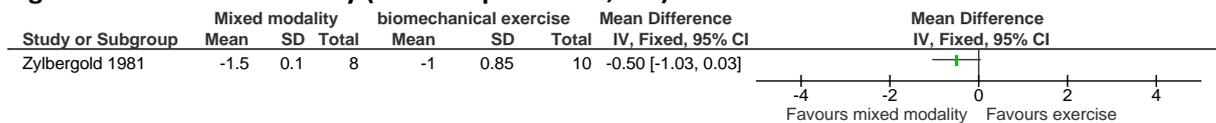
Figure 589: Pain severity (VAS) ≤ 4 months



K.8.476 Mixed modality manual therapy versus biomechanical exercise

K.8.461 Population – low back pain without sciatica

Figure 590: Pain severity (Melzack pain score, 0-5) ≤ 4 months



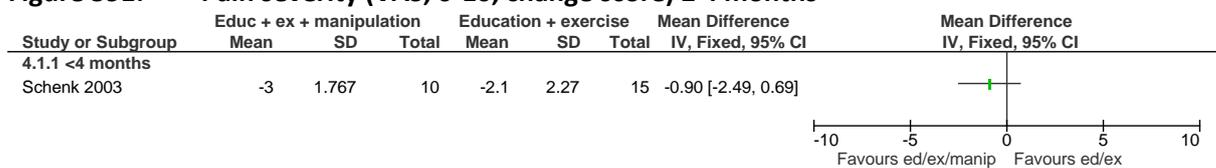
K.8.505 Combination interventions – manual therapy adjunct

K.8.501 Low back pain with sciatica

K.8.511 Manual therapy (manipulation) + self-management (education) + exercise (aerobic) vs. self-management (education) + exercise (aerobic + McKenzie),

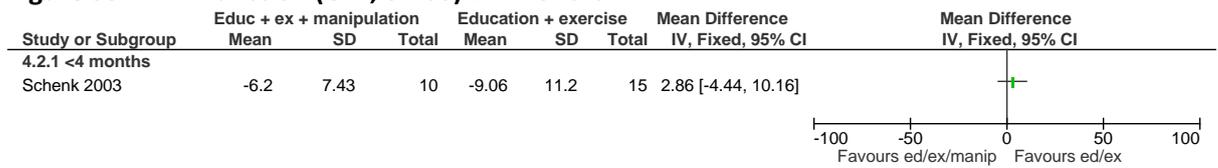
612

Figure 591: Pain severity (VAS, 0-10, change score) ≤ 4 months



613

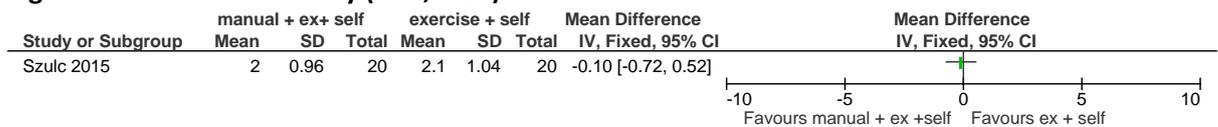
Figure 592: Function (ODI, 0-100) ≤ 4 months



K.8.5612 *Manual therapy (soft tissue techniques – muscle energy technique) + biomechanical exercise (McKenzie) + self management (unsupervised exercise) versus biomechanical exercise (McKenzie) + self management (unsupervised exercise)*

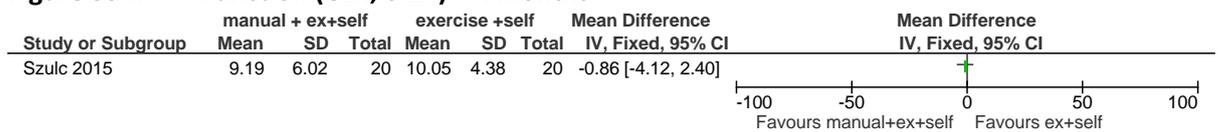
615
616

Figure 593: Pain severity (VAS, 0-10) < 4 months



617

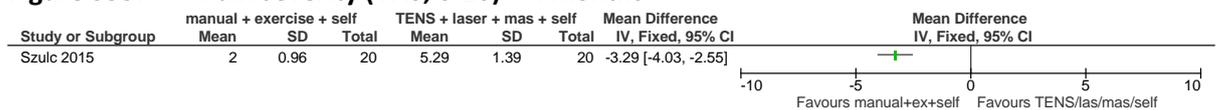
Figure 594: Function (ODI, 0-24) < 4 months



K.8.5613 *Manual therapy (soft tissue techniques – muscle energy technique) + biomechanical exercise (McKenzie) + self management (unsupervised exercise) versus standart treatment (massage + laser + TENS) + self management*

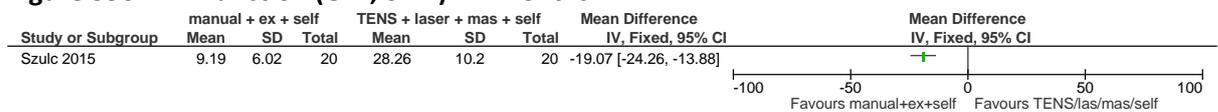
619
620

Figure 595: Pain severity (VAS, 0-10) < 4 months



621

Figure 596: Function (ODI, 0-24) < 4 months



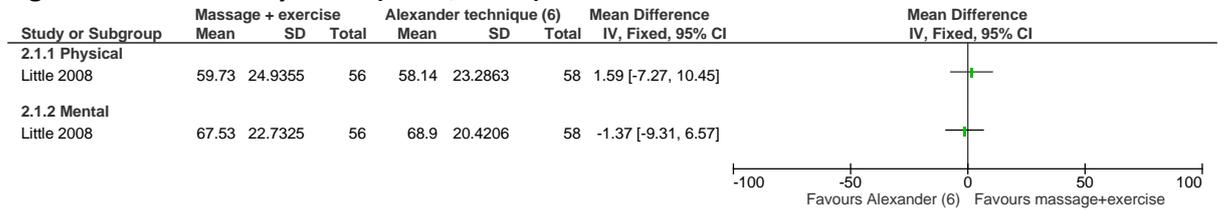
622

K.8.532 Low back pain without sciatica

K.8.521 Manual therapy (soft tissue techniques - massage) + self-management (exercise prescription) versus postural therapy (Alexander technique - 6 lessons)

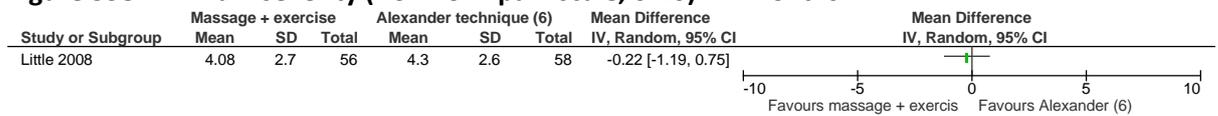
625

Figure 597: Quality of life (SF-36, 0-100) > 4 months



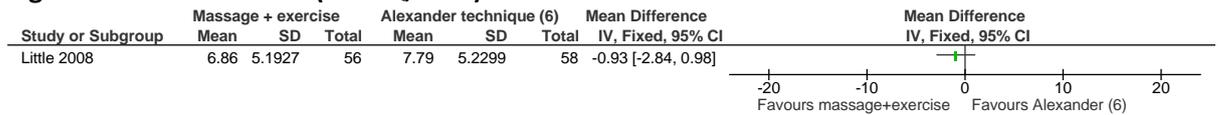
626

Figure 598: Pain severity (Von Korff pain scale, 0-10) > 4 months



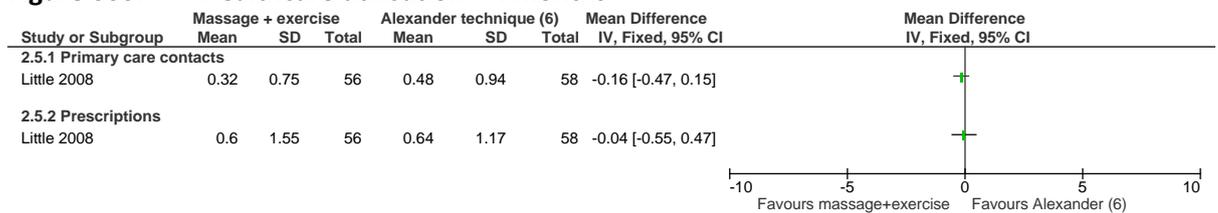
627

Figure 599: Function (RMDQ, 0-24) > 4 months



628

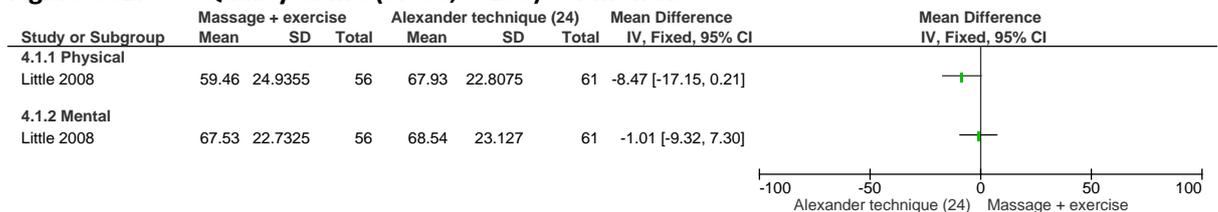
Figure 600: Healthcare utilisation > 4 months



K.8.522 Manual therapy (soft tissue techniques - massage) + self-management (exercise prescription) versus postural therapy (Alexander technique - 24 lessons)

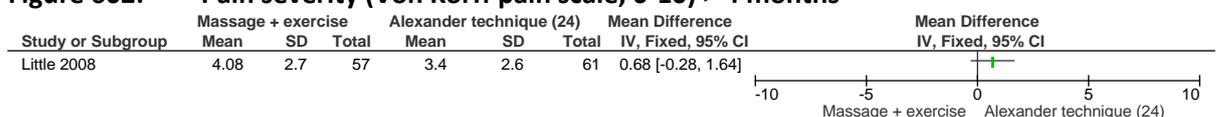
630

Figure 601: Quality of life (SF-36, 0-100) > 4 months



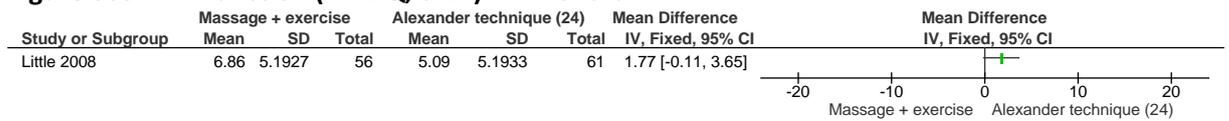
631

Figure 602: Pain severity (Von Korff pain scale, 0-10) > 4 months



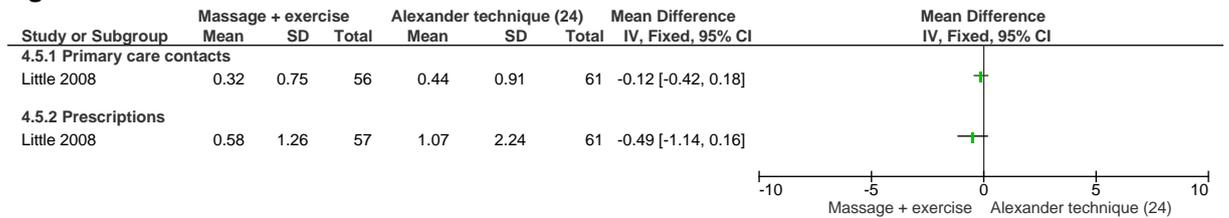
632

Figure 603: Function (RMDQ, 0-24) > 4 months



633

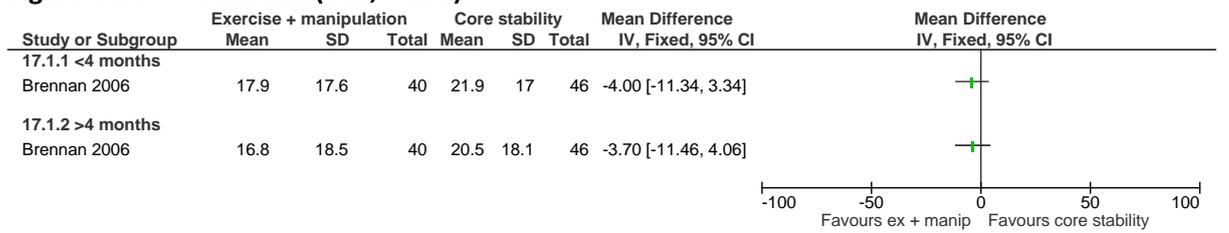
Figure 604: Healthcare utilisation > 4 months



K.8.523 Manual therapy (manipulation) + exercise (biomechanical - McKenzie) compared to exercise (biomechanical - core stability)

635

Figure 605: Function (ODI, 0-100)

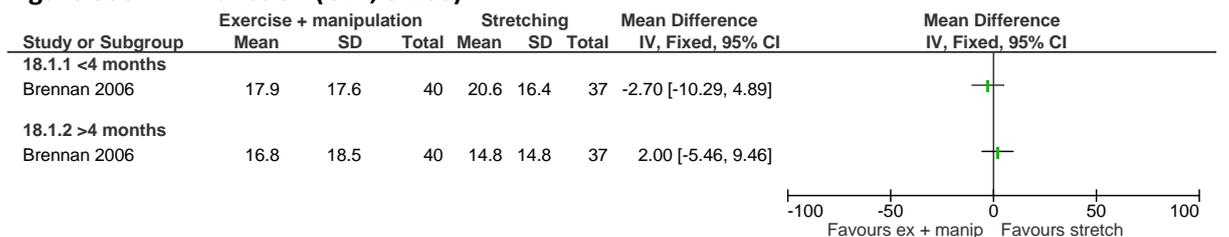


636

K.8.527 Manual therapy (manipulation) + exercise (biomechanical - McKenzie) compared to exercise (biomechanical - stretching)

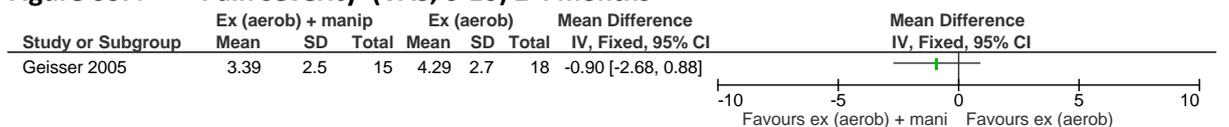
638

Figure 606: Function (ODI, 0-100)



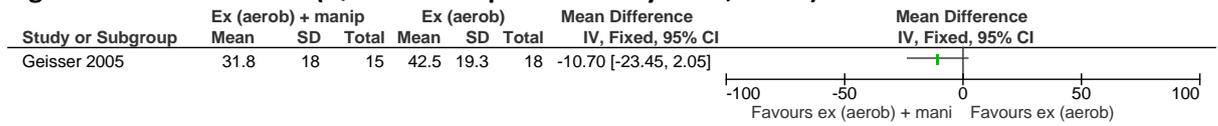
K.8.525 Manual therapy (manipulation) + exercise (aerobic) compared to exercise (aerobic)

Figure 607: Pain severity (VAS, 0-10) ≤ 4 months



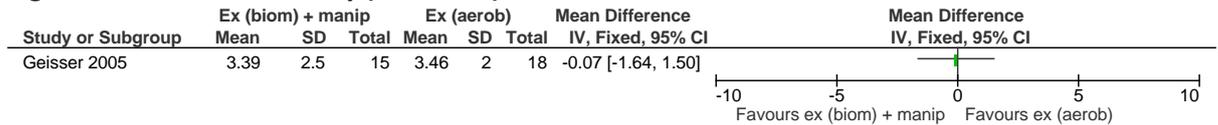
640

Figure 608: Function (Quebec back pain disability scale, 0-100) ≤ 4 months



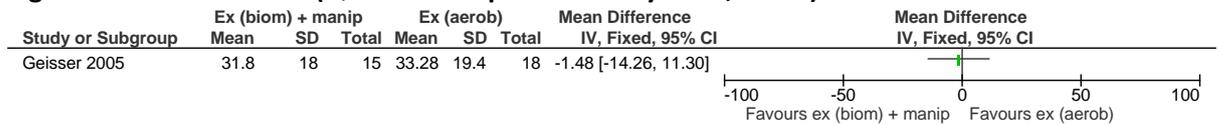
K.8.562.6 Manual therapy (manipulation) + exercise (aerobic) compared to exercise (biomechanical)

Figure 609: Pain severity (VAS, 0-10) ≤ 4 months



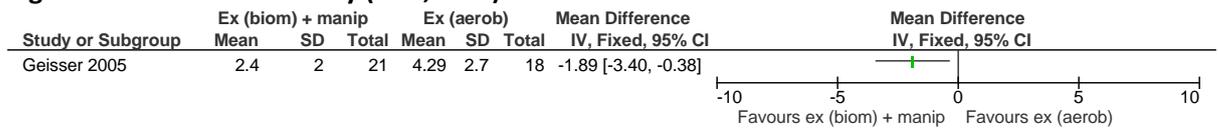
642

Figure 610: Function (Quebec back pain disability scale, 0-100) ≤ 4 months



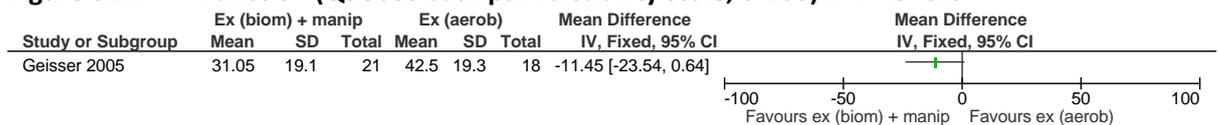
K.8.562.7 Manual therapy (manipulation) + exercise (biomechanical) compared to exercise (aerobic)

Figure 611: Pain severity (VAS, 0-10) ≤ 4 months



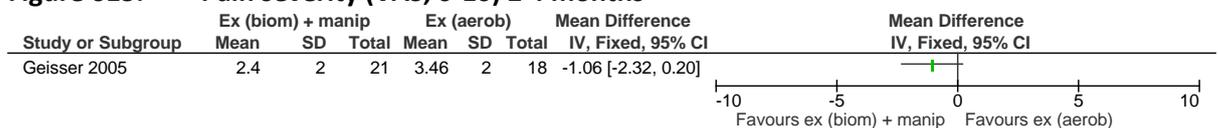
644

Figure 612: Function (Quebec back pain disability scale, 0-100) ≤ 4 months



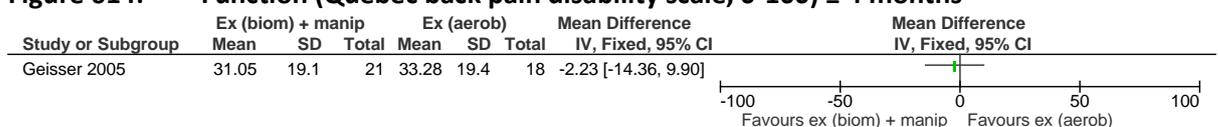
K.8.562.8 Manual therapy (manipulation) + exercise (biomechanical) compared to exercise (biomechanical)

Figure 613: Pain severity (VAS, 0-10) ≤ 4 months



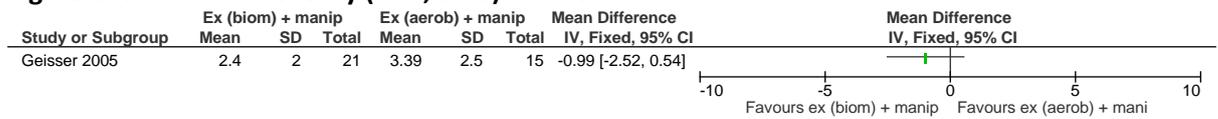
646

Figure 614: Function (Quebec back pain disability scale, 0-100) ≤ 4 months



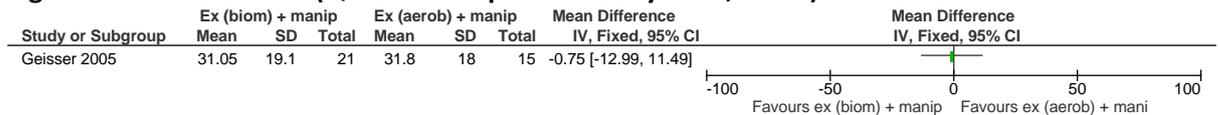
K.8.520 *Manual therapy (manipulation) + exercise (biomechanical) compared to manual therapy (manipulation) + exercise (aerobic)*
648

Figure 615: Pain severity (VAS, 0-10) ≤ 4 months



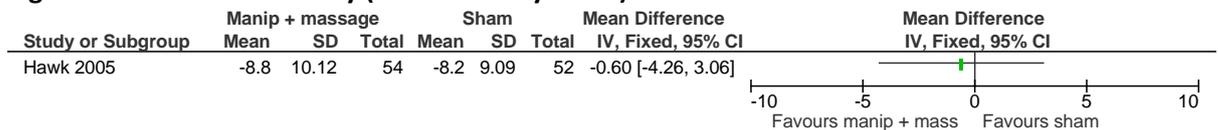
649

Figure 616: Function (Quebec back pain disability scale, 0-100) ≤ 4 months



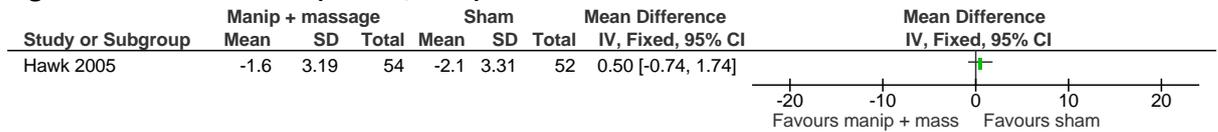
K.8.5210 *Manual therapy (manipulation plus soft tissue techniques - massage) compared to sham*

Figure 617: Pain severity (Pain disability index) ≤ 4 months



651

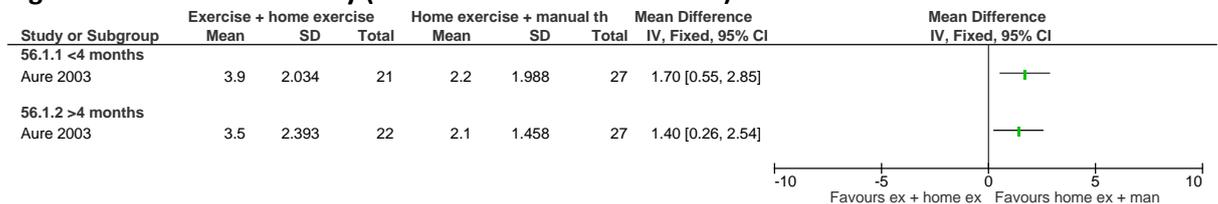
Figure 618: Function (RMDQ, 0-24) ≤ 4 months



K.8.523 Overall: Low back pain with/without sciatica

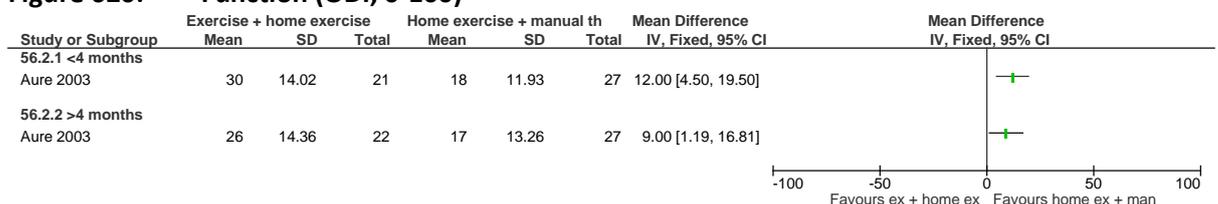
K.8.531 *Manual therapy (manipulation/mobilisation) + self management (home exercise) compared to self management (home exercise)+ exercise*
654

Figure 619: Pain severity (0-100 VAS converted to 0-10)



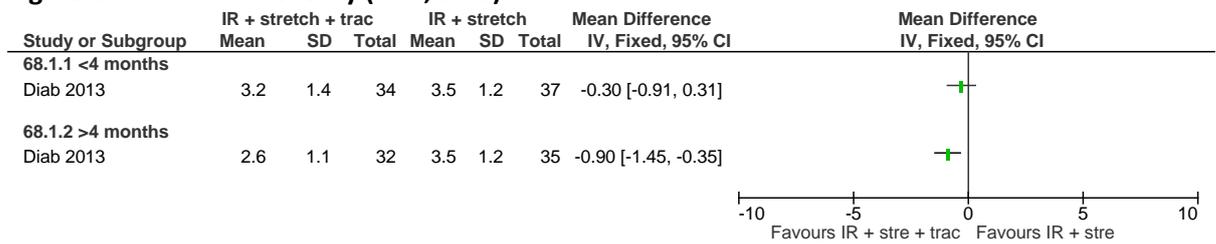
655

Figure 620: Function (ODI, 0-100)



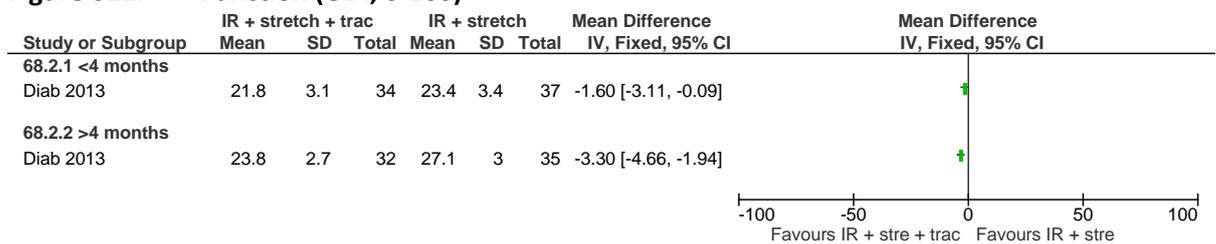
K.8.532 *Manual therapy (traction) + physical therapy (infra-red) + exercise (biomechanical - stretching) compared to physical (infra-red) + exercise (biomechanical – stretching)*
657

Figure 621: Pain severity (NRS, 0-10)



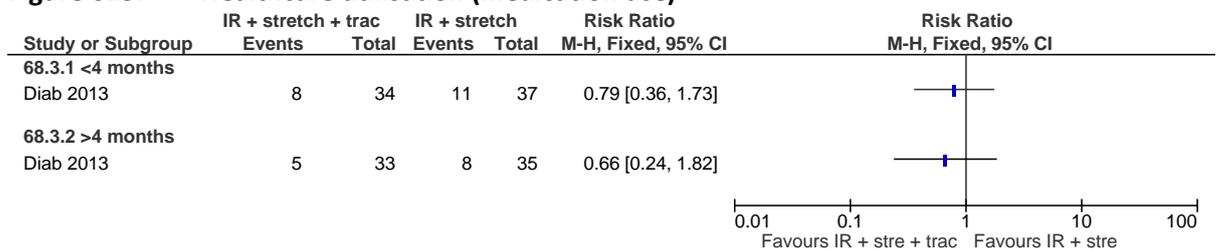
658

Figure 622: Function (ODI, 0-100)



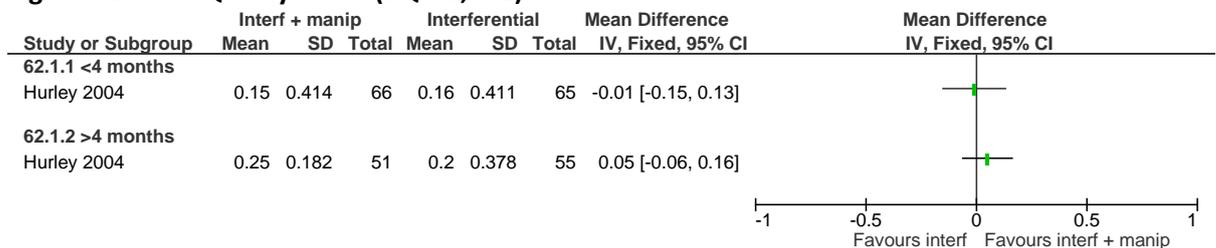
659

Figure 623: Healthcare utilisation (medication use)



K.8.533 *Manual therapy (manipulation) + electrotherapy (interferential) compared to electrotherapy (interferential)*
661

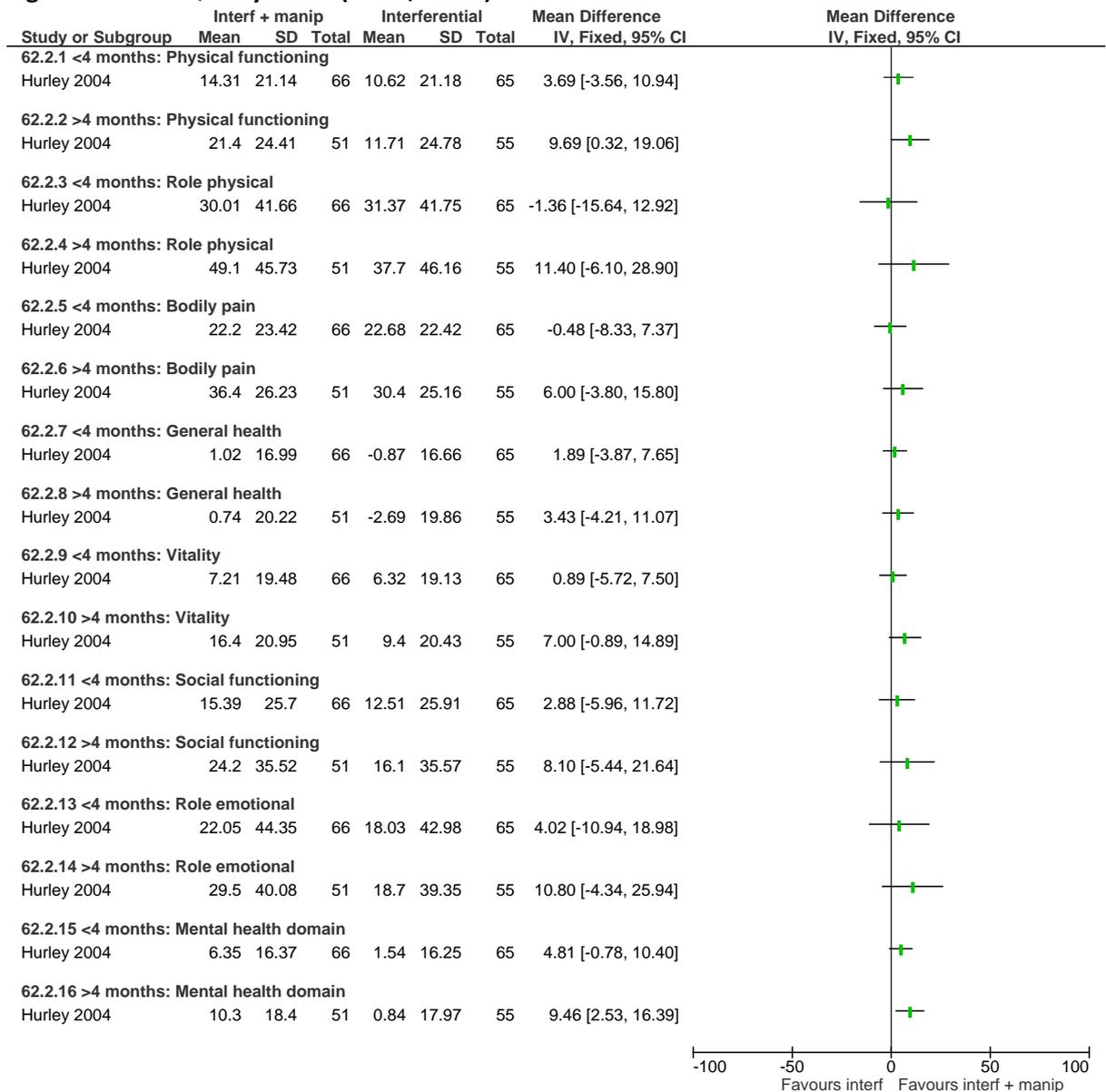
Figure 624: Quality of life (EQ-5D, 0-1)



662

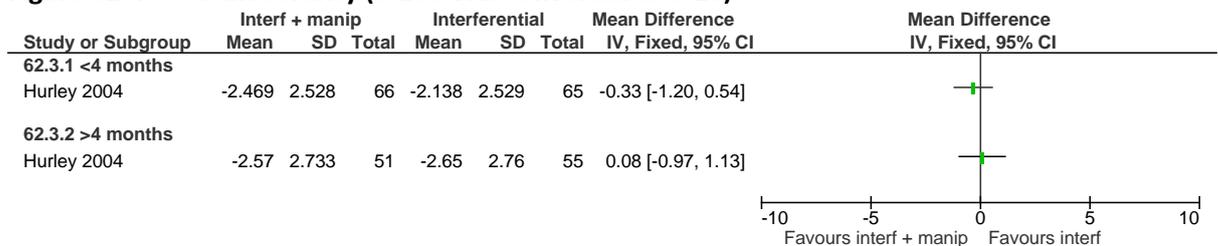
663

Figure 625: Quality of life (SF-36, 0-100)



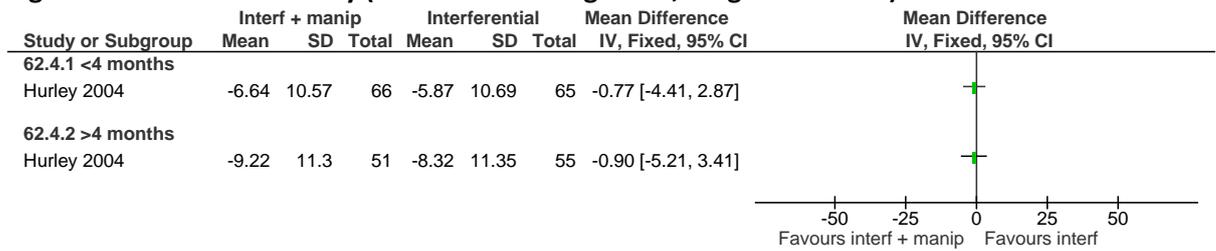
664

Figure 626: Pain severity (0-100 VAS converted to 0-10)



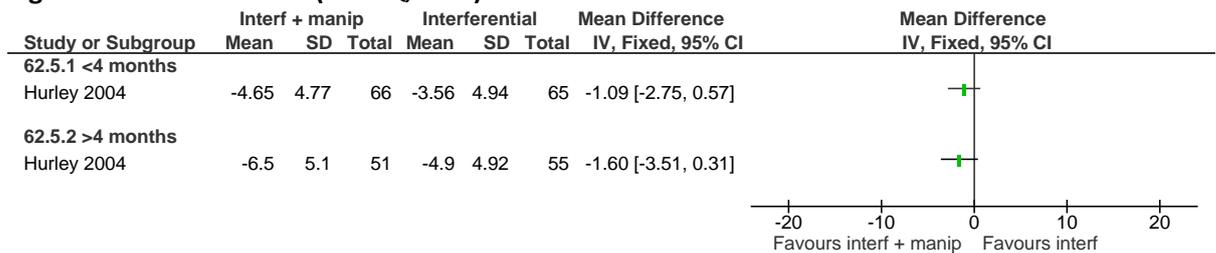
665

Figure 627: Pain severity (McGill Pain Rating Index, range not stated)



666

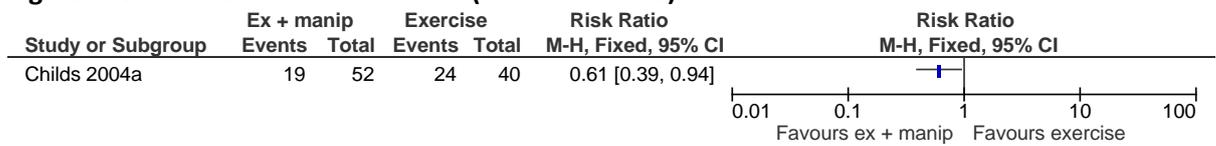
Figure 628: Function (RMDQ, 0-24)



K.8.563.7 Manual therapy (manipulation) + exercise (biomechanical – core stability) compared to exercise (biomechanical – core stability)

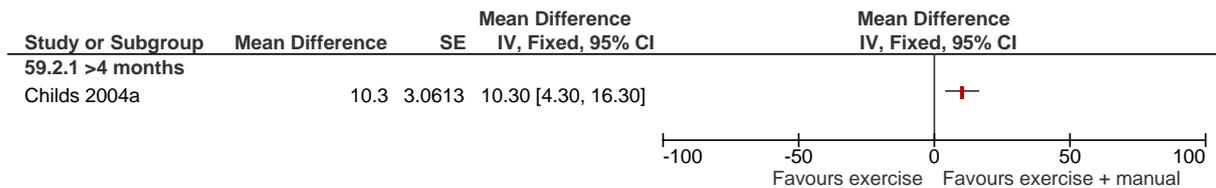
668

Figure 629: Healthcare utilisation (medication use) >4 months



669

Figure 630: Function (ODI 0-100) >4 months



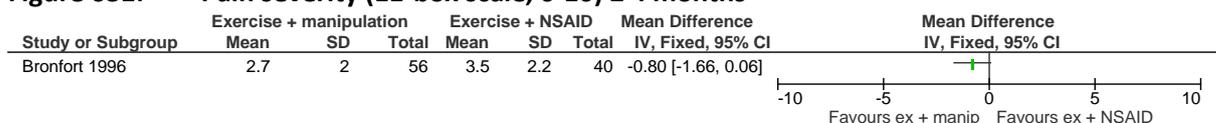
670

671

K.8.563.5 Manual therapy (manipulation) + exercise (trunk strengthening exercise) compared to pharmacological treatment (NSAID) + exercise (trunk strengthening exercise)

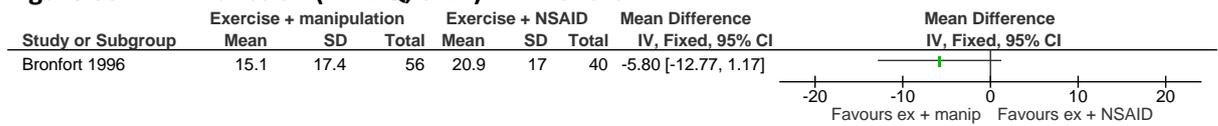
673

Figure 631: Pain severity (11-box scale, 0-10) ≤ 4 months



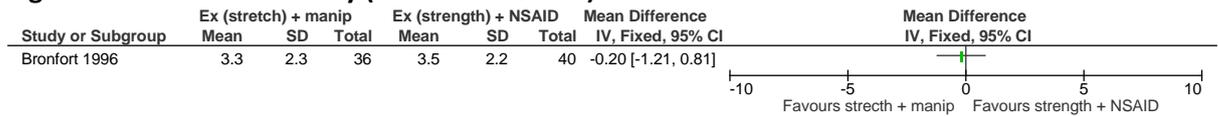
674

Figure 632: Function (RMDQ, 0-24) ≤ 4 months



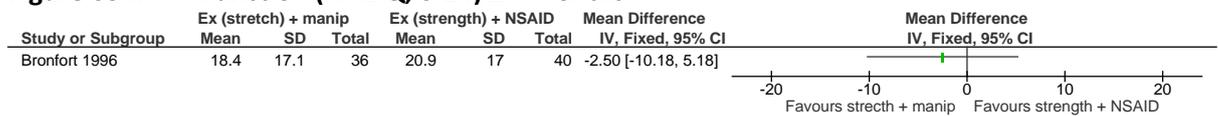
K.8.563.5 *Manual therapy (manipulation) + exercise (trunk stretching exercises) compared to pharmacological treatment (NSAID) + exercise (trunk strengthening)*
676

Figure 633: Pain severity (11-box scale 0-10) ≤ 4 months



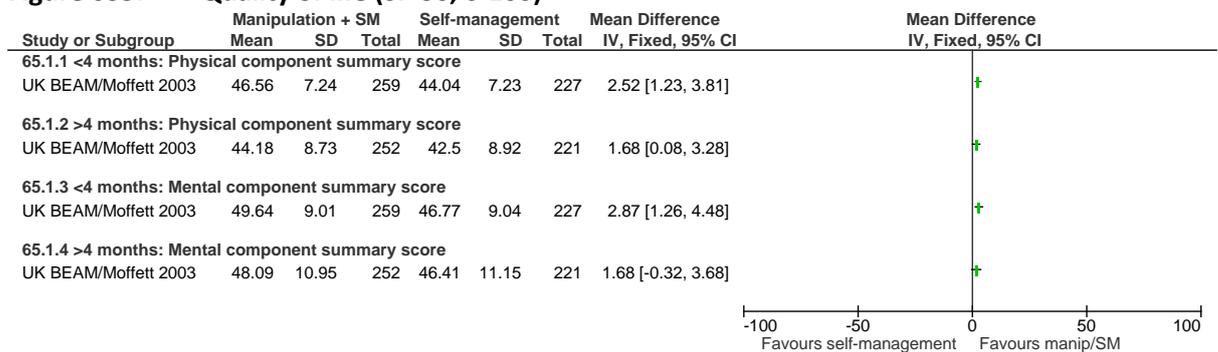
677

Figure 634: Function (RMDQ, 0-24) ≤ 4 months



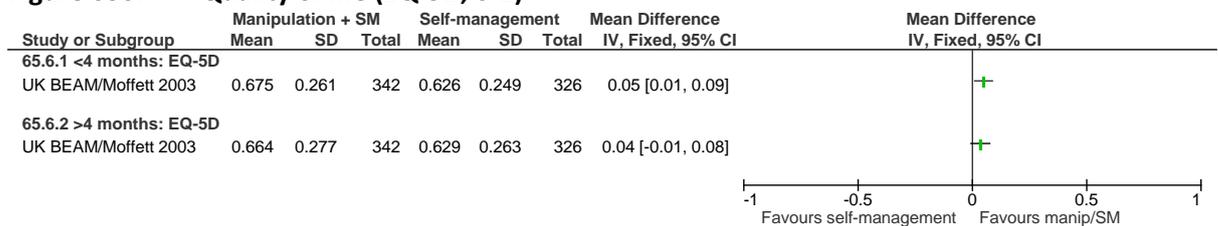
K.8.563.7 *Mixed modality manual therapy + self-management compared to self-management*

Figure 635: Quality of life (SF-36, 0-100)



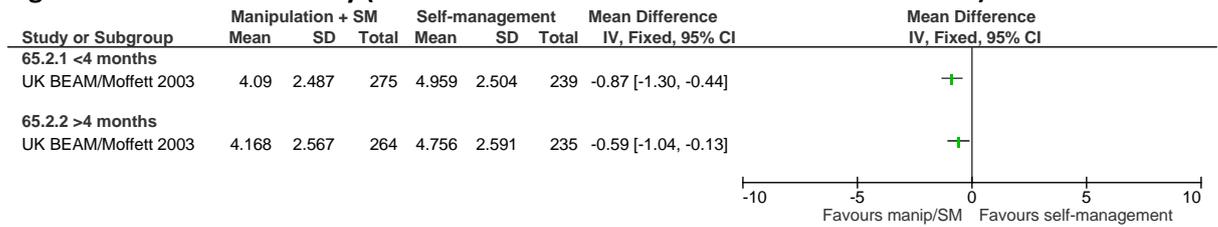
679

Figure 636: Quality of life (EQ-5D, 0-1)



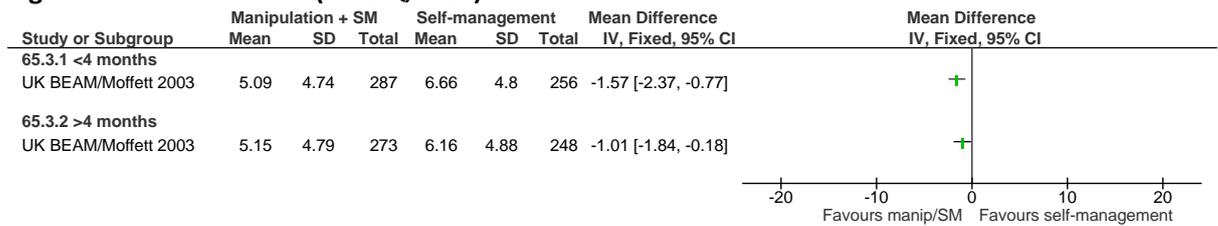
680

Figure 637: Pain severity (Modified Von Korff scale 0-100 converted to 0-10)



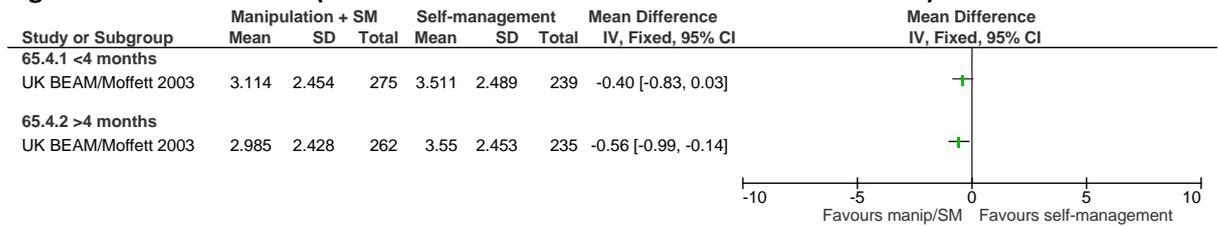
681

Figure 638: Function (RMDQ, 0-24)



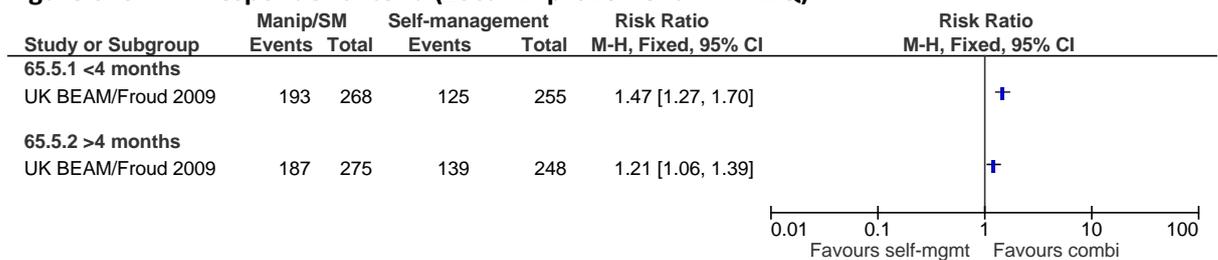
682

Figure 639: Function (Modified Von Korff scale 0-100 converted to 0-10)



683

Figure 640: Responder criteria (≥30% improvement in RMDQ)



K.8.538 685 Mixed modality manual therapy + exercise (biomechanical) + self-management compared to self-management

686

Figure 641: Pain severity (modified Von Korff 0-100 converted to 0-10 scale)

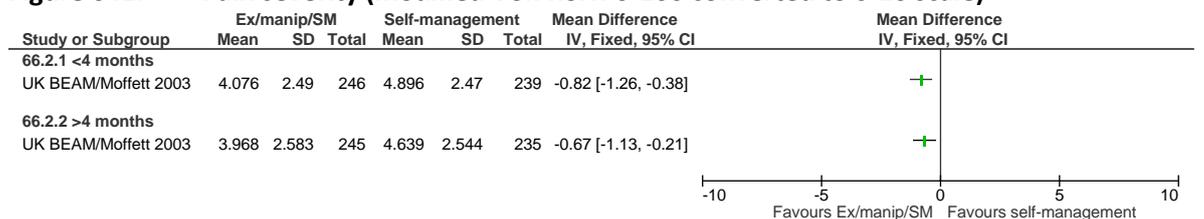
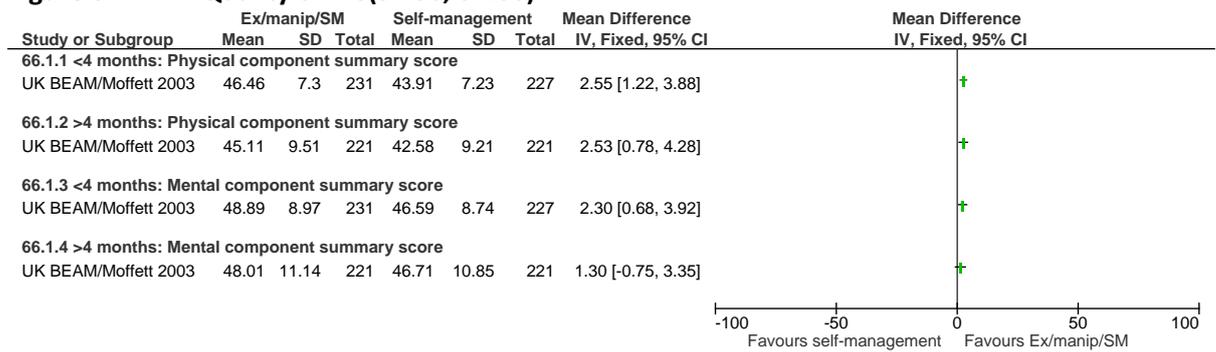
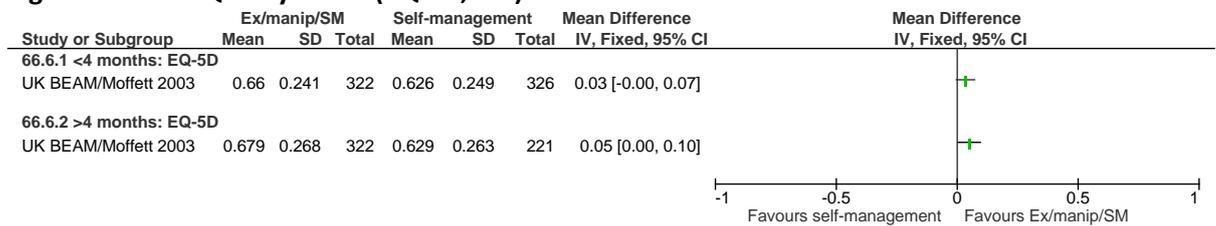


Figure 642: Quality of life(SF-36, 0-100)



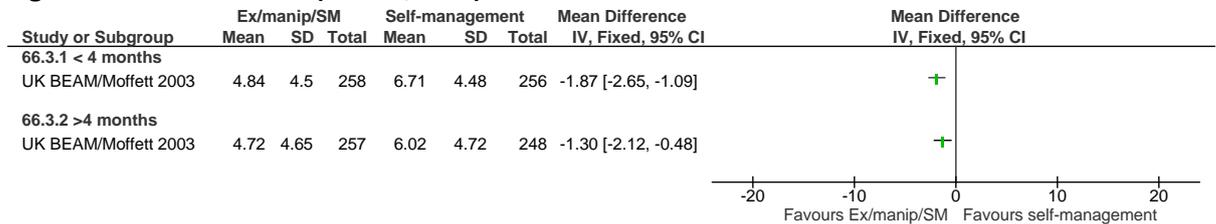
687

Figure 643: Quality of life (EQ-5D, 0-1)



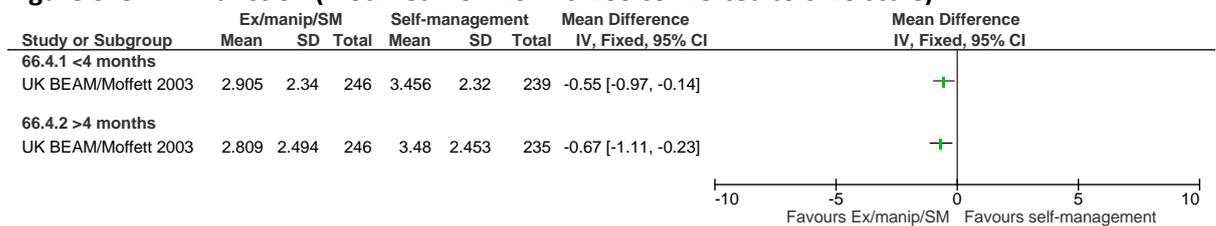
688

Figure 644: Function (RMDQ, 0-24).



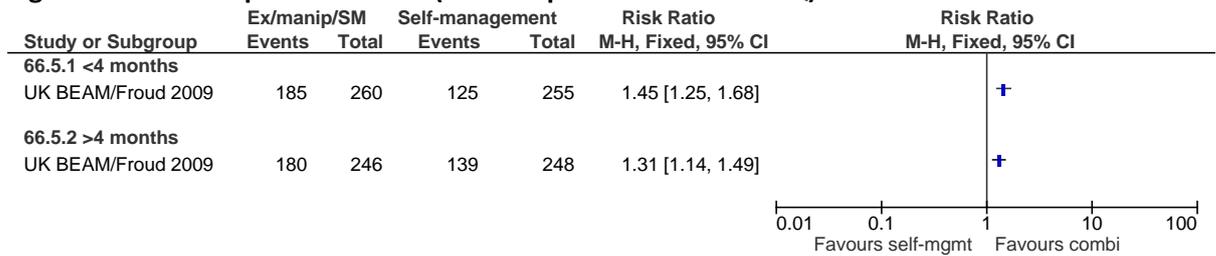
689

Figure 645: Function (modified Von Korff 0-100 converted to 0-10 scale).



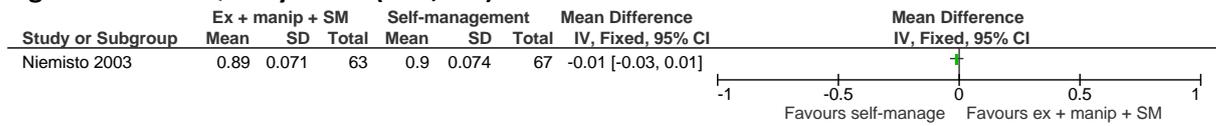
690

Figure 646: Responder criteria ($\geq 30\%$ improvement in RMDQ)



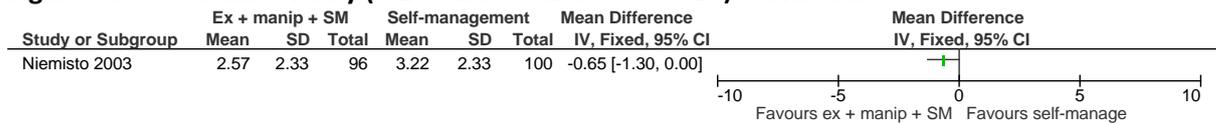
K.8.5.9.9 692 Manual therapy (manipulation/mobilisation) + exercise (biomechanical) + self-management compared to self-management

Figure 647: Quality of life (15D, 0-1) > 4 months



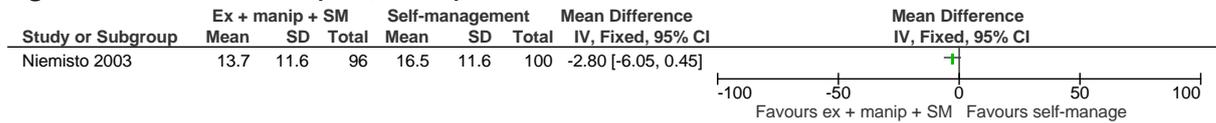
693

Figure 648: Pain severity (0-100 VAS converted to 0-10) > 4 months



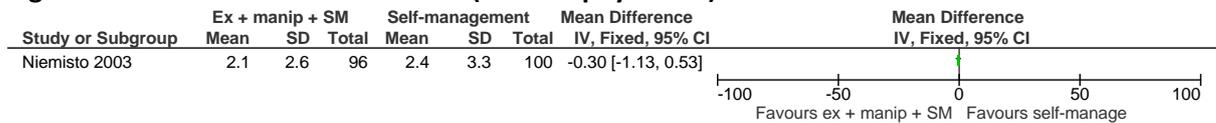
694

Figure 649: Function (ODI, 0-100) > 4 months



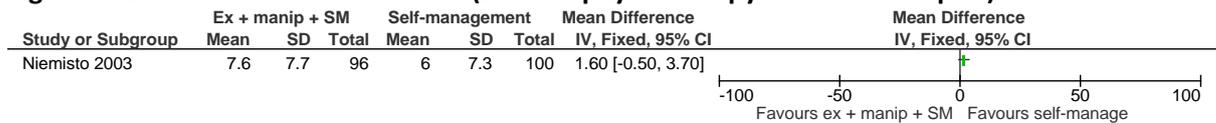
695

Figure 650: Healthcare utilisation (visits to physicians) > 4 months



696

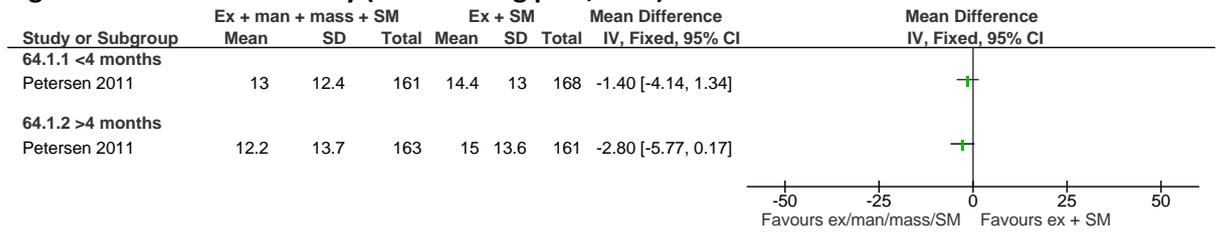
Figure 651: Healthcare utilisation (visits to physiotherapy or other therapies) > 4 months



K.8.59.10 *Manual therapy (manipulation plus soft tissue techniques - massage) + exercise (biomechanical) + self-management compared to exercise (biomechanical - McKenzie) + self-management*

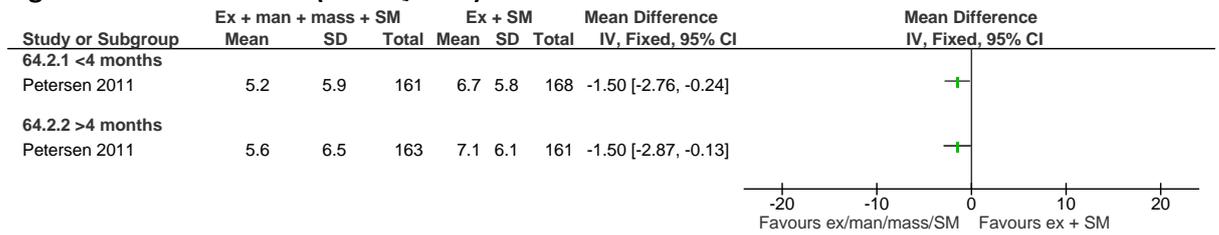
698

Figure 652: Pain severity (Back and leg pain, 0-60)



699

Figure 653: Function (RMDQ, 0-24)



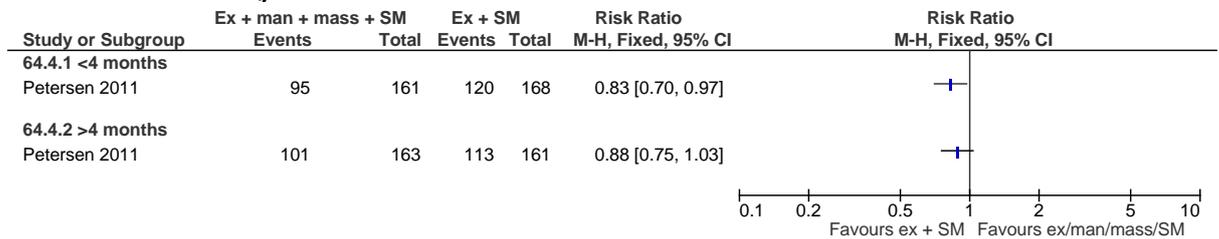
700

Figure 654: Healthcare utilisation (contact with healthcare in previous 2 months)



701

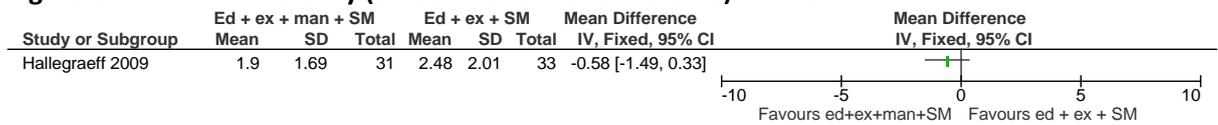
Figure 655: Responder criteria ("Success" = decrease 5 points or absolute score below 5 points on RMDQ)



702

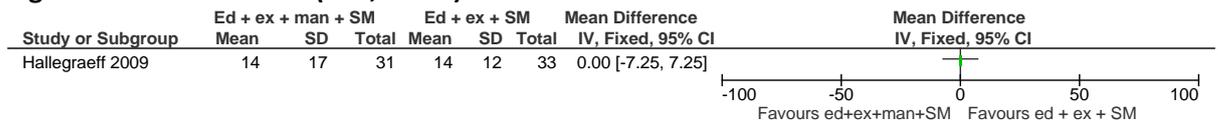
K.8.57311 *Manual therapy (manipulation) + exercise + self-management (education + advice to stay active) compared to exercise + self-management (education + advice to stay active)*
704

Figure 656: Pain severity (0-100 VAS converted to 0-10) ≤ 4 months



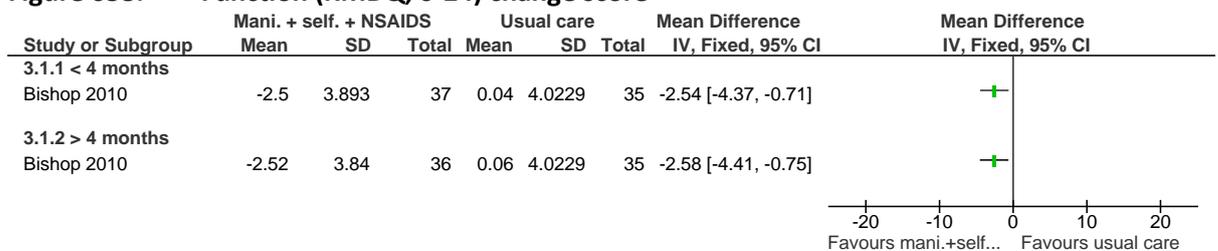
705

Figure 657: Function (ODI, 0-100) ≤ 4 months



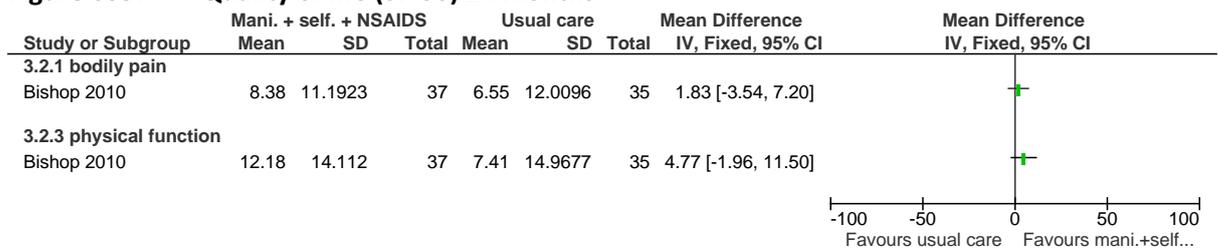
K.8.57312 *Manual therapy (manipulation) + self-management (advice) + pharmacological therapy (NSAIDs) compared to usual care*
707

Figure 658: Function (RMDQ, 0-24) change score



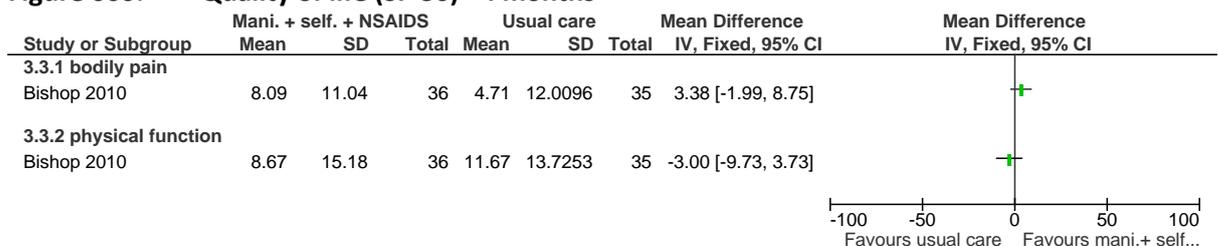
708

Figure 659: Quality of life (SF-36) ≤ 4 months



709

Figure 660: Quality of life (SF-36) > 4 months



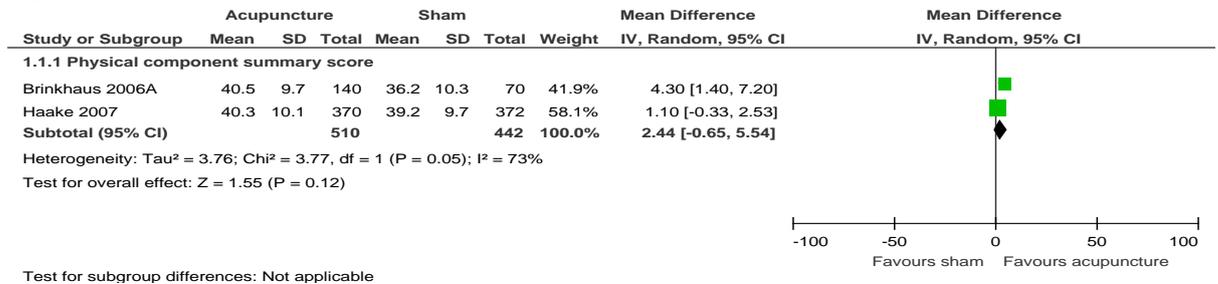
710

K1.9 Acupuncture

K7.9.21 Acupuncture versus sham/placebo

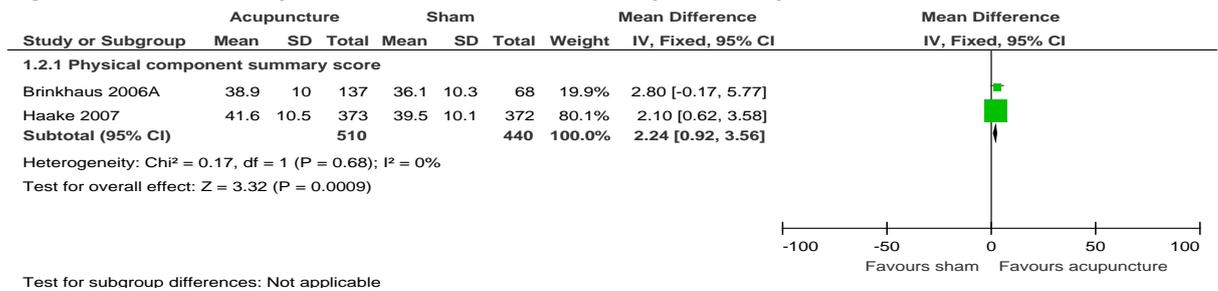
K.9.131 Low back pain without sciatica population

Figure 661: Quality of life SF-36/SF12 (0-100) Physical composite score ≤4 months



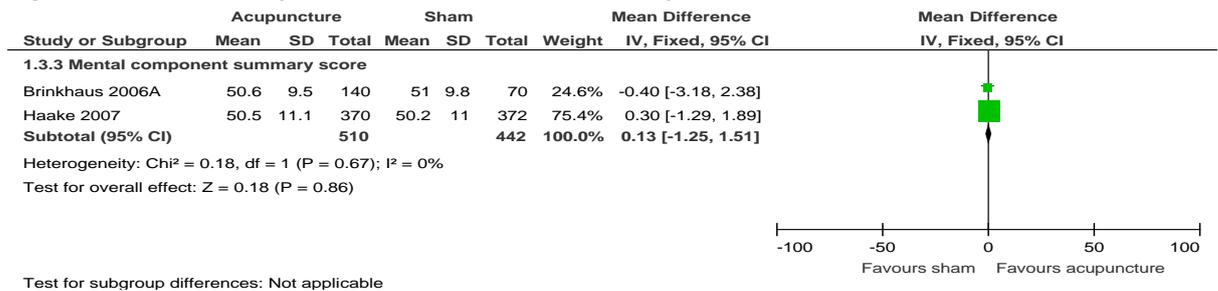
714

Figure 662: Quality of life SF-36/SF12 (0-100) Physical composite score > 4 months



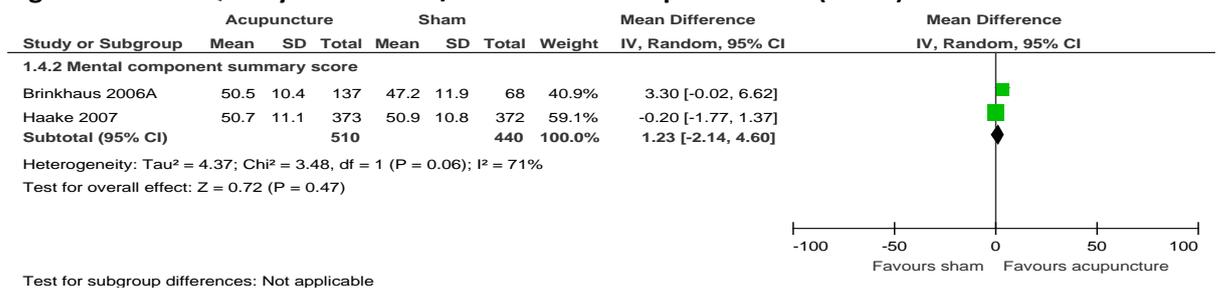
715

Figure 663: Quality of life SF-36/SF12 Mental composite score (0-100) ≤4 months



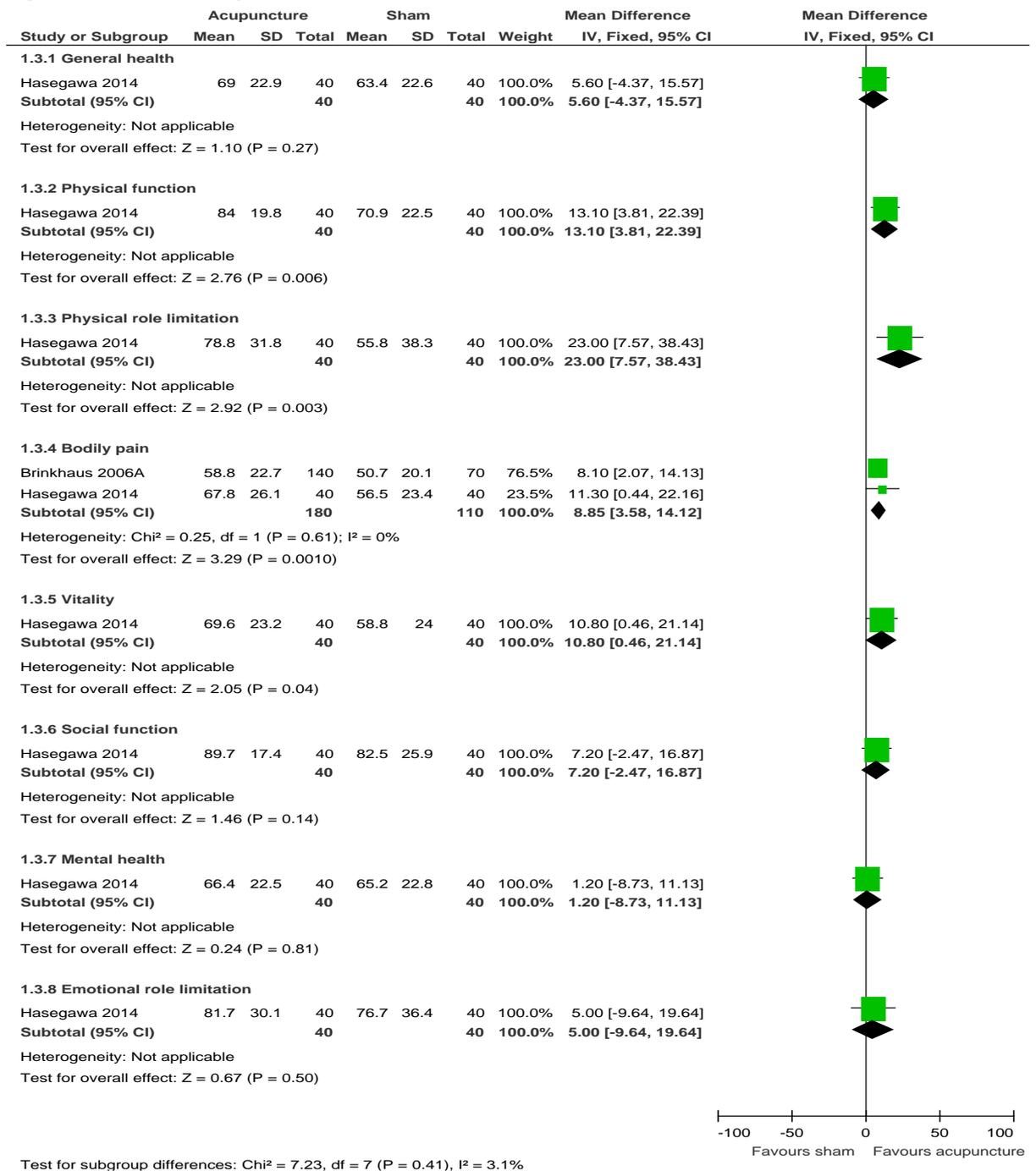
716

Figure 664: Quality of life SF-36/SF12 mental composite score (0-100) > 4 months



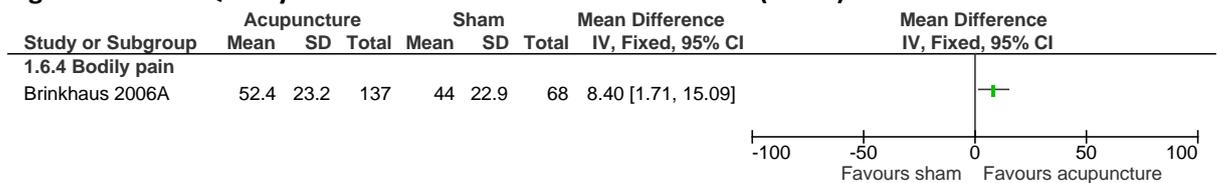
717

Figure 665: Quality of life SF-36 individual domain scores (0-100) ≤4 months



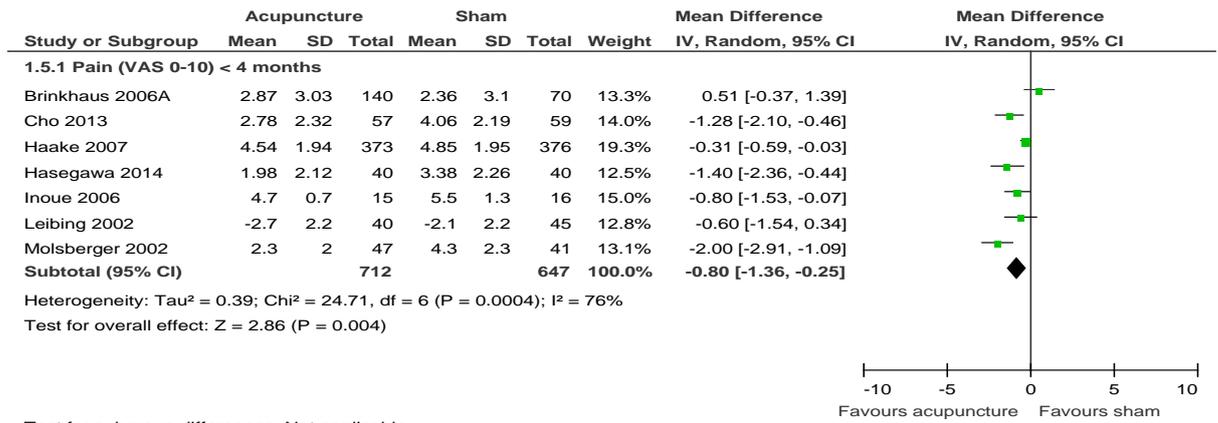
718

Figure 666: Quality of life SF-36 individual domain scores (0-100) >4 months



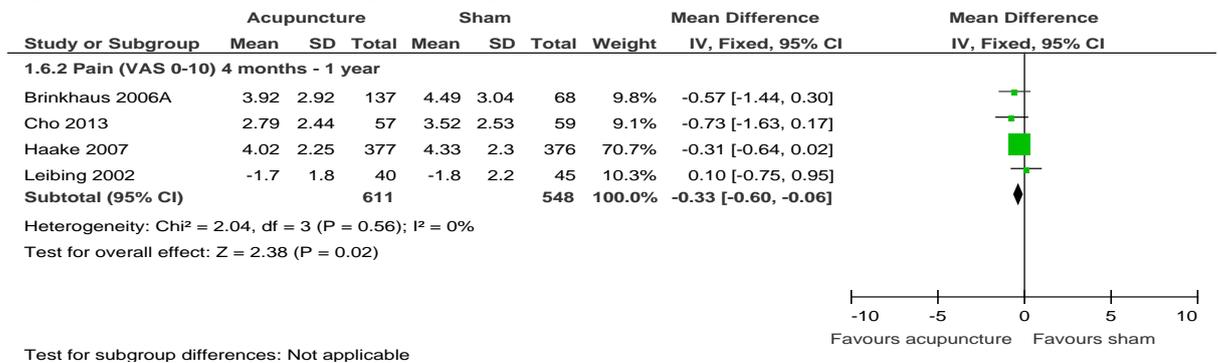
719

Figure 667: Pain severity (VAS 0–10) ≤4 months



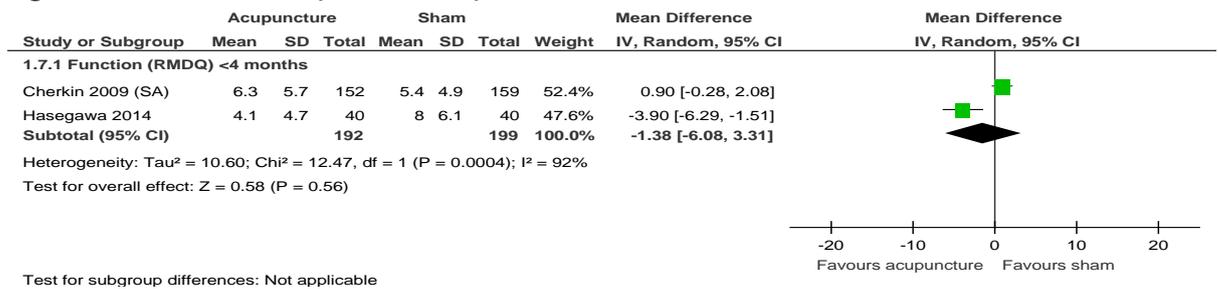
720

Figure 668: Pain severity (VAS 0–10) > 4 months



721

Figure 669: Function (RMDQ, 0-23) ≤4 months



722

Figure 670: Function (RMDQ, 0-23) > 4 months

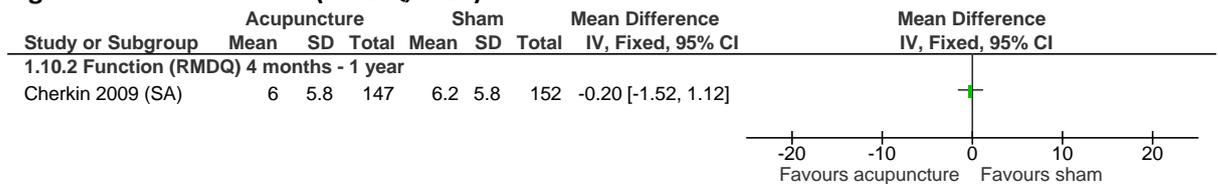
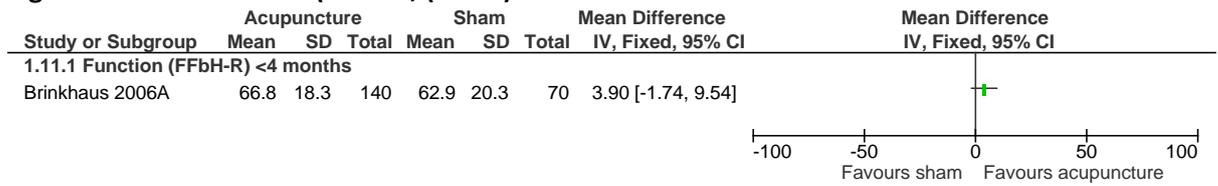
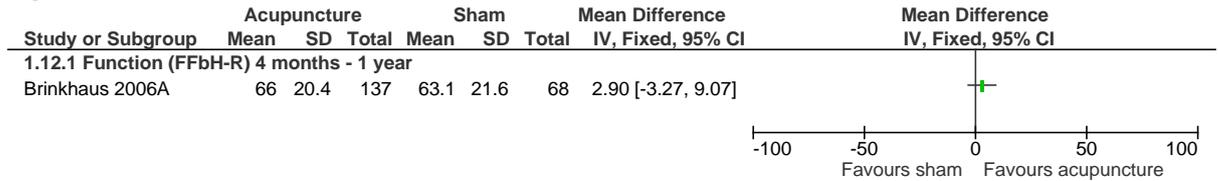


Figure 671: Function (FFbH-R, (0-100) ≤4 months



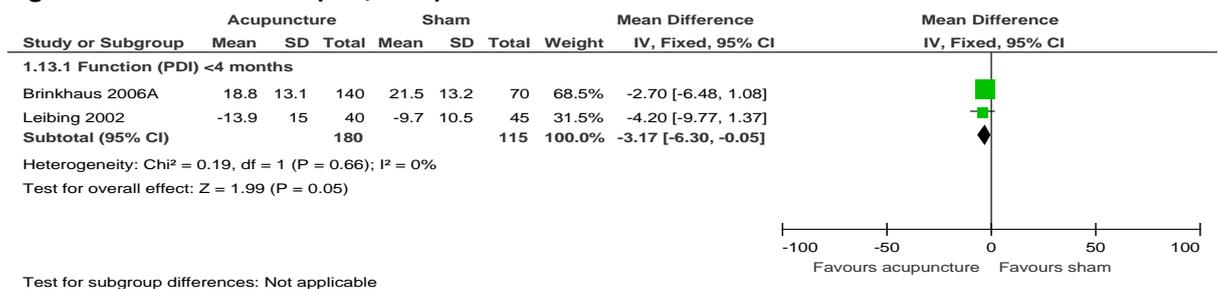
723

Figure 672: Function (FFbH-R, 0-100) > 4 months



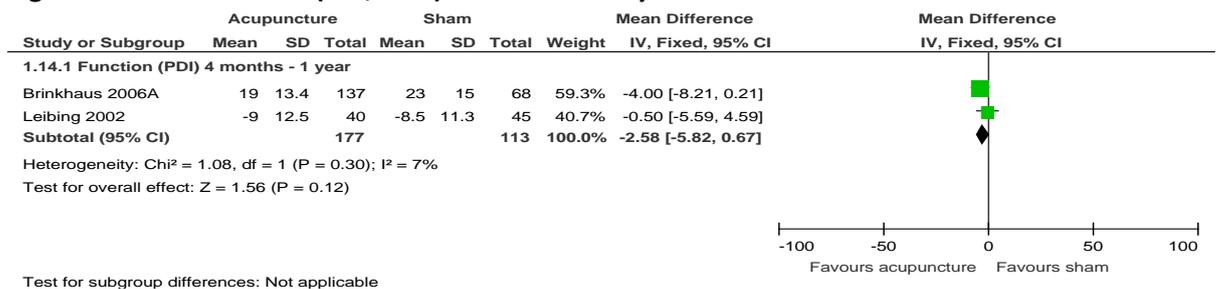
724

Figure 673: Function (PDI, 0-70) ≤4 months



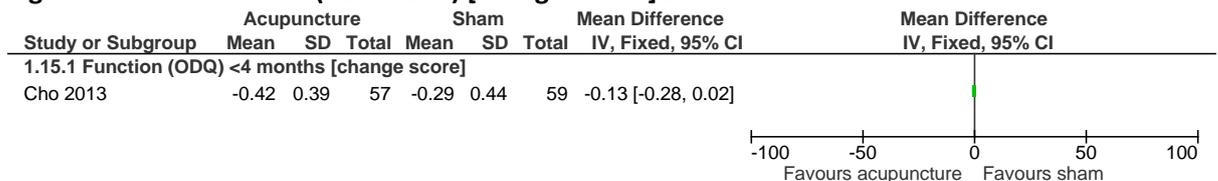
725

Figure 674: Function (PDI, 0-70) > 4 months – 1 year



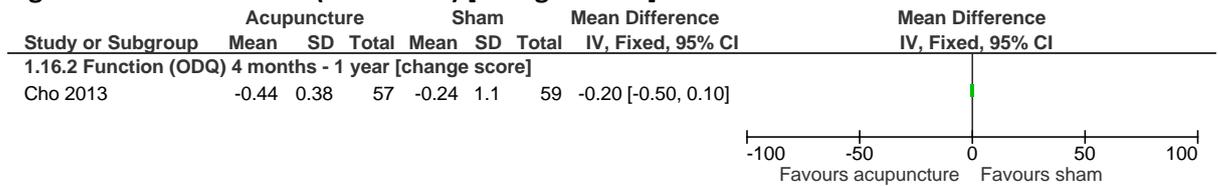
726

Figure 675: Function (ODI 0–100) [change scores] ≤ 4 months



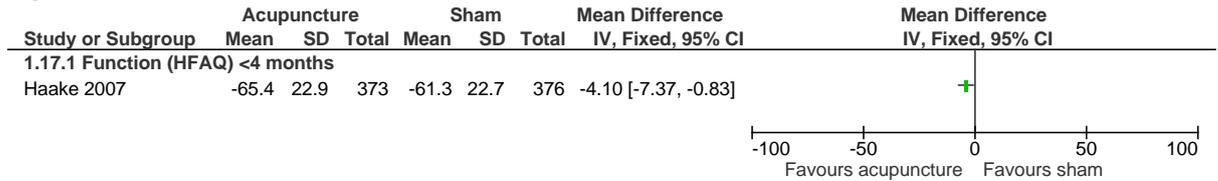
727

Figure 676: Function (ODI 0–100) [change scores] > 4 months



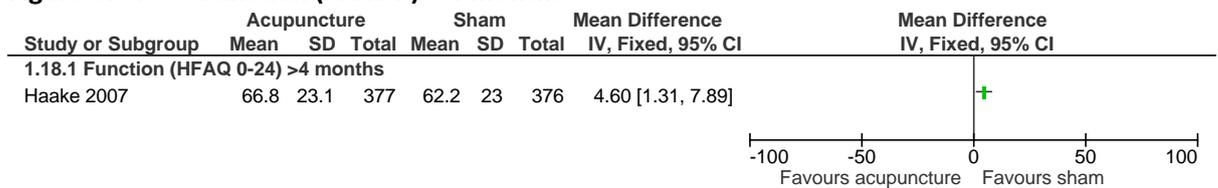
728

Figure 677: Function (FFbH-R, 0-100) ≤4 months



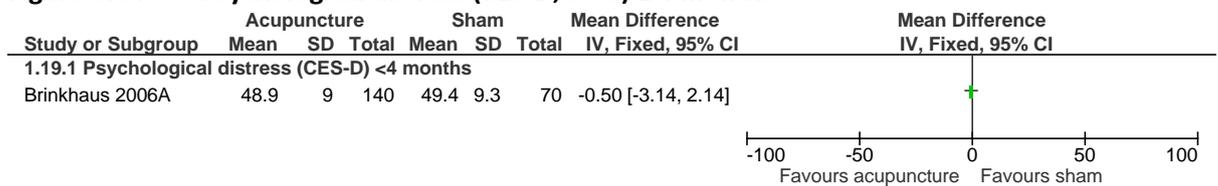
729

Figure 678: Function (FFbH-R) > 4 months



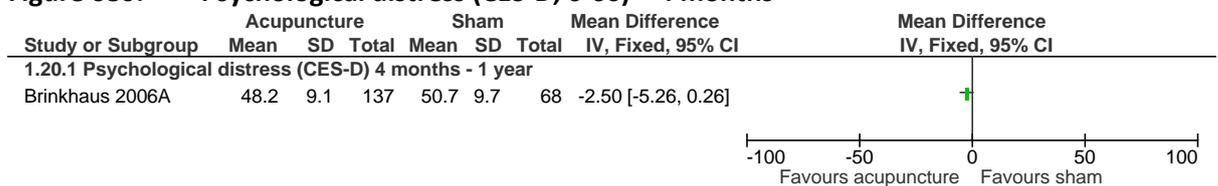
730

Figure 679: Psychological distress (CES-D, 0-60) ≤ 4 months



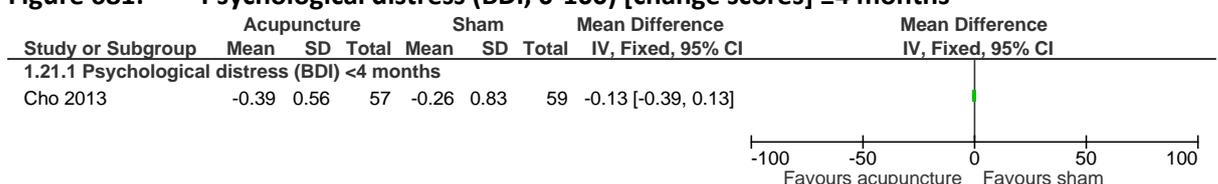
731

Figure 680: Psychological distress (CES-D, 0-60) > 4 months



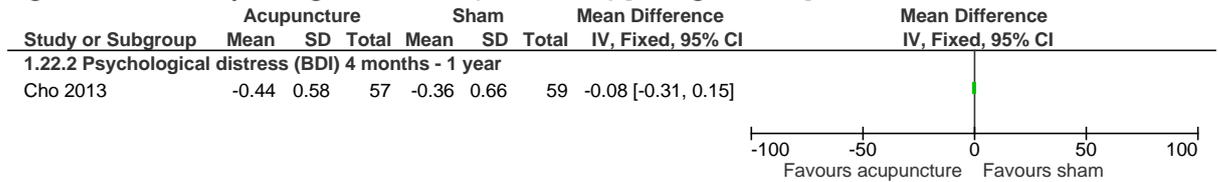
732

Figure 681: Psychological distress (BDI, 0-100) [change scores] ≤4 months



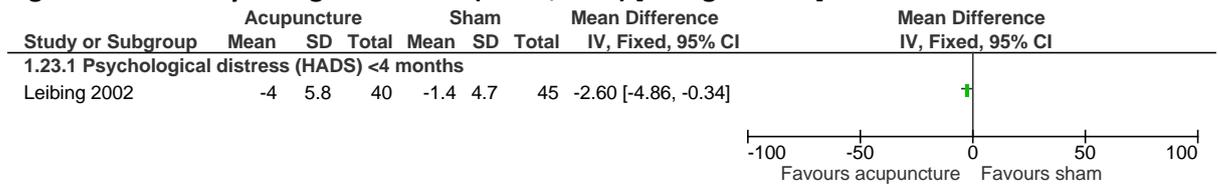
733

Figure 682: Psychological distress (BDI, 0-100) [change scores] > 4 months



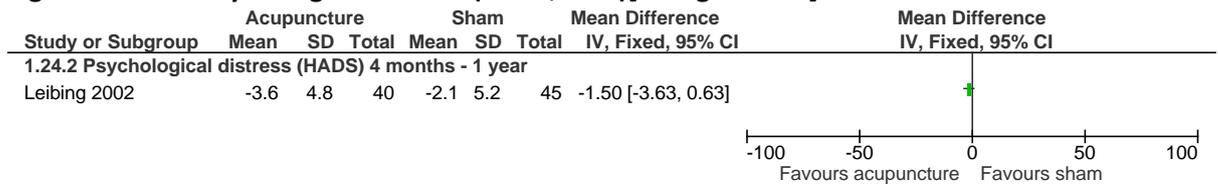
734

Figure 683: Psychological distress (HADS, 0-42) [change scores] ≤4 months



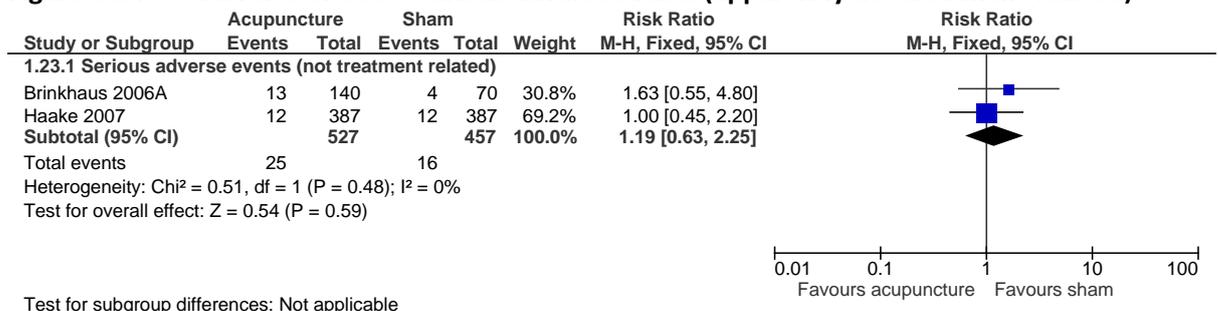
735

Figure 684: Psychological distress (HADS, 0-42)[change scores] > 4 months



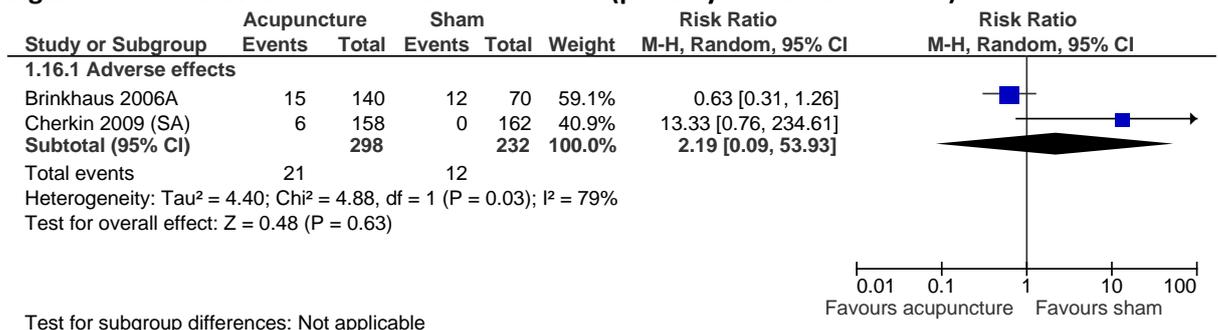
736

Figure 685: Adverse effects – serious adverse events (apparently not treatment-related)



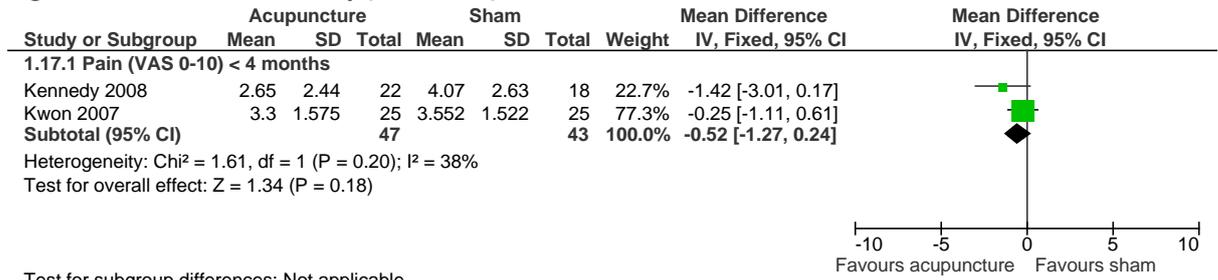
737

Figure 686: Adverse effects – adverse effects (possibly treatment-related)



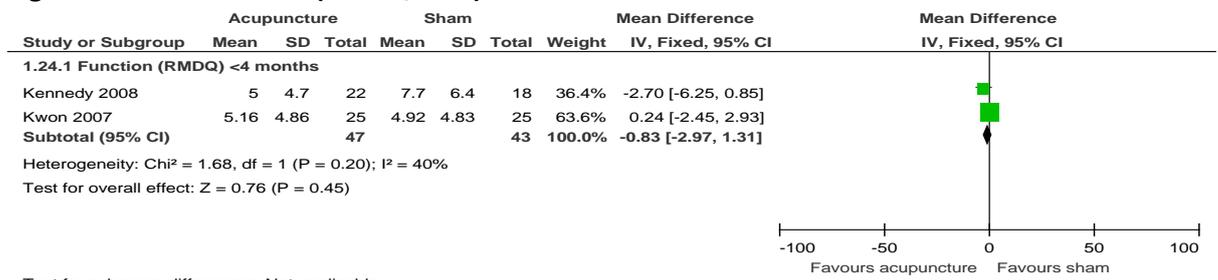
K.932 Overall population (mixed) with and without sciatica

Figure 687: Pain severity (VAS 0–10) ≤4 months



739

Figure 688: Function (RMDQ, 0-23) ≤4 months



740

Figure 689: Adverse effects – adverse effects (possibly related to treatment)

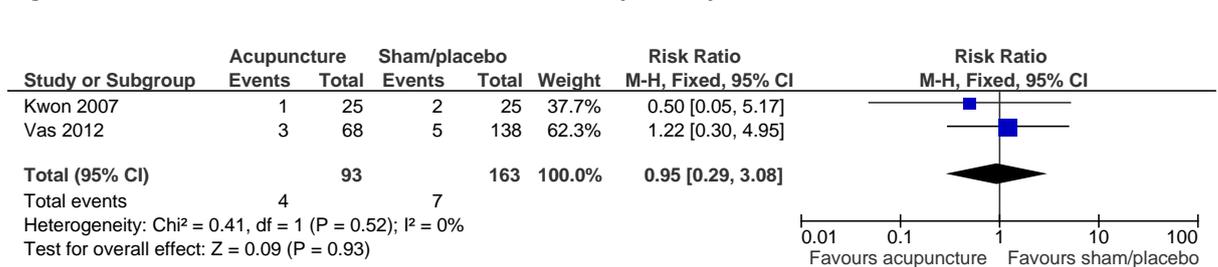
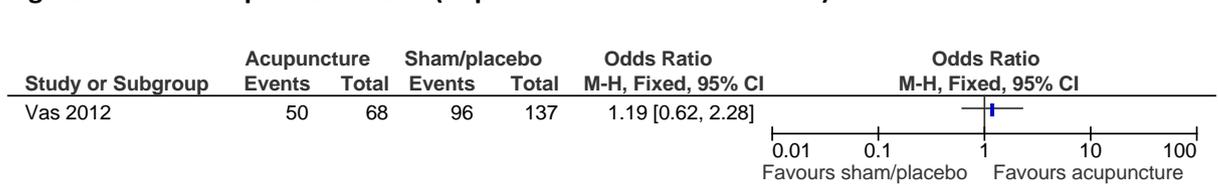


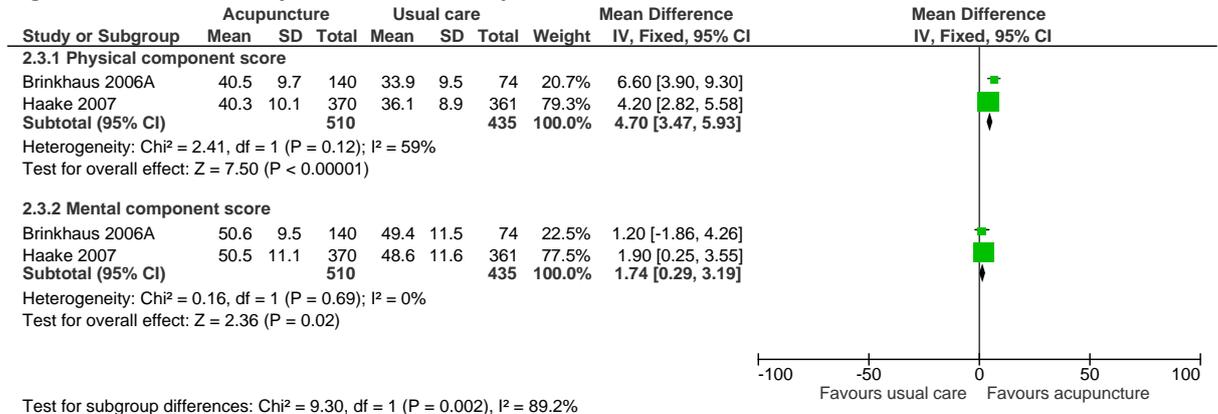
Figure 690: Responder criteria (improvement in function >35%) <4 months



K7912 Acupuncture versus usual care

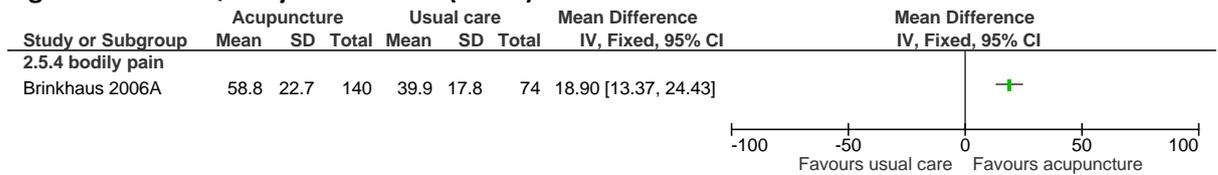
K.9.21 Low back pain without sciatica population

Figure 691: Quality of life SF-36 composite scores ≤4 months



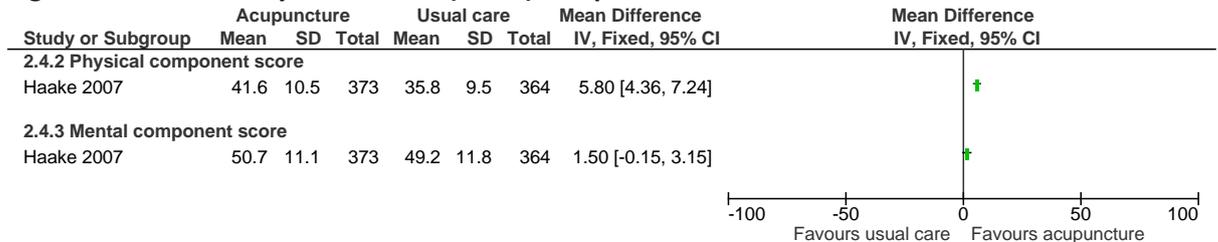
743

Figure 692: Quality of life SF-36 (0-100) individual domain scores ≤4 months



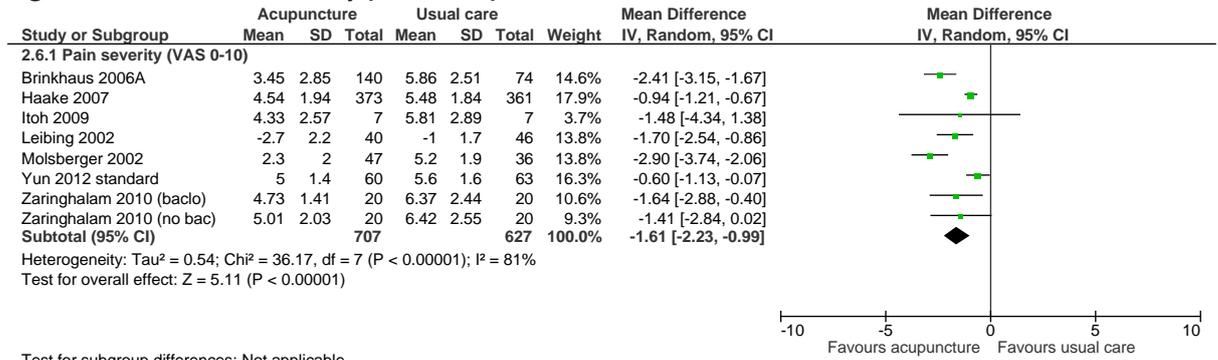
744

Figure 693: Quality of life SF-12 (0-100) composite scores > 4 months



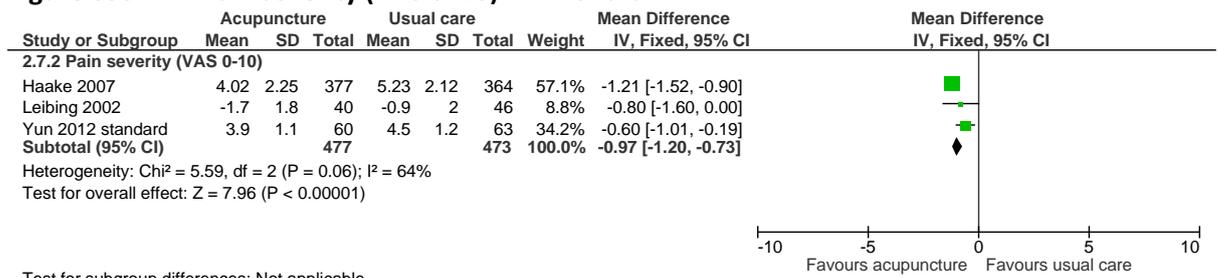
745

Figure 694: Pain severity (VAS 0-10) ≤4 months



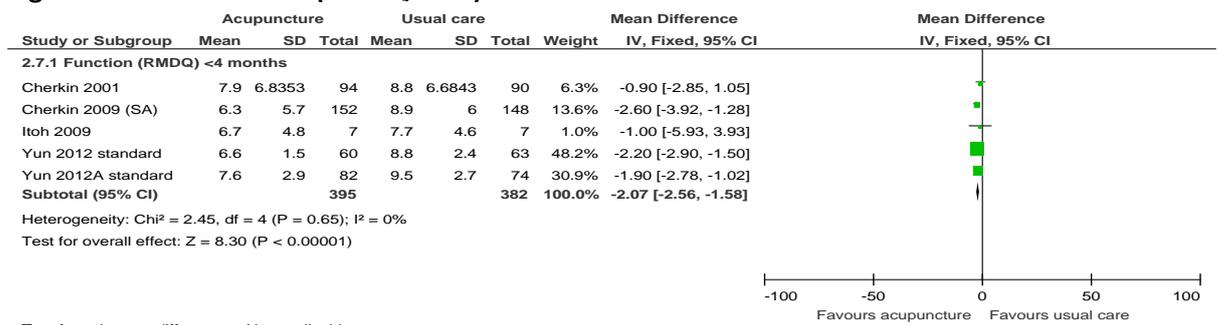
746

Figure 695: Pain severity (VAS 0–10) > 4 months



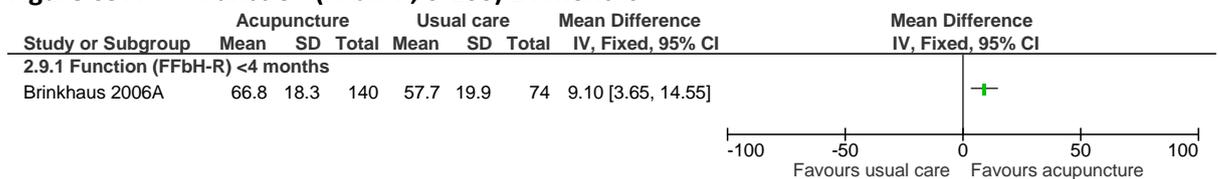
747

Figure 696: Function (RMDQ, 0-23) final scores ≤4 months



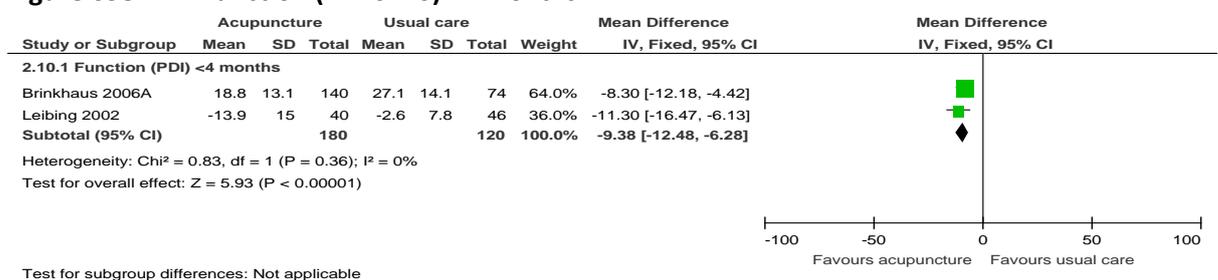
748

Figure 697: Function (FFbH-R, 0-100) ≤4 months



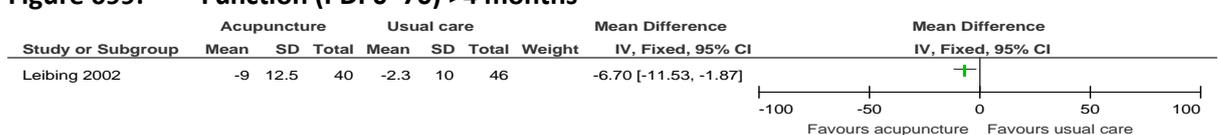
749 Data not reported for FFbH-R vs. usual care at > 4 months
750

Figure 698: Function (PDI 0–70) ≤4 months



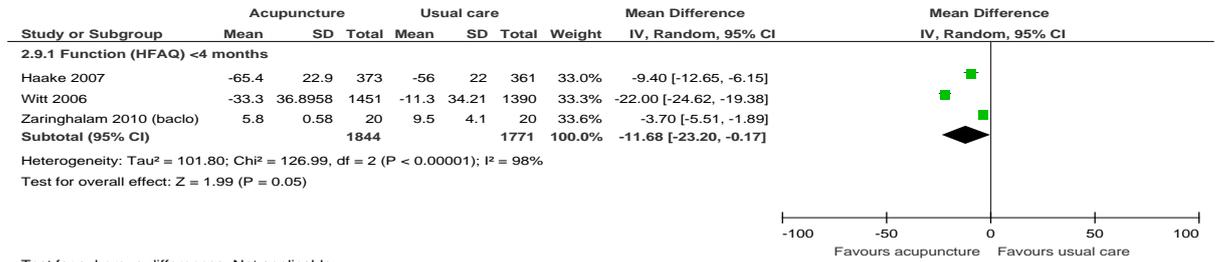
751

Figure 699: Function (PDI 0–70) >4 months



752

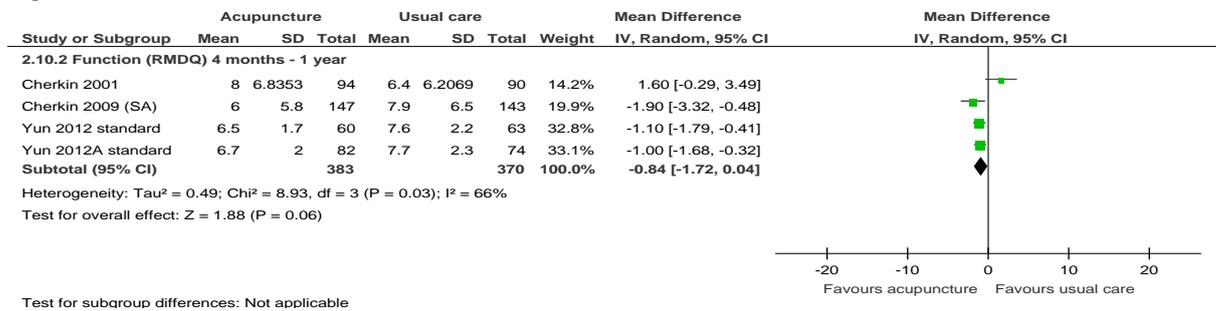
Figure 700: Function (FFbH-R, 0-100) ≤4 months



Witt et al.: usual care = waiting list

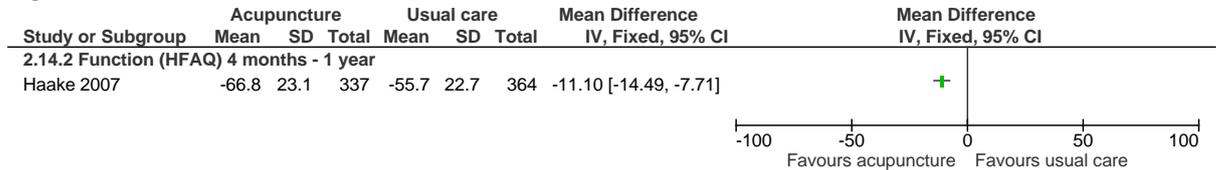
753

Figure 701: Function (RMDQ, 0-23) final scores > 4 months



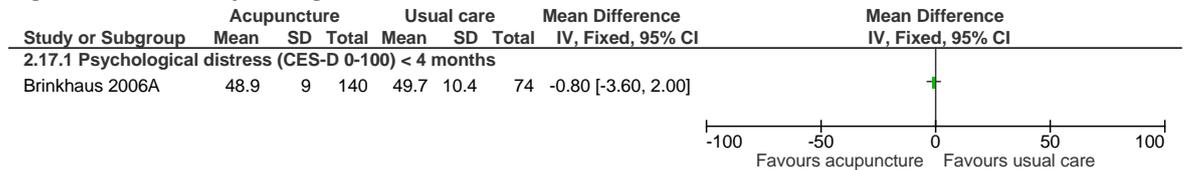
754

Figure 702: Function (FFbH-R, 0-100) > 4 months



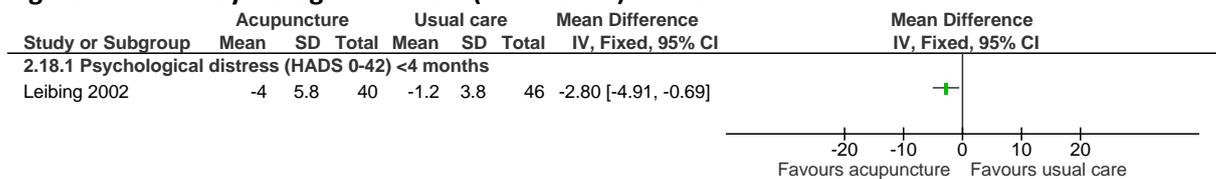
755

Figure 703: Psychological distress (CES-D, 0-60) ≤4 months



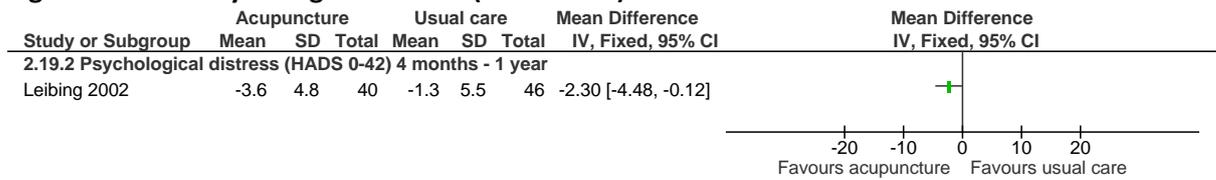
756

Figure 704: Psychological distress (HADS 0-42) ≤4 months



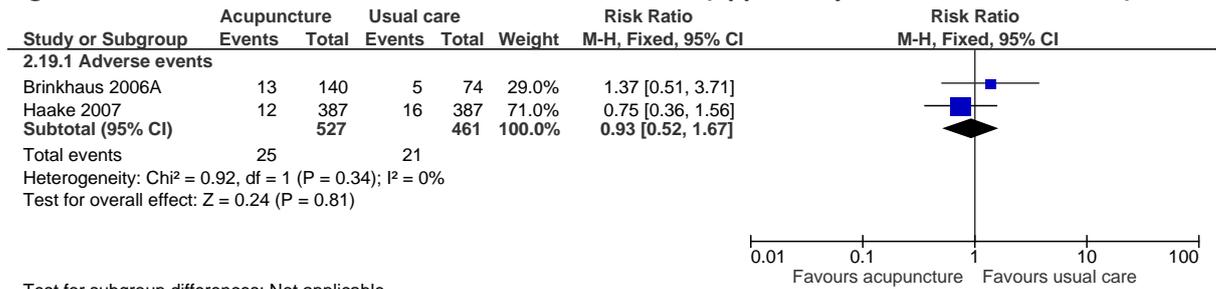
757

Figure 705: Psychological distress (HADS 0–42) > 4 months



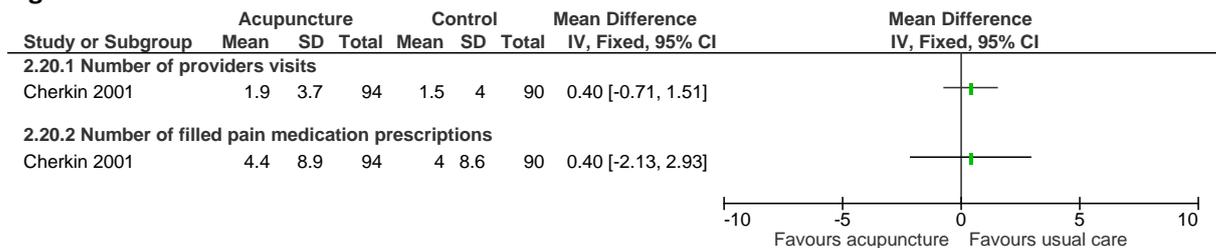
758

Figure 706: Adverse effects – serious adverse events (apparently not treatment-related)



759

Figure 707: Healthcare utilisation > 4 months



K.902 Overall population (mixed) with and without sciatica

Figure 708: Quality of life EQ-5D (0–1) ≤4 months

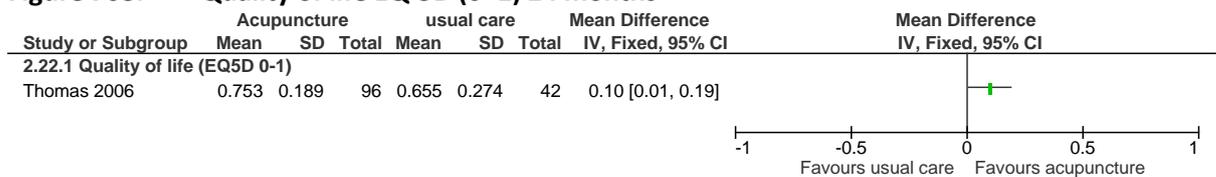
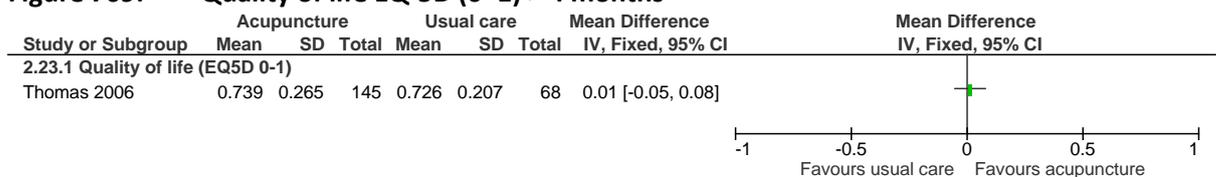


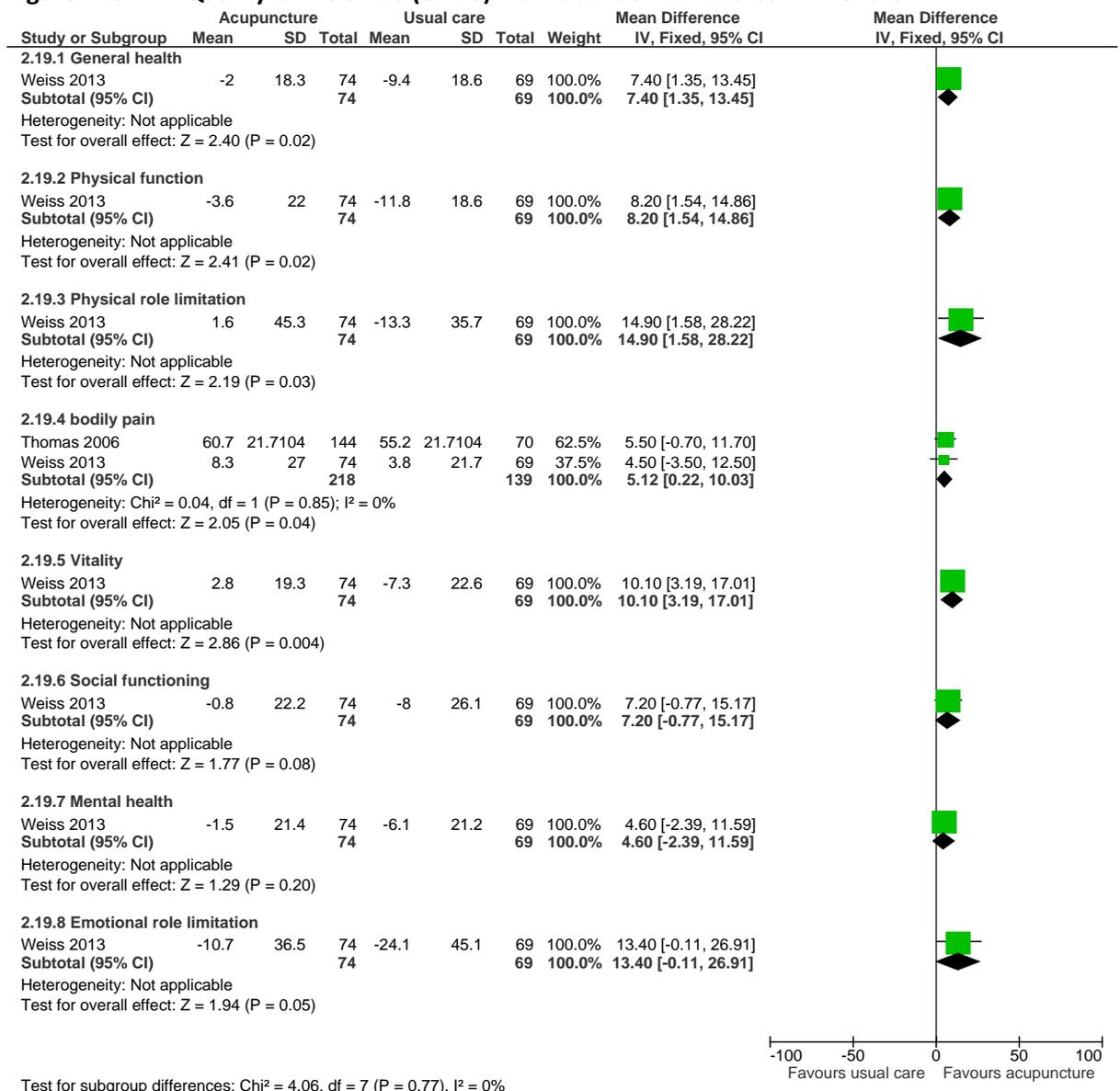
Figure 709: Quality of life EQ-5D (0–1) > 4 months



761

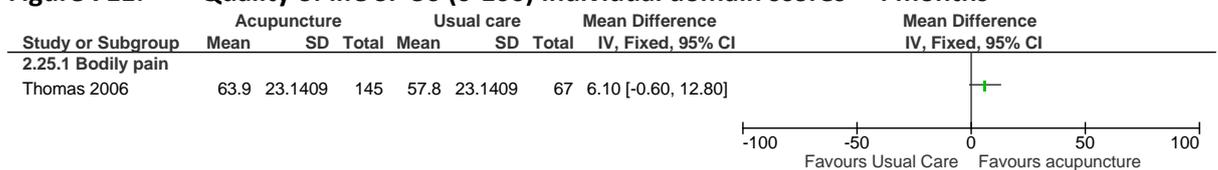
762

Figure 710: Quality of life SF-36 (0-100) individual domain scores ≤4 months



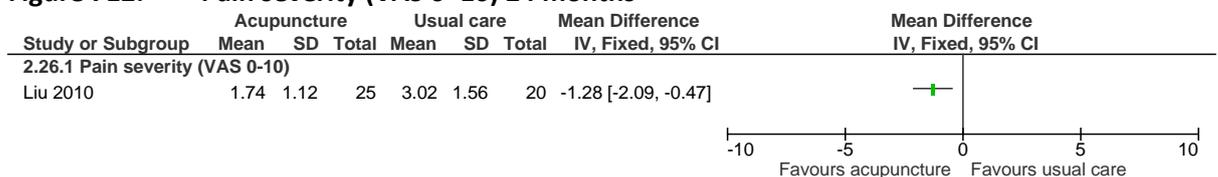
763

Figure 711: Quality of life SF-36 (0-100) individual domain scores > 4 months



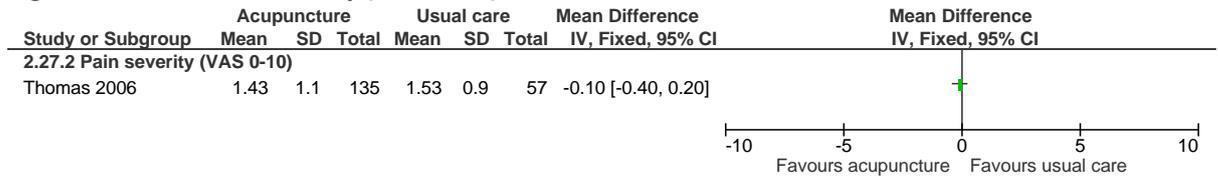
764

Figure 712: Pain severity (VAS 0-10) ≤4 months



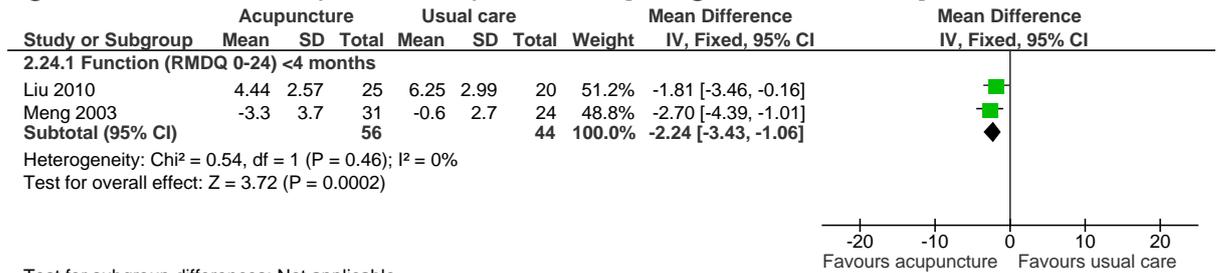
765

Figure 713: Pain severity (VAS 0–10) > 4 months



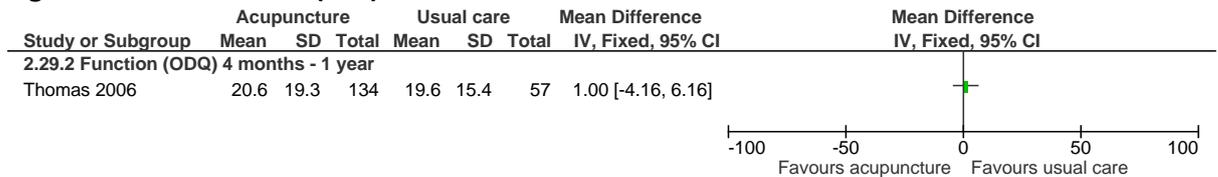
766

Figure 714: Function (RMDQ 0–24) ≤4 months [change and final scores]



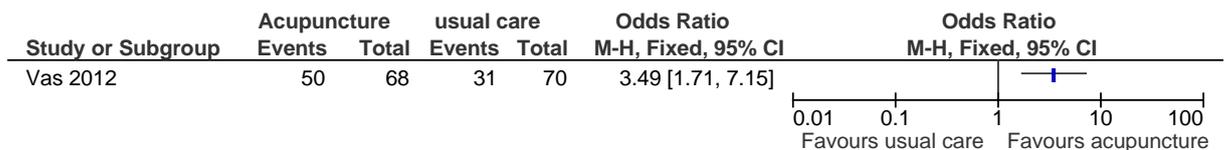
767

Figure 715: Function (ODI) > 4 months



768

Figure 716: Responder criteria (improvement in function >35%) <4 months



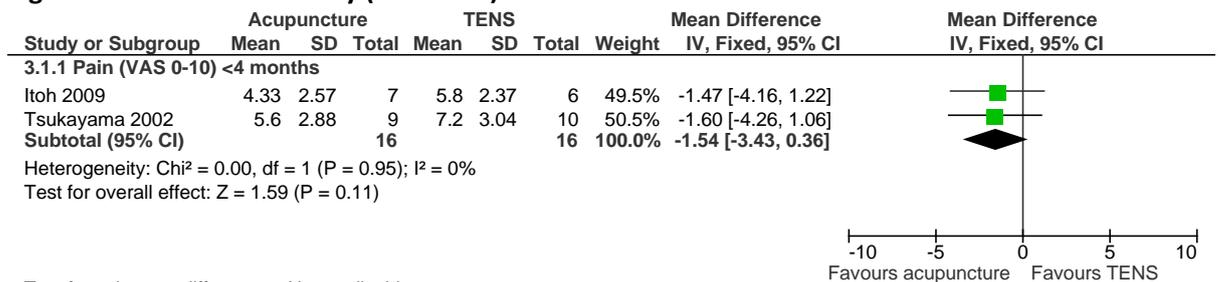
769

770

K7913 Acupuncture versus TENS

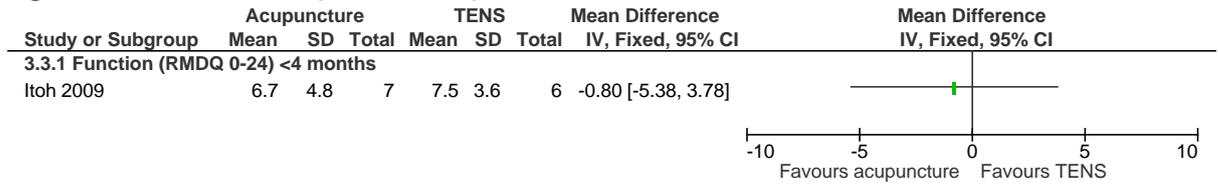
K.9.2.1 Low back pain without sciatica population

Figure 717: Pain severity (VAS 0–10) ≤4 months



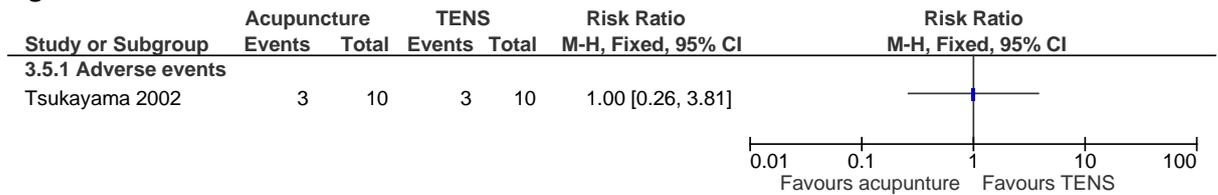
773

Figure 718: Function (RMDQ 0–24) ≤4 months



774

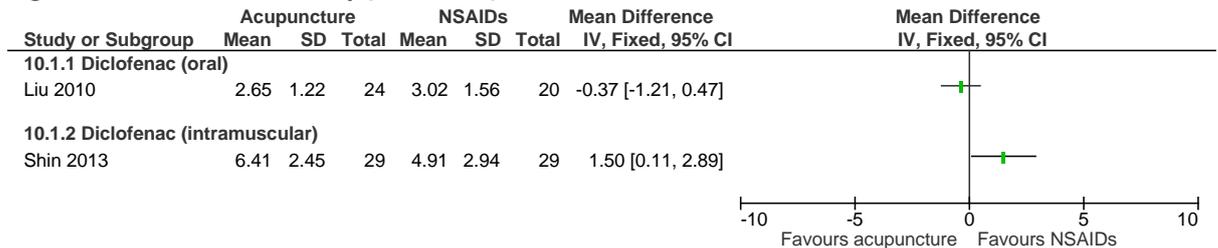
Figure 719: Adverse effects – adverse events ≤4 months



K7954 Acupuncture versus NSAIDs

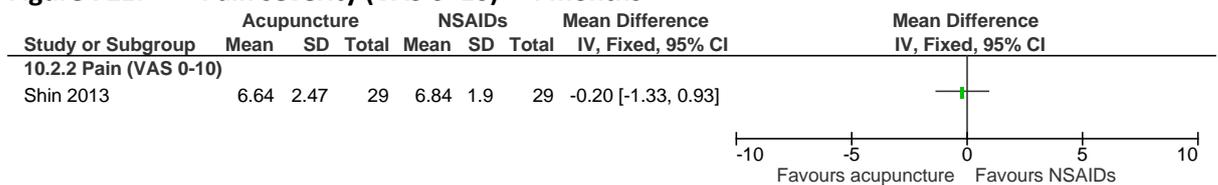
K.9761 Overall (mixed) population with or without sciatica

Figure 720: Pain severity (VAS 0–10) ≤4 months



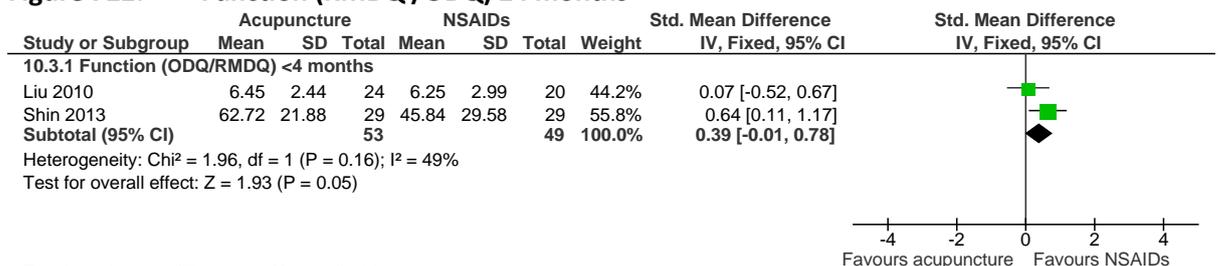
777

Figure 721: Pain severity (VAS 0–10) > 4 months



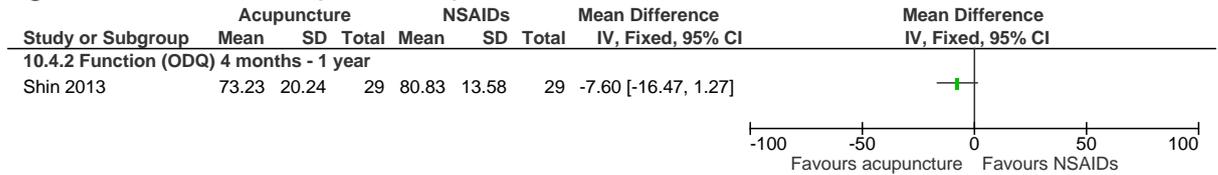
778

Figure 722: Function (RMDQ /ODQ) ≤4 months



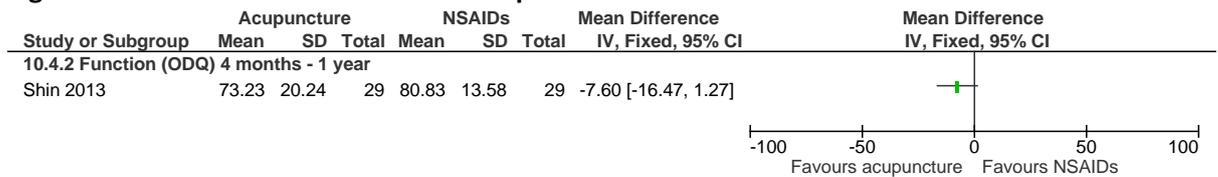
779

Figure 723: Function (ODI 0–100) > 4 months



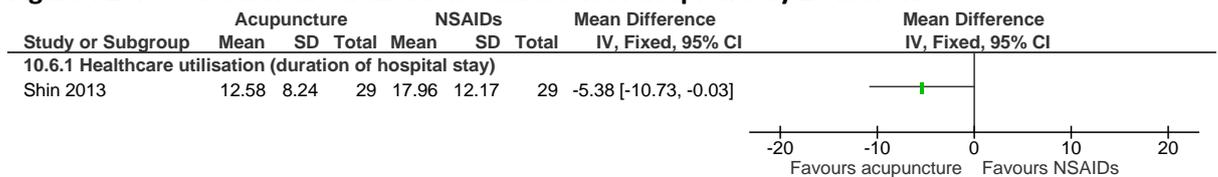
780

Figure 724: Healthcare utilisation – inpatient care ≤4 months



781

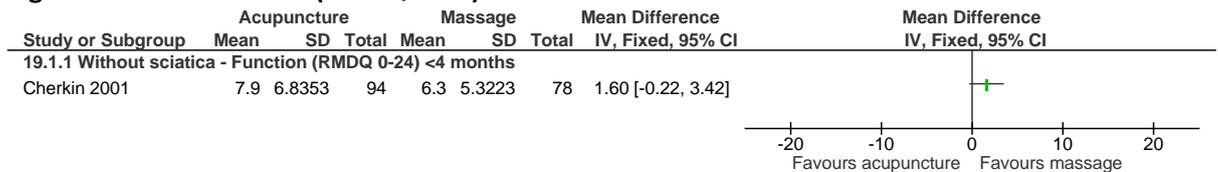
Figure 725: Healthcare utilisation – duration of hospital stay ≤4 months



K795 Acupuncture versus massage

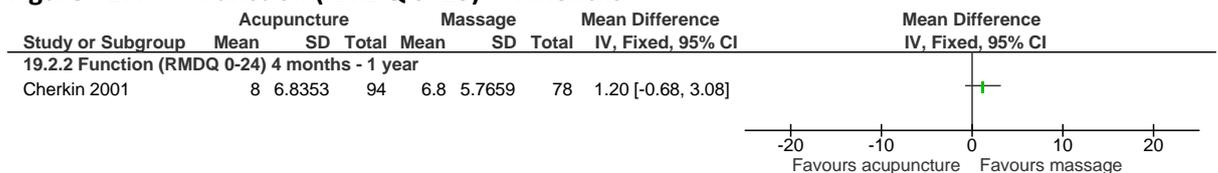
K7831 Low back pain without sciatica population

Figure 726: Function (RMDQ 0–23) ≤4 months



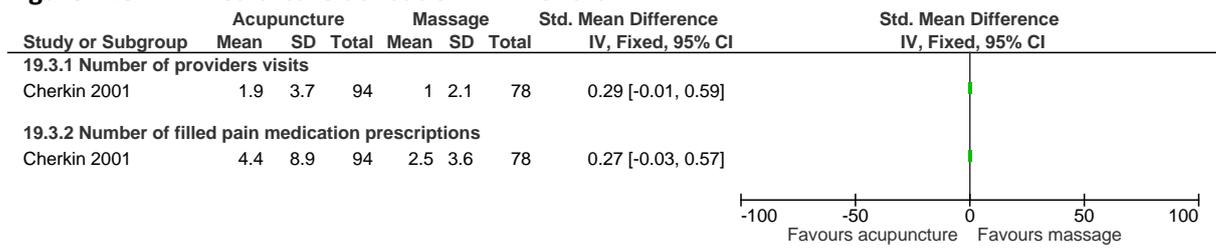
784

Figure 727: Function (RMDQ 0–23) > 4 months



785

Figure 728: Healthcare utilisation > 4 months

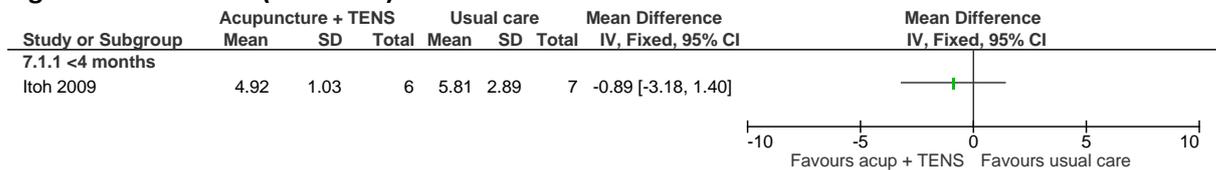


K.9.52 Combination of interventions – acupuncture adjunct

K.9.52.1 Low back pain without sciatica

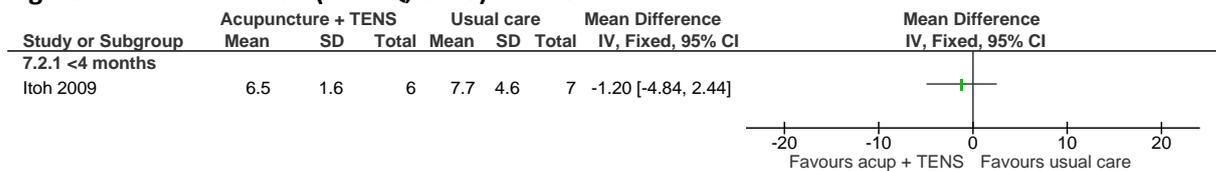
K.9.52.2 Acupuncture plus electrotherapy (TENS) compared with usual care

Figure 729: Pain (VAS 0–10) ≤ 4 months



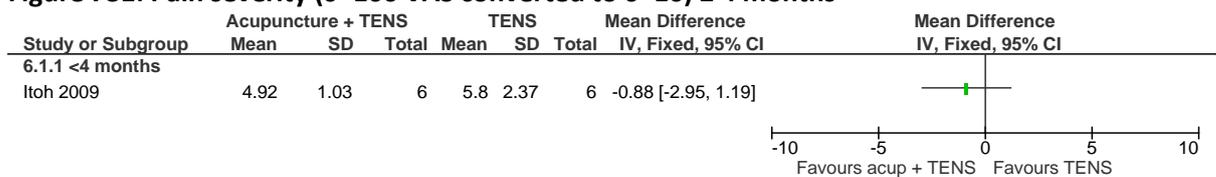
789

Figure 730: Function (RMDQ, 0–23) ≤ 4 months



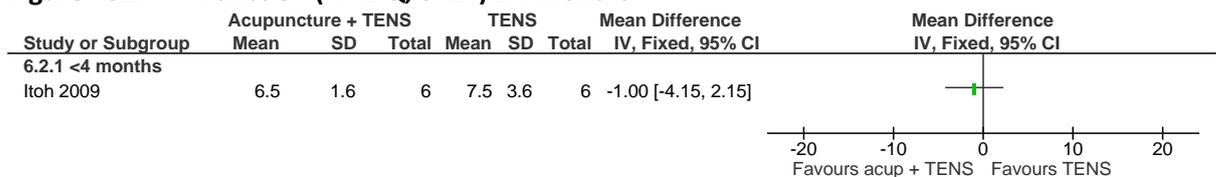
K.9.52.3 Acupuncture plus electrotherapy (TENS) compared with electrotherapy (TENS)

Figure 731: Pain severity (0–100 VAS converted to 0–10) ≤ 4 months



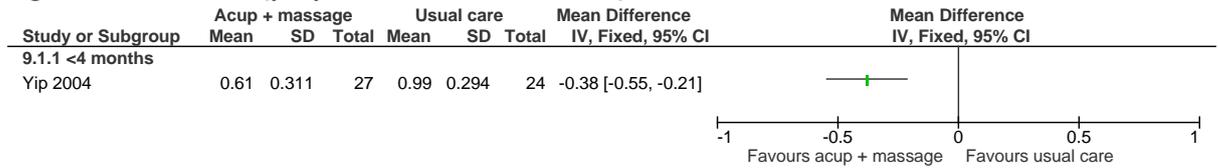
791

Figure 732: Function (RMDQ, 0–24) ≤ 4 months



K.9.5724 Acupuncture + manual therapy (massage) compared with usual care

Figure 733: Pain (proportion of baseline value) ≤ 4 months



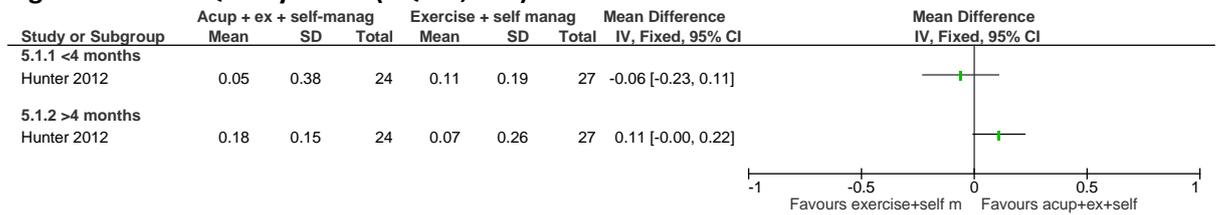
793

K.9.5725 Acupuncture + exercise (group biomechanical + aerobic exercise) + self-management (education – Back Book + unsupervised exercise) compared with exercise (group biomechanical + aerobic exercise) + self-management (education – Back Book + unsupervised exercise)

795

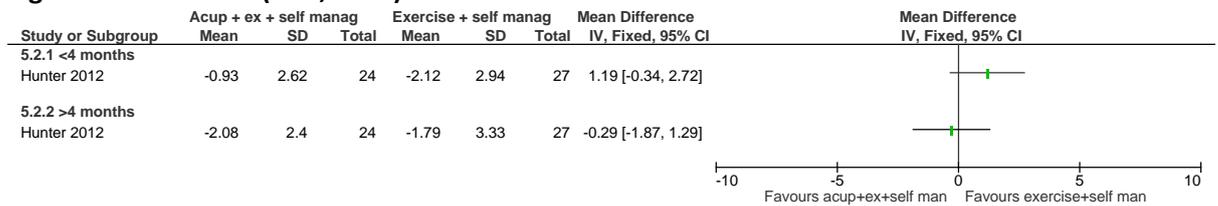
796

Figure 734: Quality of life (EQ-5D, 0–1)



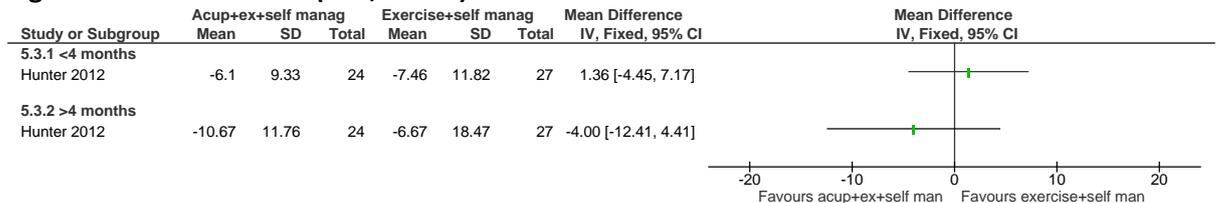
797

Figure 735: Pain (VAS, 0–10)



798

Figure 736: Function (ODI, 0–100)

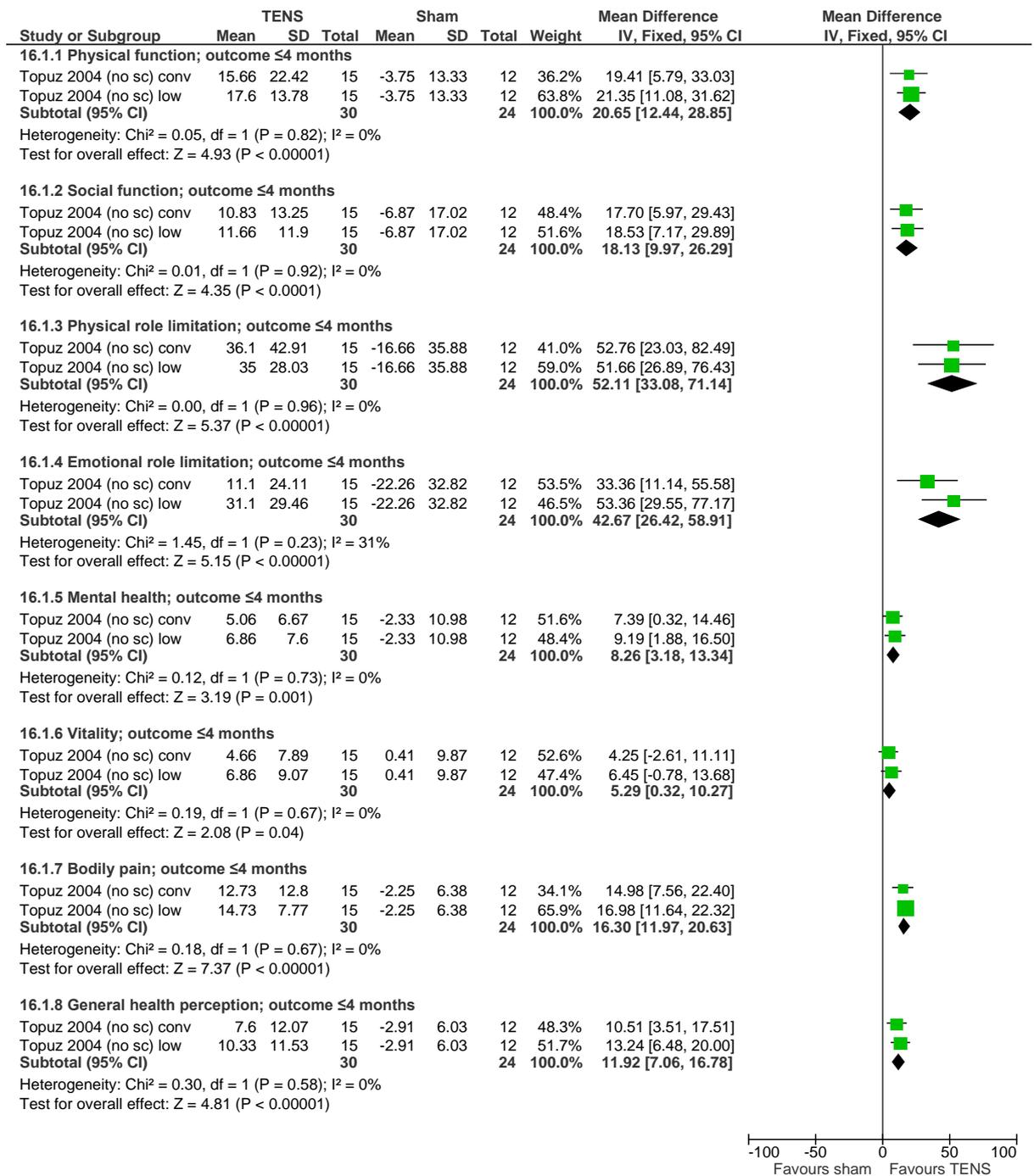


K710 Electrotherapies

K.8001 TENS

K.18011 TENS versus sham

Figure 737: Quality of life (SF-36); low back pain without sciatica



Note: conv; conventional TENS; low; low frequency TENS

Figure 738: Quality of life (SF-36, Composite scores); low back pain ± sciatica

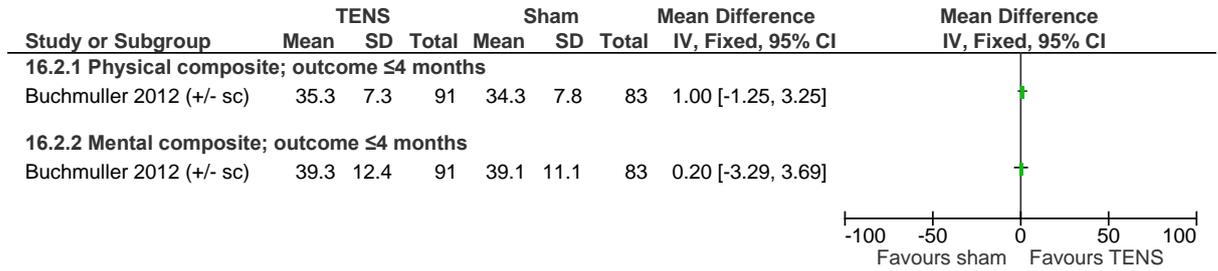
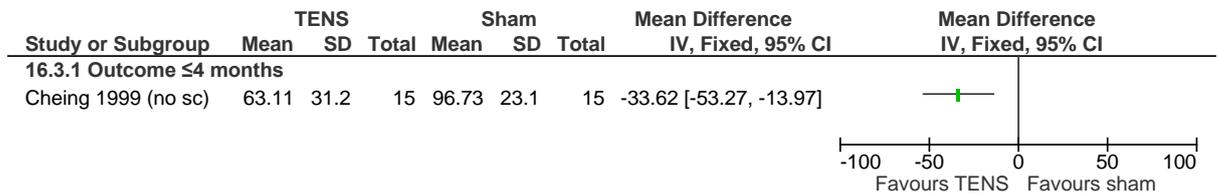
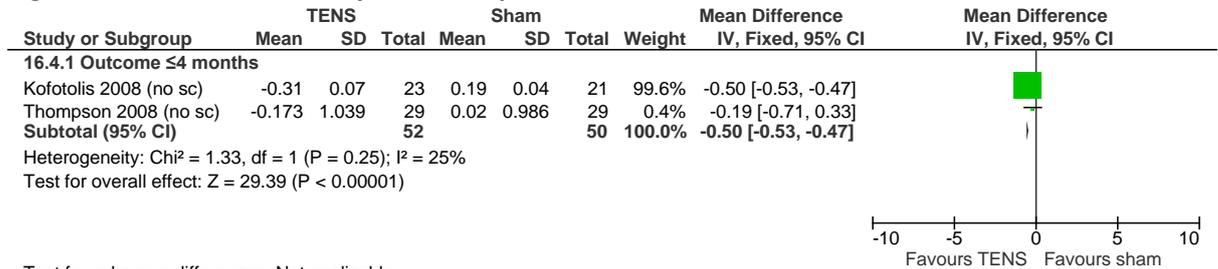


Figure 739: Pain intensity (VAS, % of baseline); low back pain without sciatica



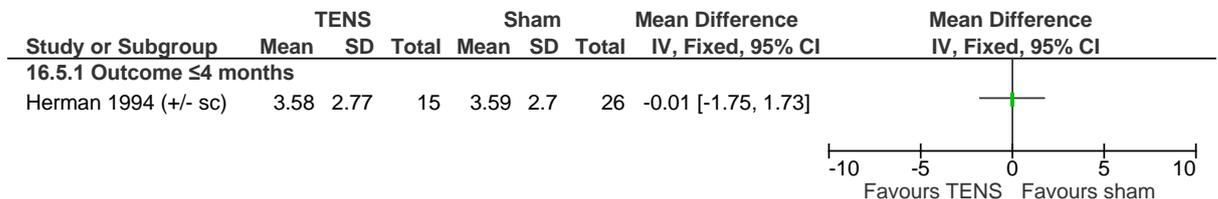
Scales: VAS 0-100

Figure 740: Pain intensity; low back pain without sciatica



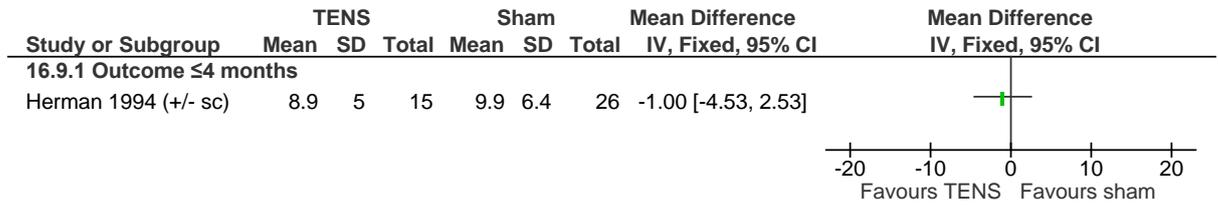
Scales: Kofotolis 2008: Borg verbal rating pain 0-10; Thompson 2008: VAS 0-10.

Figure 741: Pain intensity (VAS); low back pain ± sciatica



Scales: VAS 0-10

Figure 742: Function (RMDQ); low back pain ± sciatica



Scale: RMDQ 0-24

Figure 743: Function (RMDQ improvement of 4 points [median 15 at baseline]); low back pain ± sciatica

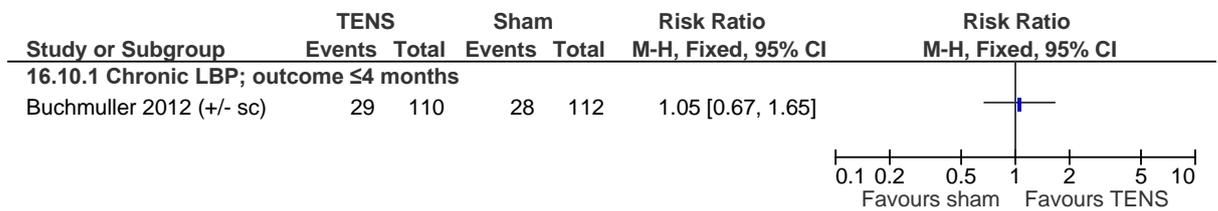
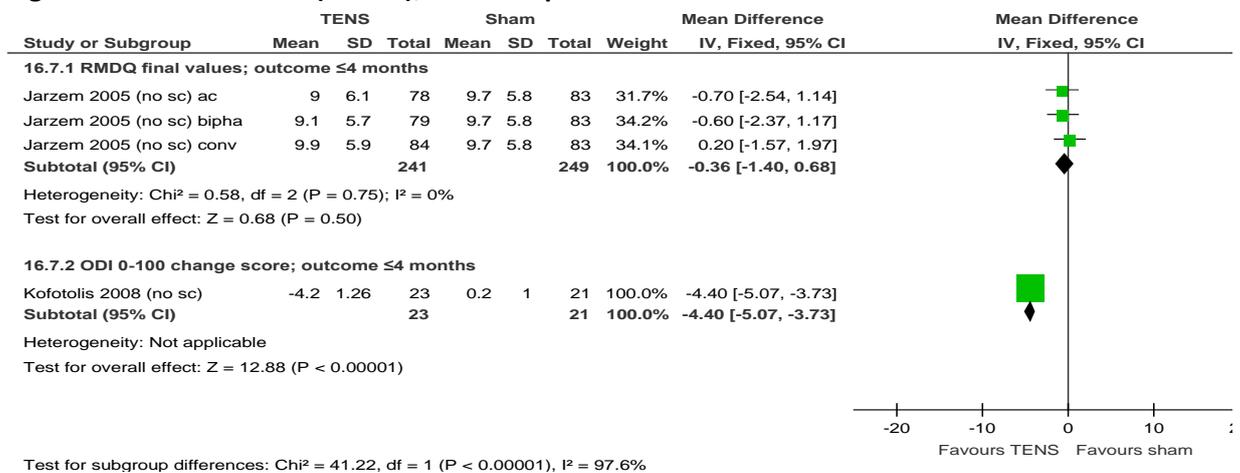


Figure 744: Function (RMDQ); low back pain without sciatica

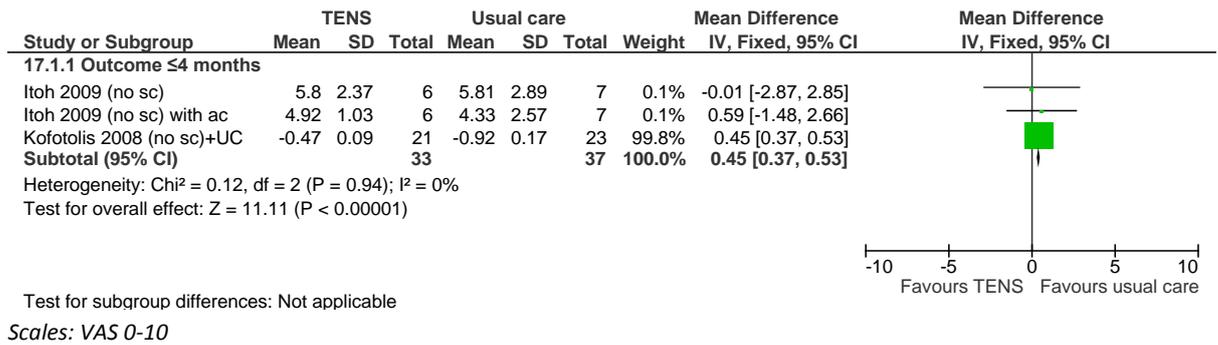


Scales: Jarzem 2005: RMDQ 0-24; Kofotolis 2008: ODI 0-100. Could not pool into SMD as change scores and final values

Note: ac; acupuncture TENS: bipha; biphasic TENS: conv; conventional TENS

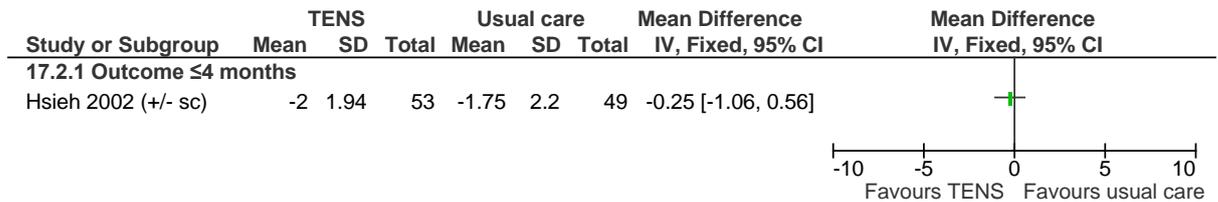
K.18032 TENS versus usual care

Figure 745: Pain intensity (VAS); low back pain without sciatica



804 Note: ac; acupuncture: UC; usual care

Figure 746: Pain intensity (VAS); low back pain ± sciatica



Scales: VAS 0-10

Figure 747: Function (RMDQ); low back pain without sciatica

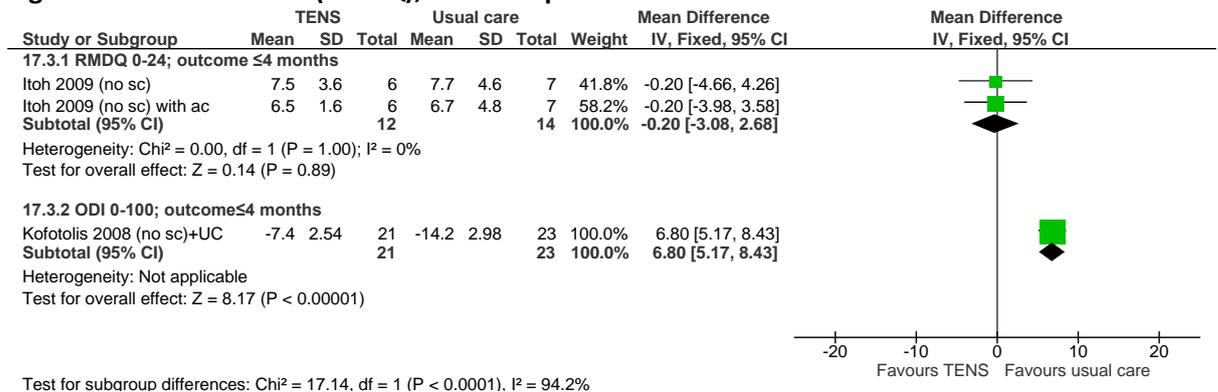
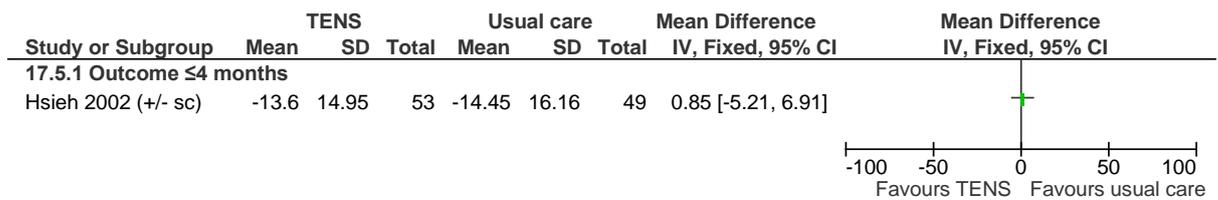


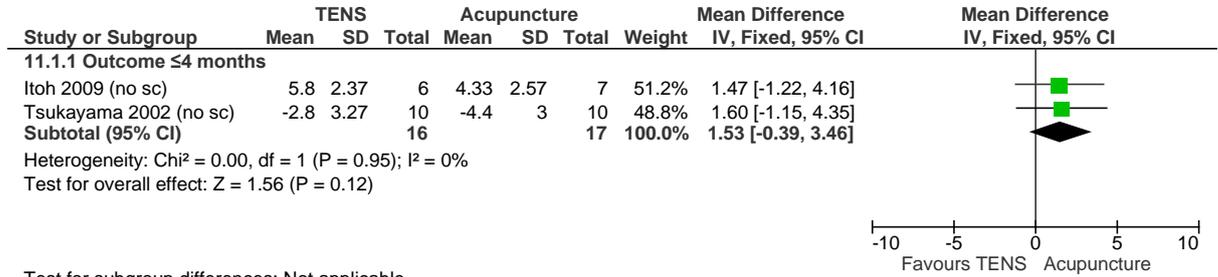
Figure 748: Function (Quebec Back Pain Disability Scale); low back pain ±sciatica



Scale: Quebec Back Pain Disability Scale 0-100

K.18053 TENS versus acupuncture

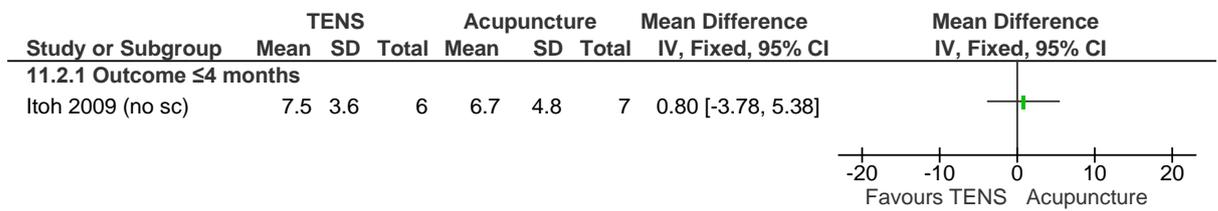
Figure 749: Pain intensity (VAS); low back pain without sciatica



Test for subgroup differences: Not applicable

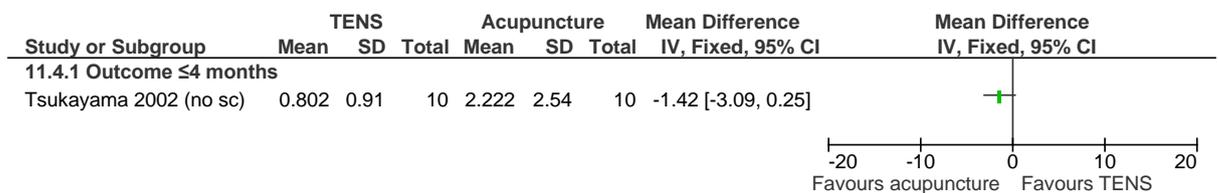
Scales: VAS 0-10

Figure 750: Function (RMDQ); low back pain without sciatica



Scales: RMDQ 0-24

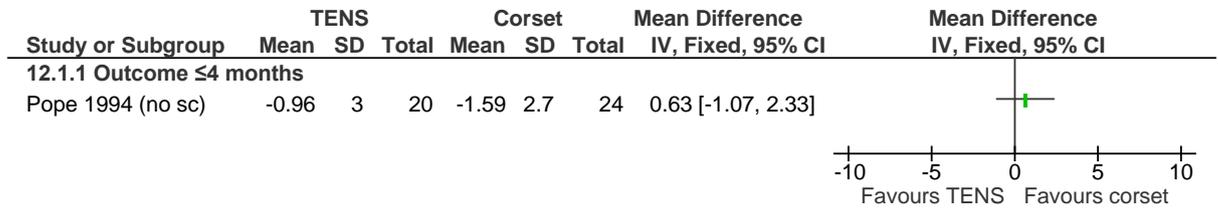
Figure 751: Function (ability, JOA score); low back pain without sciatica



Scales: : Japanese Orthopaedic Association score (JOA): subjective symptoms and activities of daily living at 2 weeks; 0-20, high is good outcome

K.18064 TENS versus corset

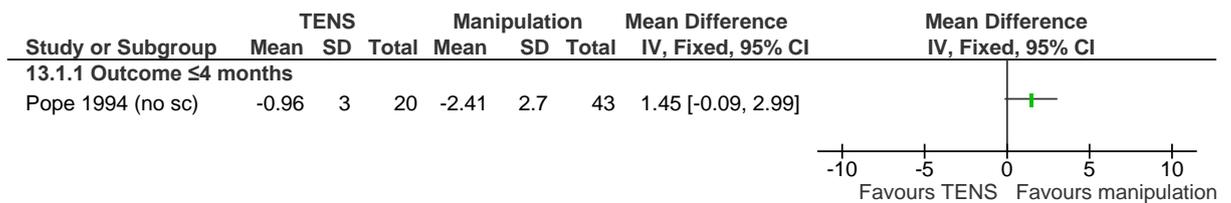
Figure 752: Pain intensity (VAS); low back pain without sciatica



Scales: VAS 0-10

K.18075 TENS versus manipulation

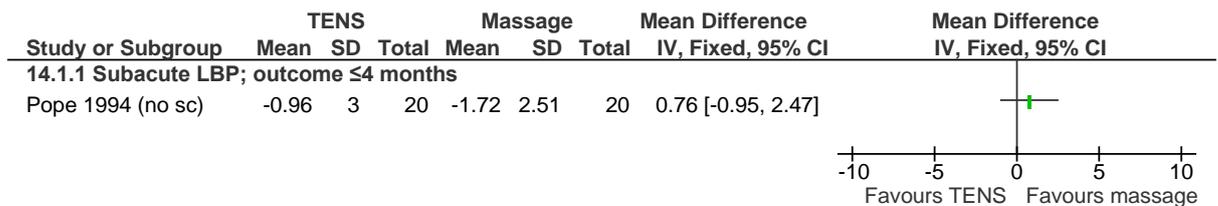
Figure 753: Pain intensity (VAS); low back pain without sciatica



Scales: VAS 0-10

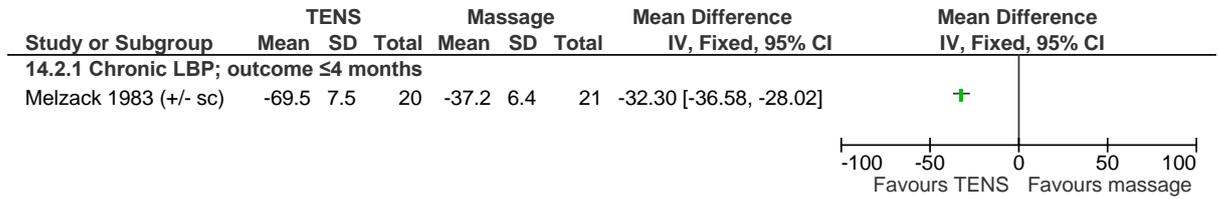
K.18086 TENS versus massage

Figure 754: Pain intensity (VAS); low back pain without sciatica



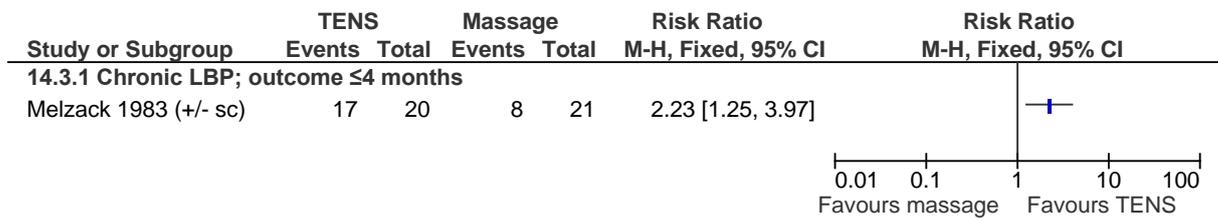
Scales: VAS 0-10

Figure 755: Pain intensity (McGill Pain Rating Index); low back pain ± sciatica



Scales: McGill Pain Rating Index 0-100

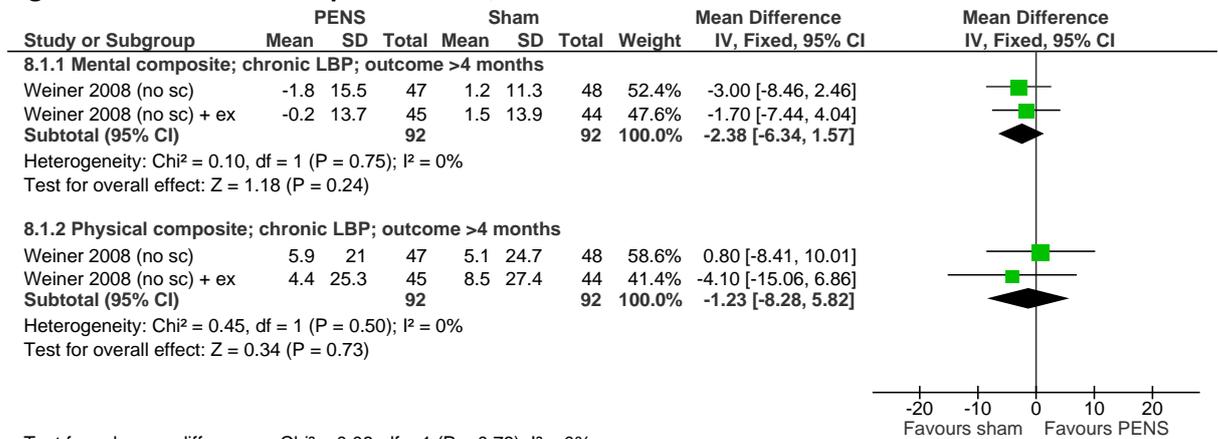
Figure 756: Responder criteria (>50% decrease in pain); low back pain ± sciatica



K.102 PENS

K.101 PENS versus sham

Figure 757: SF-36 Composite scores; stratum = without sciatica



811 Note: ex; exercise

Figure 758: SF-36 Domain scores; stratum = without sciatica

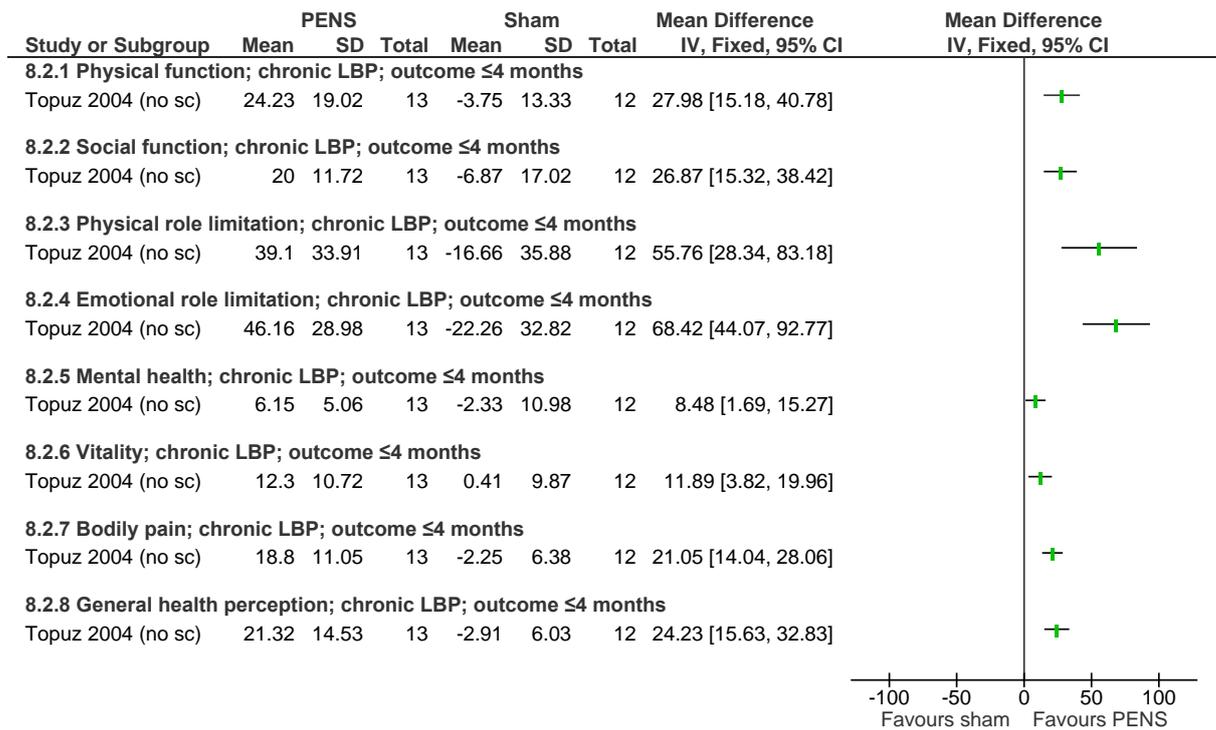
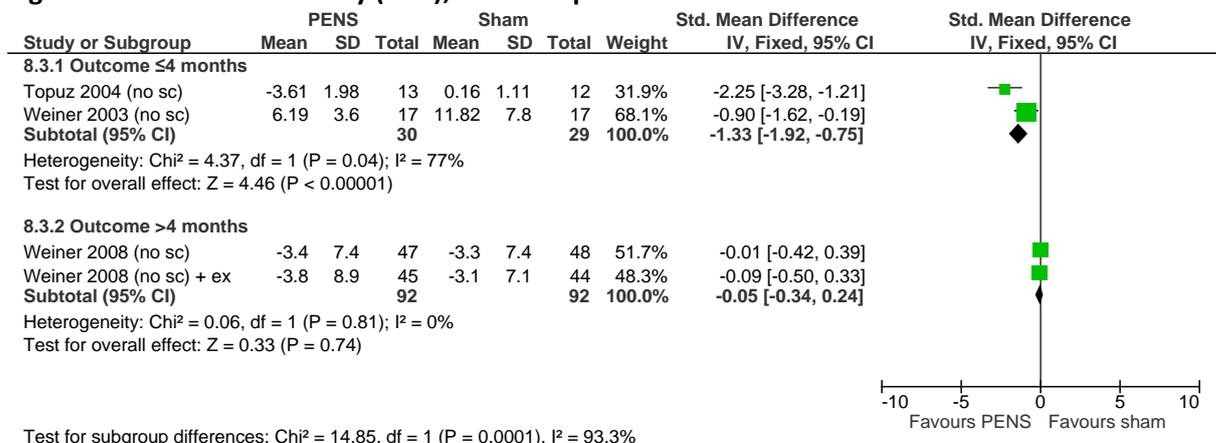


Figure 759: Pain intensity (VAS); low back pain without sciatica

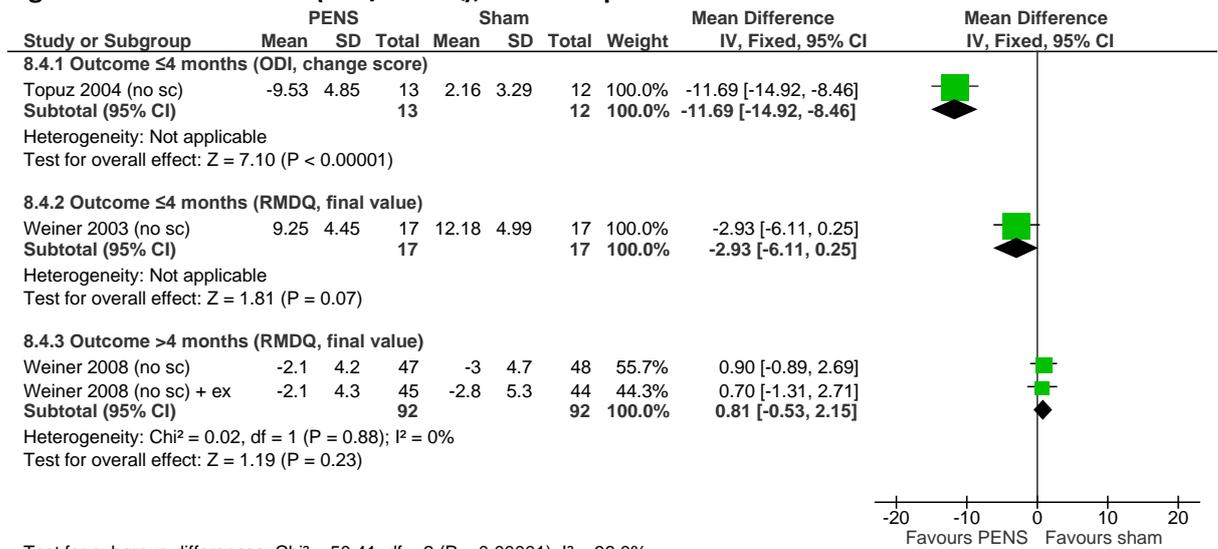


Test for subgroup differences: Chi² = 14.85, df = 1 (P = 0.0001), I² = 93.3%

Scales: Topuz 2004 and Weiner 2008: VAS 0-10. Weiner 2003: Pain Inventory

812 Note: ex; exercise

Figure 760: Function (ODI/RMDQ); low back pain without sciatica



K.18.22 PENS versus usual care

Figure 761: Pain intensity (VAS); low back pain ± sciatica

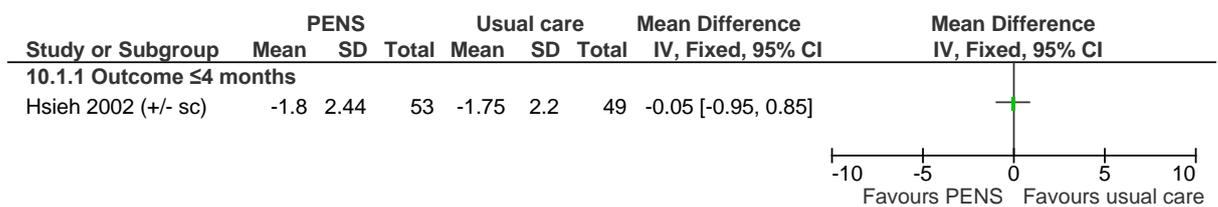
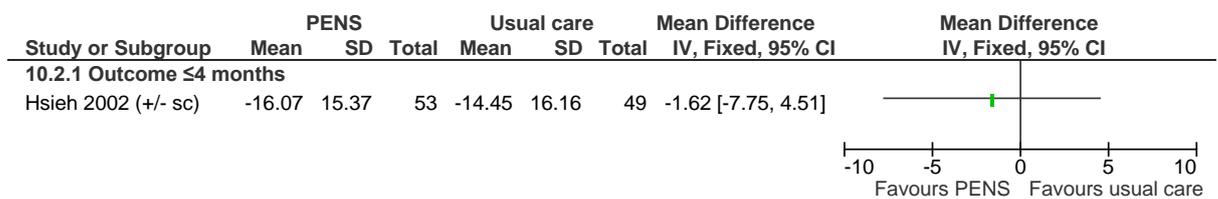
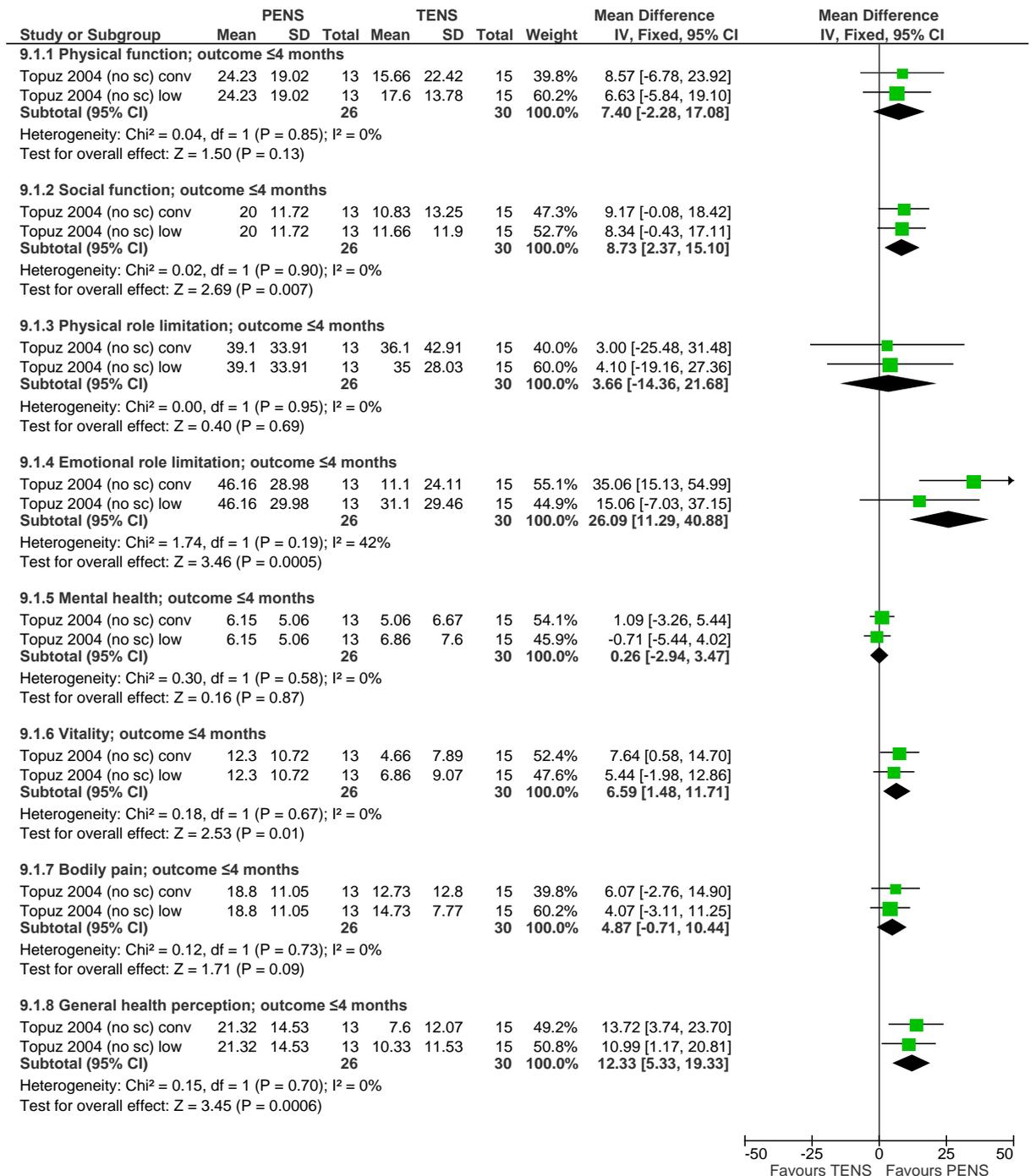


Figure 762: Function (Quebec Back Pain Disability scale); low back pain ± sciatica



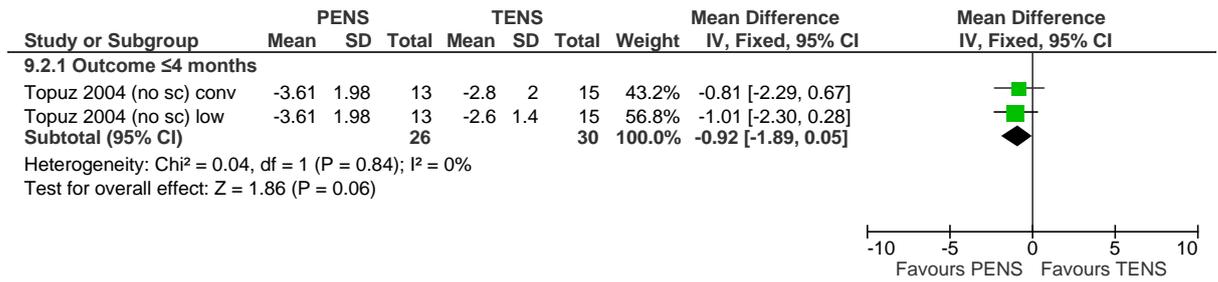
K.18.23 PENS versus TENS

Figure 763: Quality of life (SF-36); low back pain without sciatica



815 Note: conv; conventional TENS: low; low frequency TENS

Figure 764: Pain intensity (VAS); low back pain without sciatica

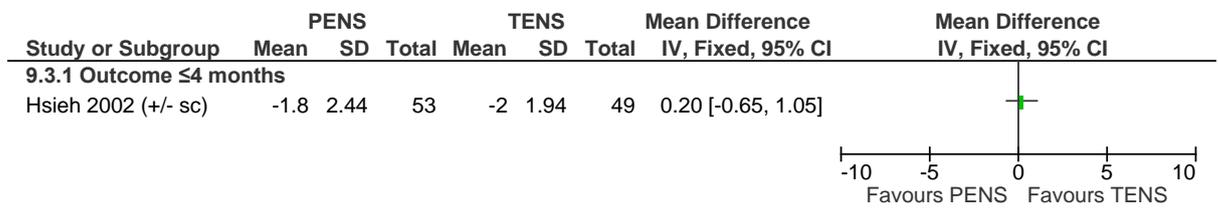


Scales: VAS 0-10

Note: conv; conventional TENS: low; low frequency TENS

816

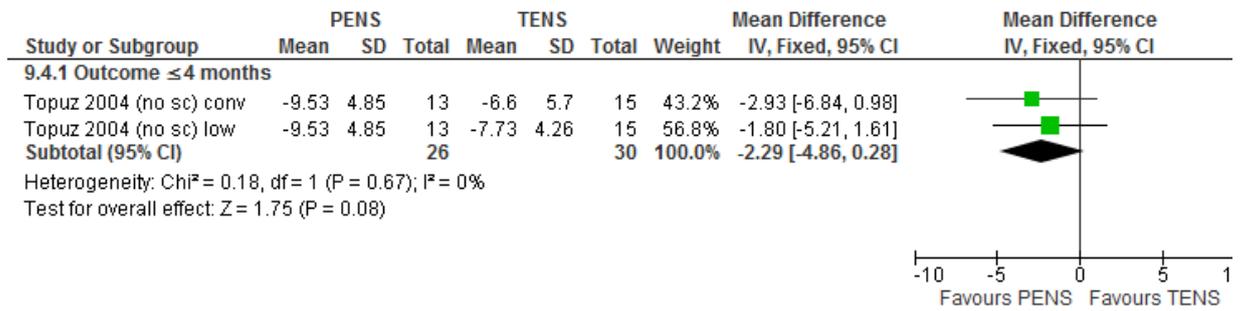
Figure 765: Pain intensity (VAS); low back pain ± sciatica



Scales: VAS 0-10

817

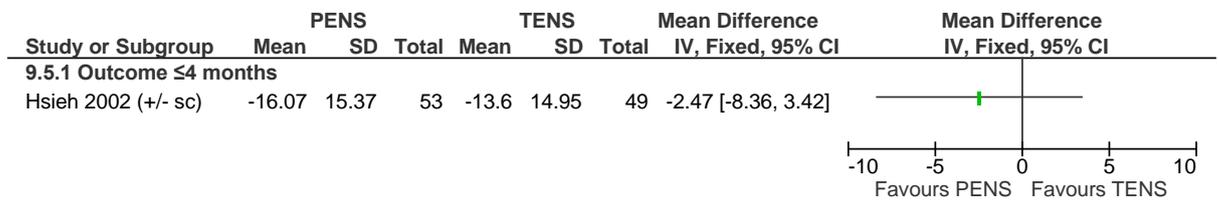
Figure 766: Function (ODI); low back pain without sciatica



Scales: ODI

Note: conv; conventional TENS: low; low frequency TENS

Figure 767: Function (Quebec Back Pain Disability scale); low back pain ± sciatica

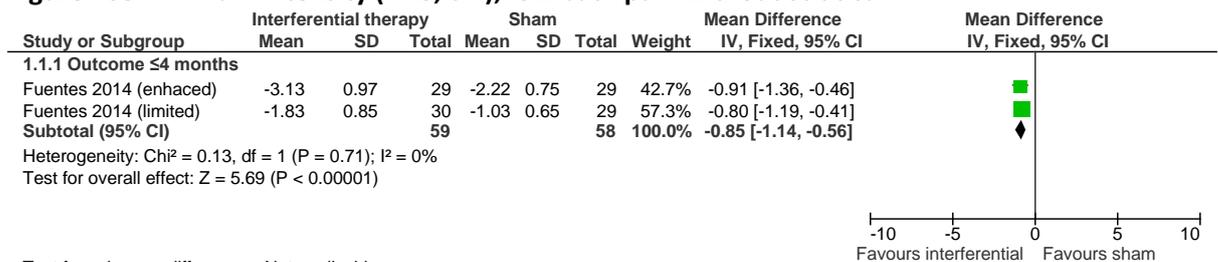


Scales: Quebec Back Pain Disability Scale 0-100

K.103 Interferential therapy

K.103.1 Interferential therapy versus placebo/sham

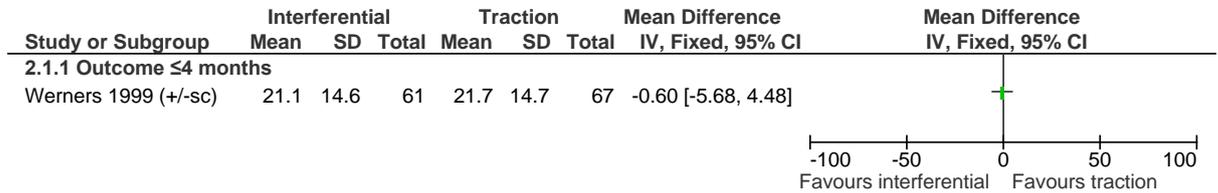
Figure 768: Pain intensity (NRS, cm); low back pain without sciatica



Scale: 0-10

K.18.202 Interferential versus traction

Figure 769: Function (ODI); low back pain without sciatica

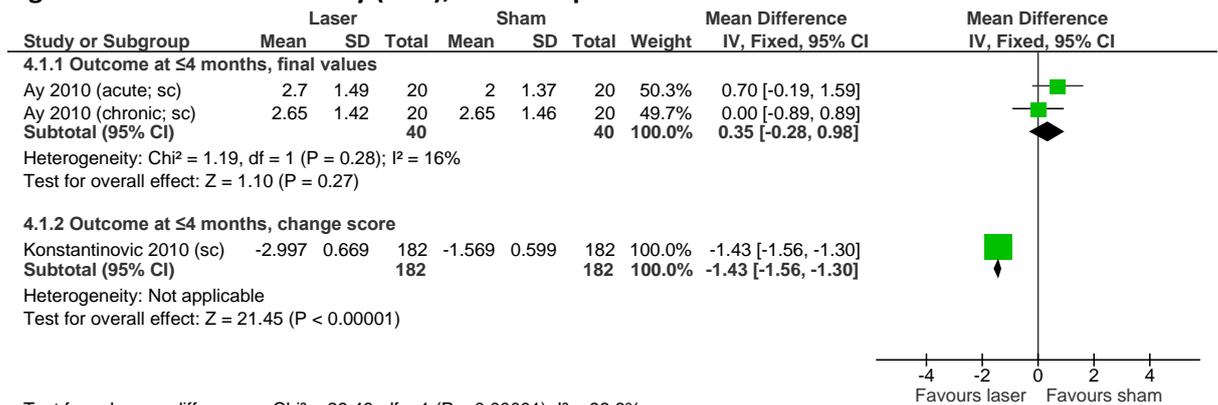


Scale: 0-100

K.18.014 Laser therapy

K.18.201 Laser versus sham

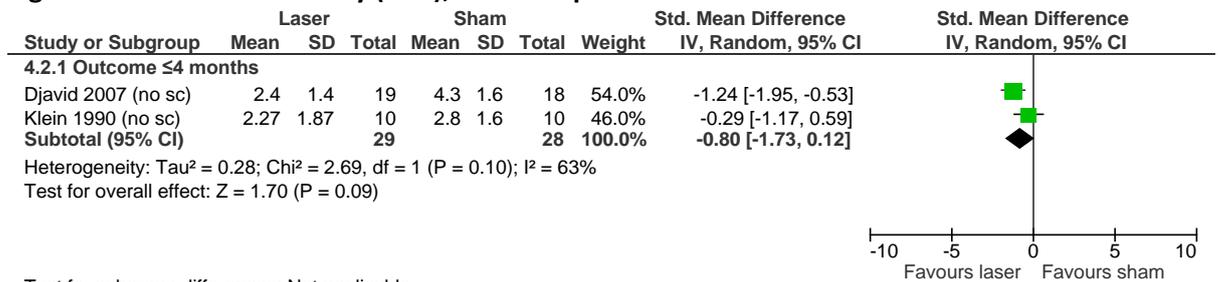
Figure 770: Pain intensity (VAS); low back pain with sciatica



Test for subgroup differences: Chi² = 29.48, df = 1 (P < 0.00001), I² = 96.6%

Scale: 0-10

Figure 771: Pain intensity (VAS); low back pain without sciatica



Test for subgroup differences: Not applicable

Scale: Djavid 2007: VAS 0-10; Klein 1990: VAS 0-7.5

Figure 772: Difference between means in maximal pain in last 24 hours, VAS (0-10); stratum = without sciatica; ≤4 months

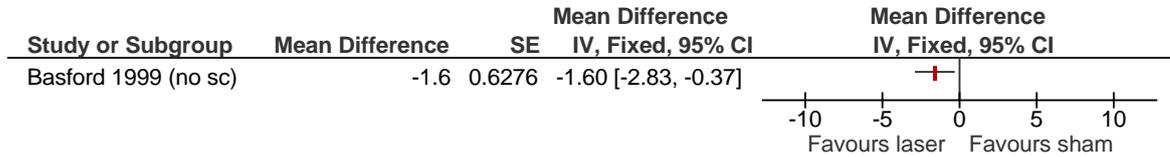
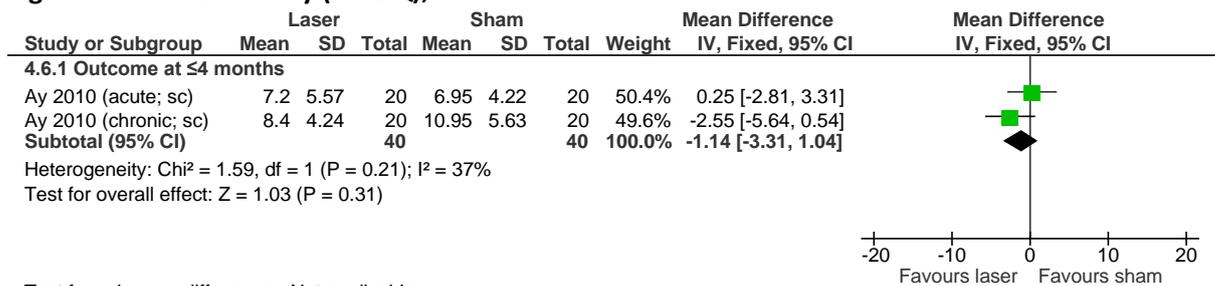
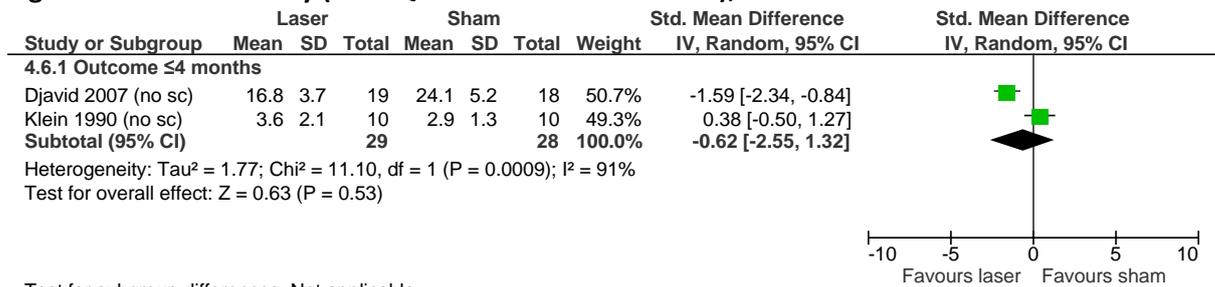


Figure 773: Disability (RMDQ); stratum = with sciatica



Scale: RMDQ 0-24

Figure 774: Disability (RMDQ/ODI – SMD to ODI 0-100); stratum = without sciatica



Scale: Klein 1990:RMDQ 0-24; Djavid 2007: ODI 0-100

Figure 775: Responder (disability improvement, no. of patients); stratum = with sciatica

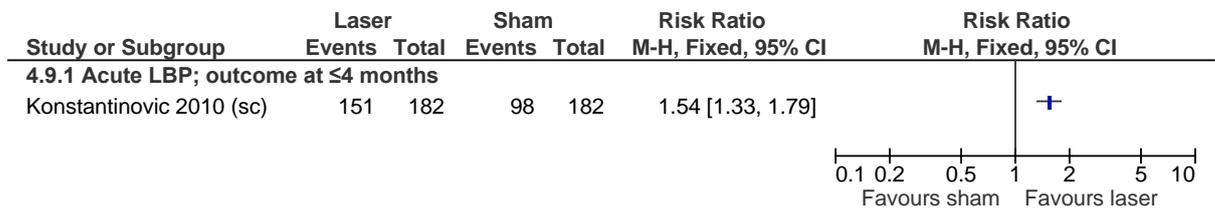


Figure 776: Responder criteria (pain improvement >60%): stratum = without sciatica

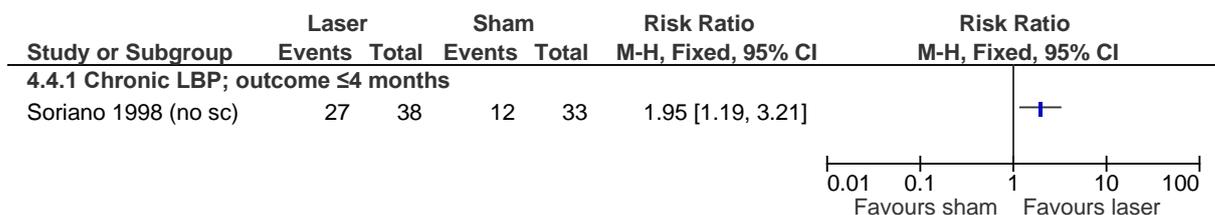
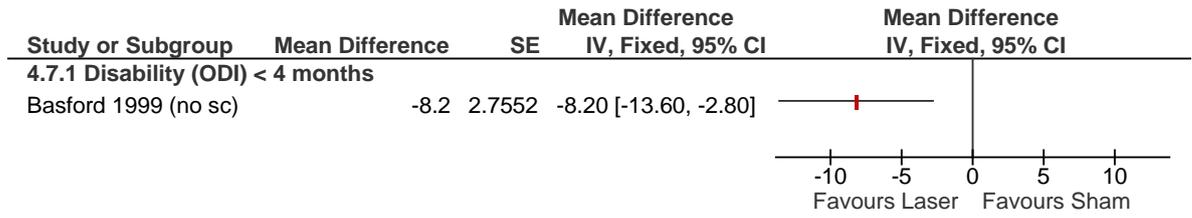
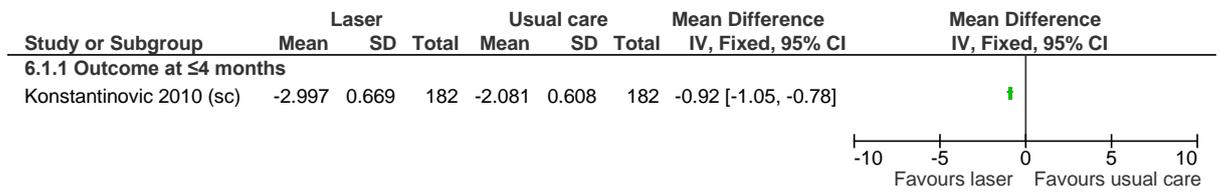


Figure 777: Disability (ODI) < 4 months



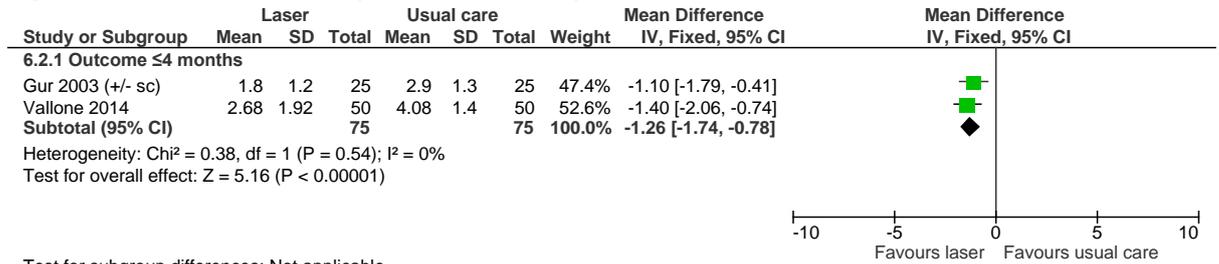
K.18232 Laser versus usual care

Figure 778: Pain intensity (VAS); low back pain with sciatica (change score)



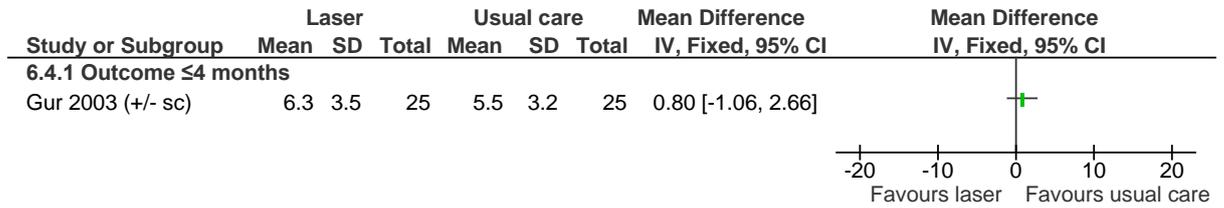
Scale: VAS 0-10

Figure 779: Pain intensity (VAS); low back pain ± sciatica



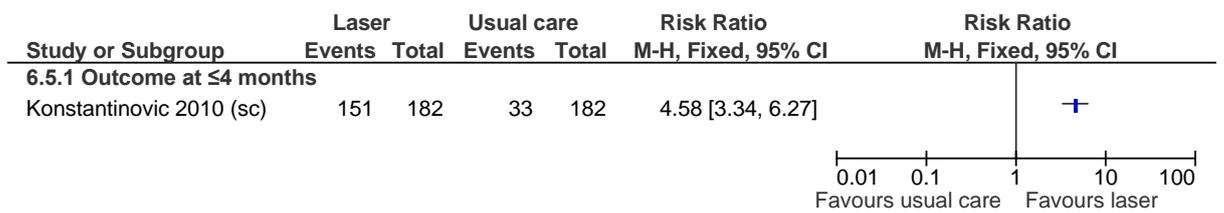
Scale: VAS 0-10

Figure 780: Function (disability, RMDQ); low back pain ± sciatica



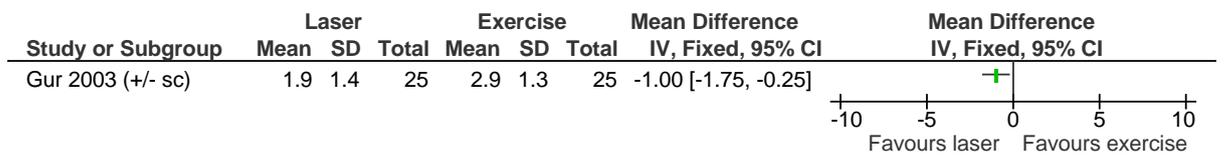
Scale: RMDQ 0-24

Figure 781: Disability improvement; low back pain with sciatica



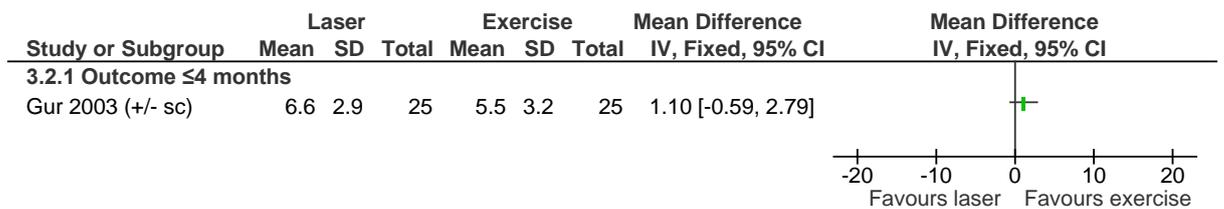
K.18243 Laser versus exercise

Figure 782: Pain intensity (VAS); low back pain ± sciatica



Scale: 0-10

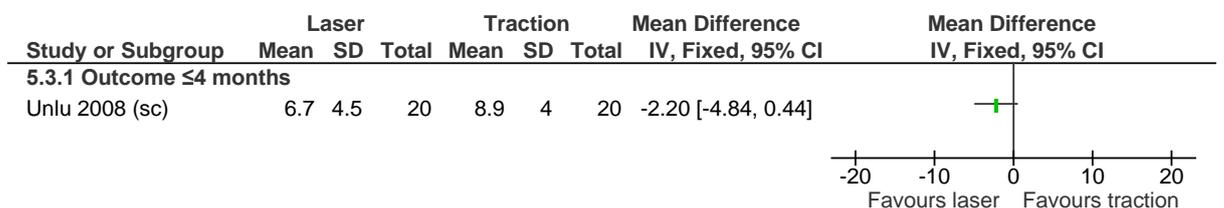
Figure 783: Disability (RMDQ); low back pain ± sciatica



Scale: RMDQ 0-24

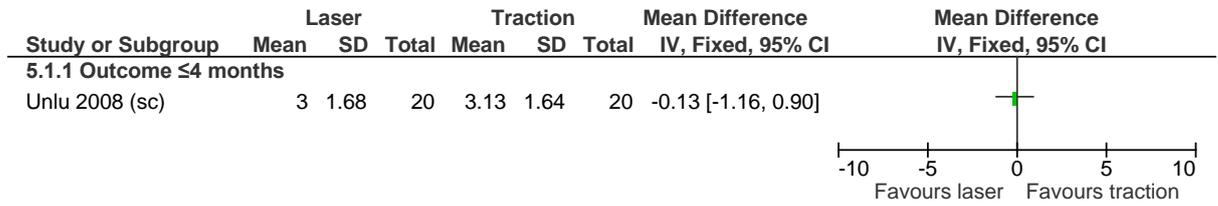
K.18254 Laser versus traction

Figure 784: Function (RMDQ); low back pain with sciatica



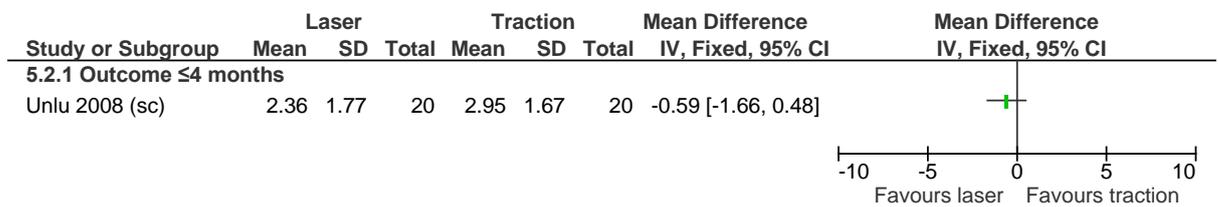
Scale: RMDQ 0-24

Figure 785: Back pain intensity; low back pain with sciatica



Scale: VAS 0-10

Figure 786: Radicular pain; low back pain with sciatica

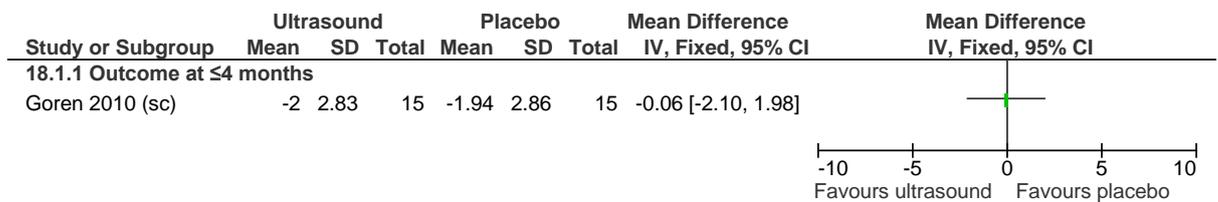


Scale: VAS 0-10

K.105 Ultrasound

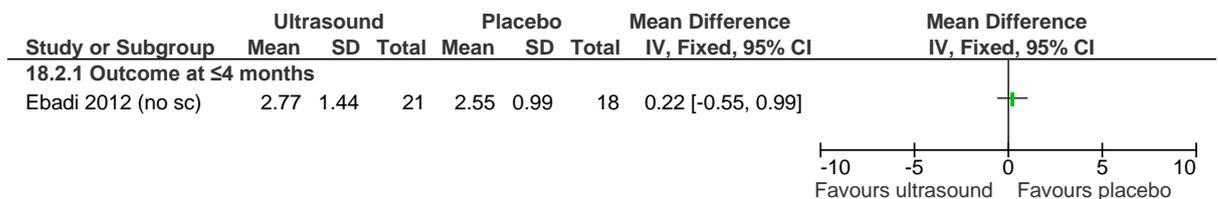
K.105.1 Ultrasound versus placebo/sham

Figure 787: Pain intensity (VAS); low back pain with sciatica



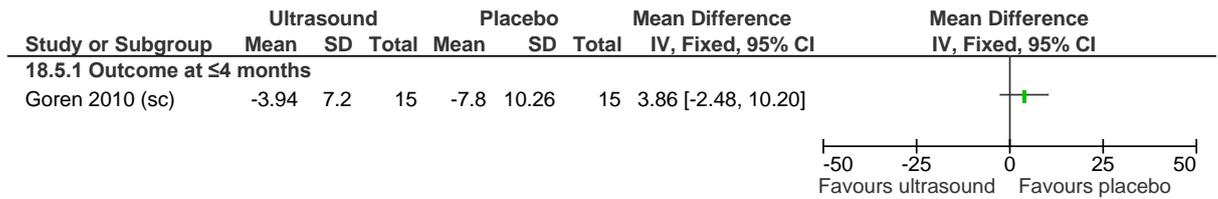
Scales: VAS 0-10

Figure 788: Pain intensity (VAS); low back pain without sciatica



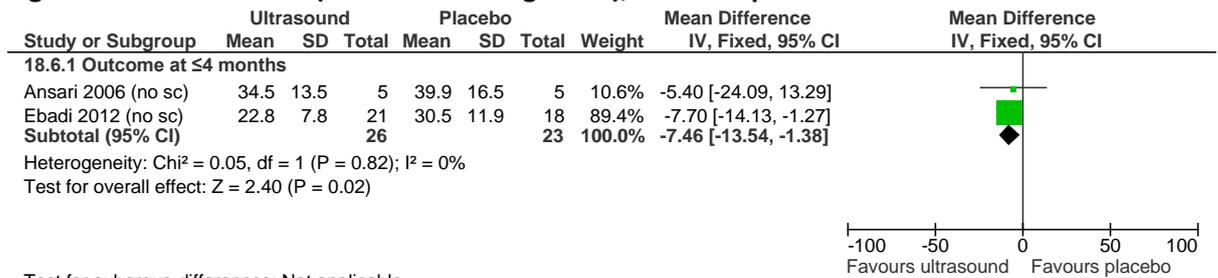
Scales: VAS 0-10

Figure 789: Function (ODI); low back pain with sciatica



Scale: ODI 0-50

Figure 790: Function (Functional Rating Index); low back pain without sciatica



Scale: Functional Rating Index 0-100

Figure 791: Responder criteria (>30% pain reduction); low back pain without sciatica

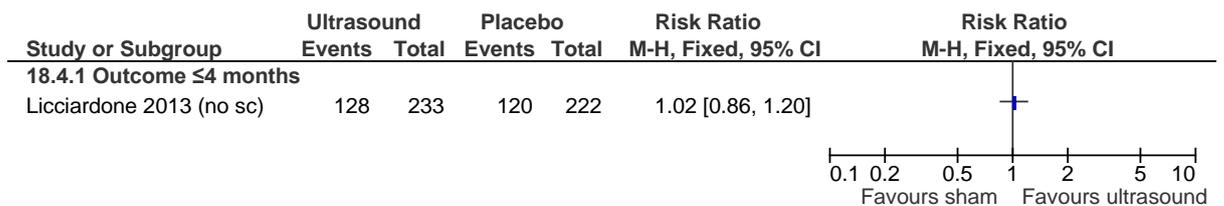
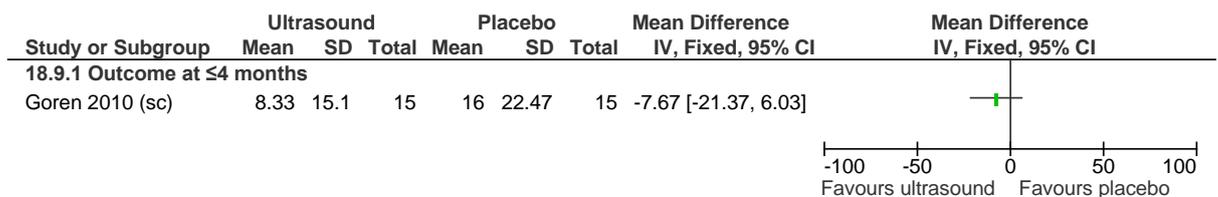


Figure 792: Healthcare utilisation (paracetamol use); low back pain with sciatica



K.18.52 Ultrasound versus usual care (both groups had exercise)

Figure 793: Quality of life (SF-36); low back pain without sciatica

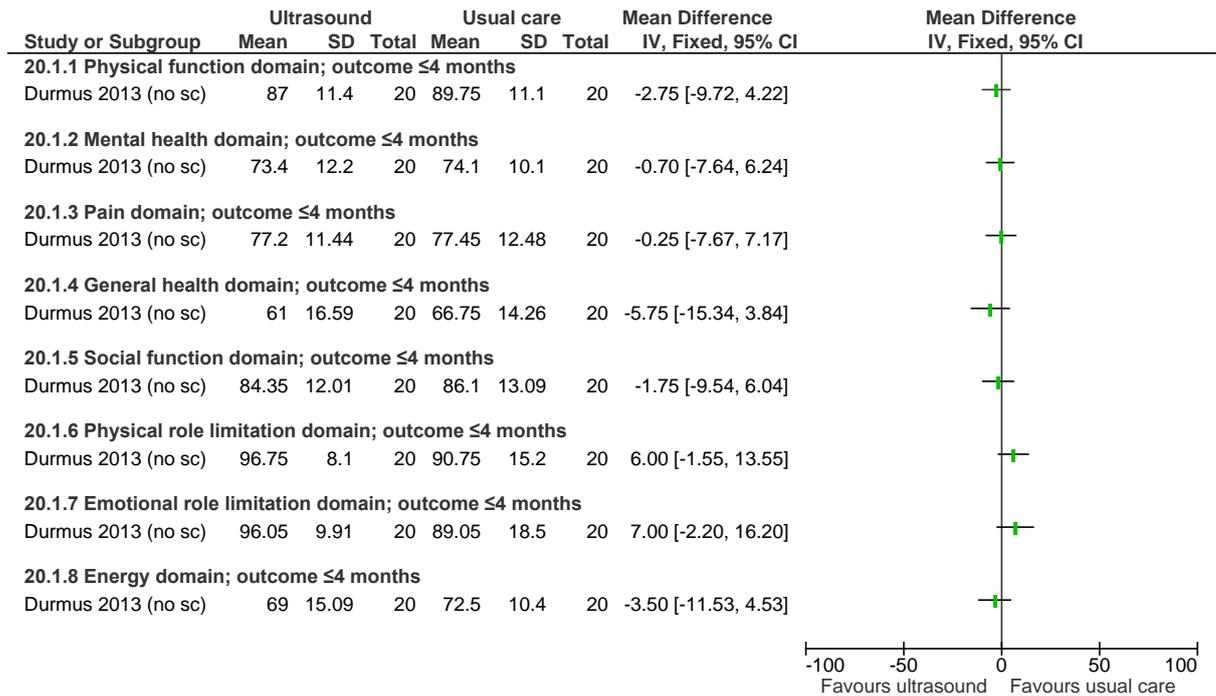
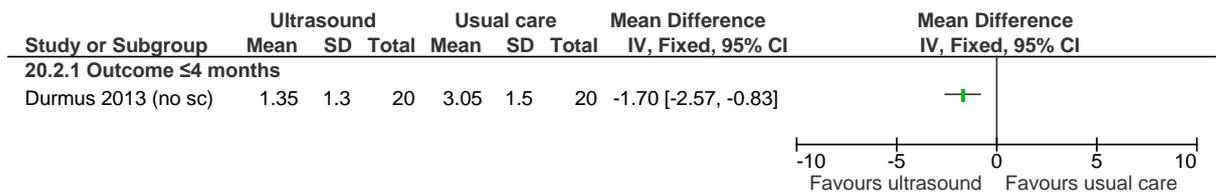
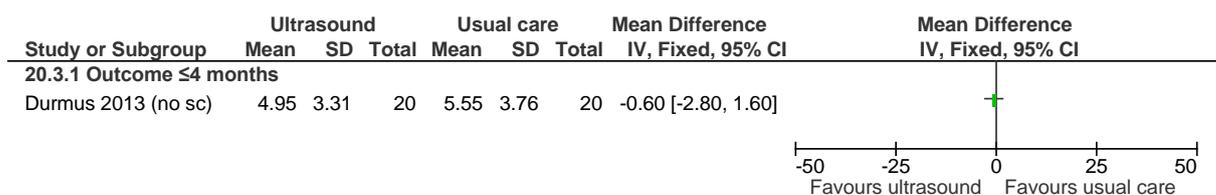


Figure 794: Pain intensity (VAS); low back pain without sciatica



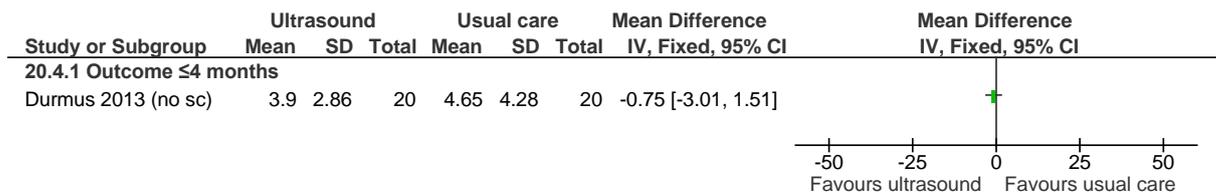
Scales: VAS 0-10

Figure 795: Function (ODI); low back pain without sciatica



Scale: ODI 0-50

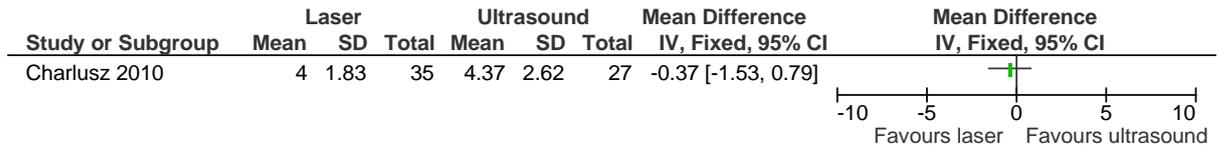
Figure 796: Psychological distress (Beck Depression Inventory); low back pain without sciatica



Scale: Beck Depression Inventory 0-63 Top=High is poor outcome

K.18293 Ultrasound versus laser

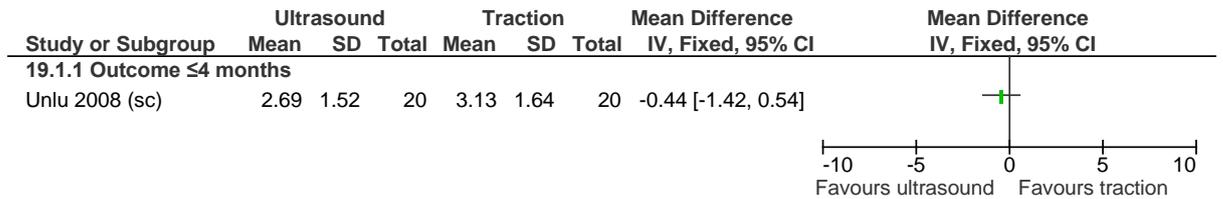
Figure 797: Pain intensity (VAS); low back pain ± sciatica



Scales: VAS 0-10

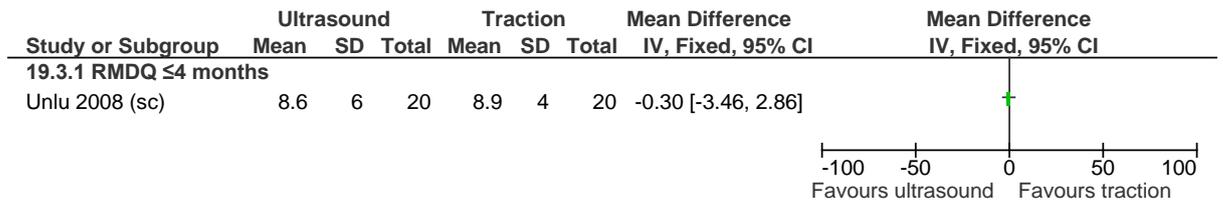
K.10.304 Ultrasound versus traction

Figure 798: Pain intensity (VAS); low back pain with sciatica



Scales: VAS 0-10

Figure 799: Function (RMDQ SMD); low back pain with sciatica



K.10.16 Combinations of interventions – electrotherapy adjunct

K.10.321 Low back pain with sciatica

K.10.33.1 Electrotherapy (ultrasound) + exercise (biomechanical + aerobics) compared to waiting list control

Figure 800: Pain (Back pain VAS, 0-10) ≤ 4 months

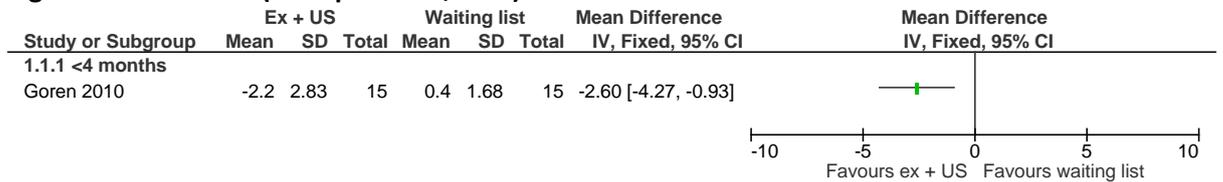


Figure 801: Pain severity (Leg pain VAS, 0-10) ≤4 months

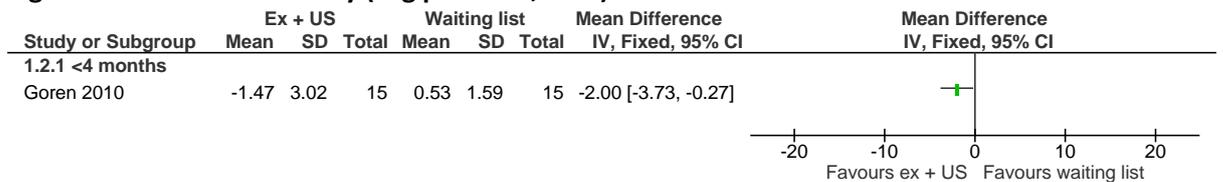


Figure 802: Function (ODI, 0-100) ≤ 4 months

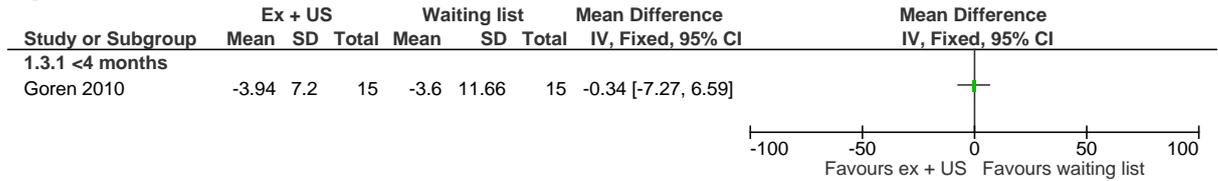
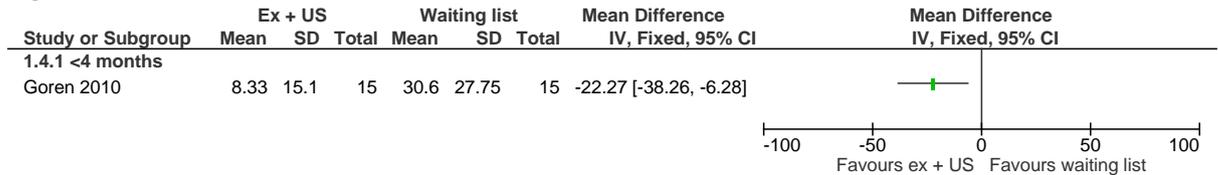


Figure 803: Medication use ≤ 4 months



K.10.5.1.2 Electrotherapy (ultrasound) + exercise (biomechanical + aerobics) compared to exercise (biomechanical + aerobics)
835

Figure 804: Pain (Back pain VAS 0-10) ≤ 4 months

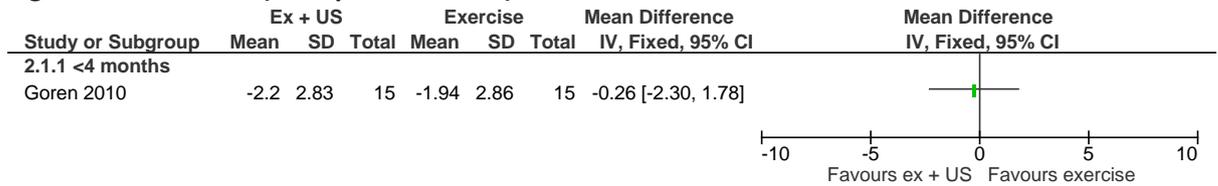


Figure 805: Pain (Leg Pain VAS, 0-10) ≤ 4 months

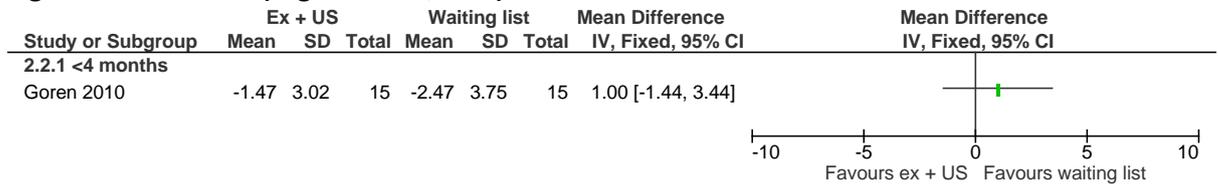


Figure 806: Function (ODI, 0-100) ≤ 4 months

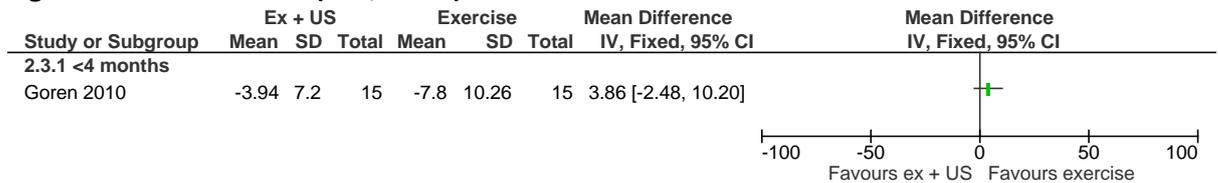
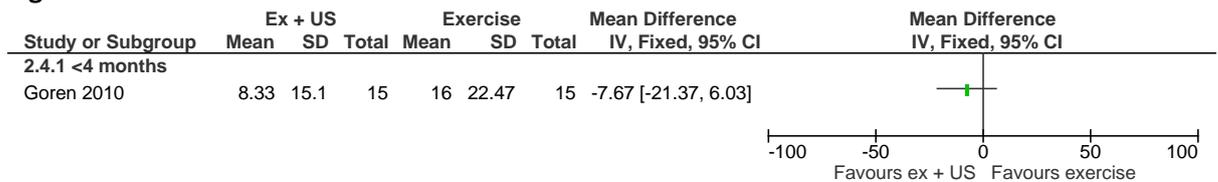


Figure 807: Medication use ≤ 4 months

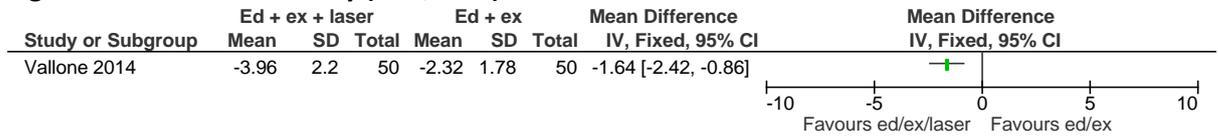


K.10.3.2 Low back pain without sciatica

K.10.3.2.1 Electrotherapy (laser) + self-management (education) + exercise (biomechanical) compared to self-management (education) + exercise (biomechanical)

838

Figure 808: Pain severity (VAS, 0-10) ≤ 4 months



K.10.3.2 Electrotherapy (TENS) + acupuncture compared to acupuncture

839

Figure 809: Pain (0-100 VAS converted to 0-10) ≤ 4 months

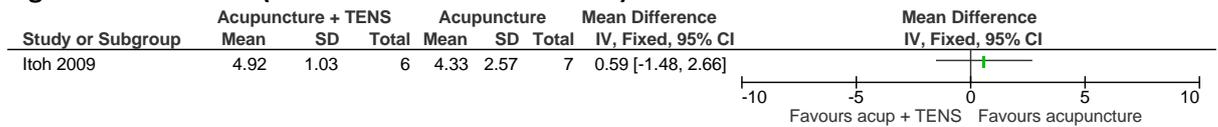
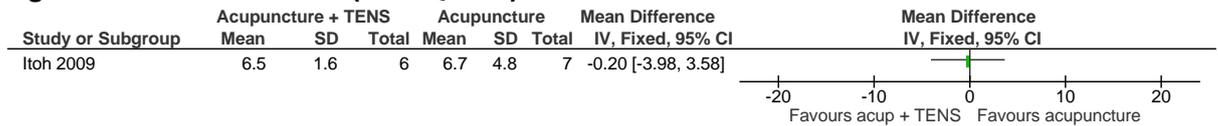


Figure 810: 32 Function (RMDQ, 0-24) ≤ 4 months



K.10.3.2.3 Electrotherapy (TENS) + exercise (biomechanical) compared to sham electrotherapy (TENS)

840

Figure 811: Pain severity (Borg verbal pain rating scale, 0-10) ≤ 4 months

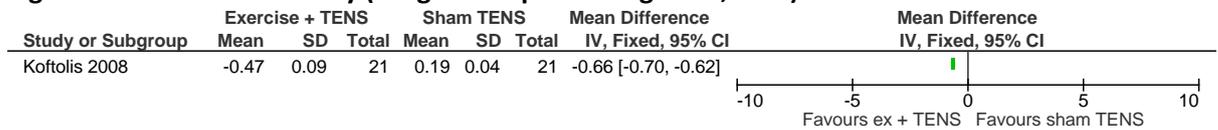
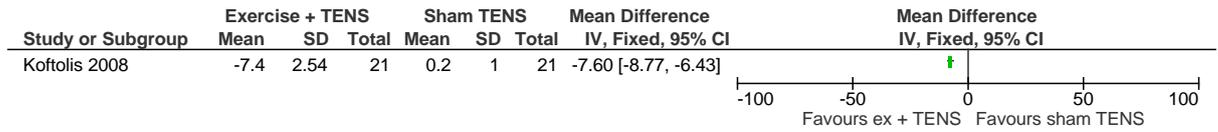
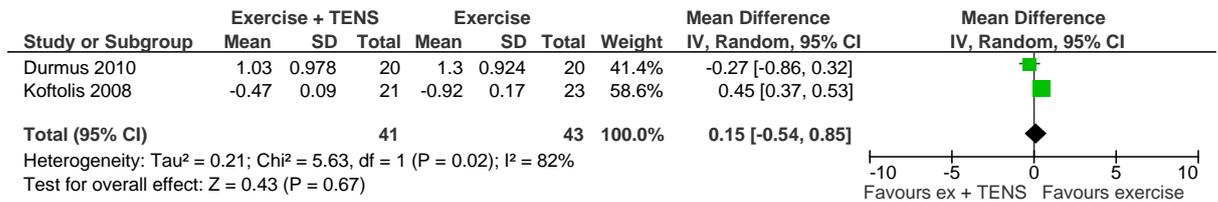


Figure 812: Function (ODI, 0-100) ≤ 4 months



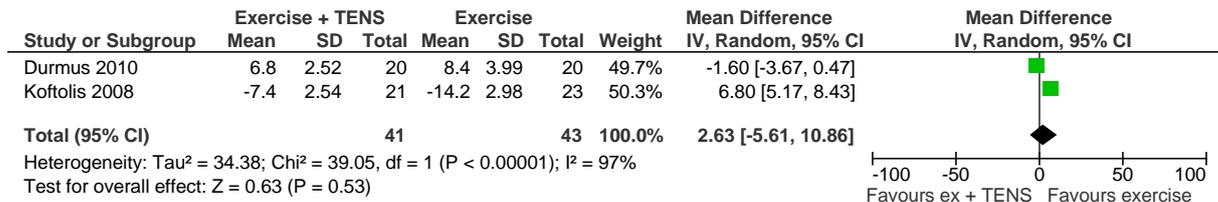
K.10.5.4.4 Electrotherapy (TENS) + exercise (biomechanical) compared to exercise (biomechanical)

Figure 813: 33 Pain severity (Borg verbal pain rating scale, and Pain disability index (PDI), converted to 0-10) ≤ 4 months



Note: Unresolved heterogeneity

842 Figure 814: Function (ODI, 0-100) ≤ 4 months



843

844

Note: Unresolved heterogeneity

Figure 815: 35 Quality of life (SF-36, 0-100) ≤ 4 months

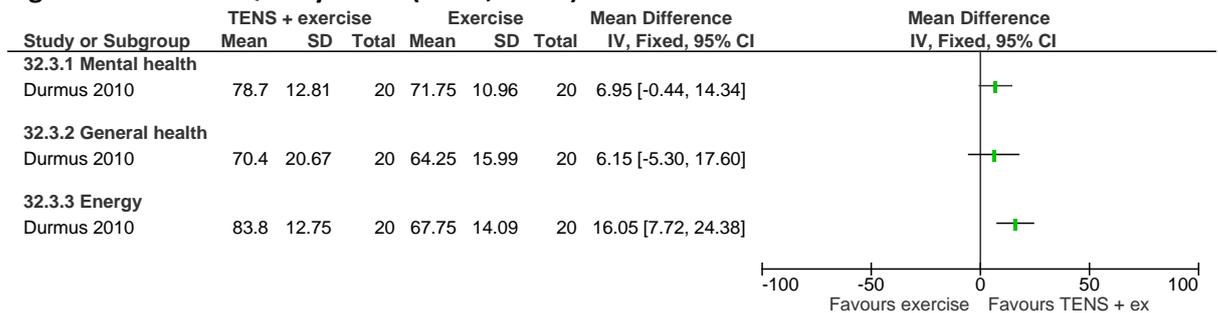
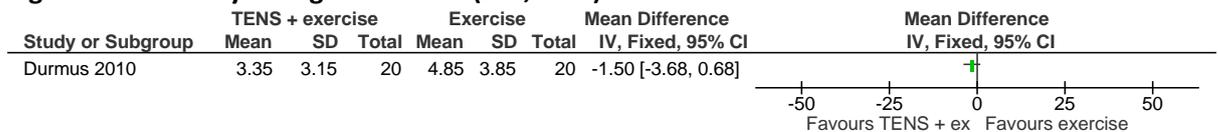


Figure 816: Psychological distress (BDI, 0-63) ≤ 4 months



K.10.5.5 *Electrotherapy (PENS) + exercise (biomechanical + aerobics) compared to sham electrotherapy (PENS) + exercise (biomechanical + aerobics)*
846

Figure 817: Quality of life (SF-36, 0-100)

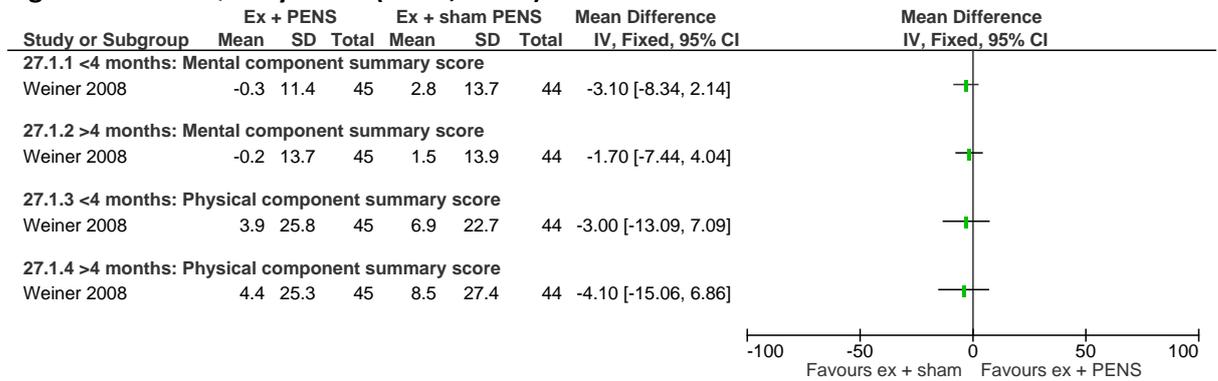


Figure 818: Pain severity (McGill, 0-78)

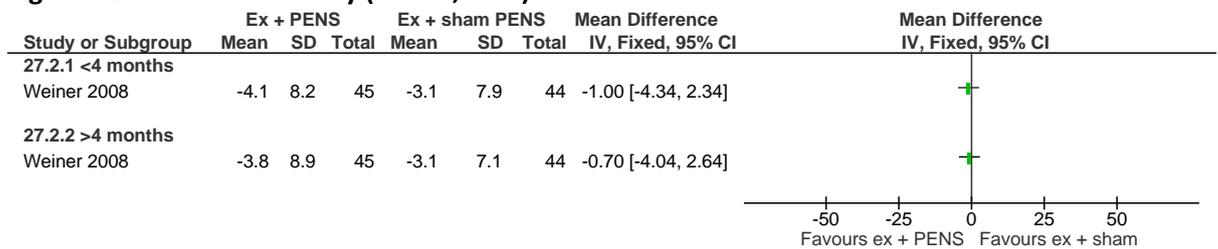
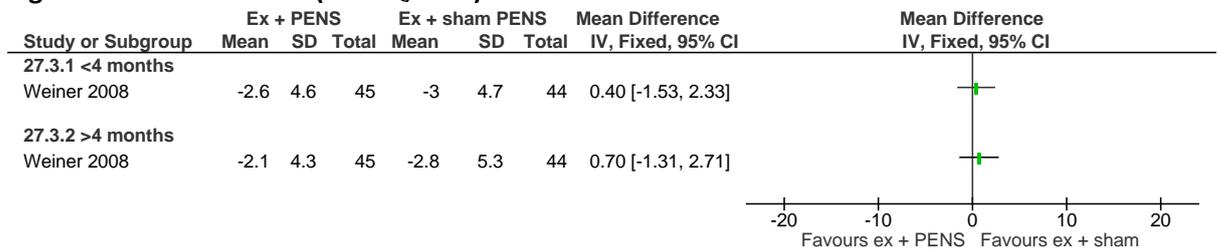


Figure 819: Function (RMDQ, 0-24)



K.10.5.6 *Electrotherapy (ultrasound) + exercise (biomechanical – core stabilisation) compared to exercise (biomechanical – core stabilisation)*
848

Figure 820: Quality of life (SF-36, 0-100) ≤ 4 months

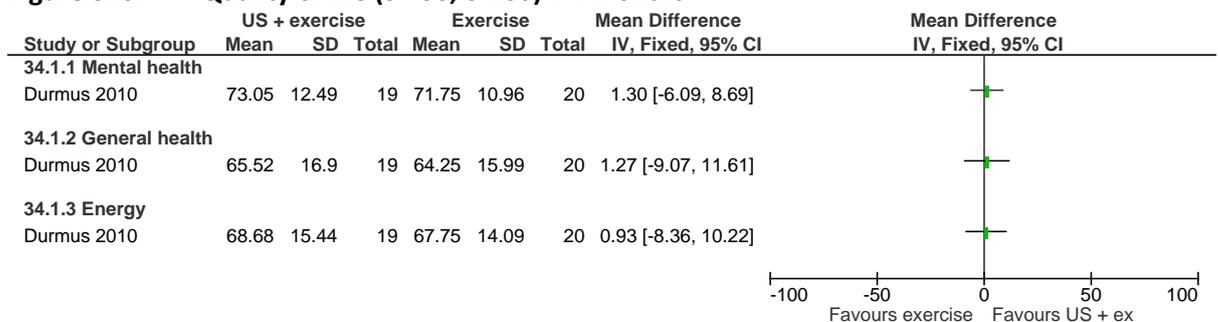


Figure 821: Pain severity (pain disability index, 0-50) ≤ 4 months

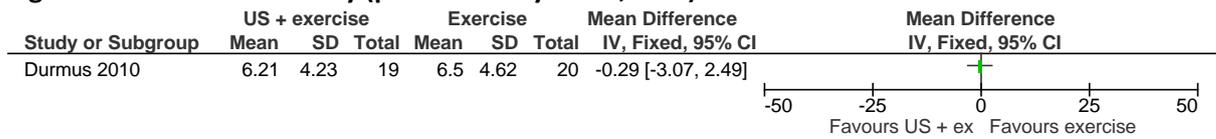


Figure 822: Function (ODI, 0-100) ≤ 4 months

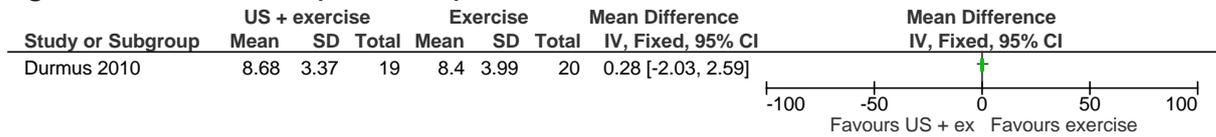
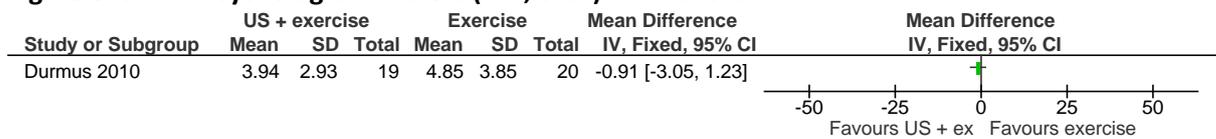


Figure 823: Psychological distress (BDI, 0-63) ≤ 4 months



K.10.5.2.7 Electrotherapy (ultrasound) + exercise + self-management compared to exercise + self-management
850

Figure 824: Pain (0-100 VAS converted to 0-10) ≤ 4 months

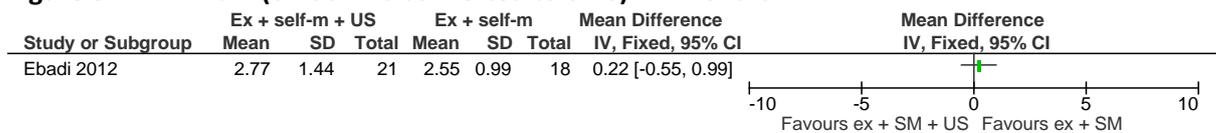
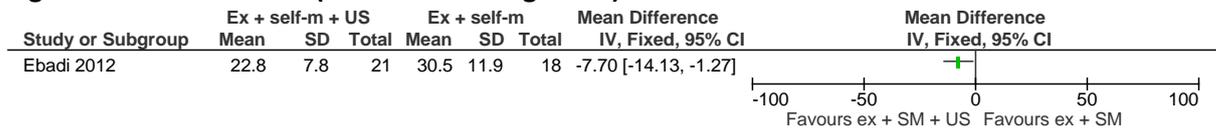


Figure 825: Function (Functional Rating Index) ≤ 4 months



K.10.5.3 Low back pain with/ without sciatica

K.10.5.3.1 Electrotherapy (electroacupuncture) + exercise + self-management (education + home exercise) compared to exercise + self-management (education + home exercise)
853

Figure 826: Pain severity (NRS, 0-10) ≤ 4 months

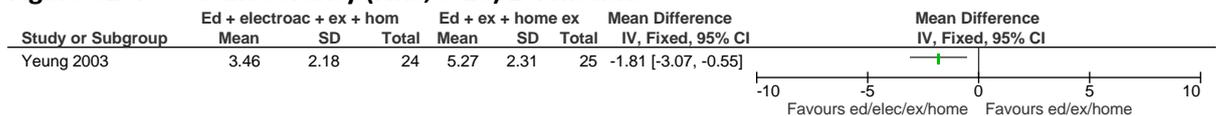


Figure 827: Function (Aberdeen LBP scale 0-100 converted to 0-10 scale) ≤ 4 months

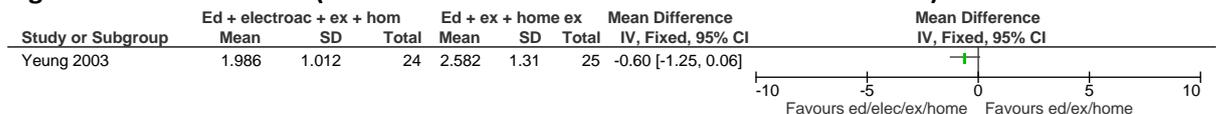
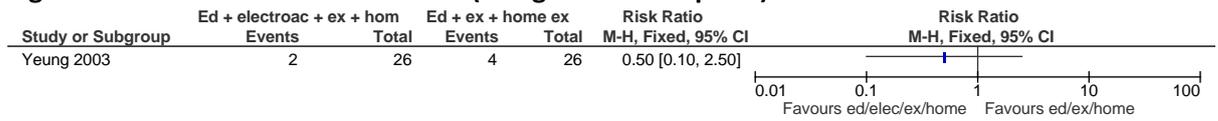


Figure 828: Healthcare utilisation (analgesic consumption) \leq 4 months



K.10.53.2 855 Electrotherapy (interferential therapy) + manual therapy (manipulation) compared to manual therapy (manipulation)

Figure 829: Quality of life (EQ-5D, 0-1)

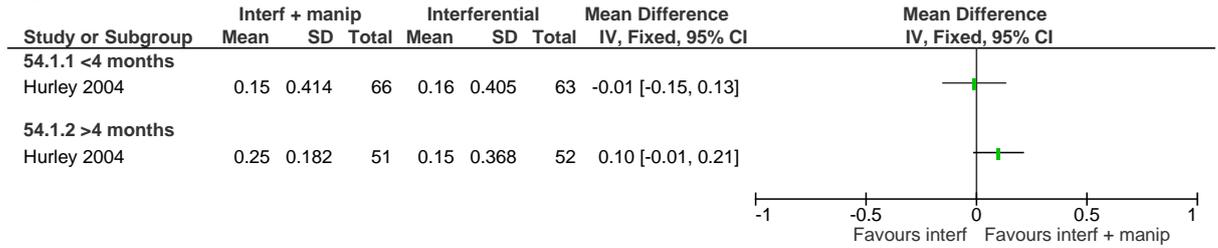


Figure 830: Quality of life (SF-36, 0-100)

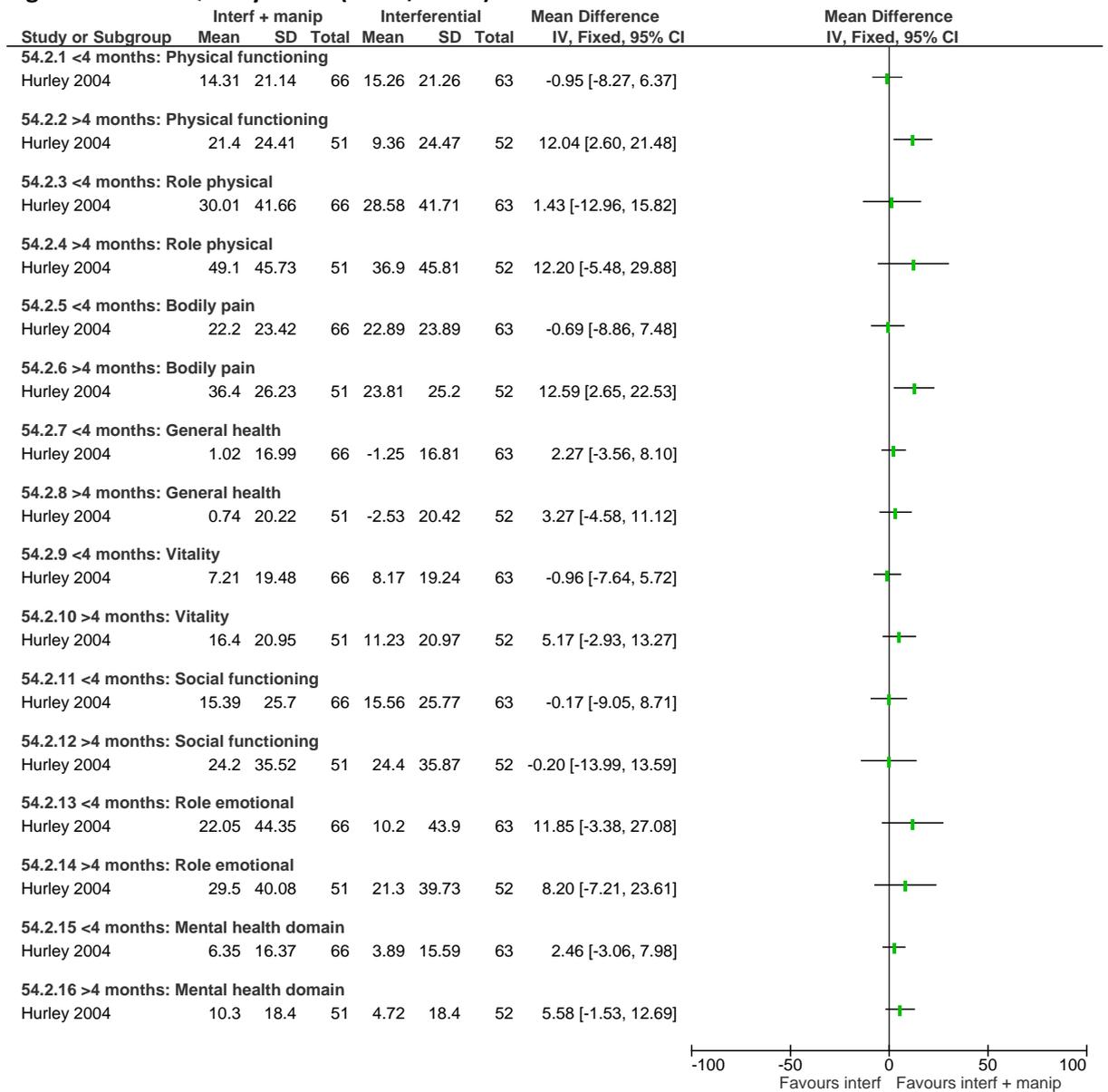


Figure 831: Pain severity (0-100 VAS converted to 0-10)

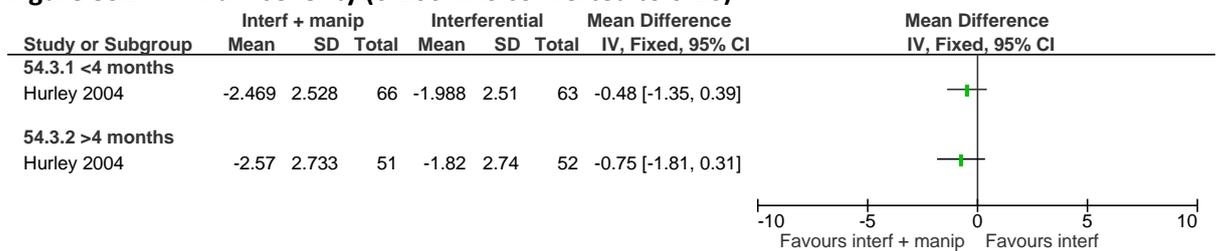
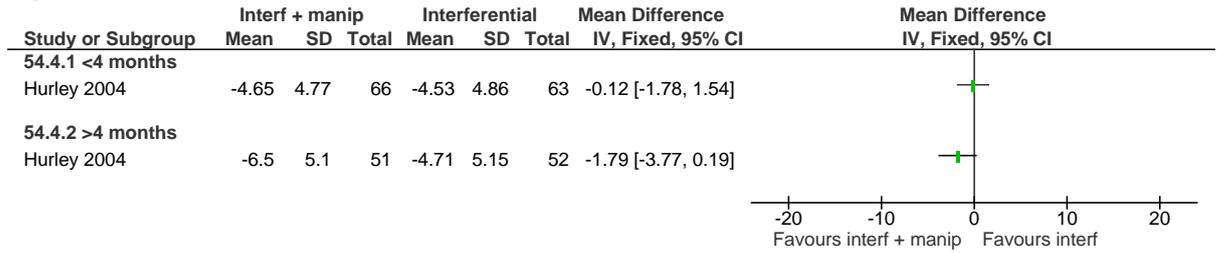
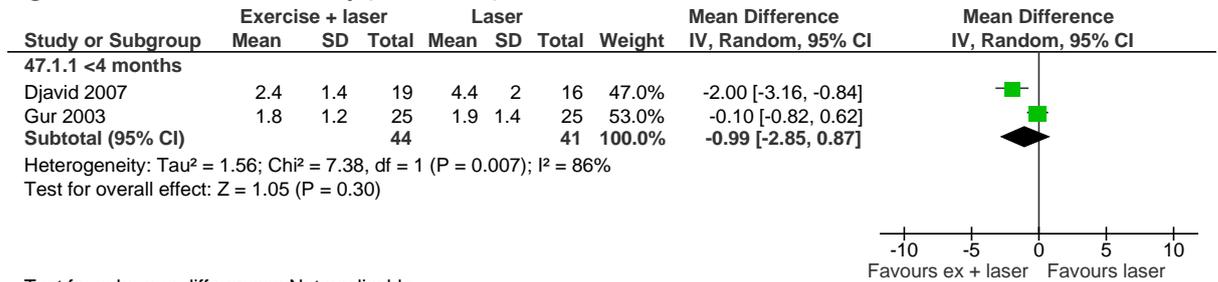


Figure 832: Function (RMDQ, 0-24)



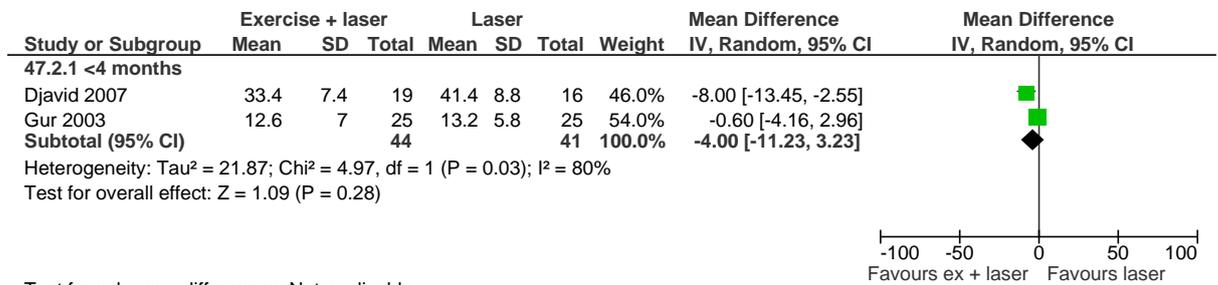
K.10.53.3 857 Electrotherapy (laser) + self-management (home exercise) compared to self-management (home exercise)

Figure 833: Pain severity (VAS, 0-10)



858 Note: Unresolved heterogeneity

Figure 834: Function (ODI, 0-100).



Note: Unresolved heterogeneity

K.10.53.4 860 Electrotherapy (HILT Laser) + self-management (unsupervised exercise) compared to placebo HILT laser + self-management (unsupervised exercise)

Figure 835: Pain severity (VAS, 0-10) ≤ 4 months

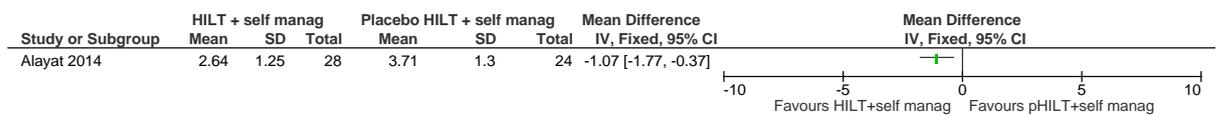


Figure 836: Function (RMDQ, 0-24) ≤ 4 months

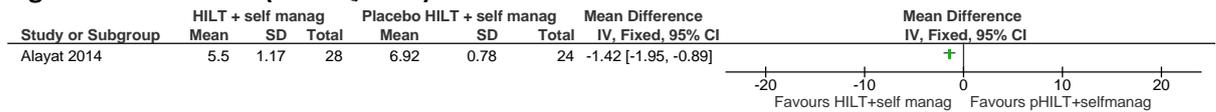
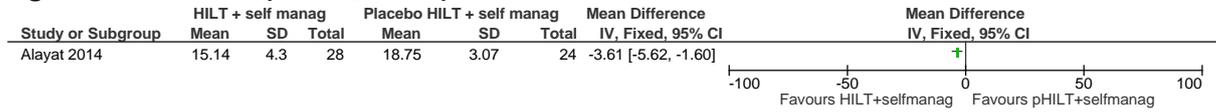


Figure 837: Function (MODQ, 0-100) ≤ 4 months



K.10.866.1 862 Electrotherapy (BEMER + TENS) + exercise + manual therapy (massage) compared to placebo BEMER + TENS + exercise + manual therapy (massage)

Figure 838: Quality of life (SF-36, 0-100, change score) ≤ 4 months

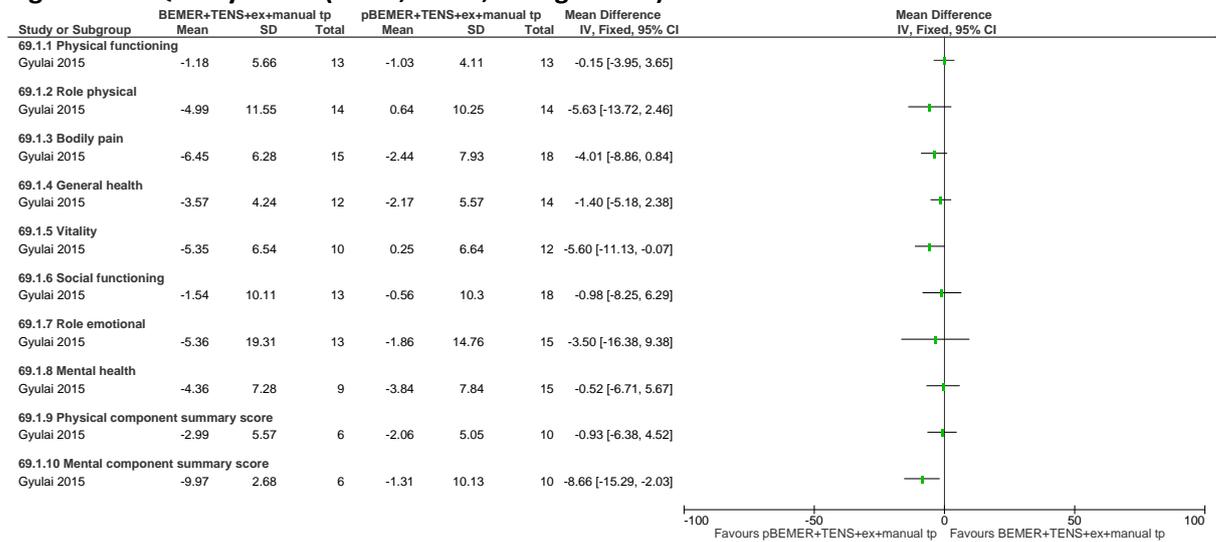


Figure 839: Pain severity (exercise VAS, 0-10, change score) ≤ 4 months

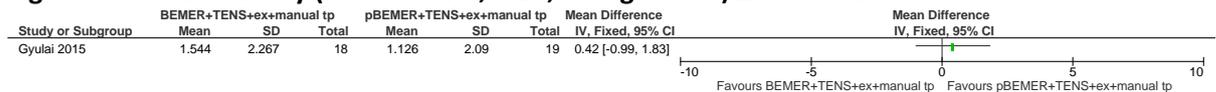


Figure 840: Pain severity (resting VAS, 0-10, change score) ≤ 4 months

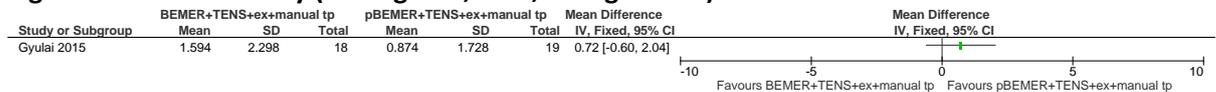
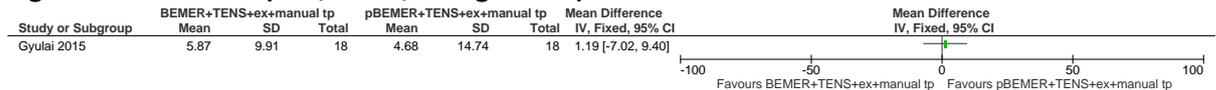


Figure 841: Function (ODI, 0-100, change score) ≤ 4 months



K.1.1 Psychological interventions

K.1.1.1 Cognitive behavioural approaches versus placebo/sham

K.1.1.1.1 Low back pain with or without sciatica

Figure 842: Pain severity (pain and impairment relationship scale) > 4 months

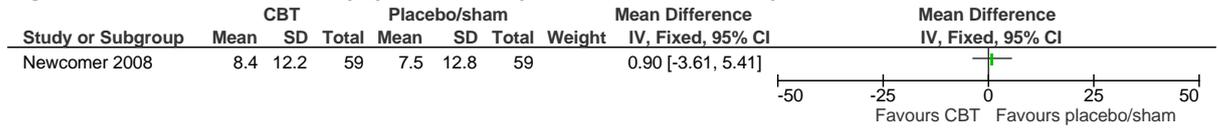
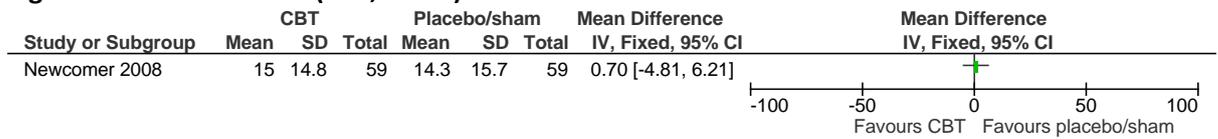


Figure 843: Function (ODI, 0-100) > 4 months



K.1.1.2 Cognitive behavioural approaches versus usual care/waiting list

K.1.1.2.1 Low back pain with or without sciatica

Figure 844: Pain severity (VAS 0-10, final values)

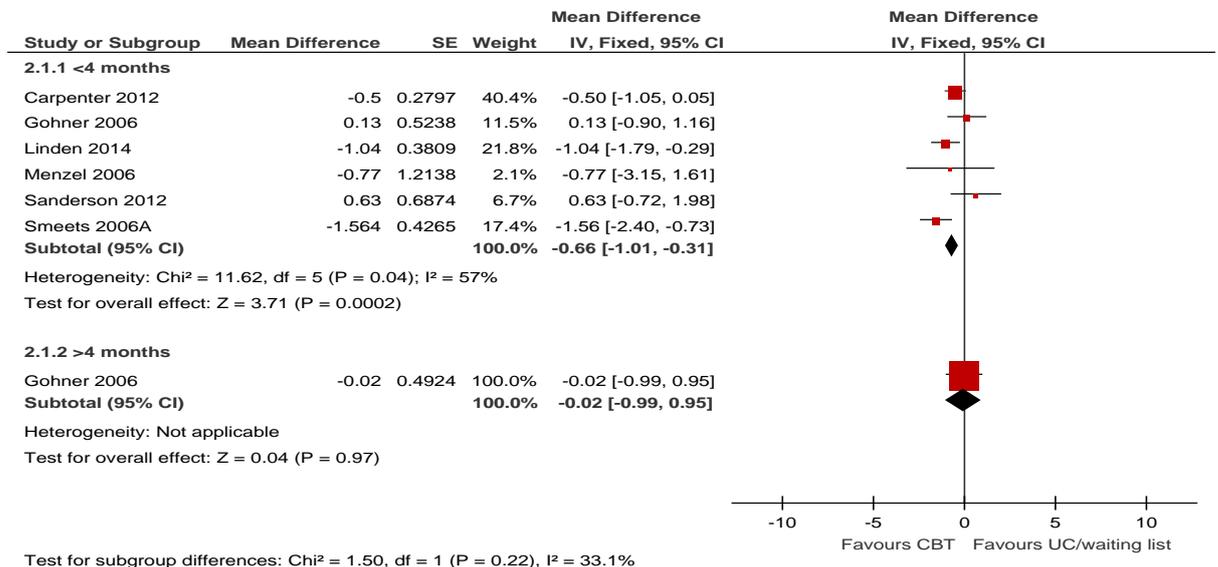
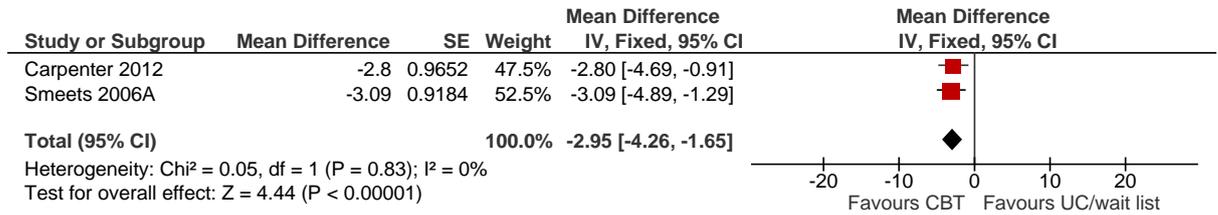
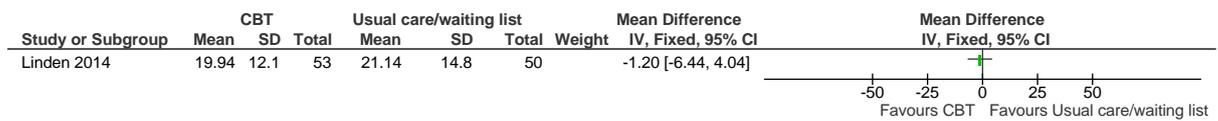


Figure 845: Function (RMDQ, 0-24) < 4 months



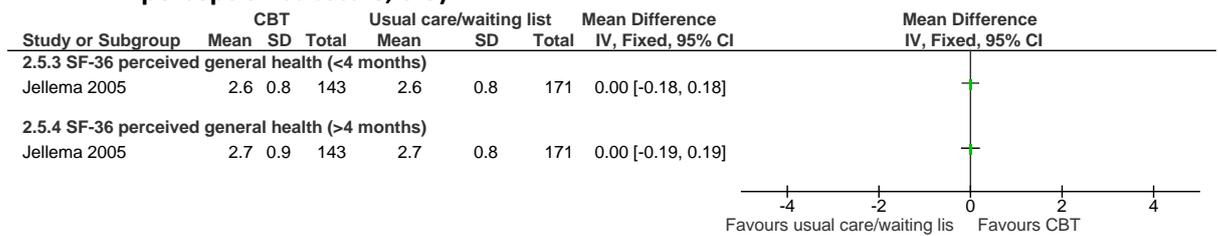
Carpenter and Smeets = waiting list control.

Figure 846: Function (PDI, pain disability index, 0-70) < 4 months



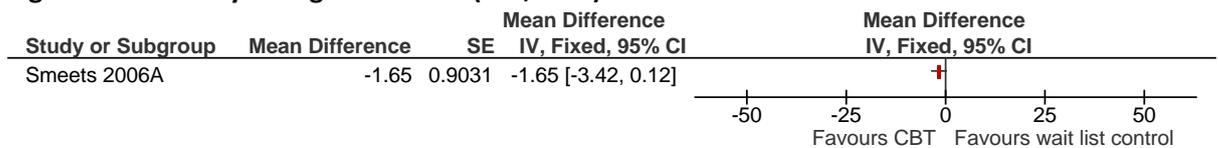
Linden = usual care

Figure 847: Quality of life (SF-36 perceived general health, first question of general health perception subscale, 0-5)



Jellema 2005 (usual care)

Figure 848: Psychological distress (BDI, 0-63) < 4 months



Smeets: waiting list control

K.1818 Cognitive behavioural approaches versus behavioural therapy

K.1839 Low back pain with or without sciatica

Figure 849: Pain severity (MPQ VAS, 0-100 converted to 0-10)

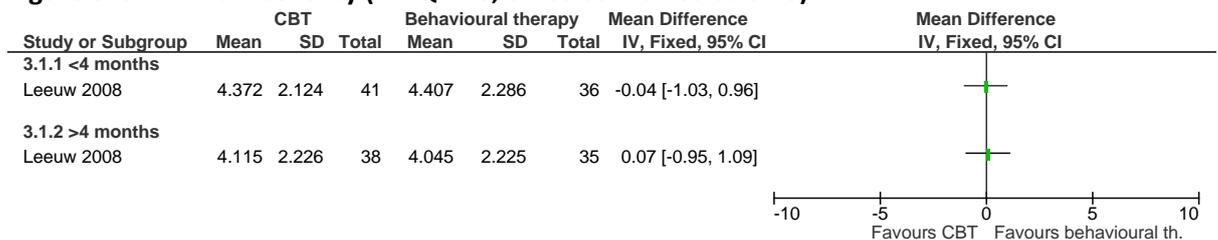


Figure 850: Function (Quebec back pain disability scale, 0-100) > 4 months

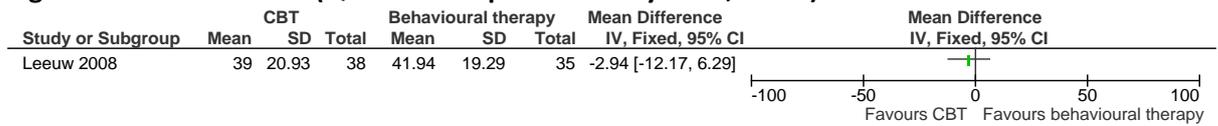
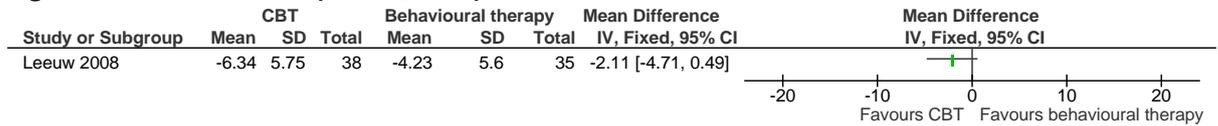


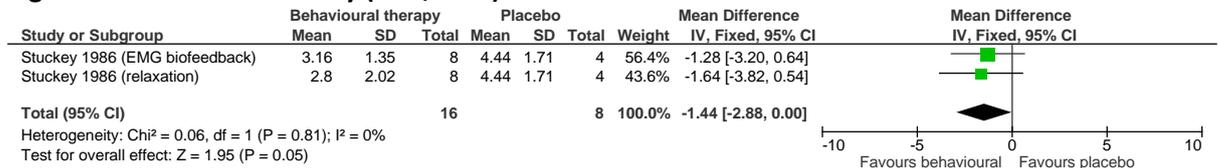
Figure 851: Function (RMDQ, 0-24) > 4 months



K.1104 Behavioural therapy versus placebo

K.1111 Low back pain with or without sciatica

Figure 852: Pain severity (VAS, 0-10) ≤ 4 months

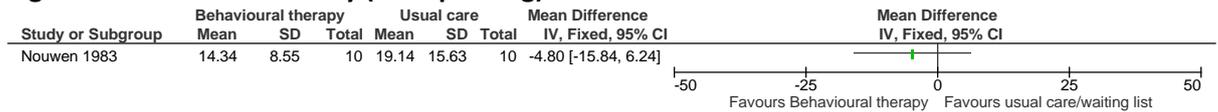


Scale: 0-100 (converted to 0-10)

K.1125 Behavioural therapy versus usual care/waiting list

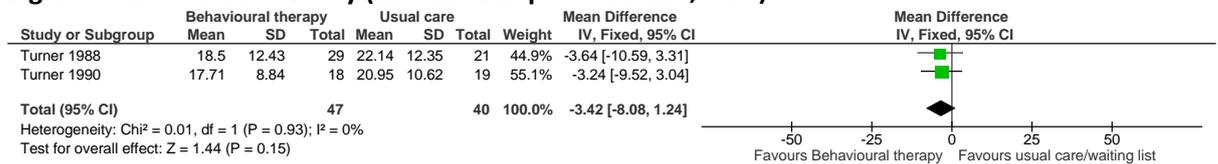
K.1131 Low back pain with or without sciatica

Figure 853: Pain severity (Back pain log) < 4 months



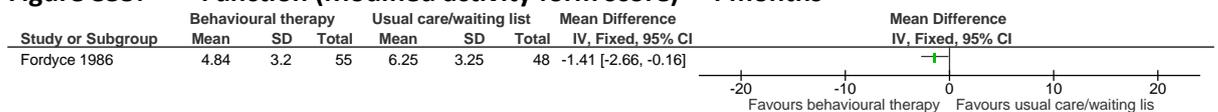
Nouwen 1983 (waiting list): Back pain log, a modification of Budzinsky 1973, to rate the intensity of the pain on a 5-point scale each waking hour of the day

Figure 854: Pain severity (McGill Pain questionnaire, 0-78)



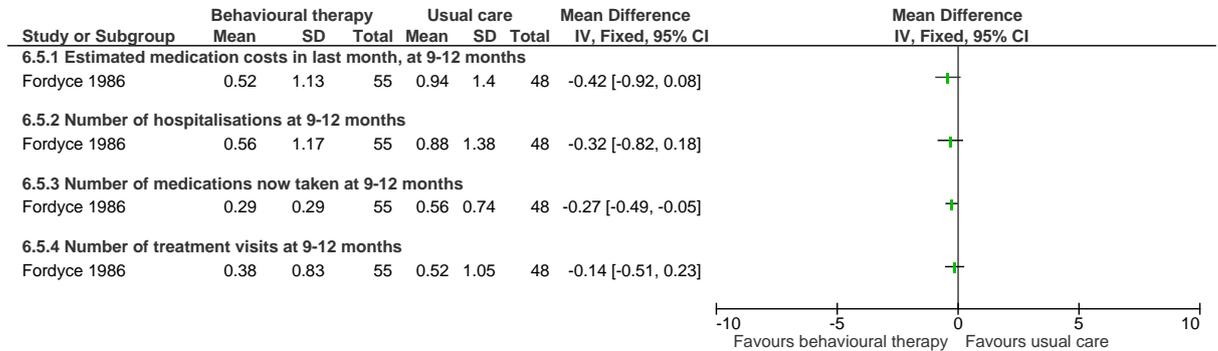
Turner 1988 (waiting list) and Turner 1990 (waiting list)

Figure 855: Function (Modified activity form score) > 4 months



Fordyce 1986 (usual care): Modified Activity Form score (number of nights in preceding week awakened by pain not included). High is poor outcome

Figure 856: Healthcare utilisation > 4 months

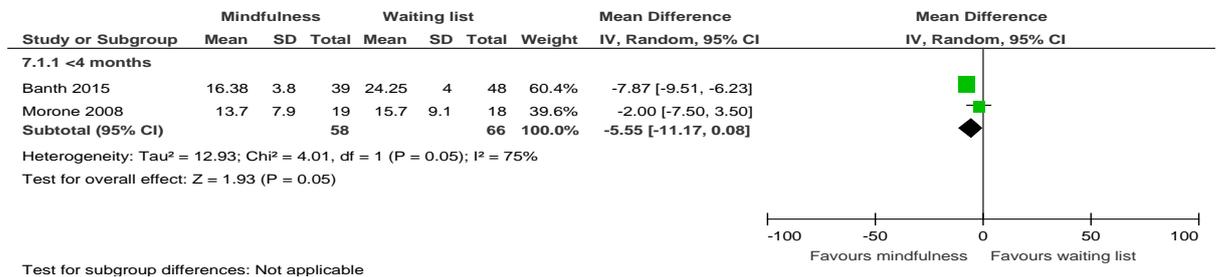


Fordyce 1986: usual care

K.1.1.6 Mindfulness versus usual care/waiting list

K.1.1.5.1 Low back pain with or without sciatica

Figure 857: Pain severity (McGill pain 0-78) < 4 months



Heterogeneity: unable to investigate as studies same in terms of pre-specified subgroups. Thus downgraded in GRADE and RE model used.

Figure 858: Function (RMDQ 0-24) < 4 months

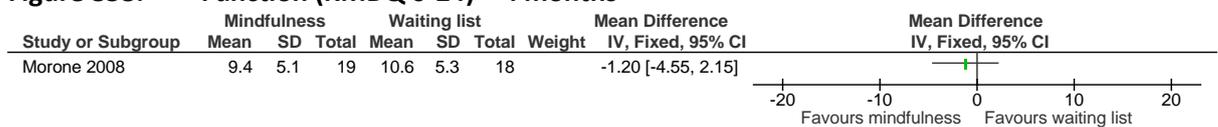
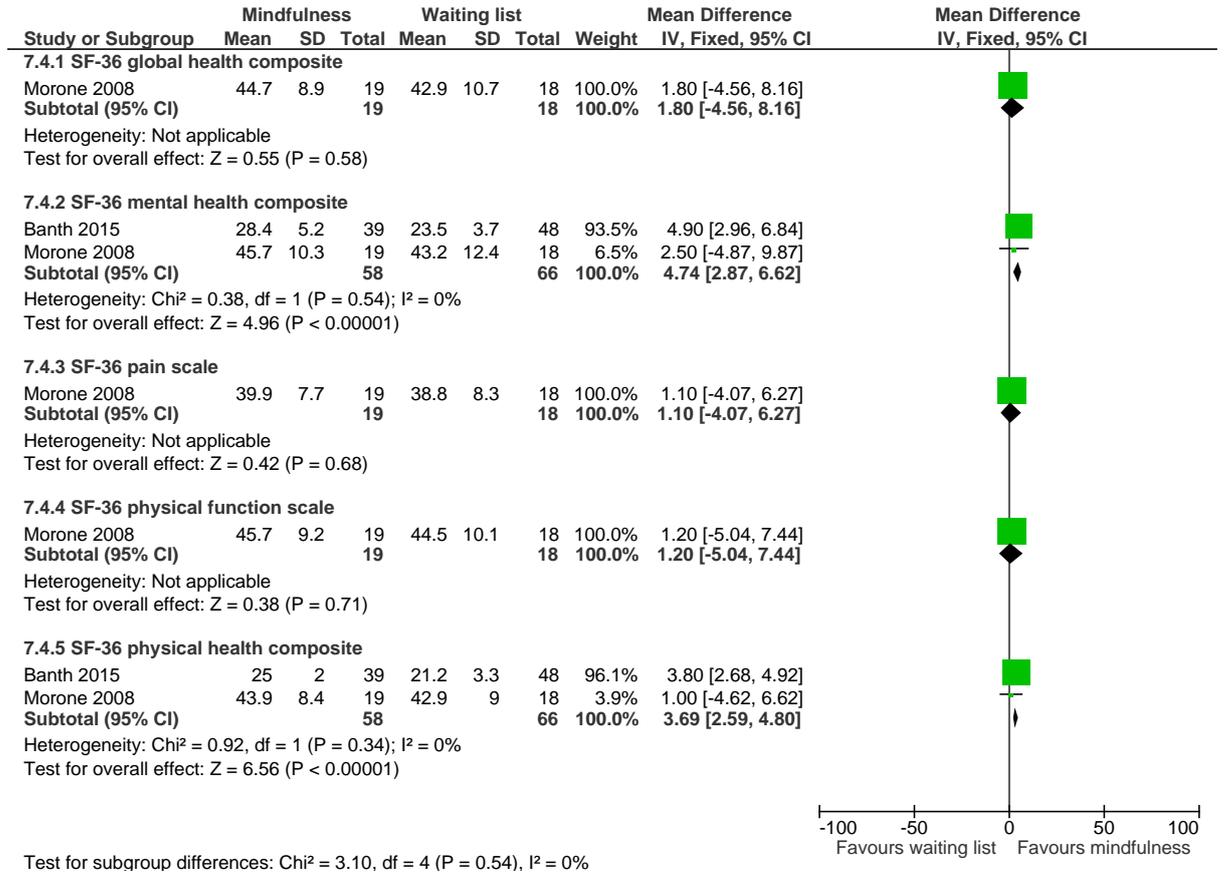


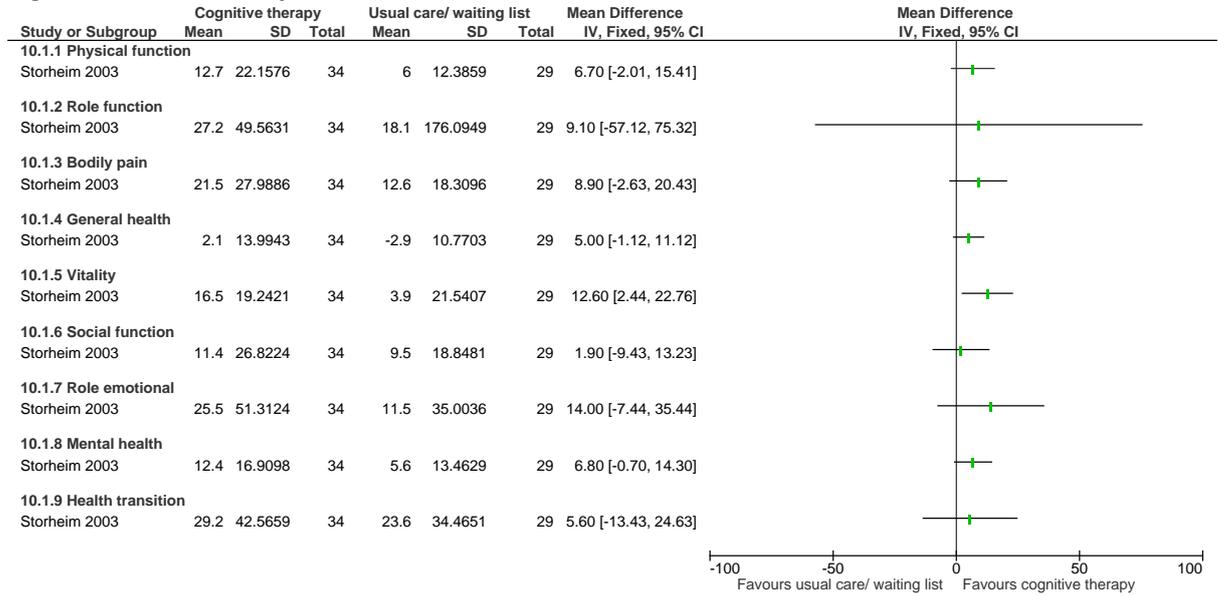
Figure 859: Quality of life (SF-36, 0-100) < 4 months



K.117 Cognitive therapy versus usual care/waiting list

K.1171 Low back pain without sciatica

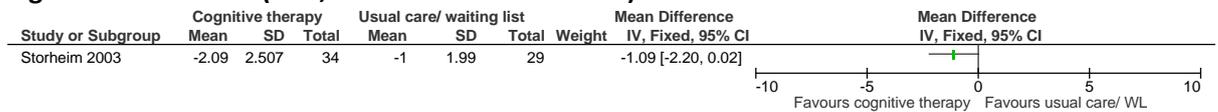
Figure 860: Quality of life (SF-36) >4 months



878 *Storheim 2003: usual care*

879

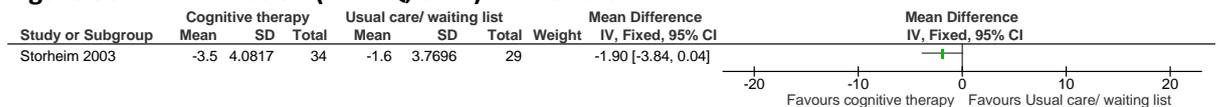
Figure 861: Pain (VAS, 0-100 converted to 0-10) >4 months



Storheim 2003: usual care

880

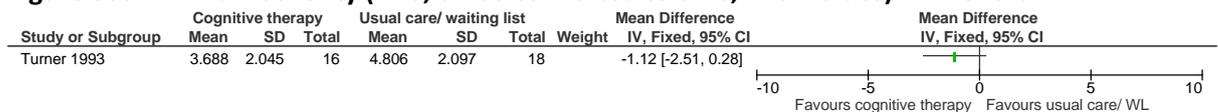
Figure 862: Function (RMDQ, 0-24) >4 months



Storheim 2003: usual care

K.11712 Low back pain with or without sciatica

Figure 863: Pain severity (VAS, 0-100 converted to 0-10, final values) ≤4 months



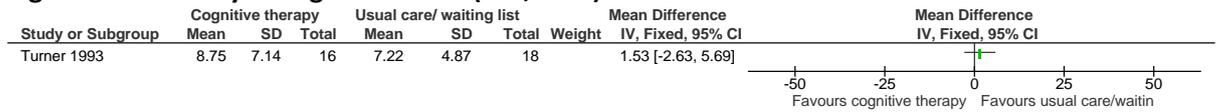
Turner 1993: waiting list

882

883

884

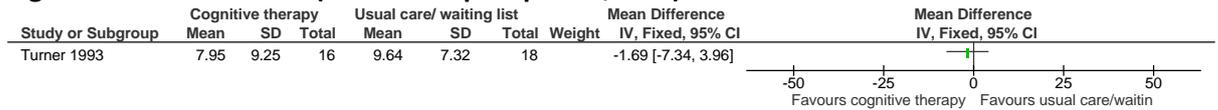
Figure 864: Psychological distress (BDI, 0-63) ≤4 months



Turner 1993: waiting list

885

Figure 865: Function (Sickness impact profile, 0-68) ≤4 months



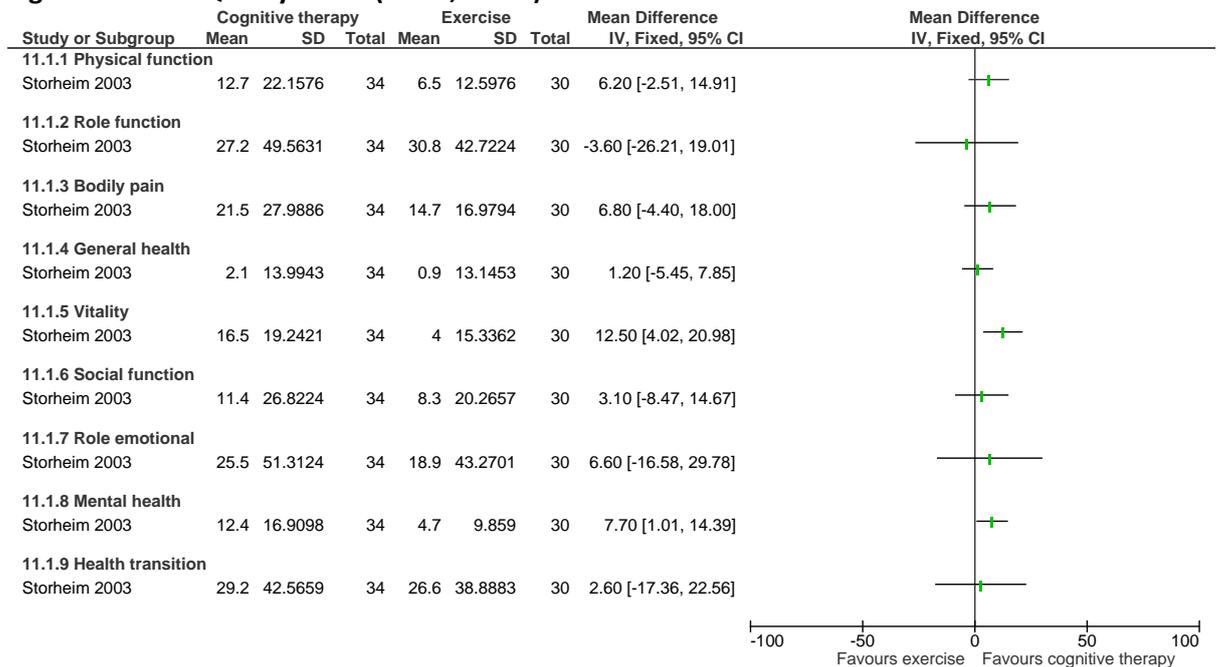
Turner 1993: waiting list

886

K.1.1.7 Cognitive therapy versus exercise (biomechanical plus aerobics)

K.1.1.8 Low back pain without sciatica

Figure 866: Quality of life (SF-36, 0-100) >4 months



889

Figure 867: Pain severity (VAS 0-100, converted to 0-10) >4 months

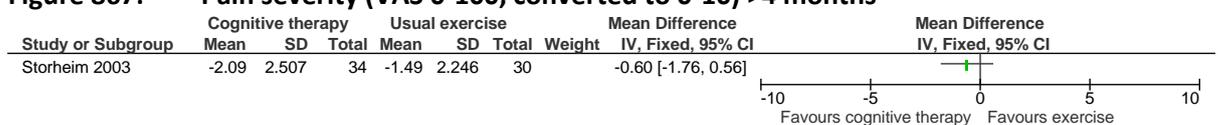
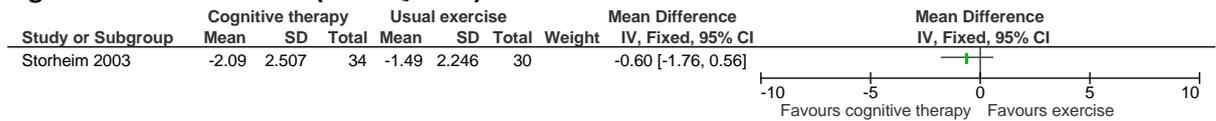


Figure 868: Function (RMDQ, 0-24) >4 months



890

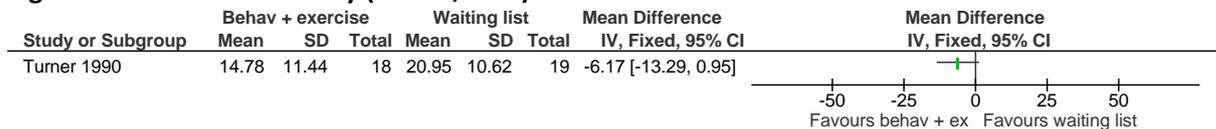
891

K.11.912 Combination of interventions – psychological adjunct

K.11.931 Low back pain without sciatica

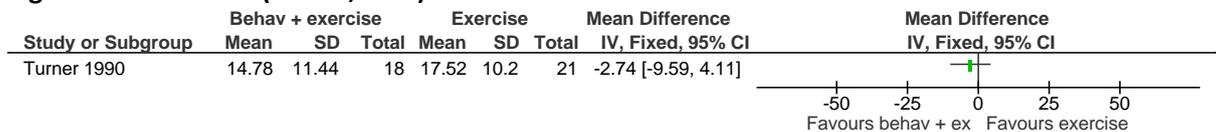
K.11.941 Psychological intervention (behavioural therapy) + exercise (aerobic) compared to waiting list (usual care not specified)
895

Figure 869: Pain severity (McGill, 0-63) ≤ 4 months



K.11.962 Psychological intervention (behavioural therapy) + exercise (aerobic) compared to exercise (aerobic)
897

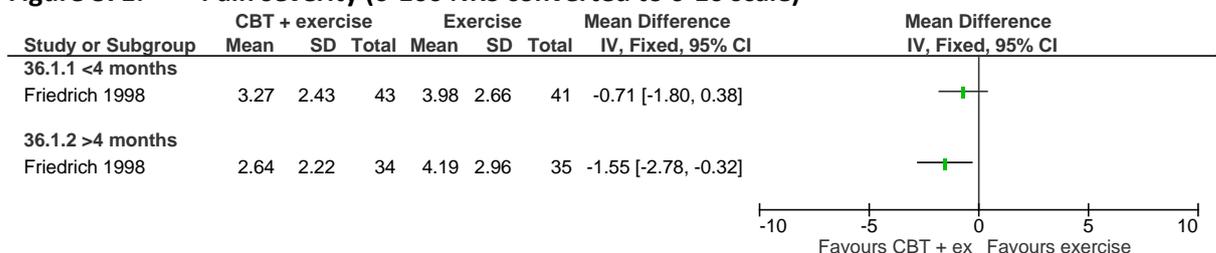
Figure 870: Pain (McGill, 0-63) ≤ 4 months



K.11.982 Low back pain with or without sciatica

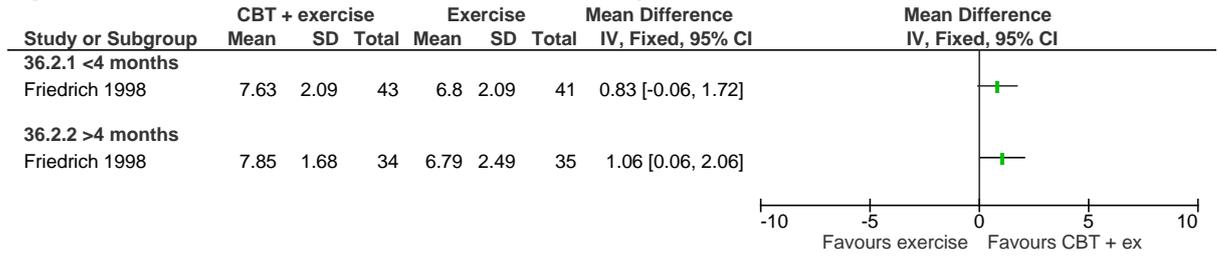
K.11.991 Psychological intervention (cognitive behavioural approaches) + exercise (mixed: biomechanical + aerobic) compared to exercise (mixed: biomechanical + aerobic)
900

Figure 871: Pain severity (0-100 NRS converted to 0-10 scale)



901

Figure 872: Function (Low back outcome scale questionnaire 0-75 converted to 0-10)



K.11.902.2 Psychological intervention (cognitive behavioural approaches) + self-management compared to self-management
903

Figure 873: Pain severity (0-100 von Korff converted to 0-10 scale)

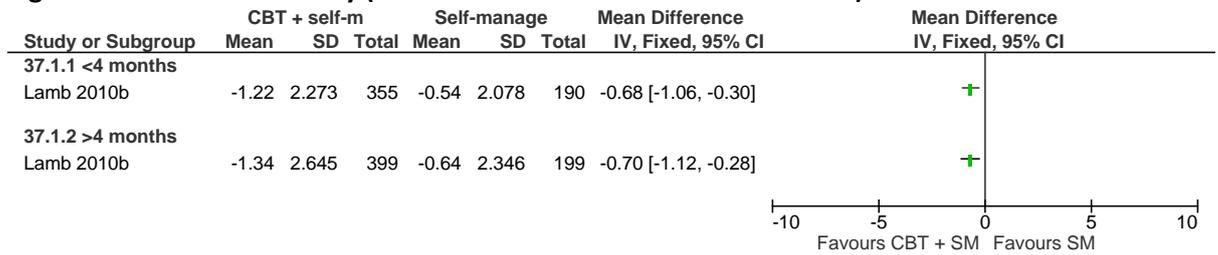


Figure 874: Function (RMDQ, 0-24)

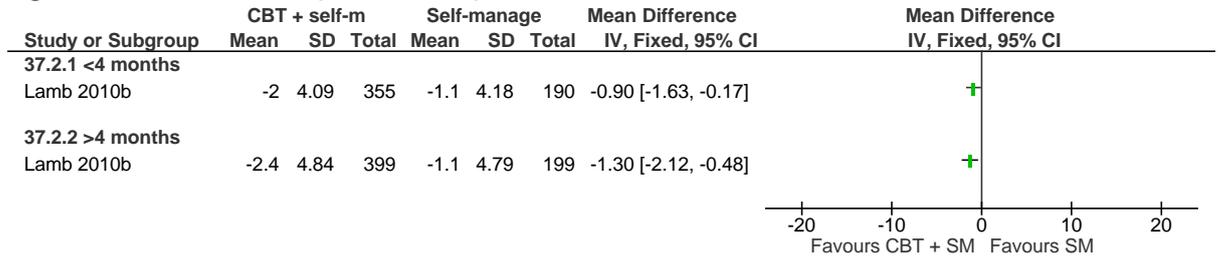


Figure 875: Function (0-100 von Korff scale converted to 0-10)

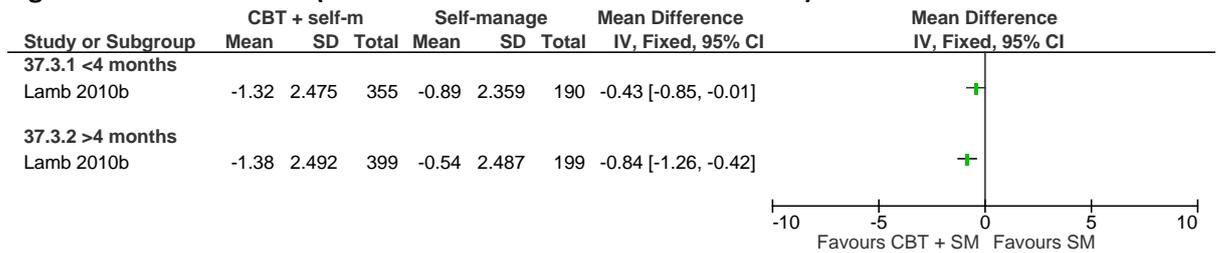


Figure 876: Quality of life (EQ-5D, 0-1)

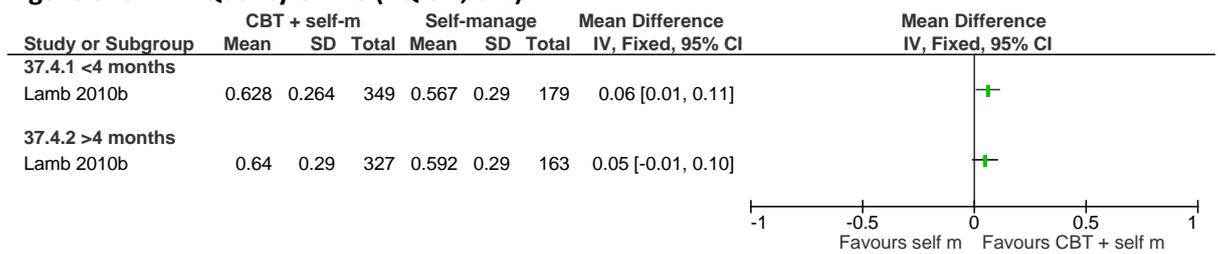


Figure 877: Quality of life (SF-12, 0-100) ≤ 4 months

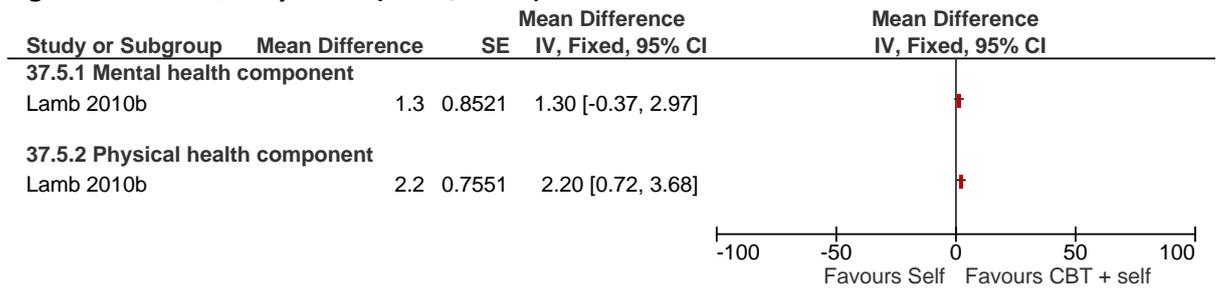
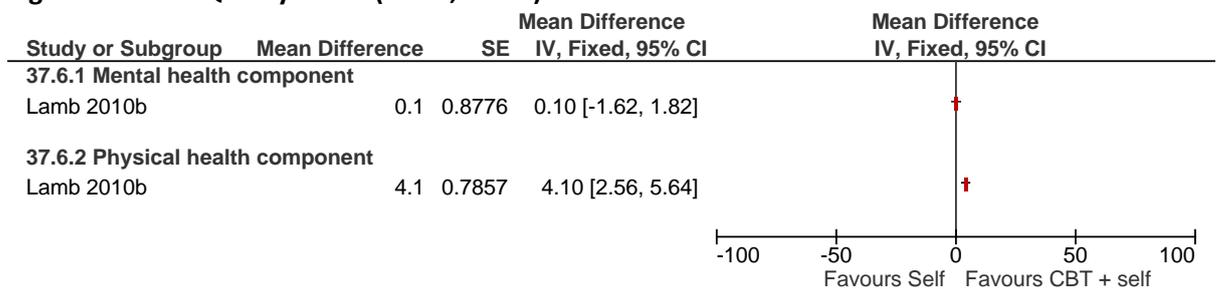


Figure 878: Quality of life (SF-12, 0-100) >4 months



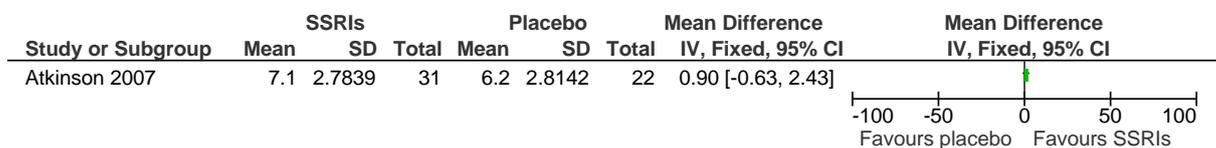
K.12 Pharmacological interventions

K.12.1 Antidepressants versus placebo

K.12.1.1 SSRIs versus placebo

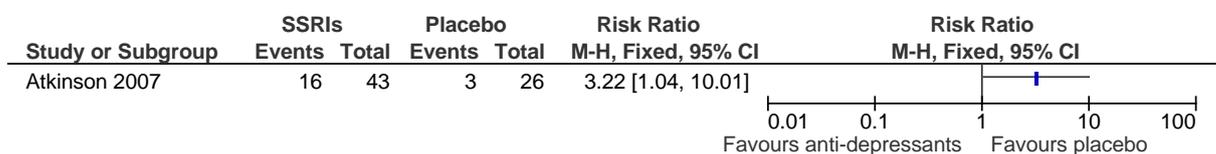
K.12.1.1.1 Low back pain population

Figure 879: Pain severity (final values, DSS 0-20) at ≤4 months



908

Figure 880: Adverse events at ≤4 months



K.12.909.2 Low back pain with/without sciatica population

Figure 881: Pain severity (Descriptor Differential Scale 0-20, VAS 0-100) at ≤4 months

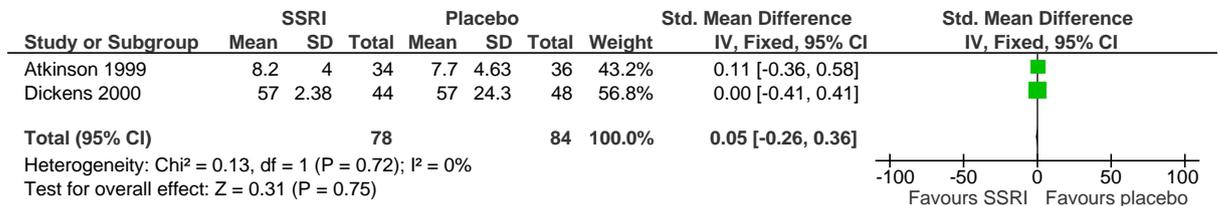


Figure 882: Function (final values, ODI 0-100) at ≤4 months

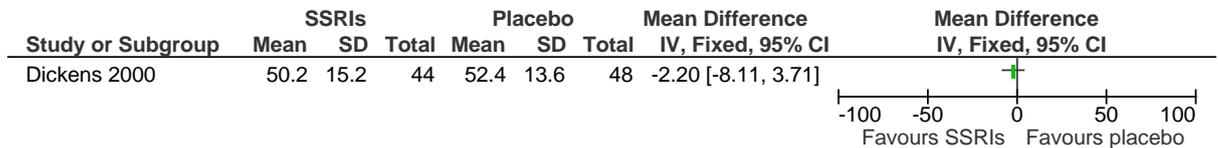


Figure 883: Psychological distress (final value, MADRS 0-60) at ≤4 months

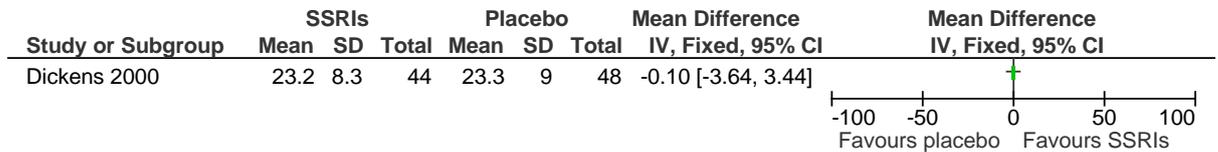
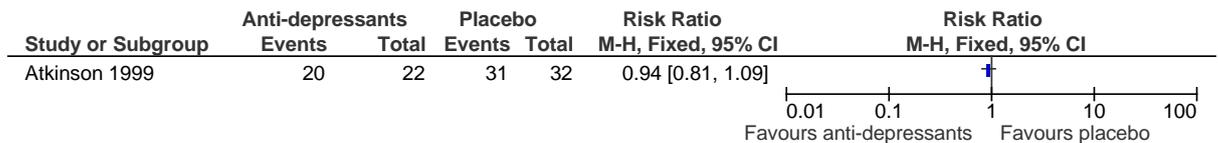


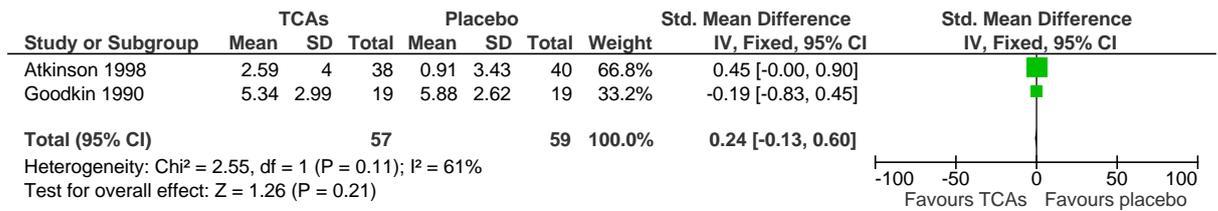
Figure 884: Adverse events at ≤4 months



K.12.102 Tricyclic antidepressants versus placebo

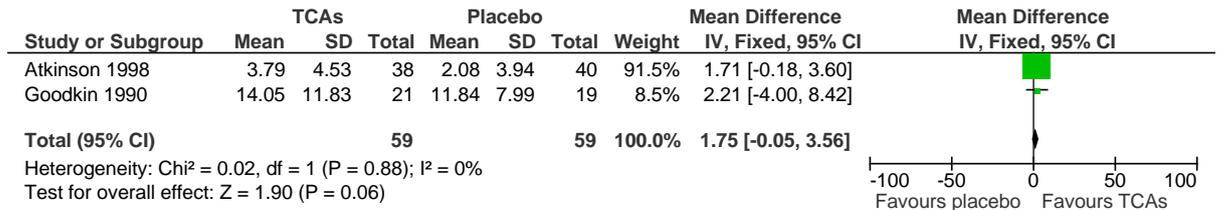
K.12.912.1 Low back pain with/without sciatica population

Figure 885: Pain severity (pooled mean change and final values, DSS 0-21 and VAS 0-10) at ≤4 months



912

Figure 886: Psychological distress (final values, BDI 0-63) at ≤4 months



913

Figure 887: Psychological distress (mean change, STAI 20-80) at ≤4 months

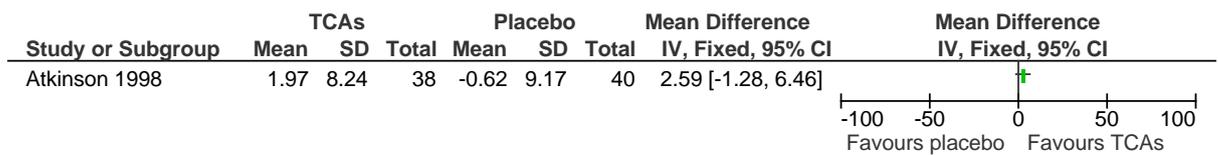
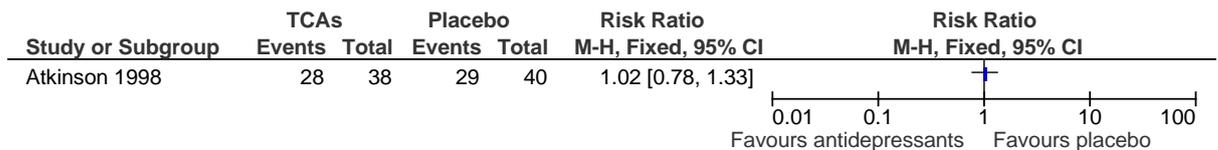


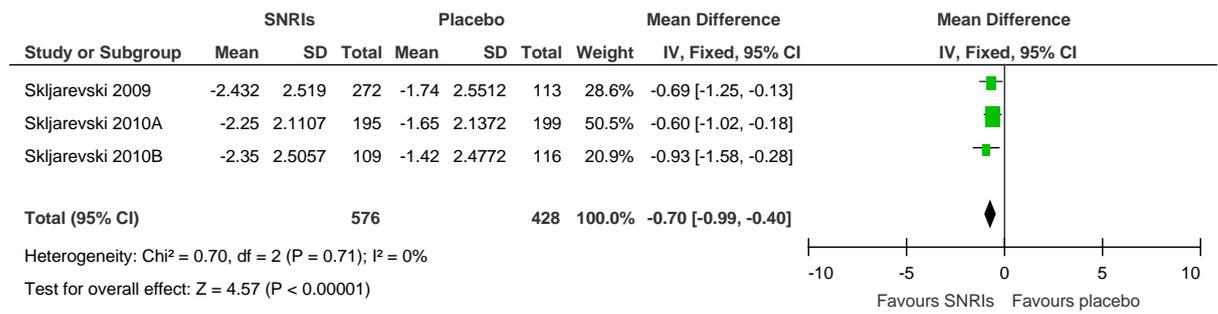
Figure 888: Adverse events at ≤4 months



K.12.143 SNRIs versus placebo

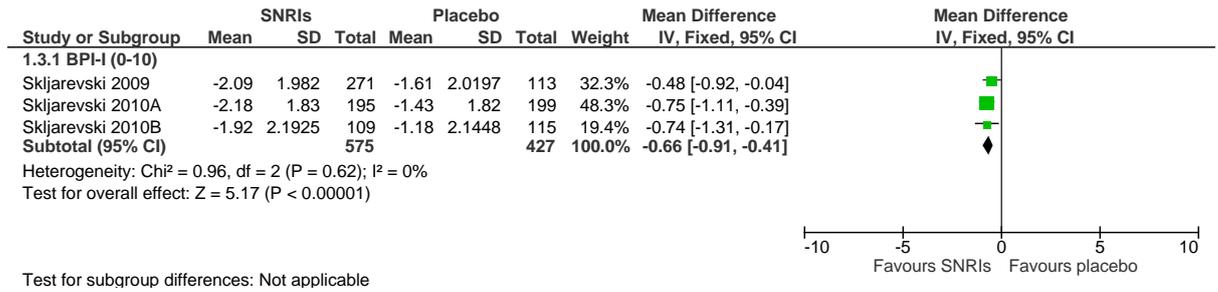
K.12.913.1 Low back pain with or without sciatica

Figure 889: Pain severity (mean change, BPI-severity 0-10) at ≤4 months



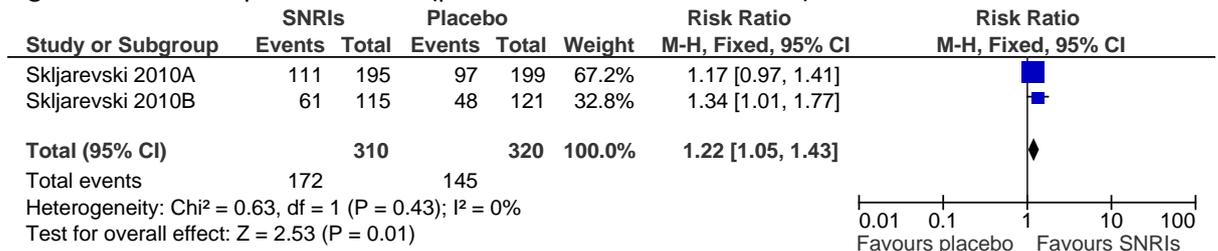
916

Figure 890: Function (mean change, BPI-I 0-10, RMDQ 0-24) at ≤4 months



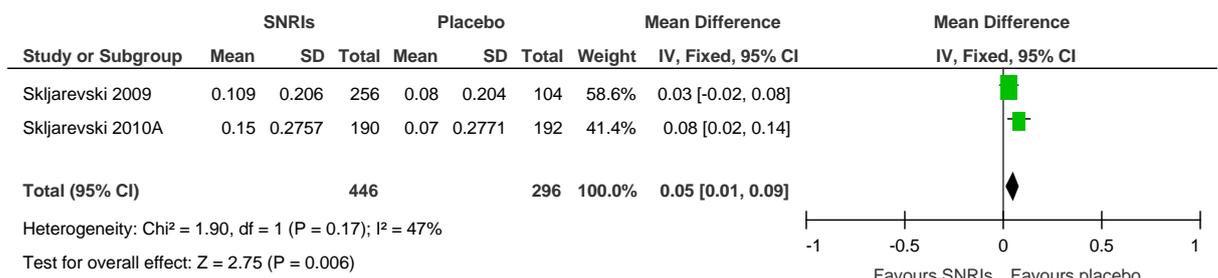
917

Figure 891: Responder criteria (pain reduction more than 30%) at ≤4 months



918

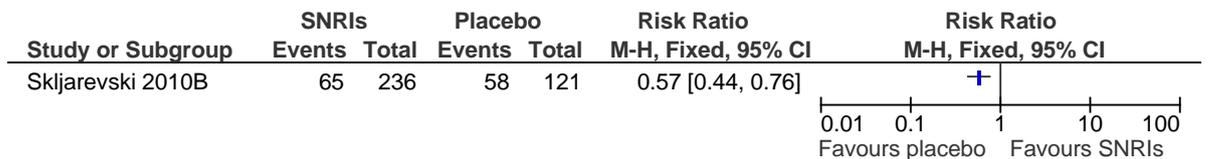
Figure 892: EQ-5D (mean change, 0.0-1.0) at ≤4 months



919

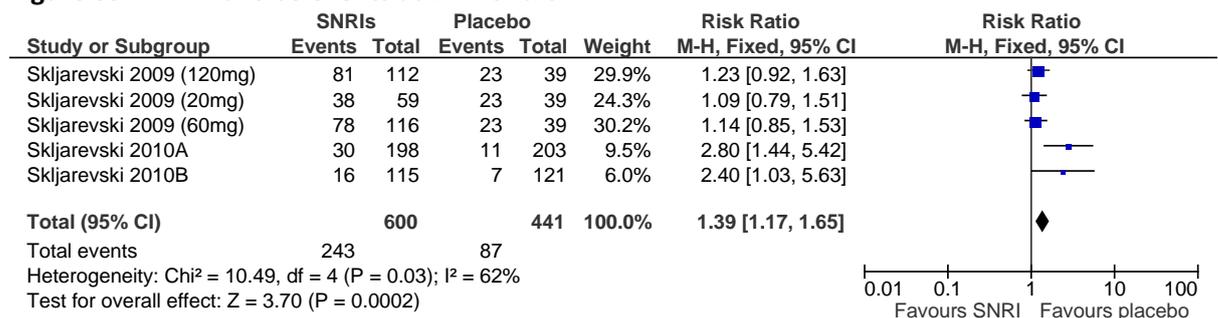
920

Figure 893: Healthcare utilisation (final values, At least 1 treatment emergent adverse event) at ≤4 months



921

Figure 894: Adverse events at ≤4 months



Skljarevski 2010A: 60mg; Skljarevski 2010B: dose titrated between 30mg to 120mg

922

Figure 895: SF-36 (mean change, 0-100, Duloxetine 60 mg) at ≤4 months

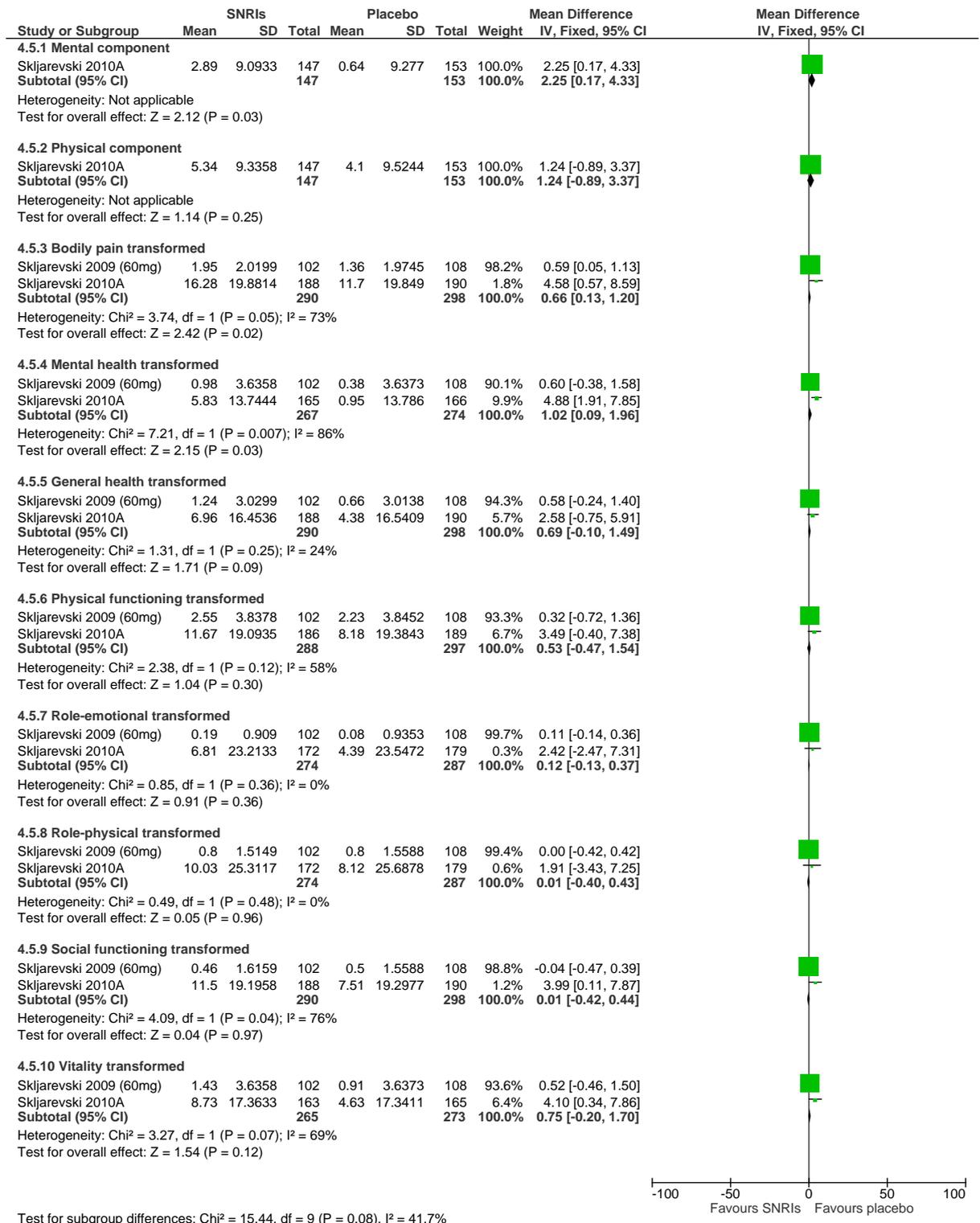
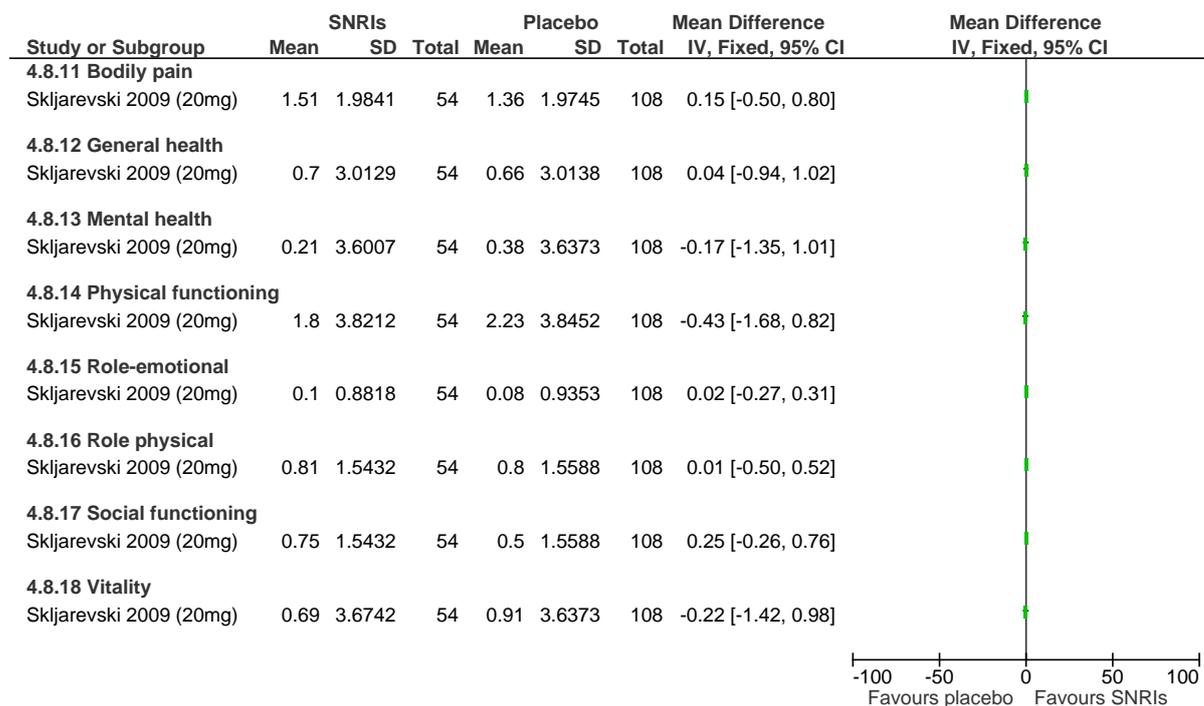


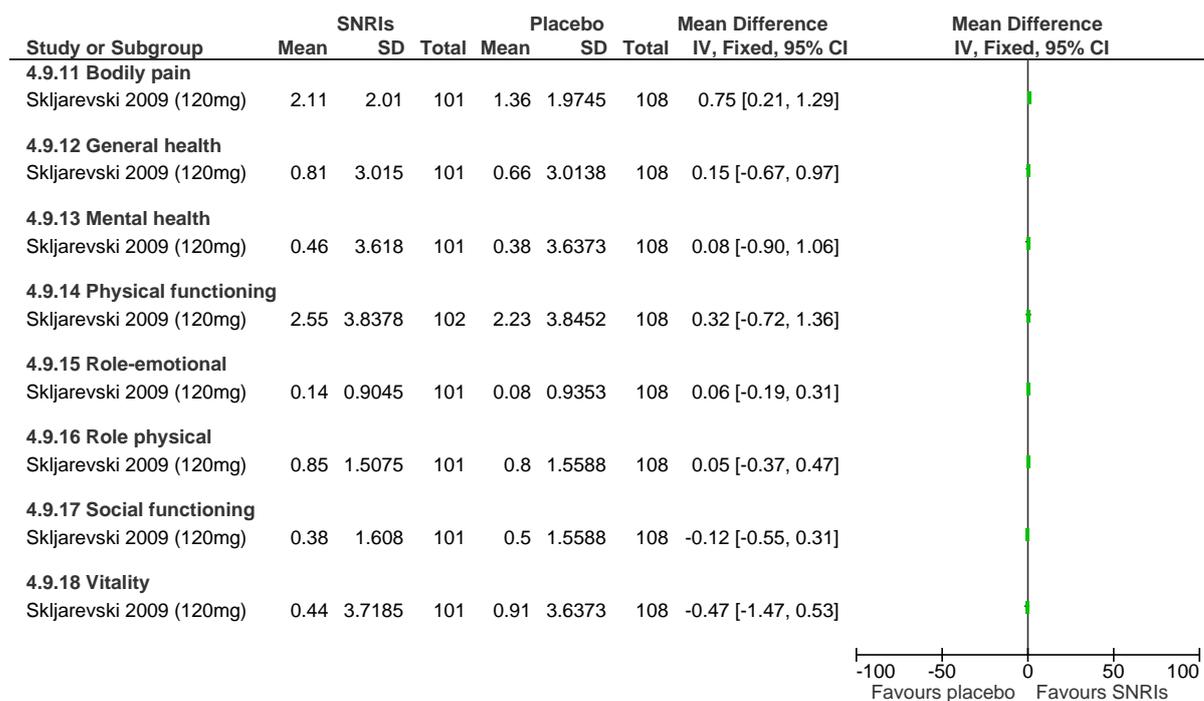
Figure 896: SF-36 (mean change, 0-100, Duloxetine 20) at ≤4 months



924

925

Figure 897: SF-36 (mean change, 0-100, Duloxetine 120) at ≤4 months



K.12.21 Anticonvulsants versus placebo

K.12.21 Gabapentinoids versus placebo (RCTs)

K.12.21.1 Low back pain with sciatica population

Figure 898: Pain severity (final values, VAS 0-10) at ≤4 months

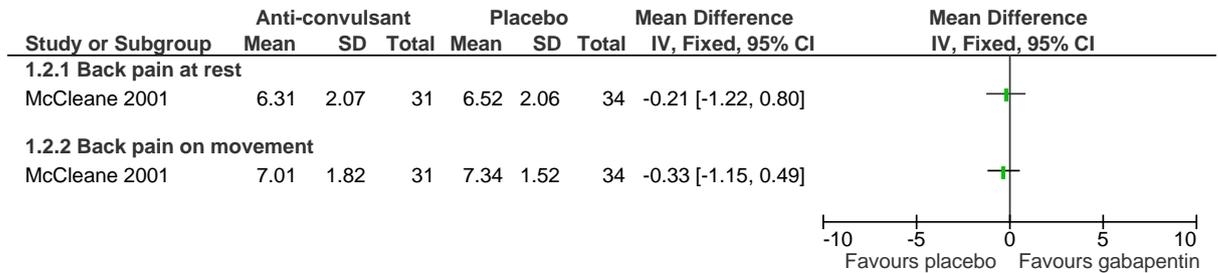
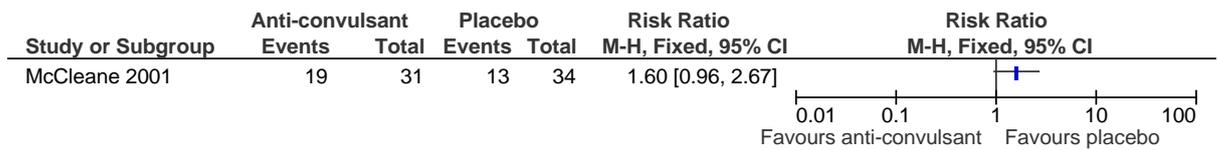


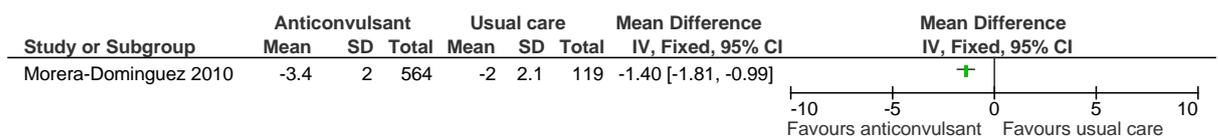
Figure 899: Adverse events at ≤4 months



K.12.22 Gabapentinoids versus placebo (cohort study)

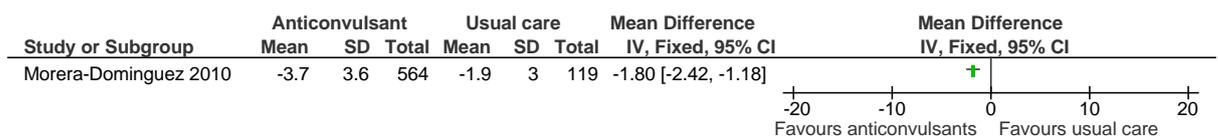
K.12.22.1 Low back pain with sciatica

Figure 900: Pain intensity (BPI 0-10, change score) at ≤4 months



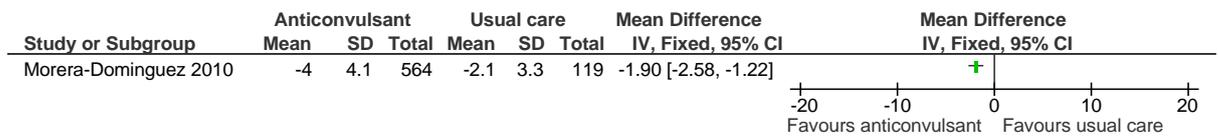
931

Figure 901: HADS anxiety (0-21) at ≤4 months



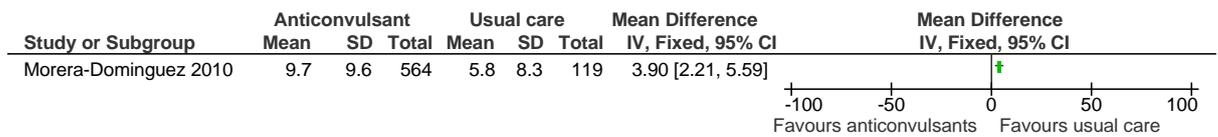
932

Figure 902: HADS depression (0-21, change score) at ≤4 months



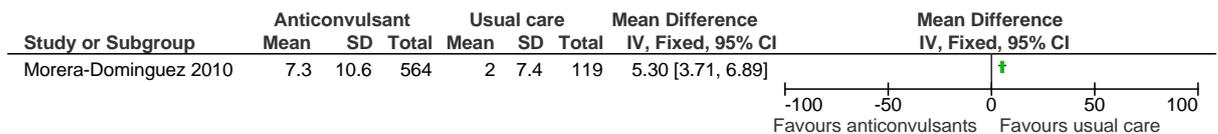
933

Figure 903: SF-12 physical (0-100, change score) at ≤4 months



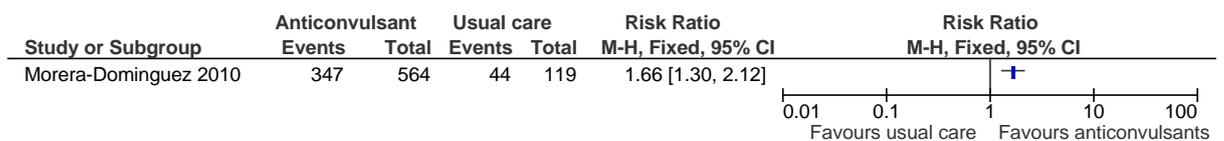
934

Figure 904: SF-12 mental (0-100, change score) at ≤4 months



935

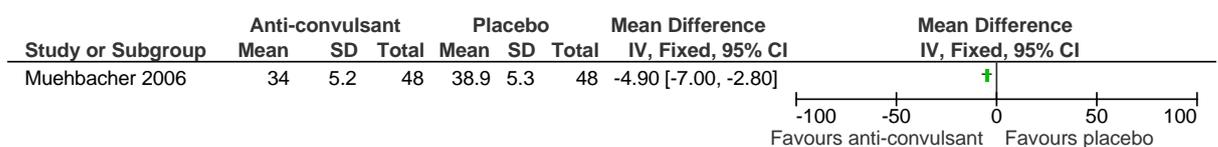
Figure 905: Responder criteria pain reduction more than 50% at ≤4 months



K.12.2.3 Other anticonvulsants versus placebo

K.12.2.3.1 Low back pain with/without sciatica

Figure 906: Function, (final values, ODI 0-100) at ≤4 months



938

Figure 907: Pain severity (final values, McGill pain questionnaire 0-78) at ≤4 months

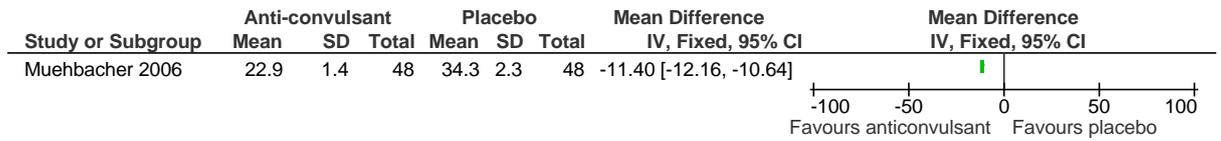
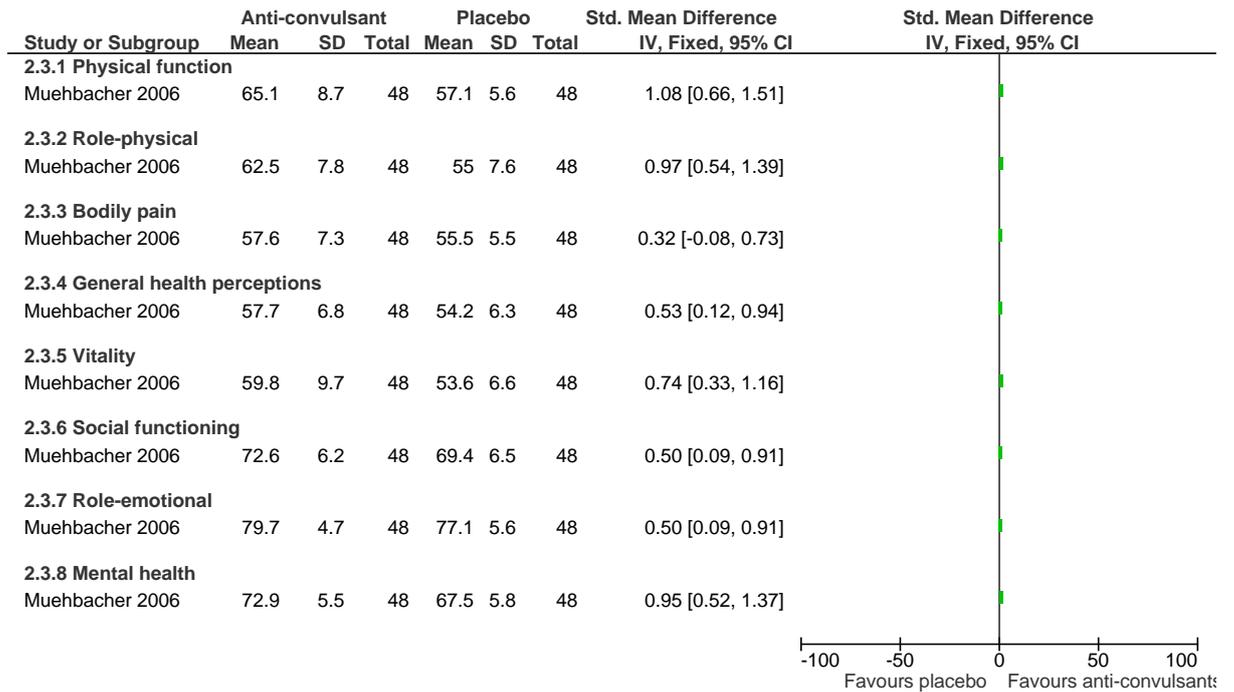
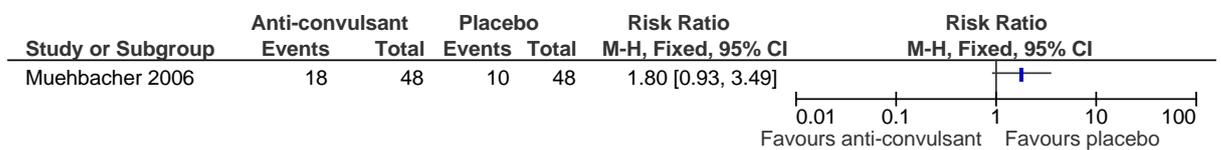


Figure 908: SF-36 (final values, 0-100) at ≤4 months



939

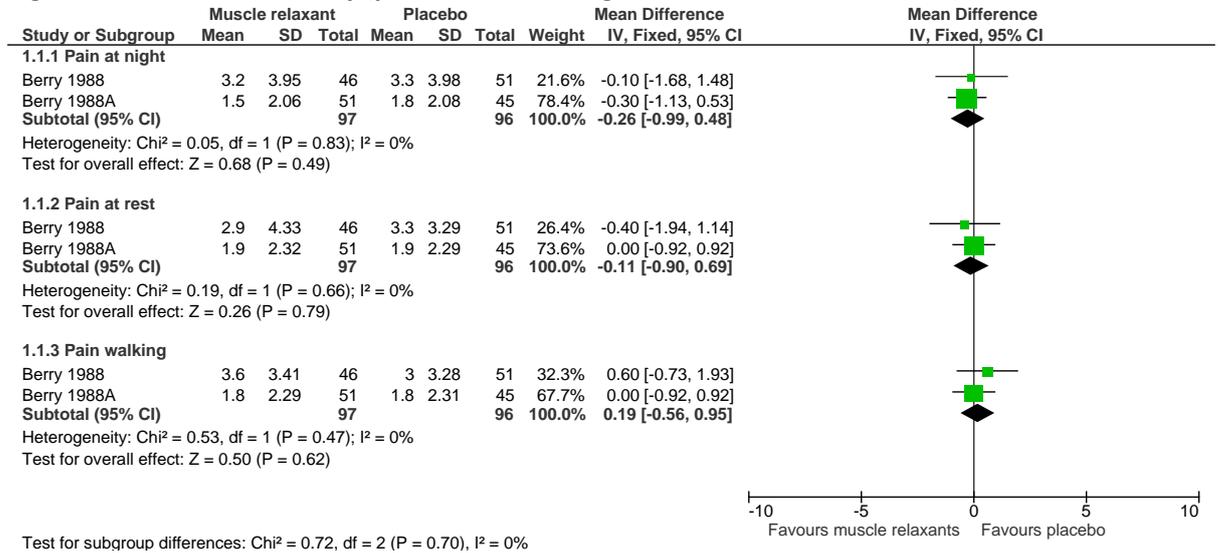
Figure 909: Adverse events at ≤4 months



K.1203 Muscle relaxants versus placebo

K.1241 Low back pain with/without sciatica population

Figure 910: Pain severity (pooled mean change and final values, VAS 0-10) at ≤4 months



942

Figure 911: Muscle spasms (1-5 scale of severity, change score) at ≤4 months

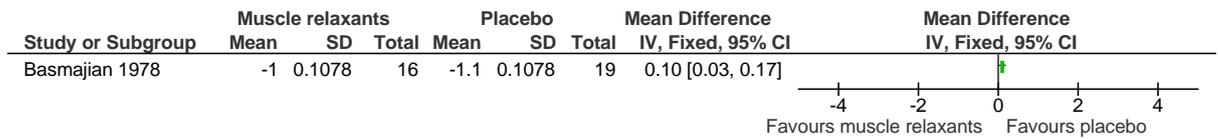


Figure 912: Adverse events at ≤4 months



K.1234 Muscle relaxant versus usual care

K.12441 Low back pain population

Figure 913: Pain severity (change scores, VAS 0-10) at ≤4 months

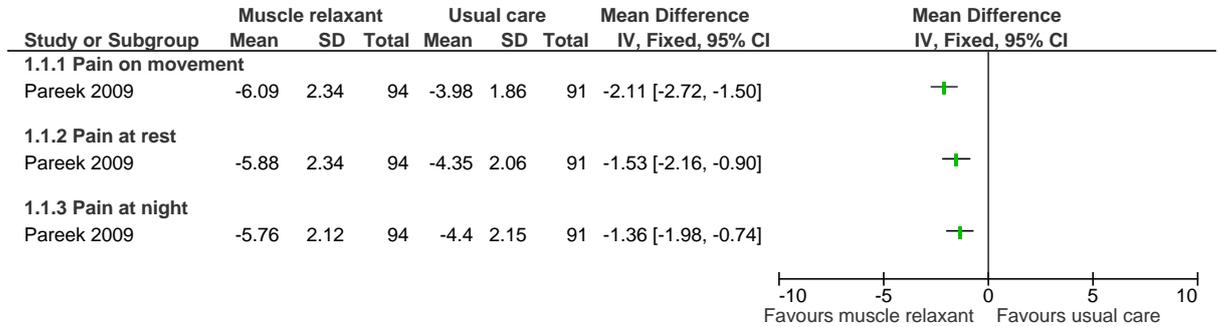
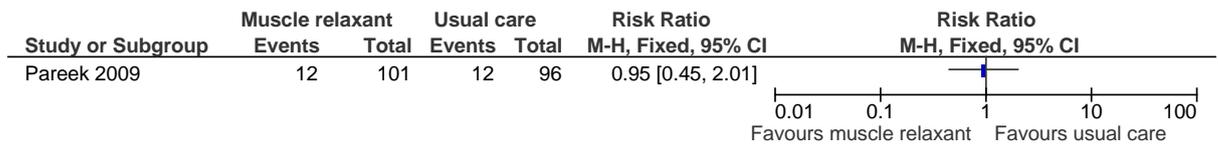


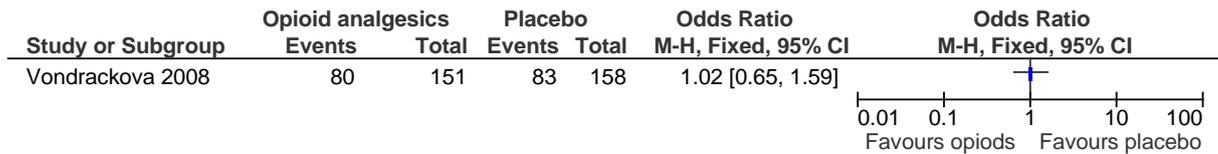
Figure 914: Adverse events at ≤4 months



K.125 Opioids versus placebo

K.12461 Low back pain with sciatica population

947 Figure 915: Adverse events at ≤4 months

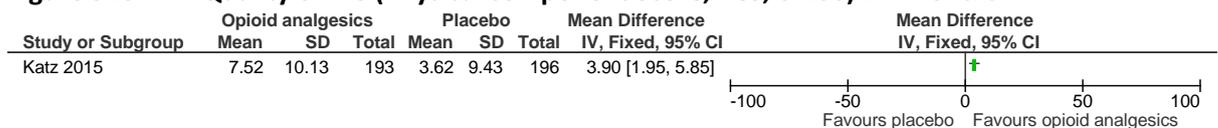


948

K.12492 Low back pain population

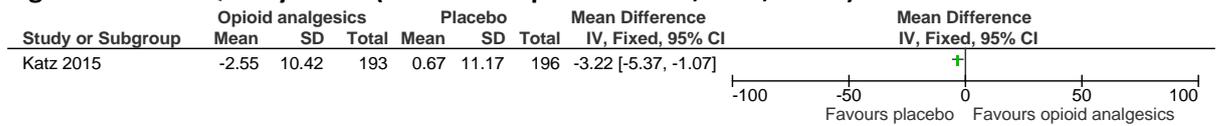
950

Figure 916: Quality of life (Physical component Score, PCS, 0-100) ≤ 4 months

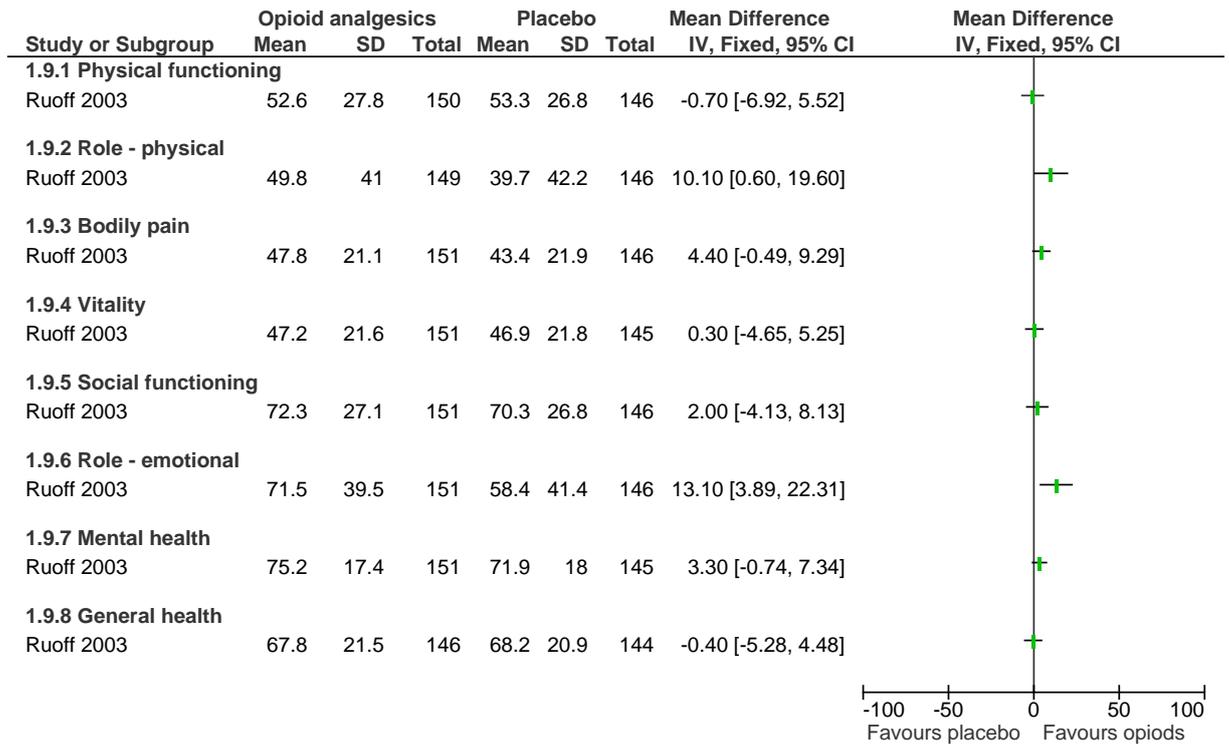


951

Figure 917: Quality of life (Mental component Score, MCS, 0-100) ≤ 4 months

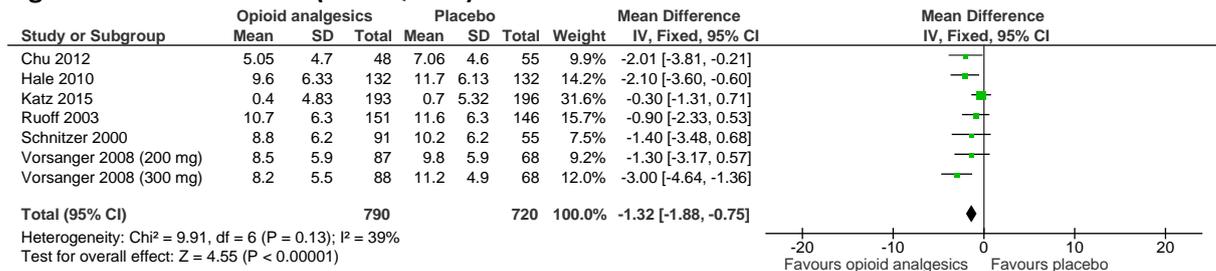


952 **Figure 918: Quality of life (Individual domain scores, SF36, 0-100) ≤ 4 months**



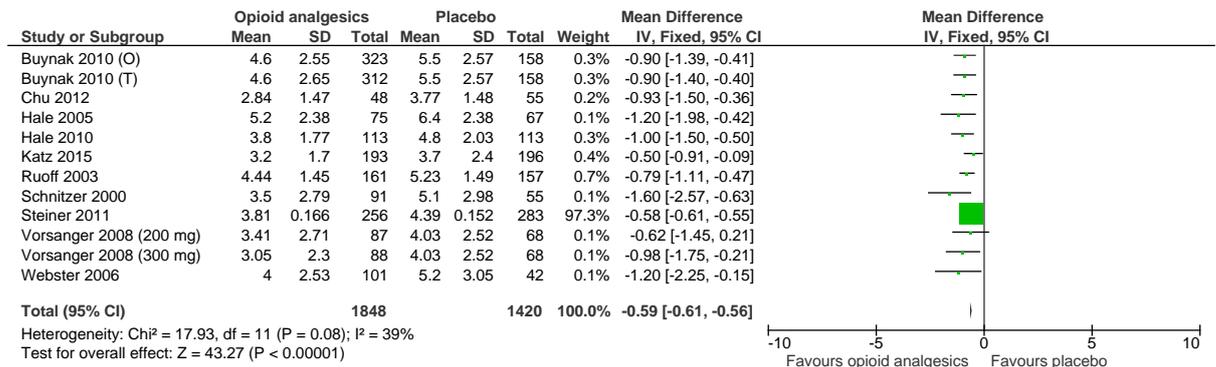
953

Figure 919: Function (RMDQ 0-24) at ≤4 months



954

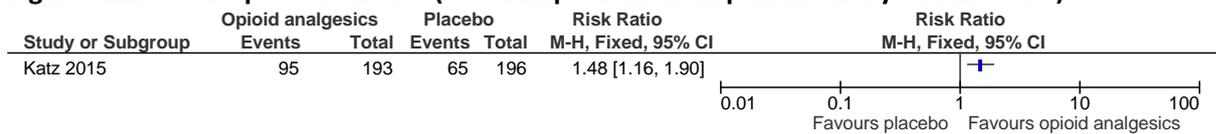
Figure 920: Pain severity (final values, VAS/NRS, 0-10) at ≤4 months



955

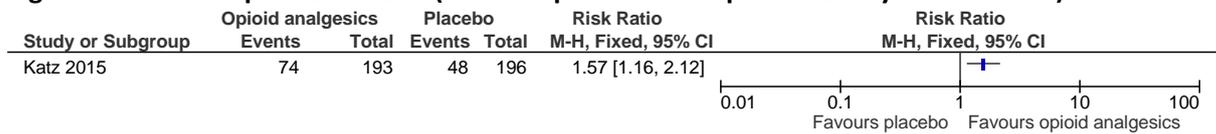
956

Figure 921: Responder criteria (>30% improvement in pain intensity on NRS scale)



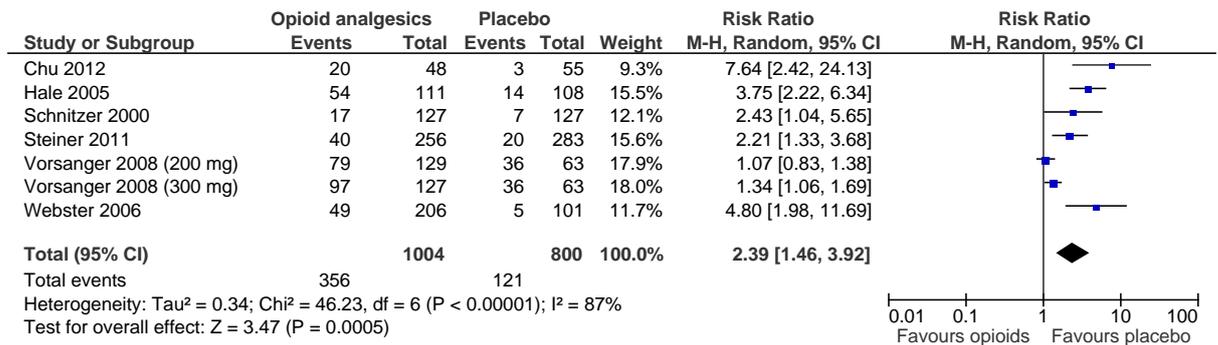
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Figure 922: Responder criteria (>50% improvement in pain intensity on NRS scale)



958

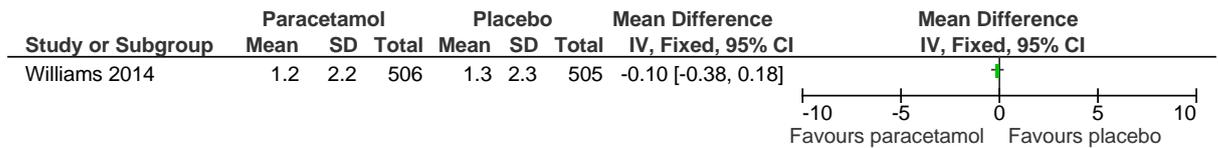
Figure 923: Adverse events at ≤4 months



K.1296 Paracetamol versus placebo

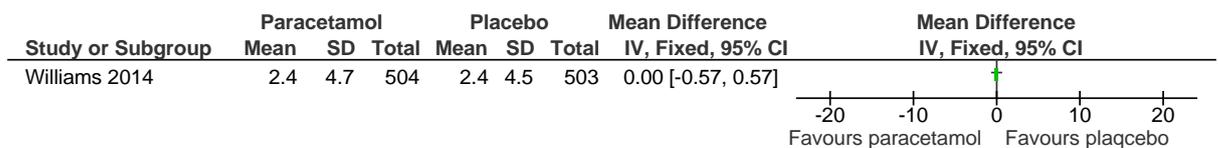
K.12601 Low back pain with/without sciatica population

Figure 924: Pain severity (final values, VAS 0-10) at ≤4 months



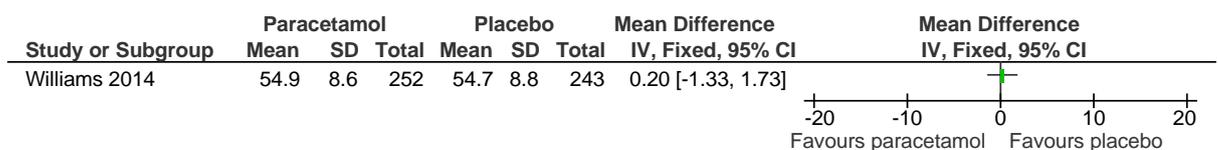
961

Figure 925: Function (final values, RMDQ 0-24) at ≤4 months



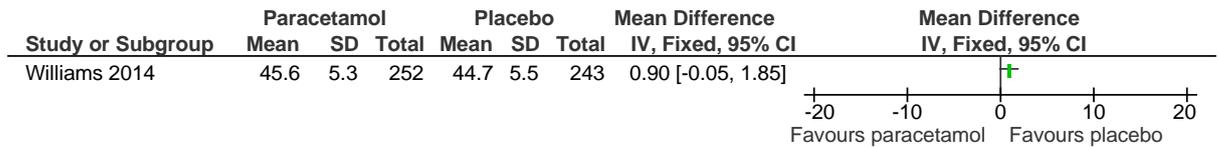
962

Figure 926: SF-12 Physical score (final values, 0-100) at ≤4 months



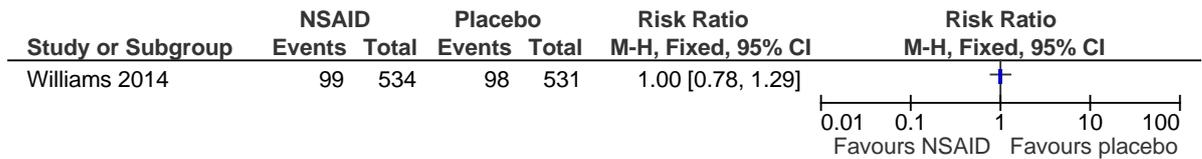
963

Figure 927: SF-12 Mental score (final values, 0-100) at ≤4 months



964

Figure 928: Adverse events at ≤4 months



K.1257 NSAIDs versus placebo

K.1261 Low back pain without sciatica population

Figure 929: Pain intensity (VAS 0-100, change score) ≤4 months

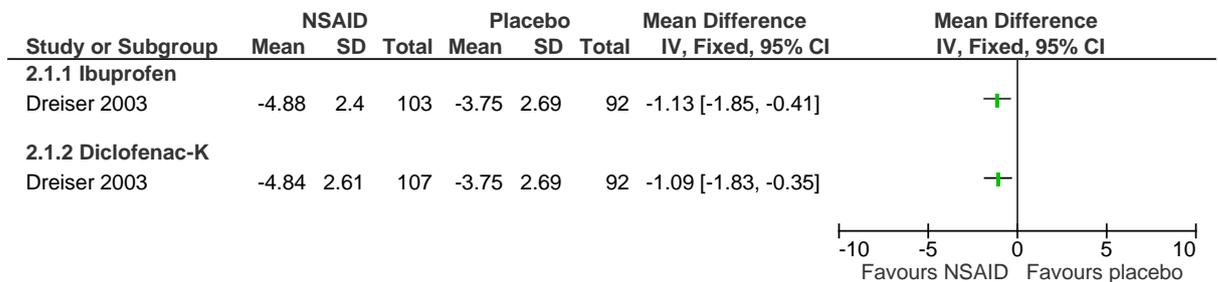


Figure 930: Adverse events at ≤4 months

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968

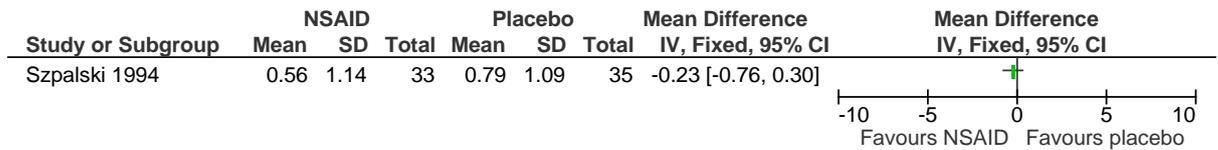


969

K.1272 Low back pain with/without sciatica population

971

Figure 931: Pain intensity (VAS 0-10, mean difference) NSAID 20mg ≤ 4 months



972

Figure 932: Pain intensity (VAS 0-10, mean difference) NSAID 60mg ≤ 4 months



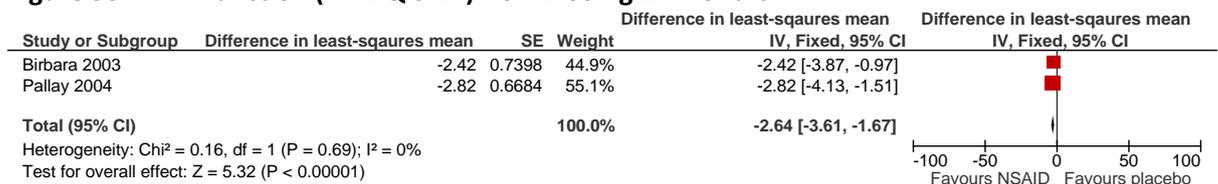
973

Figure 933: Pain intensity (VAS 0-10 mean difference) NSAID 90mg ≤ 4 months



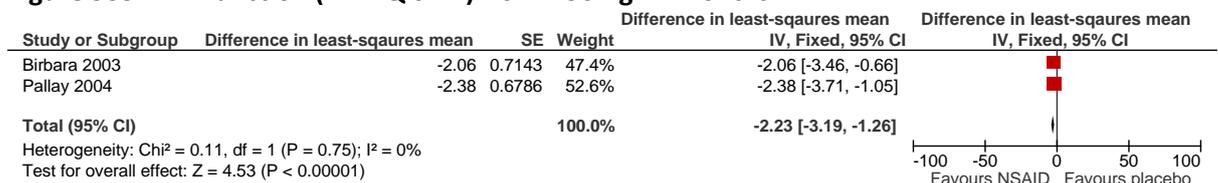
974

Figure 934: Function (RMDQ 0-24) NSAID 60mg ≤ 4 months



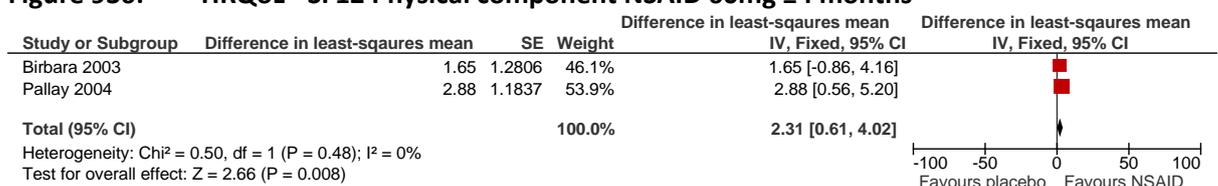
975

Figure 935: Function (RMDQ 0-24) NSAID 90mg ≤ 4 months



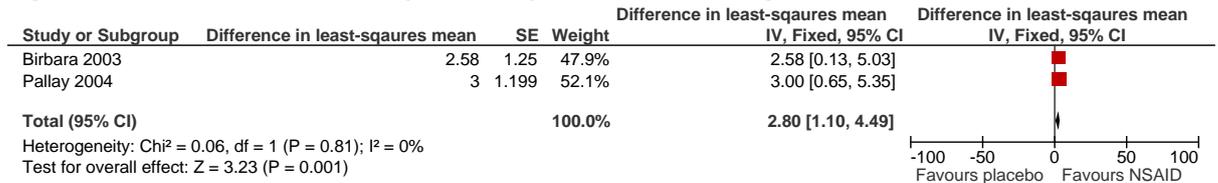
976

Figure 936: HRQoL - SF12 Physical component NSAID 60mg ≤ 4 months



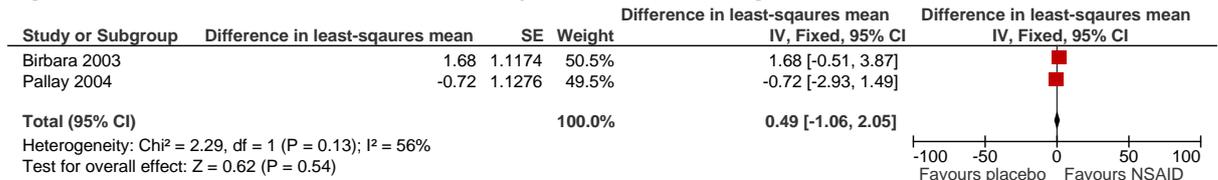
977

Figure 937: HRQoL - SF12 Physical component NSAID 90mg ≤4 months



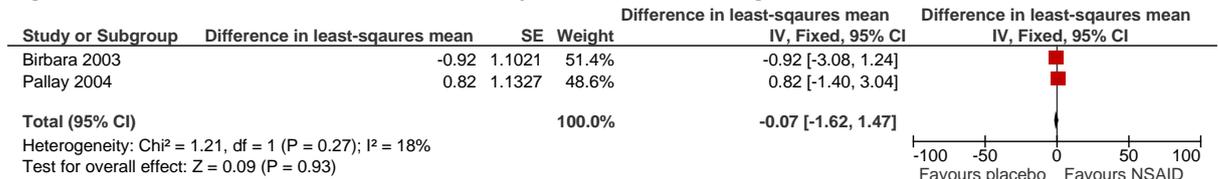
978

Figure 938: HRQoL - SF12 Mental component NSAID 60mg ≤4 months



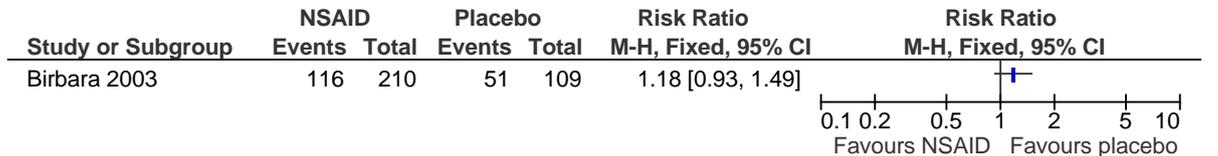
979

Figure 939: HRQoL - SF12 Mental component NSAID 90mg ≤4 months



980

Figure 940: Adverse events at ≤4 months



K. 92.8 Antibiotics versus placebo

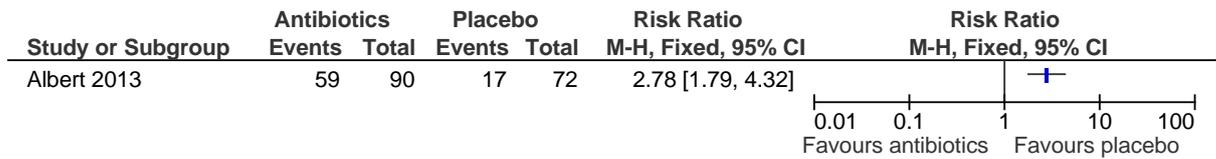
982

Figure 941: Healthcare utilisation (doctor consultation for back pain)



983

Figure 942: Adverse events

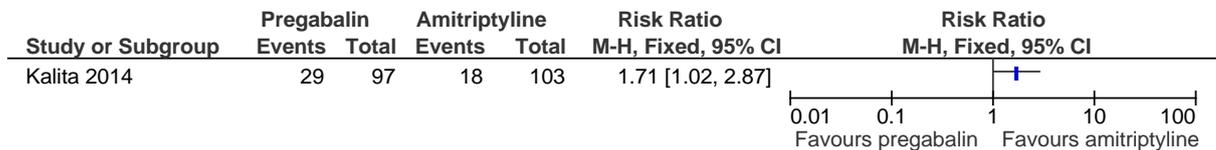


K.12.984 Head to head comparisons

K.12.985 Low back pain with/without sciatica population

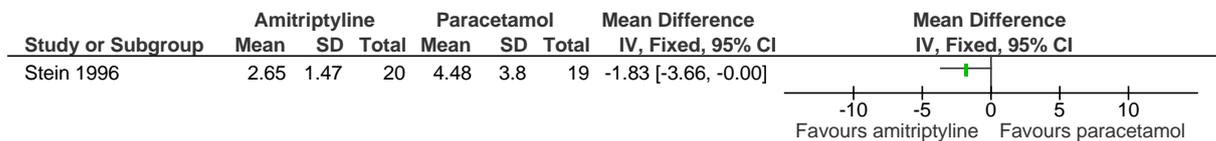
K.12.986.1 Anti-epileptic versus antidepressant (TCA)

Figure 943: Adverse events at ≤ 4 months



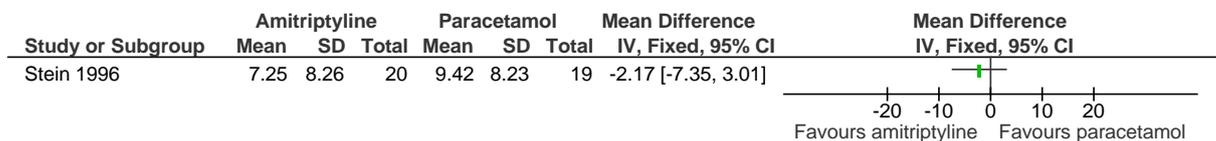
K.12.987.2 Antidepressant (TCA) versus paracetamol

Figure 944: Pain intensity (Final values, VAS 0-15) at ≤ 4 months



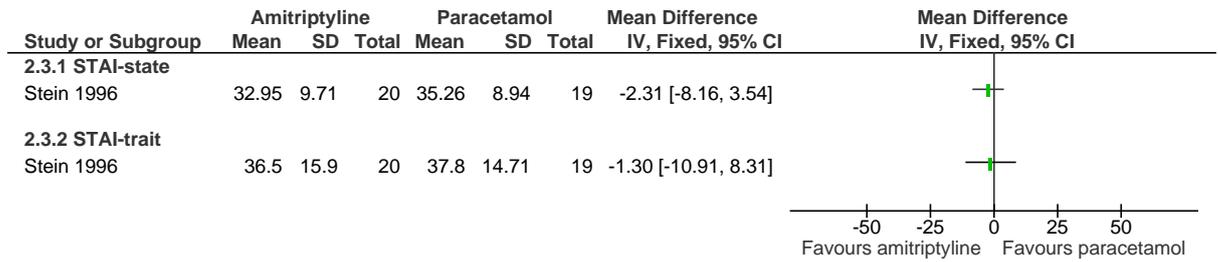
988

Figure 945: Psychological distress – BDI (Final values, 0-63) at ≤ 4 months



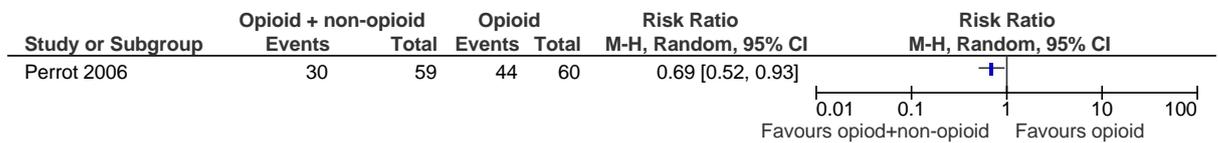
989

Figure 946: Psychological distress – STAI (Final values, 20-80) at ≤ 4 months



K.12.991.3 Opioid plus paracetamol versus opioid

Figure 947: Adverse events



K.12.991.4 Opioid plus paracetamol versus NSAIDs

Figure 948: Pain intensity (Final values, 0-10) at ≤ 4 months

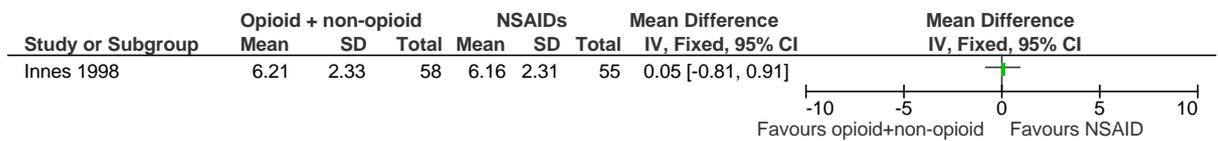
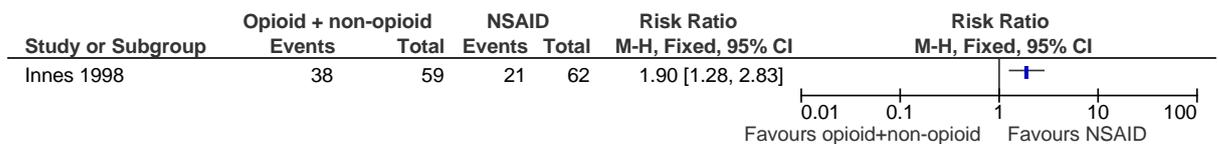


Figure 949: Adverse events



K.12900 Combined pharmacological treatments versus placebo

K.12901 Opioid+ paracetamol versus placebo (low back pain only)

Figure 950: Pain outcomes at ≤4 months

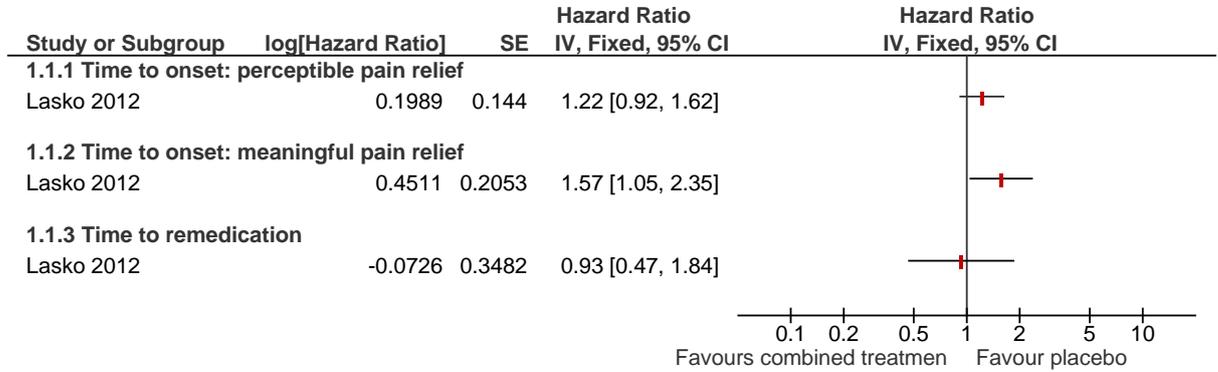


Figure 951: Pain severity (McGill pain questionnaire 0-78, change scores) at ≤4 months

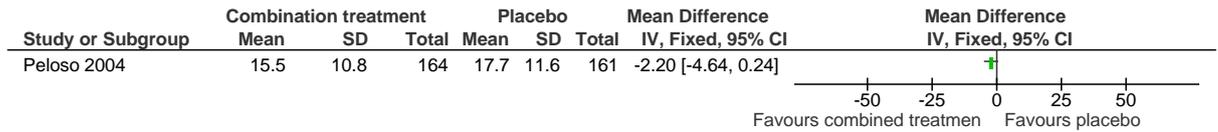


Figure 952: Pain severity (VAS 0-10, final values) at ≤4 months

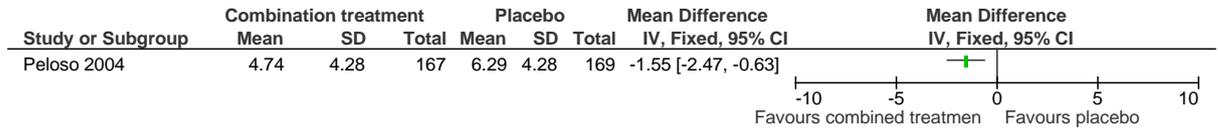
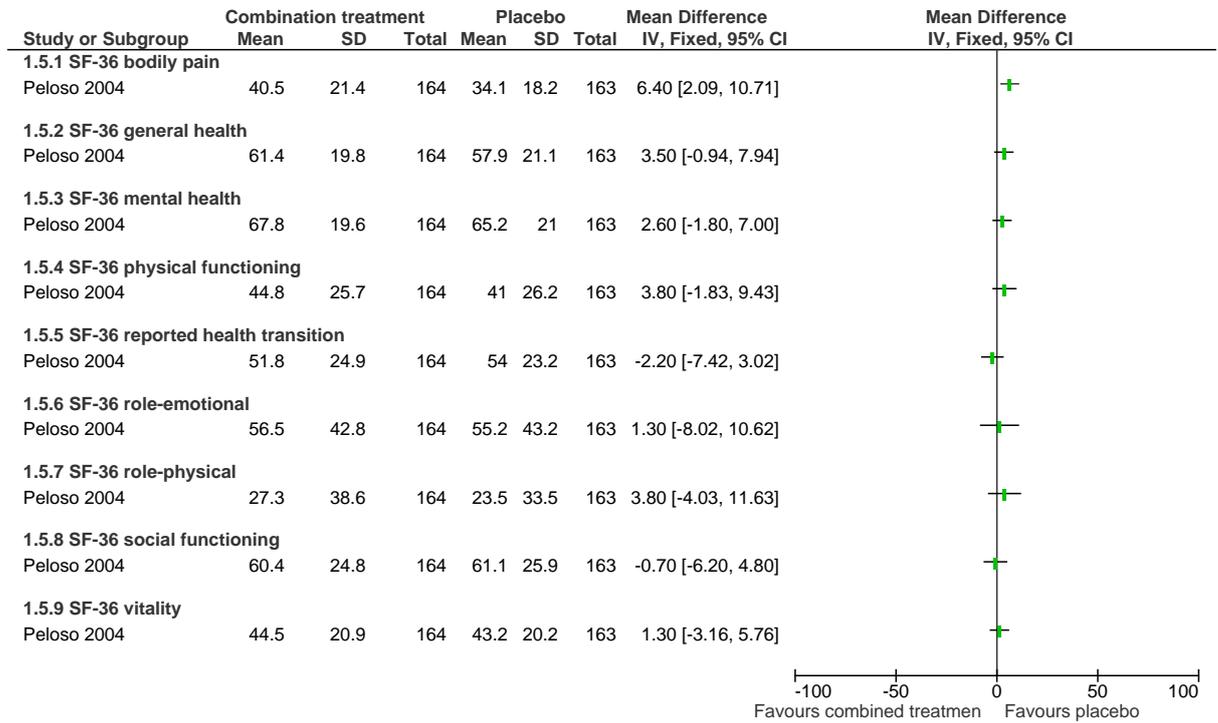
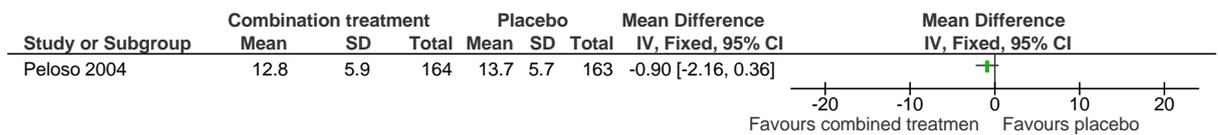


Figure 953: SF-36 (0-100, change scores) at ≤4 months



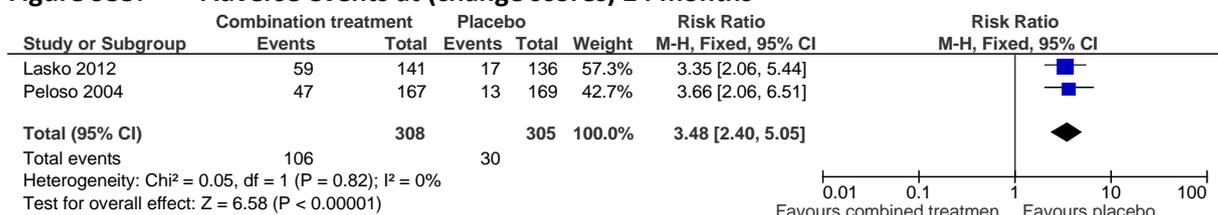
995

Figure 954: Function (RMDQ 0-24, change scores) at ≤4 months



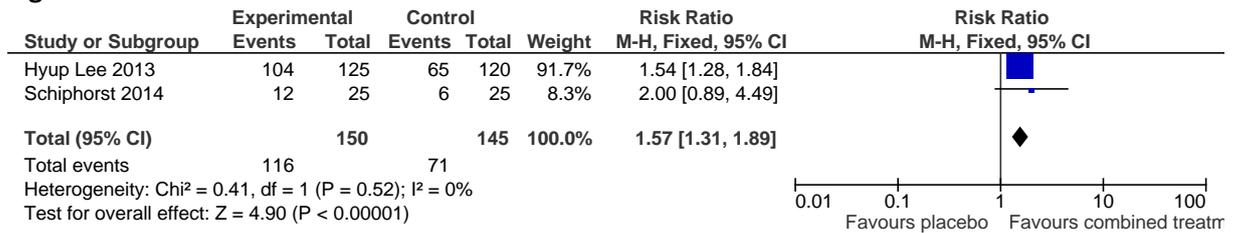
996

Figure 955: Adverse events at (change scores) ≤4 months



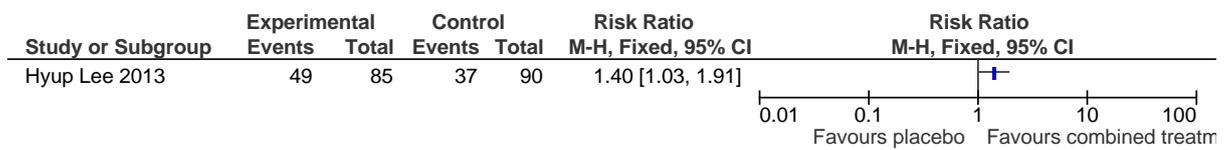
K.12972 **Opioid+ paracetamol versus placebo (low back pain with/without sciatica)**

Figure 956: Adverse events at ≤4 months



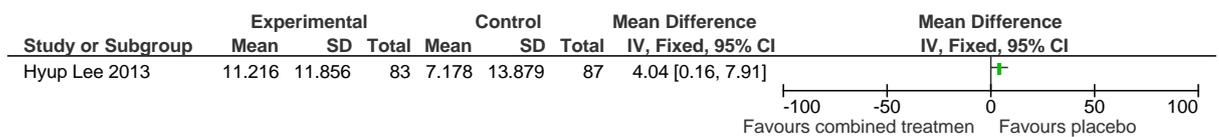
998

Figure 957: Responder criteria (pain reduction ≥30%) at ≤4 months



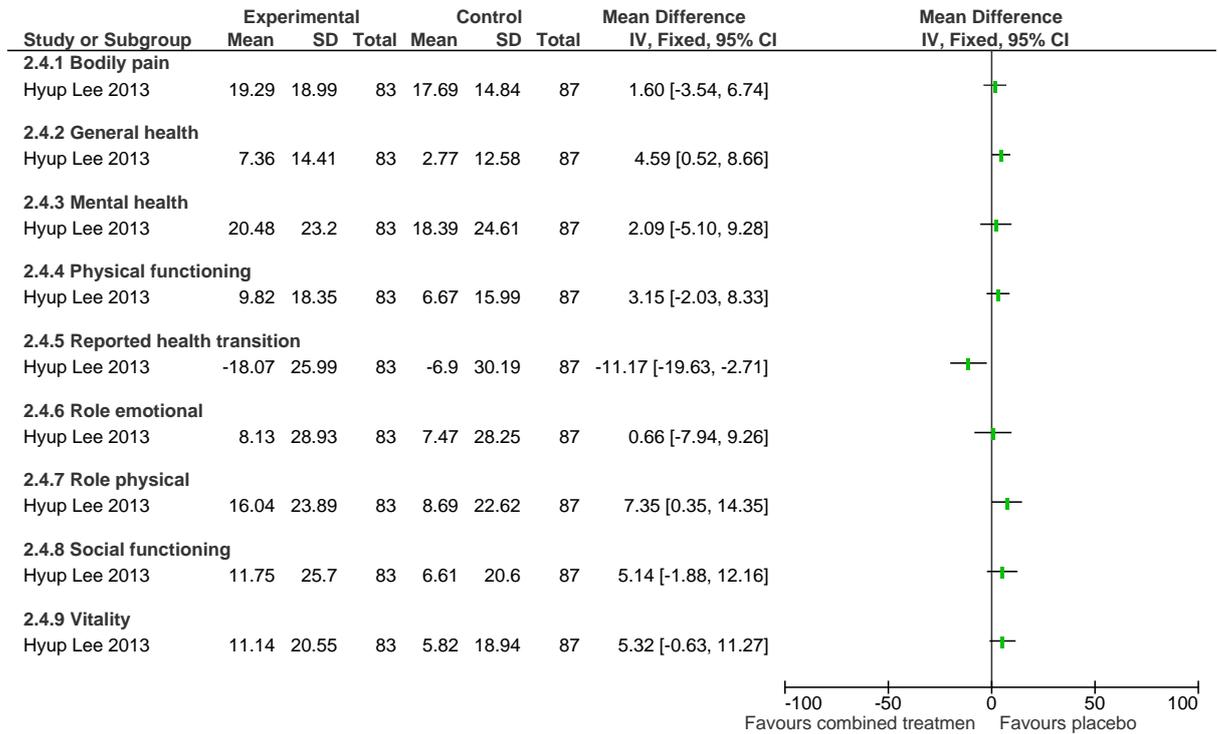
999

Figure 958: Function (Korean ODI 0-100, change score) at ≤4 months



1000

Figure 959: Korean SF-36 (0-100, change scores) at ≤4 months

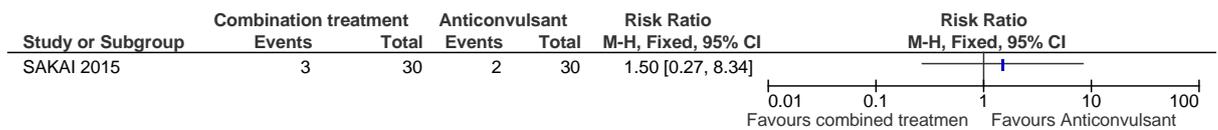


1001

K.12021 Combined pharmacological treatments versus other treatment

K.12031 Opioid + paracetamol versus anticonvulsant (low back pain only)

Figure 960: Numer of people discontinued due to adverse events at ≤4 months



K.12012 Combinations of interventions – pharmacological adjunct

K.12051 Low back pain without sciatica

K.12061.1 NSAID + massage compared to massage

Figure 961: 24 NSAID + Massage vs. massage, outcome: 24.1 Pain (VAS 0-100 converted to 0-10).

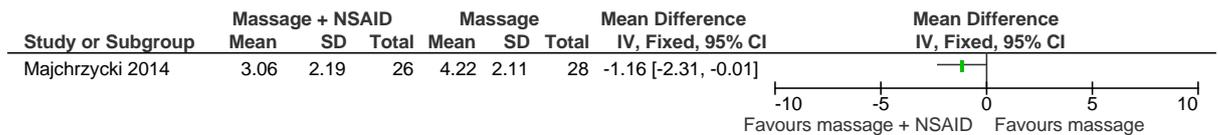


Figure 962: 24 NSAID + Massage vs. massage, outcome: 24.2 Disability (RMDQ).

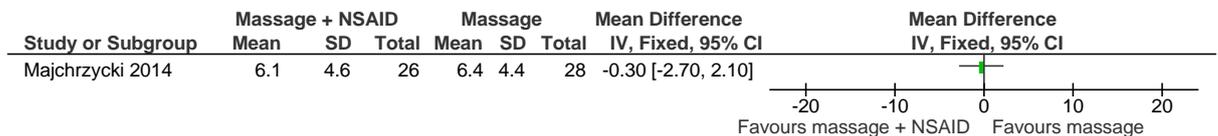
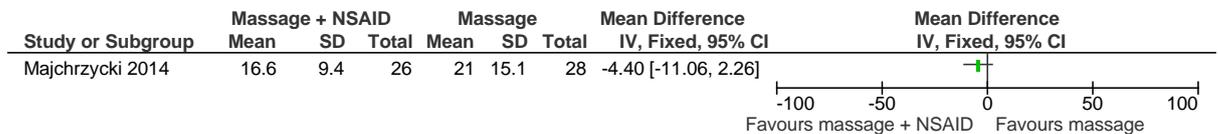
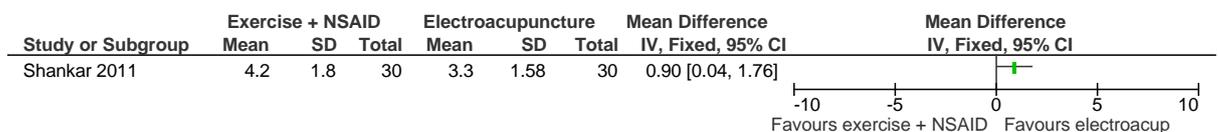


Figure 963: 24 NSAID + Massage vs. massage, outcome: 24.3 Disability (ODI).



K.12071.2 NSAID + exercise (biomech) compared to electroacupuncture

Figure 964: 26 NSAID + exercise (biomech) vs. electroacupuncture, outcome: 26.1 Pain (VAS 0-10).



1008

K.13013 Multidisciplinary biopsychosocial rehabilitation (MBR) programmes

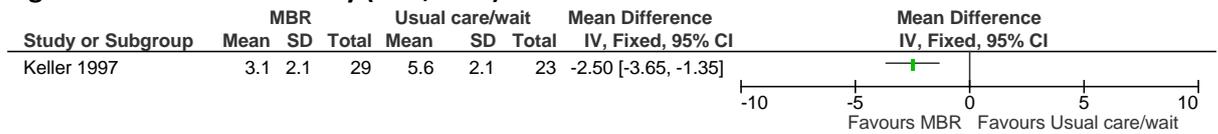
K.13011 Population: Overall with or without sciatica

K.13011 MBR programme 3 elements: physical + psychological + education vs. Placebo/sham

1012 No studies

K.10.132 MBR programme 3 elements: physical + psychological + education vs. Usual care/waiting list control
1014

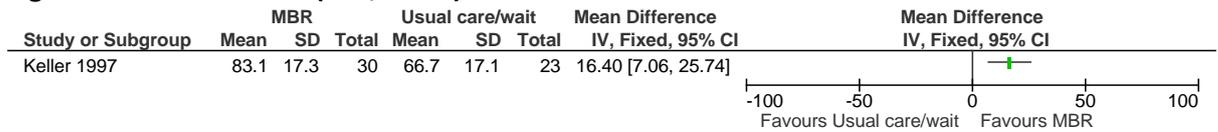
Figure 965: Pain severity (VAS, 0-10) > 4 months



1015 Keller 1997: MBR programme delivered by a multidisciplinary team

1016

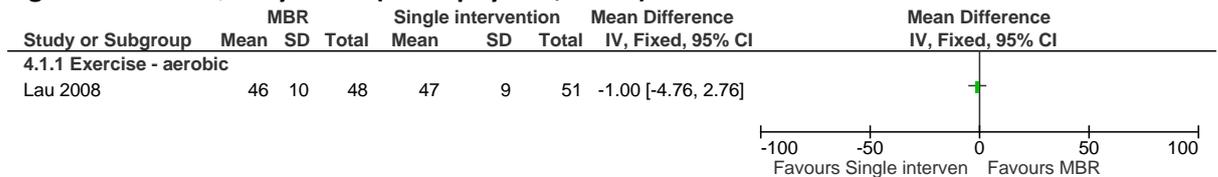
Figure 966: Function (ODI, 0-100) > 4 months



Keller 1997: MBR programme delivered by a multidisciplinary team

K.10.173 MBR programme 3 elements: physical + psychological + education vs. Single intervention

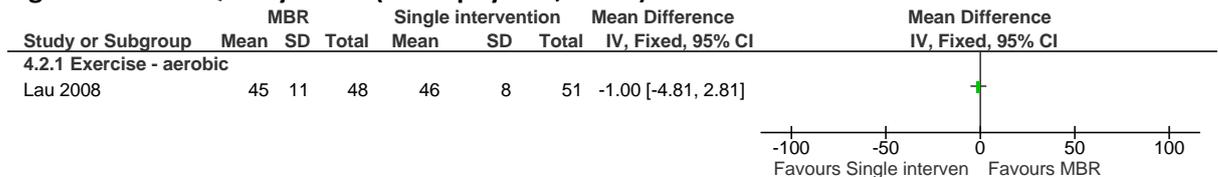
Figure 967: Quality of life (SF-12 physical, 0-100) ≤4 months



Lau 2008: MBR programme delivered by a unidisciplinary team

1018

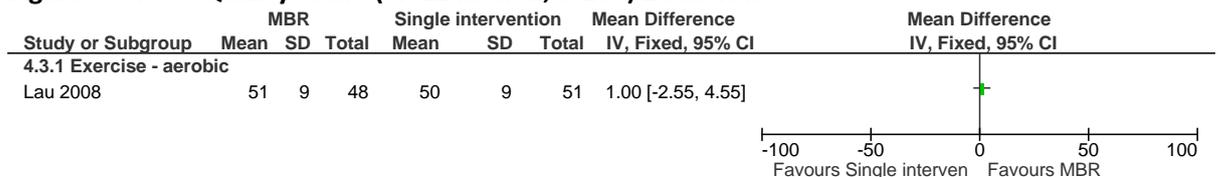
Figure 968: Quality of life (SF-12 physical, 0-100) > 4 months



Lau 2008: MBR programme delivered by a unidisciplinary team

1019

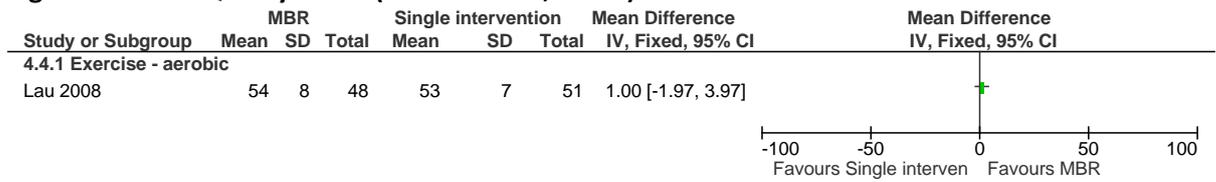
Figure 969: Quality of life (SF-12 mental, 0-100) ≤4 months



Lau 2008: MBR programme delivered by a unidisciplinary team

1020

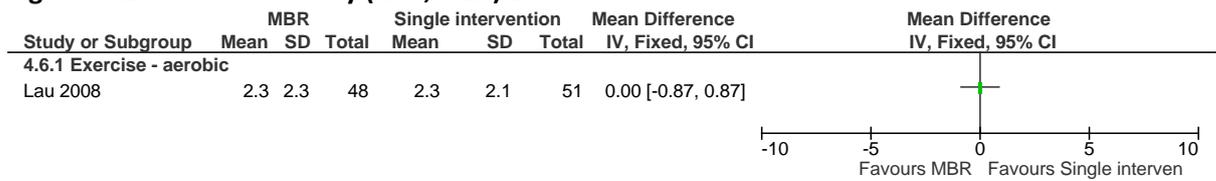
Figure 970: Quality of life (SF-12 mental, 0-100) > 4 months



Lau 2008: MBR programme delivered by a unidisciplinary team

1021

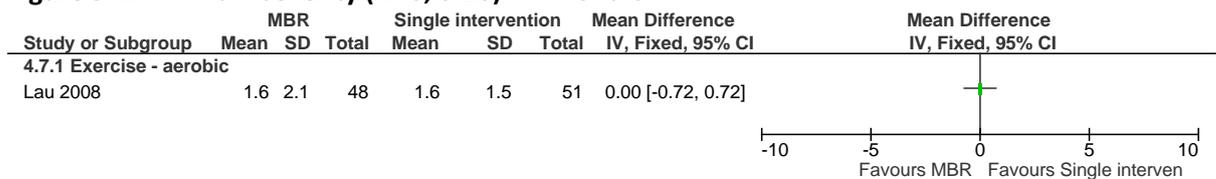
Figure 971: Pain severity (NRS, 0-10) ≤4 months



Lau 2008: MBR programme delivered by a unidisciplinary team

1022

Figure 972: Pain severity (NRS, 0-10) > 4 months

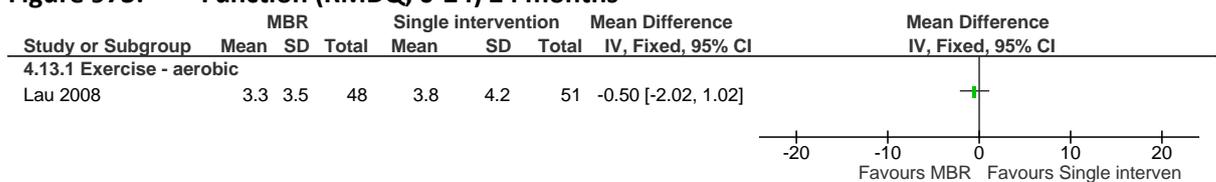


Lau 2008: MBR programme delivered by a unidisciplinary team

1023

1024

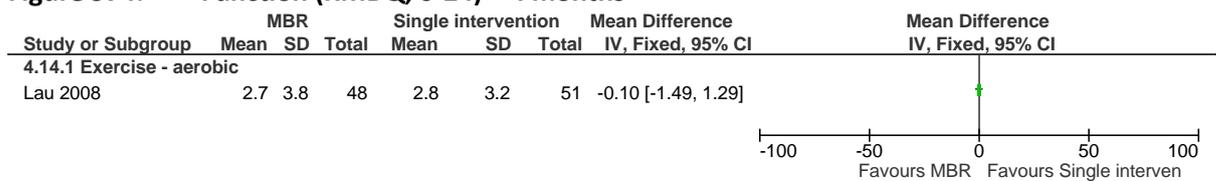
Figure 973: Function (RMDQ, 0-24) ≤4 months



Lau 2008: MBR programme delivered by a unidisciplinary team

1025

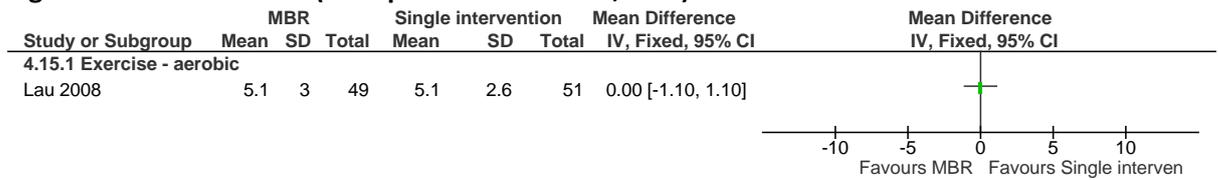
Figure 974: Function (RMDQ, 0-24) > 4 months



Lau 2008: MBR programme delivered by a unidisciplinary team

1026

Figure 975: Function (back performance scale, 0-15) ≤ 4 months

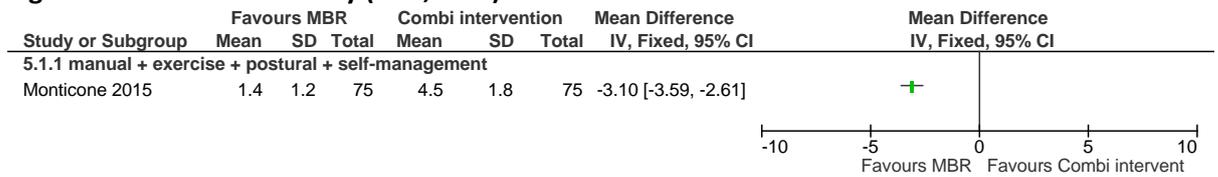


Lau 2008: MBR programme delivered by a unidisciplinary team

1027

K.10284 MBR programme 3 elements: physical + psychological + education vs. Combined intervention

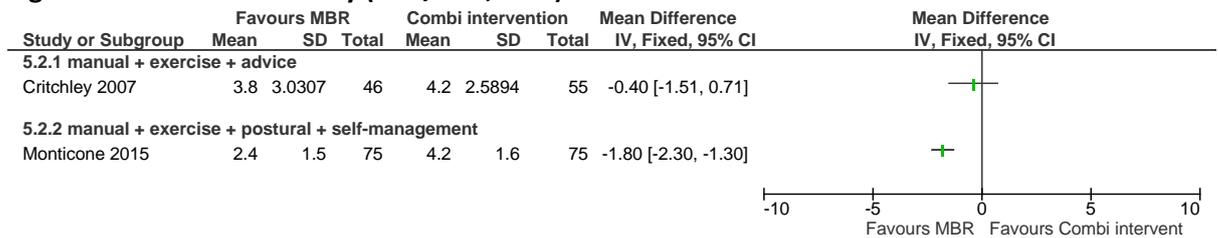
Figure 976: Pain severity (VAS, 0-10) ≤ 4 months



Monticone 2015: MBR programme delivered by a multidisciplinary team

1029

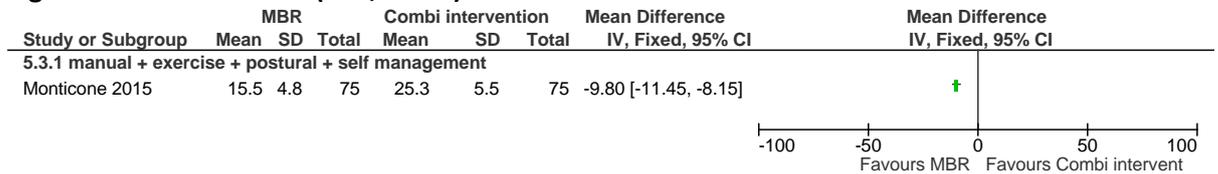
Figure 977: Pain severity (VAS/NRS, 0-10) > 4 months



Critchley 2007: MBR programme delivered by a unidisciplinary team. Monticone 2015: MBR programme delivered by a multidisciplinary team

1030

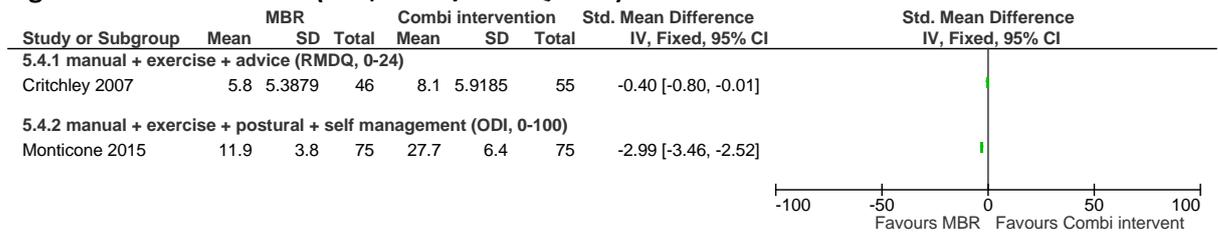
Figure 978: Function (ODI, 0-100) ≤ 4 months



Monticone 2015: MBR programme delivered by a multidisciplinary team

1031

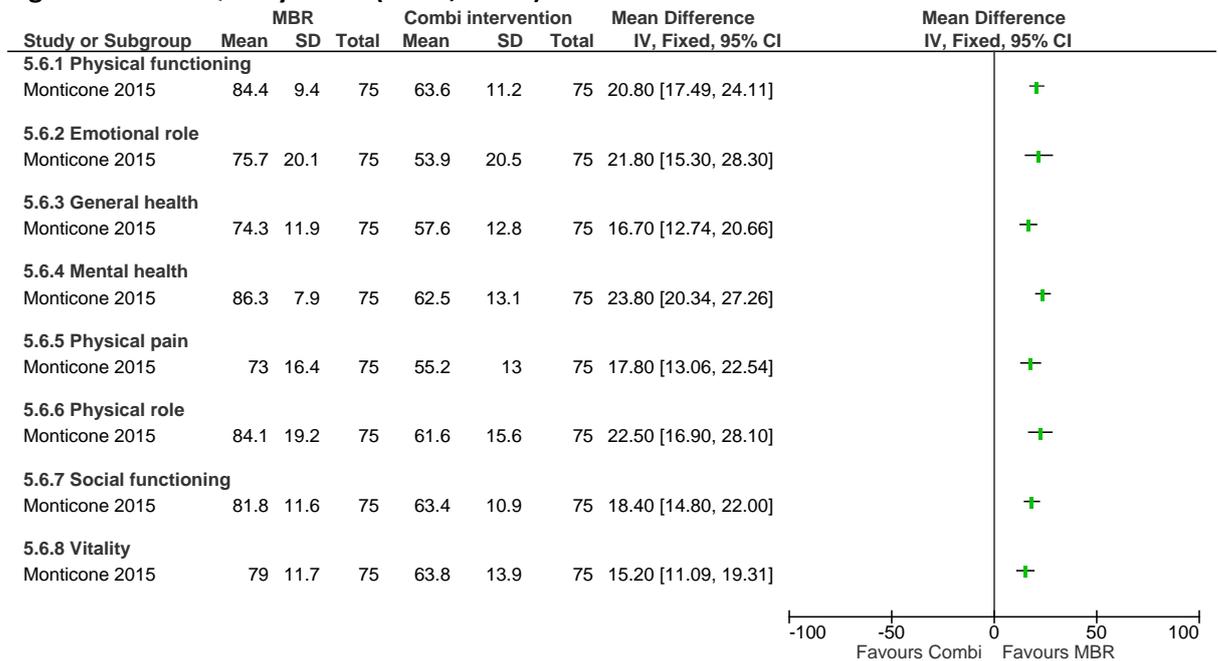
Figure 979: Function (ODI, 0-100/RMDQ, 0-24) > 4 months



Critchley 2007: MBR programme delivered by a unidisciplinary team. Monticone 2015: MBR programme delivered by a multidisciplinary team

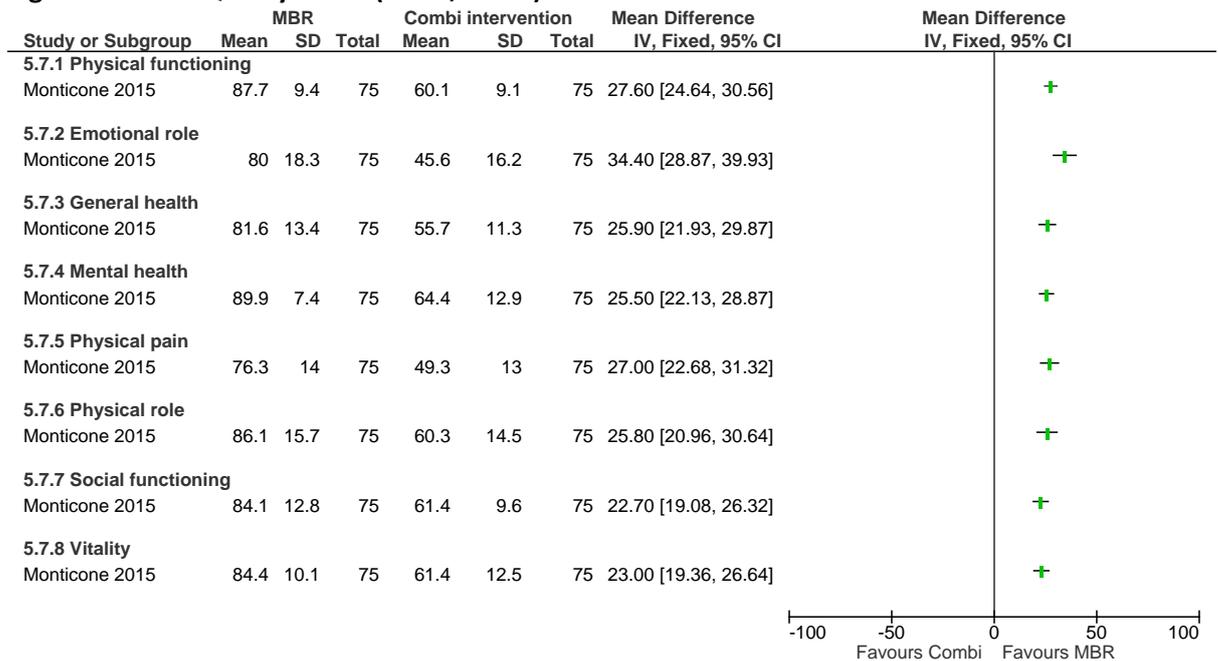
1032

Figure 980: Quality of life (SF-36, 0-100) ≤ 4 months



Monticone 2015: MBR programme delivered by a multidisciplinary team

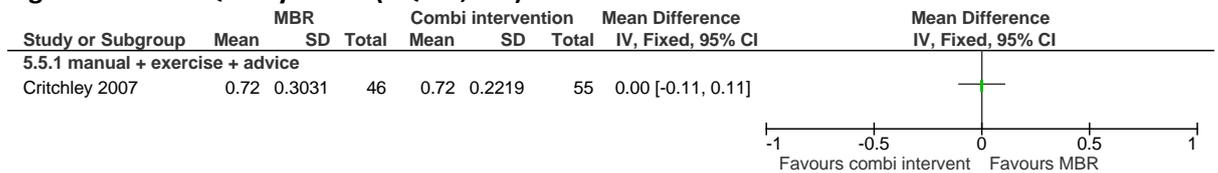
Figure 981: Quality of life (SF-36, 0-100) > 4 months



Monticone 2015: MBR programme delivered by a multidisciplinary team

1033

Figure 982: Quality of life (EQ-5D, 0-1) > 4 months



Critchley 2007: MBR programme delivered by a unidisciplinary team.

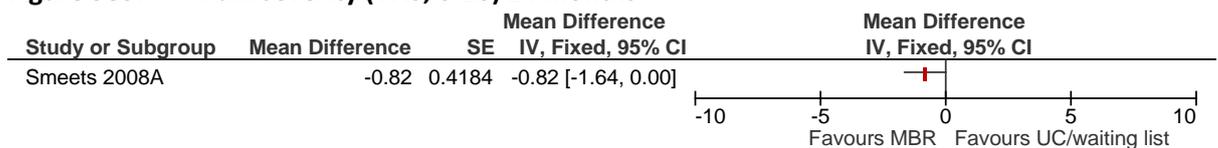
1034

K.1035 MBR programme 2 elements: physical + psychological vs. Placebo/sham

1036 No studies

K.1037 MBR programme 2 elements: physical + psychological vs. Usual care/waiting list control

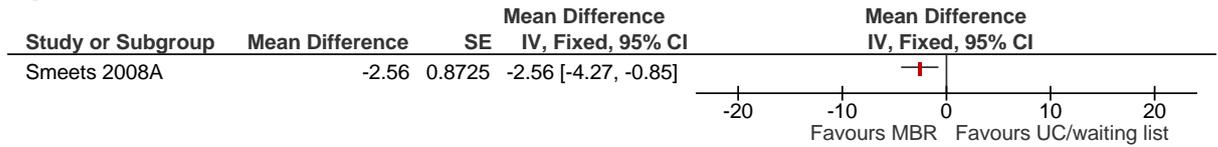
Figure 983: Pain severity (VAS, 0-10) ≤4 months



Smeets 2008A: waiting list control; MBR programme delivered by a multidisciplinary team

1038

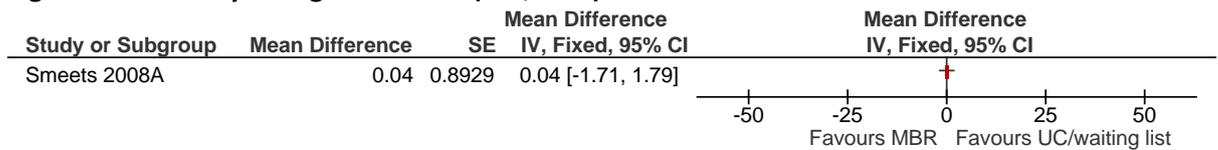
Figure 984: Function (RMDQ, 0-24) ≤4 months



Smeets2008A: waiting list control; MBR programme delivered by a multidisciplinary team

1039

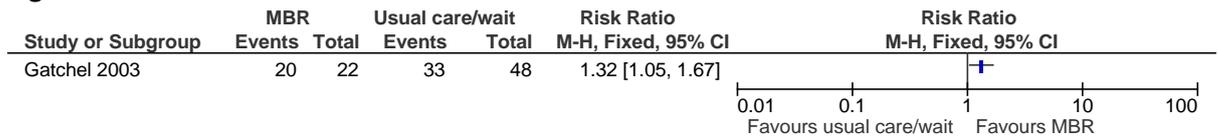
Figure 985: Psychological distress (BDI, 0-63) ≤4 months



Smeets 2008A: waiting list control; MBR programme delivered by a multidisciplinary team

1040

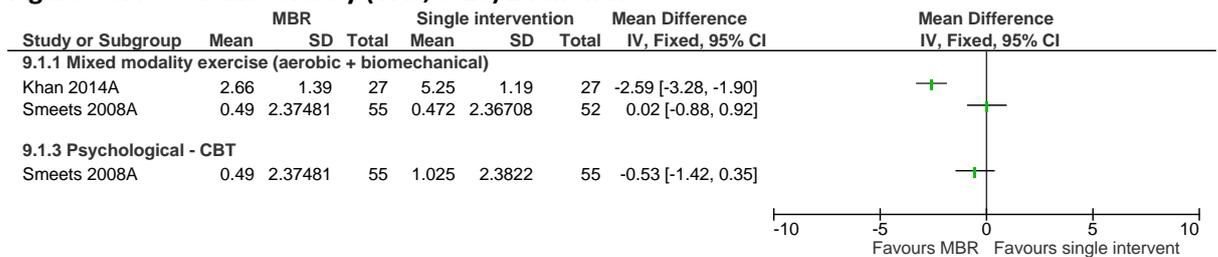
Figure 986: Return to work > 4 months



Gatchel 2003: usual care comparison; MBR programme delivered by a multidisciplinary team

K.10417 MBR programme 2 elements: physical + psychological vs. Single intervention

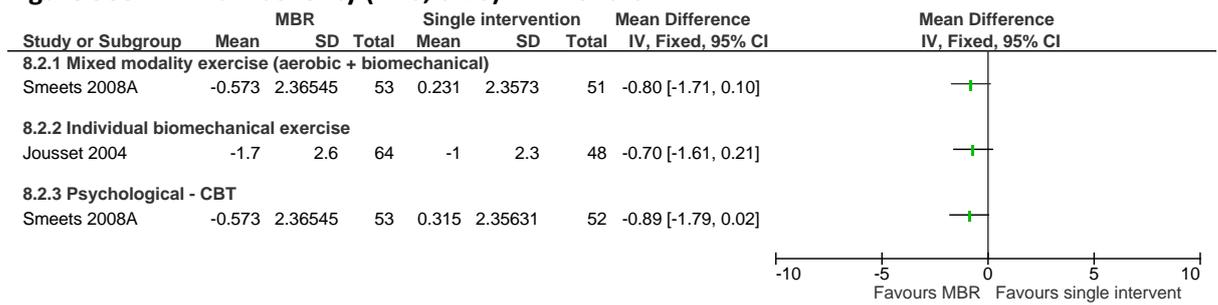
Figure 987: Pain severity (VAS, 0-10) ≤4 months



Khan 2014A: MBR programme delivered by a unidisciplinary team; Smeets 2008A: MBR programme delivered by a multidisciplinary team

1042

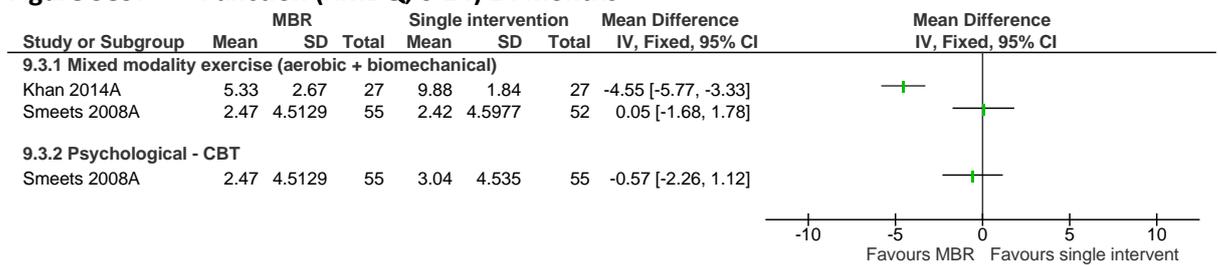
Figure 988: Pain severity (VAS, 0-10) > 4 months



Jousset 2004 and Smeets 2008A: MBR programme delivered by a multidisciplinary team

1043

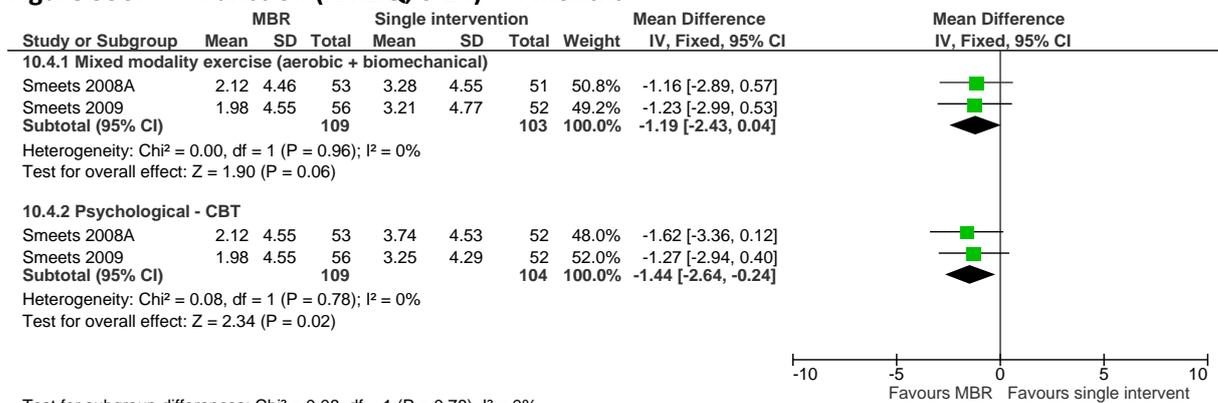
Figure 989: Function (RMDQ, 0-24) ≤ 4 months



Khan 2014A: MBR programme delivered by a unidisciplinary team; Smeets 2008A: MBR programme delivered by a multidisciplinary team

1044

Figure 990: Function (RMDQ, 0-24) > 4 months

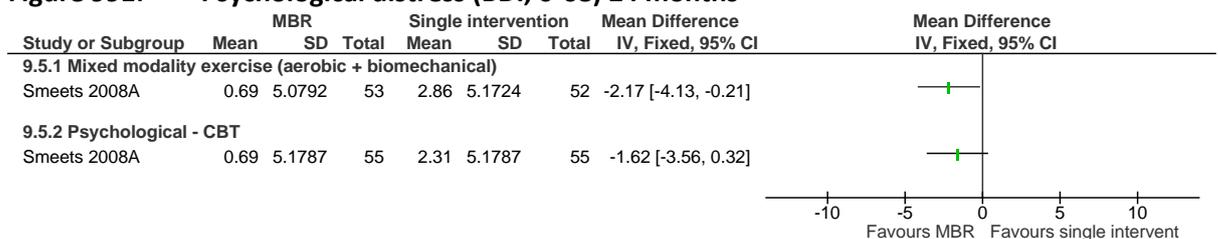


Test for subgroup differences: Chi² = 0.08, df = 1 (P = 0.78), I² = 0%

Smeets 2008A: MBR programme delivered by a multidisciplinary team

1045

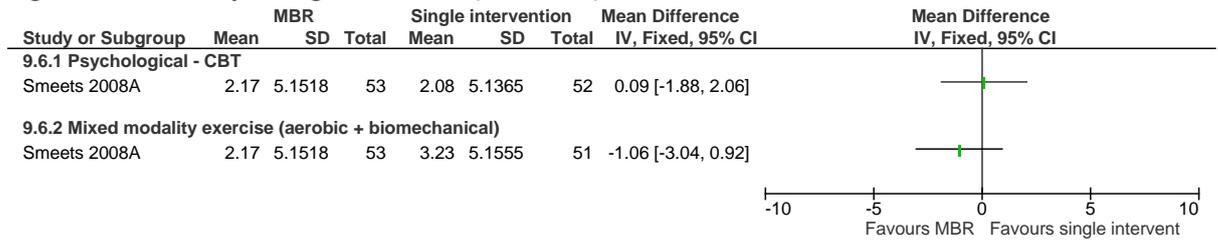
Figure 991: Psychological distress (BDI, 0-68) ≤ 4 months



Smeets 2008A: MBR programme delivered by a multidisciplinary team

1046

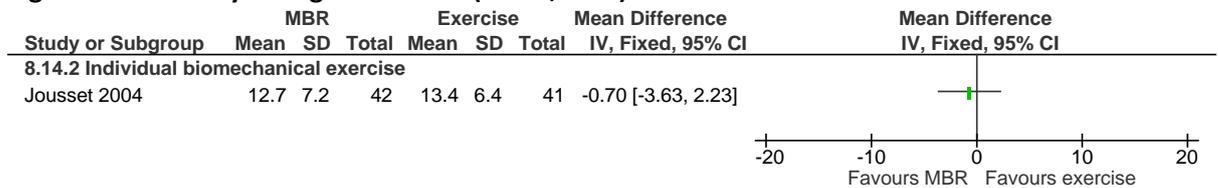
Figure 992: Psychological distress (BDI, 0-68) > 4 months



Smeets 2008A: MBR programme delivered by a multidisciplinary team

1047

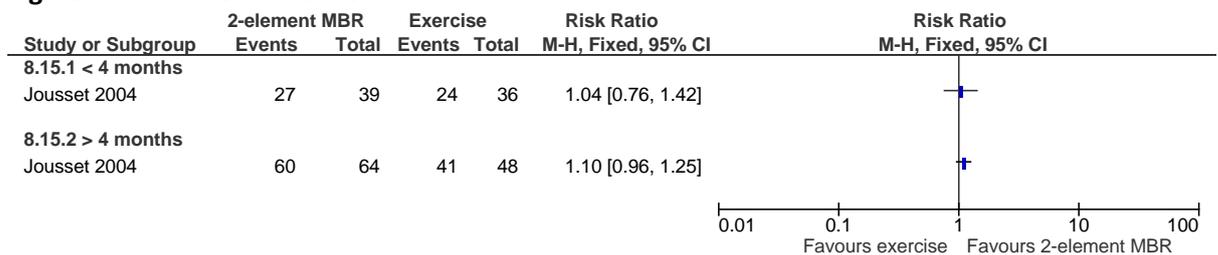
Figure 993: Psychological distress (HADS, 0-21) > 4 months



Jousset 2004: MBR programme delivered by a multidisciplinary team

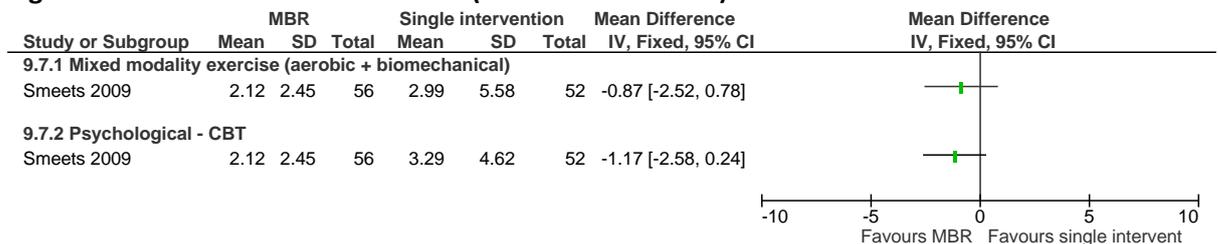
1048

Figure 994: Return to work



Jousset 2004: MBR programme delivered by a multidisciplinary team

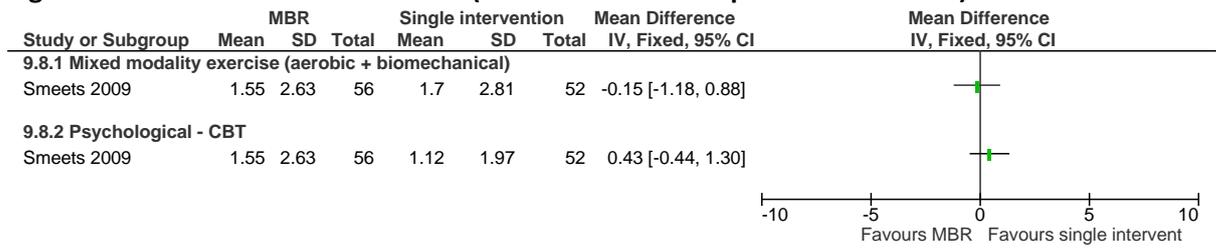
Figure 995: Healthcare utilisation (number of GP visits) > 4 months



Smeets 2009: MBR programme delivered by a multidisciplinary team

1049

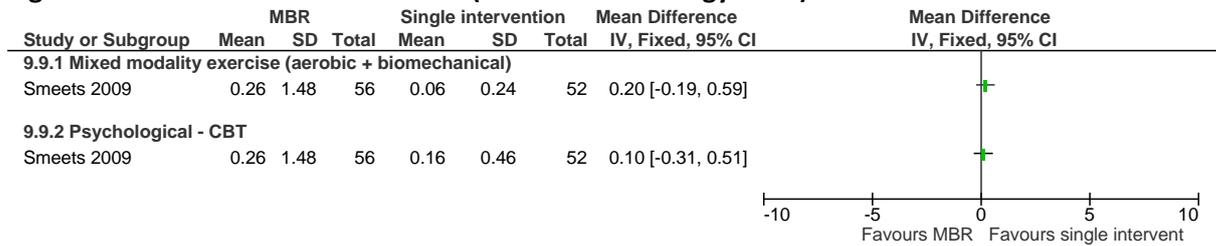
Figure 996: Healthcare utilisation (number of medical specialist care visits) > 4 months



Smeets 2009: MBR programme delivered by a multidisciplinary team

1050

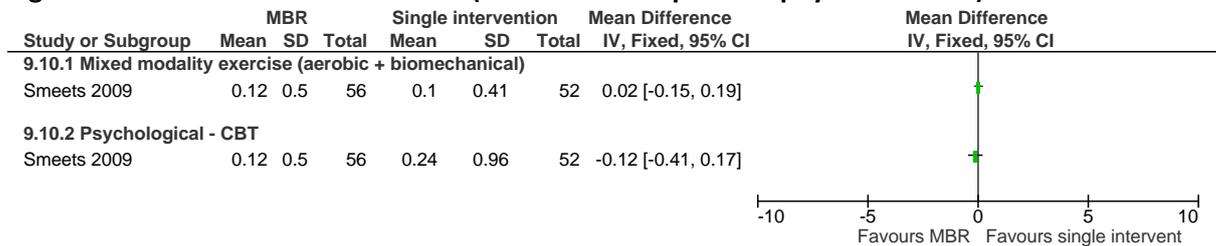
Figure 997: Healthcare utilisation (number of radiology visits) > 4 months



Smeets 2009: MBR programme delivered by a multidisciplinary team

1051

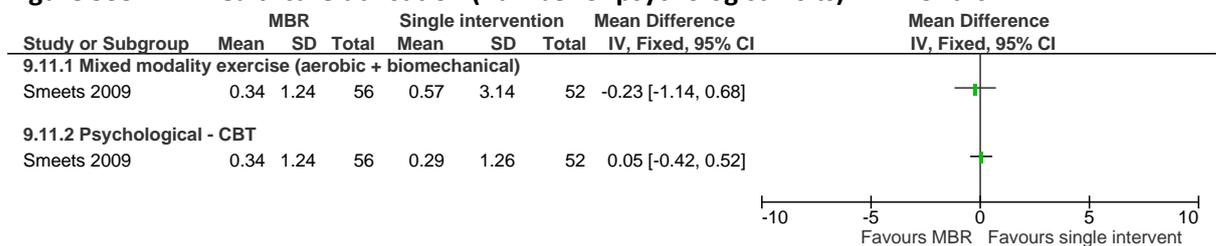
Figure 998: Healthcare utilisation (number of occupational physicians visits) > 4 months



Smeets 2009: MBR programme delivered by a multidisciplinary team

1052

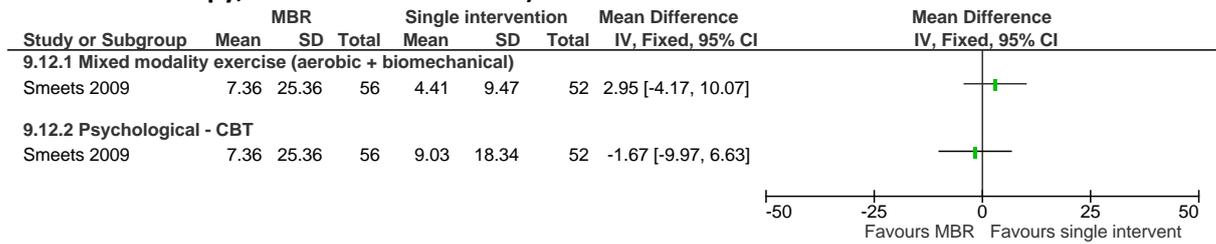
Figure 999: Healthcare utilisation (number of psychologist visits) > 4 months



Smeets 2009: MBR programme delivered by a multidisciplinary team

1053

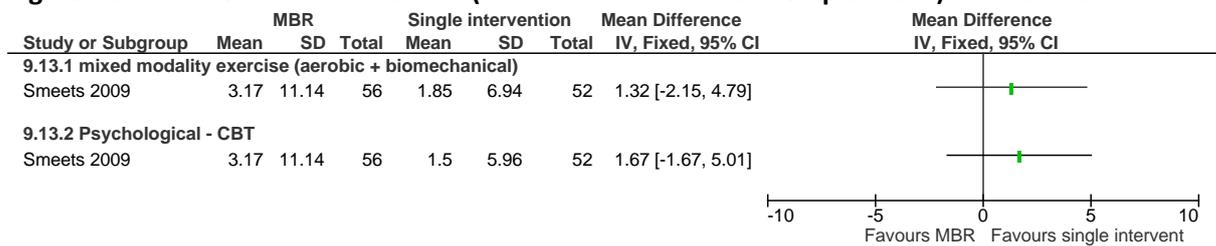
Figure 1000: Healthcare utilisation (number of therapist sessions – physiotherapy, manual therapy, Cesar or Mendendieck) > 4 months



Smeets 2009: MBR programme delivered by a multidisciplinary team

1054

Figure 1001: Healthcare utilisation (number of alternative therapist visits) > 4 months



Smeets 2009: MBR programme delivered by a multidisciplinary team

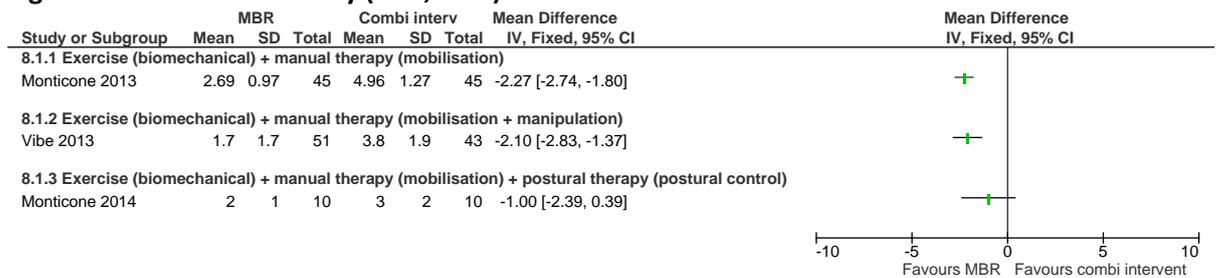
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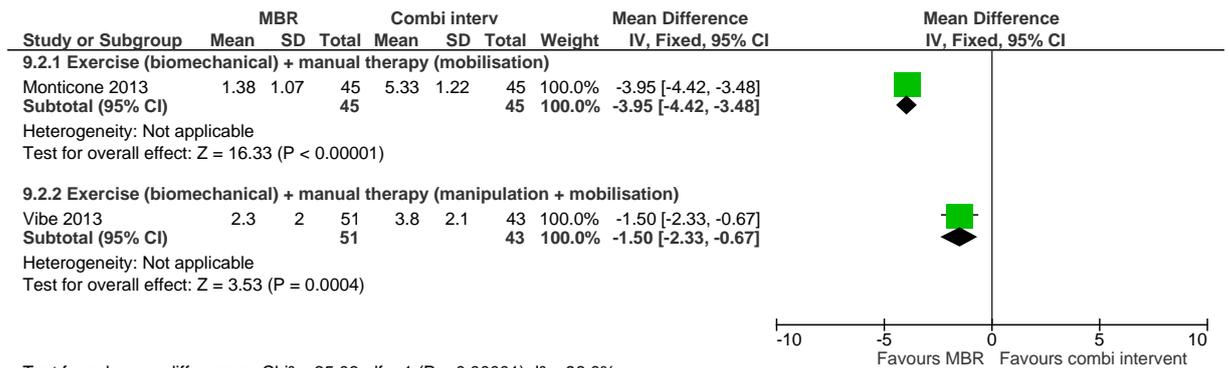
K.1058 MBR programme 2 elements: physical + psychological vs. Combined intervention

Figure 1002: Pain severity (NRS, 0-10) ≤ 4 months



Monticone 2013 and Monticone 2014: MBR programme delivered by a multidisciplinary team. Vibe Fersum 2013: MBR programme delivered by a unidisciplinary team

1059 **Figure 1003 Pain severity (NRS, 0-10) >4 months**

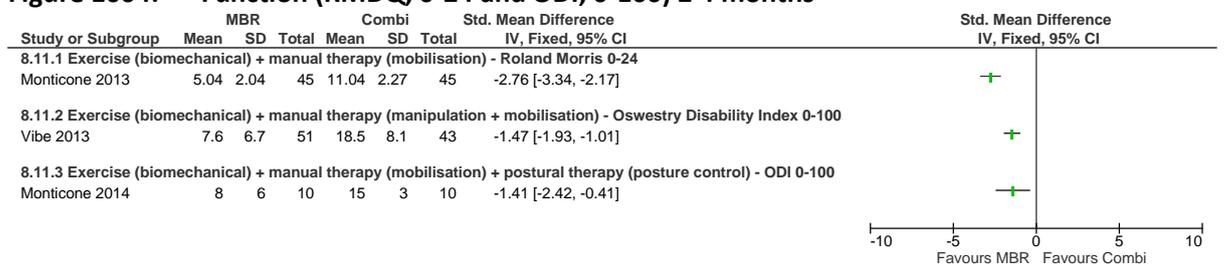


1060 Test for subgroup differences: Chi² = 25.06, df = 1 (P < 0.00001), I² = 96.0%

1061 *Monticone 2013: MBR programme delivered by a multidisciplinary team. Vibe Fersum 2013: MBR programme delivered by a*
1062 *unidisciplinary team*

1063

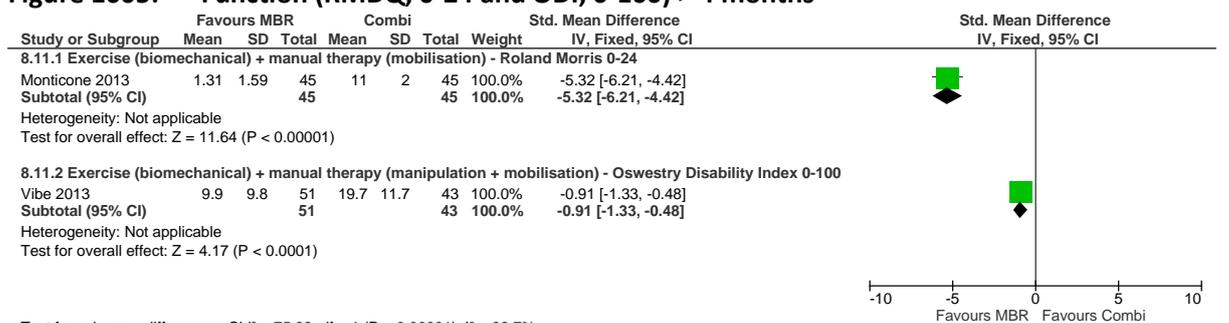
Figure 1004: Function (RMDQ, 0-24 and ODI, 0-100) ≤ 4 months



Monticone 2013 and Monticone 2014: MBR programme delivered by a multidisciplinary team. Vibe Fersum 2013: MBR programme delivered by a unidisciplinary team

1064

Figure 1005: Function (RMDQ, 0-24 and ODI, 0-100) > 4 months

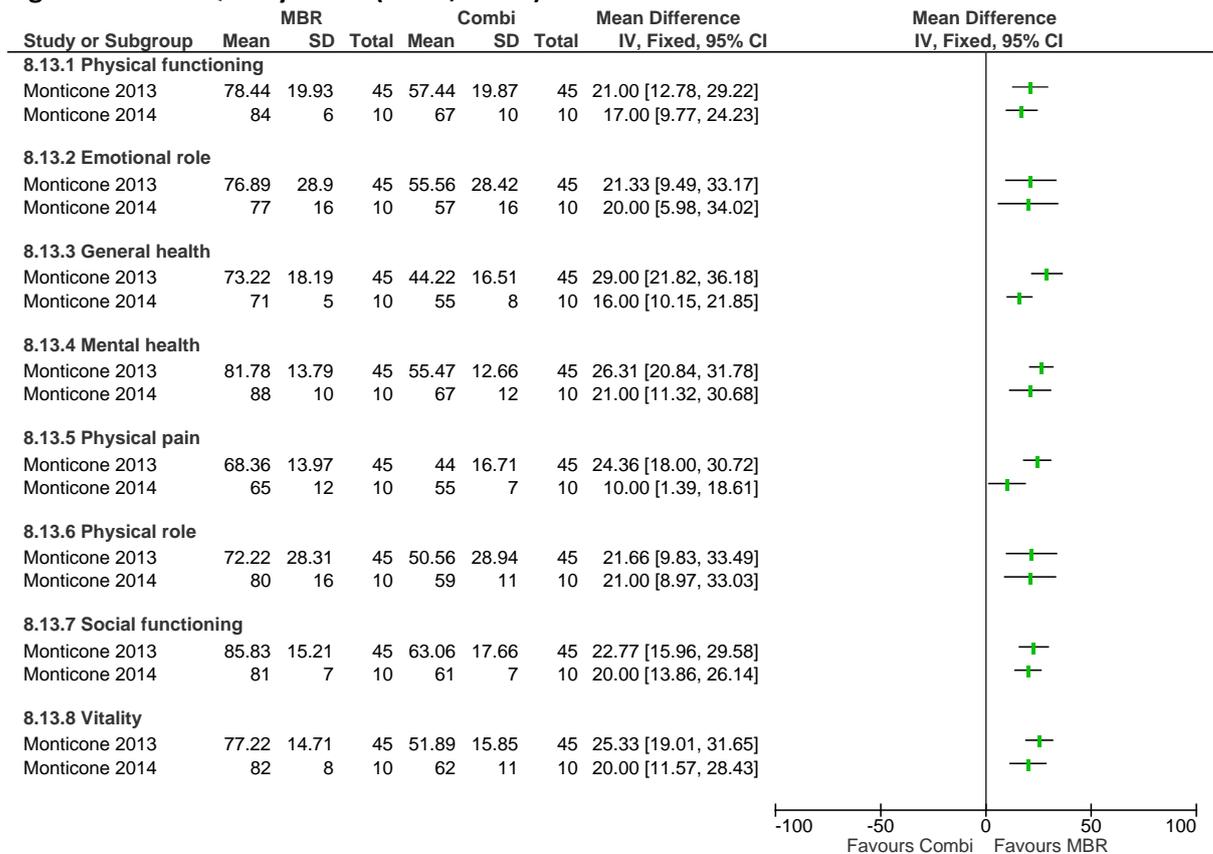


Test for subaroup differences: Chi² = 75.92, df = 1 (P < 0.00001), I² = 98.7%

Monticone 2013: MBR programme delivered by a multidisciplinary team. Vibe Fersum 2013: MBR programme delivered by a unidisciplinary team

1065

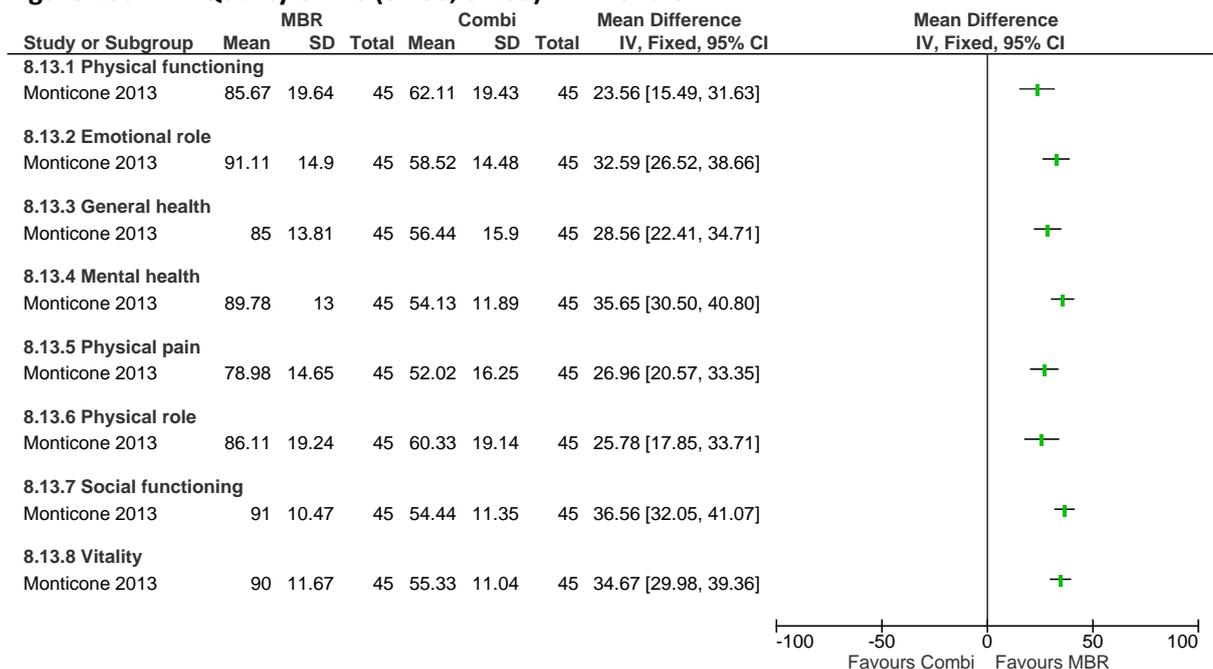
Figure 1006: Quality of life (SF-36, 0-100) ≤ 4 months



Monticone 2013: control group exercise (biomechanical) + manual therapy (manipulation); Monticone 2014 control group exercise (biomechanical) + manual therapy (manipulation) + postural therapy (postural control). In both studies MBR programme was delivered by a multidisciplinary team

1066

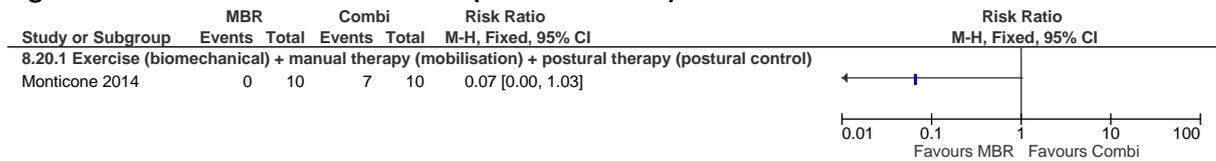
Figure 1007: Quality of life (SF-36, 0-100) > 4 months



Monticone 2013: MBR delivered by a multidisciplinary team

1067

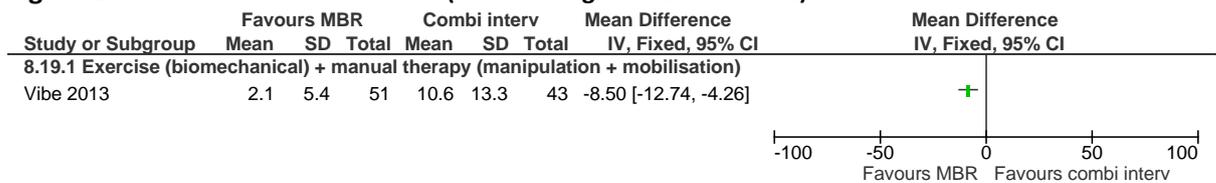
Figure 1008: Healthcare utilisation (medication use) ≤ 4months



Monticone 2014: MBR delivered by a multidisciplinary team

1068

Figure 1009: Healthcare utilisation (care-seeking after intervention) >4 months



Vibe Fersum 2013: MBR delivered by a unidisciplinary team

K.130699 MBR programme 2 elements: physical + education vs. Placebo/sham

1070 No studies

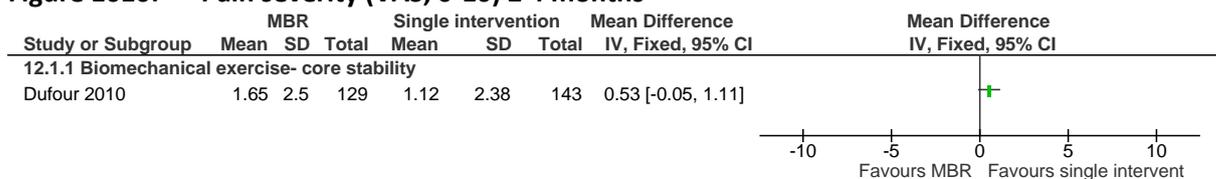
K.130710 MBR programme 2 elements: physical + education vs. Usual care/waiting list control

1072 No studies

K.130731 MBR programme 2 elements: physical + education vs. Single intervention

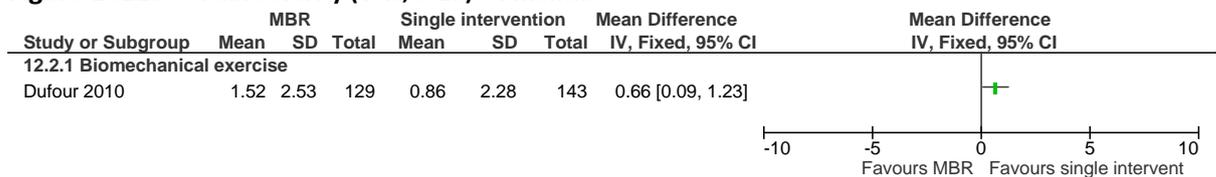
K.130741.1 MBR programme 2 elements: physical + education vs exercise

Figure 1010: Pain severity (VAS, 0-10) ≤ 4 months



Dufour 2010: MBR programme delivered by a multidisciplinary team

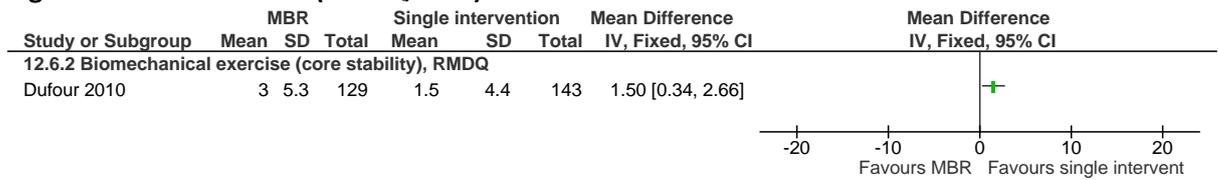
Figure 1011: Pain severity (VAS, 0-10) >4 months



Dufour 2010: MBR programme delivered by a multidisciplinary team

1075

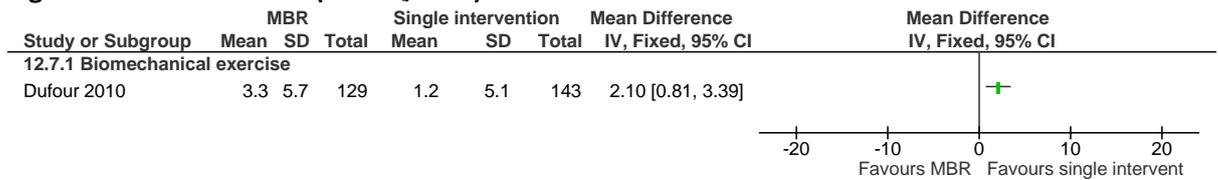
Figure 1012: Function (RMDQ, 0-24) ≤ 4 months



Dufour 2010: MBR programme delivered by a multidisciplinary team

1076

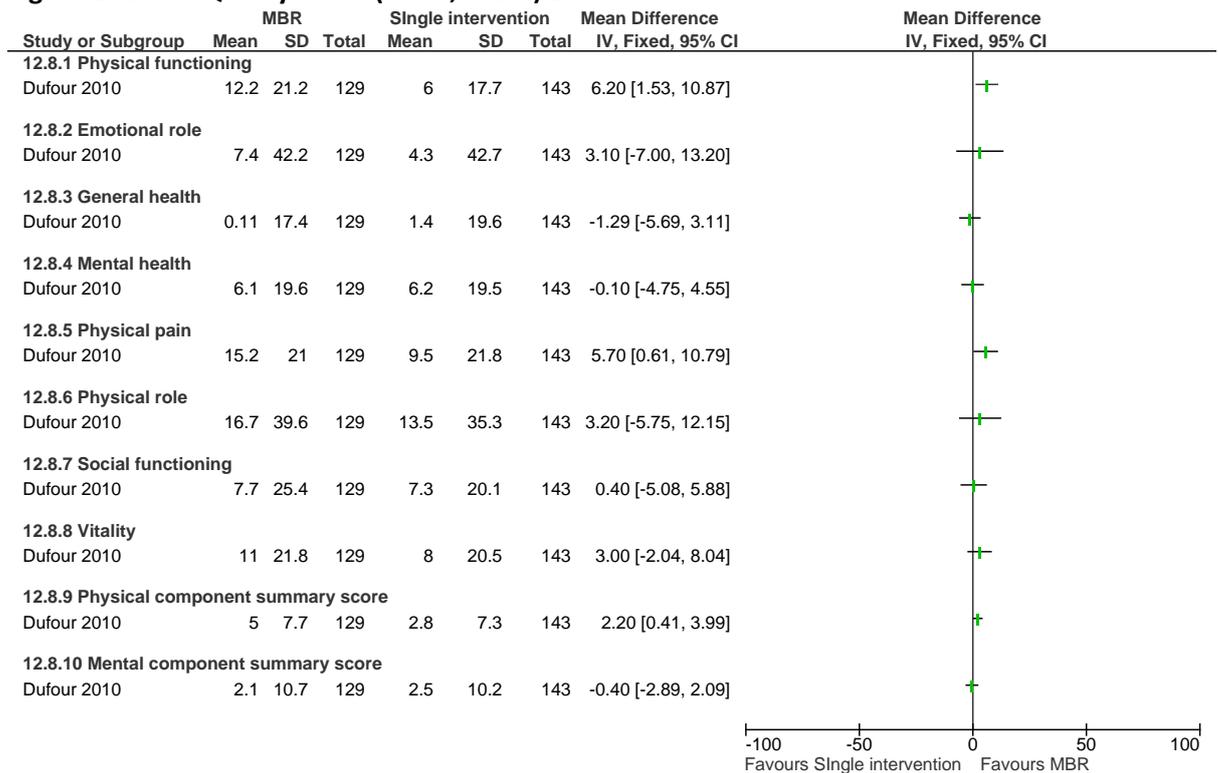
Figure 1013: Function (RMDQ, 0-24) >4 months



Dufour 2010: MBR programme delivered by a multidisciplinary team

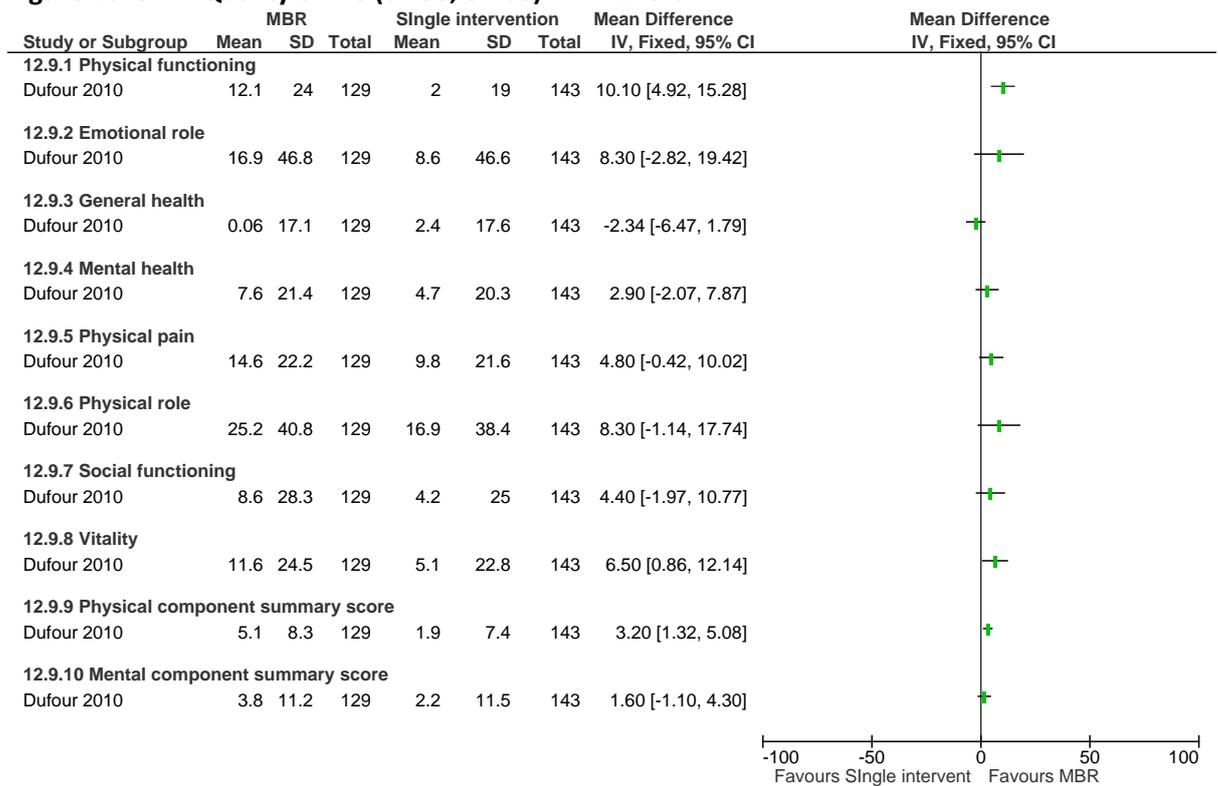
1077

Figure 1014: Quality of life (SF-36, 0-100) ≤ 4 months



Dufour 2010: MBR programme delivered by a multidisciplinary team

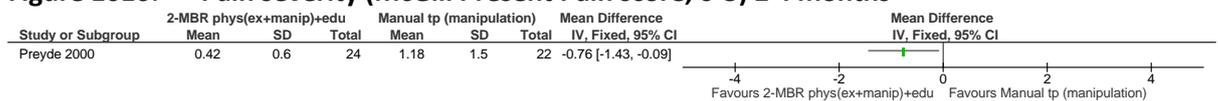
Figure 1015: Quality of life (SF-36, 0-100) > 4 months



Dufour 2010: MBR programme delivered by a multidisciplinary team

K.13.071.2 MBR programme 2 elements: physical (exercise + manipulation) + education vs manual therapy (manipulation)
1079

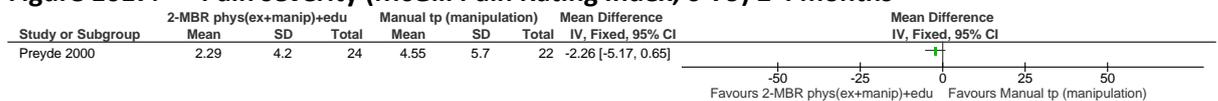
Figure 1016: Pain severity (McGill Present Pain score, 0-5) ≤ 4 months



Preyde 2000: MBR programme delivered by a unidisciplinary team

1080

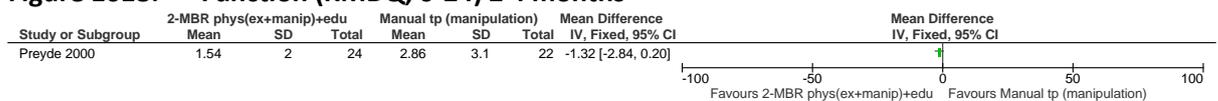
Figure 1017: Pain severity (McGill Pain Rating Index, 0-79) ≤ 4 months



Preyde 2000: MBR programme delivered by a unidisciplinary team

1081

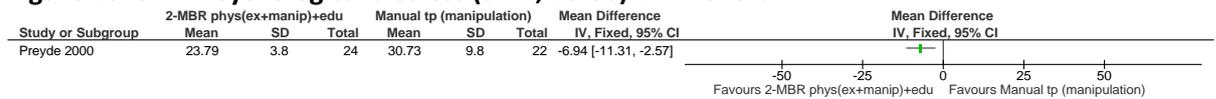
Figure 1018: Function (RMDQ, 0-24) ≤ 4 months



Preyde 2000: MBR programme delivered by a unidisciplinary team

1082

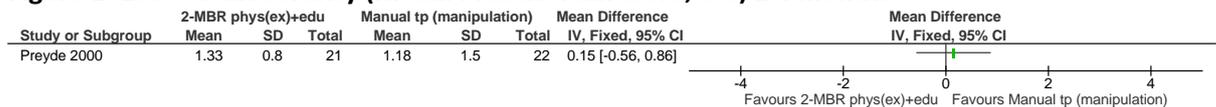
Figure 1019: Psychological distress (STAI, 20-80) ≤ 4 months



Preyde 2000: MBR programme delivered by a unidisciplinary team

K.13081.3 MBR programme 2 elements: physical (exercise) + education vs manual therapy (manipulation)

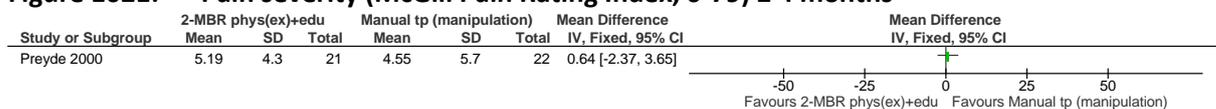
Figure 1020: Pain severity (McGill Present Pain score, 0-5) ≤ 4 months



Preyde 2000: MBR programme delivered by a unidisciplinary team

1084

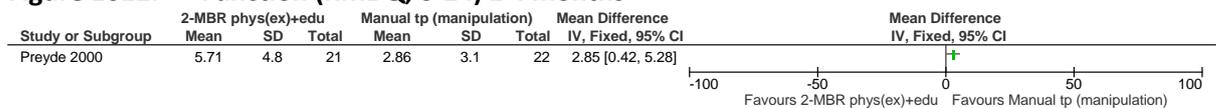
Figure 1021: Pain severity (McGill Pain Rating Index, 0-79) ≤ 4 months



Preyde 2000: MBR programme delivered by a unidisciplinary team

1085

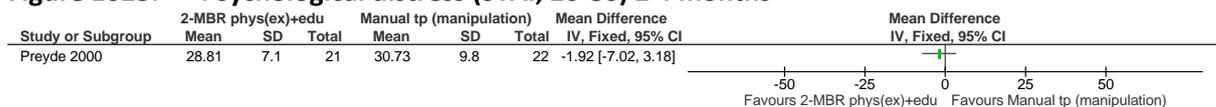
Figure 1022: Function (RMDQ, 0-24) ≤ 4 months



Preyde 2000: MBR programme delivered by a unidisciplinary team

1086

Figure 1023: Psychological distress (STAI, 20-80) ≤ 4 months



Preyde 2000: MBR programme delivered by a unidisciplinary team

K.13087 MBR programme 2 elements: physical + education vs. Combined intervention

1088 No studies

K.13089 MBR programme 3 elements: physical + psychological + education vs. 2 elements: physical + psychological

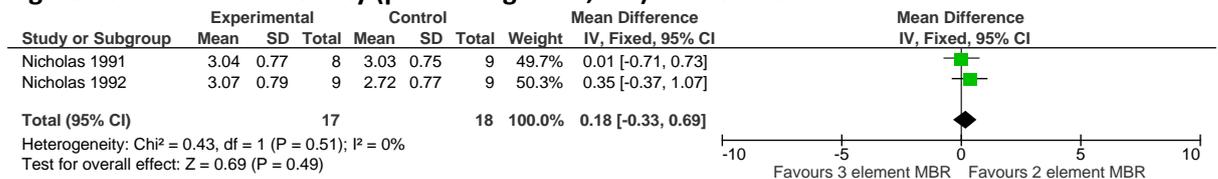
1090 No studies

1091 No studies

K.130924
1093

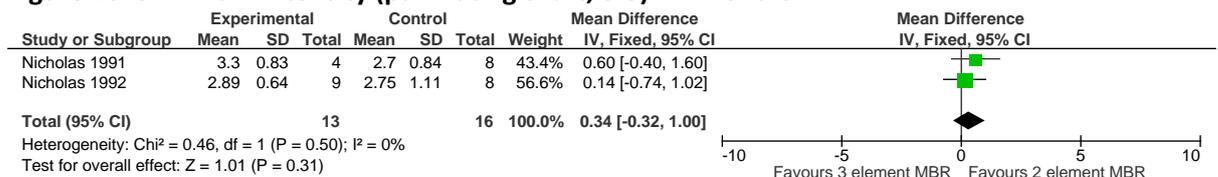
MBR programme 3 elements: physical + psychological (cognitive) + education vs. MBR programme 2 elements: physical + education. NOTE: psychological element = cognitive therapy

Figure 1024: Pain intensity (pain rating chart, 0-5) ≤4 months



Nicholas 1991 and Nicholas 1992: MBR programme delivered by a multidisciplinary team

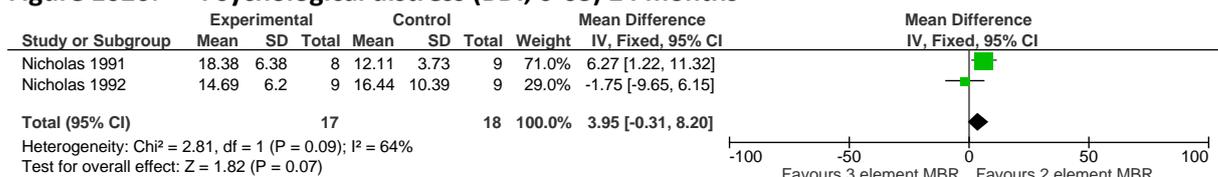
Figure 1025: Pain intensity (pain rating chart, 0-5) > 4 months



Nicholas 1991 and Nicholas 1992: MBR programme delivered by a multidisciplinary team

1094

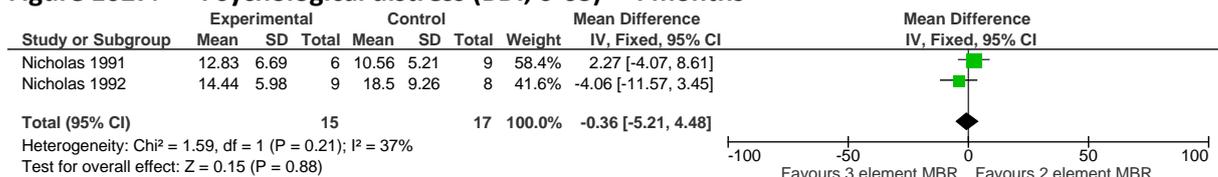
Figure 1026: Psychological distress (BDI, 0-63) ≤4 months



Nicholas 1991 and Nicholas 1992: MBR programme delivered by a multidisciplinary team

1095

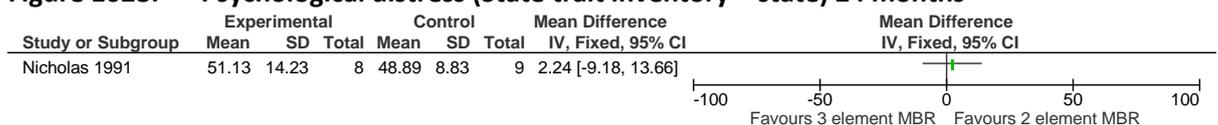
Figure 1027: Psychological distress (BDI, 0-63) > 4 months



Nicholas 1991 and Nicholas 1992: MBR programme delivered by a multidisciplinary team

1096

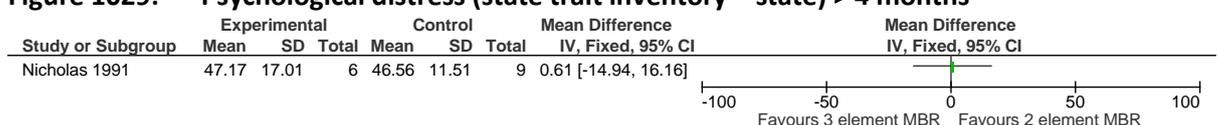
Figure 1028: Psychological distress (State trait inventory – state) ≤4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1097

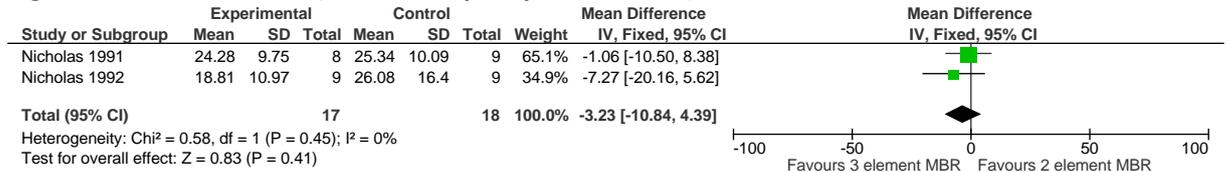
Figure 1029: Psychological distress (state trait inventory – state) > 4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1098

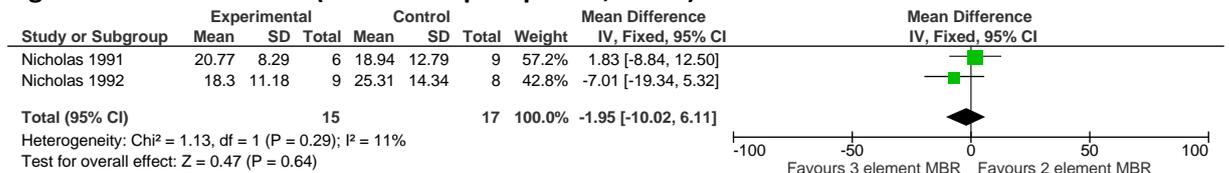
Figure 1030: Function (Sickness impact profile, 0-100) ≤4 months



Nicholas 1991 and Nicholas 1992: MBR programme delivered by a multidisciplinary team

1099

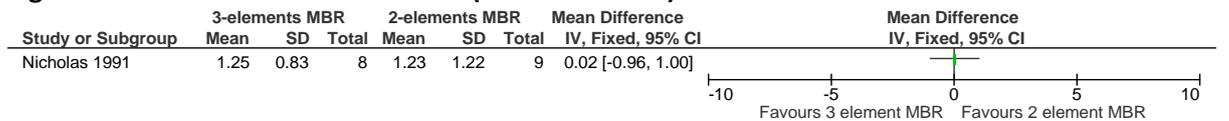
Figure 1031: Function (Sickness impact profile, 0-100) > 4 months



Nicholas 1991 and Nicholas 1992: MBR programme delivered by a multidisciplinary team

1100

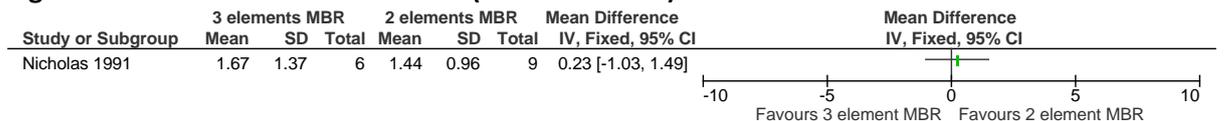
Figure 1032: Healthcare utilisation (medication use) ≤4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1101

Figure 1033: Healthcare utilisation (medication use) > 4 months



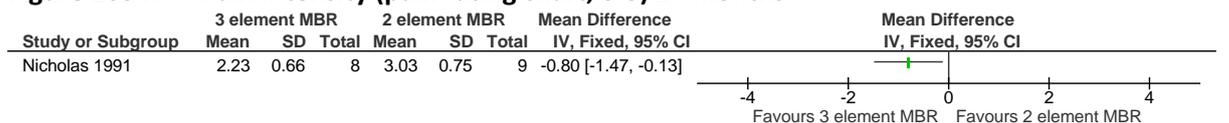
Nicholas 1991: MBR programme delivered by a multidisciplinary team

K.13.1025

1103

MBR programme 3 elements: physical + psychological (behavioural) + education vs. MBR programme 2 elements: physical + education. NOTE: psychological element = behavioural therapy

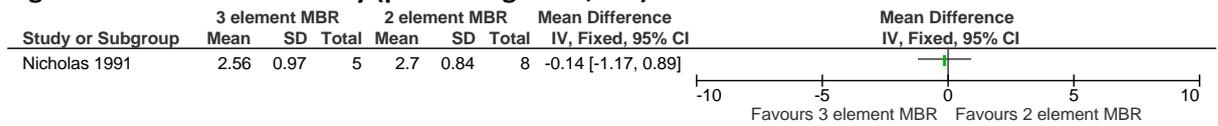
Figure 1034: Pain intensity (pain rating chart, 0-5) ≤4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

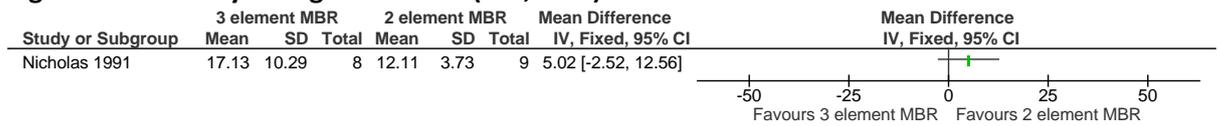
1104

Figure 1035: Pain intensity (pain rating chart, 0-5) >4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

Figure 1036: Psychological distress (BDI, 0-63) ≤4 months

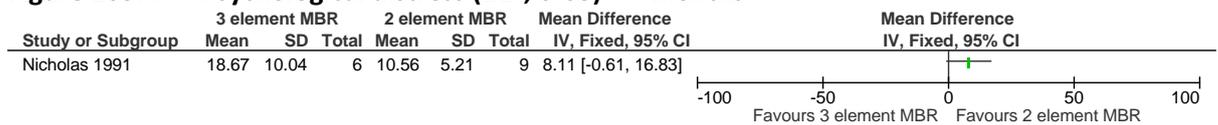


Nicholas 1991: MBR programme delivered by a multidisciplinary team

1105

1106

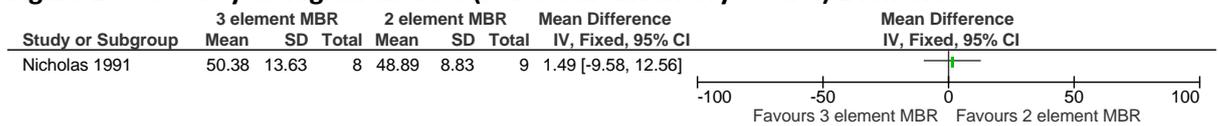
Figure 1037: Psychological distress (BDI, 0-63) > 4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1107

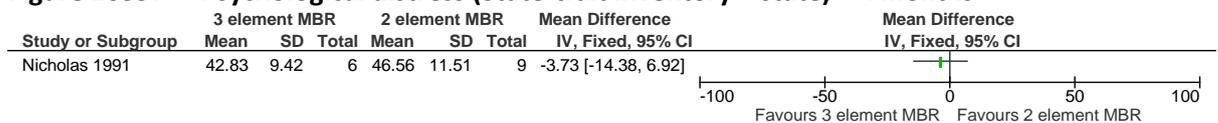
Figure 1038: Psychological distress (State-trait inventory – state) ≤4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1108

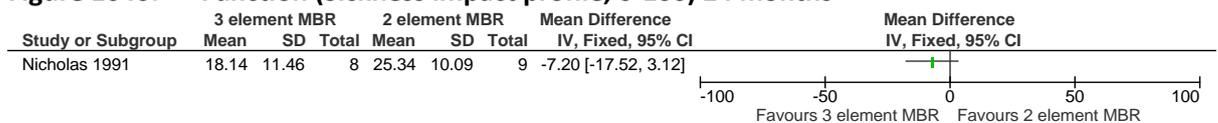
Figure 1039: Psychological distress (State-trait inventory – state) > 4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1109

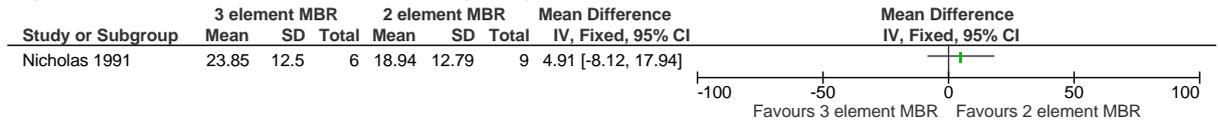
Figure 1040: Function (Sickness impact profile, 0-100) ≤4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1110

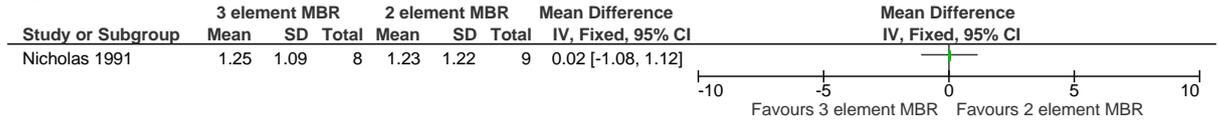
Figure 1041: Function (Sickness impact profile, 0-100) > 4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1111

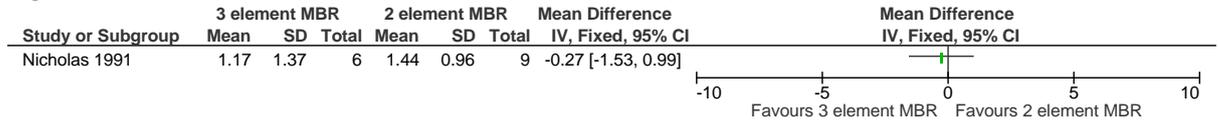
Figure 1042: Healthcare utilisation (medication use) ≤4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1112

Figure 1043: Healthcare utilisation (medication use) > 4 months



Nicholas 1991: MBR programme delivered by a multidisciplinary team

1113

K.13.1146 MBR programme 2 elements: physical + psychological vs. 2 elements: physical + education

1115 No studies

K11362 Population: low back pain without sciatica

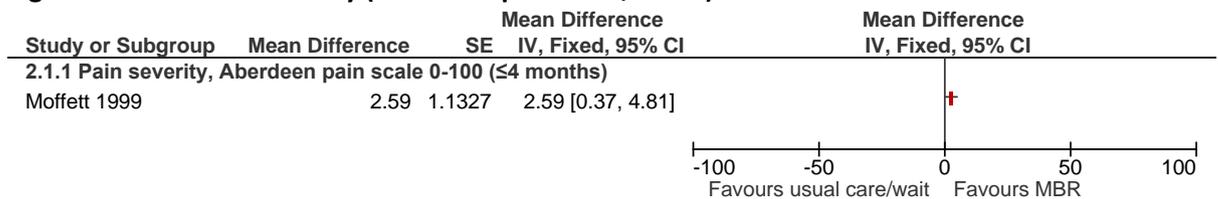
K.13.171 MBR programme 3 elements: physical + psychological + education vs. Placebo/sham

1118 No studies

K.13.192 MBR programme 3 elements: physical + psychological + education vs. Usual care/waiting list control

1120

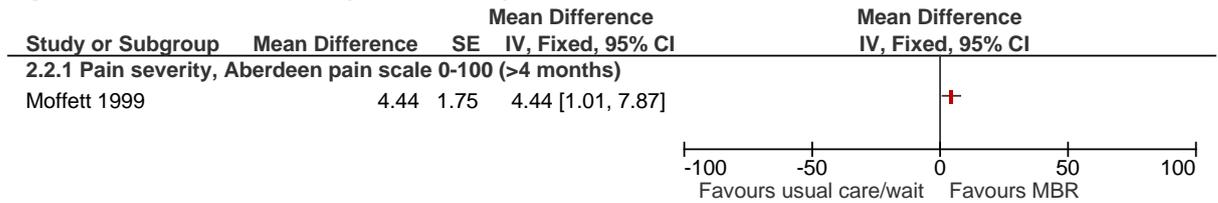
Figure 1044: Pain severity (Aberdeen pain scale, 0-100) ≤4 months



Moffett 1999: MBR programme delivered by a unidisciplinary team

1121

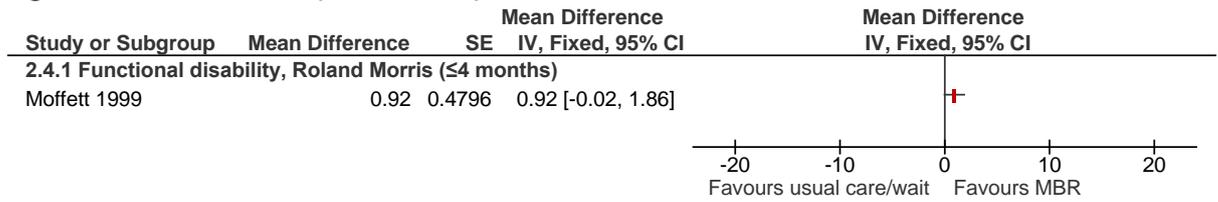
Figure 1045: Pain severity (Aberdeen pain scale, 0-100) > 4 months



Moffett 1999: MBR programme delivered by a unidisciplinary team

1122

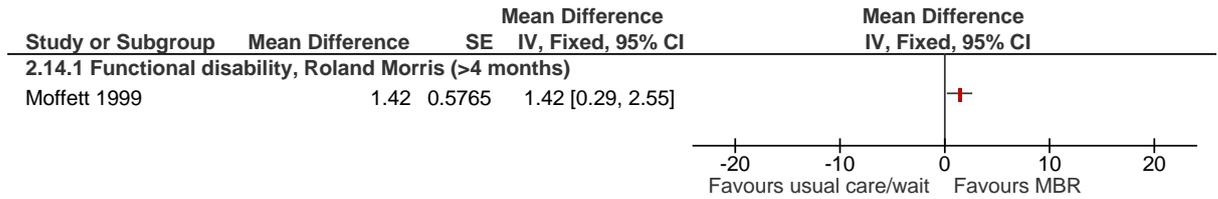
Figure 1046: Function (RMDQ, 0-24) ≤4 months



Moffett 1999: MBR programme delivered by a unidisciplinary team

1123

Figure 1047: Function (RMDQ, 0-24) > 4 months



Moffett 1999: MBR programme delivered by a unidisciplinary team

K.13.243 MBR programme 3 elements: physical + psychological + education vs. Single intervention

1125 No studies

K.13.264 MBR programme 3 elements: physical + psychological + education vs. Combined intervention

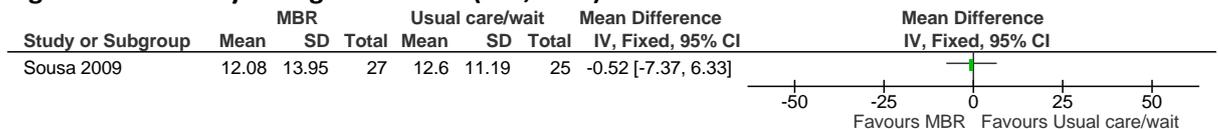
1127 No studies

K.13.285 MBR programme 2 elements: physical + psychological vs. Placebo/sham

1129 No studies

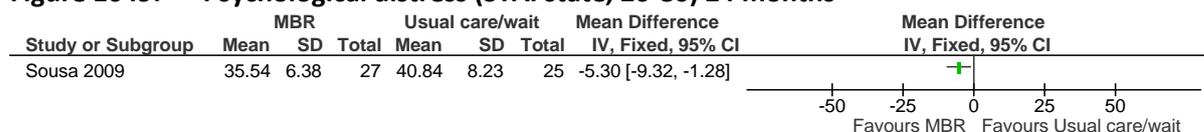
K.13.306 MBR programme 2 elements: physical + psychological vs. Usual care/waiting list control

Figure 1048: Psychological distress (BDI, 0-63) ≤4 months



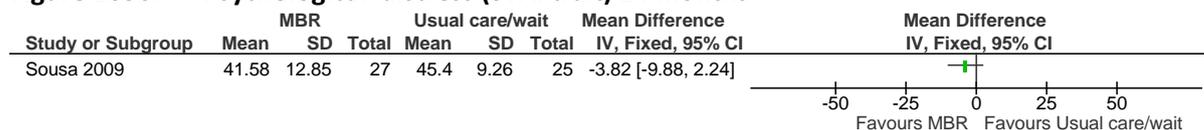
Sousa 2009: delivery of the programme was unclear

Figure 1049: Psychological distress (STAI state, 20-80) ≤4 months



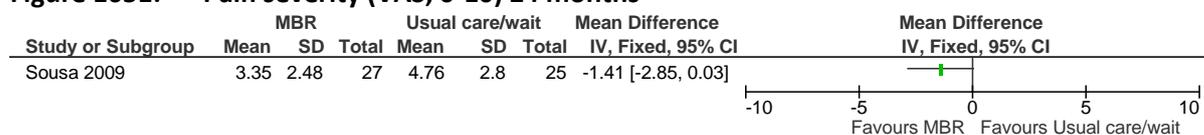
Sousa 2009: delivery of the programme was unclear

Figure 1050: Psychological distress (STAI trait) ≤4 months



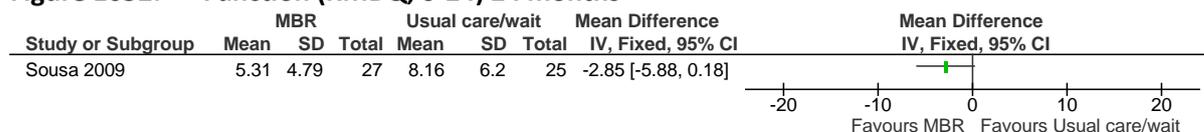
Sousa 2009: delivery of the programme was unclear

Figure 1051: Pain severity (VAS, 0-10) ≤4 months



Sousa 2009: delivery of the programme was unclear

Figure 1052: Function (RMDQ, 0-24) ≤4 months



Sousa 2009: delivery of the programme was unclear

K.13.17 MBR programme 2 elements: physical + psychological vs. Single intervention

1132 No studies

K.13.28 MBR programme 2 elements: physical + psychological vs. Combined intervention

1134 No studies

K.13.29 MBR programme 2 elements: physical + education vs. Placebo/sham

1136 No studies

K.13.70 MBR programme 2 elements: physical + education vs. Usual care/waiting list control

1138 No studies

K.13.91 MBR programme 2 elements: physical + education vs. Single intervention

1140 No studies

K.13.112 MBR programme 2 elements: physical + education vs. Combined intervention

1142 No studies

K.13.143 **MBR programme 3 elements: physical + psychological + education vs. 2 elements: physical + psychological**

1144 No studies

K.13.144 **MBR programme 3 elements: physical + psychological + education vs. 2 elements: physical + education**

1147 No studies

K.13.145 **MBR programme 2 elements: physical + psychological vs. 2 elements: physical + education**

1150 No studies

1151

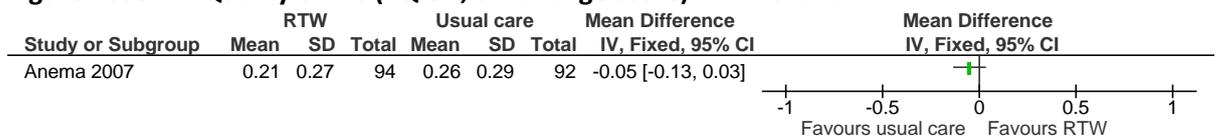
K114 Return to work programmes

K11431 Individually delivered return to work programme versus usual care

K.14.151.1 Multidisciplinary programme

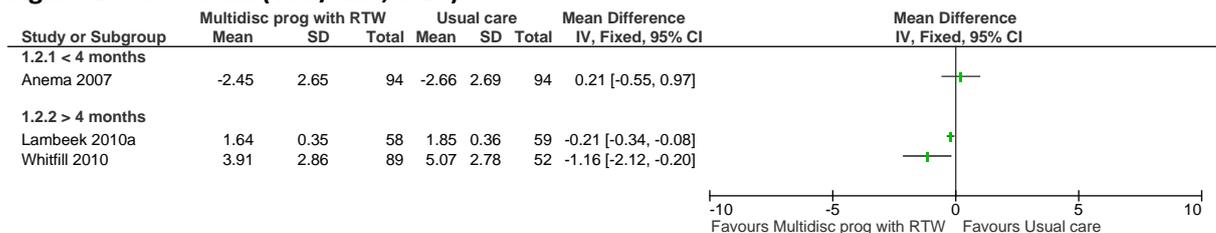
K.14.155.1 Low back pain with or without sciatica population

Figure 1053: Quality of life (EQ-5D, 0-1 change score) ≤ 4 months



1156

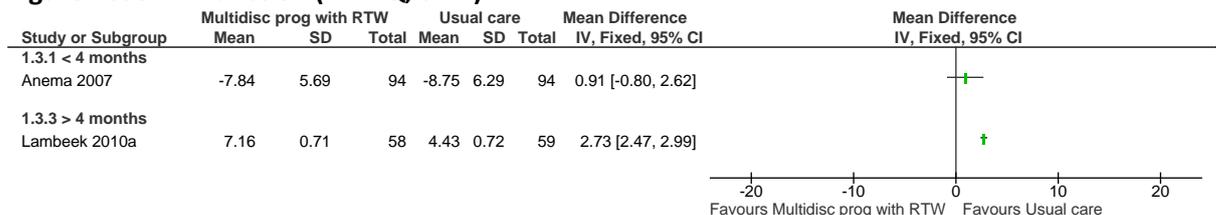
Figure 1054: Pain (VAS/NRS, 0-10)



Anema 2007 and Lambeek 2010a: change scores; Whitfill 2010: final value. Lambeek 2010a and Whitfill studies were not pooled because they featured different intervention.

1157

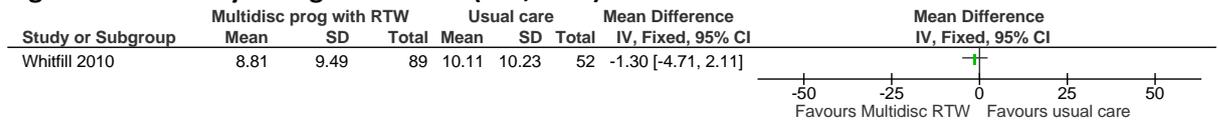
Figure 1055: Function (RMDQ, 0-24)



1158

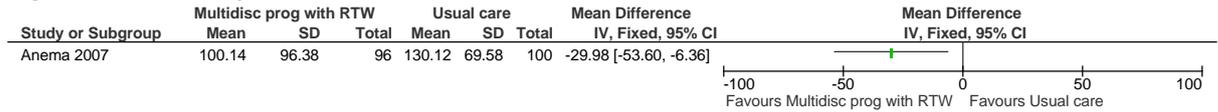
1159

Figure 1056: Psychological distress (BDI, 0-63) > 4 months



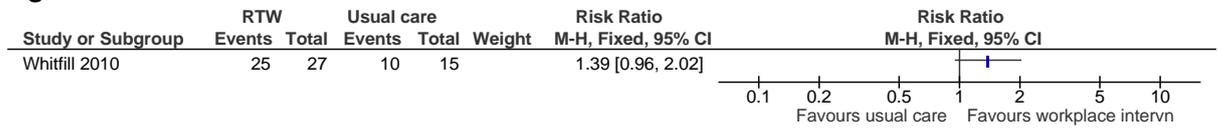
1160

Figure 1057: Days to return to work ≤ 4 months



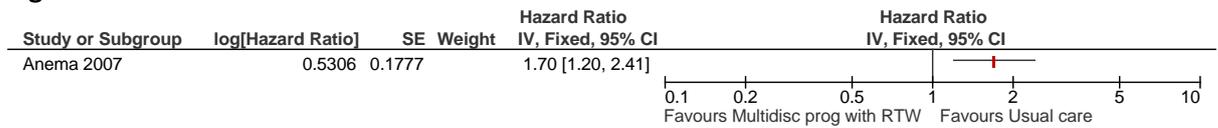
1161

Figure 1058: Return to work > 4 months



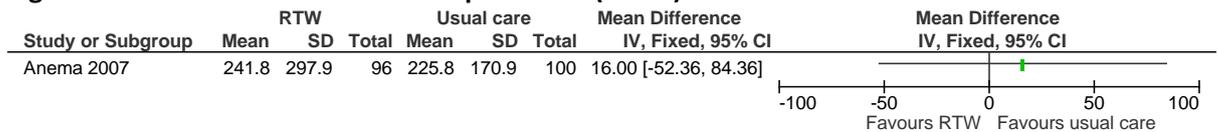
1162

Figure 1059: Return to work > 4 months



1163

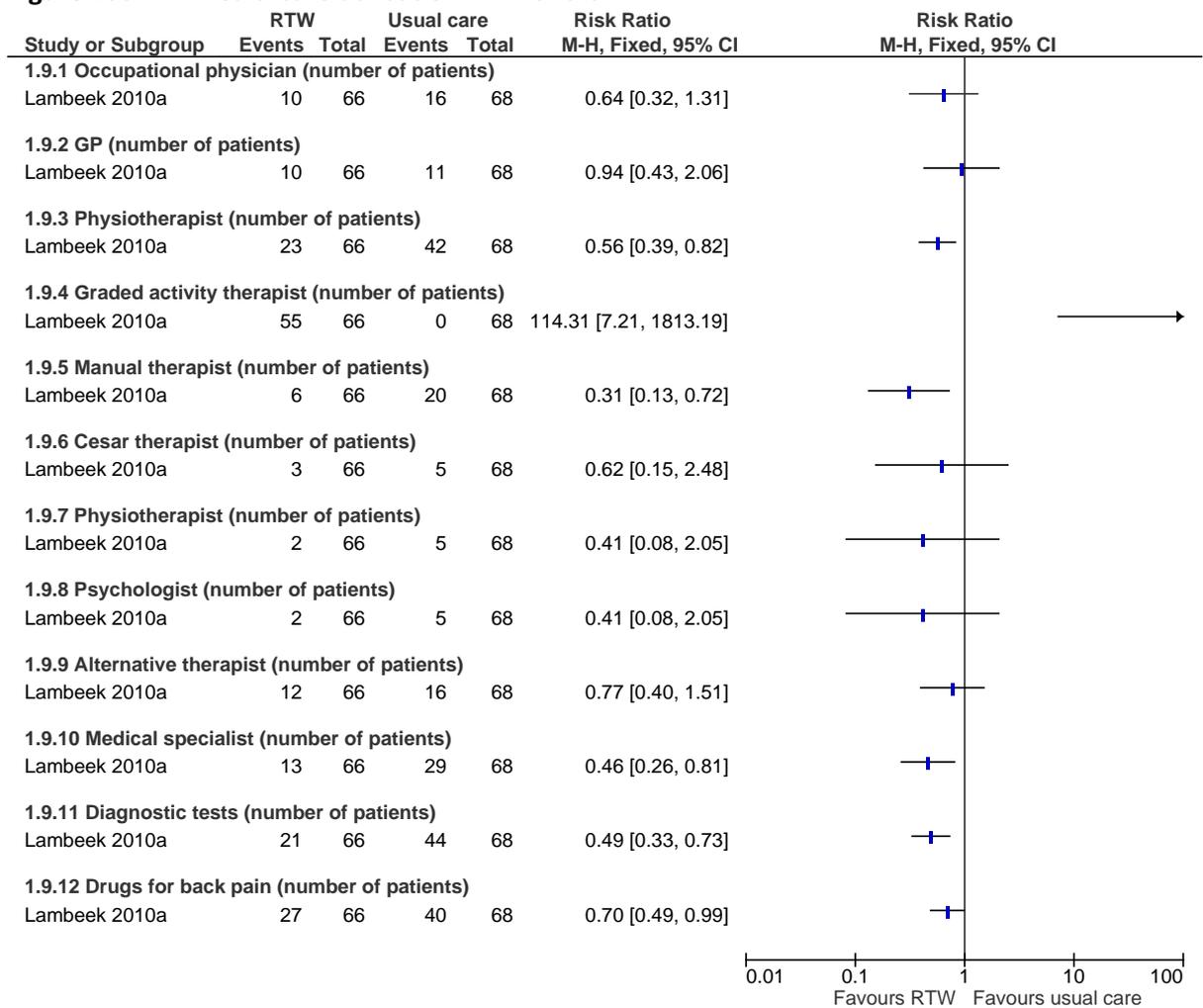
Figure 1060: Absenteeism from unpaid work (hours) > 4 months



1164

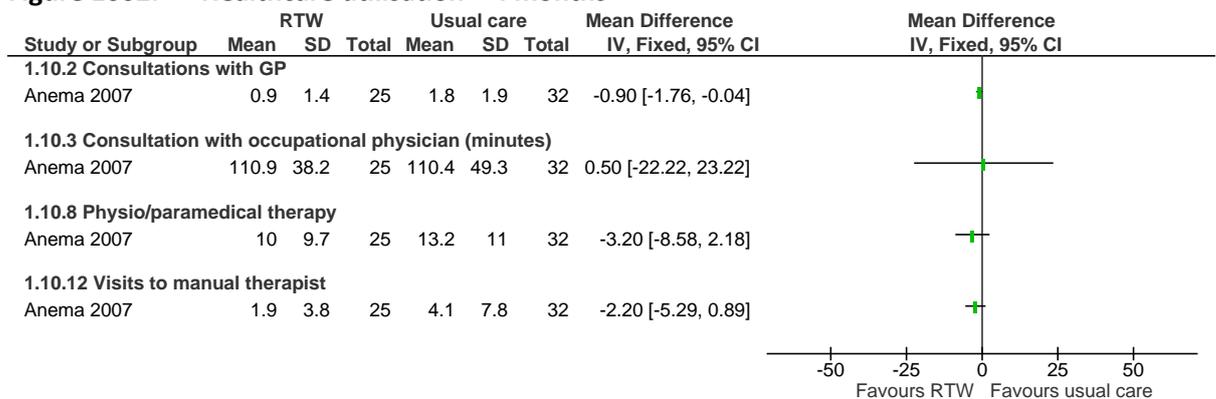
1165

Figure 1061: Healthcare utilisation > 4 months



1166

Figure 1062: Healthcare utilisation > 4 months



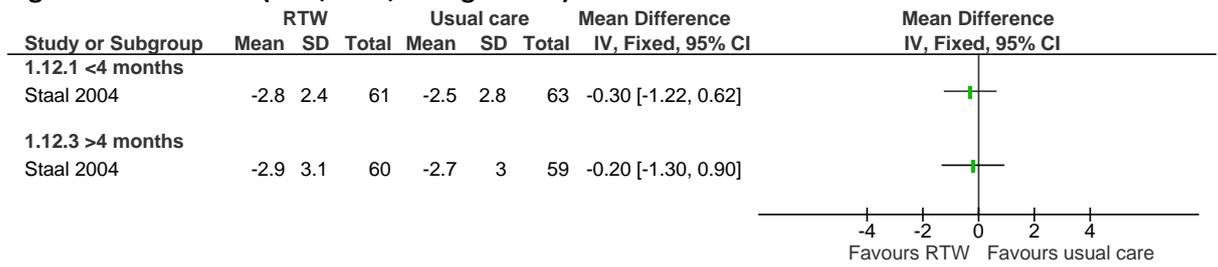
1167

1168

1169

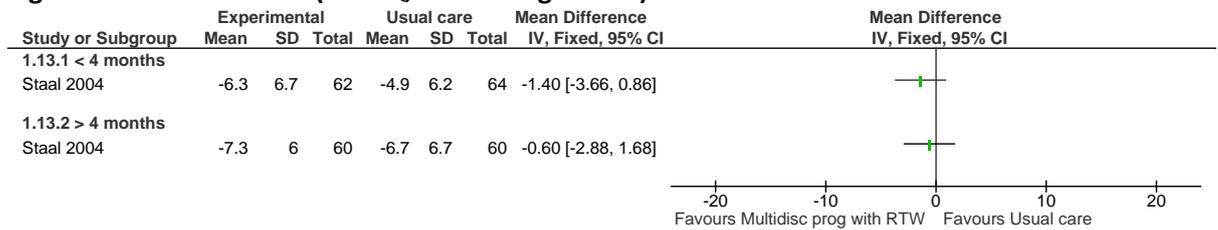
K.14.170.2 Low back pain without sciatica population

Figure 1063: Pain (NRS, 0-10, change score)



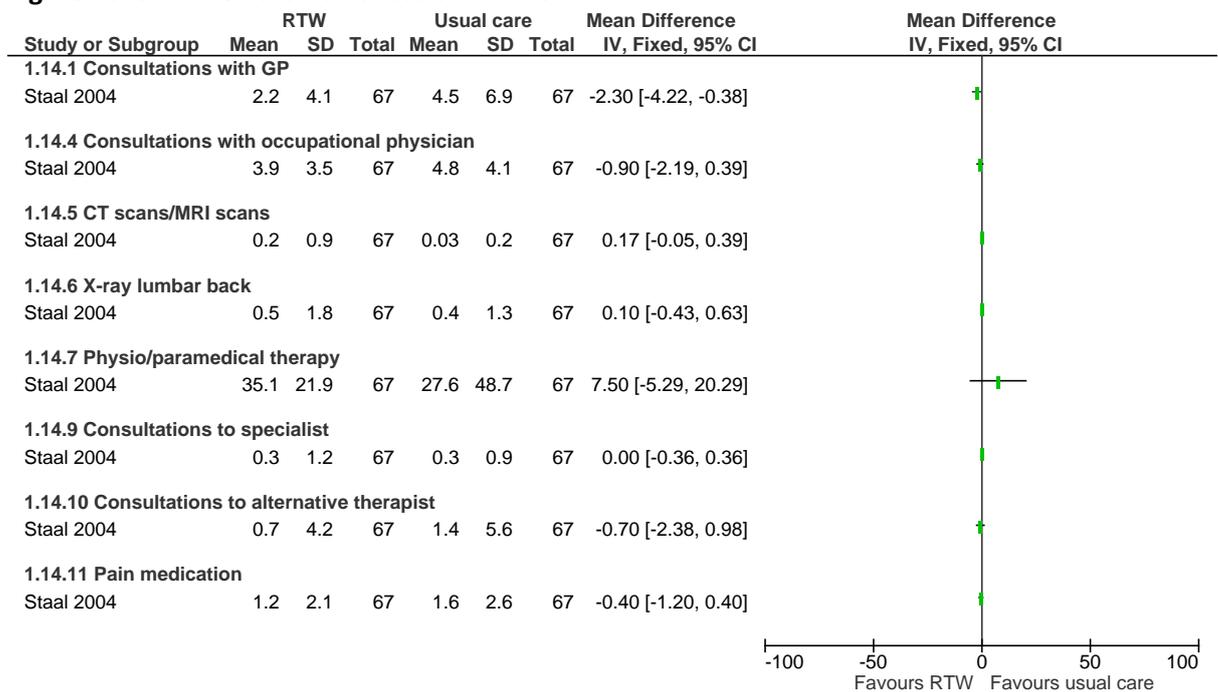
1171

Figure 1064: Function (RMDQ, 0-24 change score)



1172

Figure 1065: Healthcare utilisation > 4 months

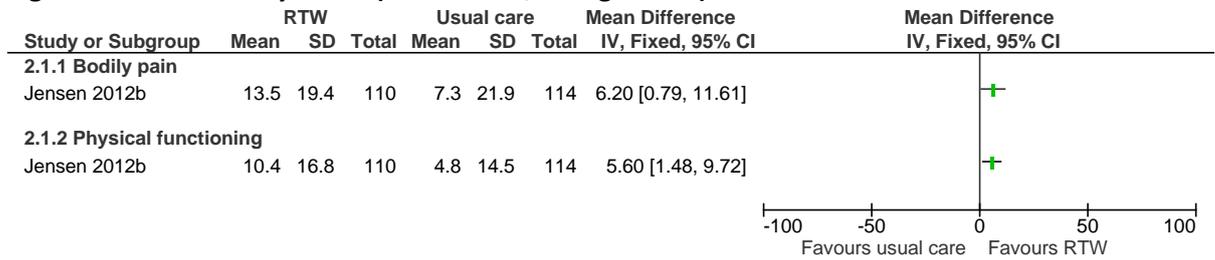


1173

K.14.142 Unidisciplinary programme

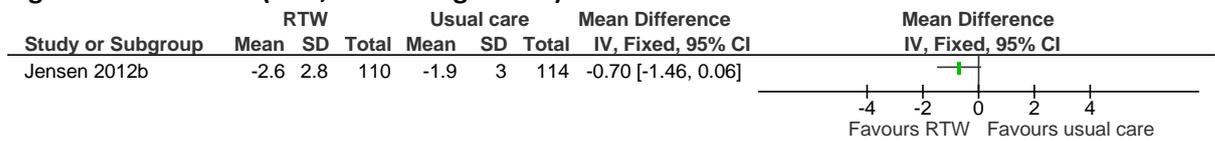
K.14.173.1 Low back pain without sciatica

Figure 1066: Quality of life (SF-36 0-100, change score) ≤ 4 months



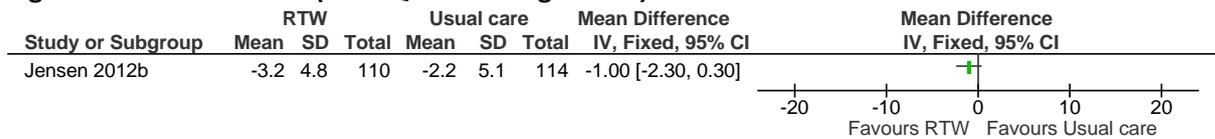
1176

Figure 1067: Pain (NRS, 0-10 change score) ≤ 4 months



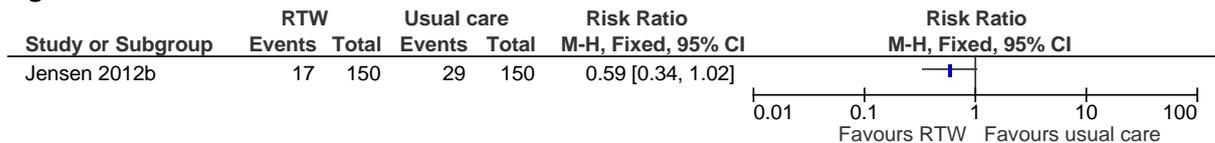
1177

Figure 1068: Function (RMDQ, 0-24 change score) ≤ 4 months



1178

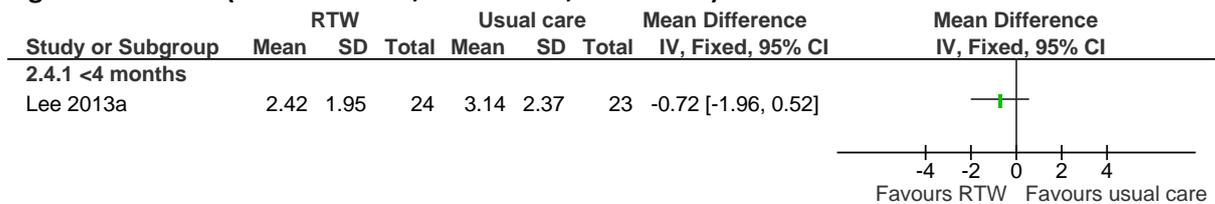
Figure 1069: Sick leave ≤ 4 months



K1142 Individually delivered return to work programme versus combination of interventions

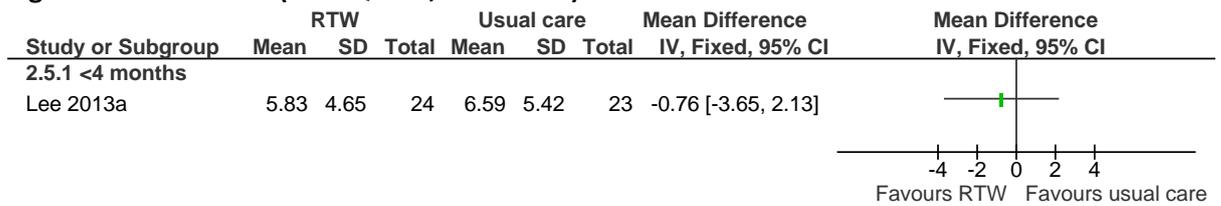
K.14.201 Low back pain without sciatica

Figure 1070: Pain (Pain level 0-10, final values, ≤4 months)



1181

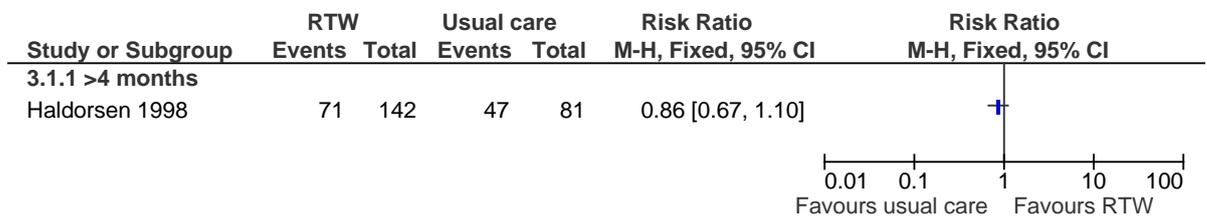
Figure 1071: Function (RMDQ 0-24, final value) ≤4 months



K1143 Mixed group and individually delivered return to work programme versus usual care

K.11331 Low back pain with or without sciatica

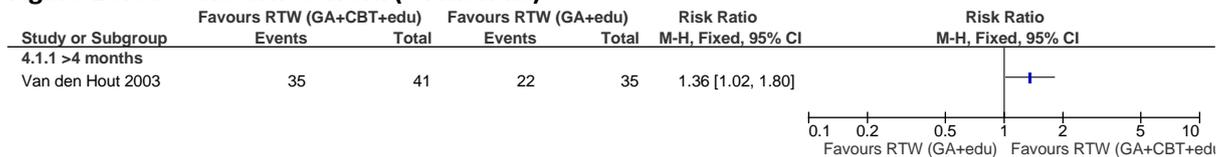
Figure 1072: Return to work (>4 months)



K1144 Mixed group and individually delivered return to work programme (graded activity, CBT and education) versus return to work programme (graded activity and education)
1185

K.11361 Low back pain without sciatica

Figure 1073: Return to work (>4 months)

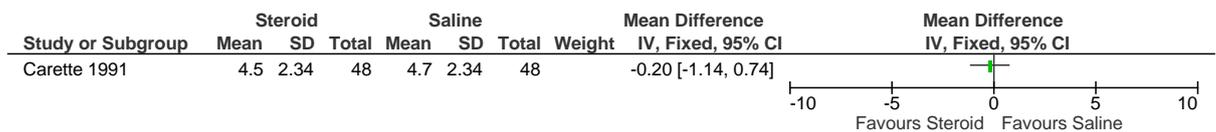


K115 Spinal injections

K1181 Image-guided facet joint injections

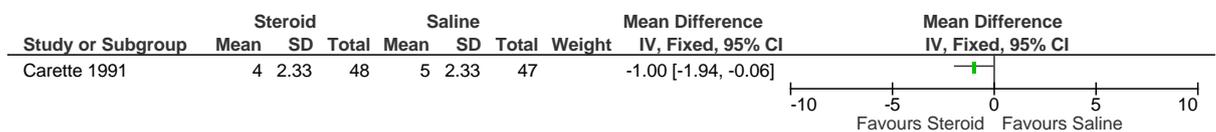
K.11891 Steroid versus saline

Figure 1074: Pain Severity (VAS, 0-10) ≤4 months (Injections at facet joints L4-L5 and L5-S1)



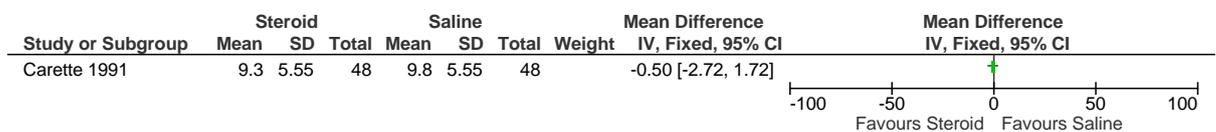
1190

Figure 1075: Pain Severity (VAS, 0-10) >4 months (Injections at facet joints L4-L5 and L5-S1)



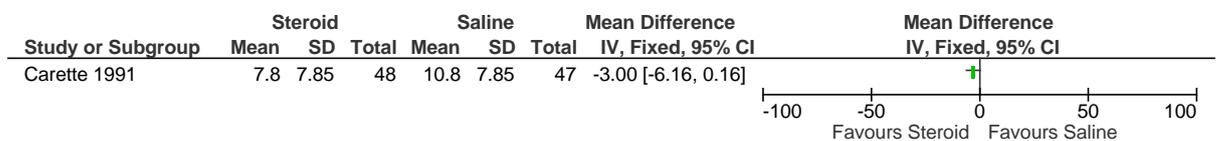
1191

Figure 1076: Function (Mean Sickness Impact Profile(MSIP), 0-100) ≤4 months (Injections at facet joints L4-L5 and L5-S1)



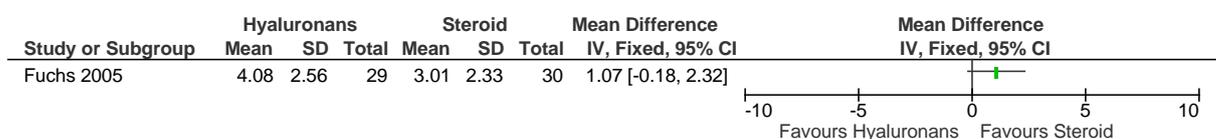
1192

Figure 1077: Function (Mean Sickness Impact Profile(MSIP), 0-100) >4 months (Injections at facet joints L4-L5 and L5-S1)



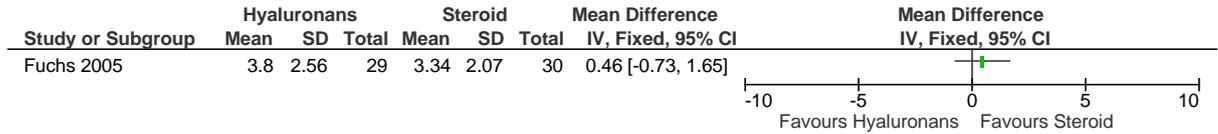
K.11932 Steroid versus hyaluronans

Figure 13: Pain Severity (VAS, 0-10) ≤4 months (Intra-articular injections at facet joints L4-L5, L5-L4 and L4-L3)



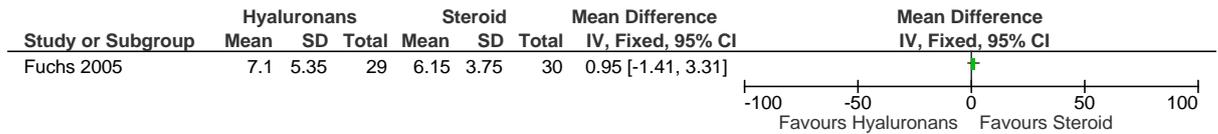
1194

Figure14: Pain Severity (VAS, 0-10) >4 months (Intra-articular injections at facet joints L4-L5,L5-L4 and L4-L3)



1195

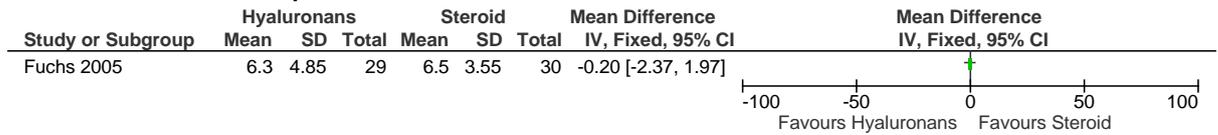
Figure 1078: Function (ODI, 0-100) ≤4 months (Intra-articular injections at facet joints L4-L5,L5-L4 and L4-L3)



Note: Data taken from same study population

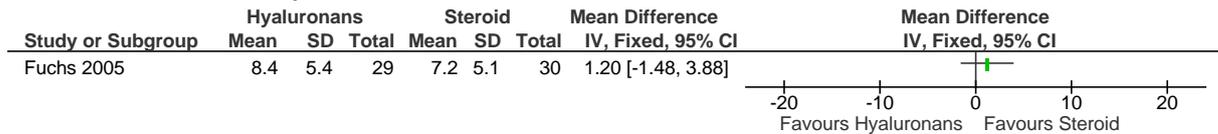
1196

Figure 1079: Function (ODI,0-100) >4 months (Intra-articular injections at facet joints L4-L5,L5-L4 and L4-L3)



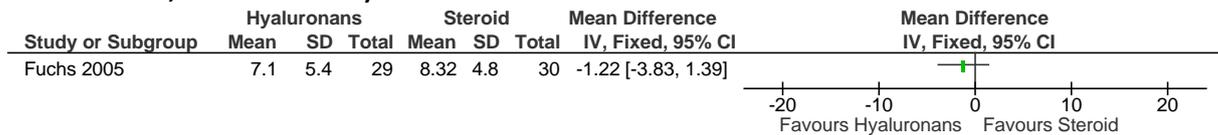
1197

Figure 1080: Function (RMDQ,0-24) ≤4 months (Intra-articular injections at facet joints L4-L5,L5-L4 and L4-L3)



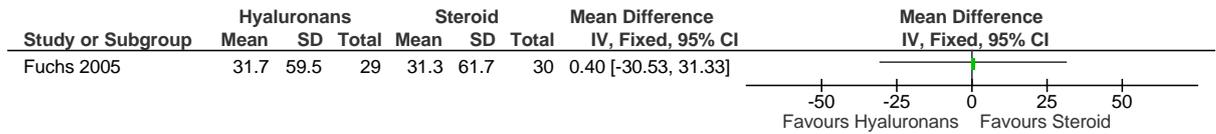
1198

Figure 1081: Function (RMDQ, 0-24) >4 months (Intra-articular injections at facet joints L4-L5,L5-L4 and L4-L3)



1199

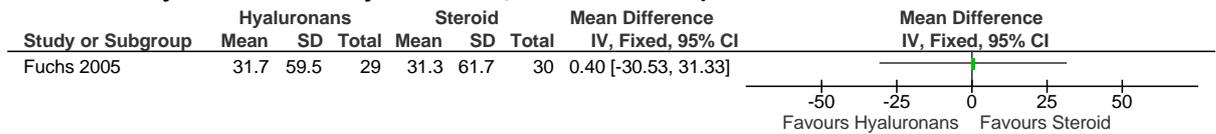
Figure 1082: Function (Low Back Outcome Score (LBOS), 0-75) ≤4 months (Intra-articular injections at facet joints L4-L5,L5-L4 and L4-L3)



Note: High is poor outcome

1200

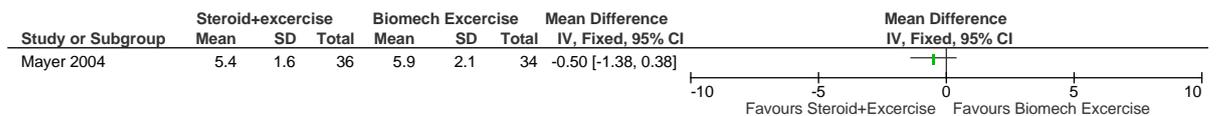
Figure 1083: Function (Low Back Outcome Score (LBOS), 0-75) >4 months (Intra-articular injections at facet joints L4-L5,L5-L4 and L4-L3)



Note: High is poor outcome

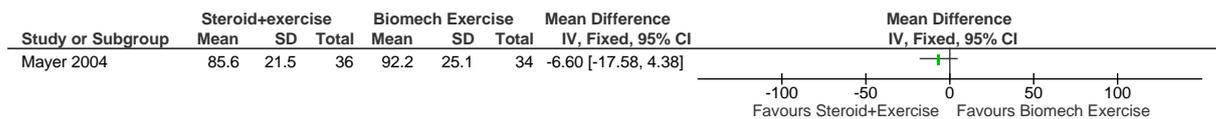
K.12013 Steroid plus biomechanical exercise versus Biomechanical exercise

Figure 1084: Pain Severity (VAS, 0-10) ≤4 months (Intra-articular injections at facet joints)



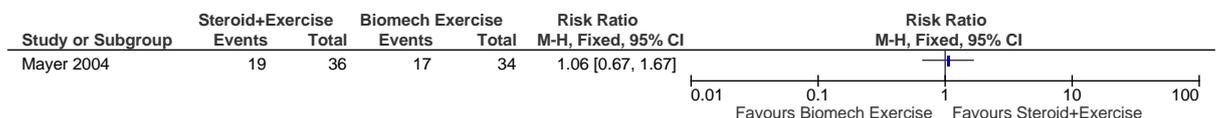
1202

Figure 1085: Function (MVAS, 0-150) ≤4 months (Intra-articular injections at facet joints)



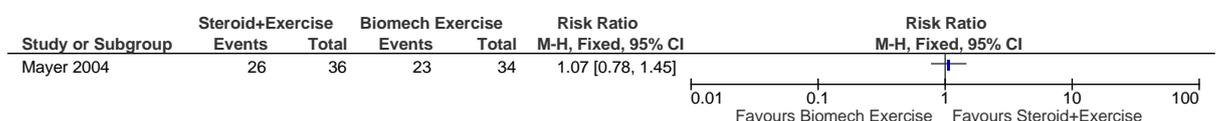
1203

Figure 1086: Responder Criteria (pain improvement >50%) ≤4 months (Intra-articular injections at facet joints)



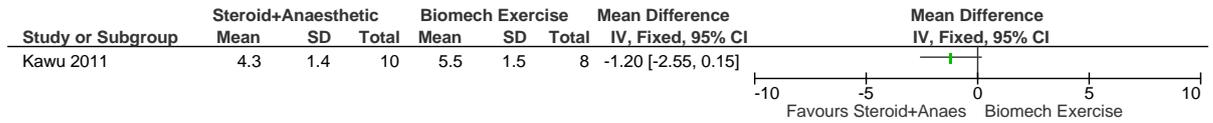
1204

Figure 1087: Responder Criteria (disability >50%) ≤4 months (Intra-articular injections at facet joints)



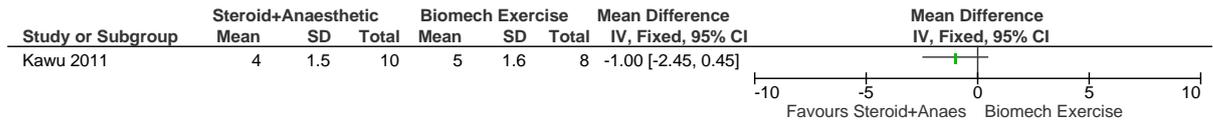
K.12054 Steroid plus anaesthetic versus Biomechanical Exercise (Cohort)

Figure 1088: Pain Severity (VAS, 0-10) ≤4 months (Injections at facet joints)



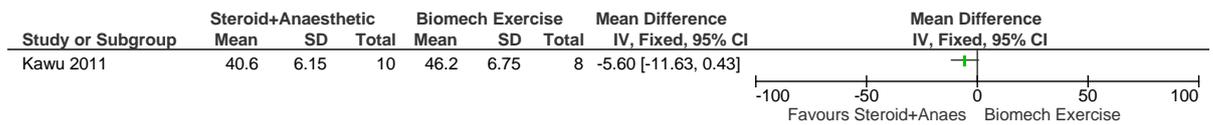
1206

Figure 1089: Pain Severity (VAS, 0-10) >4 months (Injections at facet joints)



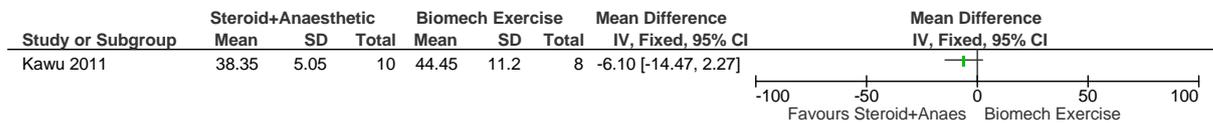
1207

Figure 1090: Function (ODI, 0-100) ≤4 months (Injections at facet joints)



1208

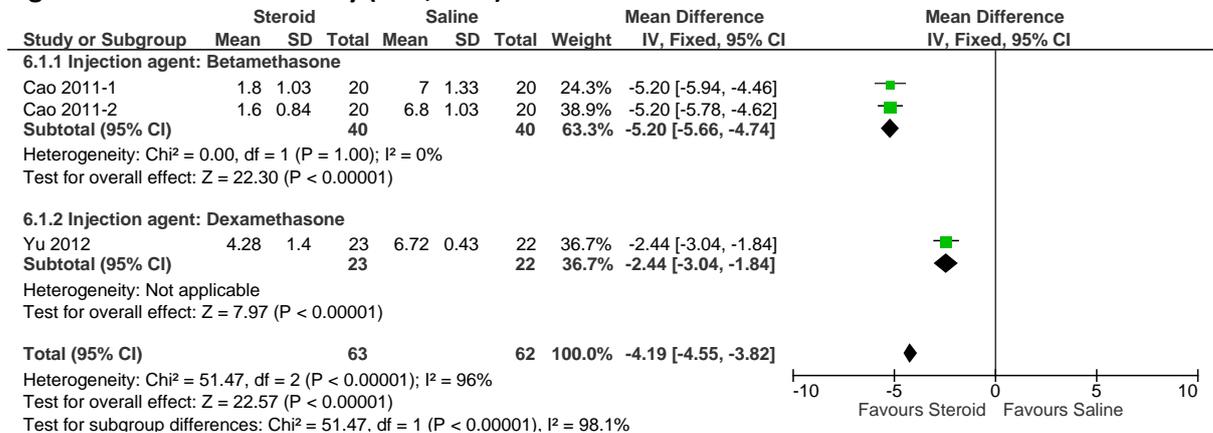
Figure 1091: Function (ODI, 0-100) >4 months (Injections at facet joints)



K1252 Other image guided injections

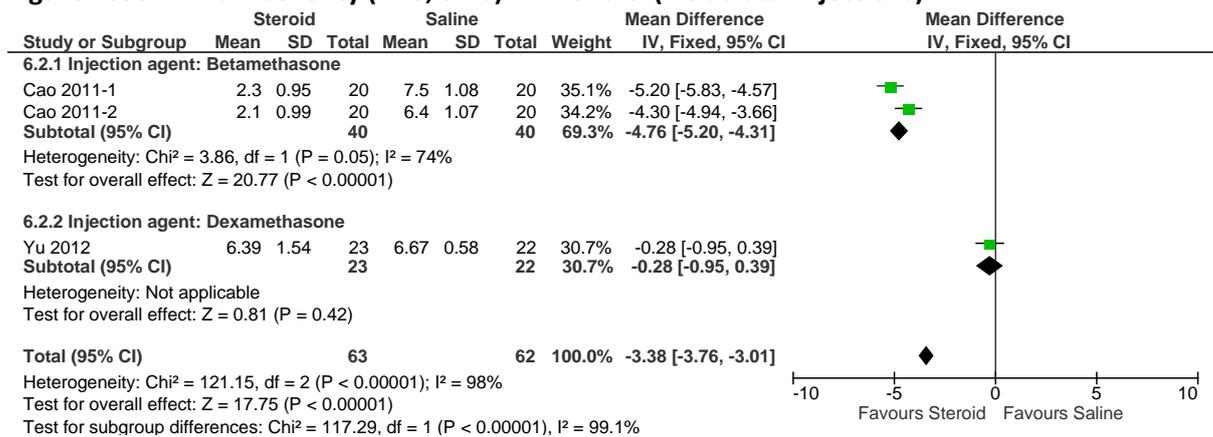
K.12001 Steroid versus saline (intradiscal injections)

Figure 1092: Pain Severity (VAS, 0-10) ≤4 months



1211

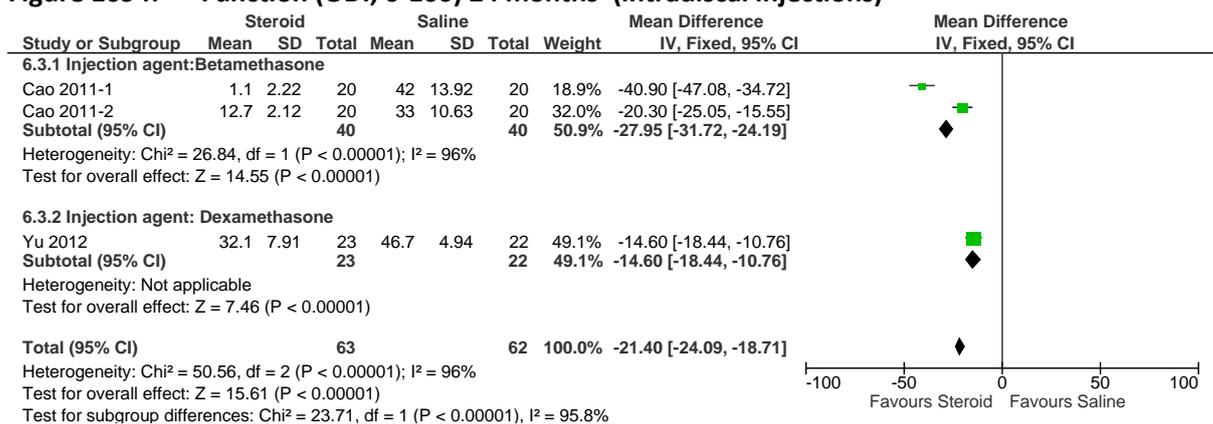
Figure 1093: Pain Severity (VAS, 0-10) >4 months (intradiscal injections)



Note: The population in Cao 2011-1 included patients with end plate Modic Type 1 changes whereas the population of patients in Cao 2011-2 included patients with end plate Modic Type 2 changes (two distinct populations). The pre-specified sub-group analysis for heterogeneity was 'choice of agent' but the agent injected in both these studies was the same.

1212

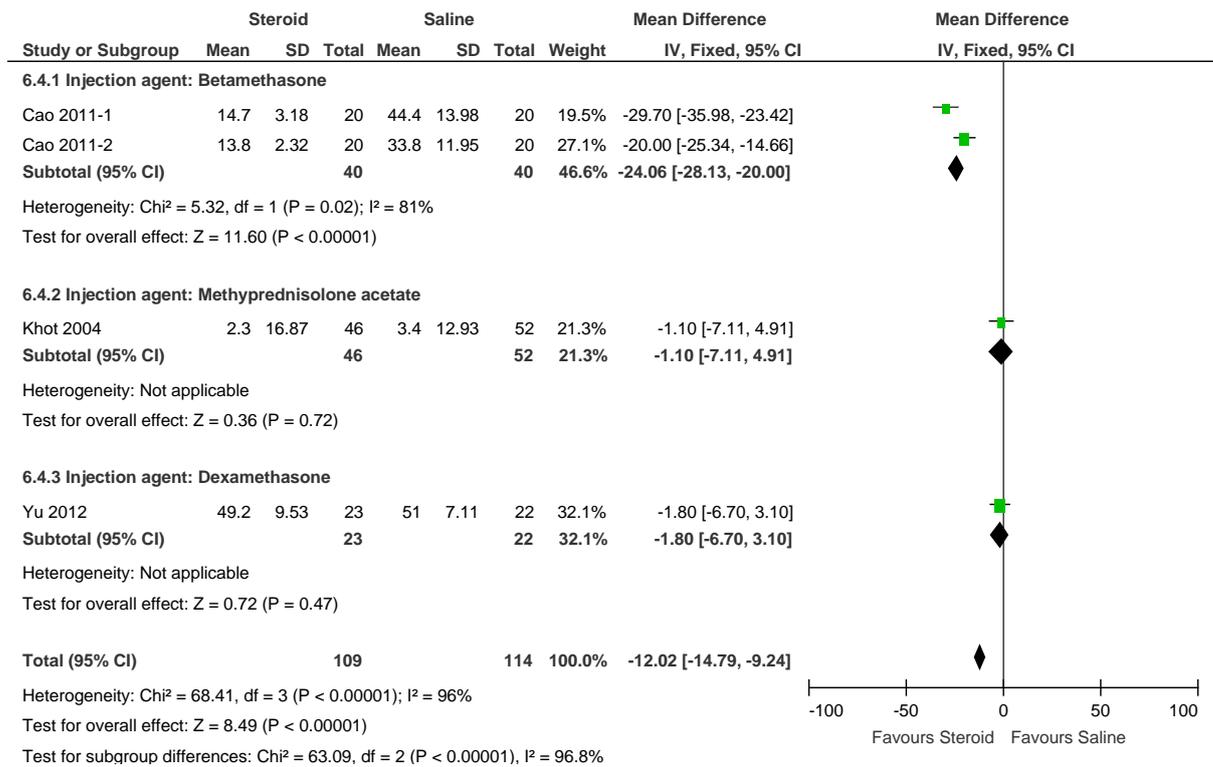
Figure 1094: Function (ODI, 0-100) ≤4 months (intradiscal injections)



Note: The population in Cao 2011-1 included patients with end plate Modic Type 1 changes whereas the population of patients in Cao 2011-2 included patients with end plate Modic Type 2 changes (two distinct populations). The pre-specified sub-group analysis for heterogeneity was 'choice of agent' but the agent injected in both these studies was the same.

1213

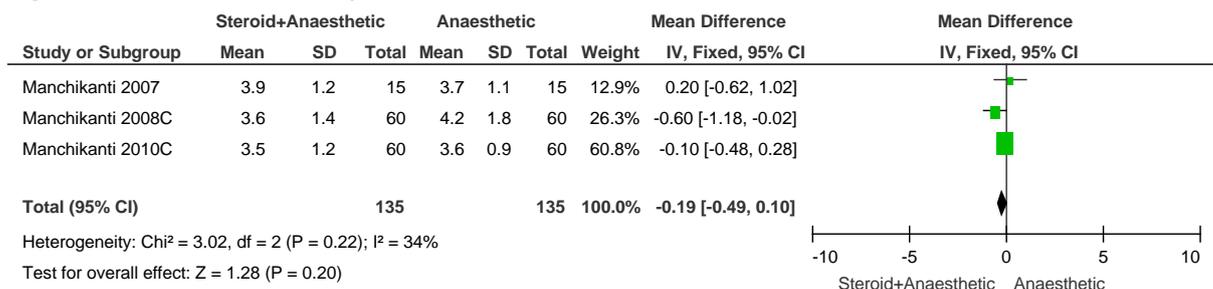
Figure 1095: Function (ODI,0-100) >4 months (intradiscal injections)



Note: The population in Cao 2011-1 included patients with end plate Modic Type 1 changes whereas the population of patients in Cao 2011-2 included patients with end plate Modic Type 2 changes (two distinct populations). The pre-specified sub-group analysis for heterogeneity was 'choice of agent' but the agent injected in both these studies was the same.

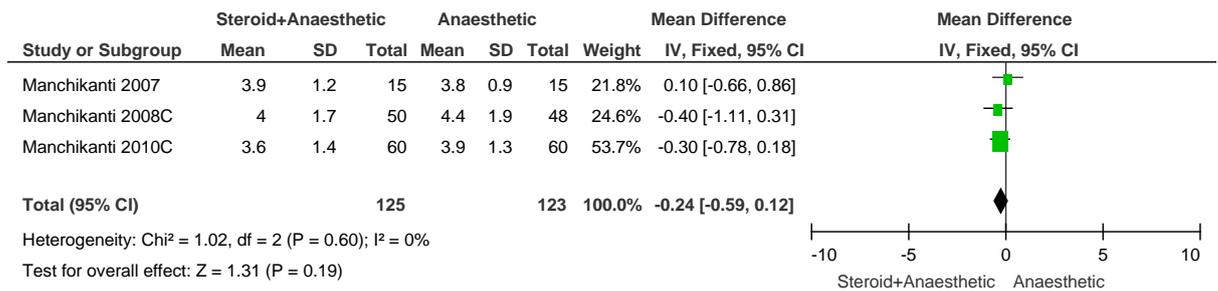
K.12.242 Steroid plus anaesthetic versus anaesthetic (caudal, interlaminar and

Figure 1096: Pain Severity (NRS, 0-10) ≤4 months



1215

Figure 1097: Pain Severity (NRS, 0-10) >4 months



1216

Figure 1098: Function (ODI, 0-100) ≤4 months

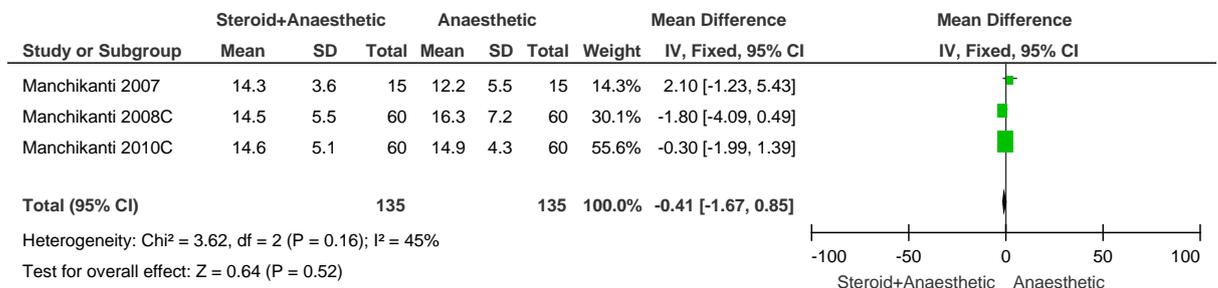
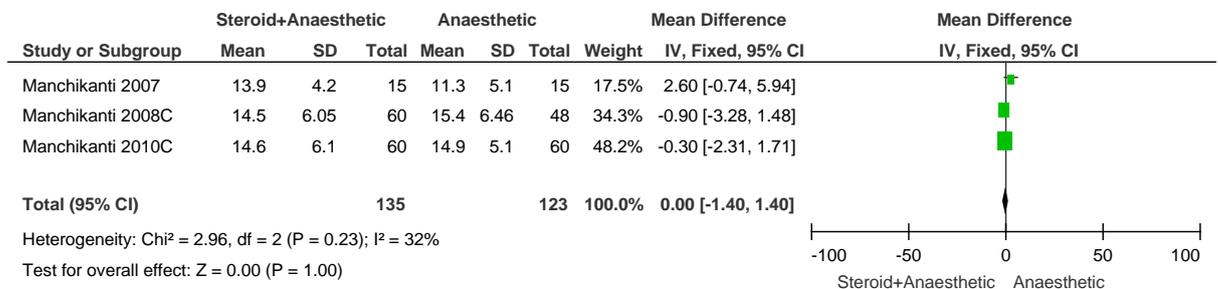
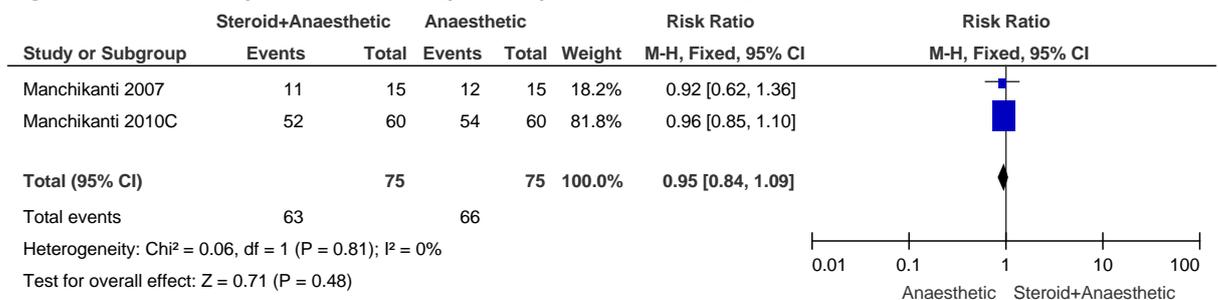


Figure 1099: Function (ODI,0-100) >4 month



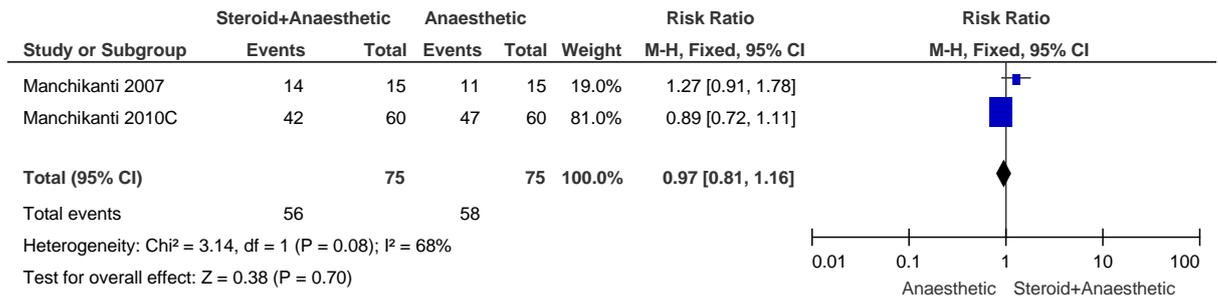
1217

Figure 1100: Responder Criteria (pain Improvement >50%) ≤4 months



1218

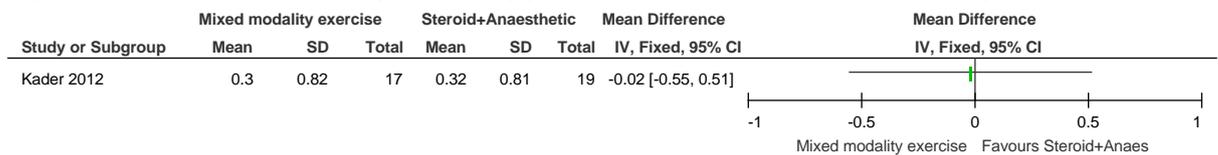
Figure 1101: Responder Criteria (pain Improvement >50%) >4 months



1219

K.12.203 Steroid plus anaesthetic versus mixed modality exercise

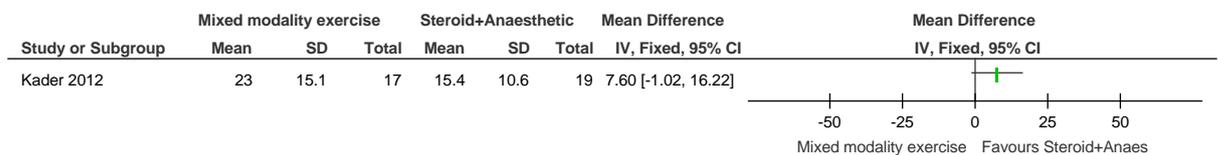
Figure 1102: Quality of life (EQ-5D,0-1) (Perifacet injections at L4/5 and L4/SI)



Note: High is good outcome

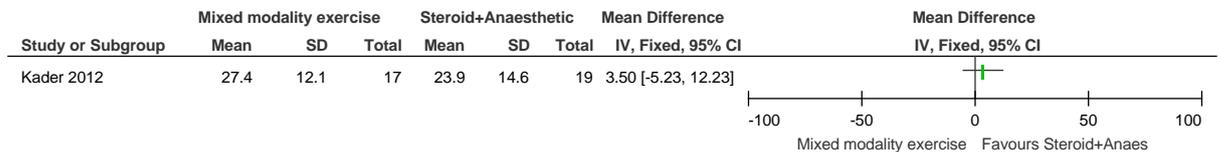
1221

Figure 1103: Pain Severity (McGill,0-78) ≤4 months (Perifacet injections at L4/5 and L4/SI)



1222

Figure 1104: Function (ODI, 0-100) ≤4 months (Perifacet injections at L4/5 and L4/SI)

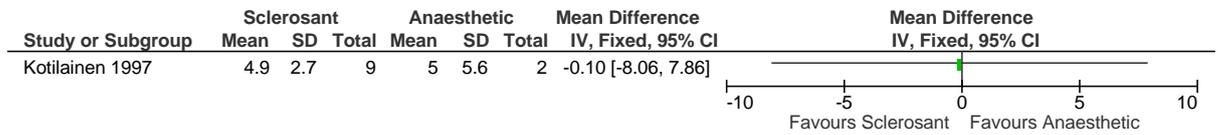


1223

K.1253 Prolotherapy injections

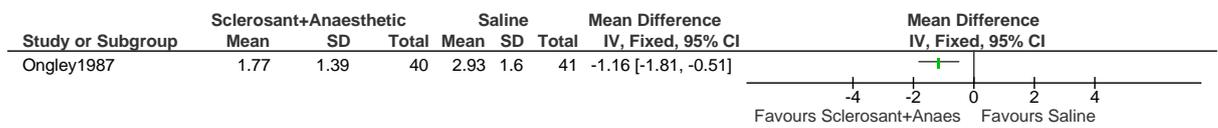
K.1251 Sclerosant versus anaesthetic

Figure 1105: Pain Severity (VAS, 0-10) ≤4 months (Intradiscal injection)



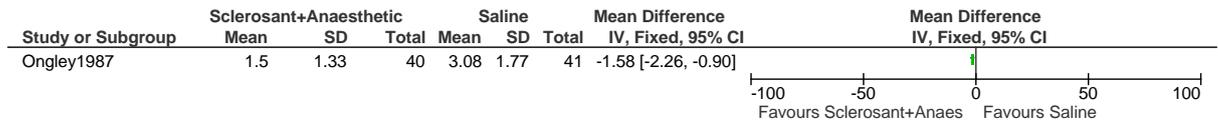
K.1252 Sclerosants plus anaesthetic versus saline

Figure 1106: Pain Severity (VAS, 0-7.5) ≤4 months (Injections at various sites)



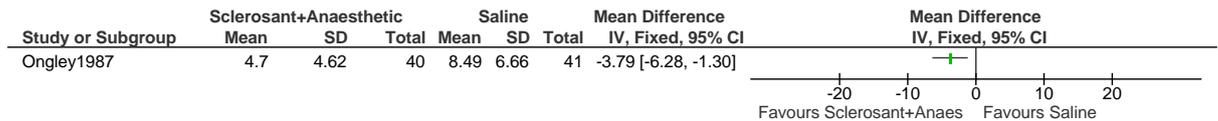
1227

Figure 1107: Pain Severity (VAS, 0-7.5) >4 months (Injections at various sites)



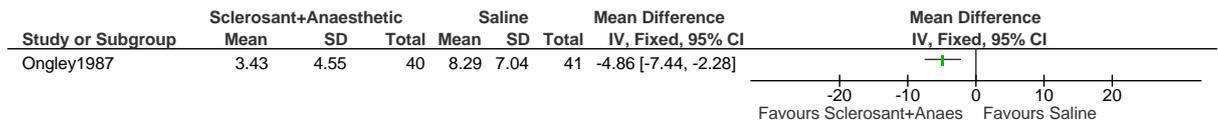
1228

Figure 1108: Function (RMDQ, 0-33) ≤4 months (Injections at various sites)



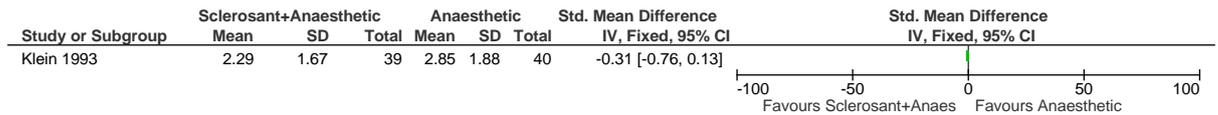
1229

Figure 1109: Function (RMDQ, 0-33) >4 months (Injections at various sites)



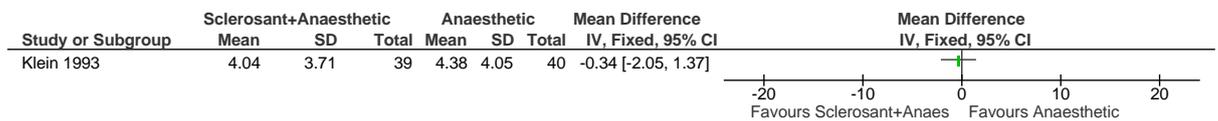
K.12303 Sclerosants plus anaesthetic versus anaesthetic

Figure 1110: Pain Severity (VAS, 0-8) >4 months (Injections at various sites)



1231

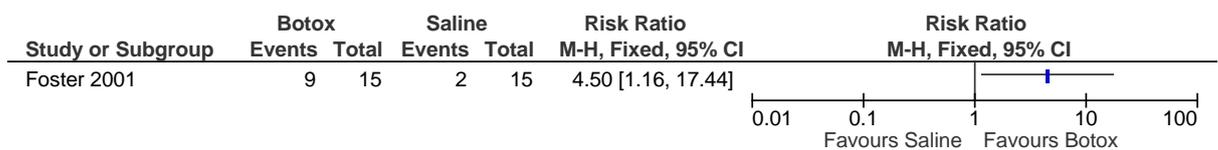
Figure 1111: Function (RMDQ,0-24) >4 months (Injections at various sites)



K1254 Other non-image-guided injections

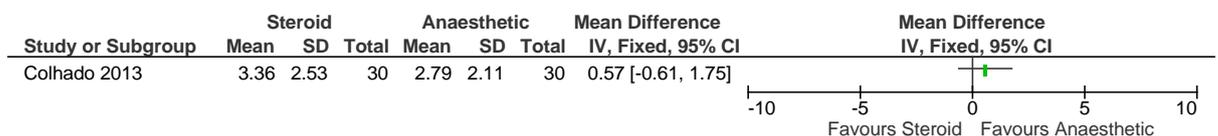
K.12331 Botulinum toxin versus saline

Figure 1112: Responder Criteria (pain Improvement >50%) ≤4 months (Injections at L1-L5 or L2-S1)



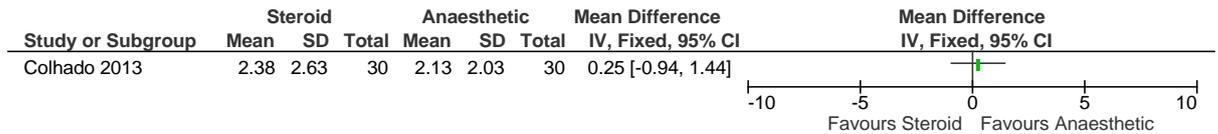
K.12342 Steroid plus anaesthetic versus steroid

Figure 1113: Pain Severity (VAS, 0-10 (First Block) ≤4 month (Epidural Blocks)



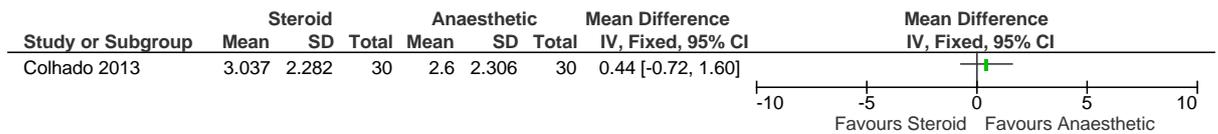
1235

Figure 1114: Pain Severity (VAS, 0-10) (Second Block) ≤4 month (Epidural Blocks)



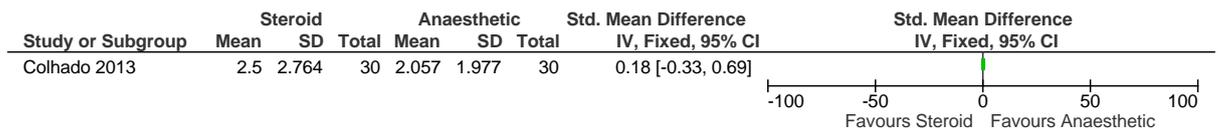
1236

Figure 1115: Pain Severity (NRS, 0-10) (First Block) ≤4 month (Epidural Blocks)



1237

Figure 1116: Pain Severity (NRS, 0-10) (Second Block) ≤4 month (Epidural Blocks)

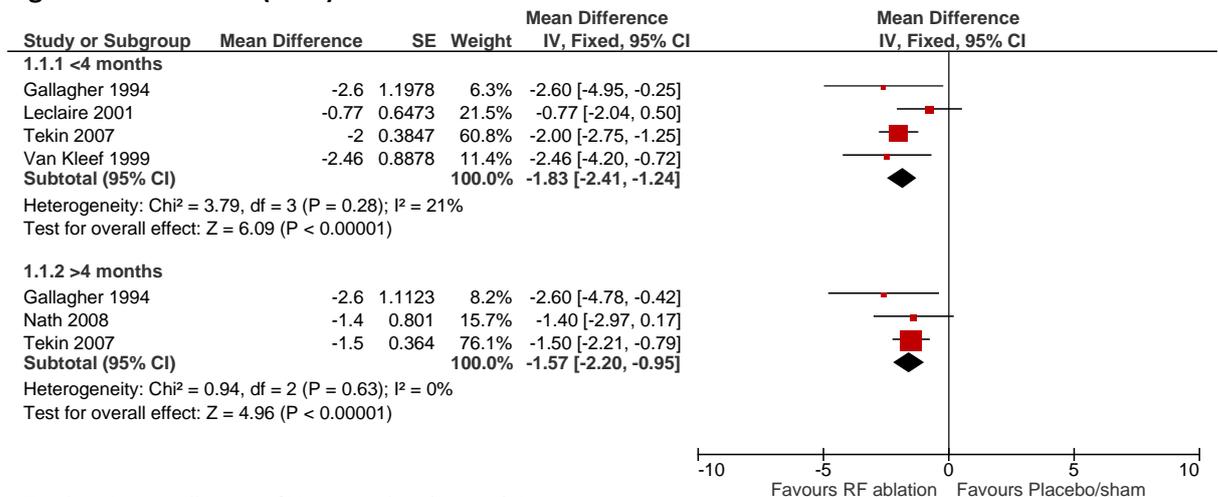


1238

K216 Radiofrequency denervation

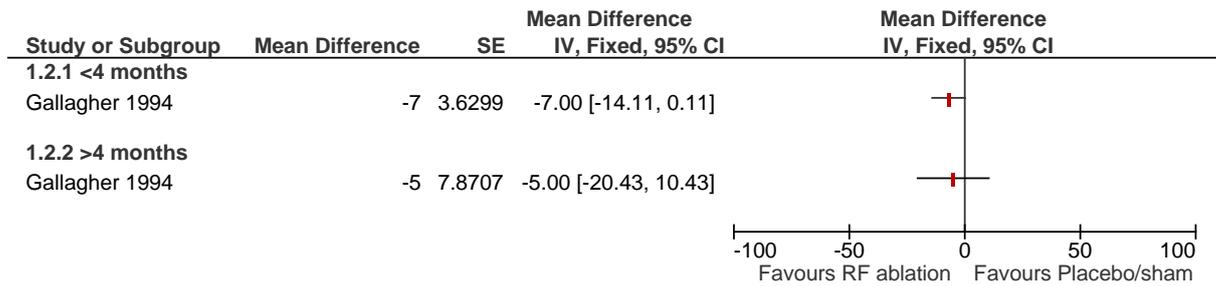
K12601 Radiofrequency denervation versus placebo/sham

Figure 1117: Pain (VAS) 0-10



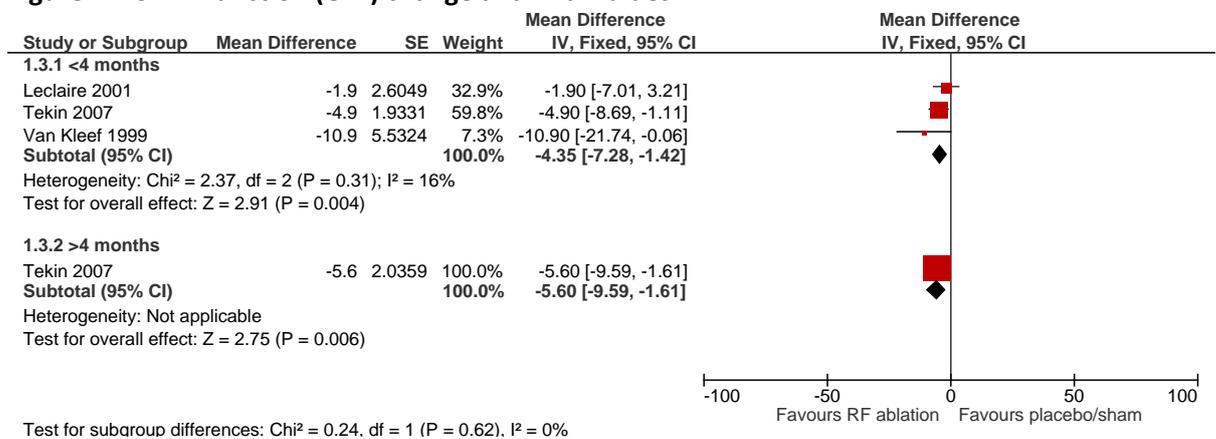
1241

Figure 1118: Pain (McGill)



1242

Figure 1119: Function (ODI) change and final values



1243

Figure 1120: Function (RMDQ) 0-100 change and final values study says positive value = improvement

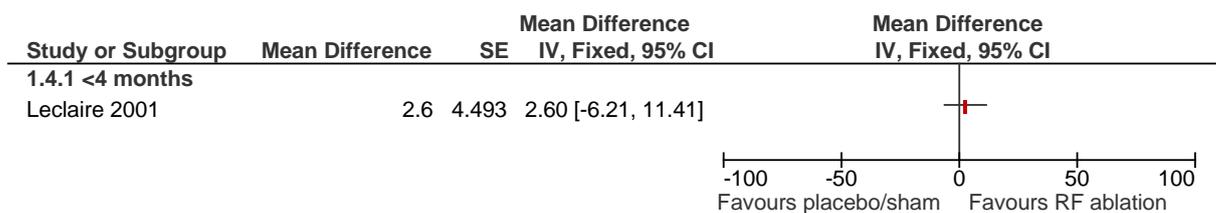
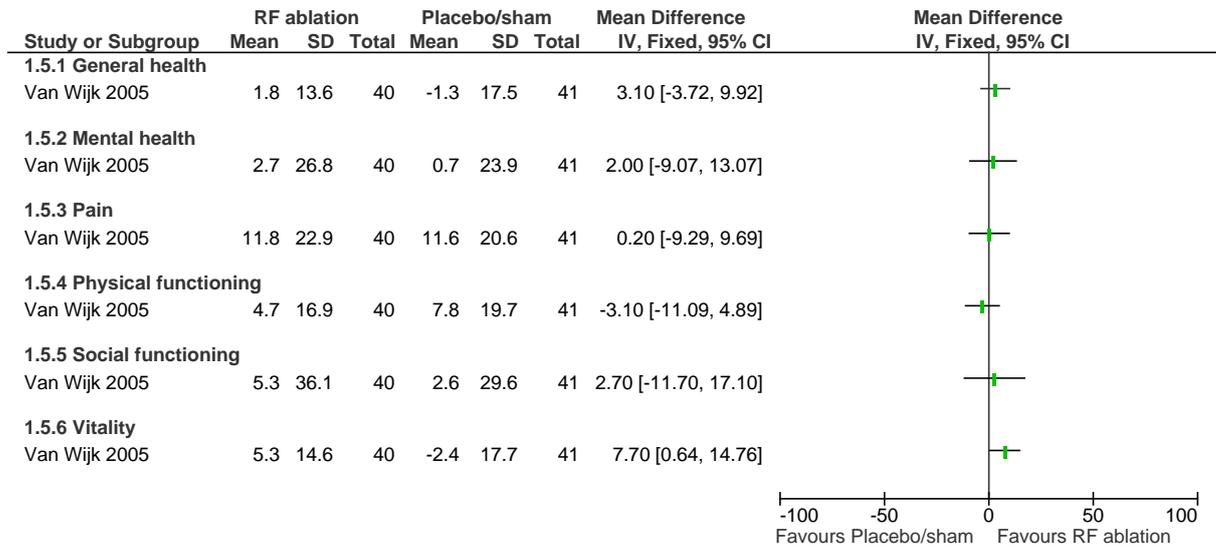
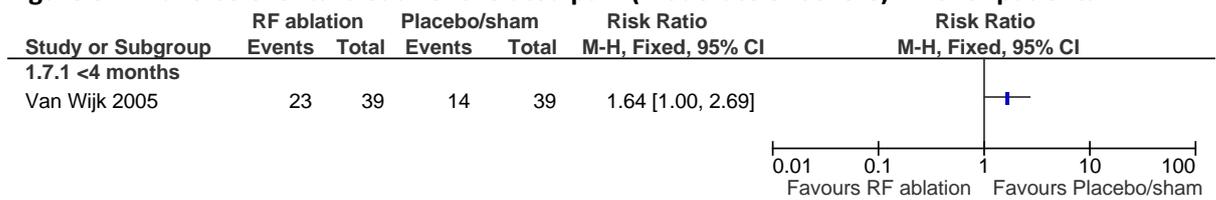


Figure 1121: Quality of life (SF-36) ≤ 4 months



1244

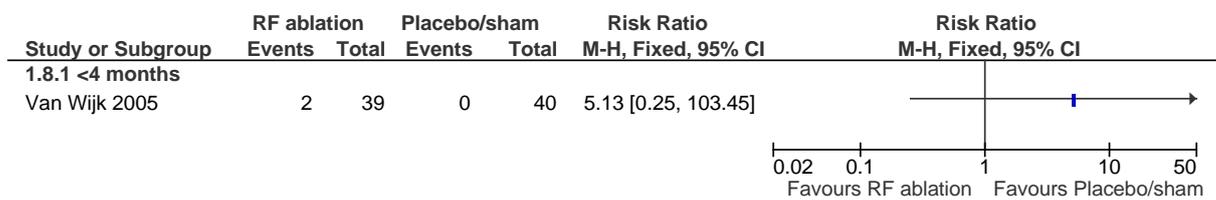
Figure 8: Adverse events: treatment related pain (moderate or severe) – no. of patients



1245

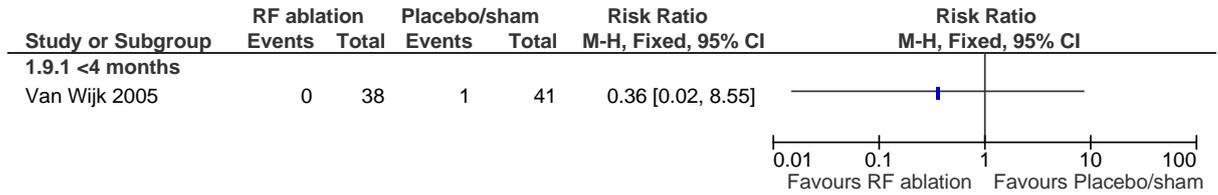
1246

Figure 9: Adverse events: change of sensibility (irritating or evident dysaesthesia or allodynia) – no. of patients



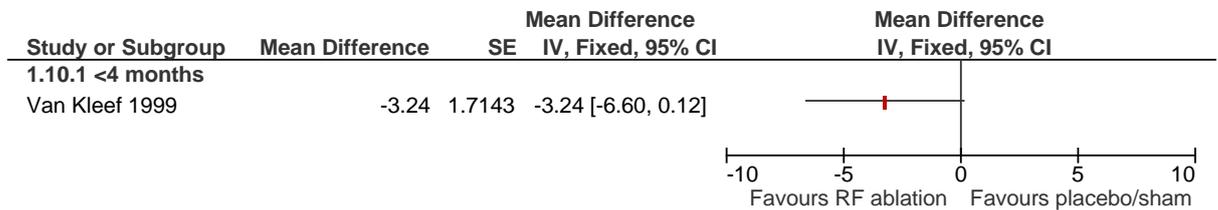
1247

Figure 10: Adverse events: loss of motor function (irritating or evident motor loss) – no. of patients



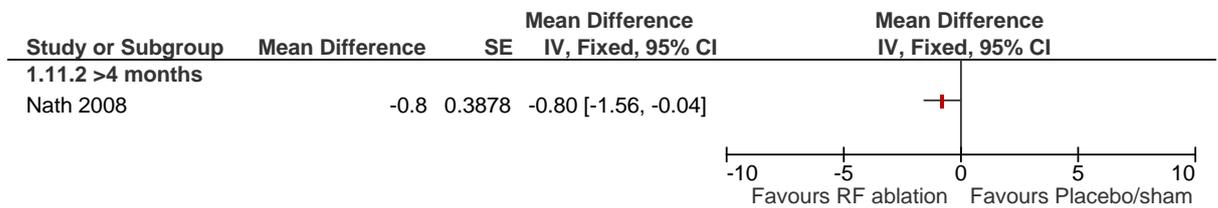
1248

Figure 11: Healthcare utilisation (analgesics) no. of tablets/4 days



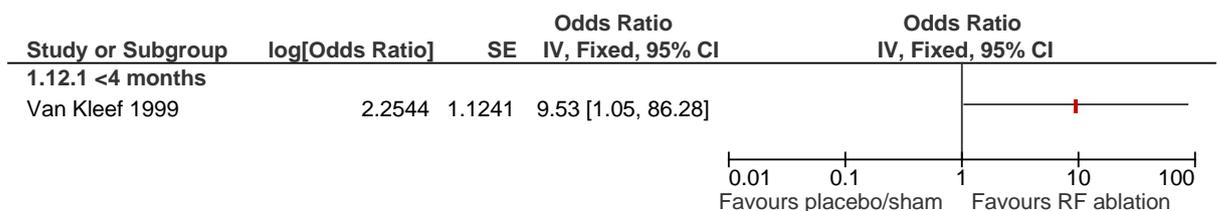
1249

Figure 1122: HC utilisation: analgesic use: global perception of improvement 0-6



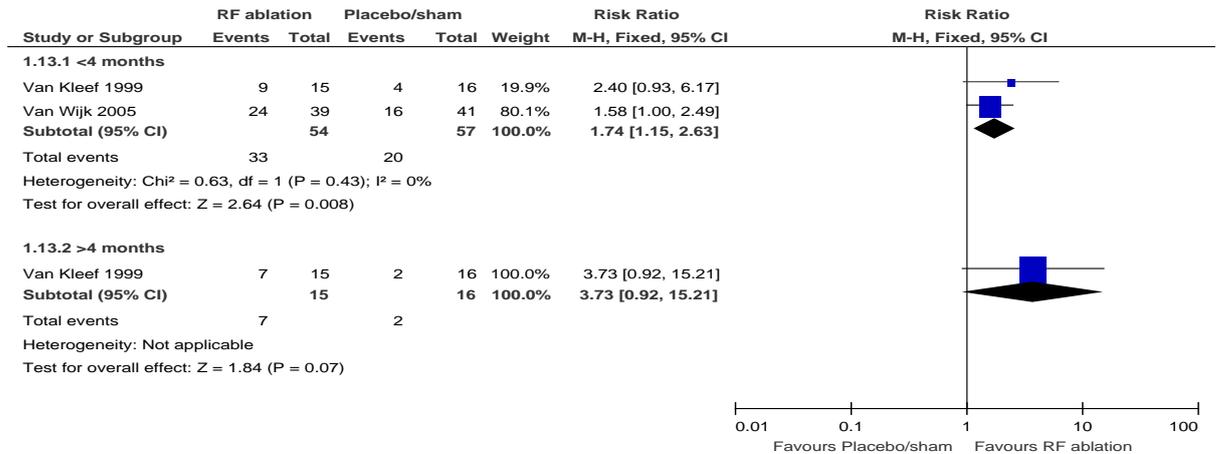
1250

Figure 1123: Responder criteria (% of patients with more than 50% pain reduction – global perceived effect)



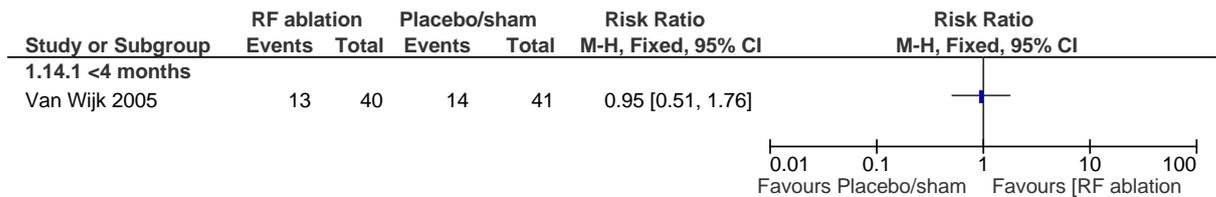
1251

Figure 1124: Responder criteria (no. of patients with more than 50% back pain or pain reduction – global perceived effect)



1252

Figure 1125: Responder criteria (no. of patients with more than 50% back pain reduction – VAS)



K1262 Radiofrequency denervation versus medial branch block

Figure 1126: Pain (VNS) 0-10

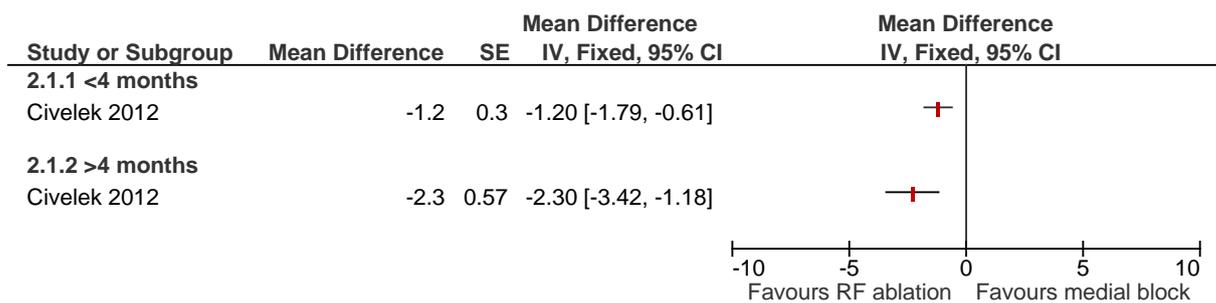
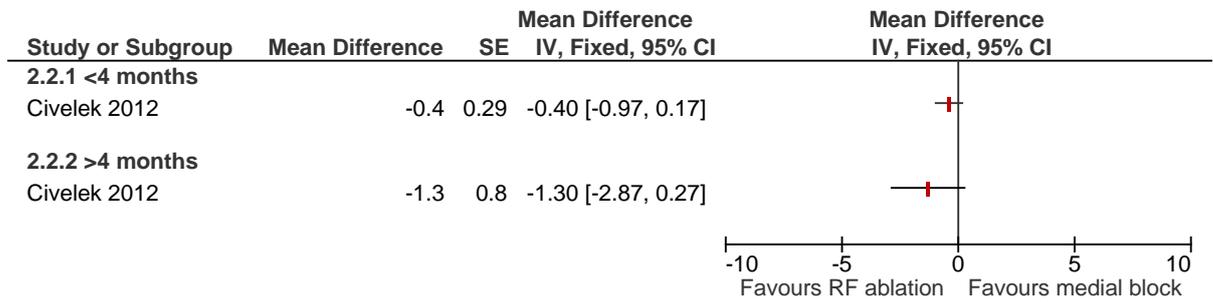


Figure 1127: Quality of life (EQ-5D) 5-15 scale (paper reports low score is better)



1254

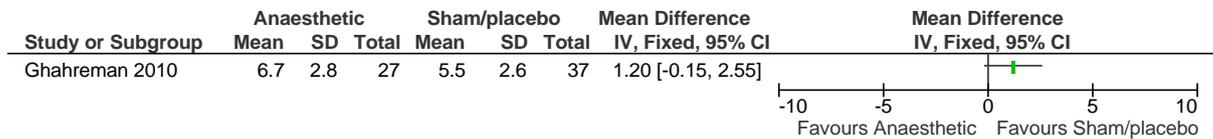
K117 Epidural injections for sciatica

K11761 Image-guided: Steroid versus placebo/sham

1257 No useable data found

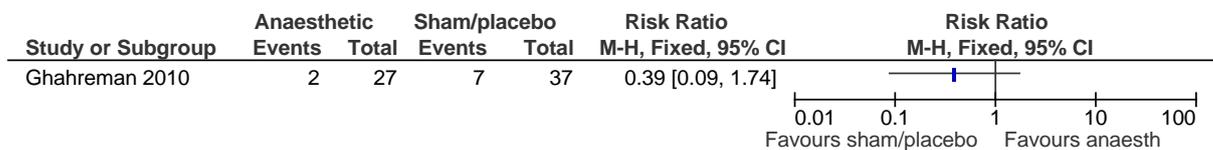
K11782 Image-guided: Anaesthetic versus placebo/sham (≥70% disc prolapse)

Figure 1128: Leg pain (0-10) at ≤4 months



1259 *Follow-up: 1 month*

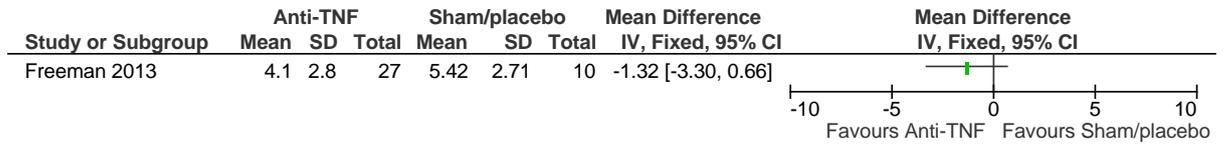
Figure 1129: Responder criteria (>50% reduction in pain) at ≤4 months



1260 *Follow-up: 1 month*

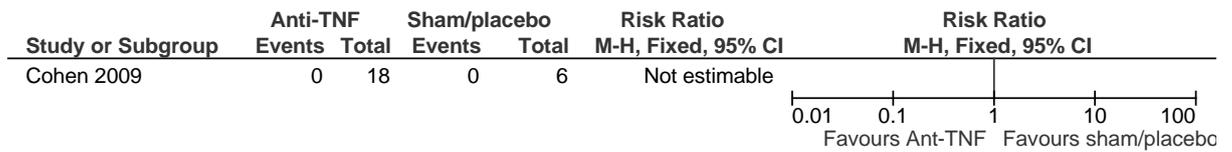
K1273 Image-guided: Anti-TNF versus placebo/sham (≥70% disc prolapse)

Figure 1130: Leg pain (mean daily worst pain, 0-10) at ≤4 months



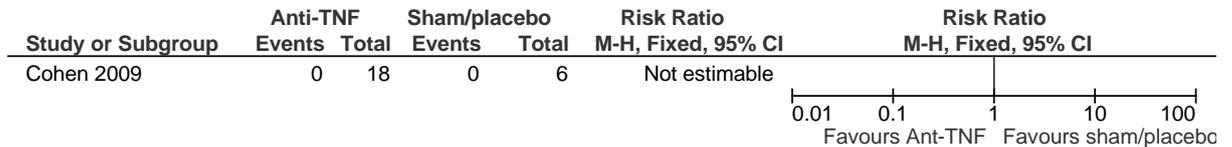
1262 *Follow-up: 5 weeks*

Figure 1131: Adverse events at ≤4 months



Follow-up: 3 months

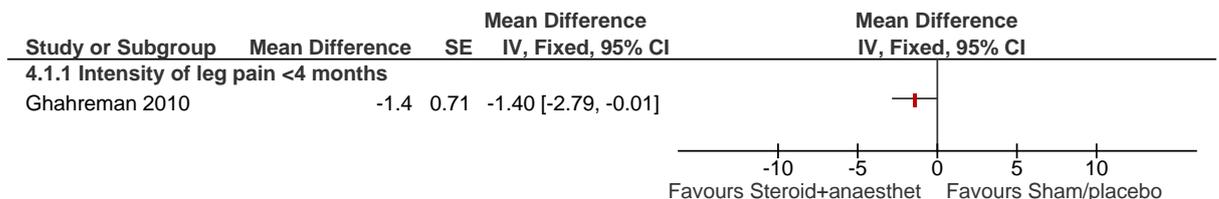
Figure 1132: Adverse events at > 4 months



Follow-up: 6 months

K1274 Image-guided: Steroid + anaesthetic versus placebo/sham (≥70% disc prolapse)

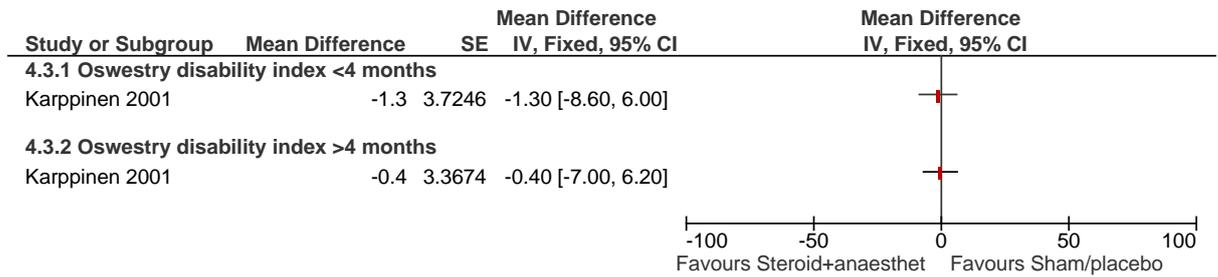
Figure 1133: Leg pain (0-10); final score at ≤4 months



Follow-up: Ghahreman = 1 month

1264

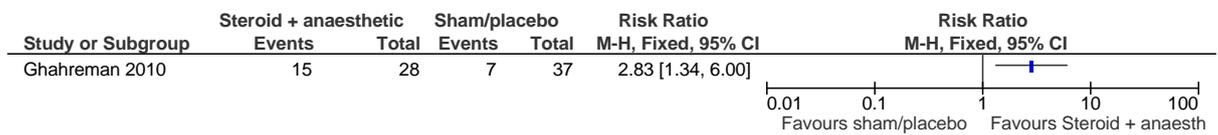
Figure 1134: Function: ODI at ≤4 months and >4 months



1265 *Follow-up: Karppinen = 3 months and 12 months*

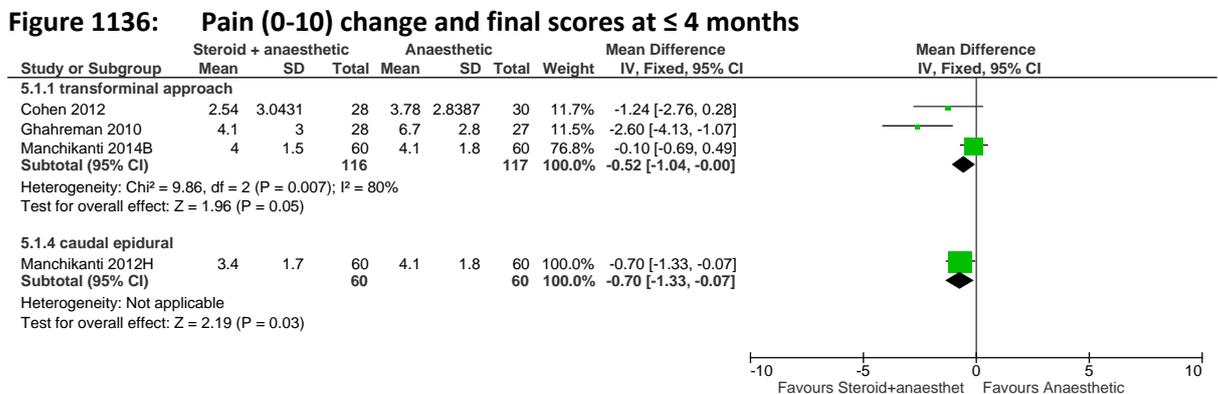
1266

Figure 1135: Responder criteria (>50% reduction in pain) at ≤4 months



1267 *Follow-up: 1 month*

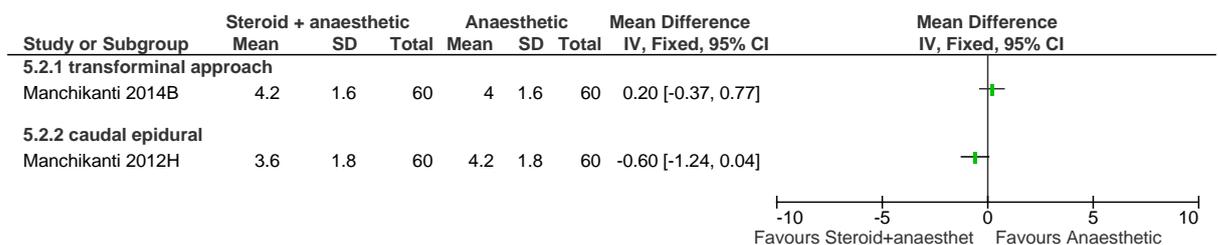
Figure 1136: Pain (0-10) change and final scores at ≤ 4 months



1269 *Follow-up: Cohen = 1 month; Ghahreman = 1 month; Manchikanti 2012H and 2014B = 3 months*

1270

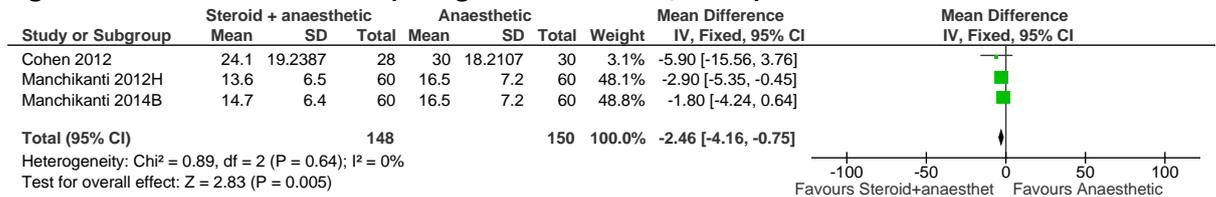
Figure 1137: Pain (0-10) change and final scores at > 4 months



1271 *Follow-up: Manchikanti 2012H and 2014B = 2 years*

1272

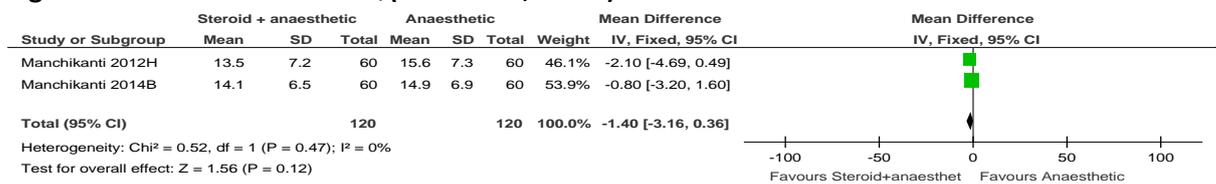
Figure 1138: Function: ODQ (change and final score, 0-100) at ≤4 months



Follow-up: Cohen = 1 month; Manchikanti 2012H and 2014B = 3 months

1273

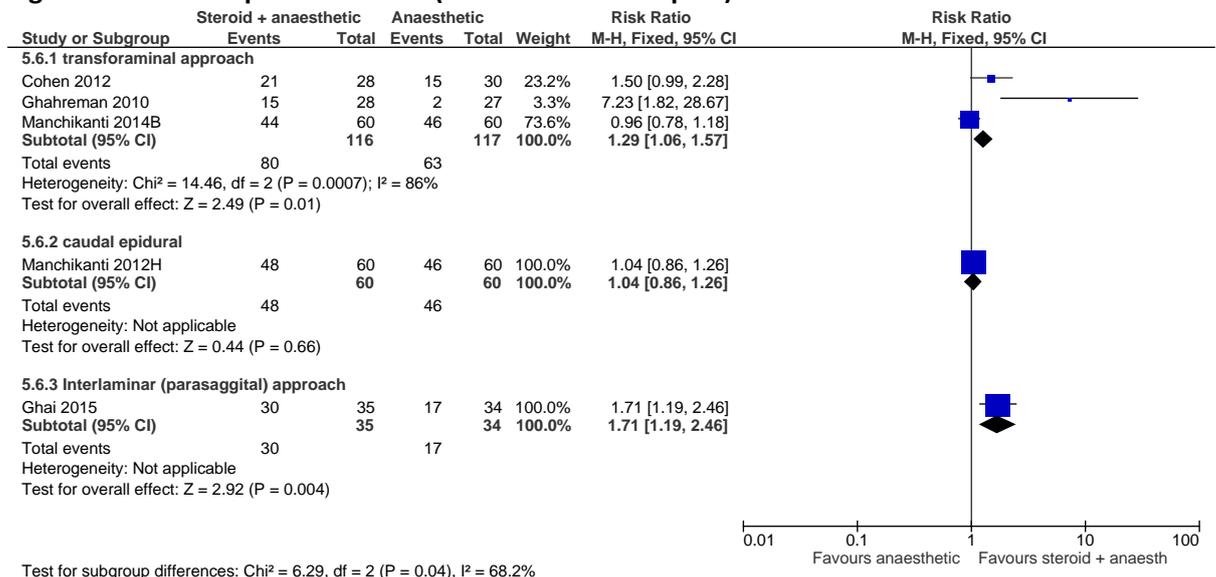
Figure 1139: Function: ODQ (final score, 0-100) at >4 months



Follow-up: Manchikanti 2008, 2012H and 2014B = 2 years

1274

Figure 1140: Responder criteria (>50% reduction in pain) at ≤4 months



Follow-up: Cohen = 1 month; Ghahreman = 1 month; Ghai, Manchikanti 2012H and 2014B = 3 months

1275

Figure 1141: Responder criteria (>50% reduction in pain) at >4 months

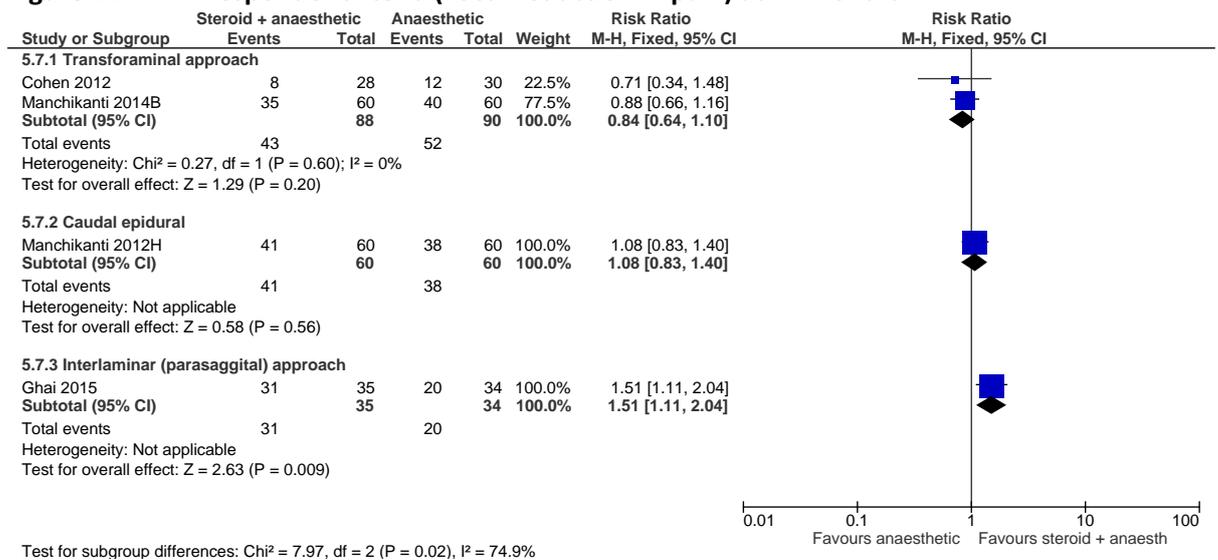
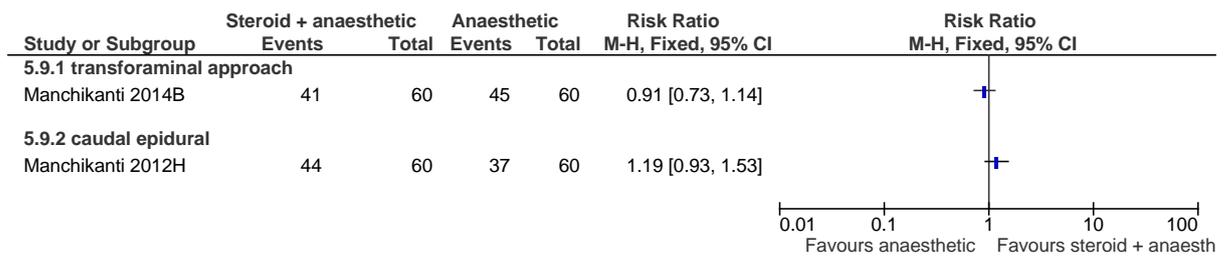


Figure 1142: Responder criteria (>50% reduction in ODI) at ≤4 months



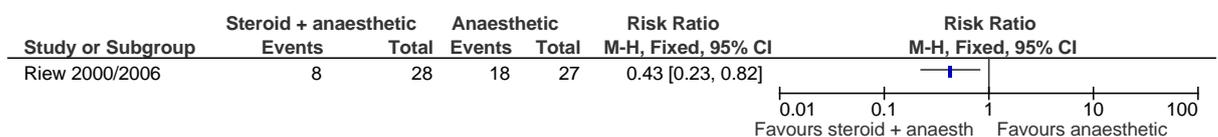
1276

Figure 1143: Responder criteria (>50% reduction in ODI) at >4 months



1277

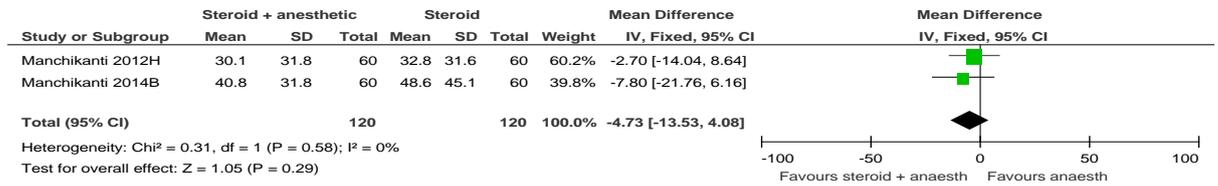
Figure 1144: HC use: surgery at >4 months



Follow-up: Riew = 23 months

1278

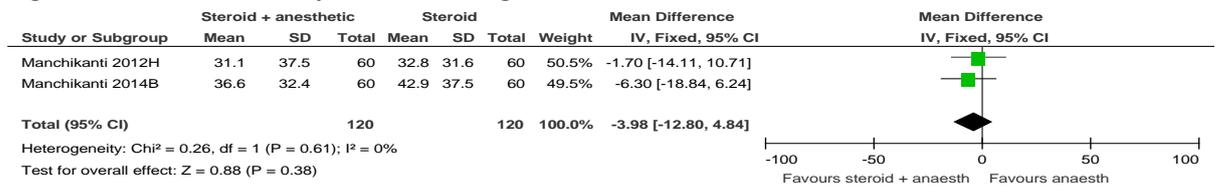
Figure 1145: HC use: opioid intake, mg dose in last 12 months ≤4 months



Follow-up: Manchikanti 2012H and 2014B = 3 months

1279

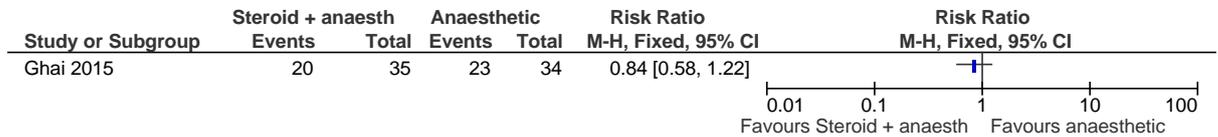
Figure 1146: HC use: opioid intake, mg dose in last 12 months >4 months



Follow-up: Manchikanti 2012H and 2014B = 2 years

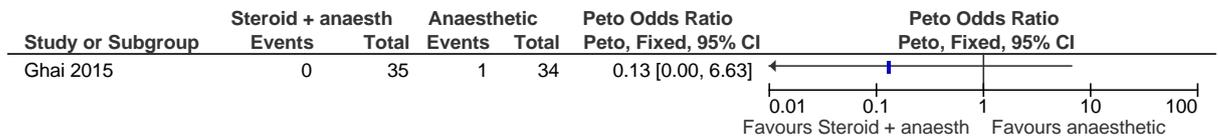
1280

Figure 1147: HC use: no. of patients having additional injections >4 months



Follow-up: Ghai = 1 year

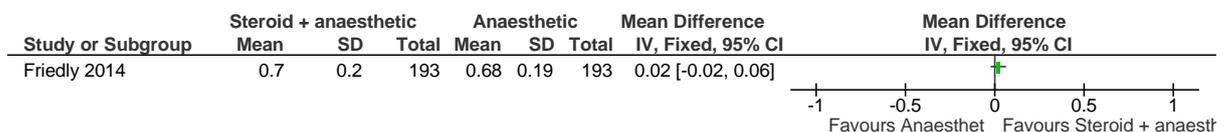
Figure 1148: Adverse events: complications >4 months – 1 year



Follow-up: Ghai = 1 year

K12716 Image-guided: Steroid + anaesthetic versus anaesthetic (non disc lesion)

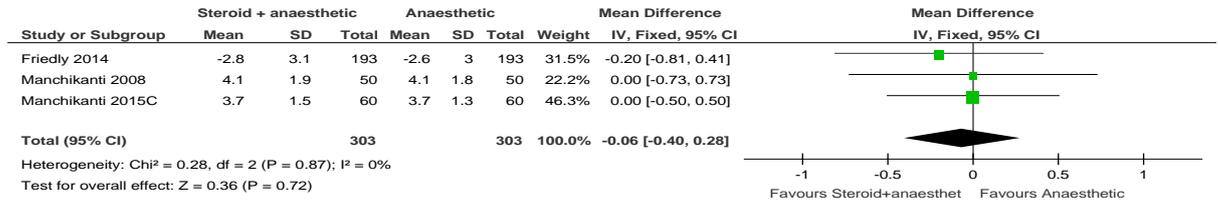
Figure 1149: Quality of life (EQ-5D) at ≤4 months



Follow-up: Friedly = 6 weeks

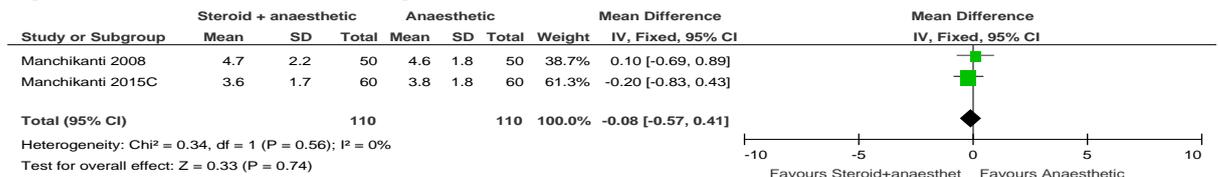
1282

Figure 1150: Pain (0-10) change and final scores at ≤ 4 months



Follow-up: Friedly = 6 weeks, Manchikanti 2008 and 2015C = 3 months

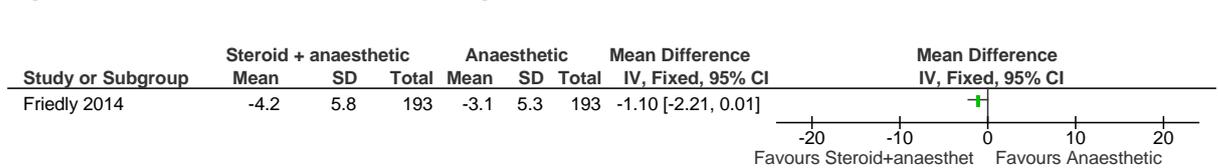
Figure 1151: Pain (0-10) change and final scores at > 4 months



1283

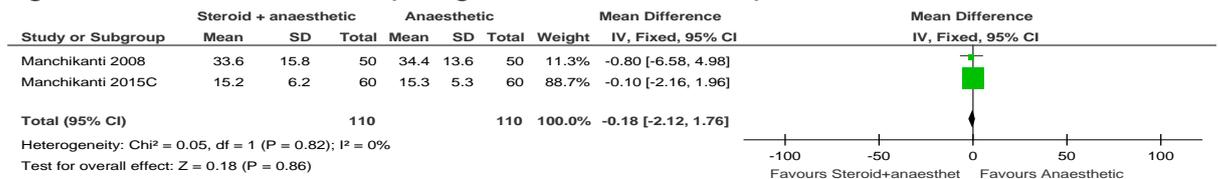
Follow-up: Manchikanti 2008 and 2015C = 2 years

Figure 1152: Function: RMDQ (change score, 0-24 scale) at ≤ 4 months



Follow-up: Friedly = 6 weeks

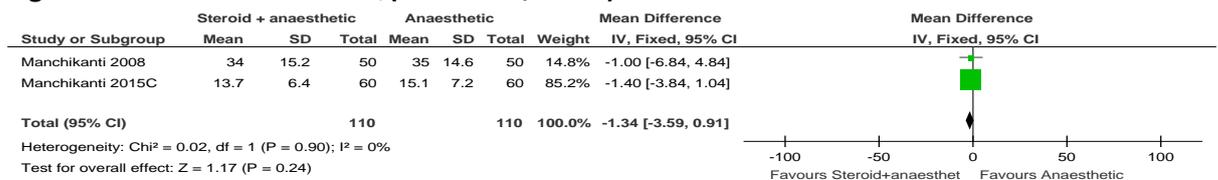
Figure 1153: Function: ODQ (change and final score, 0-100) at ≤ 4 months



Follow-up: Manchikanti 2008 and 2015C = 3 months

1284

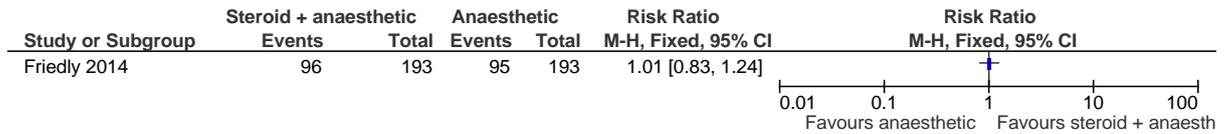
Figure 1154: Function: ODQ (final score, 0-100) at > 4 months



Follow-up: Manchikanti 2008 and 2015C = 2 years

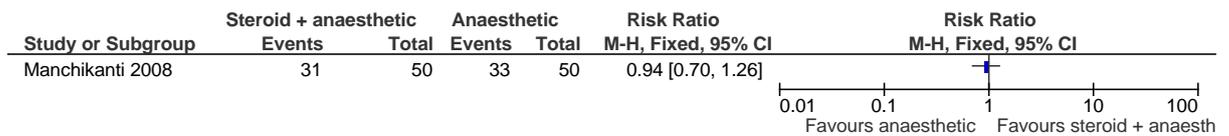
1285

Figure 1155: Responder criteria (>30% reduction in pain) at ≤4 months



Follow-up: Friedly = 6 weeks

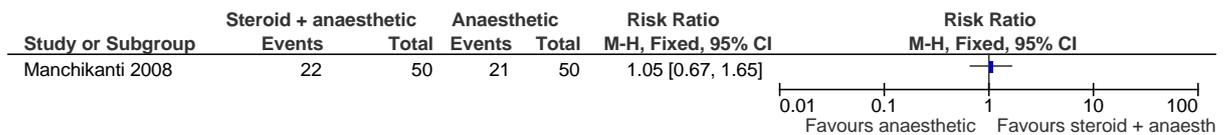
Figure 1156: Responder criteria (>50% reduction in pain) at ≤4 months



Follow-up: Manchikanti 2008 = 3 months

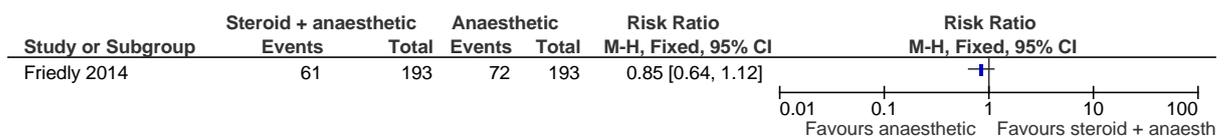
1286

Figure 1157: Responder criteria (>50% reduction in pain) at >4 months – 1 year



Follow-up: Manchikanti 2008 = 2 years

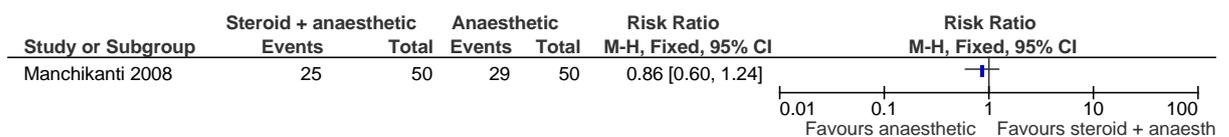
Figure 1158: Responder criteria (>30% reduction in RMDQ) at ≤4 months



Follow-up: Friedly = 6 weeks

1287

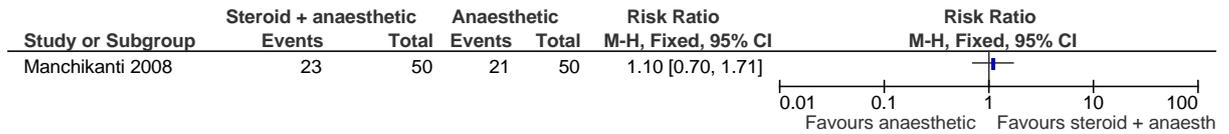
Figure 1159: Responder criteria (>50% reduction in ODI) at ≤4 months



Follow-up: Manchikanti 2008 = 3 months

1288

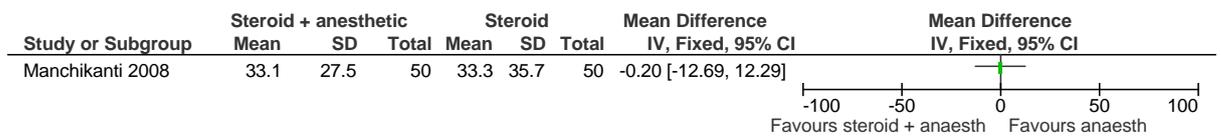
Figure 1160: Responder criteria (>50% reduction in ODI) at >4 months – 1 year



Follow-up: Manchikanti 2008 = 2 years

1289

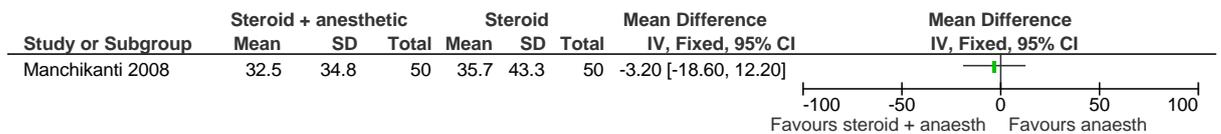
Figure 1161: HC use: opioid intake, mg dose in last 12 months ≤4 months



Follow-up: Manchikanti 2008 = 3 months

1290

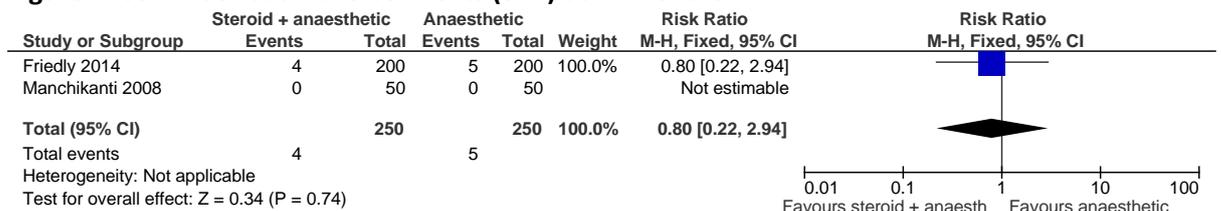
Figure 1162: HC use: opioid intake, mg dose in last 12 months >4 months – 1 year



Follow-up: Manchikanti 2008 = 2 years

1291

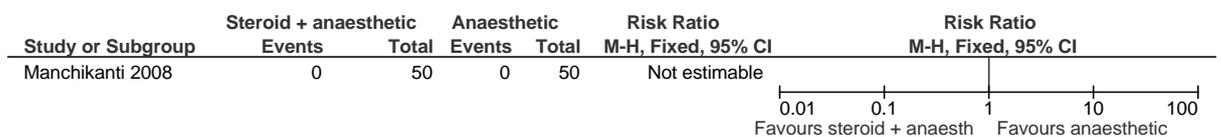
Figure 1163: Serious Adverse Events (SAE) at ≤4 months



Follow-up: Friedly = 6 weeks; Manchikanti 2008 = 3 months

1292

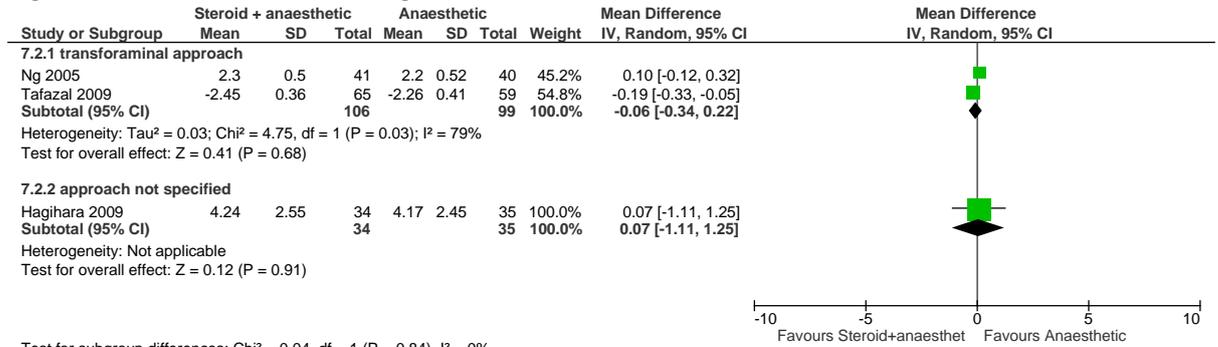
Figure 1164: SAEs at >4 months – 1 year



Follow-up: Manchikanti 2008 = 2 years

K12937 **Image-guided: Steroid + anaesthetic versus anaesthetic (mixed population / unclear spinal pathologies)**
1294

Figure 1165: Pain (0-10) change and final scores at ≤ 4 months

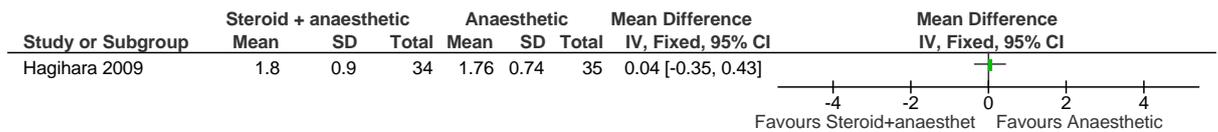


Test for subgroup differences: Chi² = 0.04, df = 1 (P = 0.84), I² = 0%

1295 Follow-up: Hagihara = 1 week, Ng and Tafazal = 12 weeks

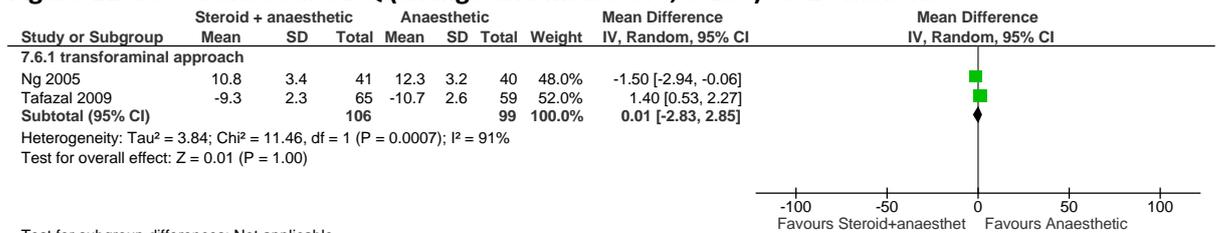
1296

Figure 1166: Pain, PPI (0-5) at ≤ 4 months



Follow-up: Hagihara = 1 week

Figure 1167: Function: ODQ (change and final score, 0-100) at ≤ 4 months



Test for subgroup differences: Not applicable

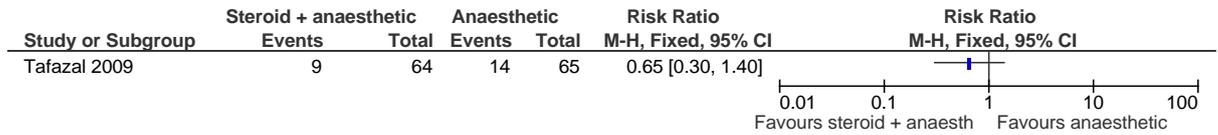
Follow-up: Ng and Tafazal = 12 weeks

Figure 1168: HC use: surgery at ≤ 4 months



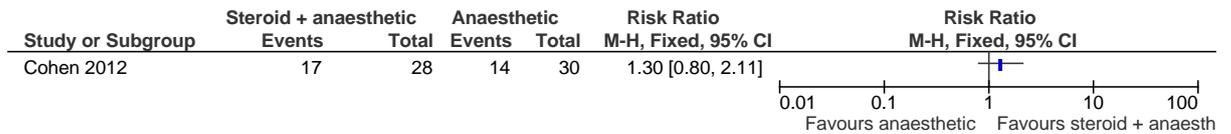
Follow-up: Cohen = 1 month; Hagihara = 1 week

Figure 1169: HC use: surgery at >4 months



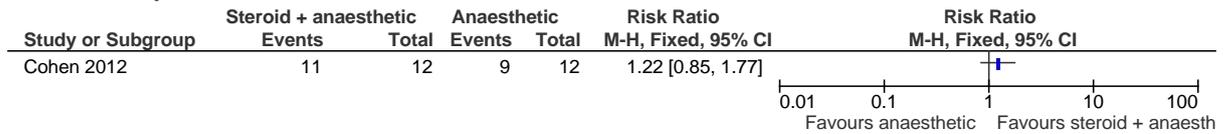
Follow-up: Tafazal = 1 year

Figure 1170: HC use: medication reduction (>20% opioid use or cessation non-opioids) ≤4 months



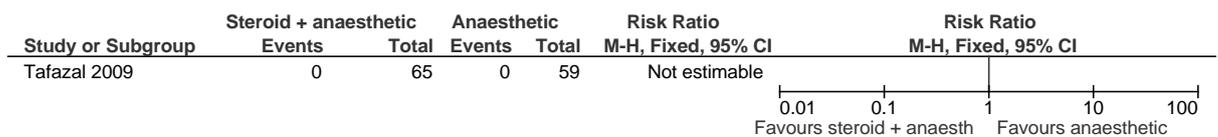
Follow-up: Cohen = 1 month

Figure 1171: HC use: medication reduction (>20% opioid use or cessation non-opioids) >4 months – 1 year



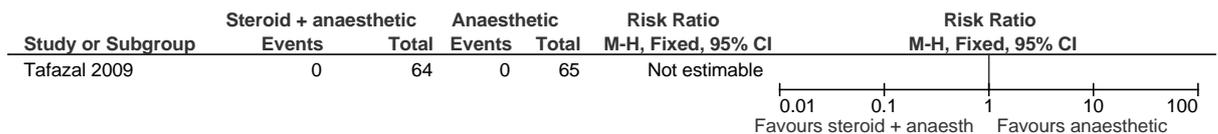
Follow-up: Cohen 2012 = 6 months

Figure 1172: Adverse events: complications at ≤4 months



Follow-up: Tafazal = 12 weeks

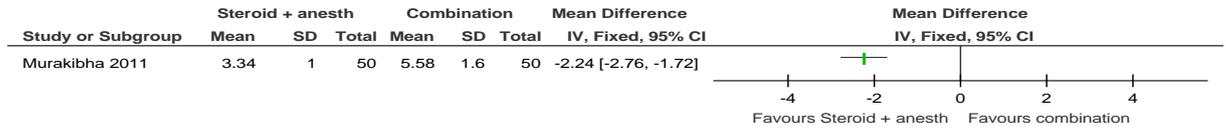
Figure 1173: Adverse events: complications at >4 months



Follow-up: Tafazal = 1 year

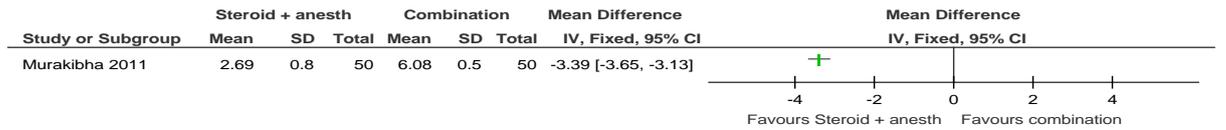
K1298 Image guided: Steroid + anaesthetic epidural versus combinations of non-invasive interventions ($\geq 70\%$ disc prolapse)

Figure 1174: Quality of life (HRQoL) > 4 months (scale not given, just NPI)



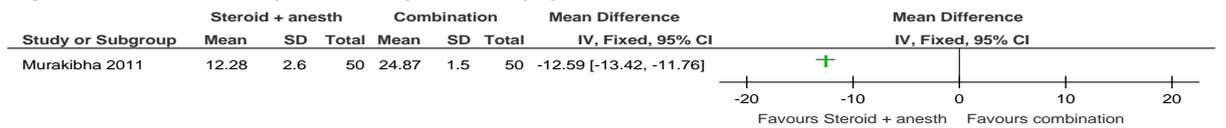
Follow-up = 6 months

Figure 1175: Pain (VAS- scale 1-10)



Follow-up = 6 months

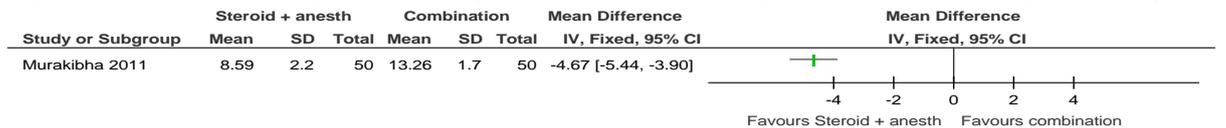
Figure 1176: Disability (Oswestry disability questionnaire) > 4months (scale of 1-100)



Follow-up = 6 months

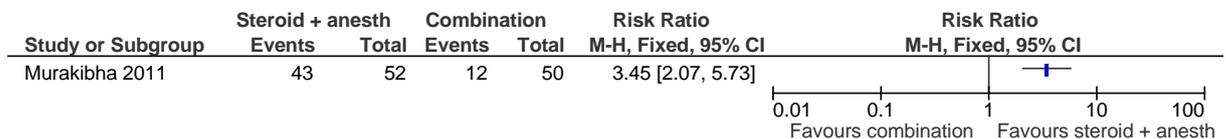
1299

Figure 1177: Psychological distress (Becks depression scale) > 4 months – 1 year (scale 0-63)



Follow-up = 6 months

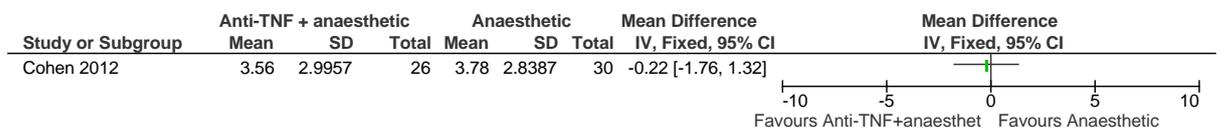
1300 **Figure 1178:** Responder criteria (complete relief of pain) > 4months



1301

K1309 Image-guided: Anti-TNF + anaesthetic versus anaesthetic (>70% disc prolapse)

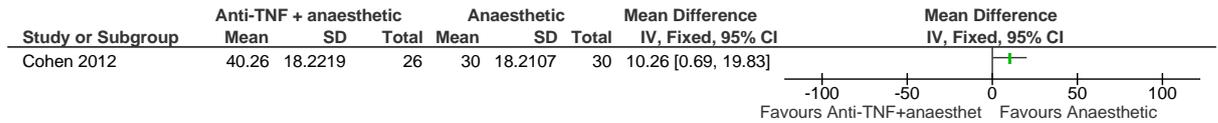
Figure 1179: Pain (0-10, change and final scores) at ≤ 4 months



Follow-up: 1 month

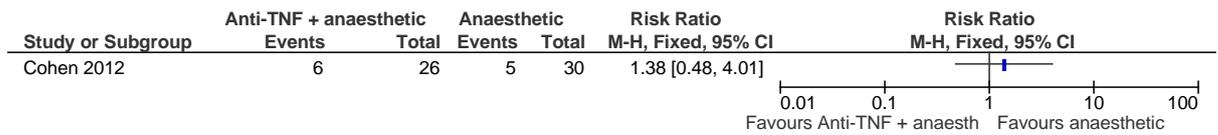
1303

Figure 1180: Function: ODQ at ≤4 months



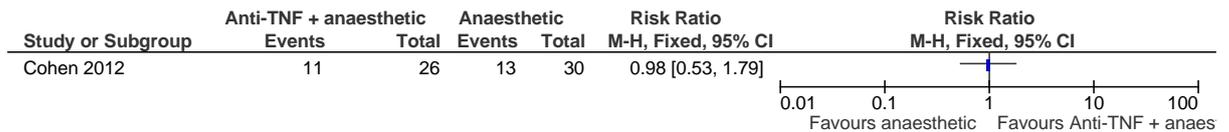
Follow-up: 1 month

Figure 1181: HC use: surgery at ≤4 months



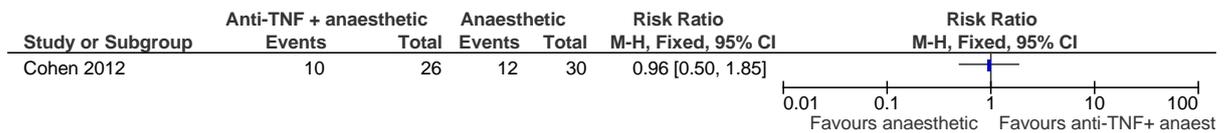
Follow-up: 1 month

Figure 1182: Responder criteria (>50% reduction in pain) at ≤4 months



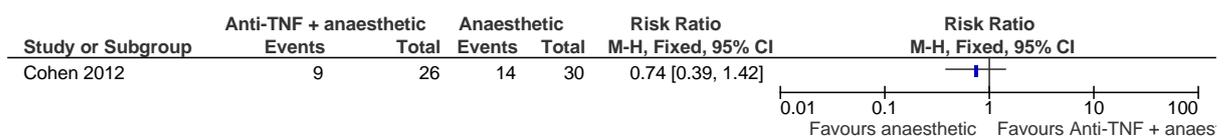
Follow-up: 3 months

Figure 1183: Responder criteria (>50% reduction in pain) at >4 months – 1 year



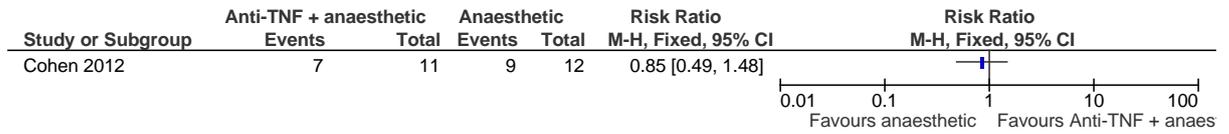
Follow-up: 6 months

Figure 1184: HC use: medication reduction (>20% opioid use or cessation non-opioids) ≤4 months



Follow-up: 1 month

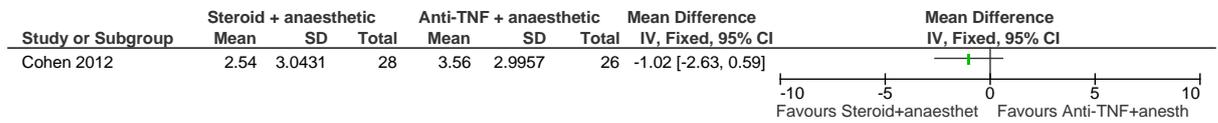
Figure 1185: HC use: medication reduction (>20% opioid use or cessation non-opioids) >4 months – 1 year



Follow-up: 6 months

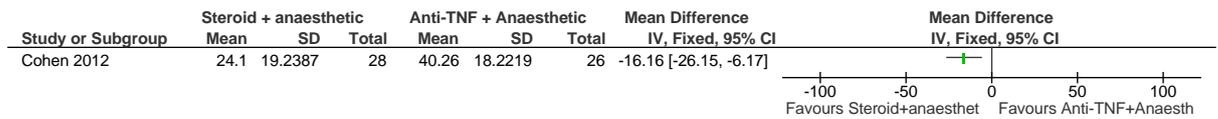
K.17010 Image-guided: Steroid + anaesthetic versus Anti-TNF + anaesthetic (>70% disc prolapse)

Figure 1186: Pain (0-10) at ≤4 months



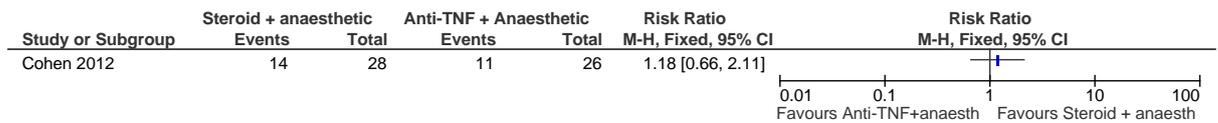
Follow-up: 1 month

Figure 1187: Function: ODI (0-100) final scores at ≤4 months



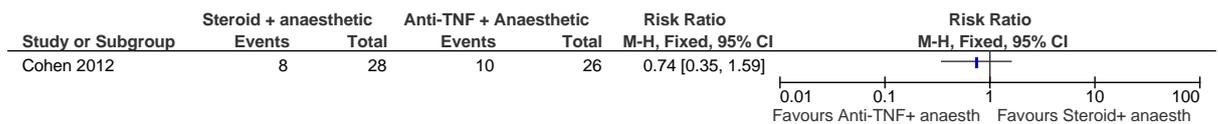
Follow-up: 1 month

Figure 1188: Responder criteria (>50% reduction in pain) at ≤4 months



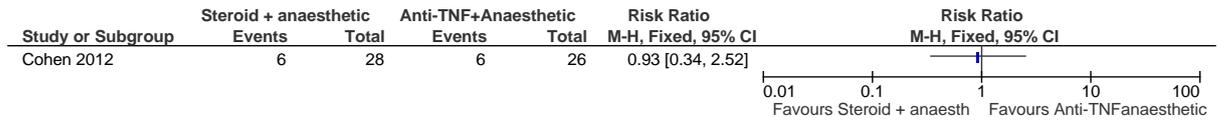
Follow-up: 3 months

Figure 1189: Responder criteria (>50% reduction in pain) at >4 months – 1 year



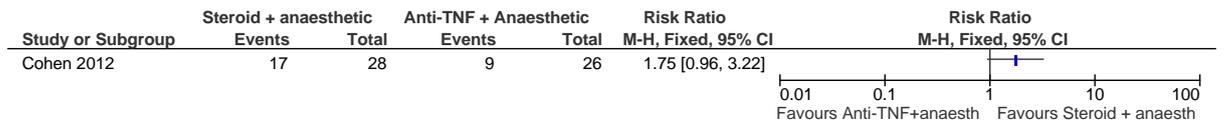
Follow-up: 6 months

Figure 1190: HC use: surgery at ≤4 months



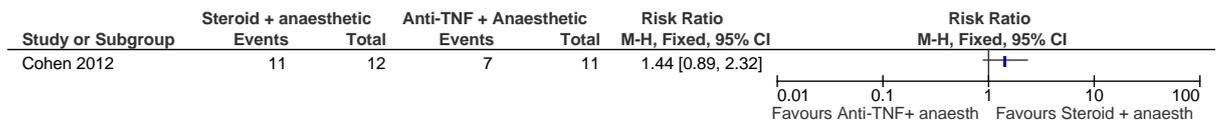
Follow-up: 1 month

Figure 1191: HC use: medication reduction (>20% opioid use or cessation non-opioids) ≤4 months



Follow-up: 1 month

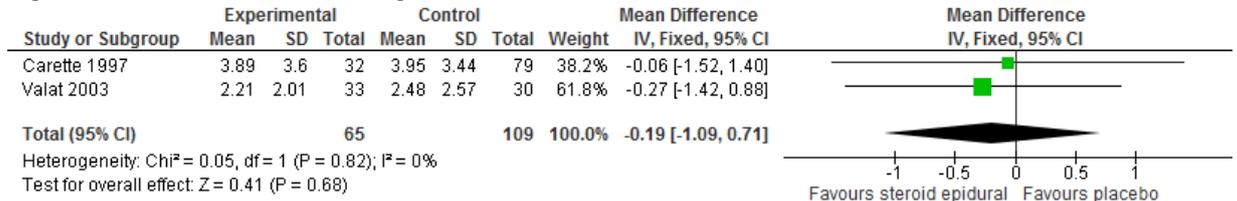
Figure 1192: HC use: medication reduction (>20% opioid use or cessation non-opioids) >4 months – 1 year



Follow-up: 6 months

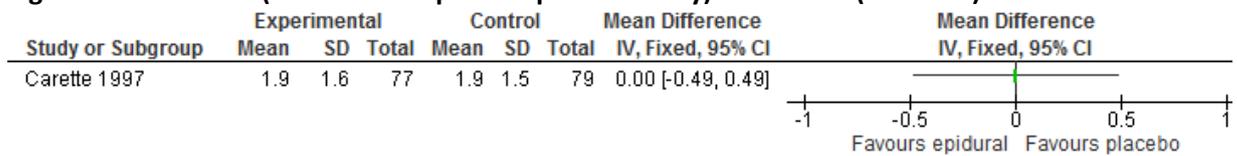
K.13071 Non image guided: Steroid epidural versus placebo caused by ($\geq 70\%$) disc prolapse

Figure 1193: Pain (VAS) change score ≤ 4 months (scale 1-10)



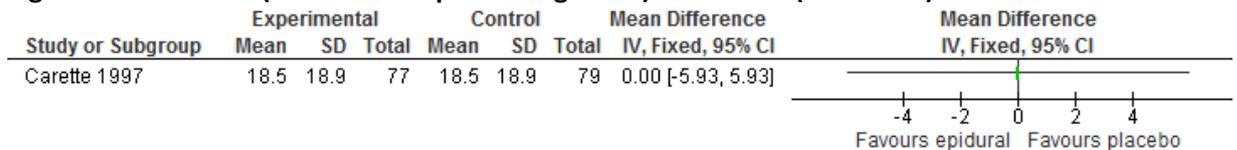
At (Range) 5 weeks-3 months

Figure 1194: Pain (McGill score: present pain intensity) ≤ 4 months (scale 1-5)



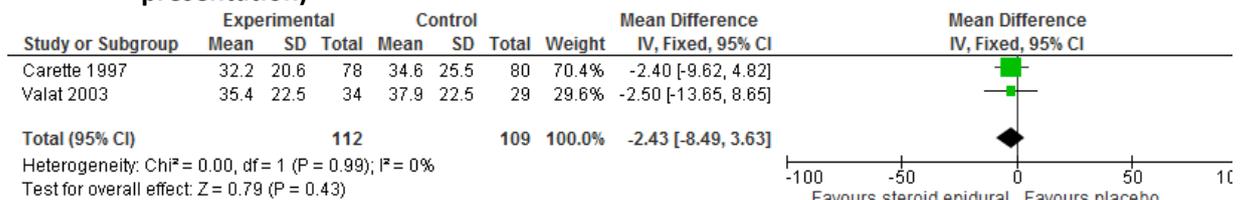
At 3 months

Figure 1195: Pain (McGill score: pain rating index) ≤ 4 months (scale 0-50)



At 3 months

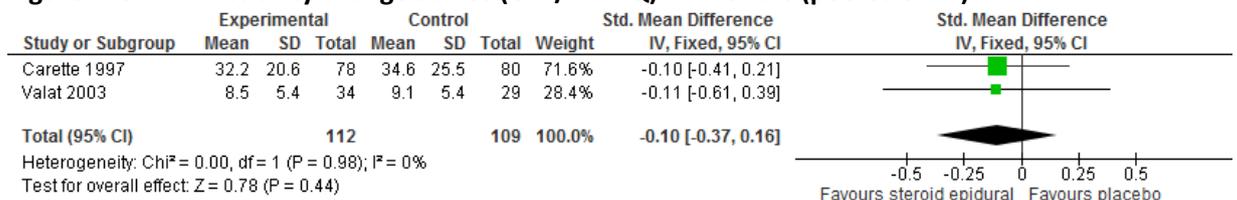
Figure 1196: Disability change scores (ODI/RMDQ) ≤ 4 months (converted to scale 1-100 for GDG presentation)



Range 5 weeks-3 months

1308

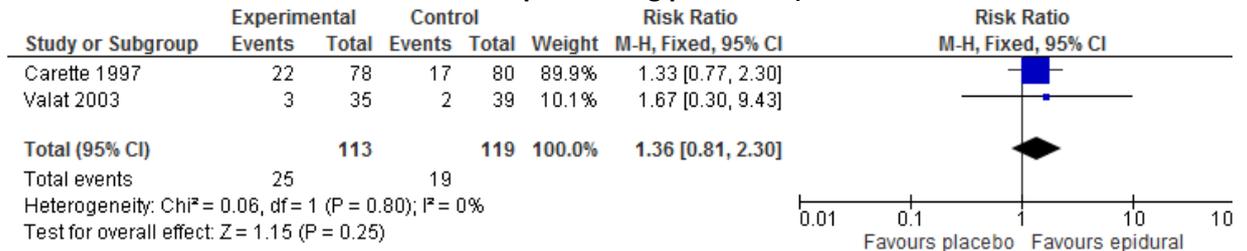
Figure 1197: Disability change scores (ODI/RMDQ) ≤ 4 months (pooled SMD)



Range 5 weeks-3 months

1309

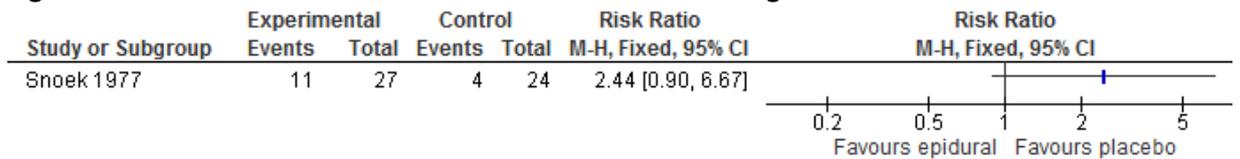
Figure 1198: Adverse events –morbidity (minor adverse events- dura accidentally puncture, transient headache or thoracic pain during procedure)



Range 5 weeks to 3 months –

K.17.112 1311 Non image guided: Steroid epidural versus placebo in a population with unclear spinal pathology

Figure 1199: health care utilisation- discontinuation of analgesics



Range 8 months-20 months

K.17.13 1313 Non image guided: Steroid epidural versus usual care in a population with unclear spinal pathology

Figure 1200: Quality of life (SF-36,0-100) at ≤4 months

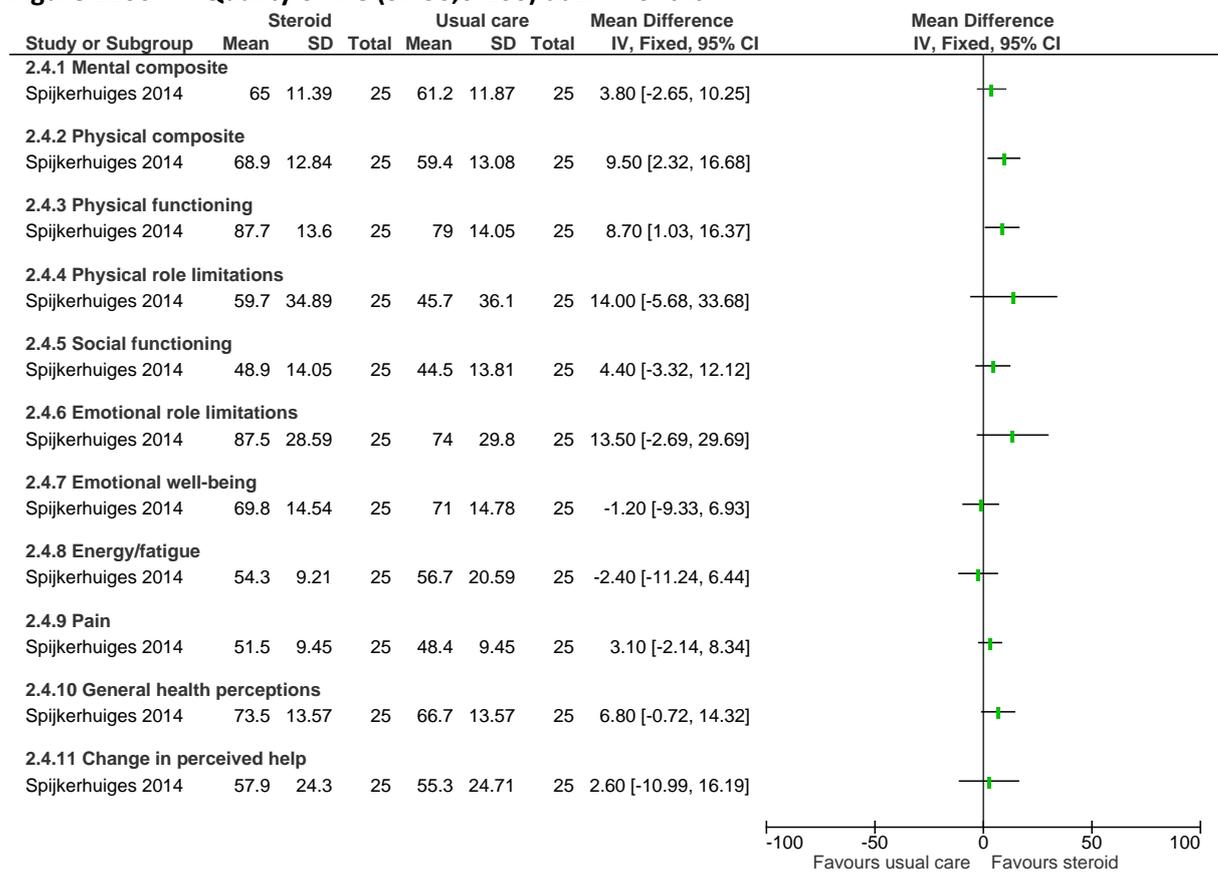
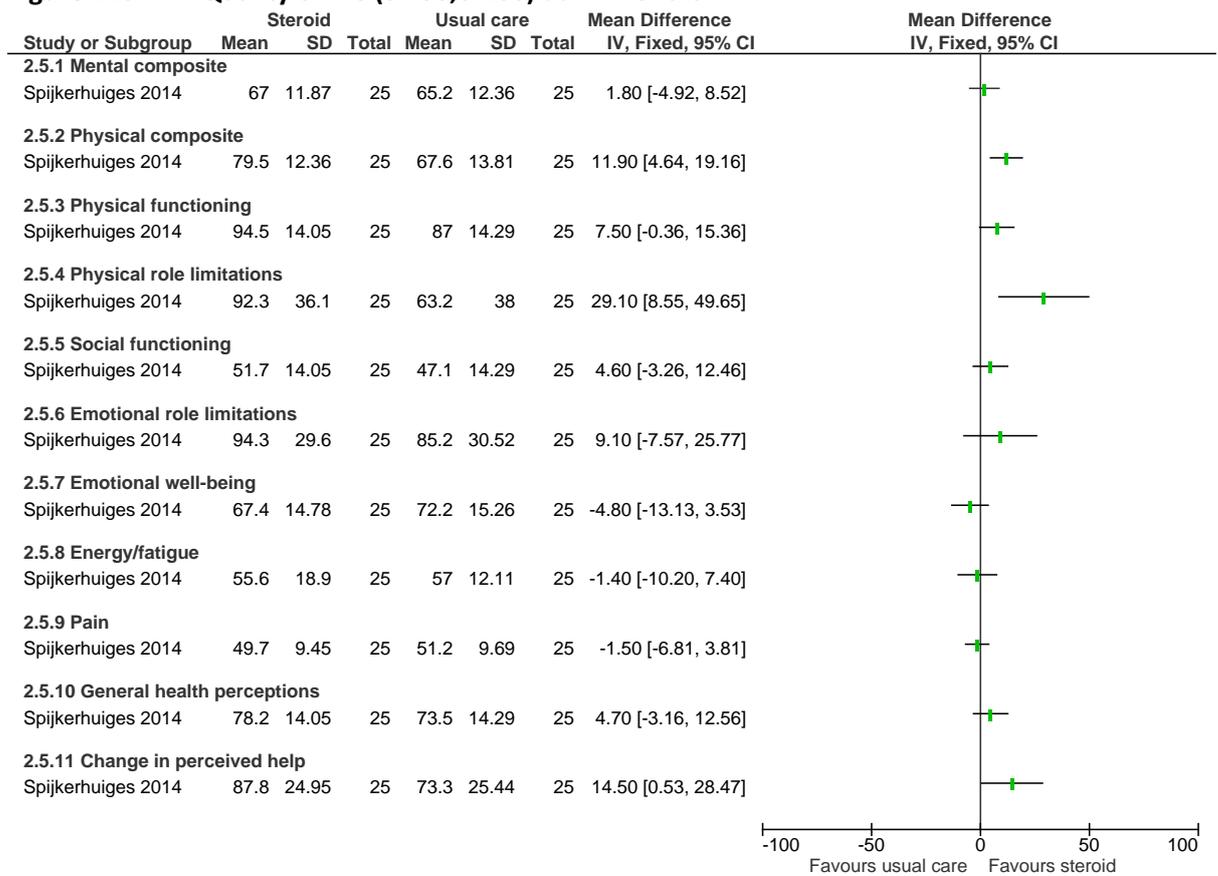
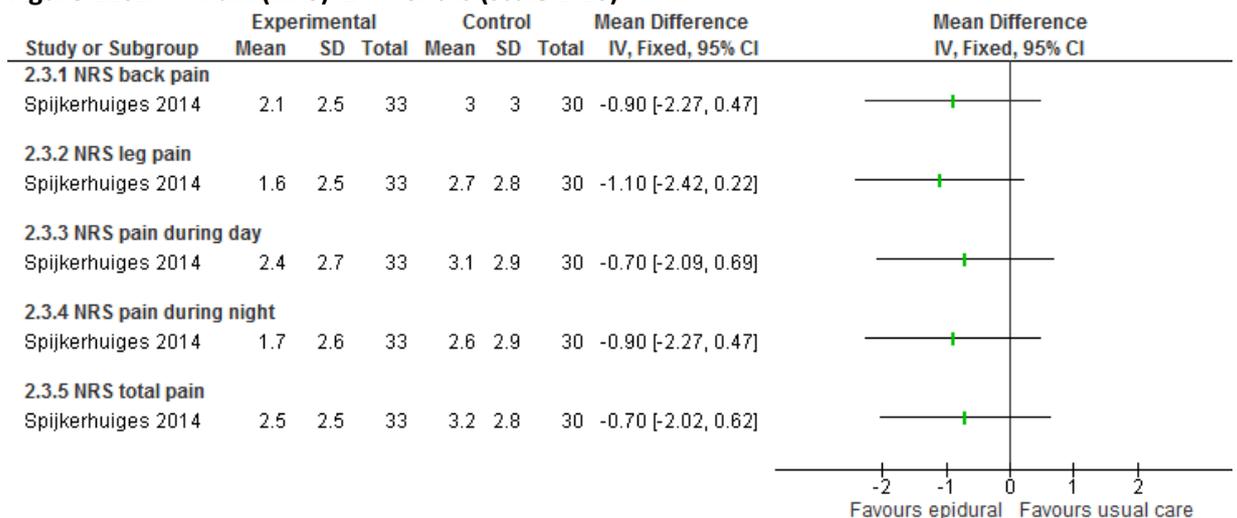


Figure 1201: Quality of life (SF-36,0-100) at >4 months



1314

Figure 1202: Pain (NRS) ≤4 months (scale 1-10)



Disability ≤4 months = 13 weeks

1315

Figure 1203: Pain (NRS) >4 months (scale 1-10)

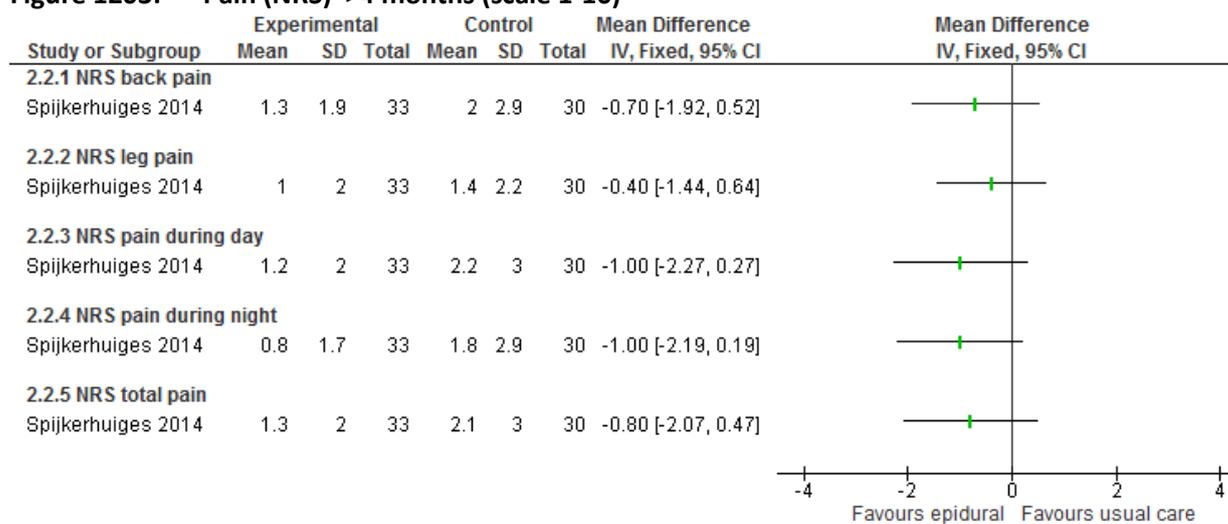
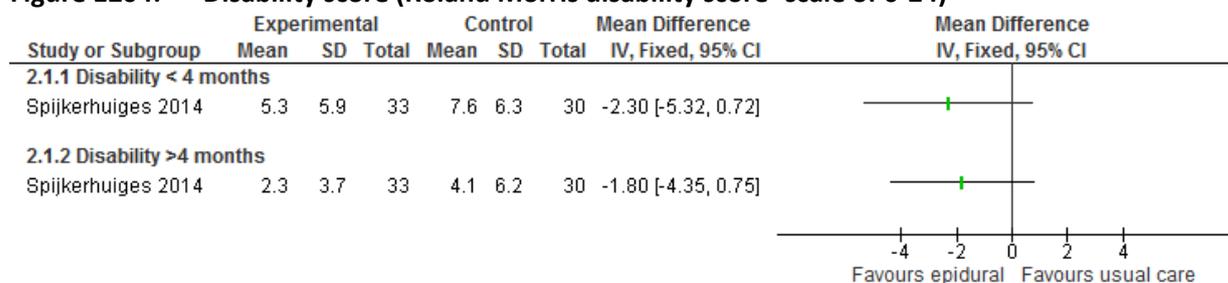


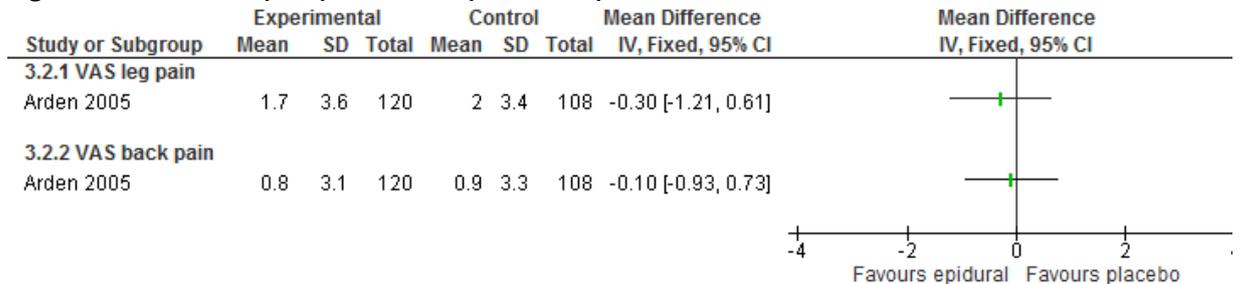
Figure 1204: Disability score (Roland Morris disability score- scale of 0-24)



Disability ≤4 months = 13 weeks, Disability >4 months- 1 year at 52 weeks
Disability >4 months- 1 year at 52 weeks

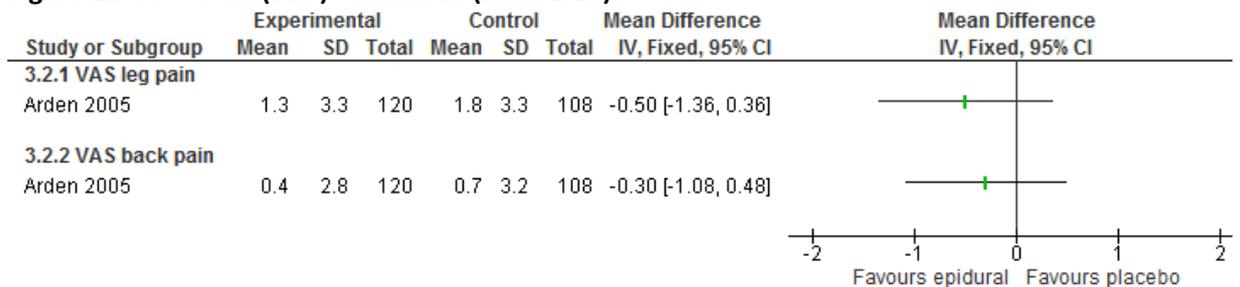
K.17.14 **Non image guided: Steroid + anaesthetic epidural versus placebo in a population with unclear spinal pathology**
1317

Figure 1205: Pain (VAS) ≤4 months (scale 1-10)



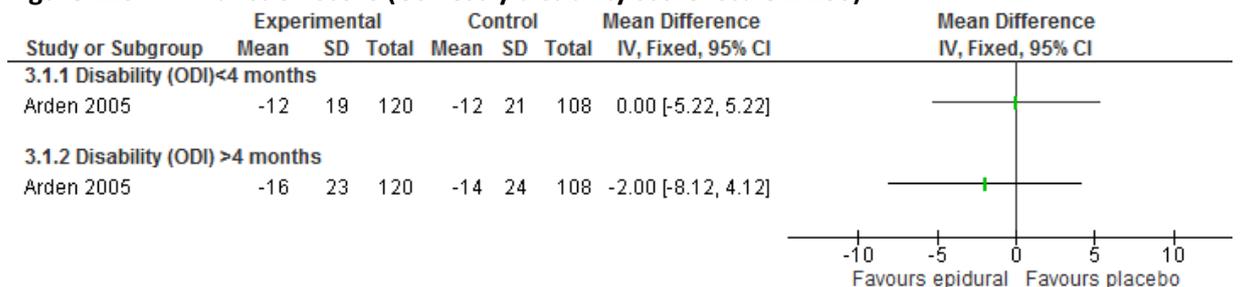
at ≤ 4 months=12 weeks

Figure 1206: Pain (VAS) >4 months (scale 1-10)



>4 months – 1 year =52 weeks

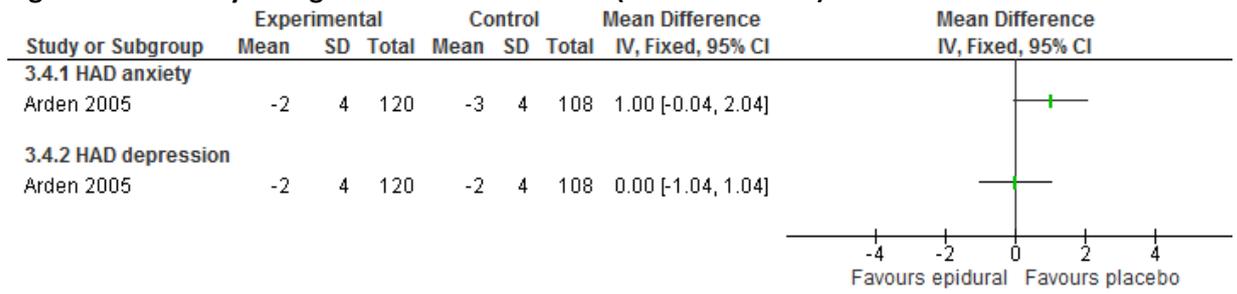
Figure 1207: Function score (Oswestry disability score- scale 1-100)



Disability at ≤ 4 months=12 weeks, disability >4 months =52 weeks

1318
1319

Figure 1208: Psychological distress ≤ 4 months (HAD- scale 0-21)

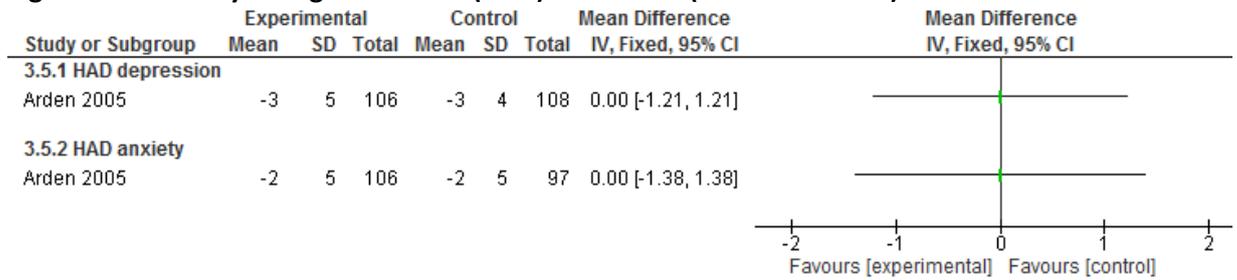


At ≤4 months=12 weeks

1320

1321

Figure 1209: Psychological distress (HAD)>4 months (HAD- scale 0-21)

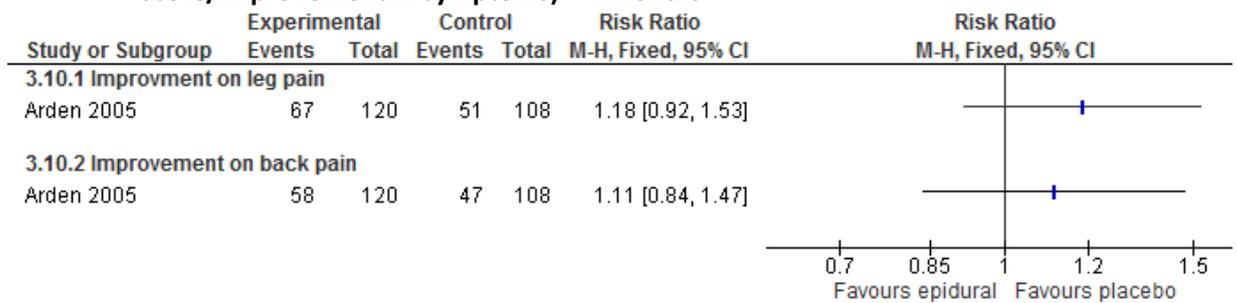


At >4 months – 1 year =52 weeks

1322

1323

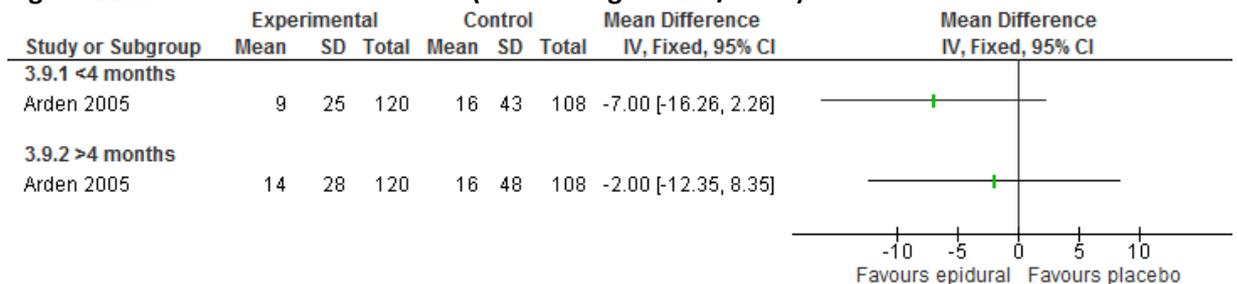
Figure 1210: Responder criteria (>75% improvement on leg pain and back pain score/improvement in symptoms) > 4 months



At 52 weeks

1324

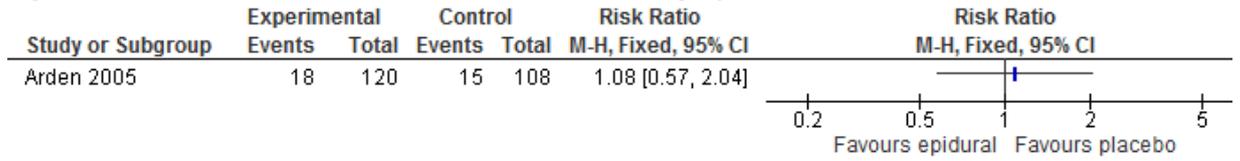
Figure 1211: Healthcare utilisation (mean analgesic use/week)



At ≤4 months=12 weeks >4 months – 1 year =52 weeks

1325

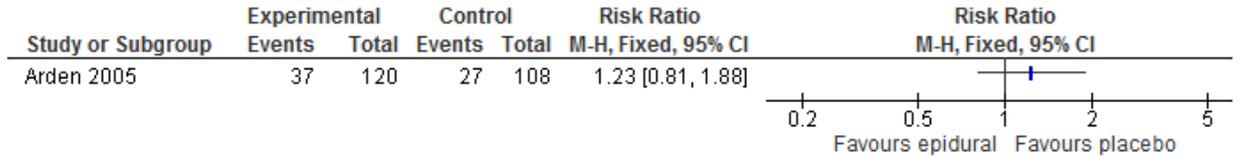
Figure 1212: Healthcare utilisation (referred for surgery) > 4 months



At 52 weeks

1326

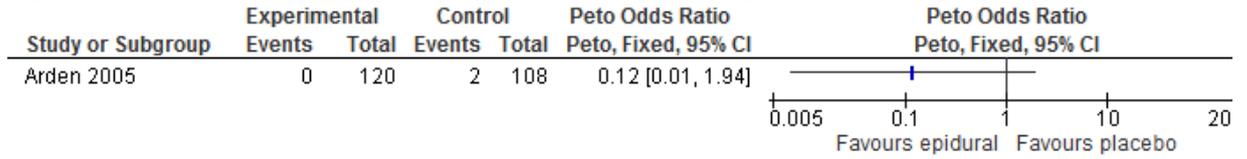
Figure 1213: Healthcare utilisation (further physiotherapy) > 4 months



At 52 weeks

1327

Figure 1214: Healthcare utilisation (referral to pain management services) > 4 months

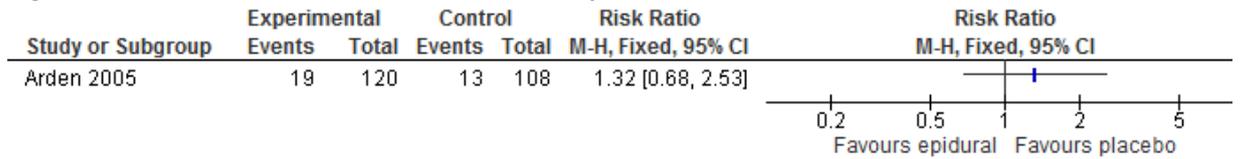


At 52 weeks

1328

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Figure 1215: Healthcare utilisation (further epidurals) > 4 months



At 52 weeks

1330

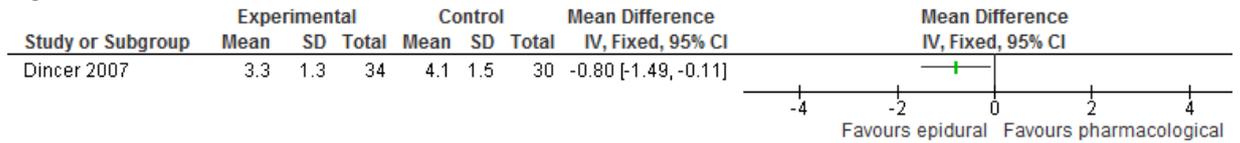
Figure 1216: Adverse events- morbidity (minor complications- defined as headache, nausea or other)



At 52 weeks

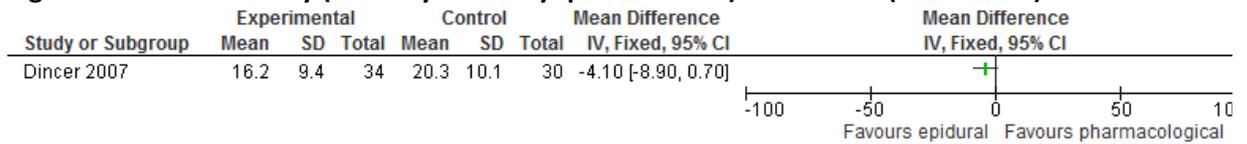
K.17315 Non image guided: Steroid + anaesthetic epidural versus Pharmacological treatment (NSAIDs) caused by (≥70%) disc prolapse
1332

Figure 1217: Pain (VAS) ≤ 4 months (scale 1-10)



At 3 months

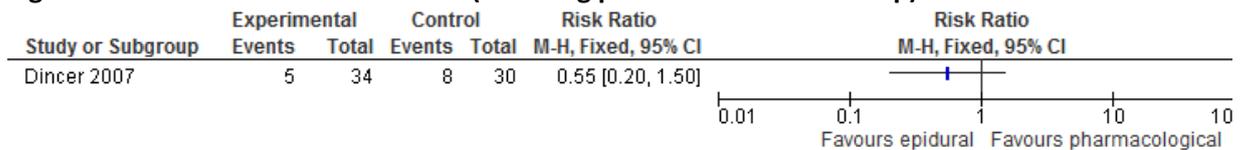
Figure 1218: Disability (Oswestry disability questionnaire) ≤ 4 months (scale 1-100)



At 3 months

1333

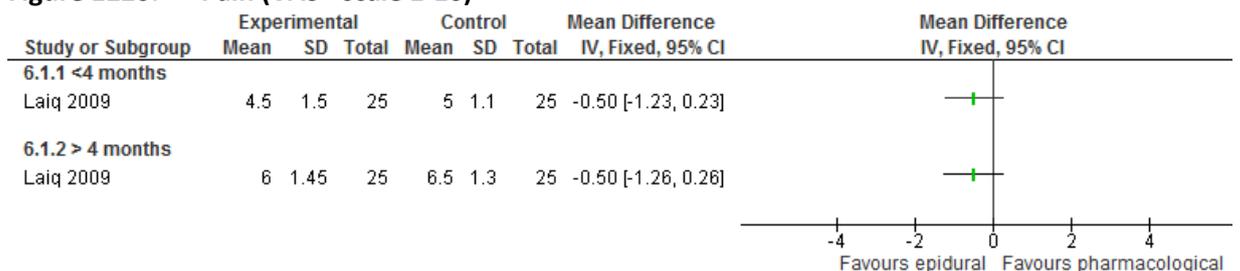
Figure 1219: Healthcare utilisation (no. using paracetamol at follow-up) ≤4 months



At 3 months

K.17316 Non image guided: Steroid + anaesthetic epidural versus Pharmacological treatment (Combination NSAIDS+ Opioids+Muscle relaxants) in sciatica caused by (≥70%) disc prolapse
1335
1336

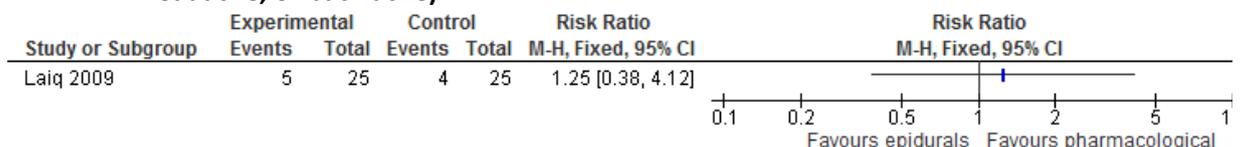
Figure 1220: Pain (VAS - scale 1-10)



At ≤4 months= 3 months,>4 months – 1 year =6 months

1337

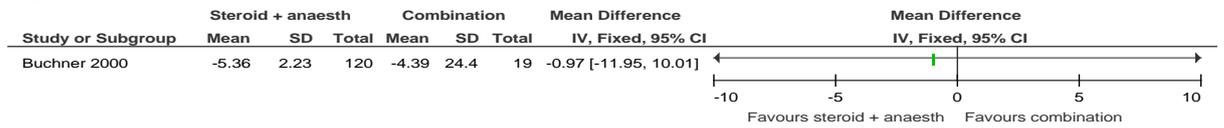
Figure 1221: Adverse events – morbidity (minor adverse events defined as flushing and headache, or back ache)



At ≤ 4 months= 3 months,

K.1737 Image guided: Steroid + anaesthetic epidural versus combination of non-invasive interventions caused by ($\geq 70\%$) disc prolapse
1339

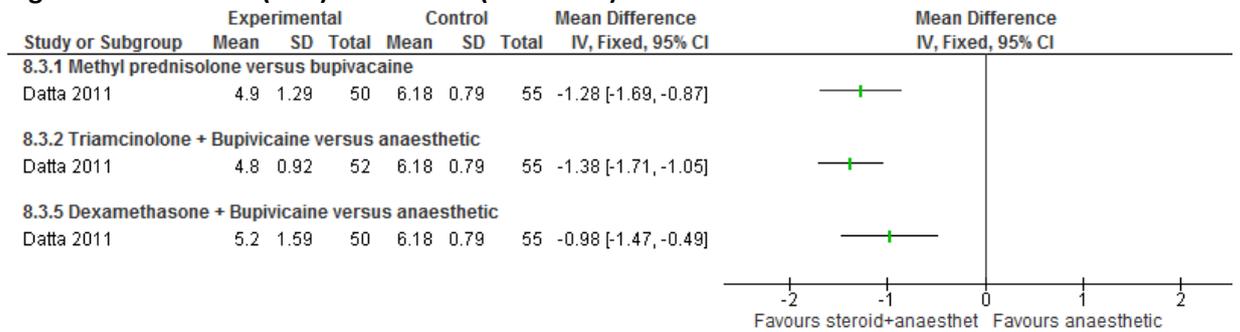
Figure 1222: Pain (VAS- scale 1-10)



At ≤ 4 months= 2 weeks

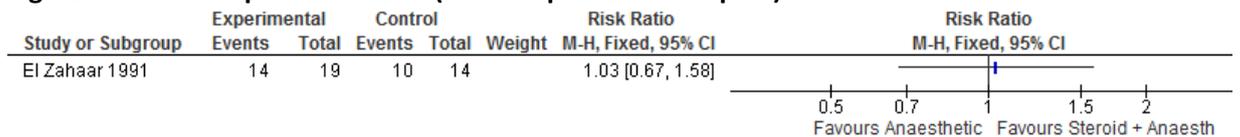
K.1748 Non image guided: Steroid + anaesthetic epidural versus anaesthetic caused by ($\geq 70\%$) disc prolapse
1341

Figure 1223: Pain (VAS) ≤ 4 months (scale 1-10)



At ≤ 4 months=3 months

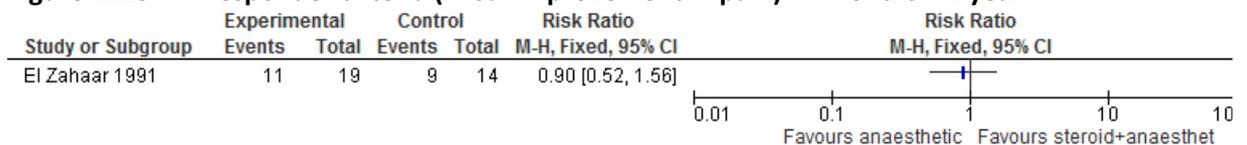
Figure 1224: Responder criteria ($>75\%$ improvement in pain) ≤ 4 months



≤ 4 months= 1 day

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1343

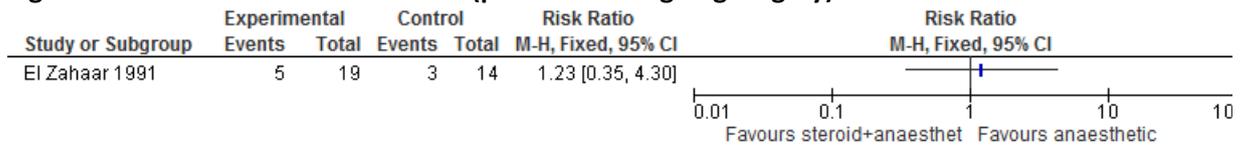
Figure 1225: Responder criteria ($>75\%$ improvement in pain) >4 months – 1 year



>4 months- 1 year mean follow $p = 20.85$ months (range 13-36)

1344
1345

Figure 1226: Healthcare utilisation (patients undergoing surgery)>4months



>4 months- 1 year mean follow p =20.85 months (range 13-36)

1346

Figure 1227: Healthcare utilisation (use of physiotherapy at follow-up)≤ 4months



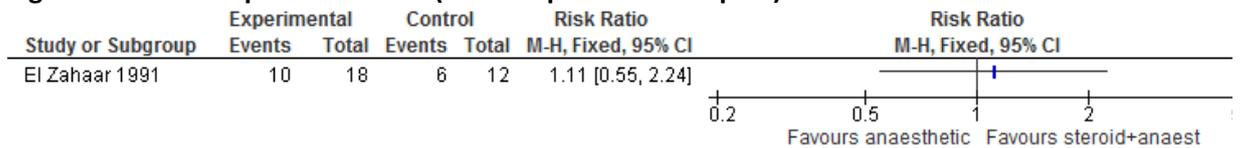
At ≤4 months=3 months

1347

K.17489 Non image guided: Steroid + anaesthetic epidural versus anaesthetic for sciatica caused by (≥70%) spinal stenosis

1349

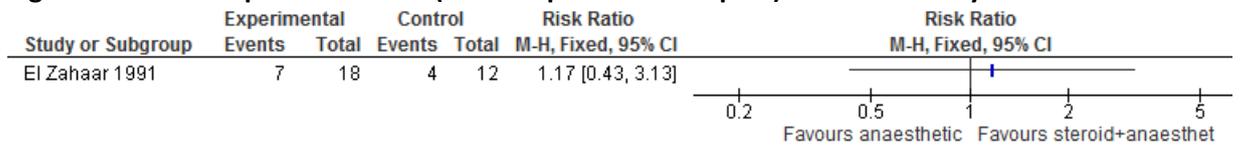
Figure 1228: Responder criteria (>75% improvement in pain) ≤4 months



≤4 months= 1 day

1350

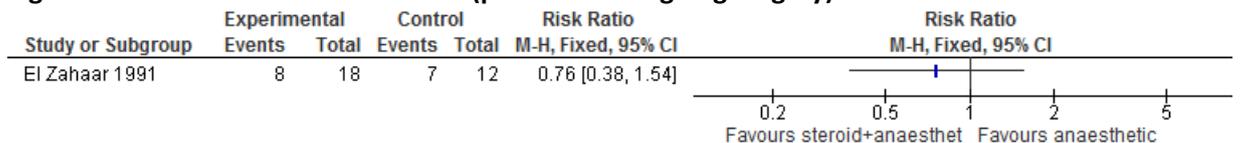
Figure 1229: Responder criteria (>75% improvement in pain) >4 months – 1 year



>4 months – 1 year mean follow p =20.85 months (range 13-36)

1351

Figure 1230: Healthcare utilisation (patients undergoing surgery)>4months



>4 months – 1 year mean follow p =20.85 months (range 13-36)

1352

K.17520 1354 Non image guided: Steroid + anaesthetic epidural versus anaesthetic in a population with unclear spinal pathology

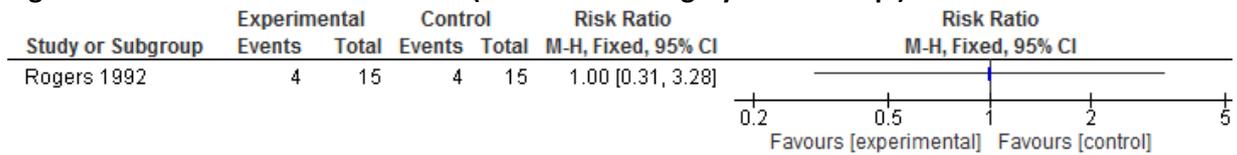
Figure 1231: Healthcare utilisation (no. of participants reporting reduced analgesics at follow-up) ≤ 4months



At ≤4 months=1 month

1355

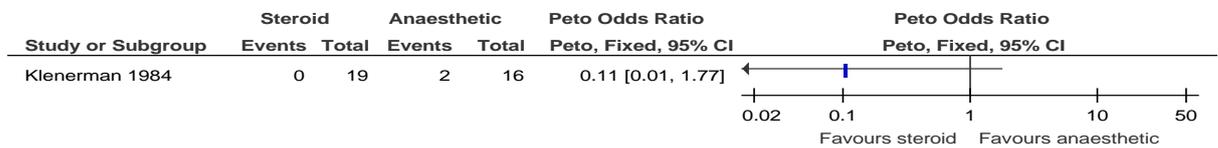
Figure 1232: Healthcare utilisation (no. had back surgery at follow-up) ≤ 4months



Follow up time not defined

K.17521 1357 Non image guided: steroid epidural versus anaesthetic epidural in a population with unclear spinal pathology

Figure 1233: Healthcare use (no. had back surgery at follow-up)



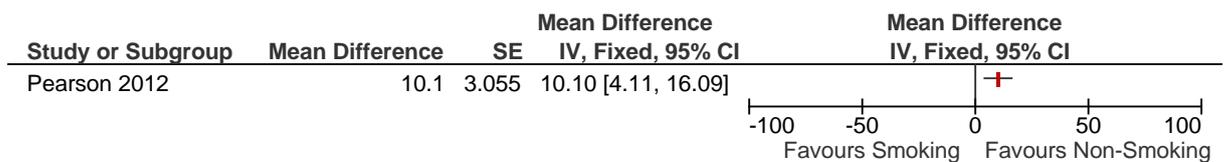
Follow-up: 1 month

K.18 Surgery and prognostic factors

K.1801 Low back pain

K.1801 Smoking

Figure 1234: Smoking as a prognostic factor for function (ODI) at 4 years (LBP or Sciatica population)- surgery: open decompressive laminectomy



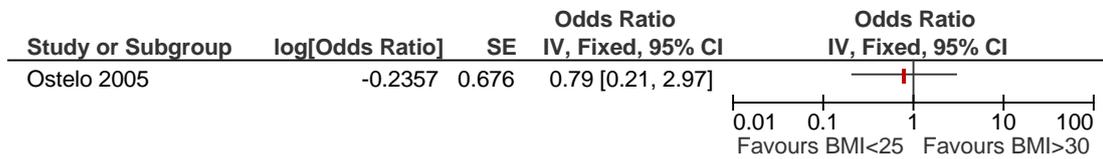
Forest plot reports the adjusted* mean difference (by ANCOVA) of smoking versus non-smoking on the treatment effect (change in ODI) of receiving surgery rather than usual care.

*Adjusted for centre, age, gender, baseline ODI, income, treatment preference, duration of symptoms, compensation, BMI,

baseline stenosis bothersomeness, joint, and stomach and bowel problems.

K.18012 BMI

Figure 1235: BMI>30 as a prognostic factor for function(RDQ≤4) at 3 months (LBP or Sciatica population) –surgery not defined

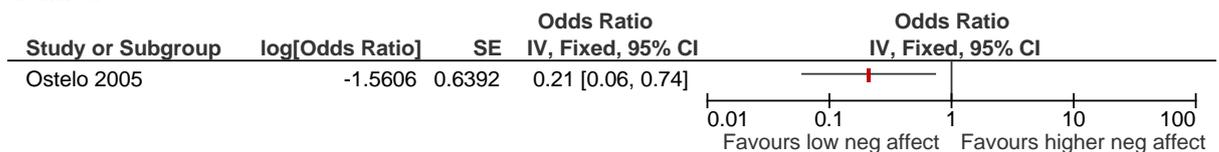


Forest plot reports the adjusted* odds ratio of BMI>30 versus BMI<25 on function (assessed by RDQ ≤4) of receiving surgery rather than usual care.

*Adjusted for duration of complaints before surgery, age, gender, whether or not pain medication was taken at baseline because the residual complaints, number of days in hospital following the surgery, severity of pain in back and leg (both on VAS), pain catastrophising (Pain Catastrophising Scale, PCS), fear of movement (Tampa scale for Kinesiophobia, TSK)

K.18023 Psychological Distress

Figure 1236: Psychological Distress (Negative Affectivity [NEM >1-≤4 versus NEM ≤1]) as a prognostic factor for back pain (VAS ≤10) at 3 months (LBP or Sciatica population)-surgery not defined

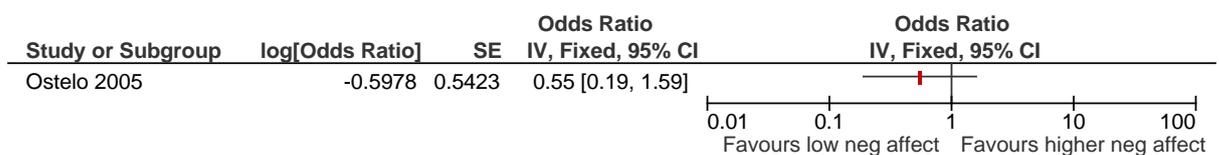


Forest plot reports the adjusted* odds ratio of psychological distress (NEM>1-≤4 versus NEM ≤1) on back pain (assessed by VAS ≤10) of receiving surgery rather than usual care.

*Adjusted for duration of complaints before surgery, age, gender, BMI, whether or not pain medication was taken at baseline because the residual complaints, number of days in hospital following the surgery, severity of pain in back and leg (both on VAS), pain catastrophising (Pain Catastrophising Scale, PCS), fear of movement (Tampa scale for Kinesiophobia, TSK)

1363

Figure 1237: Psychological Distress (Negative Affectivity (NEM>4 versus NEM ≤1)) as a prognostic factor for back pain (VAS≤10) at 3 months (LBP or Sciatica population)-surgery not defined



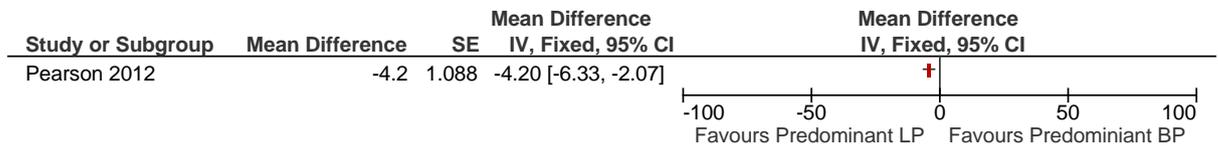
Forest plot reports the adjusted* odds ratio of psychological distress (NEM>4 versus NEM ≤1) on back pain (assessed by VAS ≤10) of receiving surgery rather than usual care.

*Adjusted for duration of complaints before surgery, age, gender, BMI, whether or not pain medication was taken at baseline because the residual complaints, number of days in hospital following the surgery, severity of pain in back and leg (both on VAS), pain catastrophising (Pain Catastrophising Scale, PCS), fear of movement (Tampa scale for Kinesiophobia, TSK)

K11842 Sciatica

K.11842.1 Radicular Symptoms

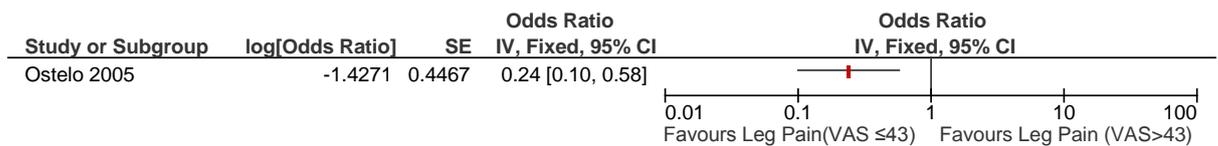
Figure 1238: Radicular symptoms as a prognostic factor for function (ODI) at 4 years - continuous outcome (LBP and/or Sciatica population)- surgery: open decompressive laminectomy



Forest plot reports the adjusted* mean difference (by ANCOVA) of predominant leg pain versus predominant back pain on the treatment effect (change in ODI) of receiving surgery rather than usual care.
*Adjusted for centre, age, gender, baseline ODI, income, treatment preference, duration of symptoms, compensation, smoking status, BMI, baseline stenosis bothersomeness, joint, and stomach and bowel problems.

1366

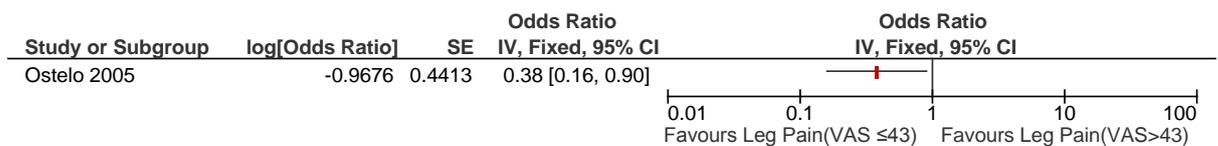
Figure 1239: Radicular symptoms as a prognostic factor for leg pain (VAS,0-100) at 3 months (LBP or Sciatica population)-surgery not defined



Forest plot reports the adjusted* odds ratio of pre-op leg pain (VAS>43) versus pre-op leg pain (VAS≤ 43) on post-op leg pain (assessed by recovery of VAS ≤10) of receiving surgery rather than usual care.
*Adjusted for duration of complaints before surgery, age, gender, BMI, whether or not pain medication was taken at baseline because the residual complaints, number of days in hospital following the surgery, severity of pain in back and leg (both on VAS), pain catastrophising (Pain Catastrophising Scale, PCS), fear of movement (Tampa scale for Kinesiophobia, TSK)

1367

Figure 1240: Radicular symptoms as a prognostic factor for leg pain(VAS ≤10) at 12 months (LBP or Sciatica population)-surgery not defined

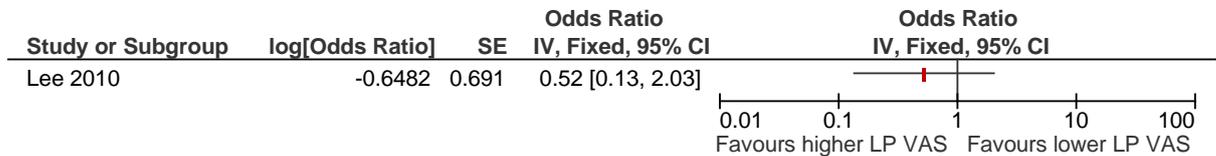


Forest plot reports the adjusted* odds ratio of pre-op leg pain (VAS>43) versus pre-op leg pain (VAS≤ 43) on post-op leg pain (assessed by VAS ≤10) of receiving surgery rather than usual care.
*Adjusted for duration of complaints before surgery, age, gender, BMI, whether or not pain medication was taken at baseline because the residual complaints, number of days in hospital following the surgery, severity of pain in back and leg (both on VAS), pain catastrophising (Pain Catastrophising Scale, PCS), fear of movement (Tampa scale for Kinesiophobia, TSK)

1368

1369

Figure 1241: Radicular symptoms as a prognostic factor for function (ODI>10) at 1 year- categorical outcome (Sciatica population) - surgery: dissection of the paravertebral muscles down to the laminae and resection of the interlaminar

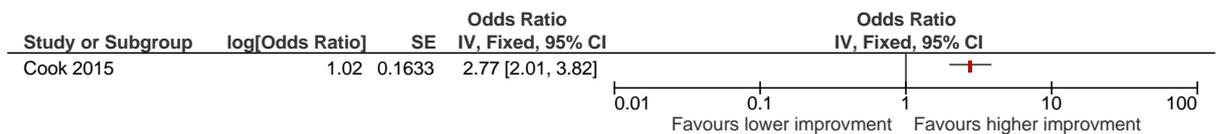


Forest plot reports the adjusted* odds ratio of pre-op leg pain (VAS) on post-op leg pain (assessed by VAS >10) of receiving surgery rather than usual care.

*Adjusted for duration of pain, age, gender, BMI, smoking, surgical levels and whether the surgery was a revision operation or the primary operation.

1370

Figure 1242: Radicular symptoms as a prognostic factor for leg pain greater than back pain on 50% improvement in pain assessed by VAS in one year- dichotomous outcome (Sciatica population)-surgery: discectomy

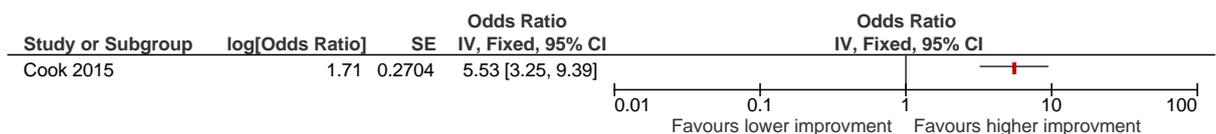


Forest plot reports the adjusted* odds ratio of leg pain greater than back pain on 50% improvement in pain assessed by VAS in one year

*Adjusted for Age, BMI, gender, previous back surgery history, baseline ODI, baseline back pain VAS, baseline SF-12 PCS and MCS scores, presence/absence of complications, levels of surgery and diagnosis.

1371

Figure 1243: Radicular symptoms as a prognostic factor for leg pain greater than back pain on 30% improvement in function assessed by ODI in one year- dichotomous outcome (Sciatica population)-surgery: discectomy

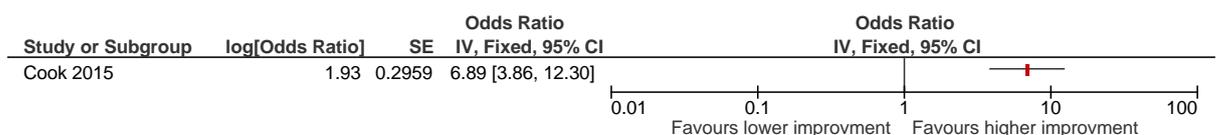


Forest plot reports the adjusted* odds ratio of leg pain greater than back pain on 30% improvement in pain assessed by VAS in one year

*Adjusted for Age, BMI, gender, previous back surgery history, baseline ODI, baseline back pain VAS, baseline SF-12 PCS and MCS scores, presence/absence of complications, levels of surgery and diagnosis.

1372

Figure 1244: Radicular symptoms as a prognostic factor for leg pain greater than back pain on 50% improvement in function assessed by ODI in one year- dichotomous outcome (Sciatica population)-surgery: discectomy



Forest plot reports the adjusted* odds ratio of leg pain greater than back pain on 30% improvement in pain assessed by VAS in one year

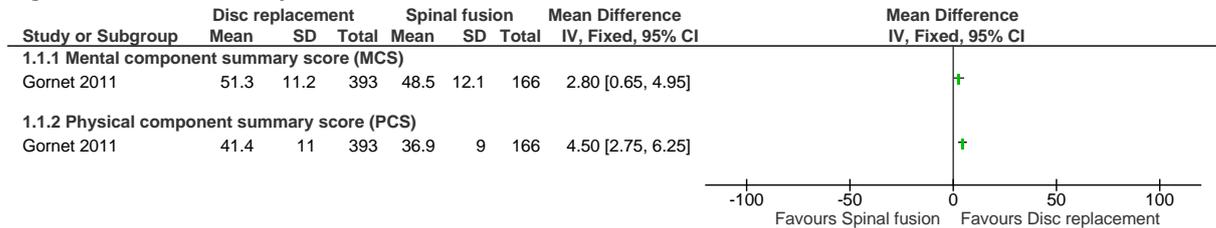
*Adjusted for Age, BMI, gender, previous back surgery history, baseline ODI, baseline back pain VAS, baseline SF-12 PCS and MCS scores, presence/absence of complications, levels of surgery and diagnosis.

1373

K319 Disc replacement

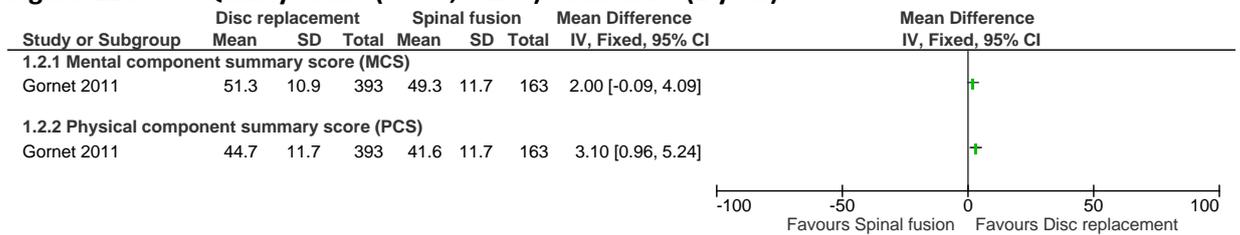
K13951 Disc replacement vs spinal fusion in low back pain with/without sciatica

Figure 1245: Quality of life (SF-36, 0-100) ≤ 4 months



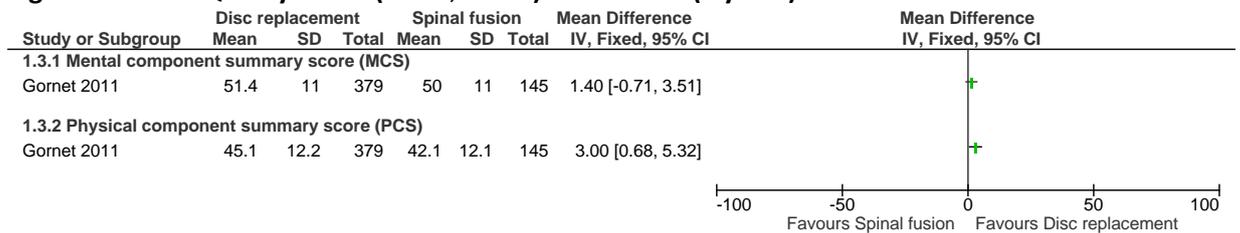
1376

Figure 1246: Quality of life (SF-36, 0-100) >4 months (1 year)



1377

Figure 1247: Quality of life (SF-36, 0-100) > 4 months (2 years)



1378

Figure 1248: Quality of life (EQ-5D, 0-1) >4 months (1 year)

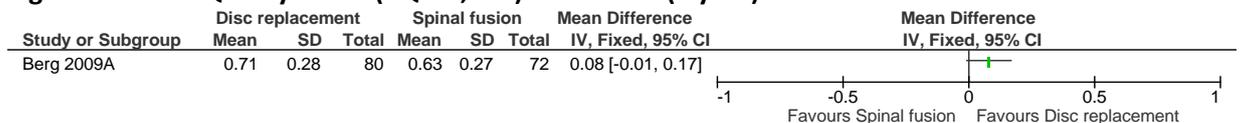
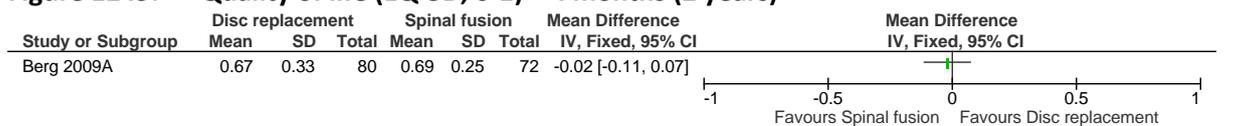
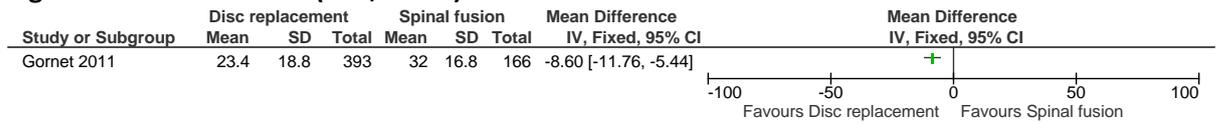


Figure 1249: Quality of life (EQ-5D, 0-1) > 4 months (2 years)



1379

Figure 1250: Function (ODI, 0-100) ≤ 4 months



1380

Figure 1251: Function (ODI, 0-100) > 4 months (1 year)

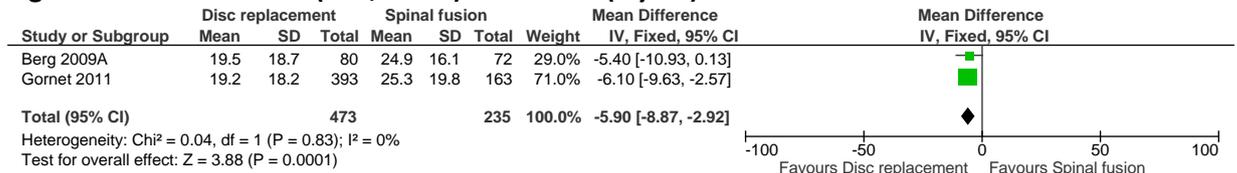
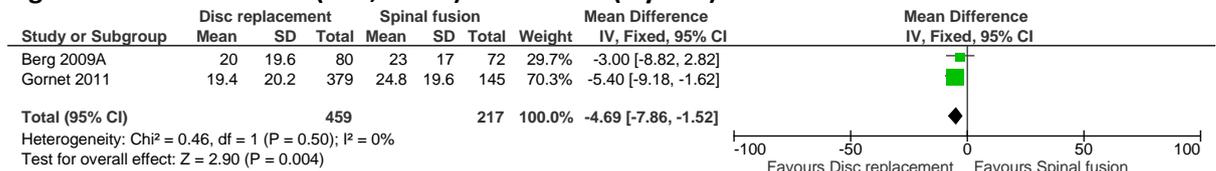
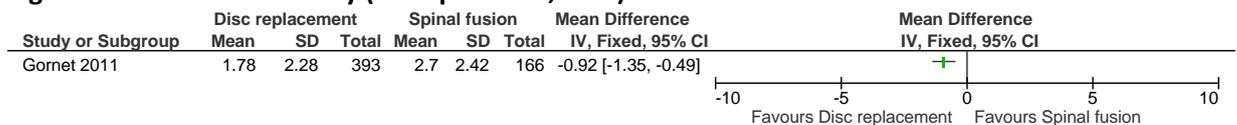


Figure 1252: Function (ODI, 0-100) > 4 months (2 years)



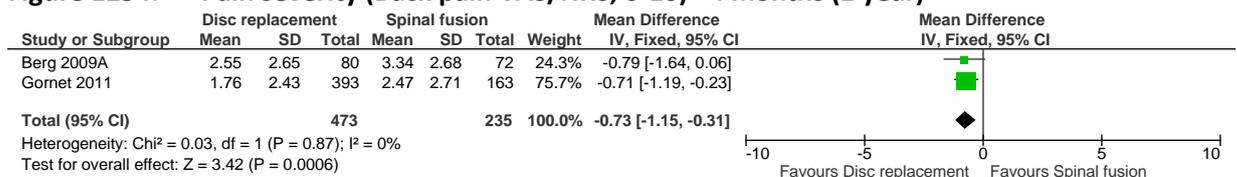
1381

Figure 1253: Pain severity (Back pain NRS, 0-10) ≤ 4 months



1382

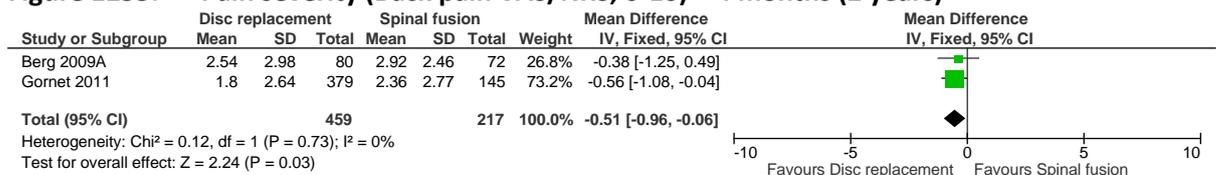
Figure 1254: Pain severity (Back pain VAS/NRS, 0-10) > 4 months (1 year)



1383

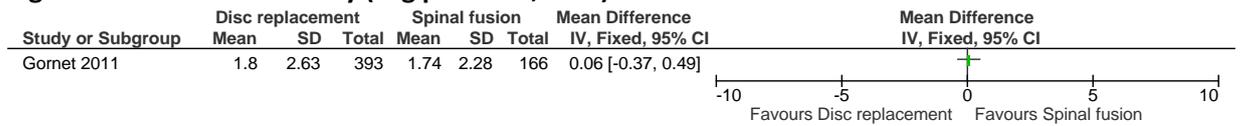
1384

Figure 1255: Pain severity (Back pain VAS/NRS, 0-10) > 4 months (2 years)



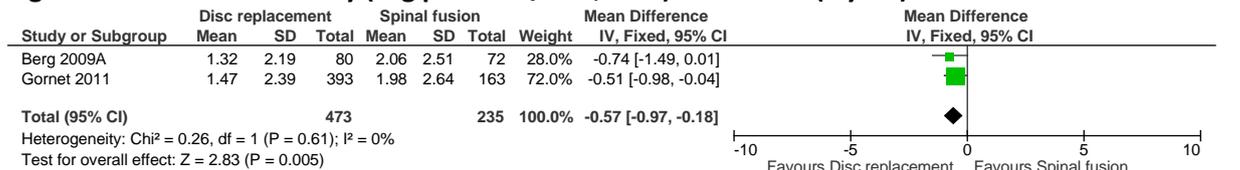
1385

Figure 1256: Pain severity (Leg pain NRS, 0-10) ≤ 4 months



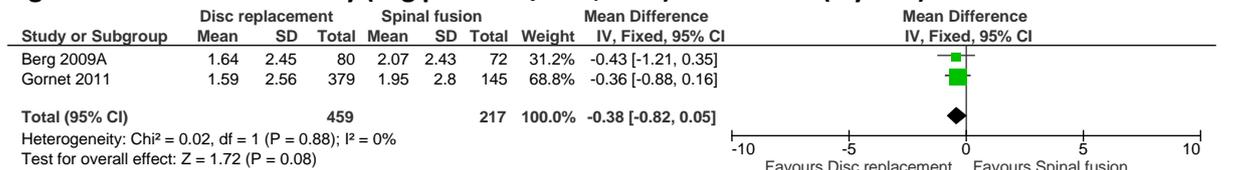
1386

Figure 1257: Pain severity (Leg pain VAS/NRS, 0-10) >4 months (1 year)



1387

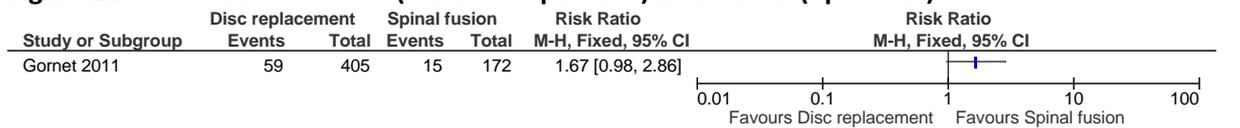
Figure 1258: Pain severity (Leg pain VAS/NRS, 0-10) > 4 months (2 years)



1388

1389

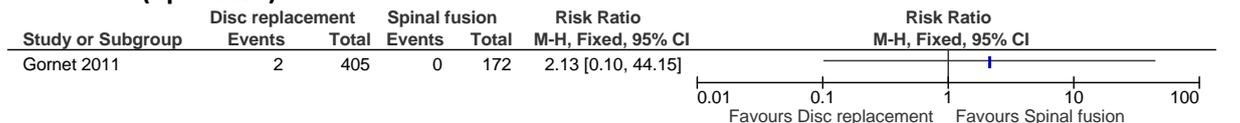
Figure 1259: Adverse events (number of patients) ≤ 4 months (operative)



Adverse events in the DR group included: n=9 anatomic/technical difficulty, n=1 cardiovascular, n=7 gastrointestinal-ileus, n=4 gastrointestinal-other, n=1 incision-related, n=1 infection, n=9 neurologic, n=4 other, n=1 other pain, n=3 peritoneal tear, n=1 rash, n=1 respiratory, n=3 spinal events, n=2 urogenital, n=14 vascular injury-intraoperative (total n=61).
Adverse events in the fusion group included: n=1 anatomic/technical difficulty, n=2 gastrointestinal ileus, n=1 neurologic, n=1 other, n=2 peritoneal tear, n=1 spinal event at cervical level, n=2 urogenital, n=8 vascular injury-intraoperative (total n= 18).

1390

Figure 1260: Adverse events (possibly device-related; number of patients) ≤ 4 months (operative)



Possible device-related adverse events included 2 anatomic/technical difficulties in the control group.

1391

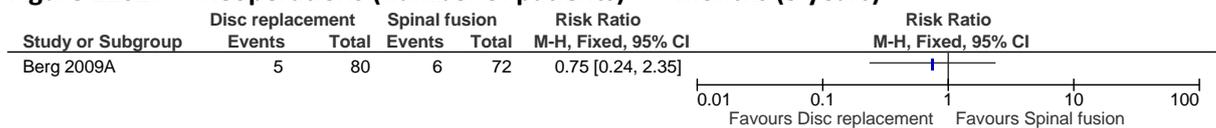
Figure 1261: Reoperations (number of patients) > 4 months (2 years)



1392 *Gornet 2011 study: second surgeries included revisions (DR=0, fusion=0); removals (DR=2, fusion=0); supplemental fixations*
 1393 *(DR=13, fusion=12); and reoperations (defined as surgical procedures at the treated spinal level that did not remove, modify*
 1394 *or add any components: decompressions, removals of bone fragment, discectomies, others; DR=22, fusion=3). The Authors*
 1395 *note that 59% of DR patients that underwent reoperations were among the first five surgeries performed by an individual*
 1396 *operator.*
 1397 *Berg 2009A study: reoperations included decompression (DR=1, fusion=0), decompression together with extraction of*
 1398 *pedicular screws (DR=0, fusion=1), fusion at TDR level (DR=4, fusion=0), TDR above fusion (DR=0, fusion=5, haematoma*
 1399 *removal (DR=2, fusion=0), hernia repair (DR=1, fusion=0), repair of dural tear (DR=0, fusion=1).*
 1400

1401

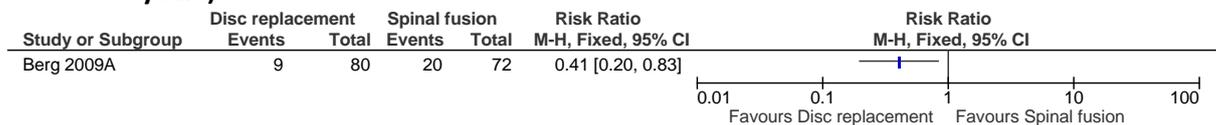
Figure 1262: Reoperations (number of patients) > 4 months (5 years)



1402 *Reoperations included decompression, decompression together with extraction of pedicular screws, fusion at TDR level, TDR*
 1403 *above fusion, haematoma removal, hernia repair, repair of dural tear.*

1404

Figure 1263: Reoperations (device-related reoperations; number of events) > 4 months (5 years)



Device-related reoperations included extraction of pedicle screws; fusion at total disc replacement level.

1405

K1196 Disc replacement vs 3-element MBR in low back pain without sciatica

Figure 1264: Quality of life (EQ-5D, 0-1) >4 months (1 year)

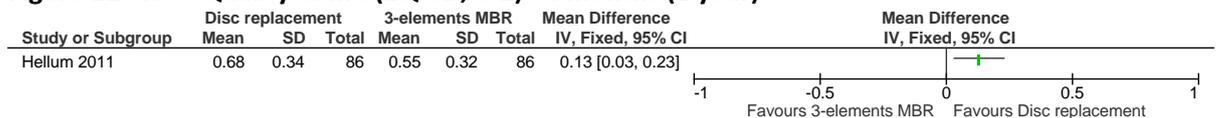


Figure 1265: Quality of life (EQ-5D, 0-1) > 4 months (2 years)

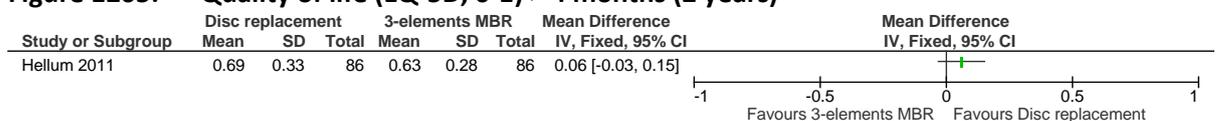
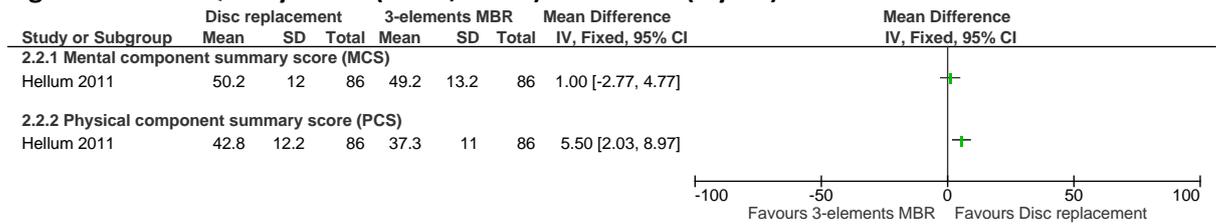
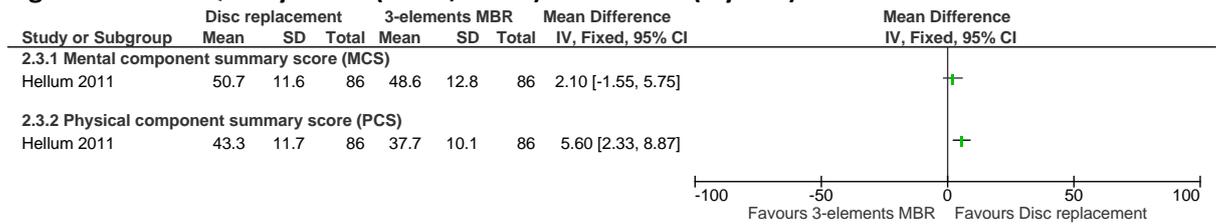


Figure 1266: Quality of life (SF-36, 0-100) >4 months (1 year)



Mental component: values not adjusted for significantly different baseline scores (significantly worse in the 3-MBR group)

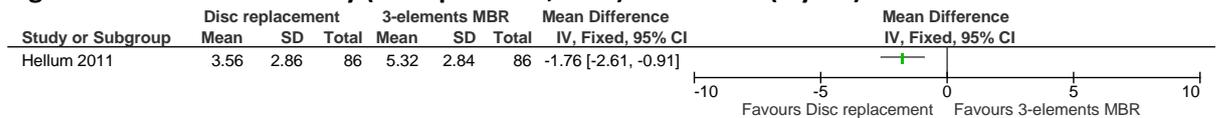
Figure 1267: Quality of life (SF-36, 0-100) > 4 months (2 years)



Mental component: values not adjusted for significantly different baseline scores (significantly worse in the 3-MBR group)

1407

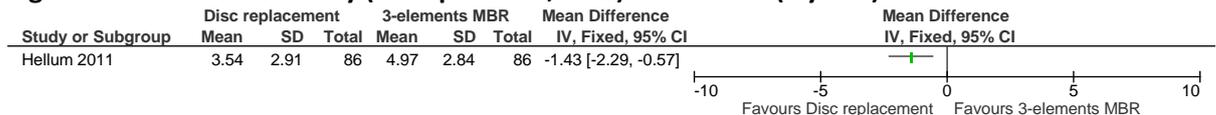
Figure 1268: Pain severity (Back pain VAS, 0-10) >4 months (1 year)



Values not adjusted for significantly different baseline scores (significantly worse in the 3-MBR group)

1408

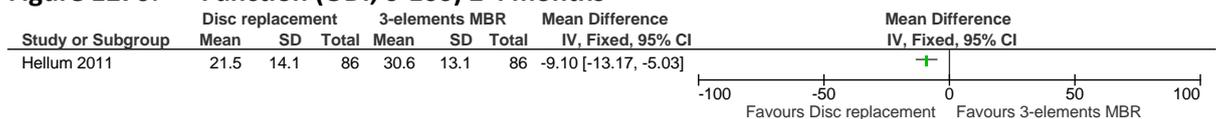
Figure 1269: Pain severity (Back pain VAS, 0-10) > 4 months (2 years)



Values not adjusted for significantly different baseline scores (significantly worse in the 3-MBR group)

1409

Figure 1270: Function (ODI, 0-100) ≤ 4 months



1410

Figure 1271: Function (ODI, 0-100) >4 months (1 year)

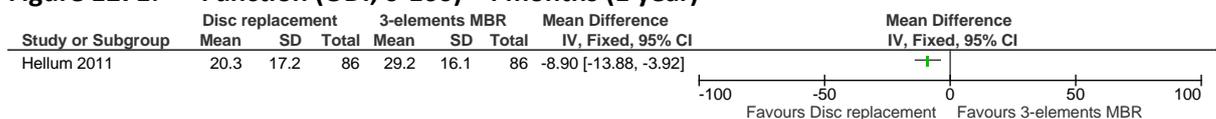
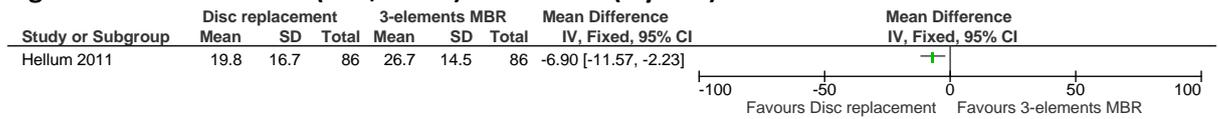


Figure 1272: Function (ODI, 0-100) > 4 months (2 years)



1411

K420 Spinal fusion

K12031 Spinal Fusion versus Usual Care

Figure 1273: Pain Severity(VAS,0-10) >4 months (2 years)

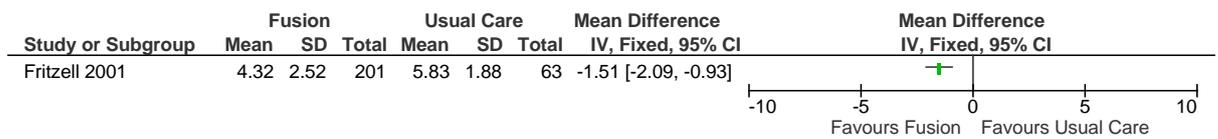
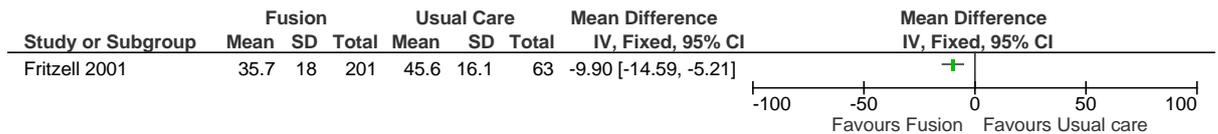
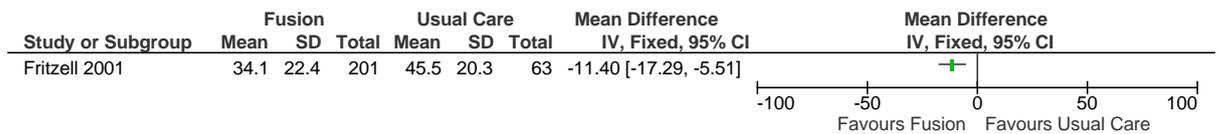


Figure 1274: Function (ODI, 0-100) >4 months (2 years)



1414

Figure 1275: Function (General Function Score, 0-100) >4 months (2 years)



1415

Figure 1276: Function (Million Visual Analogue Score (MVAS) 0-100) >4 months (2 years)

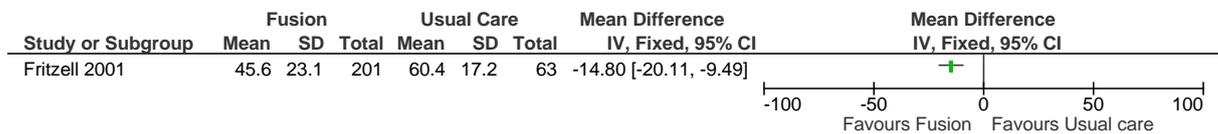
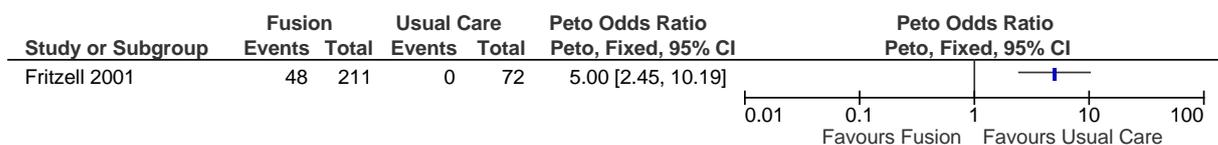
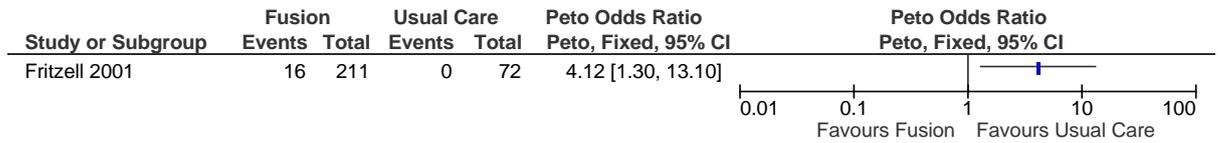


Figure 1277: Adverse Events-Complications (2 years)



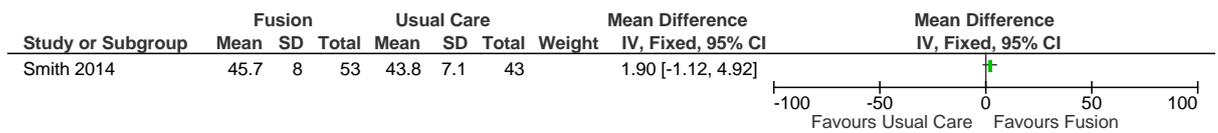
1416

Figure 1278: Reoperations (2 years)



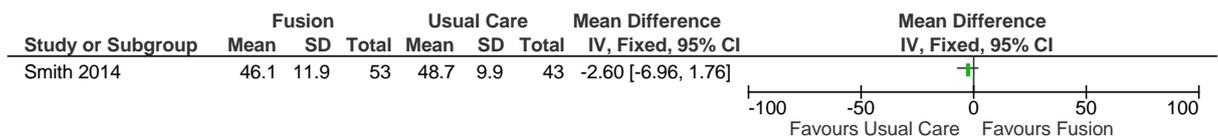
K12072 Spinal Fusion versus Usual Care (cohort)

Figure 1279: Quality of life(SF-12,PCS,0-100)>4 months (1 year)



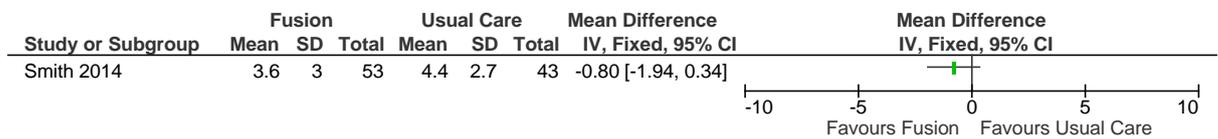
1418

Figure 1280: Quality of life(SF-12,mCS,0-100)>4 months (1 year)



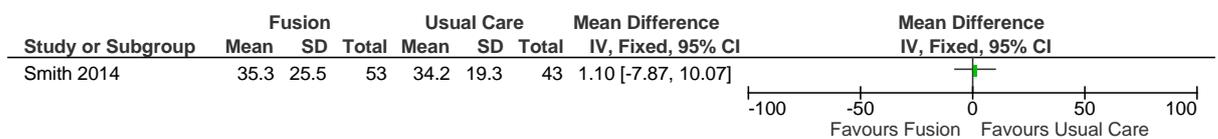
1419

Figure 1281: Pain Severity(NRS,0-10) >4 months (1 year)



1420

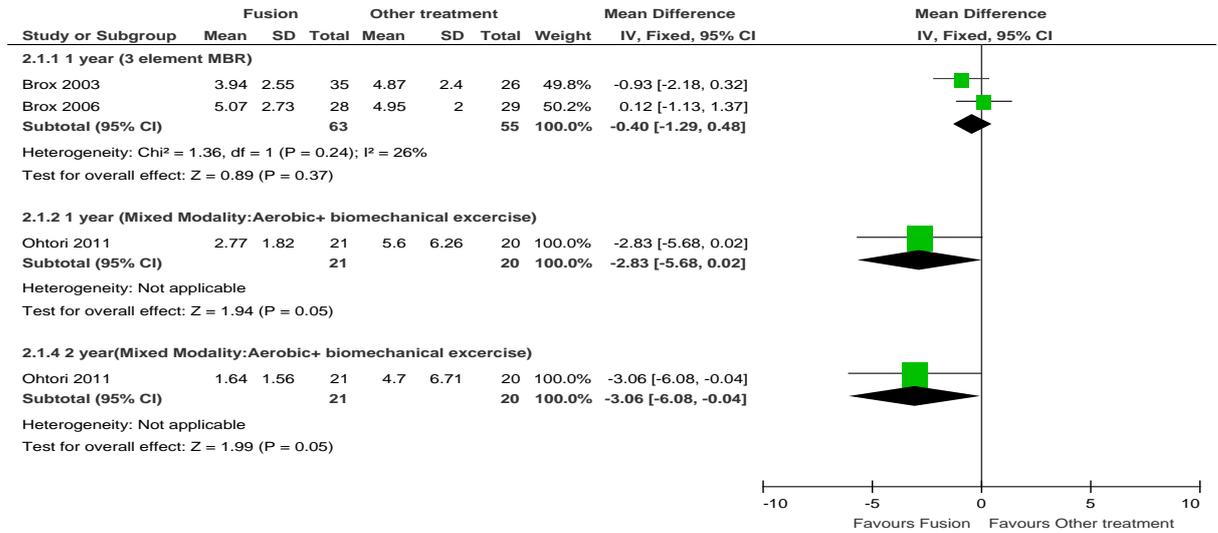
Figure 1282: Function (ODI, 0-100) >4 months (1 year)



1421

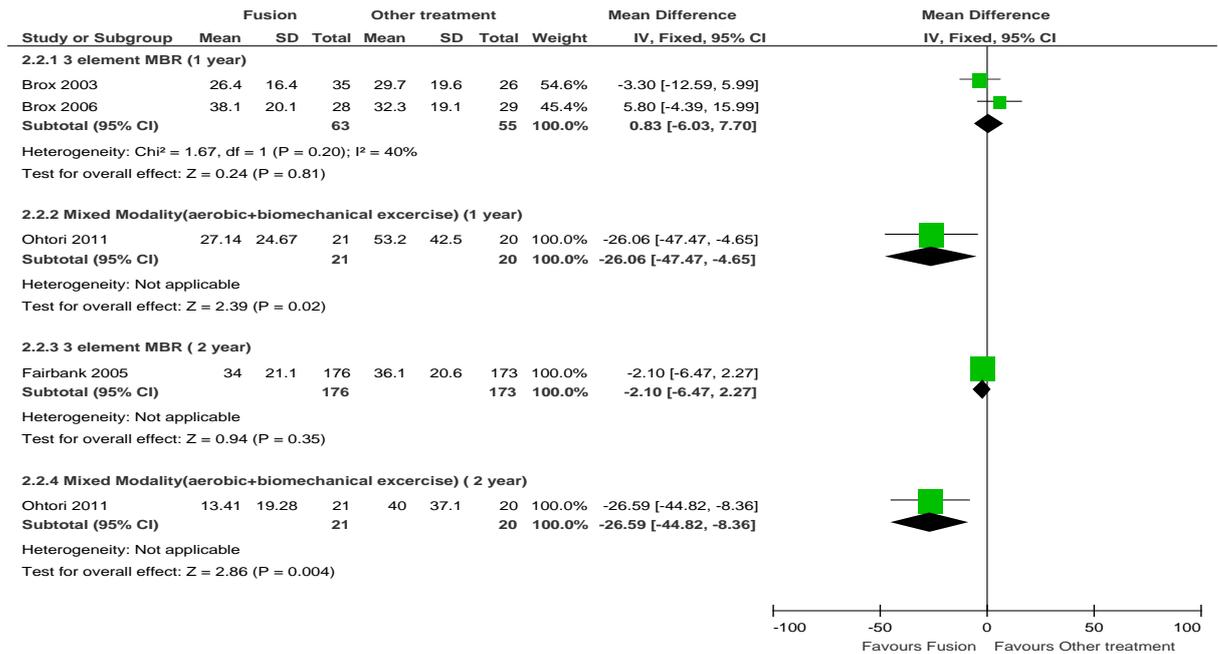
K1203 Spinal Fusion versus Other Treatment

Figure 1283: Pain Severity(VAS,0-10) >4 months (1 year)



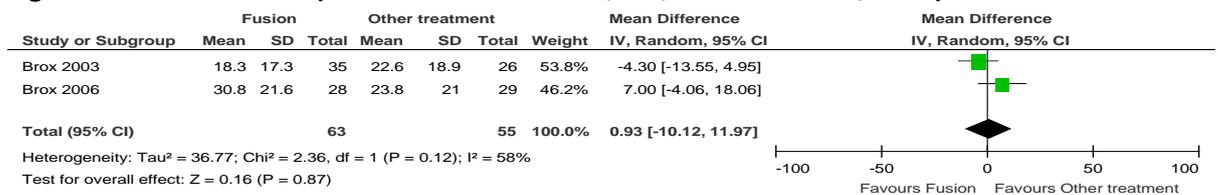
1423

Figure 1284: Function (ODI,0-100) >4 months - 1 year



1424

Figure 1285: Function (General Function Score,GFS,3 element MBR,0-100)> 4 months



1425

Figure 1286: Function (Japanese Orthopaedic Association Score (JOAS) ,0-3)> 4 months

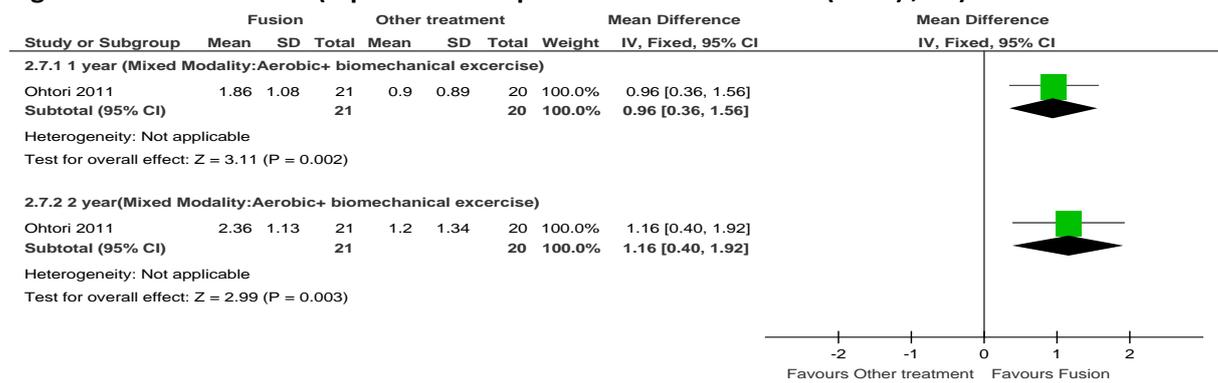
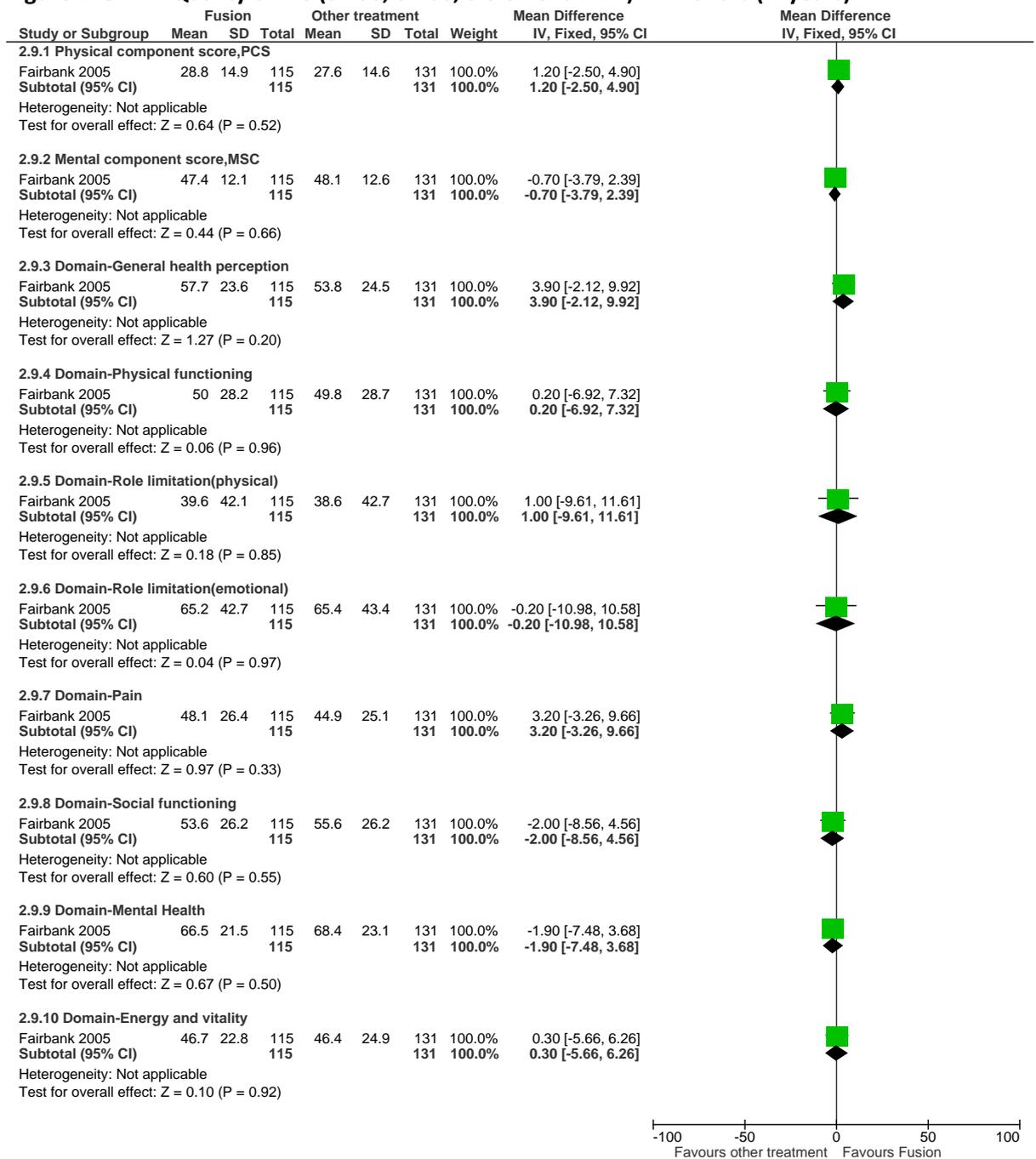
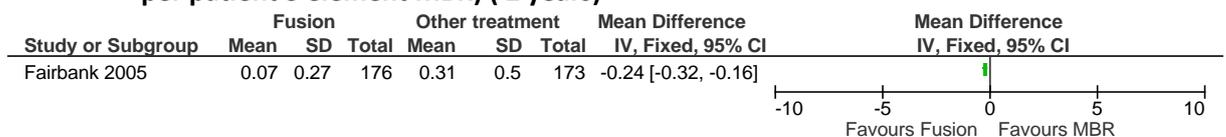


Figure 1287: Quality of life (SF-36, 0-100, 3 element MBR)> 4 months (2 years)



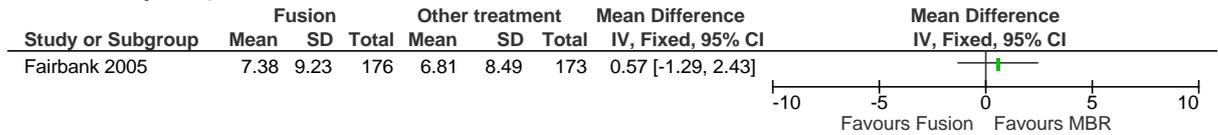
1426

Figure 1288: Healthcare Utilisation(unplanned hospital admissions for spinal surgery, mean no. per patient 3 element MBR) (2 years)



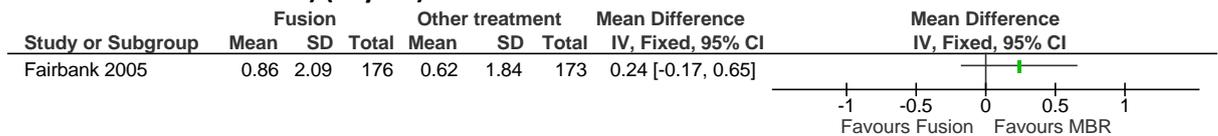
1427

Figure 1289: Healthcare Utilisation(GP consultations, mean no. per patient, 3 element MBR) (2 years)



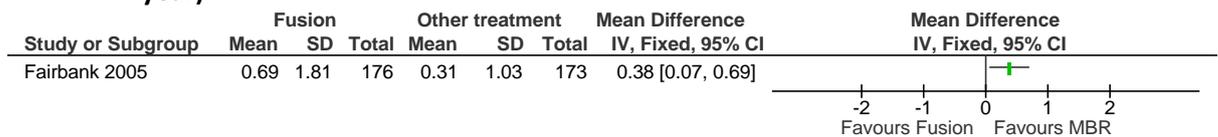
1428

Figure 1290: Healthcare Utilisation(Practise nurse consultations, mean no. per patient, 3 element MBR) (2 year)



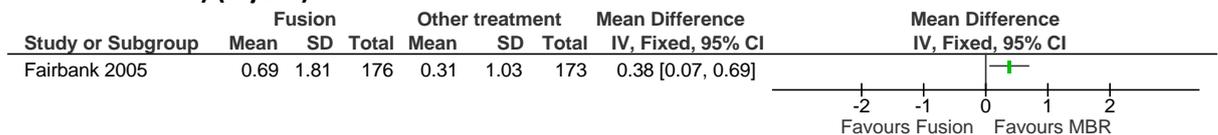
1429

Figure 1291: Healthcare Utilisation (GP home visits, mean no. per patient, 3 element MBR) (2 year)



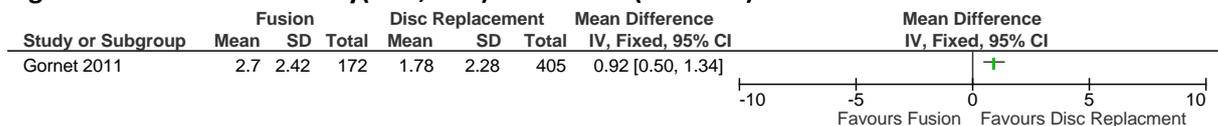
1430

Figure 1292: Healthcare Utilisation(Practise nurse home visits, mean no. per patient, 3 element MBR) (2 year)



12814 Spinal fusion versus Different types of surgery

Figure 1293: Pain Severity(VAS,0-10) ≤4 months (3 month)



1432

Figure 1294: Pain Severity(VAS,0-10) >4 months (1 year)

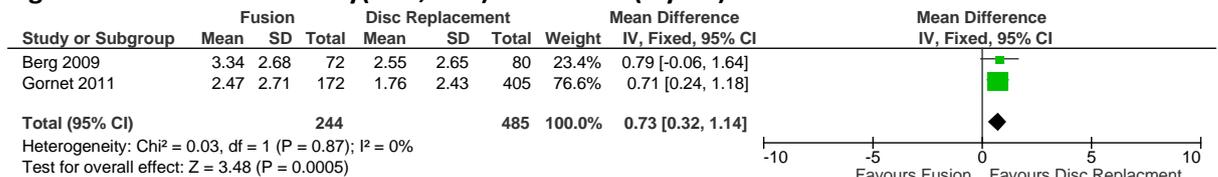


Figure 1295: Pain Severity(VAS,0-10) >4 months(2 year)

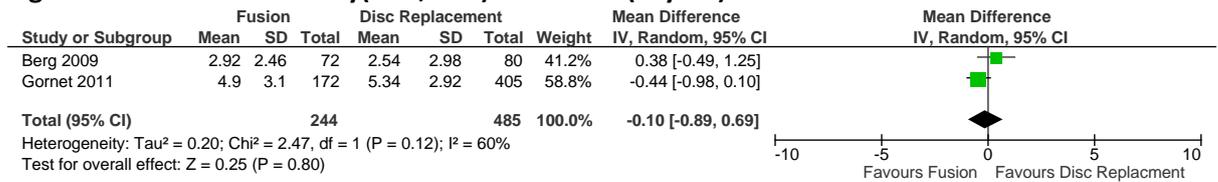
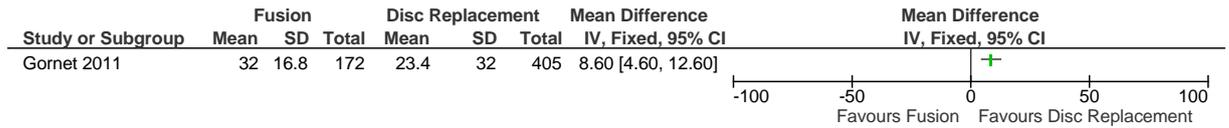
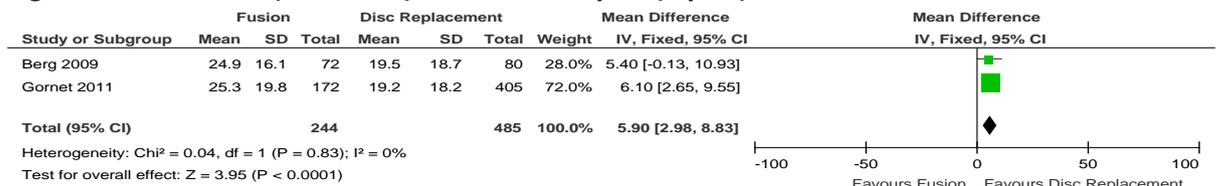


Figure 1296: Function(ODI,0-100) ≤4 months (3 months)



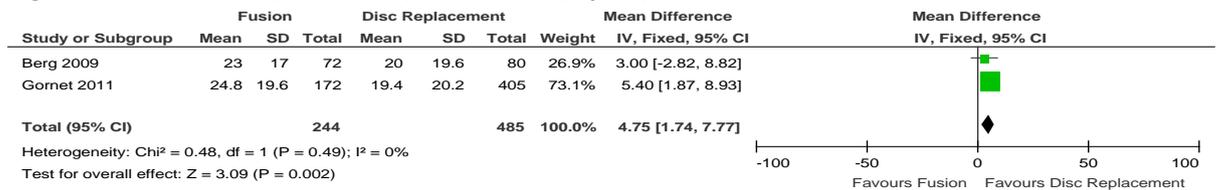
1433

Figure 1297: Function(ODI,0-100) >4 months - 1 year (1 year)



1434

Figure 1298: Function(ODI,0-100) >4 months (2 year)



1435

Figure 1299: Quality of life(SF-36, Physical Component Score,PCS,0-100)≤ 4 month (3 month)

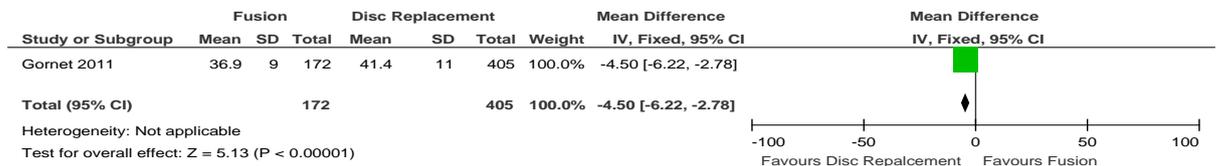
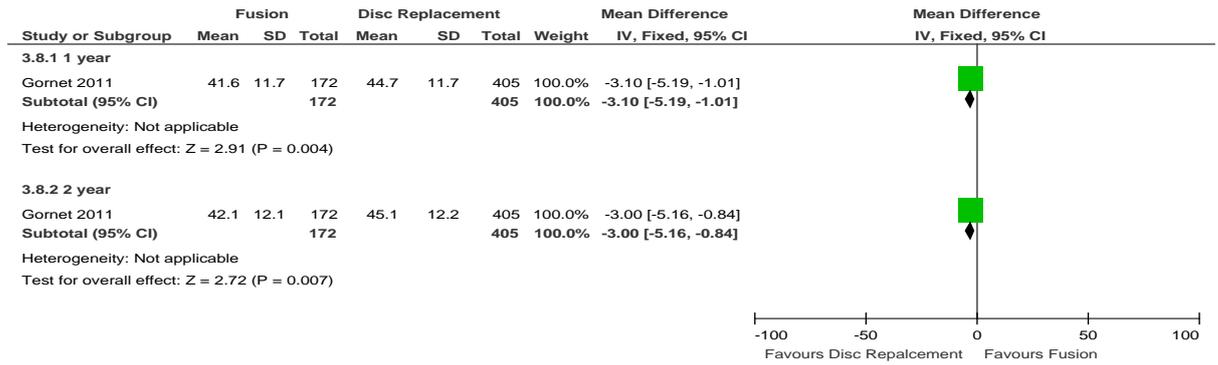
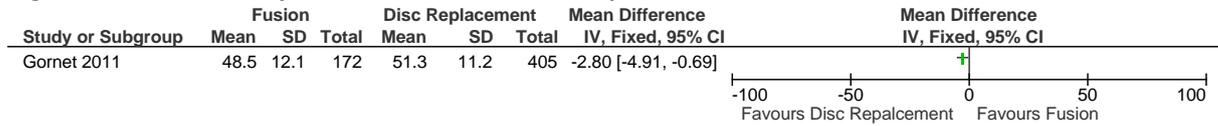


Figure 1300: Quality of life(SF-36, Physical Component Score,PCS,0-100)> 4 month



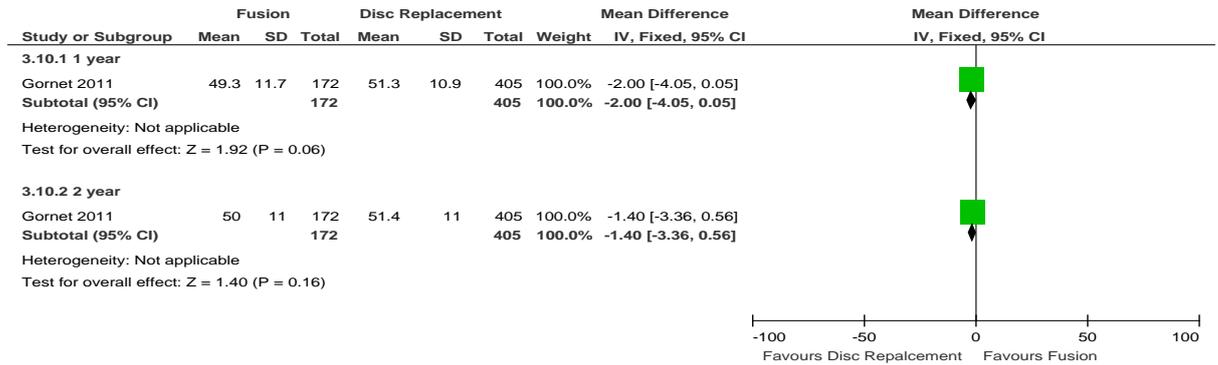
1436

Figure 1301: Quality of life(SF-36, Mental Component Score, MCS,0-100)≤ 4 month (3 months)



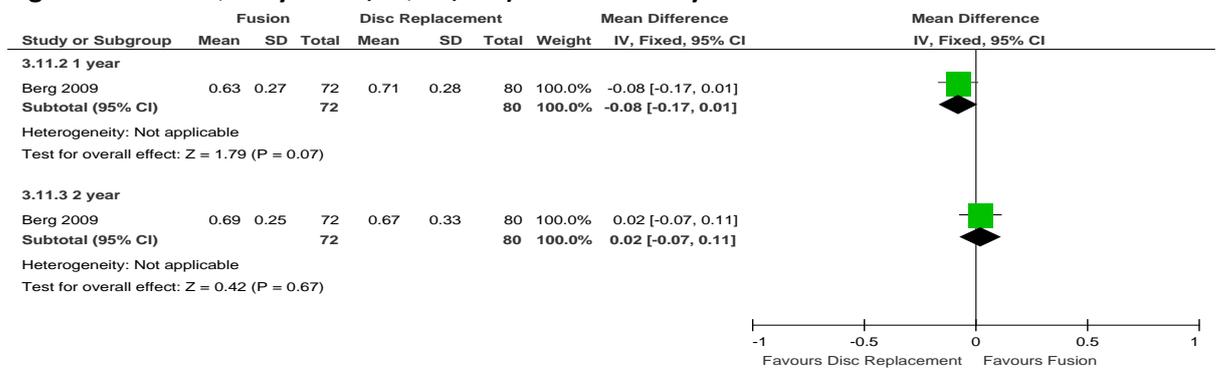
1437

Figure 1302: Quality of life(SF-36, Mental Component Score, MCS,0-100)> 4 months



1438

Figure 1303: Quality of life,EQ-5D, 0-1)>4 months - 1 year



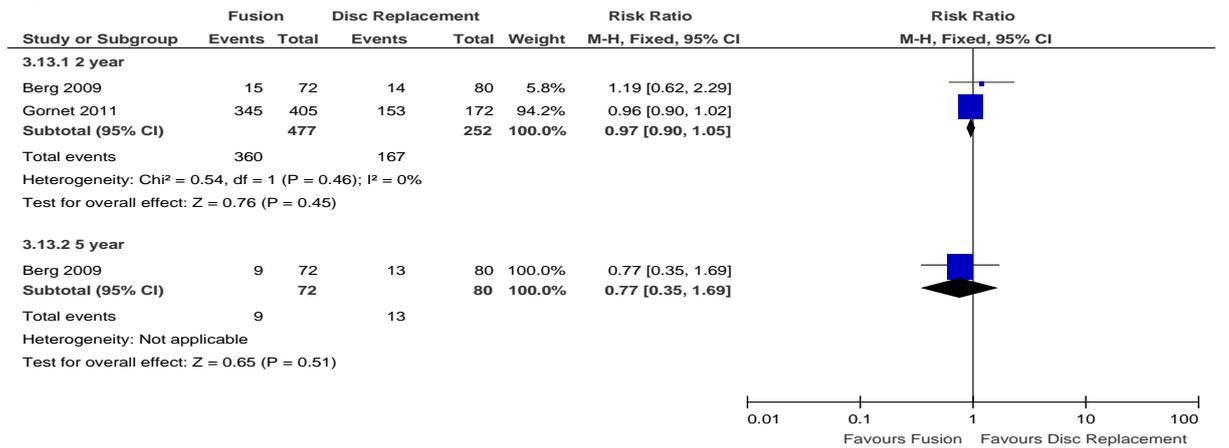
1439

Figure 1304: Adverse Events-Mortality at 2 years



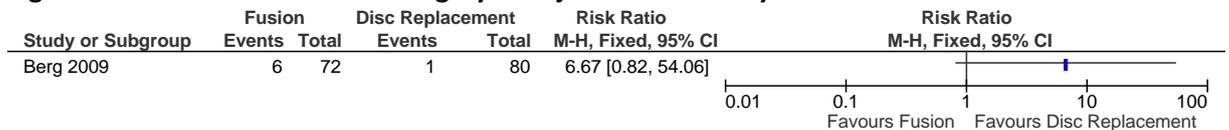
1440

Figure 1305: Adverse Events-Complications



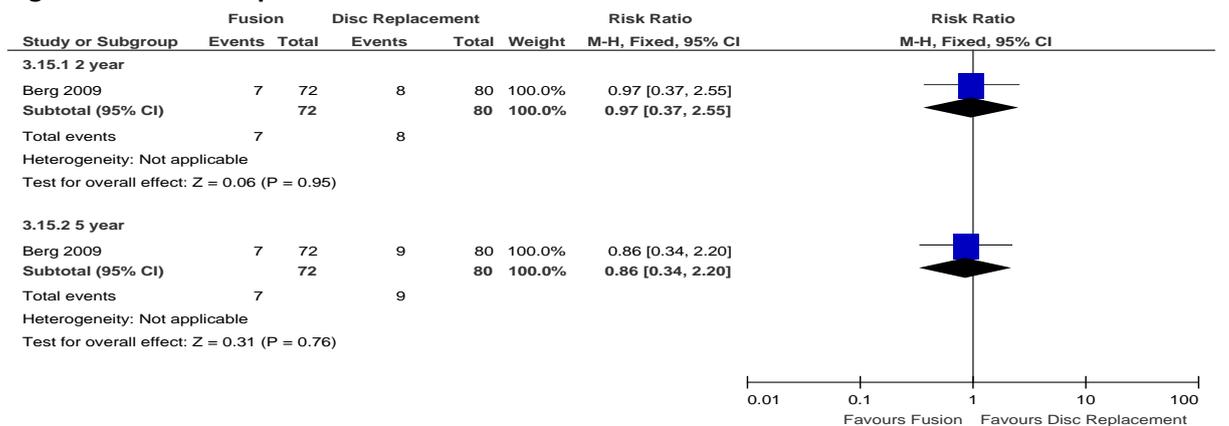
1441

Figure 1306: Adverse Events-surgery at adjacent level at 2 years



1442

Figure 1307: Re-operations

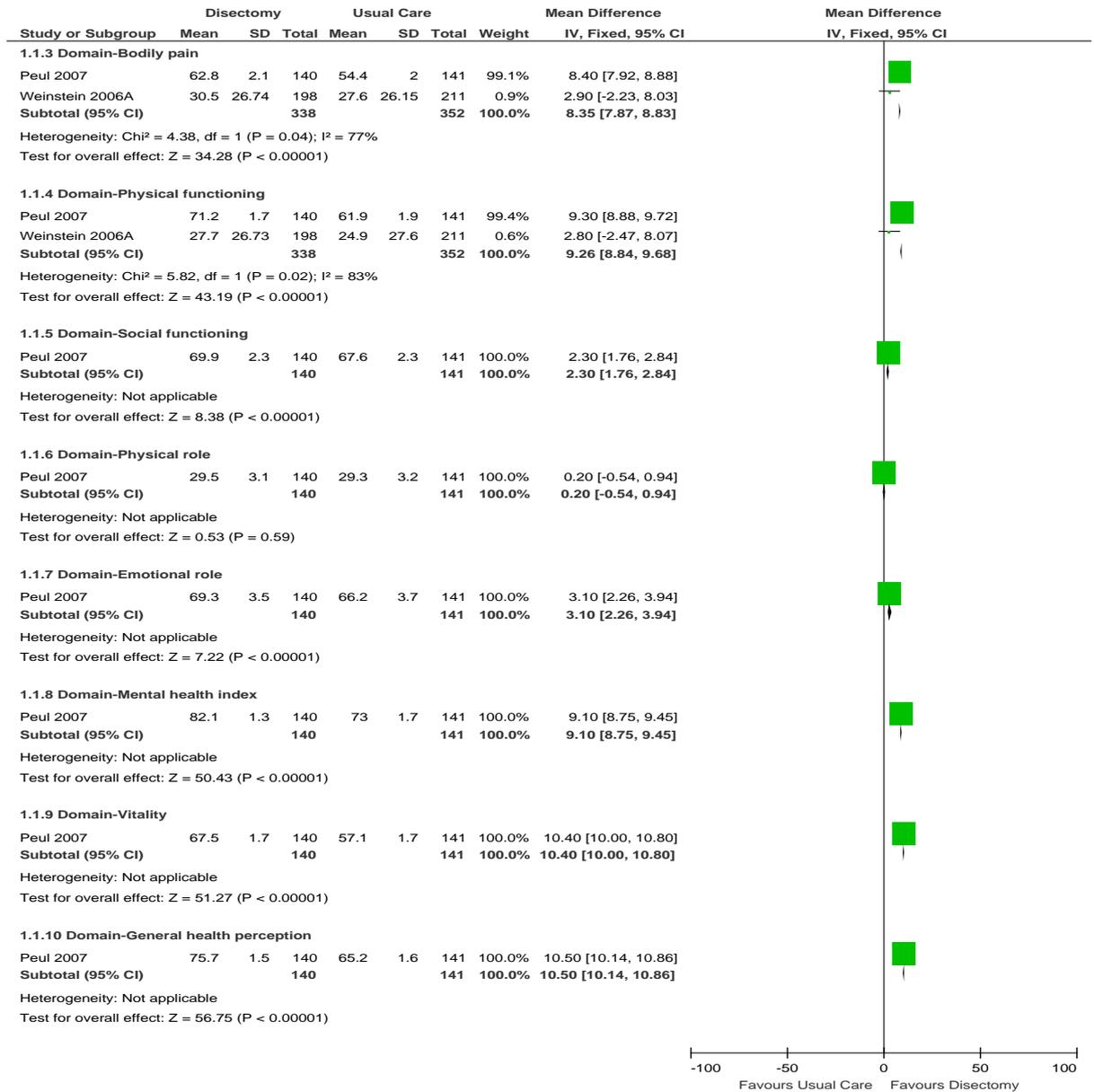


1443

K21 Spinal decompression

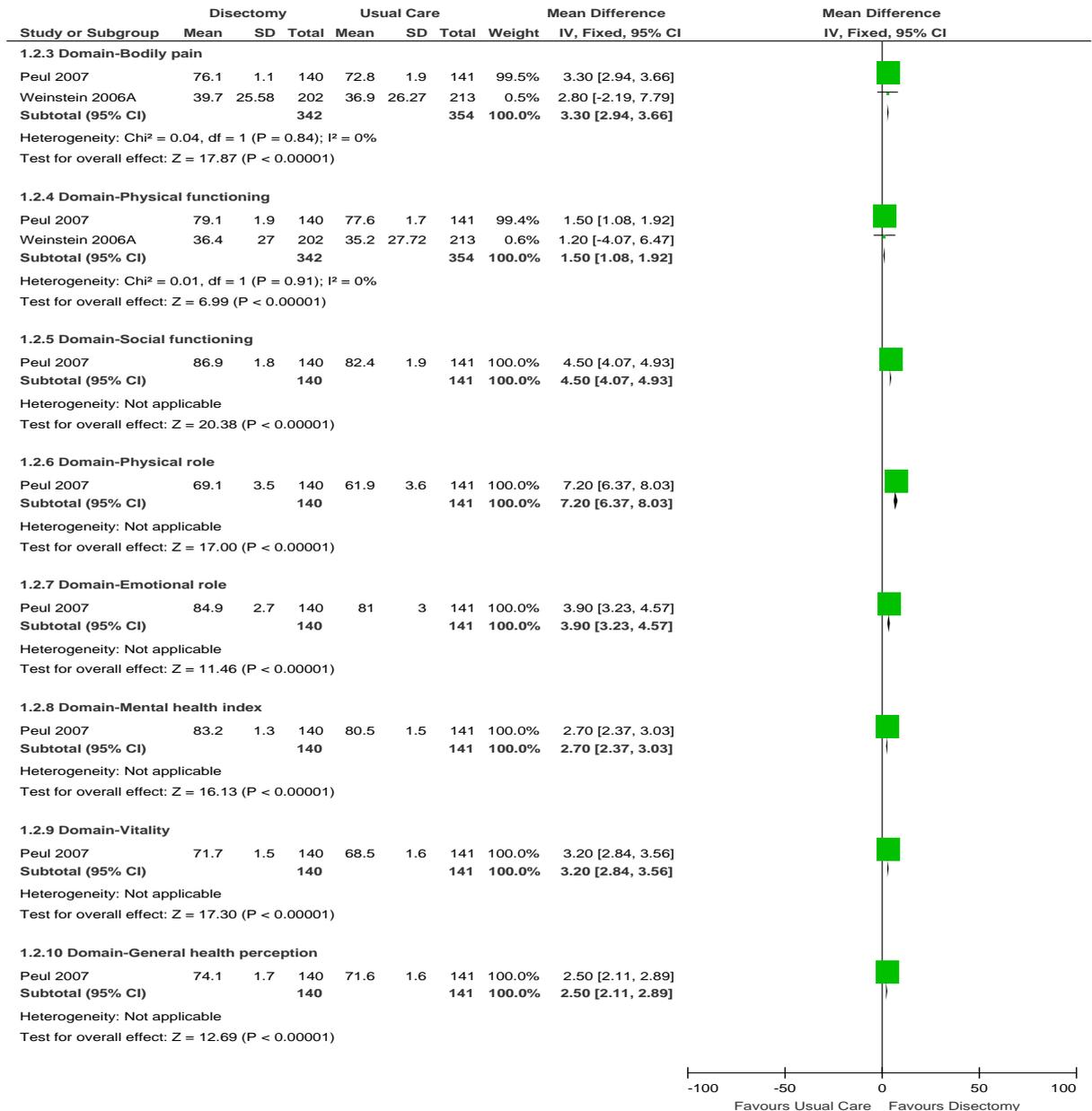
K21.1 Discectomy versus usual care

Figure 1308: Quality of life, SF-36, 0-100 ≤ 4 months



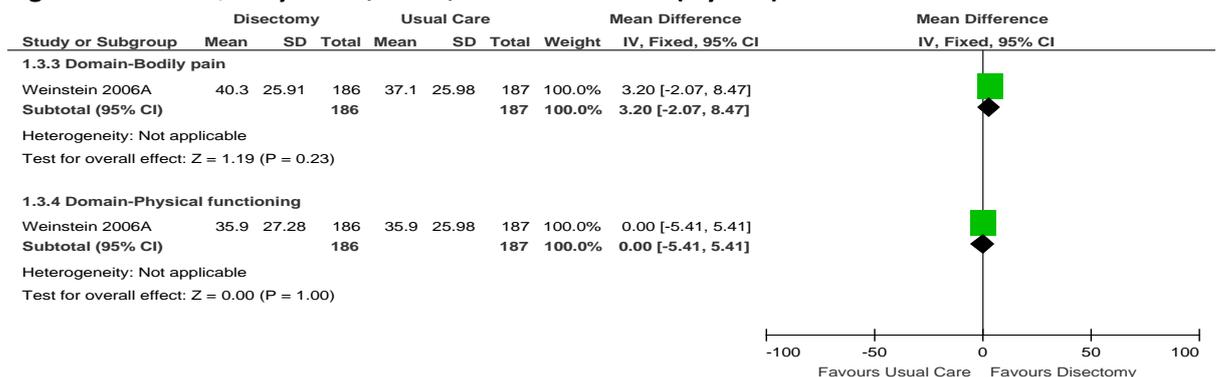
1446

Figure 1309: Quality of life, SF-36, 0-100 >4 months (1 year)



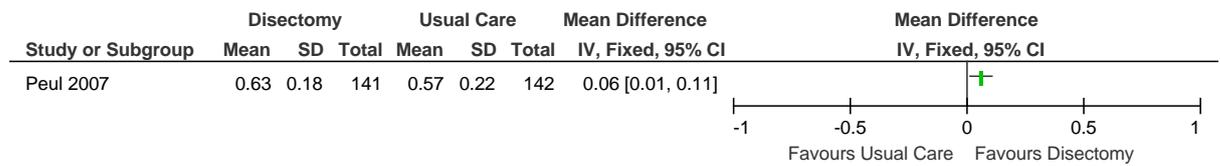
1447

Figure 1310: Quality of life, SF-36, 0-100 >4 months (2 years)



1448

Figure 1311: Quality of life, EQ-5D, 0-1 ≤4 months(3 months)



1449

Figure 1312: Quality of life, EQ-5D, 0-1 >4 months (1 year)

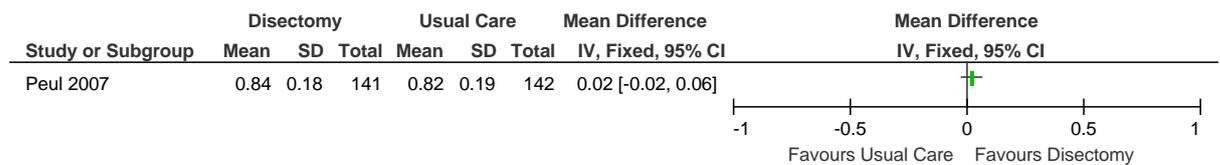
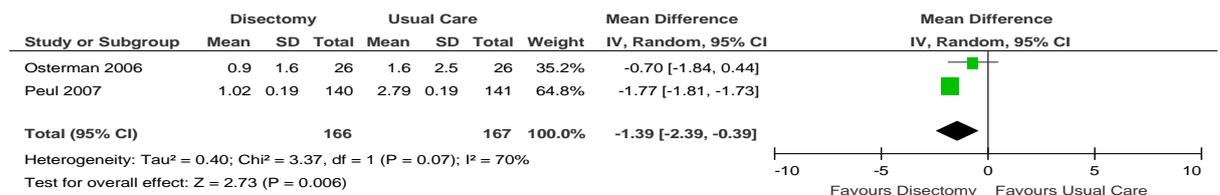


Figure 1313: Leg Pain Severity (VAS,0-10) ≤4 months (3 months)



Note: Random effects model used to address heterogeneity as subgroup analysis could not be carried out (see heterogeneity section in introduction)

1450

Figure 1314: Leg Pain Severity (VAS,0-10) >4 months (1 year)

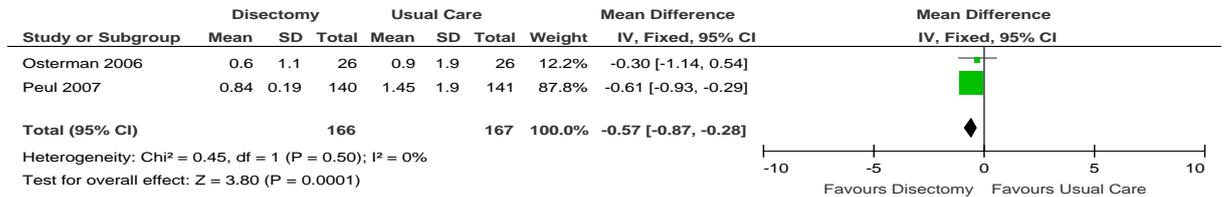
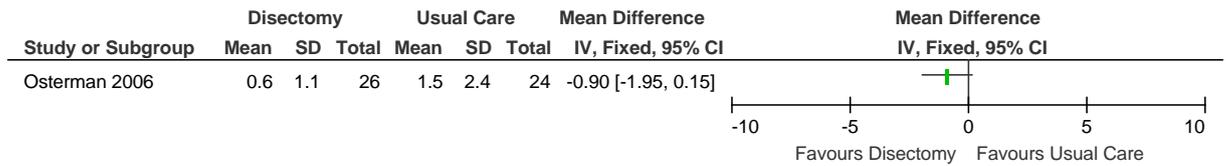
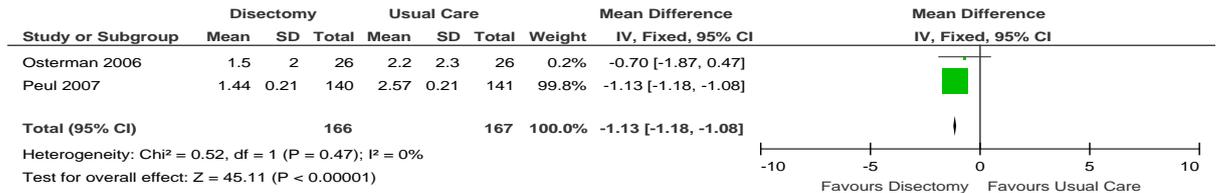


Figure 1315: Leg Pain Severity (VAS,0-10) >4 months (2 years)



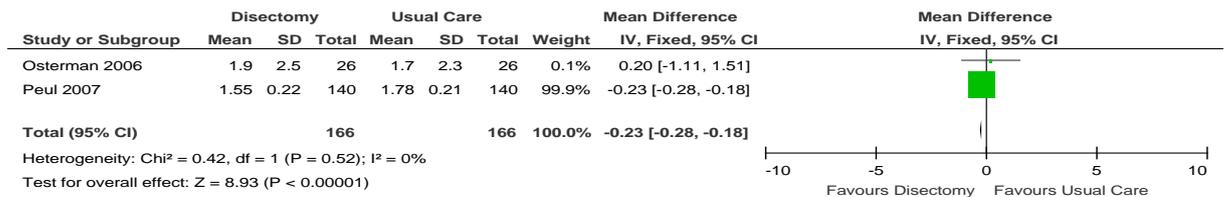
1451

Figure 1316: Back Pain Severity (VAS,0-10) ≤4 months



1452

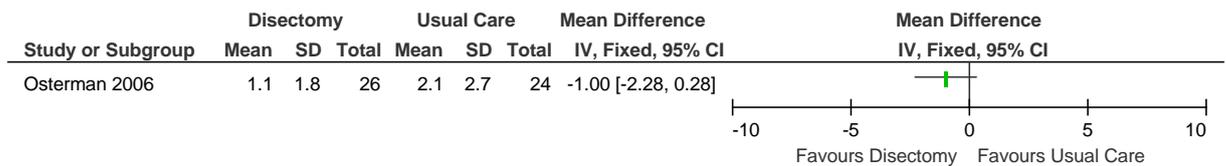
Figure 1317: Back Pain Severity (VAS, 0-10) >4 months - 1 year



1453

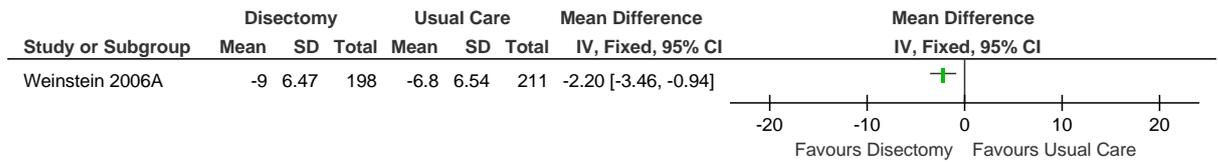
1454

Figure 1318: Back Pain Severity (VAS, 0-10) >4 months (2 years)



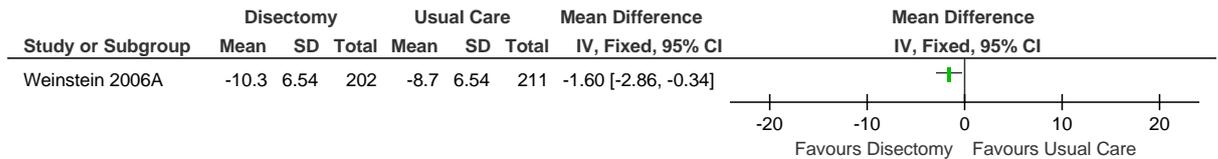
1455

Figure 1319: Pain Severity (Sciatica bothersomeness index, 0-24) ≤4 months (3 months)



1456

Figure 1320: Pain Severity (Sciatica bothersomeness index, 0-24) >4 months (1 year)



1457

Figure 1321: Pain Severity (Sciatica bothersomeness index, 0-24) >4 months (2 year)

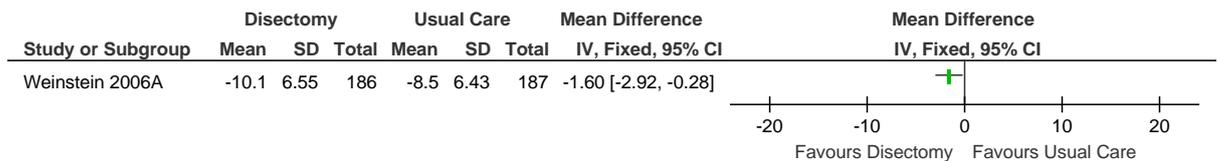
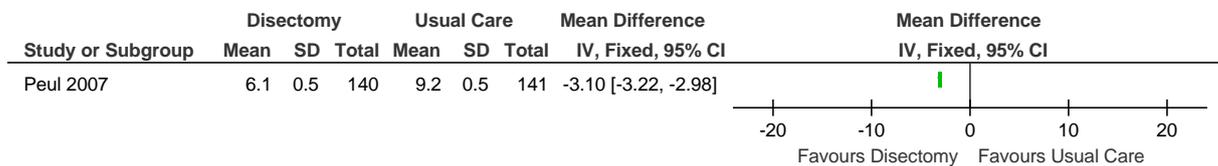
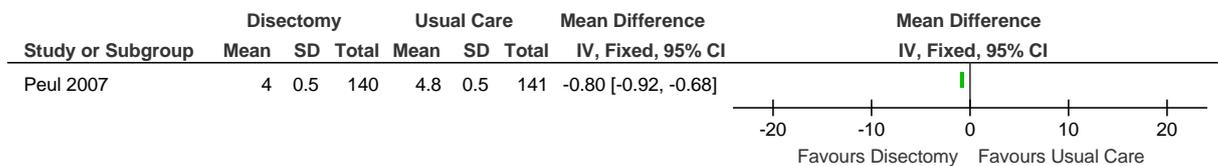


Figure 1322: Function (RMDQ, final score) ≤4 months



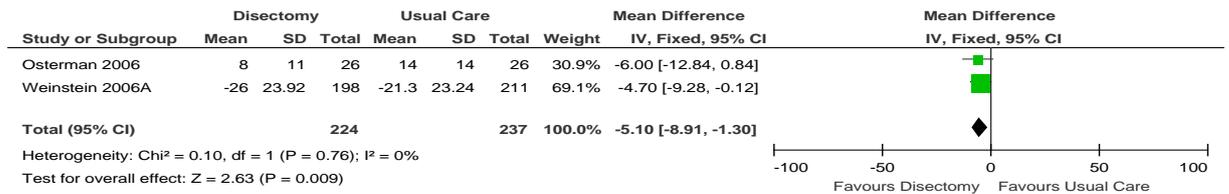
1459

Figure 1323: Function (RMDQ, final score) >4 months (1 year)



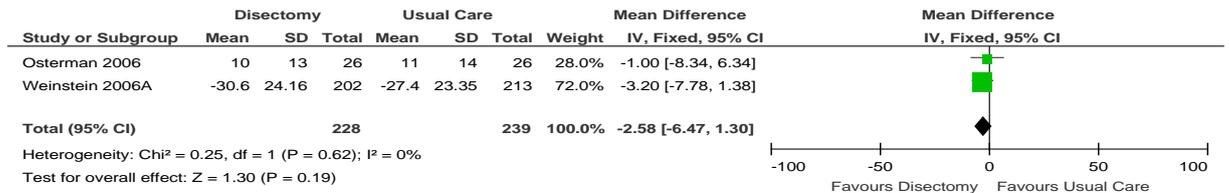
1461

1462 **Figure 1324: Function (ODI, change scores) ≤ 4 months**



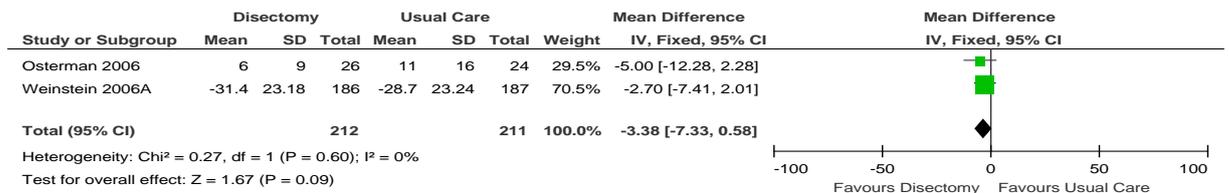
1463

1464 **Figure 1325: Function (ODI, change score) >4 months (1 year)**



1465

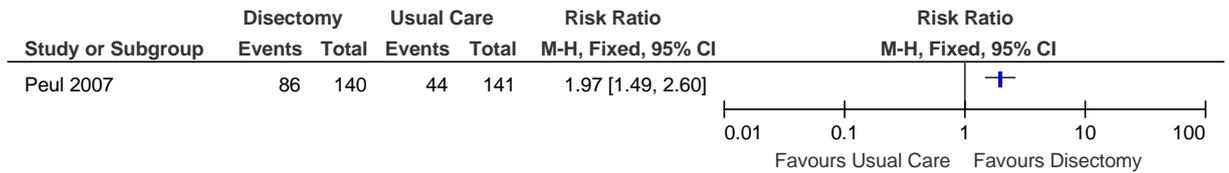
1466 **Figure 1326: Function (ODI, change scores) >4 months (2 years)**



1467

1468 **Figure 1327: Responder criteria (complete or nearly complete disappearance of symptoms) ≤ 4 months (8 weeks)**

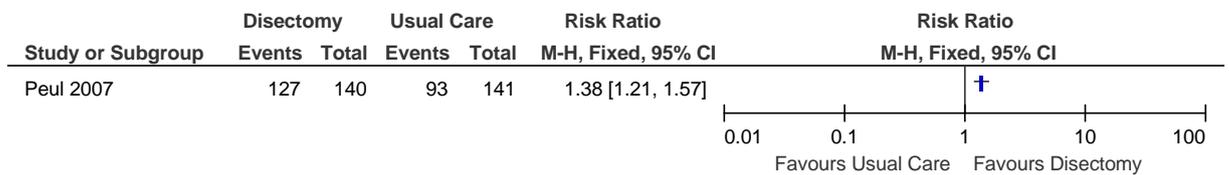
1469



1470

1471 **Figure 1328: Responder criteria (complete or nearly complete disappearance of symptoms) > 4 months (26 weeks)**

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1473

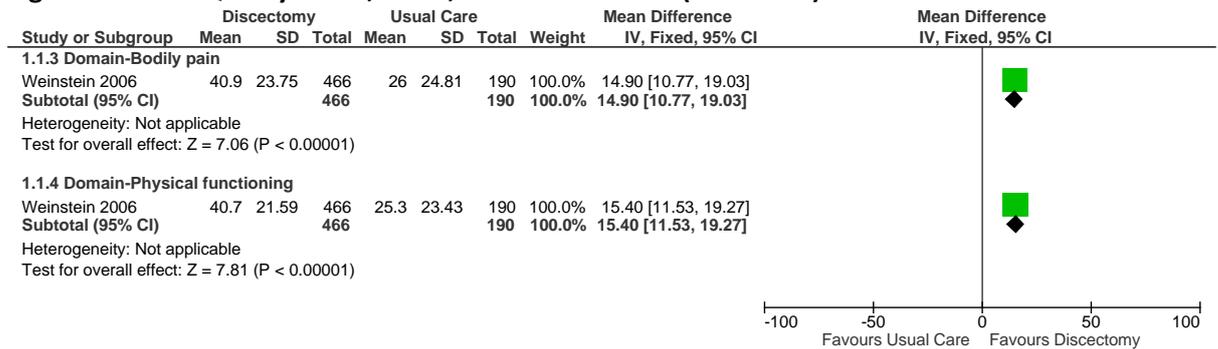
1474 **Figure 1329: Healthcare Utilisation (Number of patients with additional physical therapy visits) > 4 months (2 years)**
1475



1476
1477

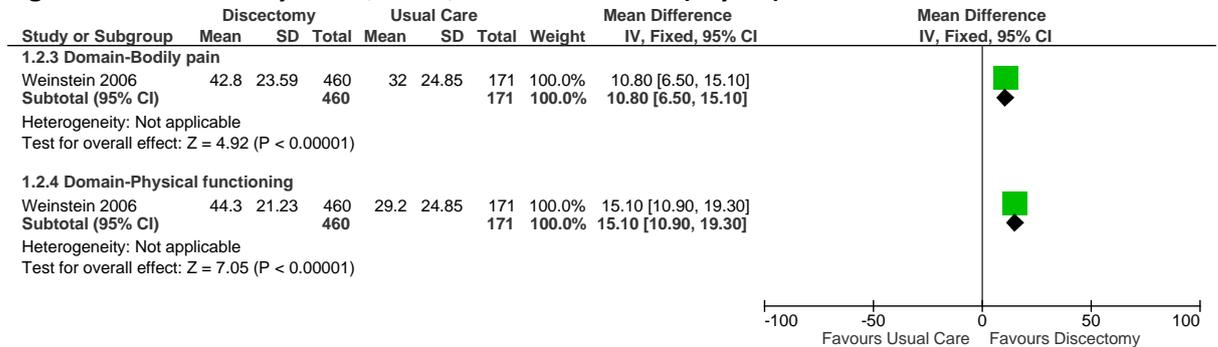
Disectomy versus usual care (cohort and RCT+cohort)

Figure 1330: Quality of life, SF-36, 0-100 ≤ 4 months (3 months)



1479

Figure 1331: Quality of life, SF-36, 0-100 ≤ 4 months (1 year)



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Figure 1332: Quality of life, SF-36, 0-100 ≤ 4 months (2 year)

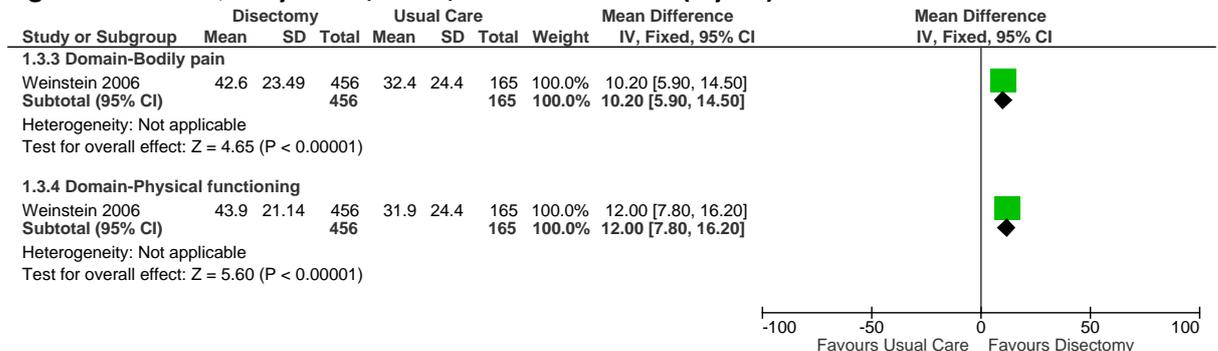
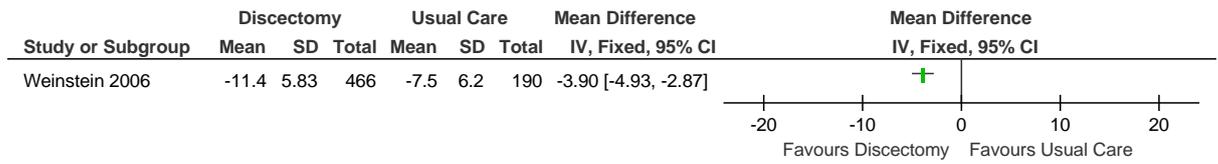
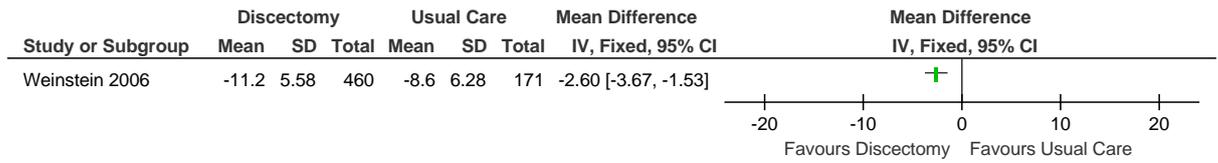


Figure 1333: Pain Severity (Sciatica bothersomeness index, 0-24) ≤4 months (3 months)



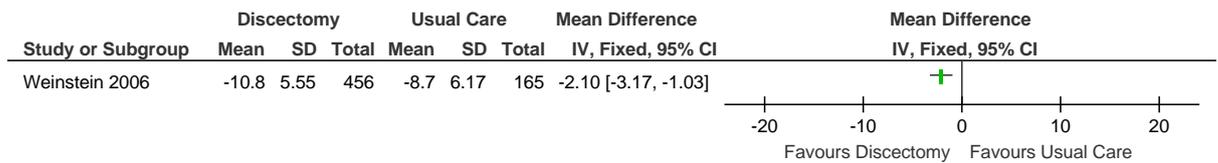
1481

Figure 1334: Pain Severity (Sciatica bothersomeness index, 0-24) ≤4 months (1 year)



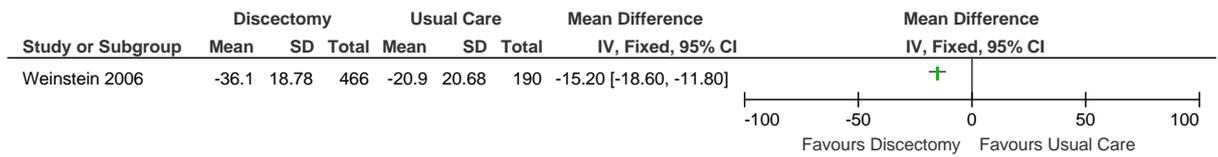
1482

Figure 1335: Pain Severity (Sciatica bothersomeness index, 0-24) ≤4 months (2 year)



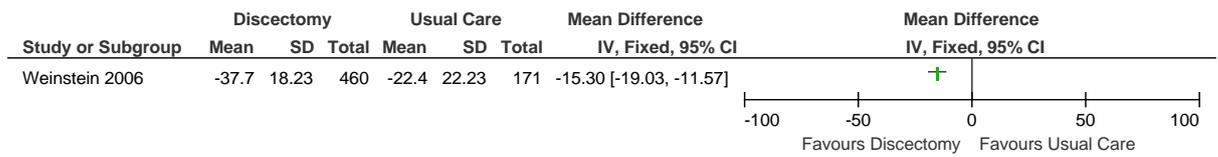
1483

Figure 1336: Function (ODI, 0-100) ≤ 4 months (3 months)



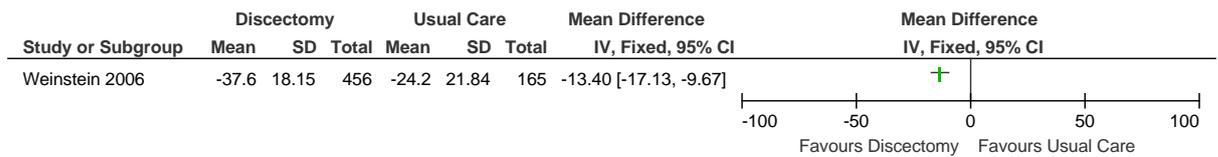
1484

Figure 1337: Function (ODI,0-100) ≤ 4 months (1 year)



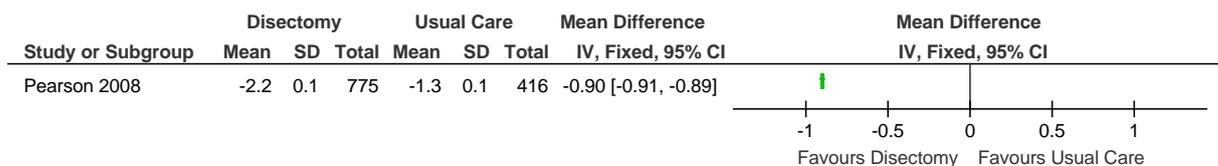
1485

Figure 1338: Function (ODI, 0-100) ≤ 4 months (2 year)



1486

Figure 1339: Pain Severity (Back Pain bothersomeness, 0-6) ≤ 4 months



1488

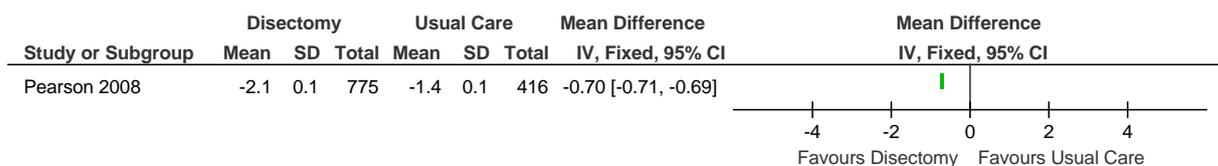
1489

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Note: adjusted for age, gender, center, race, marital status, smoking status, BMI, work status, health insurance status, compensation, joint problems, migraines, neurologic deficit, baseline back pain score, baseline satisfaction with symptoms, self-rated health trend, herniation (level, location, and morphology)

Figure 1340: Pain Severity (Back Pain bothersomeness, 0-6) >4 months (1 year)



1493

1494

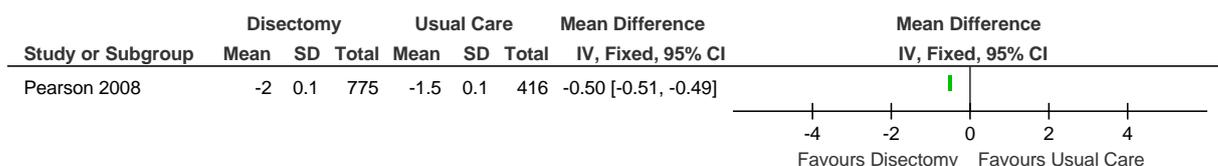
1495

1496

Note: adjusted for age, gender, center, race, marital status, smoking status, BMI, work status, health insurance status, compensation, joint problems, migraines, neurologic deficit, baseline back pain score, baseline satisfaction with symptoms, self-rated health trend, herniation (level, location, and morphology)

1497

Figure 1341: Pain Severity (Back Pain bothersomeness, 0-6) >4 months (2 year)



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1500

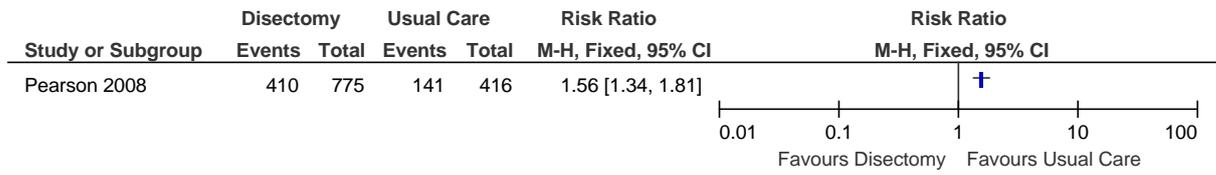
1501

1502

Note: adjusted for age, gender, center, race, marital status, smoking status, BMI, work status, health insurance status, compensation, joint problems, migraines, neurologic deficit, baseline back pain score, baseline satisfaction with symptoms, self-rated health trend, herniation (level, location, and morphology)

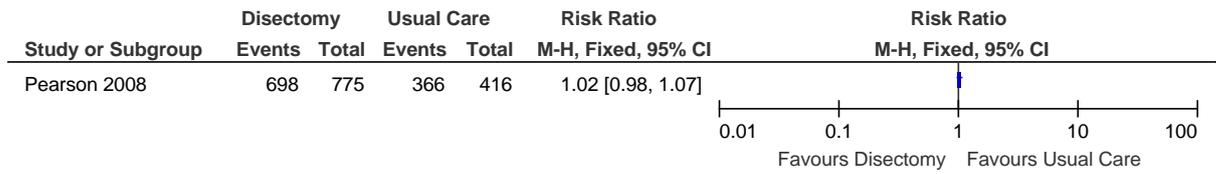
1503

Figure 1342: Healthcare Utilisation (Number of patients with more reported diagnostic test use) > 4 months (2 years)



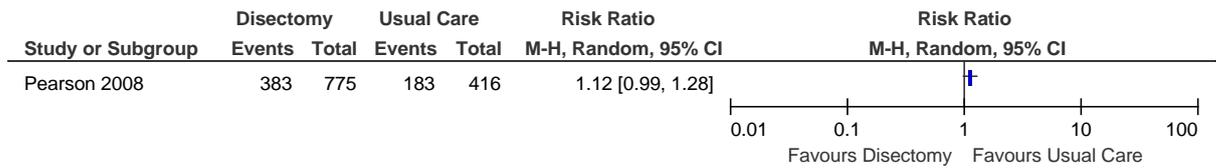
1504

Figure 1343: Healthcare Utilisation (Number of patients with reported healthcare visits) > 4 months (2 years)



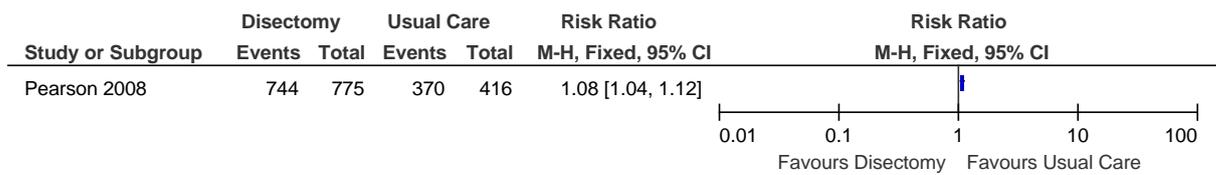
1505

Figure 1344: Healthcare Utilisation (Number of patients with additional physical therapy visits) > 4 months (2 years)



1506

Figure 1345: Healthcare Utilisation (Medication use) > 4 months (2 years)

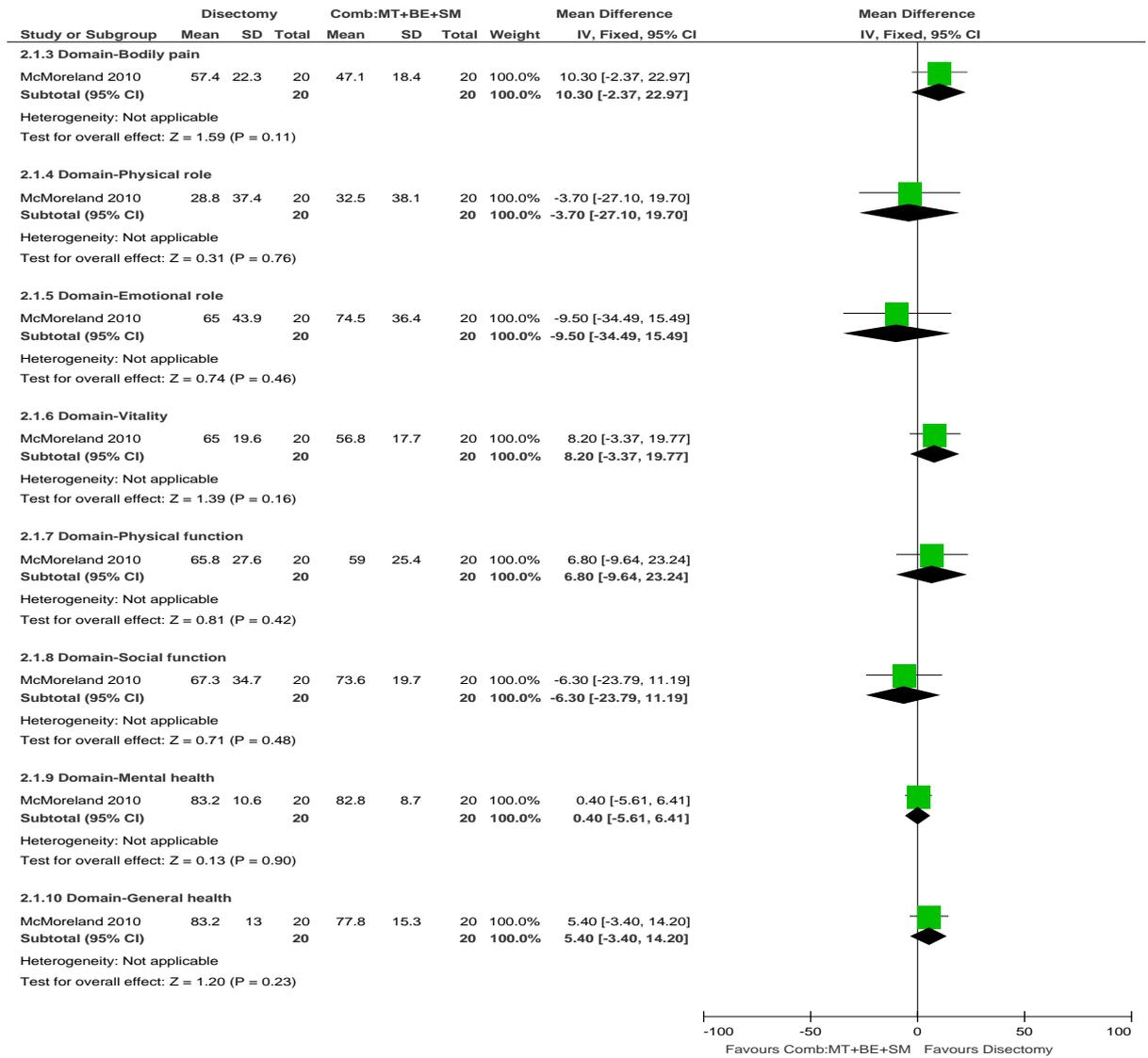


1507

K1203
1509

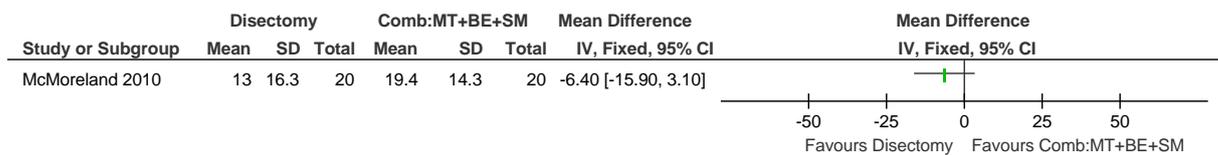
Discectomy versus combination treatment(manual therapy+ biomechanical exercise + self-management)

Figure 1346: Quality of life, SF-36, 0-100 ≤4 months (12 weeks)



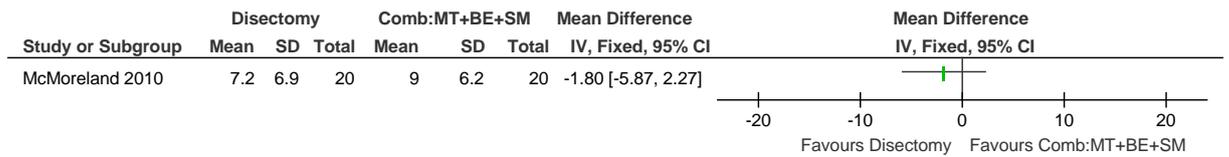
1510

Figure 1347: Pain Severity (McGill, 0-78) ≤ 4 months (12 weeks)



1511

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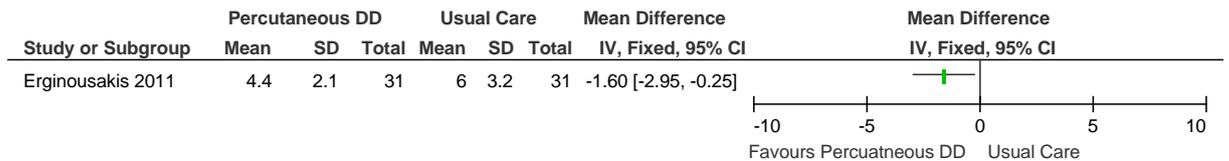


1513

K12144 Percutaneous decompression versus usual care

1515

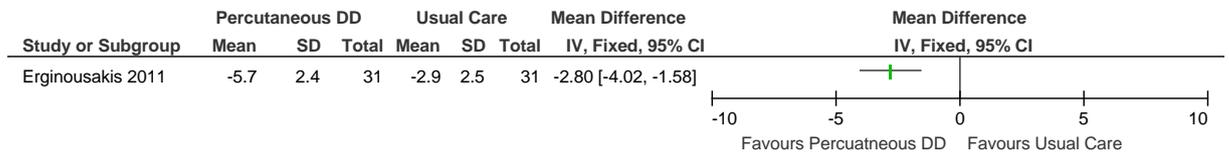
Figure 1349: Pain Severity (Leg Pain NVS, 0-10) ≤4 months (3 months)



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Figure 1350: Pain Severity (Leg Pain NVS, 0-10) >4 months (1 year)

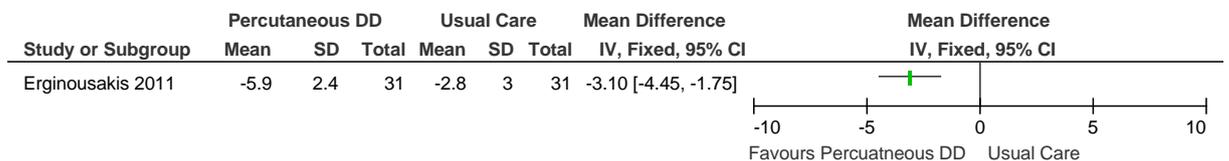


1518

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Figure 1351: Pain Severity (Leg Pain NVS, 0-10) >4 months (2 years)

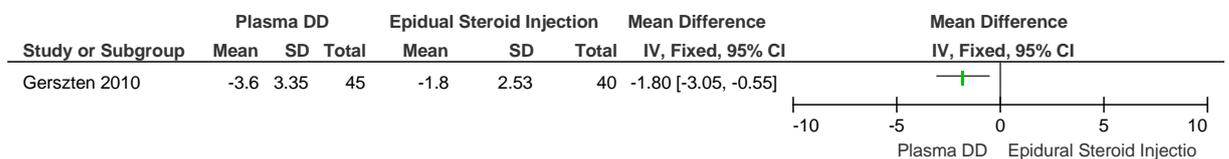


1521

K12125 Plasma disc decompression versus other treatment (epidural steroid)

1523

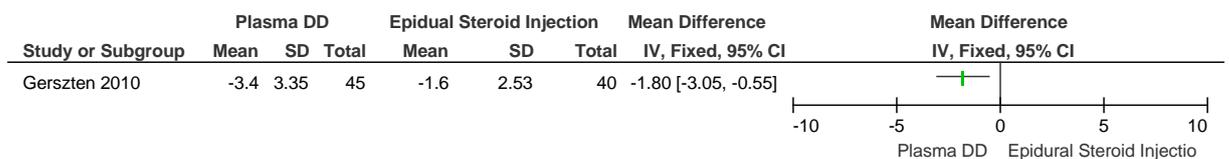
Figure 1352: Pain Severity (Leg Pain VAS,0-10) ≤4 months(3 months)



1524

1525

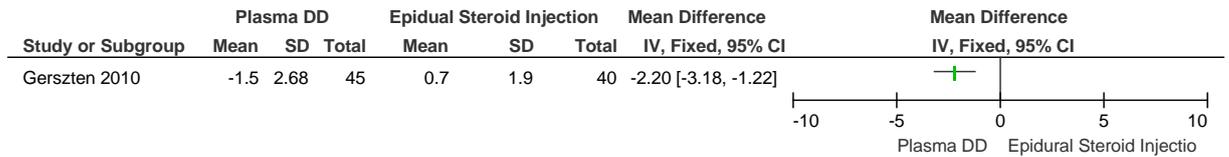
Figure 1353: Pain Severity (Leg Pain VAS,0-10) >4 months (6 months)



1526

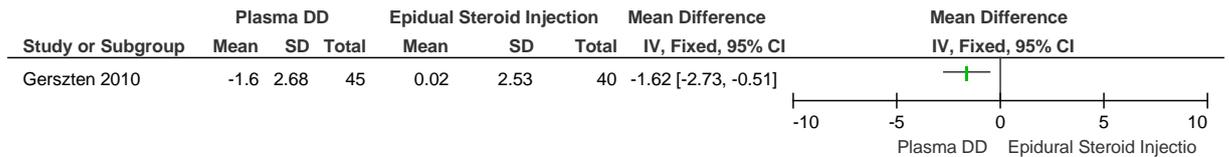
1527

1528 **Figure 1354: Pain Severity (Back Pain VAS,0-10) ≤4 months(3 months)**



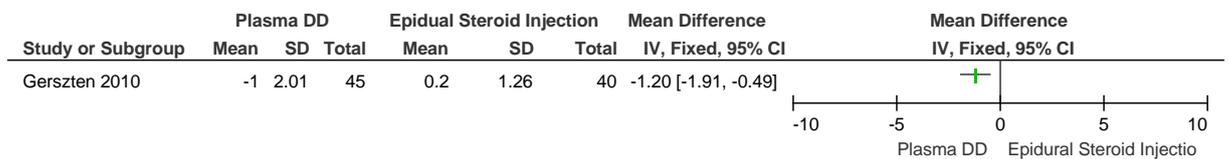
1529

1530 **Figure 1355: Pain Severity (Back Pain VAS,0-10) >4 months (6 months)**



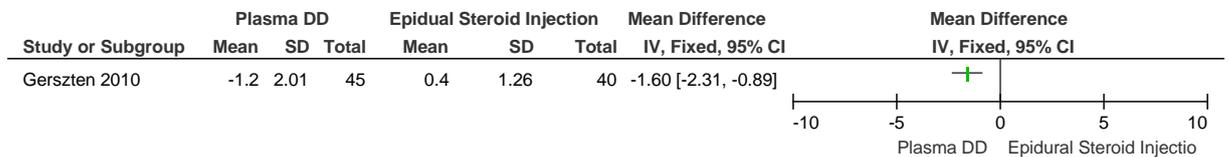
1531

1532 **Figure 1356: FunctionODI,0-100 ≤4 months (3 months)**



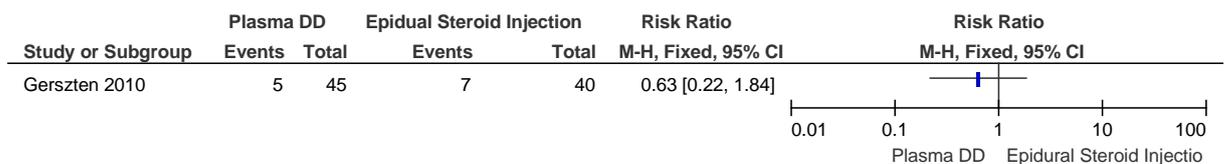
1533

1534 **Figure 1357: Function (ODI,0-100) >4 months (6 months)**



1535

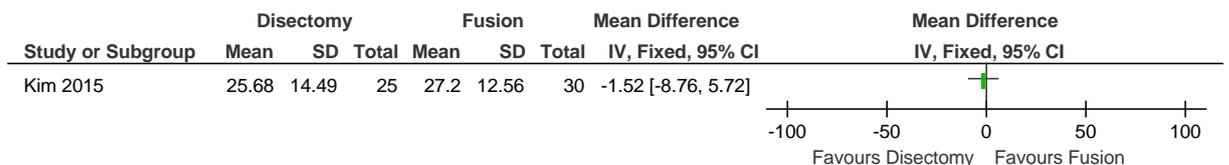
1536 **Figure 1358: Procedure related adverse events> 4 months (6 months)**



1537

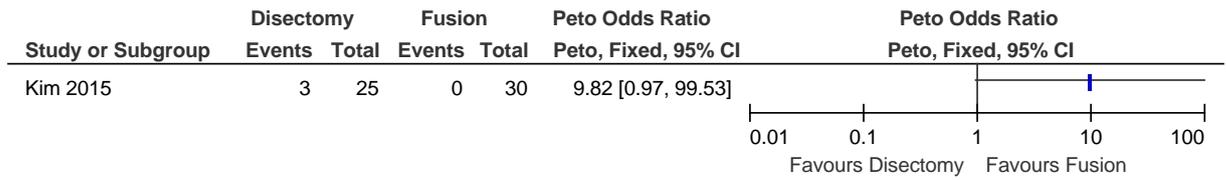
12186 Discectomy versus fusion

1539 **Figure 1359: Function (ODI 0-100) >4 months (1 year)**



1540

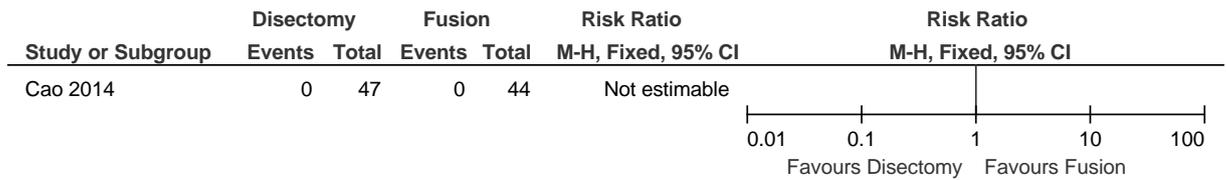
1541 **Figure 1360: Revision surgery >4 months (1 year)**



1542

K12137 Disectomy versus fusion

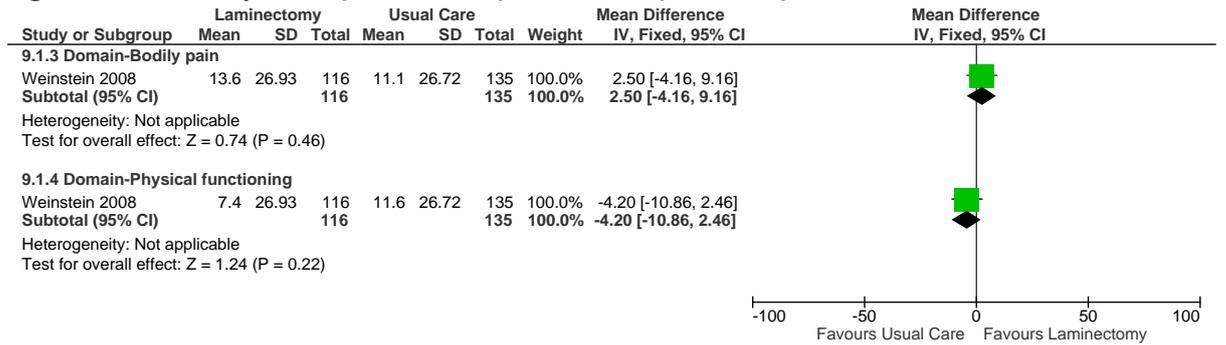
1544 **Figure 1361: Adverse events (complications) >4 months (1 year)**



1545

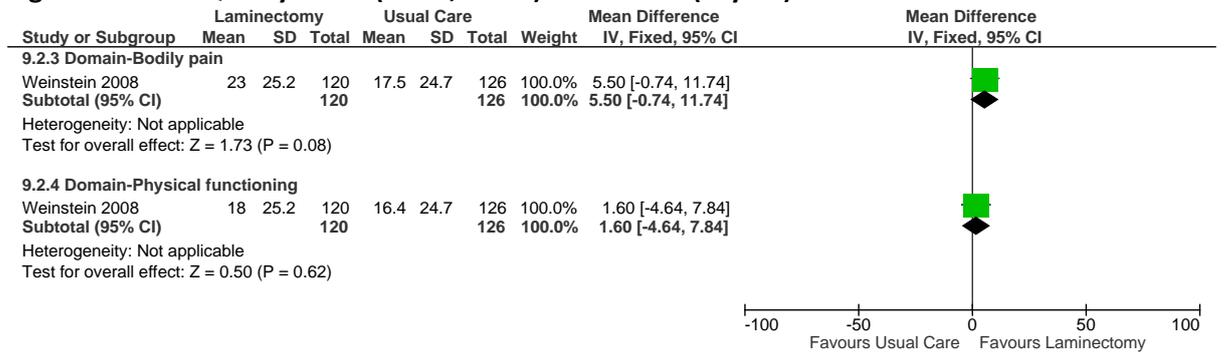
K12168 Laminectomy versus usual care

Figure 1362: Quality of life (SF-36, 0-100) ≤ 4 months (3months)



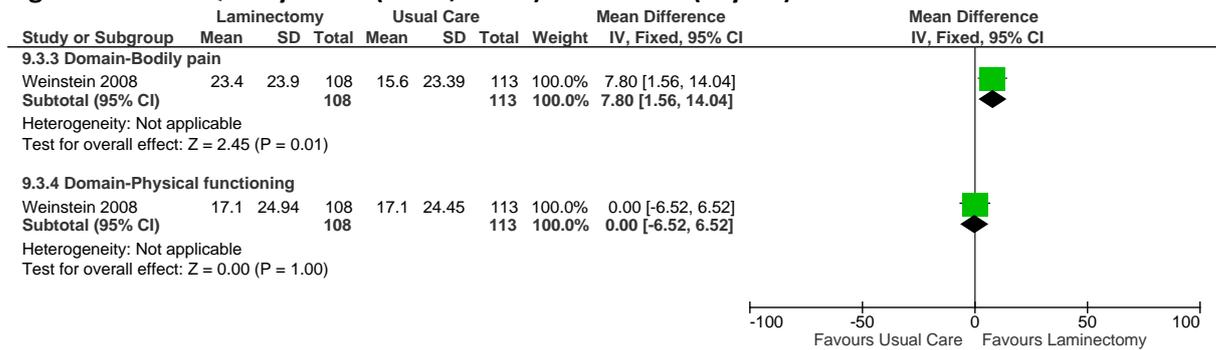
1547

Figure 1363: Quality of life (SF-36, 0-100) > 4 months (1 year)



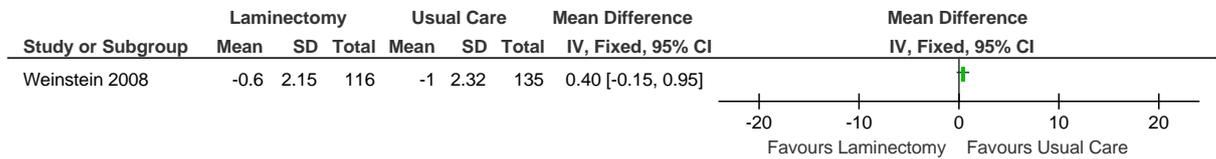
1548

Figure 1364: Quality of life (SF-36, 0-100) > 4 months (2 year)



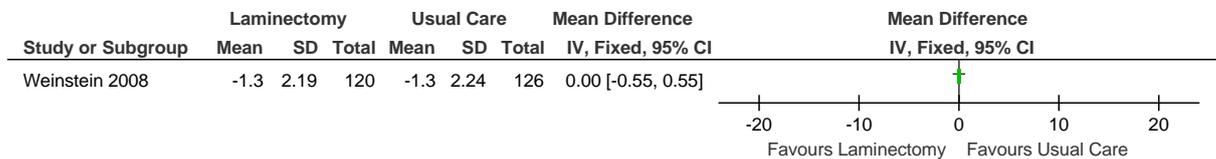
1549

Figure 1365: Pain Severity (Low back pain bothersomeness index, 0-24) ≤4 months (3 months)



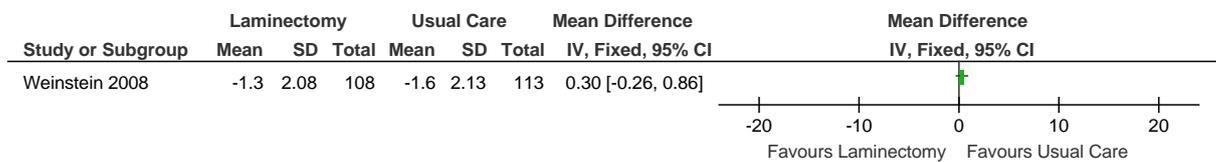
1550

Figure 1366: Pain Severity (Low back pain bothersomeness index, 0-24) >4 months (1 year)



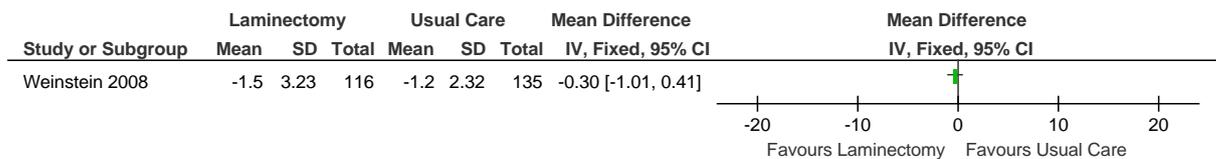
1551

Figure 1367: Pain Severity (Low back pain bothersomeness index, 0-24) >4 months (2 year)



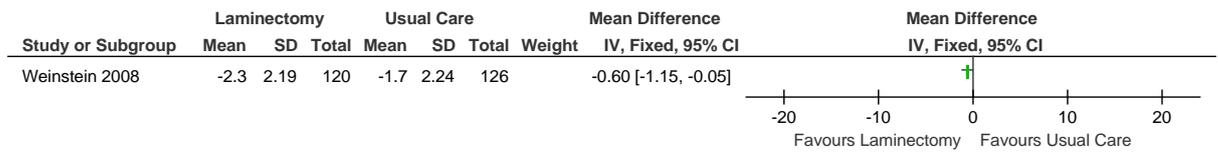
1552

Figure 1368: Pain Severity (Sciatica bothersomeness index, 0-24) ≤4 months (3 months)



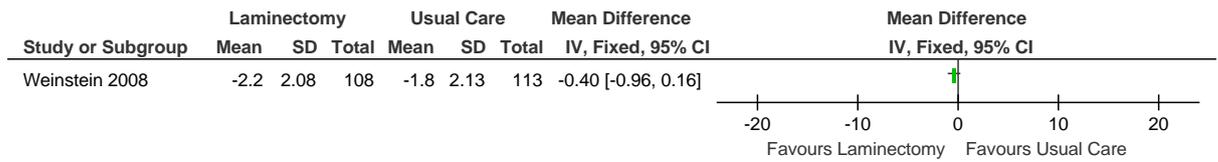
1553

Figure 1369: Pain Severity (Sciatica bothersomeness index, 0-24) >4 months (1 year)



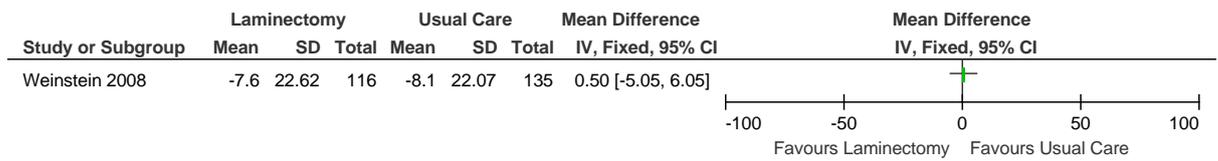
1554

Figure 1370: Pain Severity (Sciatica bothersomeness index, 0-24) >4 months (2 year)



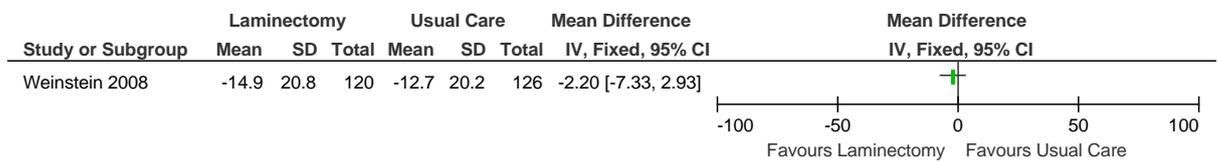
1555

Figure 1371: Function (ODI, 0-100,change scores) ≤ 4 months (3 months)



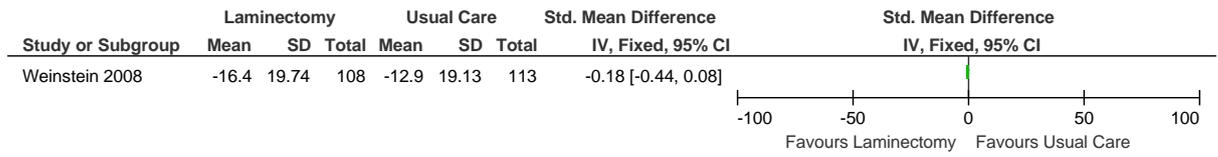
1556

Figure 1372: Function (ODI, 0-100,change scores) > 4 months (1 year)



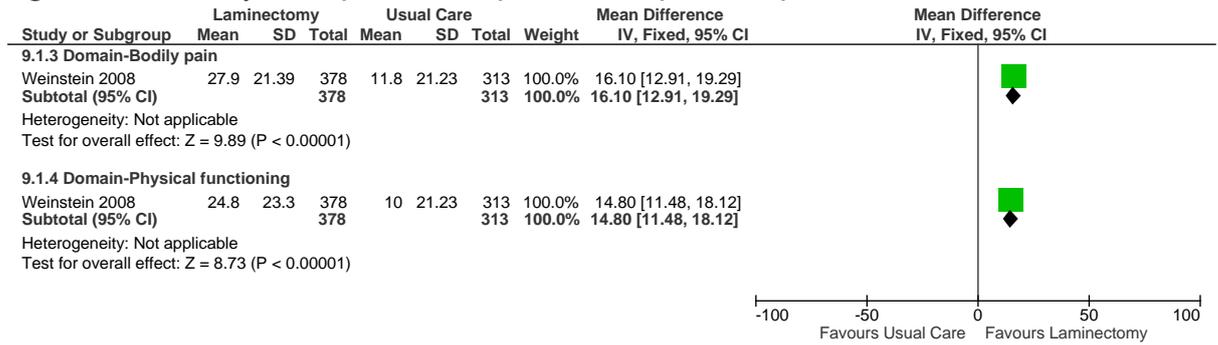
1557

Figure 1373: Function (ODI, 0-100,change scores) > 4 months (2 year)



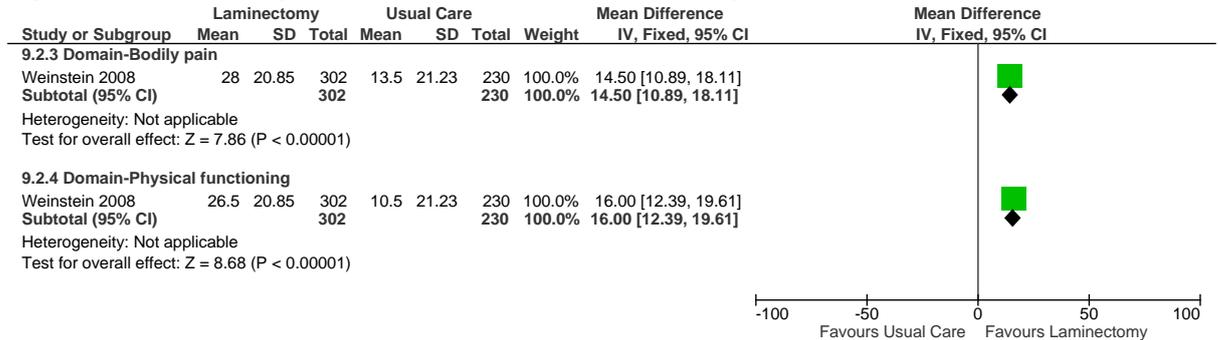
12189 Laminectomy versus usual care (RCT+cohort)

Figure 1374: Quality of life (SF-36, 0-100) ≤ 4 months (3months)



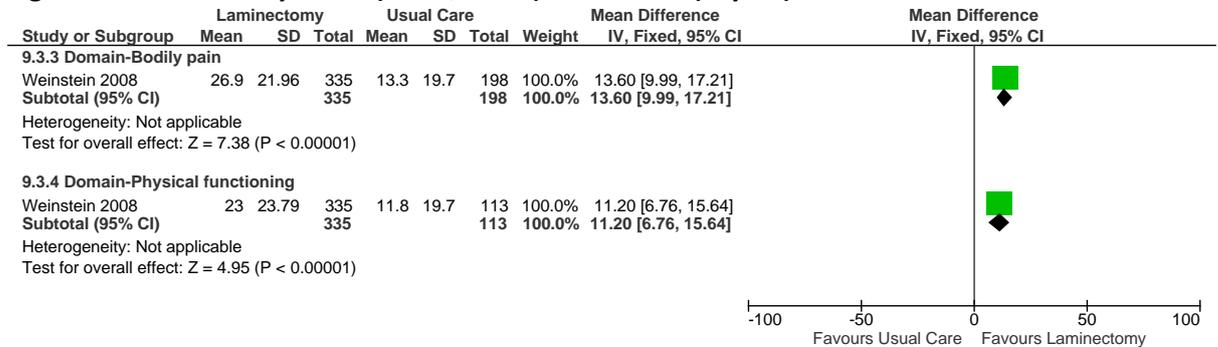
1559

Figure 1375: Quality of life (SF-36, 0-100) > 4 months (1 year)



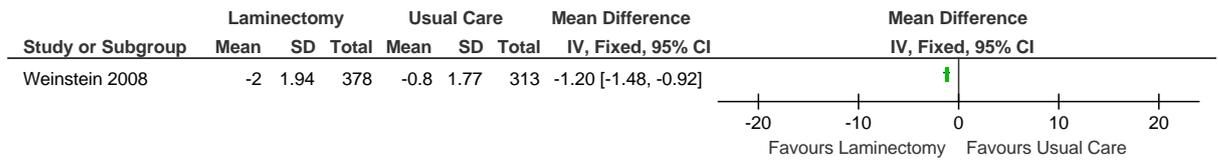
1560

Figure 1376: Quality of life (SF-36, 0-100) > 4 months (2 year)



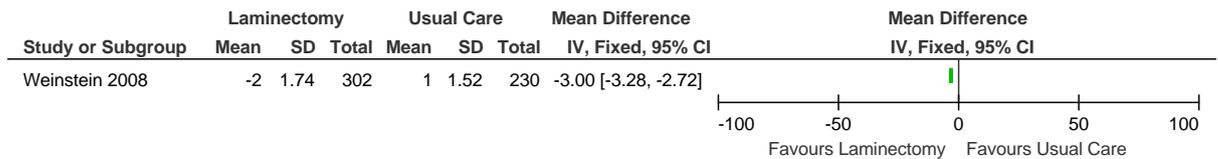
1561

Figure 1377: Pain Severity (Low back pain bothersomeness index, 0-24) ≤4 months (3 months)



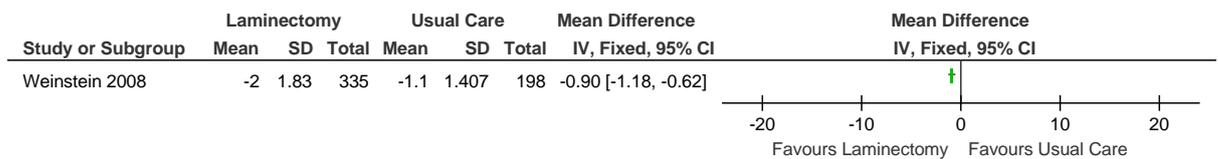
1562

Figure 1378: Pain Severity (Low back pain bothersomeness index, 0-24) >4 months (1 year)



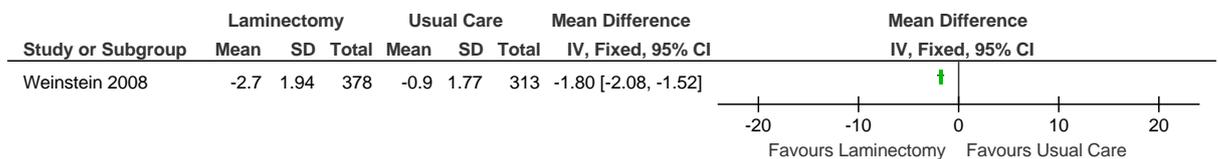
1563

Figure 1379: Pain Severity (Low back pain bothersomeness index, 0-24) >4 months (2 year)



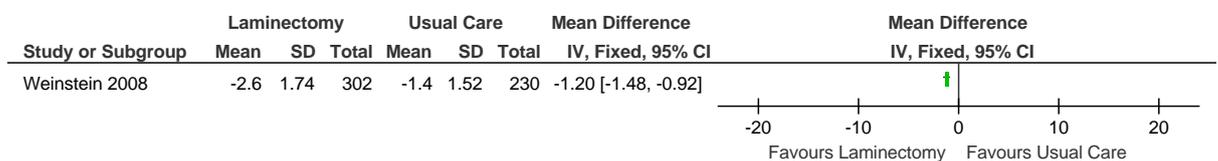
1564

Figure 1380: Pain Severity (Sciatica bothersomeness index, 0-24) ≤4 months (3 months)



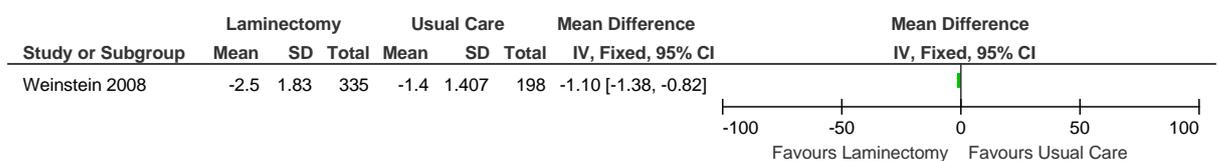
1565

Figure 1381: Pain Severity (Sciatica bothersomeness index, 0-24) >4 months (1 year)



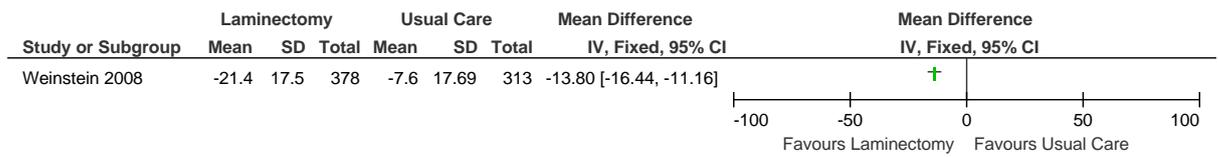
1566

Figure 1382: Pain Severity (Sciatica bothersomeness index, 0-24) >4 months (2 year)



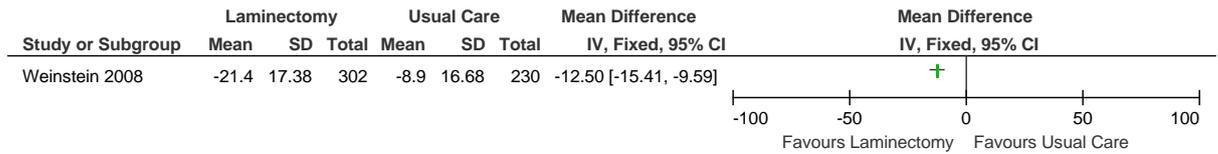
1567

Figure 1383: Function (ODI, 0-100,change scores) ≤ 4 months (3 months)



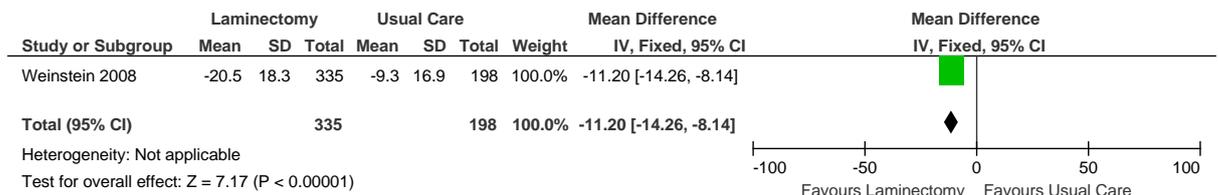
1568

Figure 1384: Function (ODI, 0-100,change scores) > 4 months (1 year)



1569

Figure 1385: Function (ODI, 0-100,change scores) > 4 months (2 year)



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1572 Appendix L: Excluded clinical studies

1573 1.1 Clinical examination

1574 **Table 1: Studies excluded from clinical review**

Study	Exclusion reason
Al nezari 2013 ⁷⁴	Systematic review is not relevant to review question or unclear PICO
Ash 2008 ¹⁴⁵	Non sciatica population. Mixed population of people with low back pain with or without sciatica (with sciatica: 58%). Incorrect interventions. Unclear if clinical examination results given in addition to imaging
Cook 2011 ⁴⁷⁶	Systematic review is not relevant to review question or unclear PICO
Ganesh 2015 ⁷⁴⁸	Incorrect interventions. Evaluation of a training programme
Modic 2005 ¹⁵⁴⁶	Inappropriate comparison. Incorrect interventions
Rebain 2002 ¹⁸⁴⁰	Systematic review is not relevant to review question or unclear PICO
Van der windt 2008 ²²⁰¹	Systematic review is not relevant to review question or unclear PICO
Van der windt 2010 ²²⁰²	Systematic review is not relevant to review question or unclear PICO
Vroomen 1999 ²²⁶⁵	Systematic review is not relevant to review question or unclear PICO
Vroomen 2002 ²²⁶⁷	Incorrect study design
Wojtysiak 2014 ²³⁵²	Incorrect study design. Not review population. Inappropriate comparison. Non randomised study. Control group of healthy volunteer. Comparison of clinical evaluation pre- and post-operatively for the evaluation of surgical treatment
Yu 2012 ²³⁹⁵	Incorrect interventions. Provocative discography

1575

1576 1.2 Risk assessment tools and stratification

1577 **Table 2: Studies excluded from the clinical review**

Reference	Reason for exclusion
Aebischer 2015 ⁵⁷	Wrong study design: cross-sectional not cohort study
Barnes 1989 ^{180,180}	No relevant outcomes and does not match review question
Beneciuk 2015 ^{206,208}	Incorrect study design: cross-sectional study
Bergstrom 2014 ^{219,220}	Population does not match protocol
Betten 2015 ^{234,234}	No relevant outcomes and does not match review question
Borys 2015 ²⁷⁷	Does not match review question

Reference	Reason for exclusion
Bruyere 2012 ^{321,321}	No relevant outcomes and does not match review question
Bruyere 2014 ^{320,321}	No relevant outcomes and does not match review question
Carragee 2005 ^{363,363}	Incorrect study design
Chapman 1994 ^{388,389}	No relevant comparator
Childs 2003A ^{414,414}	Population does not match protocol
Childs 2014 ^{414,416}	Incorrect study design: letter
Childs 2015 ^{414,417}	Incorrect population: no stratification
Cleland 2009 ^{455,456}	No relevant comparator
Cuestavargas 2014B ⁴⁹⁹	Wrong population (mixed musculoskeletal)
Cunningham 2009 ^{500,500}	Incorrect study design: survey review
Cunningham 2013 ^{500,501}	No relevant outcomes and does not match review question
Dankaert 2006A ^{517,517}	No relevant outcomes and does not match review question
Dankaerts 2009 ^{517,518}	No relevant comparator
Delitto 1993 ^{542,542}	No relevant comparator
Delitto 1995 ^{542,543}	Incorrect study design: clinical perspective review
Derby 2008 ^{551,553}	No relevant comparator
Dougherty 2014 ^{592,592}	No relevant comparator :clinical prediction rule for responsiveness to manual therapy in which comparator group get different treatment
Dougherty 2015{DOUGHERTY2015}	No relevant comparator: clinical prediction rule for responsiveness to manual therapy in which comparator group get different treatment to intervention group
Downie 2013 ^{593,593}	systematic review- used as reference list
Dunstan 2005 ^{600,600}	Population does not match protocol
Elgueta-cancino 2015 ⁶²²	Test not meet protocol criteria
Fersum 2011 ^{663,664}	Systematic review- used as reference list
Field 2012 ^{665,666}	No relevant comparator
Foster 2013 ^{681,682}	Incorrect study design: narrative review
Freyenhagen 2006 ^{698,698}	No relevant outcomes and does not match review question
Fritz 2000 ^{706,711}	No relevant outcomes and does not match review question
Fritz 2002 ^{706,714}	No relevant outcomes and does not match review question
Fritz 2005 ^{706,709}	No relevant comparator
Fritz 2007 ^{706,713}	Incorrect study design: clinical commentary
Fritz 2010 ^{706,716}	Incorrect study design: study protocol
Fritz 2011A ^{706,712}	No relevant outcomes and does not match review question
Frymoyer 1992 ^{729,729}	Incorrect study design
Gabel 2012 ^{740,741}	Population does not match protocol
Gabel 2013 ^{739,741}	Population does not match protocol
Gatchell 1986 ^{753,753}	Population does not match protocol; no relevant outcomes and does not match review question
Gatchell 1995 ^{753,755}	No relevant outcomes and does not match review question
Gatchell 1995A ^{753,754}	No relevant outcomes and does not match review question
Gatchel 2003 ^{753,756}	no relevant comparator
George 2005A ^{772,772}	No relevant outcomes and does not match review question
George 2015 ^{770,772}	No relevant outcomes and does not match review question

Reference	Reason for exclusion
George 2015A ⁷⁷¹	Wrong population (mixed neck, shoulder, back, musculoskeletal)
Gisla 2015 ⁷⁹⁷	Literature review
Grimmersomers 2008 ⁸³⁴	No relevant outcomes and does not match review question
Grotle 2006 ^{837,837}	No relevant outcomes
Grovlø 2008 ^{839,839}	No relevant outcomes and does not match review question
Hagg 2002 ^{870,870}	Incorrect study design
Hakkinen 2003 ^{877,877}	No relevant outcomes and does not match review question
Hallegraeff 2009 ^{886,886}	Incorrect study design
Hancock 2008 ^{892,894}	Non-validated tool
Hancock 2008B ^{891,894}	Incorrect study design
Hancock 2009A ^{894,895}	No relevant outcomes and does not match review question
Hancock 2010 ^{893,894}	Incorrect study design: letter to editor
Haskins 2015 ⁹¹¹	Systematic review used as source of references
Hay 2008 ^{916,917}	Incorrect study design: study protocol
Hayashi 2015 ⁹¹⁸	Does not match review question
Hazard 1991 ^{921,922}	No relevant outcomes and does not match review question
Hebert 2008 ^{927,927}	Incorrect study design
Hicks 2003 ^{957,957}	Incorrect target condition
Hendler 1988 ^{938,938}	No relevant outcomes and does not match review question
Hicks 2005 ^{956,957}	No relevant outcomes and does not match review question
Hill 2010 ^{962,964}	incorrect study design: narrative review
Hill 2010 ^{962,963}	incorrect study design: cross-sectional survey
Hurley 2001 ^{999,1000}	No relevant outcomes
Janwantanakul 2015 ^{1055,1055}	Incorrect population
Kamper 2010 ^{1109,1109}	Incorrect study design: narrative review
Karstens 2015 ^{1120,1120}	No relevant outcomes, does not match review question
Kent 2015 ¹¹⁴⁴	Unable to obtain article
Kim 2012A ¹¹⁵⁹	Survey data. Does not answer the question (looks at predicting disc herniation)
Kongsted 2011 ^{1221,1221}	Incorrect study design
Lacasse 2015 ¹²⁶¹	Incorrect population: Includes non-LBP pain
Lacroix 1990 ^{1262,1262}	No relevant outcomes and does not match review question
Law 2013 ^{1276,1276}	No relevant outcomes and does not match review protocol
Linton 2003 ^{1346,1351}	Population does not match protocol
Mehling 2015 ^{1517,1518}	Risk tool not validated
Mehling 2015A ¹⁵¹⁹	Risk tool not validated
Millard 1989 ^{1533,1533}	No relevant outcomes and does not match review question
Morso 2011 ^{1579,1579}	No relevant outcomes and does not match review question
Newell 2015 ¹⁶³⁰	Unable to obtain article
O'Sullivan 2014 ¹⁶⁶⁴	Incorrect study design
Nonclerq 2012 ^{1647,1647}	No relevant outcomes and does not match review question
Polatin 1997 ^{1783,1783}	No relevant outcomes and does not match review question
Pollock 2012 ^{1784,1784}	No relevant outcomes and does not match review question

Reference	Reason for exclusion
Pulliam 2001 ^{1798,1798}	No relevant outcomes and does not match review question
Rabey 2015 ¹⁸¹⁰	Incorrect study design cross-sectional study
Riley 1998 ^{1858,1858}	No relevant outcomes and does not match review question
Sattelmayer 2012 ^{1929,1929}	Incorrect study design
Talo 1994 ^{2108,2108}	No relevant outcomes and does not match review question
Traeger 2015 ²¹⁵³	Protocol for research of a new tool
Takekawa 2015 ^{2106,2106}	Incorrect population: identifying a subset of people without LBP
Trudellejackson 2008 ²¹⁶³	No relevant outcomes and does not match review question
Turk 2015 ^{2173,2174}	No relevant outcomes
Vendrig 1999 ^{2227,2227}	No relevant outcomes and does not match review question
Vibe fersum 2009 ^{2234,2235}	No relevant outcomes and does not match review question
Vroomen 1999A ^{2265,2266}	No relevant outcomes and does not match review question
Watkins 1986 ^{2296,2296}	No relevant outcomes and does not match review question
Wideman 2012 ^{2322,2322}	No relevant outcomes and does not match review question
Wilson 1999 ^{2347,2347}	No relevant outcomes and does not match review question
Yamada 2015 ²³⁷⁰	Incorrect comparison

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1.3 Imaging

1580 **Table 3: Studies excluded from the clinical review**

Study	Exclusion reason
Abrishamkar 2006 ⁴⁶	Inappropriate comparison. Incorrect study design (cross sectional study)
Ackerman 1997 ⁴⁷	Inappropriate comparison
Andersen 2011 ¹⁰⁷	Incorrect study design. Systematic review: methods are not adequate/unclear
Ash 2008 ¹⁴⁵	Incorrect interventions
Atalay 2001 ¹⁵¹	Incorrect study design (cross sectional study). Incorrect interventions
Bajpai 2013 ¹⁷⁰	Incorrect interventions. Incorrect study design (cross sectional study)
Chou 2009 ⁴³⁷	Systematic review: methods are not adequate/unclear. Incorrect study design
Chou 2011 ⁴²⁹	Incorrect study design. Systematic review is not relevant to review question or unclear PICO. Inappropriate comparison. Incorrect interventions
El barzouhi 2013 ⁶¹⁷	People referred for surgery (already planned)
El barzouhi 2013 ⁶¹⁸	Post-operative imaging. Incorrect interventions
Eley 2006 ⁶²¹	Incorrect interventions. Incorrect study design (cross sectional study)
Graves 2012 ⁸²³	No relevant outcomes
Grover 2003 ⁸³⁸	Narrative review
Haig 2006 ⁸⁷³	Incorrect study design. Incorrect interventions. Inappropriate comparison
Haldeman 1988 ⁸⁷⁸	Incorrect study design. Incorrect interventions. Inappropriate comparison
Indahl 1995 ¹⁰¹⁹	Inappropriate comparison. Incorrect interventions
Jarvik 1996 ¹⁰⁵⁸	Incorrect interventions
Jarvik 1997 ¹⁰⁶⁰	Incorrect interventions

Study	Exclusion reason
Jarvik 2003 ¹⁰⁵⁹	Incorrect interventions
Jenkins 2015 ¹⁰⁶⁹	Incorrect study design. Systematic review is not relevant to review question or unclear PICO. Incorrect interventions
Jensen 2010 ¹⁰⁷²	Incorrect study design
Raastad 2015 ¹⁸⁰⁷	Incorrect study design. Systematic review is not relevant to review question or unclear PICO. Incorrect interventions
Rankine 1998 ¹⁸²³	Incorrect study design
Rockey 1978 ¹⁸⁶⁸	Not review population. Not guideline condition
Van rijm 2012 ²²⁰⁵	Incorrect study design. Systematic review is not relevant to review question or unclear PICO
Wassenaar 2012 ²²⁹³	Incorrect study design. Systematic review is not relevant to review question or unclear PICO
Weiner 1999 ²³⁰⁷	Incorrect interventions. Incorrect study design (cross sectional study)
Wilson 2001 ²³⁴⁶	Incorrect study design

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1.8.4 Self-management

1583 **Table 4: Studies excluded from the clinical review**

Study	Exclusion reason
Abbasi 2012 ³⁷	Incorrect interventions
Abdel shaheed 2014 ³⁹	Systematic review: methods are not adequate/unclear
Albaladejo 2010 ⁸²	Incorrect interventions
Allen 1999 ⁹³	Not review population. Not guideline condition. Systematic review: methods are not adequate/unclear
Anon 1991 ²	Incorrect study design
Anon 2005 ¹⁹	Abstract only
Anon 2005 ¹⁸	Incorrect study design
Anon 2005 ¹⁵	Abstract only
Anon 2006 ²³	Abstract only
Anon 2012 ³¹	Conference abstract
Anon 2012 ²⁹	Abstract only
Basson 2011 ¹⁹¹	Incorrect study design
Bekkering 2005 ¹⁹⁷	Incorrect interventions. Not review population
Ben salah frih 2009 ²⁰²	Incorrect interventions
Berwick 1989 ²³²	Incorrect interventions
Boden 2003 ²⁵⁹	Comment on an RCT
Bronfort 2004 ²⁹⁶	Inappropriate comparison. Pilot study of feasibility of recruitment to RCT; no comparison between groups
Brown 1992 ³⁰⁷	Incorrect interventions
Brox 2008 ³¹²	Systematic review: methods are not adequate/unclear
Brox 2008 ³¹⁵	Systematic review: methods are not adequate/unclear
Burton 1999 ³³¹	Incorrect interventions
Busanich 2006 ³³²	Systematic review: methods are not adequate/unclear

Study	Exclusion reason
Bush 1993 ³³⁴	Incorrect interventions. Not guideline condition. Intervention on physicians dealing with patients with low back pain
Cecchi 2010 ³⁷⁵	Incorrect interventions
Cecchi 2012 ³⁷⁴	Incorrect interventions
Chang 1994 ³⁸²	Incorrect study design
Chapman 1997 ³⁸⁶	Incorrect study design
Chen 2012 ³⁹⁹	Not in English
Cherkin 1991 ⁴⁰⁶	Not review population. Not guideline condition
Cherkin 1996 ⁴¹⁰	Unable to obtain
Cherkin 1996-1 ⁴⁰⁸	Duplicate of 1996B
Cherkin 2000 ⁴⁰⁴	Abstract only
Childs 2011 ⁴¹⁸	Incorrect interventions
Chou 2007 ⁴³⁹	Systematic review: methods are not adequate/unclear
Chou 2010 ⁴³⁴	Systematic review - used as source of references
Clare 2004 ⁴⁵²	Systematic review: methods are not adequate/unclear
Cohen 1994 ⁴⁶¹	Systematic review: methods are not adequate/unclear
Cooper 2013 ⁴⁸⁰	Incorrect study design
Cuesta-vargas 2012 ⁴⁹⁷	Incorrect interventions. Both group had self-management education
Dagenais 2010 ⁵⁰⁴	Systematic review: methods are not adequate/unclear
Dahm 2010 ⁵¹⁰	Cochrane review - used as source of references
Damush 2002 ⁵¹²	Incorrect interventions
Damush 2003 ⁵¹⁴	Incorrect interventions
Damush 2003 ⁵¹³	Incorrect interventions
Dayer-berenson 2011 ⁵²⁹	Thesis
De bruijn 2007 ⁵³⁰	Not guideline condition
Dehlin 1981 ⁵³⁷	Not guideline condition. Low back insufficiency, not low back pain
Demoulin 2006 ⁵⁴⁶	Incorrect interventions
Demoulin 2012 ⁵⁴⁷	Systematic review: methods are not adequate/unclear
Deutscher 2014 ⁵⁵⁹	Cohort study. Got sufficient RCT data. Wrong intervention: education for physiotherapists, not the pts
Deyo 1986 ⁵⁶¹	Incorrect interventions
Deyo 1987 ⁵⁶²	Incorrect interventions
Di fabio 1995 ⁵⁶⁸	Incorrect interventions
Doherty 2004 ⁵⁸¹	Abstract only
Doran 2014 ⁵⁸⁹	Unable to get hold of article
Du 2011 ⁵⁹⁶	Systematic review: methods are not adequate/unclear
Dupeyron 2011 ⁶⁰¹	Systematic review: study designs inappropriate. Systematic review: methods are not adequate/unclear
Engers 2008 ⁶²⁴	Cochrane review - used as source of references
Evans 1996 ⁶³⁸	Thesis
Evans 2009 ⁶³⁶	Thesis chapter
Evans 2010 ⁶³⁷	Not guideline condition
Fernandez 2015 ⁶⁵³	Systematic review: study designs inappropriate. Systematic review used as source of references

Study	Exclusion reason
Ferrell 1997 ⁶⁶²	Not review population
Fersum 2010 ⁶⁶³	Systematic review: methods are not adequate/unclear
Fitzpatrick 1995 ⁶⁷²	Systematic review: methods are not adequate/unclear
Fritz 1998 ⁷⁰⁶	Thesis chapter
Frost 2004 ⁷²⁷	Incorrect interventions
Furlan 2002 ⁷³³	Systematic review: methods are not adequate/unclear
George 2009 ⁷⁷³	Incorrect interventions
Goffar 2005 ⁸⁰⁹	Thesis
Grunnesjo 2004 ⁸⁴²	Incorrect interventions
Gundewall 1993 ⁸⁴⁶	Not guideline condition. Mixed group of healthy volunteers and people with low back pain
Haas 1999 ⁸⁵⁴	Abstract only
Hagen 2000 ⁸⁶⁴	Systematic review: methods are not adequate/unclear
Hagen 2002 ⁸⁶⁵	Systematic review: methods are not adequate/unclear
Hagen 2005 ⁸⁶⁶	Systematic review: methods are not adequate/unclear
Hagen 2010 ⁸⁶⁷	Withdrawn
Harman 2011 ⁹⁰⁵	Incorrect interventions
Henrotin 2006 ⁹⁴⁰	Systematic review: methods are not adequate/unclear
Hilde 2006 ⁹⁶⁰	Withdrawn
Hofstee 2002 ⁹⁸¹	Incorrect interventions
Jensen 2012 ¹⁰⁷⁵	Incorrect interventions. Not review population
Kellett 1991 ¹¹³⁹	Not guideline condition. "back pain" not just low back pain
Kilpikoski 2009 ¹¹⁵⁷	Incorrect interventions
Kim 1999 ¹¹⁷⁴	Systematic review: methods are not adequate/unclear
Kinkade 2007 ¹¹⁸⁴	Incorrect study design
Koes 1994 ¹²⁰⁸	Incorrect study design
Koes 2008 ¹²⁰¹	Commentary not primary study (1ry study = Pengel 2007)
Kogure 2015 ¹²¹⁰	Mixed chronic pain (not just low back pain). Not guideline condition. "Low back pain localized from 12th rib to inferior gluteal fold"
Kotoulas 2002 ¹²³¹	Systematic review: methods are not adequate/unclear. Incorrect study design
Kovacs 2007 ¹²³⁴	Inappropriate comparison
Lee 2015 ¹²⁹³	Unable to obtain article
Levin 1996 ¹³¹⁵	Incorrect study design
Liddle 2007 ¹³³²	Systematic review: methods are not adequate/unclear
Linton 1997 ¹³⁴⁸	Not guideline condition. Not all patients had back pain
Little 2001 ¹³⁵⁵	Not review population
Lonn 1999 ¹³⁷²	Incorrect interventions
Maher 1999 ¹⁴⁰⁸	Systematic review: methods are not adequate/unclear
May 2010 ¹⁴⁸⁹	Not guideline condition
Miller 2009 ¹⁵³⁵	Systematic review: methods are not adequate/unclear. Not guideline condition
Moffett 2002 ¹⁵⁴⁸	Systematic review: methods are not adequate/unclear
Morrison 1988 ¹⁵⁷⁸	Inappropriate study design. All patients undergo intervention.

Study	Exclusion reason
Newton 1995 ¹⁶³¹	Abstract only
Ney 2008 ¹⁶³³	Narrative review
Nicholas 2013 ¹⁶³⁸	Incorrect interventions
Nilsson-wikmar 2005 ¹⁶⁴³	Not guideline condition
Noone 1996 ¹⁶⁴⁸	Unable to obtain article
Odeen 2013 ¹⁶⁶⁵	Incorrect interventions
Olaya-contreras 2015 ¹⁶⁷⁹	Inappropriate comparison. Intraclass comparison
Oliveira 2012 ¹⁶⁸¹	Systematic review: methods are not adequate/unclear
Otoo 2015 ¹⁶⁹¹	SR - used as source of references
Palacin-marin 2013 ¹⁷⁰²	Crossover study
Pensri 2012 ¹⁷⁴⁹	Crossover study
Pesco 2006 ¹⁷⁵⁸	Not guideline condition. Wrong population: neck and shoulder pain
Postacchini 1988-1 ¹⁷⁹⁰	Incorrect interventions. (Back school)
Postacchini 1988-2 ¹⁷⁹⁰	Incorrect interventions. (Back school)
Postacchini 1988-2 ¹⁷⁹⁰	Incorrect interventions. (Back school)
Postacchini 1988-2 ¹⁷⁹⁰	Incorrect interventions. (Back school)
Postacchini 1988-2 ¹⁷⁹⁰	Incorrect interventions. (Back school)
Postacchini 1988-2 ¹⁷⁹⁰	Incorrect interventions. (Back school)
Postacchini 1988-2 ¹⁷⁹⁰	Incorrect interventions. (Back school)
Rantonen 2014 ¹⁸²⁶	Incorrect interventions
Reeser 2002 ¹⁸⁴¹	Conference abstract
Rivero-arias 2006 ¹⁸⁶²	The intervention not meeting the protocol physio (joint mobilisation, manipulations,, Soft tissue techniques,, exercise programmes, heat/cold treatments, advice - but states that physios chose from a selection so excluded as per protocol) VS advice to stay active from physio - physio arm is excluded therefore study has no relevant comparisons
Roberts 2002 ¹⁸⁶⁴	Not guideline condition. Low back pain defined as referred from 12th rib to inferior gluteal fold
Rozenberg 2002 ¹⁸⁸⁵	Narrative review
Ryan 2010 ¹⁸⁹⁶	Combined interventions. Included in combination treatment review.
Saper 2014 ¹⁹²⁰	protocol only, no results
Saunders 2000 ¹⁹³¹	Incorrect study design
Schectman 2003 ¹⁹³⁷	Not review population. Not guideline condition
Schenk 1996 ¹⁹³⁹	Not guideline condition. Not review population. Healthy volunteers, not people with back pain
Schoo 2003 ¹⁹⁵²	Systematic review: methods are not adequate/unclear
Schulz 2007 ¹⁹⁵⁹	Incorrect study design. Not randomised
Schulz 2011 ¹⁹⁵⁸	Protocol only
Selkowitz 2006 ¹⁹⁷⁰	Not review population
Sherman 2011 ¹⁹⁸⁸	Included in exercise review
Sorensen 2010 ²⁰⁵⁰	Loss of randomisation. Patients in exercise arm were split into 2 groups after randomised, to receive different exercise interventions, depending on whether they met specific diagnostic criteria or not.
Spinhoven 1989 ²⁰⁵⁷	Inappropriate comparison
Stevenson 2006 ²⁰⁷⁸	Not review population
Stevermer 1999 ²⁰⁷⁹	Narrative review

Study	Exclusion reason
Strong 2006 ²⁰⁸⁷	Health Economic study. Subpopulation not meeting protocol because population is unclear. The RCTs are already excluded from the clinical review.
Taylor 1996 ²¹¹⁹	Not review population
Thomas 2010 ²¹³⁰	Dissertation
Udermann 2004 ²¹⁸²	Incorrect study design
Verbeek 2011 ²²²⁸	Cochrane review - used as source of references
Vidal 2014 ²²⁴¹	Incorrect age group
Von korff 1998 ²²⁵⁸	Incorrect interventions. Both groups received self-management education
Waddell 1997 ²²⁶⁸	Systematic review: methods are not adequate/unclear
Waddell 1998 ²²⁶⁹	Narrative review
Walsh 2013 ²²⁷⁹	Not guideline condition
Wand 2004 ²²⁸²	Wrong intervention/comparison: early vs. delayed treatment
Waterschoot 2014 ²²⁹⁴	Systematic review: methods are not adequate/unclear
Webb 1982 ²²⁹⁸	Incorrect study design
Werner 2010 ²³¹³	Study design/protocol only, not results
Yildirim 2007 ²³⁸⁶	Not guideline condition
Yildirim 2010 ²³⁸⁷	Inappropriate comparison
Zahari 2014 ²³⁹⁹	Incorrect interventions

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1.5 Exercise therapies

1586 **Table 5: Studies excluded from the clinical review**

Study	Exclusion reason
Aboagye 2015 ⁴³	Data not interpretable (data overall for both doses not given)
Adamczyk 2009 ⁵⁰	Inappropriate comparison
Agnihotri 2015 ⁶²	Incorrect study design. Conference abstract
Ahlqwist 2008 ⁶⁶	Inappropriate comparison
Ahmed 2014 ⁶⁷	Incorrect interventions
Aladro-gonzalvo 2013 ⁷⁶	Systematic review: quality assessment is inadequate
Alayat 2014 ⁸¹	Incorrect interventions
Albaladejo 2010 ⁸²	Incorrect interventions
Aleksiev 2014 ⁸⁵	Incorrect interventions
Alexandre 2001 ⁸⁶	Not possible to obtain results
Ali 2002 ⁸⁹	Unavailable
Ali 2006 ⁹⁰	Unavailable
Allison 2012 ⁹⁶	Unavailable
Alp 2011 ⁹⁸	Abstract only
Anderson 2005 ¹¹³	Incorrect study design
Anderson 2006 ¹¹⁴	Abstract only
Andrusaitis 2011 ¹²³	Inappropriate comparison
Anema 2007 ¹²⁵	Incorrect interventions

Study	Exclusion reason
Ann 2012 ¹⁷⁹⁹	Duplicate of Sherman 2011
Anon 1991 ²	Incorrect study design
Anon 2005 ¹⁸	Incorrect study design
Anon 2006 ²³	Abstract only
Anon 2012 ²⁸	Abstract only
Anon 2012 ⁴⁰⁰	Abstract only
Anon 2012 ¹⁰¹⁰	Incorrect interventions
Anon 2012 ²⁹	Abstract only
Anon 2015 ³⁶	Not review population
Aure 2003 ¹⁶⁰	Inappropriate comparison
Azevedo 2015 ¹⁶³	Protocol
Baekgaard 1996 ¹⁶⁷	Abstract
Balthazard 2012 ¹⁷³	Inappropriate comparison
Barone 2007 ¹⁸²	Systematic review: methods are not adequate/unclear
Beattie 2010 ¹⁹³	Incorrect study design
Beggs 2012 ¹⁹⁵	Abstract only
Beladev 2011 ¹⁹⁸	Incorrect study design
Bell 2009 ¹⁹⁹	Systematic review: methods are not adequate/unclear
Bello 2010 ²⁰¹	Inappropriate comparison
Ben salah frih 2009 ²⁰²	Incorrect interventions
Bendix 1995 ²⁰⁴	Inappropriate comparison
Bendix 2000 ²⁰⁵	Inappropriate comparison
Berman 1997 ²²²	Incorrect study design
Bertocco 2002 ²³⁰	Inappropriate comparison. Inappropriate outcomes
Bertozzi 2015 ²³¹	Incorrect study design
Bi 2013 ²³⁶	Incorrect interventions
Blomberg 1993 ²⁵²	Incorrect interventions
Blomberg 1994 ²⁴⁸	Incorrect interventions
Boah 2012 ²⁵⁷	Abstract only
Bodack 2001 ²⁵⁸	Incorrect study design
Borges 2014 ²⁷⁴	Not guideline condition
Borman 2003 ²⁷⁵	Inappropriate comparison
Brennan 2006 ²⁸⁸	Inappropriate comparison
Brinton 1999 ²⁹⁰	Unavailable
Bronfort 1996 ²⁹⁴	Incorrect interventions
Brooks 2012 ³⁰⁰	Inappropriate comparison
Brox 2003 ³¹⁴	Inappropriate comparison. A combination of interventions
Brox 2006 ³¹³	Inappropriate comparison. A combination of interventions
Bruce-low 2012 ³¹⁷	Unavailable
Busanich 2006 ³³²	Systematic review: methods are not adequate/unclear
Bussing 2012 ³³⁵	Systematic review: methods are not adequate/unclear
Bystrom 2013 ³⁴¹	Systematic review: methods are not adequate/unclear
Cairns 2006 ³⁴⁹	Inappropriate comparison

Study	Exclusion reason
Callaghan 1994 ³⁵²	Incorrect interventions
Cambron 2005 ³⁵⁴	Unavailable
Cambron 2006 ³⁵⁵	Inappropriate comparison
Carr 2005 ³⁶²	Incorrect interventions
Carter 2002 ³⁶⁸	Incorrect study design
Cerrada 2012 ³⁷⁷	Abstract only
Chang 1994 ³⁸²	Incorrect study design
Chatzitheodorou 2008 ³⁹³	Inappropriate comparison
Chen 2012 ⁴⁰¹	Incorrect interventions
Cherkin 1996 ⁴¹⁰	Unable to obtain - abstract?
Cherkin 1996-1 ⁴⁰⁸	Unavailable
Cherkin 1999 ⁴⁰⁷	abstract only
Cherkin 2000 ⁴⁰⁴	Abstract only
Cho 2015 ⁴²¹	Incorrect study design
Cho 2015 ⁴²²	Incorrect study design
Chown 2008 ⁴⁴¹	Inappropriate comparison. Incorrect interventions
Cleland 2006 ⁴⁵⁶	Inappropriate comparison
Cleland 2007 ⁴⁵⁴	Inappropriate comparison
Cleland 2009 ⁴⁵⁵	Incorrect interventions
Collazo 2012 ⁴⁷¹	Language - Spanish
Costa 2009 ⁴⁸³	Inappropriate comparison
Coxhead 1974 ⁴⁸⁸	Factorial design but outcomes for each arm not reported separately
Coxhead 1981 ⁴⁸⁹	Factorial design but outcomes for each arm not reported separately
Cuesta-vargas 2009{Cuesta-Vargas, 2009 CUESTA2009 /id}	Incorrect interventions
Cuesta-vargas 2011 ⁴⁹⁸	Incorrect interventions
Da fonseca 2009 ⁵⁰³	Incorrect interventions
Del pozo-cruz 2013 ⁵³⁹	Incorrect interventions
Demoulin 2006 ⁵⁴⁶	Incorrect study design
Descarreaux 2002 ⁵⁵⁶	Inappropriate comparison
Descarreaux 2002 ⁵⁵⁵	Abstract only
Dettori 1995 ⁵⁵⁷	Incorrect interventions
Diab 2013 ⁵⁷⁰	Incorrect interventions
Diaz 2013 ⁵⁷¹	Abstract only
Diaz-arribas 2015 ⁵⁷²	Inappropriate comparison. intraclass comparison
Dimaggio 1987 ⁵⁷⁴	Incorrect study design
Donzelli 2006 ⁵⁸⁶	Inappropriate comparison
Dufour 2010 ⁵⁹⁸	Inappropriate comparison
Durmus 2014 ⁶⁰⁴	Incorrect interventions. Back school
Eadie 2010 ⁶⁰⁷	Abstract only
Ezzati 2011 ⁶⁴⁰	Abstract only
Fernandez 2015 ⁶⁵³	Systematic review: study designs inappropriate
Fernando 1991 ⁶⁵⁴	Incorrect study design

Study	Exclusion reason
Ferreira 2007 ⁶⁶⁰	Incorrect interventions
Ferreira 2010 ⁶⁶¹	Incorrect interventions
Fink 2012 ⁶⁶⁹	Abstract only
Fontana 2005 ⁶⁷⁹	Not guideline condition
Franca 2012 ⁶⁸⁶	Inappropriate comparison
Franke 2000 ⁶⁹⁰	Language - German
Freburger 2008 ⁶⁹²	Incorrect study design. (abstract)
Friedrich 2005 ⁷⁰⁵	Inappropriate comparison
Fritz 2015 ⁷¹⁵	Not review population
Frost 1995 ⁷²⁵	Inappropriate comparison
Frost 1998 ⁷²⁶	Inappropriate comparison
Frost 2004 ⁷²⁷	Incorrect interventions
Gagnon 2005 ⁷⁴³	Inappropriate comparison
Garcia 2013 ⁷⁴⁹	Inappropriate comparison
Garcia 2015 ⁷⁵⁰	Protocol for a RCT
Gatti 2011 ⁷⁵⁷	Inappropriate comparison
Geisser 2005-1 ⁷⁶⁷	Inappropriate comparison
George 2010 ⁷⁶⁹	Inappropriate comparison
Ghonaie 1999 ⁷⁸⁴	Crossover study
Giggey 2009 ⁷⁹¹	Abstract only
Gladkowski 2014 ⁷⁹⁸	Systematic review: methods are not adequate/unclear
Gram 2012 ⁸²¹	Not guideline condition
Graves 2004 ⁸²⁴	Incorrect study design
Groessl 2008 ⁸³⁵	Incorrect study design
Gudavalli 2006 ⁸⁴⁴	Inappropriate comparison
Gur 2003 ⁸⁵²	Incorrect interventions
Hagen 2000 ⁸⁶³	Incorrect interventions
Hahne a.j. 2015 ⁸⁷¹	Conference abstract
Handa 2000 ⁸⁹⁷	Incorrect study design
Hartfiel 2012 ⁹⁰⁸	Not guideline condition
Helmhout 2004 ⁹³³	Inappropriate comparison
Helmhout 2008 ⁹³⁴	Incorrect interventions
Hemmila 2002 ⁹³⁵	Incorrect interventions
Henry 2014 ⁹⁴¹	Incorrect interventions
Hides 1996 ⁹⁵⁹	Inappropriate comparison
Hides 2001 ⁹⁵⁸	Inappropriate comparison
Hildebrandt 2000 ⁹⁶¹	language - Dutch
Hofstee 2003 ⁹⁸⁰	Not English
Hollinghurst 2008 ⁹⁸²	Incorrect interventions
Homayouni 2015 ⁹⁸⁴	Incorrect interventions
Hurley 2015 ¹⁰⁰¹	Incorrect interventions
Hurwitz 2002 ¹⁰⁰⁶	Incorrect interventions
Iahin 2011 ¹⁰¹¹	Abstract only

Study	Exclusion reason
Inani 2013 ¹⁰¹⁸	Inappropriate comparison
Ismail 2013 ¹⁰²⁵	Conference abstract
Iversen 2003 ¹⁰³³	Incorrect study design
Iversen 2010 ¹⁰³²	Systematic review: methods are not adequate/unclear
Jackson 2002 ¹⁰⁴⁰	Systematic review: methods are not adequate/unclear
Jans 2006 ¹⁰⁵⁴	Language - Dutch
Jarrett 2012 ¹⁰⁵⁷	Systematic review: methods are not adequate/unclear
Javadian 2012 ¹⁰⁶³	Inappropriate comparison
Javadian 2015 ¹⁰⁶²	Incorrect interventions. intraclass comparison
Jensen 2009 ¹⁰⁷¹	Not guideline condition
Jensen 2012 ¹⁰⁷⁵	unclear interventions
Jensen 2015 ¹⁰⁷³	unclear interventions
Johannsen 1995 ¹⁰⁸⁴	Inappropriate comparison
Johnson 2007 ¹⁰⁸⁷	Incorrect interventions
Johnson 2010 ¹⁰⁸⁶	Incorrect interventions
Jones 2007 ¹⁰⁹³	Incorrect age group
Jones 2007 ¹⁰⁹²	Incorrect age group
Kamali 2014 ¹¹⁰⁷	Incorrect interventions
Kankaanpaa 1999 ¹¹¹²	Inappropriate comparison
Kell 2011 ¹¹³⁷	Incorrect interventions. Unclear comparator
Kendall 2015 ¹¹⁴⁰	COMBI. Incorrect interventions
Kennedy 2012 ¹¹⁴²	Abstract only
Khalil 1992 ¹¹⁵²	Not guideline condition. (myofascial pain syndrome)
Khalil 1994 ¹¹⁵¹	Incorrect study design. (non-comparative)
Khan 2014 ¹¹⁵⁶	Incorrect interventions
Kim 2013 ¹¹⁶¹	Incorrect interventions
Koc 2009 ¹¹⁹⁹	Incorrect interventions
Kool 2005 ¹²²⁴	Incorrect interventions
Kool 2007 ¹²²³	Incorrect interventions
Koumantakis 2005 ¹²³²	Inappropriate comparison
Koumantakis 2005 ¹²³³	Inappropriate comparison
Krein 2013 ¹²³⁸	Inappropriate comparison
Kuck 2005 ¹²⁴⁴	Incorrect study design
Kumar 2009 ¹²⁵¹	Incorrect interventions
Kumar 2010 ¹²⁵³	Incorrect interventions
Kumar 2011 ¹²⁴⁸	abstract only
Kumar 2012 ¹²⁵²	Incorrect study design
Kuukkanen 1998 ¹²⁵⁵	Incorrect outcomes
Kuukkanen 2007 ¹²⁵⁶	Incorrect outcome
La touche 2008 ¹²⁶⁰	Systematic review: methods are not adequate/unclear
Lau 2008 ¹²⁷⁴	Incorrect interventions
Lee 2011 ¹³⁰⁶	Inappropriate comparison
Lee 2014 ¹²⁸⁹	Incorrect interventions. intraclass comparison

Study	Exclusion reason
Leibetseder 2007 ¹³¹⁰	Incorrect interventions
Leonard 2015 ¹³¹²	Not available
Lewis 2005 ¹³²¹	Incorrect interventions
Lewis 2008 ¹³¹⁹	Systematic review: methods are not adequate/unclear
Lewis 2011 ¹³²⁰	Inappropriate comparison
Lindstrom 1992 ¹³⁴³	Incorrect interventions
Lindstrom 1992 ¹³⁴⁴	Incorrect interventions
Lindstrom 2003 ¹³⁴²	Incorrect study design
Linton 1984 ¹³⁴⁶	Incorrect interventions
Linton 1996 ¹³⁴⁷	Incorrect interventions
Liu 2013 ¹³⁵⁶	Review protocol
Liu-ambrose 2005 ¹³⁶⁰	Inappropriate comparison
Ljunggren 1992 ¹³⁶²	Inappropriate comparison
Ljunggren 1997 ¹³⁶³	Incorrect interventions
Lomond 2014 ¹³⁶⁸	Incorrect interventions. Intraclass comparison
Long 2004 ¹³⁷⁰	Inappropriate comparison
Long 2006 ¹³⁶⁹	Abstract only
Luijsterburg 2008 ¹³⁸⁵	Unclear exercise class
Lumpkin 2007 ¹³⁸⁶	Unavailable
Luomajoki 2010 ¹³⁸⁷	Incorrect study design. (non-comparative)
Macedo 2008 ¹³⁹²	Incorrect interventions
Macedo 2012 ¹³⁹³	Inappropriate comparison
Machado 2012 ¹³⁹⁶	Review protocol
Machado 2012 ¹³⁹⁵	Review protocol
Macrae 2013 ¹⁴⁰⁰	Incorrect interventions
Magalhaes 2015 ¹⁴⁰⁶	Incorrect interventions
Maher 2005 ¹⁴⁰⁹	Inappropriate comparison
Malmivaara 1995 ¹⁴¹⁸	Inappropriate comparison
Malmivaara 2007 ¹⁴²⁰	Incorrect interventions
Malmros 1998 ¹⁴²¹	Not guideline condition. Serious spinal pathology (for example, neoplasms, infections or osteoporotic collapse)
Manca 2004{UK BEAM Trial Team, 2004 BEAM2004 /id}	Incorrect interventions
Manca 2007 ¹⁴²⁴	Inappropriate comparison
Manniche 1988 ¹⁴⁶⁴	Inappropriate comparison
Manniche 1991 ¹⁴⁶⁵	Inappropriate comparison
Manniom 1999 ¹⁴⁶⁸	Inappropriate comparison
Mannion 2013 ¹⁴⁶⁹	Incorrect interventions
Mannion 2013 ¹⁴⁶⁶	Abstract only
Marshall 2008-1 ¹⁴⁷⁸	Incorrect interventions
Marshall 2008-2 ¹⁴⁷⁸	Unclear interventions
Matsudaira 2015 ¹⁴⁸⁶	Not review population
Mayer 2003 ¹⁴⁹¹	Incorrect study design
Mckenzie 2001 ¹⁵¹³	Incorrect study design

Study	Exclusion reason
Miller 2005 ¹⁵³⁴	Inappropriate comparison
Milosavljevic 2015 ¹⁵³⁸	Protocol for RCT
Moffatt 2014 ¹⁵⁴⁷	Not guideline condition
Moffett 1999 ¹⁵⁵⁰	Incorrect interventions
Moffett 2006 ¹⁵⁵¹	Not guideline condition
Mohseni-bandpei 2011{Mohseni-Bandpei, 2011 MOHSENI2011 /id}	Incorrect interventions
Montero 2011 ¹⁵⁵⁵	Abstract only
Monticone 2013 ¹⁵⁵⁸	Incorrect interventions
Monticone 2014 ¹⁵⁵⁷	Incorrect interventions
Moon 2013 ¹⁵⁶²	Inappropriate comparison
Mooney 2004 ¹⁵⁶⁴	Incorrect study design
Morone 2011 ¹⁵⁷⁴	Incorrect interventions
Morone 2012 ¹⁵⁷⁵	Incorrect interventions
Moseley 2002 ¹⁵⁸²	Incorrect interventions
Mostagi 2015 ¹⁵⁸⁴	Unclear intervention
Moustafa 2015 ¹⁵⁸⁸	Incorrect interventions
Murtezani 2011 ¹⁶⁰²	Inappropriate comparison
Murtezani 2015 ¹⁶⁰³	Incorrect interventions
Nagrale 2012 ¹⁶⁰⁸	Inappropriate comparison
Natour 2011 ¹⁶¹⁷	Abstract only
Nazzal 2013 ¹⁶²⁰	Inappropriate comparison
Nelson 1995 ¹⁶²⁴	Incorrect study design
Niemisto 2003 ¹⁶⁴²	Incorrect interventions
Noori 2011 ¹⁶⁴⁹	Unavailable
Nwuga 1985 ¹⁶⁵⁵	Inappropriate comparison
O'brien 2006 ¹⁶⁶⁰	Inappropriate comparison
O'donoghue 2008 ¹⁶⁶²	Abstract only
Oesch 2010 ¹⁶⁶⁶	Systematic review: methods are not adequate/unclear
Ohtori 2011 ¹⁶⁷³	Incorrect interventions
Olah 2008 ¹⁶⁷⁷	Incorrect interventions
Olaya-contreras 2015 ¹⁶⁷⁹	Incorrect interventions
Oldervoll 2001 ¹⁶⁸⁰	Incorrect study design. A non-randomised comparative study
Ostelo 2000 ¹⁶⁹⁰	Abstract only
Overman 1988 ¹⁶⁹³	Inappropriate comparison
Ozdemir 2015 ¹⁶⁹⁷	Not guideline condition
Pattanasin 2012 ¹⁷³⁵	Inappropriate comparison
Pengel 2007 ¹⁷⁴⁵	Incorrect interventions
Petersen 2002 ¹⁷⁶¹	Inappropriate comparison
Petersen 2007 ¹⁷⁶²	Inappropriate comparison
Petersen 2015 ¹⁷⁶⁰	Incorrect interventions. Combination therapy (manual therapy with massage vs McKenzie)
Peterson 2011 ¹⁷⁶⁵	Incorrect interventions. Combination therapy (manual therapy with

Study	Exclusion reason
	massage vs McKenzie)
Petrofsky 2008 ¹⁷⁶⁶	Incorrect interventions
Ponte 1984 ¹⁷⁸⁵	Incorrect study design
Posadzki 2011 ¹⁷⁸⁷	Systematic review: methods are not adequate/unclear
Posadzki 2011 ¹⁷⁸⁸	Systematic review: methods are not adequate/unclear
Preyde 2000 ¹⁷⁹⁵	Incorrect interventions. Combination of interventions
Puntumetakul 2013 ¹⁸⁰⁰	Inappropriate comparison
Rantonen 2012 ¹⁸²⁵	Incorrect interventions
Rittweger 2002 ¹⁸⁶¹	Incorrect interventions
Roche-leboucher 2011 ¹⁸⁶⁷	Incorrect interventions
Rondoni 2009 ¹⁸⁷⁶	Language - Italian
Ryan 2010 ¹⁸⁹⁶	Incorrect interventions
Saner 2015 ¹⁹¹⁵	Incorrect interventions. intraclass comparison
Sansonnens 2013 ¹⁹¹⁶	Language - French
Saper 2013 ¹⁹¹⁹	Inappropriate comparison. (dosing study)
Schenk 2003 ¹⁹⁴⁰	Incorrect interventions
Schrepfer 2000 ¹⁹⁵⁴	Incorrect interventions. Single 20 minute intervention with pre and post scores
Sculco 2001 ¹⁹⁶²	Incorrect study design
Searle 2015 ¹⁹⁶³	Systematic review: methods are not adequate/unclear
Seferlis 1998 ¹⁹⁶⁸	Inappropriate comparison. Not possible to extract results for each intervention separately to make comparison
Selhorst 2015 ¹⁹⁶⁹	Cancelled
Sertpoyraz 2009 ¹⁹⁷⁵	Inappropriate comparison
Shamsi 2015 ¹⁹⁷⁹	Incorrect interventions. intraclass comparison
Sjogren 1997 ²⁰¹⁴	Inappropriate comparison
Sjogren 2006 ²⁰¹⁵	Crossover study
Skikic emuji 2004 ¹⁵⁹²	Inappropriate comparison
Smith 2011 ²⁰³²	Incorrect interventions
Sorensen 2010 ²⁰⁵⁰	Incorrect interventions
Soukup 1999 ²⁰⁵³	Not review population. some participants not in pain at time of trial
Spanos 2002 ²⁰⁵⁴	Incorrect outcomes (correction of sciatic scoliosis deformity)
Staal 2004 ²⁰⁶⁴	Incorrect interventions
Standaert 2007 ²⁰⁶⁸	Abstract only
Standaert 2011 ²⁰⁶⁹	Incorrect interventions
Stankovic 1990 ²⁰⁷⁰	Inappropriate comparison
Stankovic 1995 ²⁰⁷¹	Inappropriate comparison
Steeffel 2012 ²⁰⁷⁴	Systematic review: methods are not adequate/unclear
Sung 2013 ²⁰⁹⁰	Inappropriate comparison
Sweet 1995 ²⁰⁹⁵	Unavailable
Sweetman 1993 ²⁰⁹⁷	Incorrect age group. Mixed adult and children population
Taylor 2011 ²¹¹⁵	Incorrect study design
Tekur 2008 ²¹²²	Incorrect interventions. residential yoga course
Tekur 2010 ²¹²¹	Incorrect interventions. residential yoga course

Study	Exclusion reason
Tekur 2012 ²¹²⁰	Unlikely to be used as part of current practice
Trampas 2015 ²¹⁵⁴	Incorrect study design
Tritilanunt 2001 ²¹⁵⁸	A combination of interventions
Tygiel 1996 ²¹⁸⁰	Incorrect study design
Unsgaard-tondel 2010 ²¹⁸⁶	Inappropriate comparison
Vallone 2014 ²¹⁹²	Incorrect interventions
Van der roer 2008 ²¹⁹⁷	Incorrect interventions
Van dyke 1994 ²²⁰⁴	Incorrect study design
Vincent 2012 ²²⁴⁶	Abstract only
Vincent 2013 ²²⁴⁷	Abstract only
Wajswelner 2012 ²²⁷³	Inappropriate comparison
Walter 2004 ²²⁸⁰	Incorrect study design
Weifen 2013 ²³⁰⁵	Incorrect interventions
Wiesinger 1997 ²³²⁵	Incorrect study design. (non-comparative)
Winters 2004 ²³⁴⁹	Inappropriate comparison
Xueqiang 2012 ²³⁶⁶	Inappropriate comparison
Yaghoubi 2014 ²³⁶⁷	Not in english language
Yamato 2015 ²³⁷³	Systematic review: methods are not adequate/unclear
Ye 2015 ²³⁷⁹	Incorrect interventions. intraclass comparison
Yelland 2004 ²³⁸⁴	Incorrect interventions
Yeung 2003 ²³⁸⁵	Inappropriate comparison
Yozbatiran 2002 ²³⁹³	language - Turkish
Yozbatiran 2004 ²³⁹⁴	Unavailable
Zhang 2015 ²⁴¹⁰	Incorrect interventions

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1.6 Postural therapies

1591 **Table 6: Studies excluded from the clinical review**

Study	Exclusion reason
Anon 1999 ⁴	Incorrect study design
Aronow 1986 ¹³⁹	Incorrect study design. Article
Bonetti 2010 ²⁷¹	Incorrect study design
Brinton 1999 ²⁹⁰	Unavailable
Cacciatore 2005 ³⁴⁵	Incorrect study design
Cacciatore 2011 ³⁴⁴	Inappropriate outcomes "muscle tone"
Costa 2009 ⁴⁸³	Incorrect interventions
Curnow 2009 ⁵⁰²	Incorrect interventions. Possibly relevant to exercise
Dettori 1995 ⁵⁵⁷	Incorrect interventions. Possibly relevant to exercise
Diciaccio 2012 ⁵⁶⁷	Incorrect study design

Study	Exclusion reason
Dimulescu 2013 ⁵⁷⁵	Abstract only
Dos Santos 2010 ⁵⁹⁰	Abstract only
Ernst 2003 ⁶³⁰	Systematic review: methods are not adequate/unclear. Used to cross-check references
Gatti 2011 ⁷⁵⁷	Incorrect interventions
Hall 1993 ⁸⁸⁵	Incorrect interventions
Jaromi 2012 ¹⁰⁵⁶	Incorrect interventions. "ergonomics training"
Khan 2008 ¹¹⁵⁵	Incorrect study design
Kim 2013 ¹¹⁶⁸	Incorrect interventions. "neurac sling exercise"
Lawand 2013 ¹²⁷⁷	Abstract only
McClellan 2015 ¹⁵⁰⁶	Not a RCT or cohort study, no comparator group.
Norris 2008 ¹⁶⁵¹	Incorrect interventions. Possibly relevant to exercise
Nwuga 1982 ¹⁶⁵⁶	Incorrect interventions
Oostendorp 1988 ¹⁶⁸⁶	Incorrect interventions. "proprioceptive facilitation"
Oyarzo 2014 ¹⁶⁹⁵	Incorrect population – not everyone had low back pain
Paolucci 2012 ¹⁷⁰⁹	Unavailable
Pesco 2006 ¹⁷⁵⁸	Not guideline condition
Sheeran 2013 ¹⁹⁸²	Intraclass comparison
Sofi 2011 ²⁰⁴⁴	Incorrect study design
Tsao 2008 ²¹⁶⁵	Incorrect study design
Williams 1991 ²³³⁷	Incorrect interventions
Woodman 2012 ²³⁵⁶	Systematic review is not relevant to review question or unclear PICO. Used to cross-check references

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1.9.7 Orthotics

1594 **Table 7: Studies excluded from the clinical review**

Study	Exclusion reason
Ahlgren 1978 ⁶⁵	incorrect study type
Alaranta 1988 ⁷⁸	Inappropriate comparison
Aleksiev 2014 ⁸⁵	Intraclass exercise comparison
Ammendolia 2005 ¹⁰¹	Systematic review: methods are not adequate/unclear
Anon 2000 ⁵	Systematic review is not relevant to review question or unclear PICO
Anon 2007 ²⁴	Narrative review-unavailable
Berger 2013 ²¹⁷	Abstract only
Bigos 2009 ²⁴⁰	Systematic review is not relevant to review question or unclear PICO. No relevant outcomes
Bonaiuti 2004 ²⁷⁰	Incorrect interventions
Brodke 2004 ²⁹²	Incorrect study design
Castro-sanchez 2012 ³⁷¹	Incorrect interventions
Charrette 1998 ³⁹¹	Does not match review question
Charrette 2003 ³⁹²	Incorrect study design (article)
Chen 2003 ⁴⁰²	Population does not match protocol (healthy individuals)

Study	Exclusion reason
Cholewicki 2010 ⁴²⁶	Incorrect interventions
Chuter 2014 ⁴⁵¹	Systematic review is not relevant to review question or unclear PICO
Dananberg 1999 ⁵¹⁵	Inappropriate comparison
Dougherty 2014 ⁵⁹¹	Incorrect interventions
Ferrari 2007 ⁶⁵⁵	Inappropriate comparison
Ferrari 2011 ⁶⁵⁶	Inappropriate comparison.
Ferrari 2013 ⁶⁵⁷	Incorrect interventions. combination
Gatty 2003 ⁷⁵⁸	Population does not match protocol
Gavin 1993 ⁷⁵⁹	Inappropriate comparison
Gaydos 2012 ⁷⁶⁰	Systematic review is not relevant to review question or unclear PICO
Goldish 1993 ⁸¹³	Inappropriate comparison
Hall 2004 ⁸⁸⁴	Not guideline condition
Hall 2008 ⁸⁸³	Does not match review question
Halvorson 1993 ⁸⁸⁷	Inappropriate comparison
He 2006 ⁹²³	Incorrect interventions
Hipp 2010 ⁹⁷²	Incorrect study design
Jellema 2001 ¹⁰⁶⁷	Systematic review is not relevant to review question or unclear PICO
Jellema 2002 ¹⁰⁶⁵	Inappropriate comparison
Lahad 1994 ¹²⁶³	Systematic review is not relevant to review question or unclear PICO
Kawchuk 2015 ¹¹³³	Inappropriate comparison
Koes 1994 ¹²⁰⁸	Incorrect interventions.
Langford 2005 ¹²⁷²	Incorrect interventions
Legaspi 2007 ¹³⁰⁸	Systematic review: methods are not adequate/unclear
Mahoney 2001 ¹⁴¹⁰	Inappropriate comparison
Malanga 2010 ¹⁴¹⁵	Inappropriate comparison. Not a study
Mattson 2008 ¹⁴⁸⁸	incorrect study stype, case-series
Nachemson 1983 ¹⁶⁰⁵	Population does not match protocol
Nyiendo 2001 ¹⁶⁵⁸	Intervention does not match protocol
Oh 2014 ¹⁶⁶⁸	No compator group
Penrose 1991 ¹⁷⁴⁷	Incorrect study design
Penttinen 1990 ¹⁷⁵⁰	Inappropriate comparison
Pope 1990{POPE1990}	Conference abstract
Sahar 2007 ¹⁹⁰¹	Systematic review is not relevant to review question or unclear PICO. Systematic review: study designs inappropriate
Saito 2014 ¹⁹⁰³	Inappropriate comparison
Saunders 1993 ¹⁹³⁰	Inappropriate comparison
Shabat 2005 ¹⁹⁷⁶	Population does not match protocol
Turner 2008 ²¹⁷⁵	Incorrect study design. Inappropriate comparison
Van duijvenbode 2008 ²²⁰³	Incorrect interventions. Does not match protocol
Van tulder 2000 ²²⁰⁹	Systematic review: methods are not adequate/unclear
Verbeek 2011 ²²²⁸	Systematic review: methods are not adequate/unclear. Systematic review: study designs inappropriate
Wassell 2000 ²²⁹²	Population does not match protocol
Wood 2003 ²³⁵⁵	Does not match review question

Study	Exclusion reason
Zhang 2005 ²⁴⁰⁵	Population does not match protocol

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1.8 Manual therapies

1597 **Table 8: Studies excluded from the clinical review (single intervention)**

Study	Exclusion reason
Abenhaim 1992 ⁴²	Systematic review: methods are not adequate/unclear
Adamczyk 2009 ⁵⁰	Inappropriate comparison
Added 2013 ⁵¹	Incorrect interventions
Anderson 1992 ¹¹⁷	Systematic review: methods are not adequate/unclear
Anderson 2005 ¹¹³	Unavailable
Andersson 1999 ¹¹⁹	Incorrect interventions
Anon 1990 ¹	Abstract only
Anon 1997 ³	Unavailable
Anon 1999 ¹²⁶	Unavailable
Anon 2005 ¹⁹	Incorrect study design
Anon 2005 ¹⁸	Abstract only
Anon 2005 ¹²	Not available
Anon 2011 ²⁷	Not available
Anon 2011 ¹⁷⁴⁸	Abstract only
Arkuszewski 1986 ¹³⁷	Incorrect intervention
Assendelft 1992 ¹⁴⁸	Systematic review: methods are not adequate/unclear
Assendelft 1996 ¹⁴⁹	Systematic review: methods are not adequate/unclear
Assendelft 2003 ¹⁵⁰	Systematic review: quality assessment is inadequate
Assendelft willem 2013 ¹⁴⁷	Withdrawn from publication
Aure 2003 ¹⁶⁰	Inappropriate comparison
Avery 2004 ¹⁶¹	Systematic review: methods are not adequate/unclear
Balthazard 2012 ¹⁷³	Incorrect interventions
Bialosky 2009 ²³⁷	Outcomes measured immediately after treatment only (5 minutes)
Blomberg 1992{Blomberg, 1992 BLOMBERG1992 /id}	Inappropriate comparison
Blomberg 1993 ²⁵²	Inappropriate comparison
Blomberg 1993 ²⁵⁰	Inappropriate comparison
Blomberg 1994 ²⁵¹	Inappropriate comparison
Boezaart 1999 ²⁶²	Incorrect interventions
Bronfort 2000 ²⁹³	Incorrect interventions
Bronfort 2004 ²⁹⁷	Systematic review is not relevant to review question or unclear PICO
Bronfort 2011 ²⁹⁸	Unclear which interventions received
Cai 2009 ³⁴⁸	Inappropriate comparison (cohort study with no control group)
Cambron 2005 ³⁵⁴	Unavailable

Canadian coordinating office for health technology assessment 2002 ³⁵⁷	Unavailable
Carr 2005 ³⁶²	Incorrect interventions
Cecchi 2010 ³⁷⁵	Inappropriate comparison
Cecchi 2010 ³⁷³	Inappropriate comparison
Cecchi 2012 ³⁷⁴	Inappropriate comparison
Chen 2012 ³⁹⁷	Incorrect interventions
Cherkin 1998 ⁴⁰⁵	Inappropriate comparison
Cherkin 2003 ⁴¹²	Systematic review: quality assessment is inadequate
Chown 2008 ⁴⁴¹	Inappropriate comparison
Christensen 1993 ⁴⁴⁷	Inappropriate comparison (cohort study with no control group)
Clarke 2006 ⁴⁵³	Systematic review is not relevant to review question or unclear PICO
Clarke 2007{CLARKE2007}	Systematic review is not relevant to review question or unclear PICO
Cleland 2006 ⁴⁵⁶	Inappropriate comparison
Cleland 2006 ⁴⁵⁷	Inappropriate comparison
Cleland 2009 ⁴⁵⁵	Inappropriate comparison
Conijn 2003 ⁴⁷³	Incorrect study design
Conijn 2003 ⁴⁷²	Incorrect study design
Cook 2012 ⁴⁷⁹	Incorrect study design
Cook 2013 ⁴⁷⁷	Inappropriate comparison
Cote 1994 ⁴⁸⁵	Inappropriate comparison
Coxhead 1981 ⁴⁸⁹	Inappropriate comparison
Critchley 2007 ⁴⁹³	Incorrect interventions
Cuesta-vargas 2011 ⁴⁹⁸	Inappropriate comparison
De oliveira 2013 ⁵³³	Inappropriate comparison
Doran 1975 ⁵⁸⁸	no relevant outcomes
Ehrenbrusthoff 2012 ⁶¹³	Not available
Erhard 1994 ⁶²⁷	Incorrect interventions
Ernst 1999 ⁶²⁸	Systematic review: methods are not adequate/unclear
Ernst 2003 ⁶²⁹	Systematic review: methods are not adequate/unclear
Farasyn 2006 ⁶⁴⁹	Incorrect interventions
Farasyn 2007 ⁶⁴⁸	Incorrect study design
Ferreira 2003 ⁶⁵⁹	Systematic review: quality assessment is inadequate
Field 2007 ⁶⁶⁶	Inappropriate comparison
Flynn 2006 ⁶⁷⁸	Inappropriate comparison
Foster 2006 ⁶⁸³	Incorrect study design
Franca 2010 ⁶⁸⁷	Inappropriate comparison
Franca 2012 ⁶⁸⁶	Inappropriate comparison
Franke 2000 ⁶⁸⁹	Unavailable
Freeman 2005 ⁶⁹³	Inappropriate comparison
Friedman 2015 ⁷⁰⁰	Incorrect study design. Conference abstract
Fritzell 2000 ⁷²⁰	Abstract only
Frost 2004 ⁷²⁷	Incorrect interventions
Furlan 2002 ⁷³³	Systematic review is not relevant to review question or unclear PICO
Furlan 2003 ⁷³²	Systematic review is not relevant to review question or unclear PICO
Furlan 2008 ⁷³⁴	Systematic review is not relevant to review question or unclear PICO
Furlan 2009 ⁷³⁵	Systematic review is not relevant to review question or unclear PICO
Geisser 2005-2 ⁷⁶⁷	Already included
Gibson 1985 ⁷⁹⁰	Inappropriate comparison

Gillstrom 1985 ⁷⁹³	Inappropriate comparison (cohort study with no control group)
Gillstrom 1985 ⁷⁹⁴	Inappropriate comparison (cohort study with no control group)
Ginsberg 1987 ⁷⁹⁶	Inappropriate comparison
Godfrey 1984 ⁸⁰⁵	Incorrect outcome
Goertz 2012 ⁸⁰⁶	Not available
Goertz 2013 ⁸⁰⁷	Inappropriate comparison
Goldby 2006 ⁸¹²	Specific details of manual therapy modalities not given - could be anything
Goldstein 2002 ⁸¹⁴	Incorrect interventions
Grunnesjo 2004 ⁸⁴²	Incorrect interventions. Participants receive different treatment within the same treatment group
Grunnesjo 2011 ⁸⁴¹	Incorrect interventions. Participants receive different treatment within the same treatment group
Gudavalli 2006 ⁸⁴⁴	Inappropriate comparison
Haas 2004 ⁸⁵⁵	Inappropriate comparison
Haas 2011 ⁸⁵⁶	Abstract only
Hadler 1987 ⁸⁵⁹	Inappropriate comparison
Hadler 1990 ⁸⁶⁰	Inappropriate comparison
Hallegraeff 2009 ⁸⁸⁶	Inappropriate comparison
Hancock 2010 ⁸⁹³	Incorrect study design
Harte 2003 ⁹⁰⁷	Systematic review: quality assessment is inadequate
Haugaard 2007 ⁹¹³	Systematic review is not relevant to review question or unclear PICO
Hay 2005 ⁹¹⁶	Incorrect interventions. Combination of interventions
Hay 2008 ⁹¹⁷	Inappropriate comparison
Hemmila 1997 ⁹³⁶	Incorrect interventions
Hernandez-reif 2001 ⁹⁴⁷	Inappropriate comparison
Hertzman-miller 2002 ⁹⁵¹	Incorrect interventions. Not all participants received the same care in intervention groups
Heymans 2006 ⁹⁵³	Inappropriate comparison
Hoehler 1981 ⁹⁷⁸	No relevant outcomes
Hofstee 2002 ⁹⁸¹	Inappropriate comparison
Hollisaz 2007 ⁹⁸³	Incorrect interventions
Hsieh 2004 ⁹⁹²	Inappropriate comparison
Hsieh 2006 ⁹⁹¹	Inappropriate comparison
Hurley 2001 ⁹⁹⁹	Editorial
Hurwitz 2002 ¹⁰⁰⁴	
Hurwitz 2002 ¹⁰⁰³	Abstract only
Hurwitz 2002 ¹⁰⁰⁵	
Hurwitz 2006 ¹⁰⁰⁷	Incorrect interventions
Iversen 2010 ¹⁰³²	Systematic review: methods are not adequate/unclear
Jacobs 1992 ¹⁰⁴²	Incorrect study design
Jang 2013 ¹⁰⁵³	Inappropriate comparison
Jewell 2005 ¹⁰⁷⁷	Inappropriate comparison (cohort study with no control group)
Johnston 2008 ¹⁰⁸⁸	Systematic review is not relevant to review question or unclear PICO
Jousset 2004 ¹⁰⁹⁶	Inappropriate comparison
Kaapa 2006 ¹⁰⁹⁹	Inappropriate comparison
Kalauokalani 2001 ¹¹⁰³	Incorrect study design
Kankaanpaa 1999 ¹¹¹²	Inappropriate comparison

Karjalainen 2003 ¹¹¹⁸	Inappropriate comparison
Karjalainen 2004 ¹¹¹⁷	Inappropriate comparison
Kent 2010 ¹¹⁴³	Systematic review is not relevant to review question or unclear PICO
Kim 2015 ¹¹⁶⁷	Incorrect population (torture survivors). Incorrect intervention (MET)
Kinalski 1989 ¹¹⁸³	Inappropriate comparison
Koes 1996 ¹²⁰²	Systematic review is not relevant to review question or unclear PICO
Koes 1998 ¹²⁰⁰	Abstract only
Kohlbeck 2005 ¹²¹²	Inappropriate comparison
Koldas 2008 ¹²¹⁴	Incorrect interventions
Kraft 2001 ¹²³⁵	Incorrect study design
Krause 2000 ¹²³⁶	Systematic review: study designs inappropriate
Kuczynski 2012 ¹²⁴⁵	Systematic review: quality assessment is inadequate. Systematic review is not relevant to review question or unclear PICO
Kumar 2013 ¹²⁵⁰	Systematic review: methods are not adequate/unclear
Lakke 2009 ¹²⁶⁵	Systematic review: methods are not adequate/unclear
Lalanne 2009 ¹²⁶⁶	Incorrect outcomes (EMG outcomes)
Larsson 1980 ¹²⁷³	Incorrect outcomes
Learman 2007 ¹²⁸²	Not available
Learman 2008 ¹²⁸³	Incorrect outcomes (improvement in proprioception)
Learman 2009 ¹²⁸⁴	Incorrect outcomes (improvement in proprioception)
Lewis 2005 ¹³²¹	Inappropriate comparison
Lewis 2013 ¹³²⁵	Systematic review: methods are not adequate/unclear
Licciardone 2003 ¹³³¹	Inappropriate comparison
Licciardone 2005 ¹³³⁰	Systematic review: methods are not adequate/unclear
Licciardone 2013 ¹³²⁹	Not guideline condition
Louw 2007 ¹³⁷⁷	Systematic review is not relevant to review question or unclear PICO
Luijsterburg 2008 ¹³⁸⁵	Inappropriate comparison
Mackawan 2007 ¹³⁹⁹	Immediate post-treatment outcomes only
Majchrzycki 2014 ¹⁴¹²	Inappropriate comparison
Mandara 2008 ¹⁴⁵⁸	Incorrect study design
Mathews 1975 ¹⁴⁸³	Crossover study
Mathews 1987 ¹⁴⁸⁴	Inappropriate comparison
Mathews 1988 ¹⁴⁸⁵	Inappropriate comparison
Mccarthy 2008 ¹⁵⁰⁴	Incorrect interventions
Mcmorland 2010 ¹⁵¹⁵	Inappropriate comparison
Menke 2014 ¹⁵²⁷	Systematic review: methods are not adequate/unclear
Mirovsky 2002 ¹⁵⁴⁰	Incorrect interventions
Mirovsky 2006 ¹⁵³⁹	Incorrect interventions
Moffett 2000 ¹⁵⁵²	
Moffett 2003 ¹⁵⁴⁹	We have excluded this study as it was allocated (all arms) into teh combinations review
Mooney 2004 ¹⁵⁶⁴	Incorrect study design
Morris 2013 ¹⁵⁷⁷	Systematic review is not relevant to review question or unclear PICO
Moseley 2002 ¹⁵⁸²	Inappropriate comparison

Muthukrishnan 2010 ¹⁶⁰⁴	Inappropriate comparison
Nagrale 2012 ¹⁶⁰⁸	Inappropriate comparison
Netchanok 2012 ¹⁶²⁷	Inappropriate comparison
Newel 1977 ¹⁶²⁹	no relevant outcomes
Niemisto 2003 ¹⁶⁴²	Inappropriate comparison
Noori 2011 ¹⁶⁴⁹	Incorrect interventions
North american spine society board of directors 2003 ¹⁶⁵²	Protocol only
O'brien 2006 ¹⁶⁶⁰	Not available
Olson 1991 ³⁹⁵	Incorrect study design. (survey)
Oort 2009 ¹⁶⁸⁵	Not available
Orrock 2013 ¹⁶⁸⁹	Systematic review: methods are not adequate/unclear
Ostelo 2000 ¹⁶⁹⁰	Abstract only
Paanalahti 2014 ¹⁶⁹⁸	Inappropriate comparison
Paatelma 2008 ¹⁶⁹⁹	Inappropriate comparison
Panagopoulos 2015 ¹⁷⁰⁶	Wrong intervention: visceral manipulation, not spine. Inappropriate comparison. Incorrect interventions
Parkinson 2013 ¹⁷²⁶	Systematic review: methods are not adequate/unclear
Patel 2013 ¹⁷³¹	Systematic review: methods are not adequate/unclear
Pengel 2002 ¹⁷⁴⁴	Systematic review is not relevant to review question or unclear PICO
Pfefer 2006 ¹⁷⁶⁷	Abstract only
Preyde 2000 ¹⁷⁹⁵	Inappropriate comparison
Rajadurai 2009 ¹⁸¹⁹	Systematic review: quality assessment is inadequate
Rannou 2009 ¹⁸²⁴	Abstract only
Rasmussen 1979 ¹⁸²⁹	Inappropriate comparison
Rasmussen-barr 2003 ¹⁸³⁰	Inappropriate comparison
Richards 2013 ¹⁸⁵³	Systematic review is not relevant to review question or unclear PICO
Roche 2007 ¹⁸⁶⁶	Inappropriate comparison
Romanowski 2012 ¹⁸⁷³	Inappropriate comparison
Rubinstein 2009{RUBINSTEIN2009}	Systematic review is not relevant to review question or unclear PICO
Rubinstein 2010 ¹⁸⁸⁹	Systematic review is not relevant to review question or unclear PICO
Rubinstein 2011 ¹⁸⁹⁰	Systematic review is not relevant to review question or unclear PICO
Rubinstein 2011 ¹⁸⁸⁸	Systematic review is not relevant to review question or unclear PICO
Rubinstein 2012 ¹⁸⁸⁶	Systematic review is not relevant to review question or unclear PICO
Rubinstein 2013 ¹⁸⁸⁷	Systematic review is not relevant to review question or unclear PICO
Rupert 1983 ¹⁸⁹²	Not available
Rupert 2002 ¹⁸⁹³	Incorrect study design
Ryan 2004 ¹⁸⁹⁷	Incorrect study design
Saggini 2004 ¹⁹⁰⁰	Inappropriate comparison

Low back pain and sciatica
Excluded clinical studies

Sahin 2009 ¹⁹⁰²	Inappropriate comparison
Sanders 1990 ¹⁹¹³	Immediate post-treatment outcomes only
Sanders 1990 ¹⁹¹²	Abstract only
Schafer 2011 ¹⁹³⁵	Inappropriate comparison (cohort study with no control group)
Scheer 1996 ¹⁹³⁸	Systematic review: methods are not adequate/unclear
Schenk 2012 ¹⁹⁴¹	Inappropriate comparison
Schenkman 2009 ¹⁹⁴²	Inappropriate comparison
Schneider 2010 ¹⁹⁴⁷	Incorrect study design
Schneider 2014 ¹⁹⁴⁸	Abstract only
Schulz 2009 ¹⁹⁵⁷	Abstract only
Schulz 2011 ¹⁹⁵⁸	Protocol only
Seferlis 1998 ¹⁹⁶⁸	Outcomes not reported separately
Seferlis 2000 ¹⁹⁶⁷	Outcomes not reported separately
Selhorst 2015 ¹⁹⁶⁹	Incorrect age group
Shearar 2005 ¹⁹⁸¹	Not guideline condition
Shekelle 1992 ¹⁹⁸⁴	Systematic review: methods are not adequate/unclear
Shekelle 1994 ¹⁹⁸³	Inappropriate comparison
Shum 2013 ¹⁹⁹⁶	Incorrect study design
Silva parreira 2013 ²⁰⁰⁴	Abstract only
Sims-williams 1978 ²⁰⁰⁶	Data tables unavailable
Sims-williams 1979 ²⁰⁰⁷	Inappropriate comparison
Skargren 1997 ²⁰¹⁸	Not guideline condition
Skargren 1998 ²⁰¹⁷	Incorrect study design
Skargren 1998 ²⁰¹⁶	Inappropriate comparison
Skillgate 2007 ²⁰²⁰	Not guideline condition
Skillgate 2010 ²⁰¹⁹	Not guideline condition
Slater 2012 ²⁰²⁵	Systematic review is not relevant to review question or unclear PICO
Smith 2006 ²⁰³⁴	Inappropriate outcomes (movement time)
Snow 2001 ²⁰³⁸	Incorrect study design
Snyder 2007 ²⁰³⁹	Incorrect study design
Sran 2005 ²⁰⁶⁰	Unavailable
Sritoomma 2014 ²⁰⁶¹	Inappropriate comparison
Stager 2007 ²⁰⁶⁶	Incorrect study design
Standaert 2011 ²⁰⁶⁹	Systematic review: methods are not adequate/unclear
Stano 2002 ²⁰⁷²	Incorrect study design
Surkitt 2012 ²⁰⁹¹	Systematic review is not relevant to review question or unclear PICO
Sutlive 2009 ²⁰⁹³	Inappropriate comparison
Sweetman 1993 ²⁰⁹⁷	Incorrect age group
Swenson 2003 ²⁰⁹⁸	Systematic review: methods are not adequate/unclear
Szulc 2015 ²¹⁰²	Incorrect interventions. Combination of interventions
Taber 2014 ²¹⁰³	Incorrect study design
Takamoto 2015 ²¹⁰⁵	Inappropriate comparison. Intraclass comparison. Not guideline population: low back pain defined as 'pain and discomfort below the costal margin and above the inferior gluteal fold'
Tasleem 2003 ²¹¹²	Inappropriate comparison
Ter riet 2002 ²¹²⁴	Abstract only
Tesio 1993 ²¹²⁶	Inappropriate comparison
Thomson 2009 ²¹⁴¹	Inappropriate comparison
Tobis 1983 ²¹⁴⁷	Incorrect study design. methods not described
Tofighi 2011 ²¹⁴⁸	Not in English

Low back pain and sciatica
Excluded clinical studies

Tozzi 2012 ²¹⁵²	Not guideline condition
Tsao 2010 ²¹⁶⁶	Incorrect interventions
Tucker 1993 ²¹⁷¹	Incorrect study design. (case report)
Ukhalkar 2013 ²¹⁸⁵	Incorrect interventions
Van der heijden 1995 ²¹⁹⁶	Systematic review: methods are not adequate/unclear
Van der heijden 1995{VANDERHEIJDEN1995A}	Incorrect comparison
Van der valk 1995 ²¹⁹⁹	Incorrect study design. Systematic review is not relevant to review question or unclear PICO
Van tulder 1997 ²²¹⁰	Systematic review is not relevant to review question or unclear PICO
Van tulder 2000 ²²⁰⁶	Abstract only
Vaucher 2013 ²²²²	Incorrect study design
Vavrek 2011 ²²²³	Abstract only
Vavrek 2014 ²²²⁴	Abstract only
Verhoef 1997 ²²³⁰	Not guideline condition
Vernon 1999 ²²³¹	Systematic review: methods are not adequate/unclear
Verwoerd 2015 ²²³²	Incorrect interventions. Not enough details
Vincent 2013 ²²⁴⁸	Systematic review is not relevant to review question or unclear PICO
Vismara 2012 ²²⁵⁰	Inappropriate comparison
Visser 2013 ²²⁵¹	Not guideline condition
Walach 2003 ²²⁷⁴	Not guideline condition
Walker 2010 ²²⁷⁷	Systematic review is not relevant to review question or unclear PICO
Walker 2011 ²²⁷⁸	Systematic review is not relevant to review question or unclear PICO
Wand 2004 ²²⁸²	Inappropriate comparison
Wang 2005 ²²⁸³	Not in English
Waterworth 1985 ²²⁹⁵	Inappropriate comparison
Weber 1983 ²³⁰⁰	Inappropriate comparison
Wegner 2013 ²³⁰⁴	Systematic review: methods are not adequate/unclear
Westrom 2010 ²³¹⁴	Protocol only
Wilder 2011 ²³²⁷	Protocol only
Wilkey 2003 ²³²⁹	Abstract only
Wilkey 2008 ²³²⁸	Inappropriate comparison
Williams 1989 ²³⁴³	Not available
Williams 1997 ²³³⁸	Incorrect study design
Williams 2003 ²³⁴¹	Not guideline condition
Williams 2004 ²³⁴⁰	Not guideline condition
Williams 2007 ²³⁴²	Systematic review is not relevant to review question or unclear PICO
Wilson 2003 ²³⁴⁵	Immediate post-treatment outcomes only
Wontae 2013 ²³⁵⁴	Incorrect outcomes (range of movement)
Xue 2008 ²³⁶⁵	Incorrect study design
Yoon 2012 ²³⁹⁰	Inappropriate comparison
Yurtkuran 1997 ²³⁹⁸	Incorrect interventions
Zaproudina 2009 ²⁴⁰¹	Inappropriate comparison
Zhang 2005 ²⁴⁰⁵	Inappropriate comparison
Zhang 2008 ²⁴⁰⁶	Inappropriate comparison

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1.9 Acupuncture

1600 **Table 9: Studies excluded from the clinical review**

Study	Exclusion reason
Aboagye 2015 ⁴³	Inappropriate comparison
Albedah 2015 ⁸³	Incorrect interventions. Wet cupping, not acupuncture
Alexandre 2001 ⁸⁶	Not guideline condition
Altmaier 1992 ⁹⁹	Inappropriate comparison. Not review population. Not guideline condition
Amos 2012 ¹⁰³	Not guideline condition. Back and neck pain
Anon 2003 ⁸	Review of teh results of a previously published trial
Anon 2004 ⁹	Commentary on Meng 2003
Anon 2005 ¹⁷	Commentary on Thomas 2005
Anon 2012 ³⁰	Unable to obtain article
Arden 2005 ¹³⁴	Not guideline condition. Not review population
Bronfort 2012 ²⁹⁵	No outcome data
Carlsson 2001 ³⁶¹	Inappropriate comparison. Inappropriate sham
Ceccherelli 2002 ³⁷²	Inappropriate comparison. Within class comparison
Dascanio 2011 ⁵²⁰	No relevant outcomes
Di cesare 2011 ⁵⁶⁶	Incorrect interventions. Inappropriate comparison. Anaesthetic injections (mesotherapy)
Ding 2015 ⁵⁷⁶	Inappropriate comparison
Eisenberg 2007 ⁶¹⁵	Incorrect intervention. Patients could choose to have massage, acupuncture or chiropracty.
Farham 2006 ⁶⁵⁰	Commentary on Thomas 2006
Fox 1976 ⁶⁸⁴	Crossover study
Franke 2000 ⁶⁹⁰	In German
Frost 1976 ⁷²⁴	Incorrect popualtion
Furlan 2005 ⁷³⁷	Cochrane Review - used as source of references
Furlan 2011 ⁷³⁸	Cochrane reviuew - used as source of references
Garvey 1989 ⁷⁵²	Incorrect interventions
Ghia 1976 ⁷⁸⁰	Not guideline condition. Not all patients had back pain
Giles 1999 ⁷⁹²	Not guideline condition. Not all patients had low back pain
Glazov 2009 ⁸⁰¹	Incorrect intervention. Laser
Glazov 2014 ⁸⁰²	Incorrect intervention. Laser
Guerreiro da silva 2004 ⁸⁴⁵	Not guideline condition. Low back or pelvic pain in pregnancy
Hanly 2000 ⁸⁹⁸	cohort study-incorrect population (inflammatory causes of backpain)
Hansson 2008 ⁹⁰⁴	Not guideline condition. Not all patients had low back pain
Hirota 2006 ⁹⁷⁴	Not in English
Hirota 2007 ⁹⁷³	Not in English
Hopton 2010 ⁹⁸⁸	Includes 2 reviews (Furlan 2005 and Manheimer 2005) already included separately
Hsieh 2004 ⁹⁹²	Incorrect intervention. Acupressure (no needles)
Hsieh 2006 ⁹⁹¹	Incorrect intervention. Acupressure (no needles)
Hurley 2001 ⁹⁹⁹	Commentary on Cherkin 2001

Study	Exclusion reason
Hutchinson 2012 ¹⁰⁰⁹	Systematic review: quality assessment is inadequate. All included studies already in our list
Inman 2004 ¹⁰²¹	cohort study-single intervention study
Inoue 2008 ¹⁰²²	Incorrect interventions. Comparator is injection of local anaesthetic
Inoue 2009 ¹⁰²³	Incorrect interventions. Comparator is injection of local anaesthetic
Itoh 2004 ¹⁰³⁰	Inappropriate comparison. Within class comparison
Itoh 2004 ¹⁰²⁷	Not in English
Itoh 2005 ¹⁰²⁸	Not in English
Itoh 2006 ¹⁰²⁹	Crossover study
Itoh 2009 ¹⁰³¹	Not in English
Ji 2015 ¹⁰⁷⁹	SR used as a source of references. Studies in Chinese language included.
Kerr 2003 ¹¹⁴⁶	Inappropriate comparison. Inappropriate sham
Kim 2013 ¹¹⁷⁹	cohort study-interclass comparison
Kinoshita 1981 ¹¹⁸⁵	Not in English
Kraft 2001 ¹²³⁵	Commentary on Franke 2000
Kreczi 1986 ¹²³⁷	Crossover study
Kvorning 2004 ¹²⁵⁷	Not guideline condition. Not all patients had LBP (some pelvic/girdle pain; pregnant women)
Lam 2013 ¹²⁶⁷	Systematic review - all relevant papers included
Lee 2013 ¹²⁹⁷	Systematic review - all relevant papers included
Lee 2013 ¹³⁰¹	Abstract only; no outcomes
Lian 2005 ¹³²⁸	Inappropriate comparison. Within class comparison
Lin 2015 ¹³³⁷	Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera). Mixed chronic pain (not just low back pain)
Liu 2015 ¹³⁵⁸	Incorrect study design. Cohort study
Macdonald 1983 ¹³⁹¹	Inappropriate sham. Inappropriate comparison
Manheimer 2005 ¹⁴⁶²	Systematic review - all relevant papers included
Manheimer 2005 ¹⁴⁶¹	Systematic review - all relevant papers included
Mendelson 1977 ¹⁵²⁵	Incorrect study design. Not outcomes of RCT
Mendelson 1978 ¹⁵²⁴	Crossover study
Mendelson 1983 ¹⁵²⁶	Crossover study
Miao 2010 ¹⁵²⁸	Inappropriate comparison. Within class comparison
Miyazaki 2009 ¹⁵⁴⁵	Not guideline condition. Incorrect interventions
Moffett 1999 ¹⁵⁵⁰	Incorrect interventions
Molsberger 2006 ¹⁵⁵³	Incorrect study design
Najafi 2013 ¹⁶⁰⁹	Incorrect study design
Najm 2008 ¹⁶¹⁰	Commentary on Haake 2007
Nicholas 1992 ¹⁶⁴⁰	Inappropriate comparison
Pach 2013 ¹⁷⁰¹	Inappropriate comparison. Within class comparison
Sakai 2001 ¹⁹⁰⁴	Commentary on Sakai 2001 published in Japanese
Sator-katzenschlager 2004 ¹⁹²⁸	Inappropriate comparison. Within class comparison
Seo 2013 ¹⁹⁷³	Protocol only; no results
Sherman 2003 ¹⁹⁸⁷	Protocol only; no results
Shin 2012 ¹⁹⁹¹	Inappropriate comparison

Study	Exclusion reason
Skonnord 2012 ²⁰²²	Protocol only; no results
Sodipo 1981 ²⁰⁴⁰	Poster
Sugiyama 1984 ²⁰⁸⁹	Not in English
Szczurko 2007 ²¹⁰⁰	Incorrect interventions. Dietary intervention and relaxation techniques are part of the combination of intervention.
Thomas 1994 ²¹³⁵	Crossover study
Thomas 2005 ²¹³³	HTA
Van tulder 1999 ²²⁰⁸	Systematic review - all relevant trials included
Vas 2014 ²²²¹	Mixed chronic pain (not just low back pain)
Vickers 2004 ²²³⁷	Not SR; review only includes 1 eligible RCT, already included (Grant 1999)
Vickers 2009 ²²⁴⁰	Not RCT or SR
Vickers 2010 ²²³⁹	Systematic review - all relevant papers included
Vickers 2012 ²²³⁸	Systematic review - all relevant papers included
Vickers 2012 ²²³⁶	Systematic review - all relevant papers included
Vlaeyen 1995 ²²⁵³	Incorrect study design. No useabledatato extract- presented as graphs and univariate analysis
Wedenberg 2000 ²³⁰³	Not guideline condition. Not all patients had low back pain (some pelvic pain and some both; pregnant women; only 4/60 pure LBP)
White 2002 ²³¹⁷	Commentary on Leibing 2002
Xu 2013 ²³⁶⁴	Systematic review - all relevant papers included
Xu 2015 ²³⁶³	Incorrect comparison: moxibustion
Yamashita 2001 ²³⁷²	Commentary
Yeh 2013 ²³⁸⁰	Incorrect intervention. Acupressure
Yeh 2014 ²³⁸¹	Mixed chronic pain (not just low back pain). Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera)
Yeung 2003 ²³⁸⁵	Wrong comparison: Combi Tx vs. single Tx - has been included in Combi review
Yuan 2009 ²³⁹⁶	Inappropriate comparison. Within class comparison
Zhang 1997 ²⁴⁰⁹	Inappropriate comparison. Within class comparison
Zhi 1995 ²⁴¹²	Inappropriate comparison. Within class comparison

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L10 Electrotherapies

1605 **Table 10: Studies excluded from the clinical review**

Study	Exclusion reason
Akhmadeeva 2014 ⁷²	incorrect study design: Conference abstract
Barker 2008 ¹⁷⁹	Inappropriate comparison
Bloodworth 2004 ²⁵⁴	Crossover study
Brosseau 2002 ³⁰¹	Systematic review is not relevant to review question or unclear PICO
Chenot 2007 ⁴⁰³	Incorrect study design. Post hoc analysis of a longitudinal prospective

Study	Exclusion reason
	cohort study embedded within a 3 armed RCT
Cubukcu 2004 ⁴⁹⁶	Incorrect interventions
Durmus 2009 ⁶⁰³	Incorrect interventions
Ebadi 2013 ⁶⁰⁸	Incorrect study design
Ebadi 2014 ⁶⁰⁹	Systematic review is not relevant to review question or unclear PICO
Flowerdew 1997 ⁶⁷⁷	Systematic review is not relevant to review question or unclear PICO
Gabis 2009 ⁷⁴²	Incorrect interventions
Ghoname 1999 ⁷⁸⁴	Crossover study
Ghoname 1999 ⁷⁸³	Crossover study
Ghoname 1999 ⁷⁸²	Crossover study
Ghoname 1999 ⁷⁸¹	Crossover study
Glaser 2001 ⁷⁹⁹	Incorrect interventions
Grazio 2009 ⁸²⁶	Abstract only
Hurley 2001 ⁹⁹⁹	Commentary not primary study
Khadilkar 2005 ¹¹⁵⁰	Systematic review is not relevant to review question or unclear PICO
Kim 2015 ¹¹⁷⁸	Incorrect interventions
Kloimstein 2014 ¹¹⁹⁴	Incorrect study design. No control group
Lam 2014 ¹²⁶⁸	Incorrect study aim: looking at procedure for stimulation for popliteal sciatic nerve blocks
Lumpkin 2007 ¹³⁸⁶	Unavailable
Monticone 2004 ¹⁵⁵⁶	Not guideline condition
Moore 1997 ¹⁵⁷²	Crossover study
Pallett 2014 ¹⁷⁰⁵	Incorrect study design. Observational study (no control group)
Perez-palomares 2010 ¹⁷⁵²	Unavailable
Rabin 1987 ¹⁸¹¹	Incorrect study design
Sakai 2001 ¹⁹⁰⁴	Unavailable
Salim 1996 ¹⁹⁰⁷	Not guideline condition
Seco 2011 ¹⁹⁶⁴	Systematic review is not relevant to review question or unclear PICO
Thiese 2013 ²¹²⁹	Protocol only; no outcomes
Thorsteinsson 1977 ²¹⁴²	Crossover study
Ugur 2001 ²¹⁸⁴	Non-English
Weng 2005 ²³¹²	Not guideline condition
Yip 2007 ²³⁸⁸	Incorrect interventions. TENS + radiation (not in list so not permissible combination) vs. usual care
Yokoyama 2004 ²³⁸⁹	Incorrect comparison
Yousefi-nooraie 2008 ²³⁹²	Systematic review: quality assessment is inadequate

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L611 Psychological intervention

1608 **Table 11: Studies excluded from the clinical review**

Study	Exclusion reason
Altmaier 1992 ⁹⁹	Incorrect interventions. No appropriate control group.

Study	Exclusion reason
Andersson 2012 ¹¹⁸	Not guideline condition. Included neck pain- no subgrouping.
Argueta-bernal 2004 ¹³⁶	Systematic review: literature search not sufficiently rigorous. Systematic review: methods are not adequate/unclear. Incorrect interventions. Inappropriate comparison
Bailey 2002 ¹⁶⁹	Dissertation
Basler 1990 ¹⁸⁸	Not guideline condition. Systematic review is not relevant to review question or unclear PICO. Included all chronic pain syndromes no stratification.
Basler 1997 ^{187,188}	Incorrect intervention
Bean 2014 ¹⁹²	Mixed chronic pain (not just low back pain)
Beissner 2012 ¹⁹⁶	Incorrect study design. Inappropriate comparison
Bendix 1995 ²⁰⁴	Incorrect interventions. psychophysical programme- Unclear if the active physical training group could act as compare.
Bendix 1998 ²⁰³	Incorrect interventions. Mixed intervention
Bendix 2000 ²⁰⁵	Incorrect interventions. Mixed intervention.
Besen 2015 ²³³	Incorrect study design
Bland 2010 ²⁴⁵	Systematic review: methods are not adequate/unclear. Systematic review: quality assessment is inadequate. Systematic review: literature search not sufficiently rigorous. Systematic review is not relevant to review question or unclear PICO. Incorrect interventions. Inappropriate comparison
Boogar 2012 ²⁷²	Not in English
Brox 2003 ³¹⁴	Incorrect interventions. Mixed intervention cognitive behavioural approaches +Exercises
Bru 1994 ³¹⁶	Includes other musculoskeletal pain.
Brunner 2013 ³¹⁸	Systematic review: study designs inappropriate. Systematic review: quality assessment is inadequate. Included mixed interventions. Poor quality assessment.
Buhrman 2004 ³²⁴	Not guideline condition. Included neck pain
Buhrman 2011 ³²⁵	Not guideline condition. Mixed low back, thoracic and neck pain.
Busch 2011 ³³³	Not review population. Mixed chronic pain (not just low back pain)
Canter 2007 ³⁵⁹	Abstract / summary only
Carson 2005 ³⁶⁷	Incorrect interventions
Cherkin 2014 ⁴¹¹	Inappropriate comparison. Comparing two different psychological interventions.
Christensen 2003 ⁴⁴⁶	Serious spinal pathology (for example, neoplasms, infections or osteoporotic collapse)
Christiansen 2010 ⁴⁴⁸	Incorrect interventions. No control group.
Cohen 1983 ⁴⁶²	Incorrect study design
Cramer 2012 ⁴⁹¹	Systematic review is not relevant to review question or unclear PICO. Included mindfulness based cognitive therapy. Protocol does not include this intervention
Diaz 2013 ⁵⁷¹	Abstract only
Dobscha 2008 ⁵⁸⁰	Inappropriate comparison. Muscular skeletal pain, not specifically back pain. Indirect population.
Domenech 2013 ⁵⁸²	Incorrect study design. Incorrect interventions. Inappropriate comparison. Description of intervention only

Study	Exclusion reason
Donaldson 1994 ⁵⁸⁴	Mixed chronic pain (not just low back pain)
Esmer 2010 ⁶³³	Inappropriate comparison
Finan 2012 ⁶⁶⁷	Incorrect study design. Crossover study. Not guideline condition. Incorrect interventions. Inappropriate comparison
Flor 1993 ⁶⁷⁵	Not guideline condition
Friedberg 2010 ⁶⁹⁹	Incorrect study design. (commentary)
Gatchel 2003 ⁷⁵⁶	Incorrect interventions
Glombiewski 2010 ⁸⁰³	Not guideline condition. Mixed low, mid and upper back pain.
Guck 2015 ⁸⁴³	Incorrect study design
Goossens 1998 ^{816,816}	HE paper with no relevant clinical outcomes
Haig 2003 ⁸⁷⁴	Wrong intervention. Incorrect interventions
Hansen 2010 ⁹⁰²	Incorrect study design. Description of an intervention used. No data.
Hay 2005 ⁹¹⁶	Incorrect interventions. Mixed intervention
Heinrich 1985 ⁹³¹	Incorrect interventions
Henschke 2010 ⁹⁴⁴	Systematic review is not relevant to review question or unclear PICO
Hentschke 2010 ⁹⁴⁵	Incorrect study design. Incorrect interventions
Hernandez-reif 2001 ⁹⁴⁷	Incorrect interventions
Hoffman 2007 ⁹⁷⁹	Primary neurological disorders (including cauda equina syndrome or mononeuritis). Serious spinal pathology (for example, neoplasms, infections or osteoporotic collapse). Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera). Included all non-cancerous causes of LBP
Johnson 2007 ¹⁰⁸⁷	Incorrect interventions. Mixed cognitive behavioural approaches with physical intervention
Johnstone 2002 ¹⁰⁸⁹	Inappropriate comparison
Jonbozorgi 2013 ¹⁰⁹¹	Not in English
Kaluza 1986 ¹¹⁰⁶	Not in English
Kankaanpaa 1999 ¹¹¹²	Incorrect interventions
Kapitza 2010 ¹¹¹⁴	Incorrect interventions. Inappropriate comparison
Kerns 2014 ¹¹⁴⁵	intraclass comparison
Klabin moffett 1986 ¹¹⁸⁹	Mixed intervention group compared with control (Back school)
Lamb 2007 ¹²⁶⁹	Incorrect study design
Lindell 2008 ¹³³⁹	Not guideline condition. Data for CLBP patients was not analysed separately
Lindstrom 1992 ¹³⁴³	Outcomes do not match protocol
Linton 1984 ¹³⁴⁶	Incorrect interventions. Mixed relaxation and behavioural therapy versus waiting list control.
Linton 2000 ¹³⁴⁵	included patients with non-specific neck and back pain.
Linton 2001 ¹³⁵⁰	Included non-specific neck pain as well, no subgroup for low back pain.
Linton 2005 ¹³⁵²	Not guideline condition. Included neck pain patients.
Linton 2006 ¹³⁴⁹	included patients with non-specific neck and back pain.
Machado 2007 ¹³⁹⁷	Incorrect interventions
Mangels 2009 ¹⁴⁶⁰	Not guideline condition. Mixed musculoskeletal disease.
Mccauley 1983 ¹⁵⁰⁵	Incorrect interventions
Mehling 2005 ¹⁵¹⁸	Incorrect interventions

Study	Exclusion reason
Monticone 2013 ¹⁵⁵⁸	Incorrect interventions
Monticone 2014 ¹⁵⁵⁷	Wrong intervention: included in MBR review
Moore 2000 ¹⁵⁶⁷	Not guideline condition. Population unclear.
Morone 2012 ¹⁵⁷⁶	Incorrect study design. Design and methods only.
Moseley 2004 ¹⁵⁸¹	Incorrect interventions. Non
Nakao 2012 ¹⁶¹¹	Post-hoc analysis of another RCT selecting those with low back pain from their responses to the Symptom Checklist questionnaire.
Newton-john 1995 ¹⁶³²	Incorrect study design. control group not randomised.
Nicholas 1991 ¹⁶³⁹	Incorrect interventions
Nicholas 1992 ¹⁶⁴⁰	Incorrect interventions
Norton 2015 ¹⁶⁵³	Cost effectiveness analysis only
O'keeffe 2015 ¹⁶⁶³	Study protocol
Olason 2004 ¹⁶⁷⁸	Wrong study design. Incorrect study design. Inappropriate comparison. Retrospective cohort study.
Onac 2012 ¹⁶⁸²	Inappropriate comparison
Paolucci 2012 ¹⁷⁰⁸	Incorrect interventions
Patil 2009 ¹⁷³⁴	Incorrect study design. Systematic review: methods are not adequate/unclear. Systematic review: literature search not sufficiently rigorous. Incorrect interventions. Inappropriate comparison
Persson 2001 ¹⁷⁵⁷	Serious spinal pathology (for example, neoplasms, infections or osteoporotic collapse). Incorrect interventions. Inappropriate comparison. No psychological intervention arm.
Pincus 2011 ¹⁷⁷³	Incorrect study design
Pincus 2013 ¹⁷⁷⁴	Incorrect study design. Reports proposed study design only.
Pincus 2015 ¹⁷⁷⁵	Incorrect comparator - no details of physio given
Pouladeireishehri 2011 ¹⁷⁹²	Conference abstract
Raftery 2013 ¹⁸¹⁶	Incorrect interventions. Psychological intervention was PGAP, not on protocol
Raine 2004 ¹⁸¹⁷	Wrong study design. Incorrect study design
Rasmussen 2013 ¹⁸²⁸	Incorrect interventions
Reid 2003 ¹⁸⁴²	Incorrect study design. Inappropriate comparison. Uncontrolled study.
Reme 2011 ¹⁸⁴⁵	Incorrect study design. Protocol only
Riecke 2013 ¹⁸⁵⁶	Incorrect interventions. Cognitive behavioural approaches used as control, both arms received it. . Inappropriate comparison
Riipinen 2005 ¹⁸⁵⁷	Wrong comparison. Incorrect interventions. Inappropriate comparison
Rogerson 2010 ¹⁸⁷¹	Incorrect interventions. Mixed cognitive behavioural approaches with physical therapy.
Rose 1997 ¹⁸⁷⁹	Inappropriate comparison. Comparing cognitive behavioural approaches course lengths, no placebo group.
Saarijärvi 1992 ¹⁸⁹⁸	Incorrect interventions. Couple therapy intervention
Schiltenswolf 2006 ¹⁹⁴⁴	Inappropriate comparison
Schweikert 2006 ¹⁹⁶⁰	Incorrect interventions. Usual care, is far beyond usual care in NHS.
Sleptsova 2013 ²⁰²⁷	Not guideline condition. Incorrect interventions. Mixed types of chronic pain.
Sousa 2009 ⁵³⁴	Incorrect sample size. Incorrect interventions. Waiting list versus exercise, cognitive behavioural approaches and EMG

Study	Exclusion reason
Spinhoven 2004 ²⁰⁵⁸	Re-analysis of the results of Kole 1999
Steenstra 2006 ²⁰⁷⁵	Incorrect interventions. Mixed intervention with large PT input.
Sveinsdottir 2012 ²⁰⁹⁴	Systematic review: methods are not adequate/unclear. Systematic review is not relevant to review question or unclear PICO. Incorrect study design. Narrative review
Taloyan 2013 ²¹⁰⁹	Incorrect study design. Inappropriate comparison
Tlach 2011 ²¹⁴⁵	Incorrect study design. Incorrect interventions. Non randomised study from description, and also 3 x interventions all involving cognitive behavioural approaches no control group.
Trapp 2009 ²¹⁵⁶	Conference abstract
Turner 1982 ²¹⁷⁷	Incorrect study design
Van den hout 2003 ²¹⁹⁵	Incorrect interventions. Problem solving therapy.
Van tulder 2000 ²²¹²	Systematic review is not relevant to review question or unclear PICO. Only chronic LBP, (>12 weeks)
Van tulder 2001 ²²¹³	Systematic review is not relevant to review question or unclear PICO. Only chronic >12 weeks included
Vibe fersum k. 2013 ²²³⁴	Incorrect interventions
Vlaeyen 1995 ²²⁵³	Incorrect study design. Patients assigned to treatment groups based on timing of referral ('time criterion')
Wand 2004 ²²⁸²	Inappropriate comparison
Werner 2010 ²³¹³	Incorrect study design. Describes prospective study design only. . Trail design and not results
Whitfill 2010 ²³²⁰	Incorrect interventions

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L612 Pharmacological interventions

1611 **Table 12: Studies excluded from the clinical review**

Study	Exclusion reason
Aghababian 1986 ⁵⁸	Drug not licensed in the UK.
Agrifoglio 1994 ⁶³	Inappropriate comparison
Aksoy 2002 ⁷³	Inappropriate comparison
Albert 2008 ⁸⁴	Incorrect study design. Incorrect interventions. Inappropriate comparison
Alford 2013 ⁸⁸	Not clinical trial.
Allan 2005 ⁹²	Incorrect interventions
Altman 2010 ¹⁰⁰	Narative review
Andersen 1978 ¹⁰⁹	Not review population
Anon 2005 ¹³	Abstract
Anon 2005 ¹⁶	Not clinical trial
Anon 2007 ²⁶	Narative review
Aoki 1983 ¹²⁸	Incorrect interventions
Arbus 1990 ¹³³	Incorrect interventions
Arul prakasam 2011 ¹⁴⁴	Incorrect study design
Atkinson 1985 ¹⁵²	Narrative review

Study	Exclusion reason
Bakshi 1994 ¹⁷¹	Incorrect interventions
Baratta 1976 ¹⁷⁷	Not guideline condition
Baratta 1982 ¹⁷⁸	Incorrect interventions
Baron 2015 ¹⁸¹	incorrect population (sciatica)
Bartleson 2002 ¹⁸⁵	Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear
Basmajian 1989 ¹⁹⁰	Not review population
Benyamin 2015 ²¹³	Study protocol
Biondi 2013 ²⁴¹	Incorrect interventions. Inappropriate comparison
Blazek 1986 ²⁴⁶	Inappropriate comparison
Borenstein 1990 ²⁷³	Inappropriate comparison
Bosch 1997 ²⁷⁸	Incorrect interventions
Brannan 2005 ²⁸⁷	Not guideline condition. Not review population
Brizzi 2004 ²⁹¹	Inappropriate comparison
Bronfort 1996 ²⁹⁴	Inappropriate comparison
Bronfort 2004 ²⁹⁷	Inappropriate comparison
Brotz 2010 ³⁰²	Sciatica population
Brown 1978 ³⁰⁵	Not guideline condition. Mixed back and neck pain.
Brown 1986 ³⁰⁶	Drug not licensed in the UK.
Brown 1996 ³⁰⁹	Systematic review: study designs inappropriate. Systematic review: literature search not sufficiently rigorous. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear
Browning 2001 ³¹⁰	Systematic review: methods are not adequate/unclear
Brunton 2010 ³¹⁹	Systematic review is not relevant to review question or unclear PICO
Buffum 2004 ³²³	Crossover study
Burgess 2001 ³²⁸	Narative review.
Cabitza 2008 ³⁴³	Inappropriate comparison
Casale 1988 ³⁶⁹	Incorrect interventions
Chan 2009 ³⁸⁰	Narrative review
Chandanwale 2011 ³⁸¹	Incorrect interventions
Chaparro 2014 ³⁸⁵	Systematic review: methods are not adequate/unclear
Chapman 1982 ³⁸⁷	Incorrect interventions
Charlusz 2010 ³⁹⁰	Incorrect interventions
Childers 2005 ⁴¹³	Inappropriate comparison
Chou 2004 ⁴⁴⁰	Systematic review is not relevant to review question or unclear PICO
Chou 2007 ⁴³⁸	Systematic review is not relevant to review question or unclear PICO
Chung 2013 ⁴⁴⁹	Systematic review is not relevant to review question or unclear PICO
Coats 2004 ⁴⁵⁸	Inappropriate comparison. Intervention removed from the market.
Codding 2008 ⁴⁶⁰	Abstract
Cohen 2015 ⁴⁶⁵	Inappropriate comparison. Not guideline condition
Coletta 1988 ⁴⁷⁰	Inappropriate comparison
Cowan 1963 ⁴⁸⁷	Not guideline condition. Mixed musculoskeletal disorders.
Davies 2008 ⁵²⁷	Systematic review: quality assessment is inadequate. Systematic review:

Study	Exclusion reason
	methods are not adequate/unclear
Davoli 1989 ⁵²⁸	Incorrect interventions
Dharmshaktu 2012 ⁵⁶⁵	Systematic review is not relevant to review question or unclear PICO. Not review population
Driessens 1994 ⁵⁹⁵	Inappropriate comparison
Durant 1988 ⁶⁰²	Not guideline condition. Not an efficacy trial.
Ergun 2010 ⁶²⁶	Inappropriate comparison
Euller-ziegler 2001 ⁶³⁵	Narative review
Famaey 1998 ⁶⁴⁶	Inappropriate comparison
Farajirad 2013 ⁶⁴⁷	Inappropriate comparison. Drug not used to treat low back pain
Ferreira 2002 ⁶⁵⁸	Systematic review is not relevant to review question or unclear PICO
Fine 2002 ⁶⁶⁸	Systematic review is not relevant to review question or unclear PICO
Fishbain 2000 ⁶⁷⁰	Systematic review is not relevant to review question or unclear PICO. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear
Frampton 2007 ⁶⁸⁵	Not guideline condition
Friedman 2008 ⁷⁰¹	Incorrect interventions
Fryda-kaurimsky 1981 ⁷²⁸	Inappropriate comparison
Furlan 2006 ⁷³⁶	Systematic review is not relevant to review question or unclear PICO
Gaynor 2011 ⁷⁶¹	Systematic review is not relevant to review question or unclear PICO
Geba 2004 ⁷⁶²	Abstract only
Giles 1999 ⁷⁹²	Comment, not RCT
Gimbel 2014 ⁷⁹⁵	Incorrect interventions
Ginsberg 1987 ⁷⁹⁶	Incorrect interventions
Glaxosmithkline 1995 ⁸⁰⁰	Study register, RCT included (Dickens2000)
Gold 1978 ⁸¹¹	Insufficient information reported for analysis
Goldstein 2002 ⁸¹⁴	Incorrect interventions
Gotzsche 2000 ⁸¹⁷	Excerpts from clinical evidence reports.
Gotzsche 2010 ⁸¹⁸	Systematic review is not relevant to review question or unclear PICO
Gould 2009 ⁸¹⁹	Oxymorphone is not licended in the UK
Grahame 1976 ⁸²⁰	Not guideline condition. Narative review.
Grevsten 1975 ⁸²⁹	Not guideline condition
Griffin 2000 ⁸³¹	Abstract.
Grillage 1986 ⁸³³	Not guideline condition
Gross 1986 ⁸³⁶	not in english
Grunenthal gmbh 2010 ⁸⁴⁰	Clinical trial, not published study
Hackett 1988 ⁸⁵⁸	Brief report
Hagen 2000 ⁸⁶³	Incorrect interventions
Hale 1997 ⁸⁷⁹	Inappropriate comparison
Hale 2007 ⁸⁸¹	Incorrect interventions. Oxymorphone is not licenced in the UK
Hale 2009 ⁸⁸⁰	Not guideline condition. Mixed causes of pain.
Hale 2013 ⁸⁸²	Not an efficacy trial.
Hameroff 1982 ⁸⁸⁸	Not guideline condition. Mixed back and neck pain population.
Hameroff 1984 ⁸⁸⁹	Not guideline condition. Mixed back and neck pain population

Study	Exclusion reason
Hancock 2009 ⁸⁹⁶	Not an efficacy trial.
Haroutiunian 2010 ⁹⁰⁶	Systematic review is not relevant to review question or unclear PICO. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear
Hasue 1997 ⁹¹²	Not guideline condition. Non English language
Heath 2006 ⁹²⁵	Not guideline condition
Hennies 1981 ⁹³⁹	Not guideline condition. Inappropriate comparison
Hickey 1982 ⁹⁵⁴	Drug not licensed in the UK.
Himanen 1982 ⁹⁶⁵	Conference abstract
Hindle 1972 ⁹⁶⁶	Inappropriate comparison
Hingorani 1966 ⁹⁶⁷	Not guideline condition
Hingorani 1970 ⁹⁷⁰	Drug not used for low back pain.
Hingorani 1971 ⁹⁶⁸	Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera)
Hingorani 1975 ⁹⁷¹	Inappropriate comparison
Hingorani 1975 ⁹⁶⁹	Conference abstract
Hondras 2009 ⁹⁸⁵	Incorrect interventions
Hunt 2003 ⁹⁹⁷	Not an efficacy trial.
Hurme 1986 ¹⁰⁰²	Drug not licensed in the UK.
Hurwitz 2002 ¹⁰⁰⁶	Incorrect interventions
Hurwitz 2005 ¹⁰⁰⁸	Incorrect interventions
Ilic 2009 ¹⁰¹⁶	Incorrect population
Jackson 2006 ¹⁰³⁹	Narative review
Jaffe 1974 ¹⁰⁴⁹	Inappropriate comparison
Jamison 1998 ¹⁰⁵¹	Inappropriate comparison
Jamison 2013 ¹⁰⁵²	Inappropriate comparison. Post-hoc analysis of Hale et al. looking at effect of psychological status.
Jokhio 1998 ¹⁰⁹⁰	Not guideline condition. Inappropriate comparison
Kageyama 1982 ¹¹⁰¹	Not in english
Kalso 2005 ¹¹⁰⁴	Not clinical trial.
Kalso 2007 ¹¹⁰⁵	Incorrect interventions
Kantor 1986 ¹¹¹³	Not guideline condition. Narative review.
Katz 2003 ¹¹²⁷	Incorrect interventions. Drug withdrawn from the market.
Katz 2004 ¹¹²⁹	Inappropriate comparison. Intervention withdrawn from the market.
Katz 2007 ¹¹²⁸	Incorrect interventions. Oxymorphone is not licenced in the UK
Katz 2011 ¹¹²⁶	Drug not licensed in the UK. Inappropriate comparison
Kavanagh 2009 ¹¹³⁰	Not guideline condition
Kavanagh 2012 ¹¹³¹	Not guideline condition. Inappropriate comparison. Mixed population of osteoarthritis and low back pain.
Keller 2007 ¹¹³⁸	Summary of reviews.
Ketenci 2005 ¹¹⁴⁹	Inappropriate comparison
Kimbrough 2010 ¹¹⁸²	Inappropriate comparison. Letter to editor.
Kivitz 2013 ¹¹⁸⁷	Inappropriate comparison. Drug not licensed in the UK.
Koes 1992 ¹²⁰⁴	Incorrect interventions

Study	Exclusion reason
Koes 1992 ¹²⁰⁵	Inappropriate comparison
Koes 1993 ¹²⁰³	Not guideline condition. Inappropriate comparison
Koes 1996 ¹²⁰⁶	Systematic review: literature search not sufficiently rigorous. Systematic review: methods are not adequate/unclear
Koes 1997 ¹²⁰⁷	Systematic review: methods are not adequate/unclear
Koes 2006 ¹²⁰⁹	Narative reivew
Kotani 1976 ¹²²⁹	Not in english
Kroenke 2009 ¹²⁴⁰	Not guideline condition
Kuijpers 2011 ¹²⁴⁶	Systematic review is not relevant to review question or unclear PICO
Kuroki 1995 ¹²⁵⁴	Not in english
Kwong 2013 ¹²⁵⁹	Not an efficacy trial.
Lam 2013 ¹²⁶⁷	Systematic review is not relevant to review question or unclear PICO
Lange 2010 ¹²⁷¹	Systematic review is not relevant to review question or unclear PICO
Laws 1994 ¹²⁷⁸	Inappropriate comparison
Leas 2010 ¹²⁸⁵	Evidence advisory paper - not an efficacy trial.
Lee 2008 ¹²⁹²	Not guideline condition
Lepisto 1979 ¹³¹³	Not review population. Thoracic and lumbar muscle spasm population
Li 2008 ¹³²⁶	Inappropriate comparison
Lind 2007 ¹³³⁸	Not guideline condition. Narative review.
Lionberger 2010 ¹³⁵³	Systematic review is not relevant to review question or unclear PICO
Listrat 1990 ¹³⁵⁴	Short communication only.
Lloyd 2004 ¹³⁶⁴	Incorrect interventions
Loldrup 1989 ¹³⁶⁷	Not guideline condition
Machado 2009 ¹³⁹⁴	Systematic review is not relevant to review question or unclear PICO
Maciel 2014 ¹³⁹⁸	Not guideline condition
Madhusudhan 2013 ¹⁴⁰³	Inappropriate comparison
Madigan 2009 ¹⁴⁰⁴	Narative reivew
Majchrzycki 2014 ¹⁴¹²	Inappropriate comparison
Maksymowych 2004 ¹⁴¹⁴	Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera)
Malanga 2008 ¹⁴¹⁶	Narrative review
Malanga 2009 ¹⁴¹⁷	Not guideline condition
Markman 2015 ¹⁴⁷⁴	Not guideline condition
Martell 2007 ¹⁴⁸⁰	Systematic review: methods are not adequate/unclear
Martina 2005 ¹⁴⁸¹	Narative review
Matsumo 1981 ¹⁴⁸⁷	Abstract only.
Mayyas 2010 ¹⁴⁹⁴	Not guideline condition. Systematic review is not relevant to review question or unclear PICO
Mazza 2010 ¹⁴⁹⁶	Incorrect interventions
Mccarberg 2010 ¹⁵⁰²	Systematic review is not relevant to review question or unclear PICO
Mccarberg 2013 ¹⁵⁰³	Not a clinical trial.
Mcguinness 1969 ¹⁵¹¹	Not guideline condition
Mcintosh 2011 ¹⁵¹²	Systematic review is not relevant to review question or unclear PICO
Mehta 2009 ¹⁵²⁰	Drug not licended in UK

Study	Exclusion reason
Mibielli 2010 ¹⁵²⁹	Not guideline condition. Mixed back, hip and neck pain populations.
Middleton 1984 ¹⁵³⁰	Exclude: intraclass comparison
Mika 2013 ¹⁵³¹	Not guideline condition. Narrative review.
Milgrom 1993 ¹⁵³²	Incorrect study design
Miller 2013 ¹⁵³⁶	Incorrect interventions
Mitra 2013 ¹⁵⁴³	Not guideline condition. Mixed chronic pain population
Moore 1999 ¹⁵⁶⁸	Not guideline condition
Moore 2003 ¹⁵⁶⁹	Not guideline condition
Moore 2007 ¹⁵⁷⁰	Systematic review is not relevant to review question or unclear PICO
Moore 2010 ¹⁵⁷¹	Irrelevant study
Moore 2015 ¹⁵⁶⁵	Abstract
Morlion 2011 ¹⁵⁷³	Systematic review is not relevant to review question or unclear PICO. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear
Moulin 2001 ¹⁵⁸⁷	Systematic review: methods are not adequate/unclear
Muckle 1986 ¹⁵⁹⁰	Not guideline condition
Muller 2005 ¹⁵⁹³	Comment, not RCT
Mullican 2001 ¹⁵⁹⁴	Not guideline condition. Mixed population of osteoarthritis and low back pain.
Muncie 1986 ¹⁵⁹⁵	Drug not available in the UK.
Murphy 1978 ¹⁶⁰¹	Not guideline condition
Nalamachu 2011 ¹⁶¹²	Systematic review is not relevant to review question or unclear PICO
Nemes 2013 ¹⁶²⁵	Incorrect population
Noble 2010 ¹⁶⁴⁵	Not guideline condition
O'donnell 2009 ¹⁶⁶¹	Incorrect interventions. Cyclo-Oxygenase-2 not listed in the BNF
Okada 1976 ¹⁶⁷⁵	Not in English
Ono 1987 ¹⁶⁸⁴	Non English language
Orava 1986 ¹⁶⁸⁷	Inappropriate comparison
Oyemade 1979 ¹⁶⁹⁶	Not guideline condition
Palangio 2000 ¹⁷⁰³	Not guideline condition. Mixed chronic pain population
Palangio 2002 ¹⁷⁰⁴	Inappropriate comparison
Patel 2000 ¹⁷³⁰	Inappropriate comparison
Pedersen 2014 ¹⁷⁴¹	Not guideline condition
Pedersen 2015 ¹⁷⁴²	Incorrect population, sciatica.
Peniston 2009 ¹⁷⁴⁶	Post hoc analysis of 2 studies pooled.
Pergolizzi 2013 ¹⁷⁵³	Narrative review
Perrot 2006 ¹⁷⁵⁵	Systematic review is not relevant to review question or unclear PICO
Perrot 2008 ¹⁷⁵⁴	Systematic review is not relevant to review question or unclear PICO
Petering 2011 ¹⁷⁵⁹	Narrative review.
Pohjolainen 2000 ¹⁷⁸²	Inappropriate comparison
Postacchini 1988-1 ¹⁷⁹⁰	Incorrect study design
Pownall 1986 ¹⁷⁹³	Not an efficacy trial.
Preston 2014 ¹⁷⁹⁴	Not review population
Raber 1999 ¹⁸⁰⁹	Inappropriate comparison

Study	Exclusion reason
Ralph 2008 ¹⁸²¹	Inappropriate comparison. Intervention withdrawn from the market.
Rauck 2006 ¹⁸³⁷	Inappropriate comparison
Rauck 2006 ¹⁸³⁸	Inappropriate comparison
Rauck 2006 ¹⁸³³	Abstract
Rauck 2006 ¹⁸³⁴	Abstract
Rauck 2006 ¹⁸³⁵	Abstract
Rauck 2007 ¹⁸³⁶	Inappropriate comparison
Rauck 2009 ¹⁸³²	Systematic review is not relevant to review question or unclear PICO
Rauck 2014 ¹⁸³⁹	Incorrect interventions. Hydrocodone is not licenced in the UK
Relja 1990 ¹⁸⁴³	Incorrect study design
Richards 2002 ¹⁸⁵⁴	Conference abstract
Riou 2014 ¹⁸⁵⁹	Not an efficacy trial.
Roelofs 2008 ¹⁸⁶⁹	Systematic review: methods are not adequate/unclear
Roelofs 2008 ¹⁸⁷⁰	Systematic review is not relevant to review question or unclear PICO
Romano 2012 ¹⁸⁷²	Systematic review is not relevant to review question or unclear PICO
Romera 2012 ¹⁸⁷⁴	Not guideline condition. Not an efficacy trial.
Roodbro 1975 ¹⁸⁷⁸	Not guideline condition
Rossi 2012 ¹⁸⁸²	Inappropriate comparison
Rovinski 1995 ¹⁸⁸⁴	Non-English language.
Rusinyol 2009 ¹⁸⁹⁵	Incorrect interventions
Sakai 2008 ¹⁹⁰⁵	Not guideline condition
Salerno 2002 ¹⁹⁰⁶	Systematic review is not relevant to review question or unclear PICO
Salvini 1986 ¹⁹⁰⁹	Not guideline condition. Inappropriate comparison
Salzman 1999 ¹⁹¹⁰	Inappropriate comparison. Not an efficacy trial.
Salzmann 1992 ¹⁹¹¹	Inappropriate comparison. Drug withdrawn from the market.
Santos 2015 ¹⁹¹⁸	Systematic review: methods are not adequate/unclear
Sarbu 2008 ¹⁹²¹	Non-comparative study.
Schattenkirchner 2003 ¹⁹³⁶	Incorrect interventions
Schnitzer 2003 ¹⁹⁴⁹	Narative review.
Schnitzer 2004 ¹⁹⁵⁰	Systematic review is not relevant to review question or unclear PICO. Systematic review: study designs inappropriate
Schreiber 2001 ¹⁹⁵³	Not guideline condition. Mixed low back pain and whiplash populations.
Sedighi 2014 ¹⁹⁶⁶	RCT protocol
Serfer 2010 ¹⁹⁷⁴	Drug withdrawn
Shimia 2014 ¹⁹⁹⁰	Not guideline condition
Shirado 2010 ¹⁹⁹⁵	Incorrect interventions
Silva 1995 ²⁰⁰⁵	Systematic review: methods are not adequate/unclear
Skljarevski 2011 ²⁰²¹	Not guideline condition. Systematic review is not relevant to review question or unclear PICO
Slappendel 2006 ²⁰²⁴	Inappropriate comparison. Not an efficacy trial.
Sloan 2008 ²⁰²⁹	Narative review.
Smith 2002 ²⁰³³	Narrative review
Smith 2010 ²⁰³⁵	Narative review. Not guideline condition
Soni 2009 ²⁰⁴⁸	Systematic review is not relevant to review question or unclear PICO

Study	Exclusion reason
Soonawalla 2008 ²⁰⁴⁹	Inappropriate comparison
Sorge 1997 ²⁰⁵¹	Inappropriate comparison
Sprott 2006 ²⁰⁵⁹	Not an efficacy trial.
Staiger 2003 ²⁰⁶⁷	Systematic review is not relevant to review question or unclear PICO
Steiner 2011 ²⁰⁷⁷	Inappropriate comparison
Stimmel 1986 ²⁰⁸⁰	Narative review.
Storch 1982 ²⁰⁸¹	Non English language
Stratz 1990 ²⁰⁸³	Incorrect interventions. Drug not licensed in the UK.
Straube 2010 ²⁰⁸⁵	Systematic review is not relevant to review question or unclear PICO
Sweetman 1987 ²⁰⁹⁶	Incorrect study design
Szpalski 1993 ²¹⁰¹	Conference abstract
Taguchi 2015 ²¹⁰⁴	incorrect population (sciatica)
Tanen 2014 ²¹¹⁰	Incorrect comparison and population (sciatica)
Tasleem 2003 ²¹¹²	Incorrect study design. Not guideline condition. Inappropriate comparison
Tavafian 2014 ²¹¹⁴	Inappropriate comparison
Taylor 2013 ²¹¹⁷	Systematic review is not relevant to review question or unclear PICO
Ternelin 1998 ²¹²⁵	Incorrect interventions
Thomas 2006 ²¹³⁴	Incorrect interventions
Thompson 1983 ²¹³⁹	Abstract only
Thurel 1991 ²¹⁴³	Inappropriate comparison
Torri 1994 ²¹⁵⁰	Not in english
Toth 2004 ²¹⁵¹	Systematic review is not relevant to review question or unclear PICO. Systematic review: quality assessment is inadequate. Systematic review: methods are not adequate/unclear
Tsuyama 1977 ²¹⁷⁰	Not in english
Tsuyama 1981 ²¹⁶⁸	Not in english
Tsuyama 1984 ²¹⁶⁹	Not in english
Turner 1993 ²¹⁷⁸	Systematic review: methods are not adequate/unclear. Systematic review: literature search not sufficiently rigorous. Systematic review: quality assessment is inadequate
Tuzun 2003 ²¹⁷⁹	Inappropriate comparison. Drug not licensed in UK
Uberall 2012 ²¹⁸¹	Drug not licensed in the UK.
Ueberall 2015 ²¹⁸³	Incorrect interventions. Intra-class comparison
Urquhart 2008 ²¹⁸⁷	Systematic review: methods are not adequate/unclear
Vaiani 1990 ²¹⁹⁰	Not guideline condition
Van der weide 1997 ²²⁰⁰	Systematic review is not relevant to review question or unclear PICO
Van tulder 1997 ²²¹⁰	Systematic review is not relevant to review question or unclear PICO
Van tulder 2000 ²²¹⁴	Systematic review is not relevant to review question or unclear PICO
Van tulder 2001 ²²⁰⁷	Not in english
Van tulder 2003 ²²¹⁵	Systematic review is not relevant to review question or unclear PICO
Van tulder 2003 ²²¹⁶	Systematic review: study designs inappropriate
Van tulder 2006 ²²¹¹	Summary of systematic reviews.
Veenema 2000 ²²²⁵	Incorrect interventions

Study	Exclusion reason
Verdu 2008 ²²²⁹	Systematic review: methods are not adequate/unclear. Systematic review: quality assessment is inadequate
Videman 1984 ²²⁴⁴	Drug not licensed in the UK.
Videman 1984 ²²⁴⁵	Incorrect interventions. Inappropriate comparison
Volklein 1990 ²²⁵⁵	Not in english
Von heymann 2013 ²²⁵⁶	Incorrect interventions
Vorsanger 2009 ²²⁶²	Irrelevant study
Vorsanger 2009 ²²⁶¹	Irrelevant study
Vorsanger 2010 ²²⁶⁴	Not guideline condition. Inappropriate comparison
Vorsanger 2011 ²²⁶³	Inappropriate comparison. Within class post-hoc comparison.
Wade 2009 ²²⁷⁰	Narrative review
Waikakul 1995 ²²⁷²	Inappropriate comparison
Waikakul 1996 ²²⁷¹	Inappropriate comparison
Wang 2008 ²²⁸⁶	Systematic review is not relevant to review question or unclear PICO
Ward 1981 ²²⁹⁰	Inappropriate comparison
Ward 1984 ²²⁸⁸	Incorrect study design
Ward 1986 ²²⁸⁹	Not an efficacy trial.
Waterworth 1985 ²²⁹⁵	Diflunical not registered in the UK
Watson 2004 ²²⁹⁷	Not guideline condition. Mixed chronic pain population.
Weber 1980 ²³⁰¹	Drug not used for low back pain.
Weber 1980 ²²⁹⁹	Incorrect interventions
Wen 2015 ²³¹¹	Incorrect intervention (hydrocodone is not lincended in the UK)
Weil 2010 ²³⁰⁶	Not guideline condition
Wetzel 2014 ²³¹⁵	Incorrect study design: cross-over study
White 2011 ²³¹⁸	Systematic review: methods are not adequate/unclear
Wielage 2013 ²³²⁴	Incorrect study design
Wielage 2013 ²³²³	Incorrect study design
Wild 2010 ²³²⁶	Not guideline condition. Inappropriate comparison. Mixed low back pain and osteoarthritis populations.
Williams 2009 ²³³⁶	Incorrect interventions
Williamson 2014 ²³⁴⁴	Post-hoc analysis of length of treatment.
Worz 1996 ²³⁵⁷	Not in english
Ximenes 2007 ²³⁶¹	Inappropriate comparison. Drug withdrawn from the market
Yakhno 2006 ²³⁶⁸	Inappropriate comparison
Yaksi 2007 ²³⁶⁹	Incorrect interventions
Yarlas 2013 ²³⁷⁶	Inappropriate comparison
Yue 2014 ²³⁹⁷	Incorrect interventions
Zerbini 2005 ²⁴⁰⁴	Inappropriate comparison. Within class comparison.
Zippel 2007 ²⁴¹⁹	Inappropriate comparison

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1615 **Table 13: Studies excluded from the clinical review (Combination, MBR and RTW reviews)**

Study	Exclusion reason
Ahlqwist 2008 ⁶⁶	Incorrect age group
Alaranta 1991 ⁷⁹	Not guideline condition. Not in English. Not review population
Alaranta 1994 ⁸⁰	Back school included in comparison arm
Albaladejo 2010 ⁸²	Incorrect interventions
Alexandre 2001 ⁸⁶	Inadequate description of exercise
Andersson 1999 ¹¹⁹	Not a programme. No specific Tx given
Apeldoorn 2012 ¹³¹	Control group all tailored
Basler 1997 ¹⁸⁷	All tailored Tx and CBT in combination
Ben salah frih 2009 ²⁰²	Insufficient description of interventions
Bronfort 2000 ²⁹³	Not everyone received same care
Bronfort 2011 ²⁹⁸	No combi Tx group
Brox 2003 ³¹⁴	Incorrect interventions. Comparator is spinal surgery
Bru 1994 ³¹⁶	Not guideline condition. Not all patients had low back pain
Callaghan 1994 ³⁵²	Incorrect interventions. 8 week back school vs. 4 week back school vs sham exercise
Carr 2005 ³⁶²	Incorrect interventions. Modality of physiotherapy is not described
Cecchi 2010 ³⁷³	Exercises part of the combi Tx not defined
Chan 2011 ³⁷⁹	Tailored Tx modalities in both groups
Chatzitheodorou 2008 ³⁹³	Diathermy in combi group, excluded Tx
Chown 2008 ⁴⁴¹	Fully tailored Tx
Christensen 2003 ⁴⁴⁶	Incorrect population
Christiansen 2010 ⁴⁴⁸	Incorrect interventions. Modalities of exercise and physiotherapy are not specified
Corey 1996 ⁴⁸¹	Same study as Mitchell 1994. Back school offered in control arm, control arm could also receive 'physiotherapy' - no further elaboration provided.
Cramer 1993 ⁴⁹⁰	Usual care + massage + cold pack vs. manipulation (+ tailored adjunct)
Cuesta-vargas 2009{Cuesta-Vargas, 2009 CUESTA2009 /id}	Inappropriate comparison. A+B versus A only type (adjunct)
Cuesta-vargas 2011 ⁴⁹⁸	Inappropriate comparison. A+B versus A only type (adjunct)
Demir 2014 ⁵⁴⁴	Incorrect population (post-surgery)
Denis 2012 ⁵⁴⁸	Not all participants currently have low back pain
Deyo 1990 ⁵⁶⁴	Inappropriate comparison. Analysed as TENS vs. no TENS, exercise vs. no exercise not in randomised groups
Donaldson 1994 ⁵⁸⁴	No combi Tx arm
Erp 2015 ⁶³¹	Protocol for an RCT
Esmer 2010 ⁶³³	No combi Tx arm
Farrell 1982 ⁶⁵¹	Diathermy part of the main intervention - diathermy is an excluded intervention
Ferrari 2013 ⁶⁵⁷	Incorrect interventions. No description of exercise

Ford 2015 ⁶⁸⁰	Wrong intervention: mixed physio: the interventions given were different depending upon the underlying pathology of the LBP. Pts not all randomised to the same Tx.
Franco 2014 ⁶⁸⁸	Incorrect study design. Protocol for an RCT
Frost 2004 ⁷²⁷	Combi physiotherapy group completely tailored
Gudavalli 2006 ⁸⁴⁴	Participants in Tx group could also receive choice of modalities - cryote or USS
Hampel 2015 ⁸⁹⁰	Incorrect study design. Longitudinal non-randomised study
Hebert 2015 ⁹²⁶	Rehabilitation following lumbar disc surgery
Heinrich 1985 ⁹³¹	Does not give details of modalities used within core elements of the interventions, eg 'exercises'
Helmhout 2008 ⁹³⁴	Combi Tx arm is tailored Tx
Hemmila 1997 ⁹³⁶	Comparison group gives classes but modalities used tailored at discretion of physiotherapist
Henry 2014 ⁹⁴¹	Inappropriate comparison. Comparison between treatment matched vs unmatched to patient-specific clinical features
Hodselmans 2001 ⁹⁷⁷	Incorrect study design. Not RCT; Includes back school in intervention group
Homayouni 2015 ⁹⁸⁴	Incorrect interventions. Hot packs as part of intervention
Hurley 2015 ¹⁰⁰¹	Mixed chronic pain (not just low back pain). Population includes postpartum back pain
Jakobsen 2015 ¹⁰⁵⁰	Not guideline condition. Mixed chronic pain (not just low back pain). Population with musculoskeletal pain in the back and neck/shoulder
Jensen 2011 ¹⁰⁷⁴	The classes and modalities of the physical / exercise interventions are not reported
Jensen 2012 ¹⁰⁷⁰	The classes and modalities of the physical / exercise interventions are not reported
Johnson 2010 ¹⁰⁸⁶	Uninterpretable data
Kamali 2014 ¹¹⁰⁷	Inappropriate comparison. Intra-class combination rather than inter-class comparison
Kamper 2015 ¹¹⁰⁸	SR - used as source of references
Karjalainen 2003{Karjalainen, 2003 KARJALAINEN2003 /id}	Insufficient description of exercise intervention
Kaye 2015 ¹¹³⁵	Systematic review on epidurals. Incorrect interventions
Keijsers 1989 ¹¹³⁶	Includes back school in intervention arm
Kim 2013 ¹¹⁶¹	Incorrect study design
Kim 2015 ¹¹⁶⁷	Mixed chronic pain (not just low back pain). Incorrect population (torture survivors)
Kizhakkeveettil 2014 ¹¹⁸⁸	SR - used as source of references
Klabin moffett 1986 ¹¹⁸⁹	Includes back school in intervention arm
Koc 2009 ¹¹⁹⁹	Incorrect interventions
Kool 2007 ¹²²³	Incorrect interventions. Comparator group = back school excluded from protocol
Kumar 2009 ¹²⁵¹	Incorrect interventions. Intervention includes diathermy which is excluded
Kumar 2010 ¹²⁵³	Incorrect interventions. Intervention includes diathermy which is excluded
Lambeek 2009 ¹²⁷⁰	Process evaluation report within an RCT
Lee 2011 ¹³⁰⁶	Moist heat Tx part of combi group
Lee 2014 ¹³⁰⁰	Incorrect study design

Licciardone 2003 ¹³³¹	Tailored vs. control groups
Linden 2014 ¹³⁴⁰	Single intervention. Included in psychological therapies review
Luedtke 2015 ¹³⁸²	Incorrect interventions. Transcranial stimulation is not a suitable intervention for this review
Macedo 2008 ¹³⁹²	Inappropriate comparison
Manniche 1988 ¹⁴⁶⁴	Heat Tx part of combi Tx
Mannion 1999 ¹⁴⁶⁸	Incorrect interventions
Matsudaira 2015 ¹⁴⁸⁶	Not guideline condition
Momsen 2014 ¹⁵⁵⁴	The classes and modalities of the physical / exercise interventions are not reported
Murtezani 2015 ¹⁶⁰³	Not guideline condition. Mixed chronic pain (not just low back pain). People with lumbar and thoracic pain
Nazzal 2013 ¹⁶²⁰	Incorrect interventions. Intervention non reproducible due to lack of details (excluded after presentation of evidence at GDG)
Nochit 2014 ¹⁶⁴⁶	Incorrect study design
Onat 2014 ¹⁶⁸³	Incorrect interventions. Balneotherapy is not relevant to this review
Prommanon 2015 ¹⁷⁹⁶	Incorrect interventions
Rantonen 2014 ¹⁸²⁶	Not true combination arm: different forms of self-management (Back book education booklet + 1:1 information)
Reme 2009 ¹⁸⁴⁴	No relevant outcomes reported
Roussel 2015 ¹⁸⁸³	Not guideline condition. Healthy people at risk for low back pain
Rushton 2015 ¹⁸⁹⁴	Incorrect population (post-surgery)
Schaafsma 2013 ¹⁹³⁴	Cochrane review - used as source of references
Schenk 2012 ¹⁹⁴¹	Exercises in the comparison group tailored and not specified, just exercises according to the DP determined at initial visit
Schenkman 2009 ¹⁹⁴²	Participants in each group had tailored Tx's, choice of various classes and modalities
Searle 2015 ¹⁹⁶³	Incorrect interventions. SR on exercise (not combination).
Semrau 2015 ¹⁹⁷²	Incorrect study design. Quasi-experimental study
Sokunbi Og 2014 ²⁰⁴⁶	Not guideline condition. Mixed chronic pain (not just low back pain). Low back definition including gluteal fold and therefore sacroiliac joint
Stapelfeldt 2011 ²⁰⁷³	The classes and modalities of the physical / exercise interventions are not reported
Steenstra 2003 ²⁰⁷⁶	Protocol only, no outcomes. Study protocol
Storro 2004 ²⁰⁸²	Not enough detail of interventions used in control group (only gives health care professionals)
Streicher 2014 ²⁰⁸⁶	Incorrect study design
Szczurko 2007 ²¹⁰⁰	Incorrect interventions. Dietary advice and relaxation techniques are part of the combination of intervention but are not relevant to our protocol
Tao 2005 ²¹¹¹	Heat wrap in Tx combi arm, not on list of interventions
Turner 1988 ²¹⁷⁶	Not combination treatment
Verwoerd 2015 ²²³²	Intervention not adequately described
Walker 2011 ²²⁷⁸	Cochrane review, used for reference list
Walti 2015 ²²⁸¹	Incorrect interventions. Multimodal therapy arm consists of sensory and motor retraining, not relevant to this review
Waterworth 1985 ²²⁹⁵	Some participants has extra mechanical therapy
Yousefi-nooraie 2008 ²³⁹²	Cochrane review, used for references only
Zahari 2014 ²³⁹⁹	Physiotherapy was tailored to each person in both groups

1616

L614 Return to work programmes

1618 As above.

1619

L615 Spinal injections

1621 **Table 14: Studies excluded from the clinical review**

Study	Exclusion reason
Abdi 2005 ^{40,40}	SR - used as source of references
Abdi 2007 ^{40,41}	SR - used as source of references
Ackerman 2008 ^{47,49}	Same intervention given to both groups
Al 1999 ^{75,75}	conference abstract
Anon 2001 ⁶	conference abstract
Anon 2002 ⁷	conference abstract
Anon 2012 ³²	Incorrect study design
Anwar 2005 ^{127,127}	Same intervention given in both groups (steroid vs. steroid)
Baeza-noci 2007 ¹⁶⁸	Incorrect study design. cohort study-non-protocol intervention: ozone therapy)
Balague 1996 ^{172,172}	Narrative review
Bartynski 2007 ^{186,186}	Incorrect study design. cohort study-single intervention
Bellini 2013 ^{200,200}	review article
Benyamin 2012 ^{211,212}	systematic review
Bernstein 2001 ^{225,225}	review article
Bicket 2013 ^{238,238}	SR - used as source of references
Blomberg 1992 ^{249,249}	Cortisone injections were given in combination with a number of other non-invasive treatments
Boezaart 1999 ^{261,262}	single agent trial
Bogduk 2005 ^{263,264}	Narrative review
Bogefeldt 2008 ^{267,267}	part of a program of treatments, not specifically injections
Boswell 2003 ^{280,280}	systematic review
Boswell 2005 ^{280,281}	SR - used as source of references
Bourne 2000 ^{284,285}	review
Briggs 2010 ^{289,289}	cohort study-single intervention
Brown 2012 ^{305,308}	Sacro-iliac joint injection
Buenaventura 2009 ^{322,322}	SR - used as source of references
Buttermann 2004 ^{337,337}	No randomization or comparator
Buttermann 2012 ^{336,337}	comment only
Cadth 2014 ^{346,356}	summary of abstracts
Cahana 2004 ^{347,347}	review article

Cakit 2007 ^{351,351}	Incorrect study design
Carreon 2008 ^{365,365}	SR - used as source of references
Cesare 2011{Di Cesare, 2011 DICESARE2011 /id}	Same agent used in both groups (just compares different technique)
Chambers 2013 ^{378,378}	Narrative review
Chapman 1981 ^{388,388}	conference abstract
Choi 2013 ^{424,424}	SR - used as source of references
Chou 2009 ^{435,440}	SR - used as source of references
Cohen 2011 ^{462,464}	review article
Cohen 2013 ^{462,468}	SR - used as source of references
Conn 2009 ^{474,474}	SR - used as source of references
Coric 2013 ^{482,482}	Incorrect study design. Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera)
Costantino 2011 ^{484,484}	Non protocol intervention- mesotherapy
Covarrubias-gomez 2011 ⁴⁸⁶	non-English study
Dagenais 2005 ^{505,505}	SR - used as source of references
Dagenais 2007 ^{505,507}	systematic review
Dagenais 2010 ^{505,506}	Review article
Dallas 1987 ^{511,511}	Crossover study
Das 2004 ^{519,519}	Incorrect study design
Datta 2009 ^{524,524}	SR - used as source of references
Datta 2009 ^{523,524}	SR - used as source of references
De oliveira magalhaes 2012 ⁵³²	Wrong Tx - ozone therapy
Depalma 2009 ^{549,550}	cohort study-single intervention
Derby 2004 ^{551,551}	cohort study-non-protocol intervention
Friedman 2013 ^{701,702}	SR - used as source of references
Friedrich 2010 ^{703,704}	Narrative review
Fritzler 2011 ^{723,723}	review paper
Galiano 2007 ^{745,745}	Wrong comparison: ultrasound guided injection vs. CT controlled injection
Goodman 2008 ^{815,815}	review
Grewal 2012 ^{830,830}	Narrative review
Gupta 1987 ^{850,850}	Incorrect study design
Gupta 2012 ^{849,850}	Incorrect study design. cohort study-protocol outcomes not reported
Hanly 2000 ^{898,898}	Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera). cohort study
Hansen 2007 ^{899,901}	SR - used as source of references
Hansen 2012 ^{899,900}	SR - used as source of references
Henschke 2010 ^{942,944}	SR - used as source of references
Henschke 2012 ^{943,944}	Review article
Herskowitz 2004 ^{950,950}	conference abstract
Herskowitz 2004 ^{949,950}	Conference abstract

Hery 1987 ^{952,952}	conference abstract
Huda 2010 ^{996,996}	within-class comparison: steroid vs. steroid
Ikegami 2010 ^{1014,1014}	Wrong intervention: elcatonin
Inman 2004 ^{1021,1021}	Incorrect study design. cohort study-single intervention
Jabbari 2006 ^{1036,1036}	Incorrect study design. Pilot study-single intervention
Jabbari 2007 ^{1036,1037}	review paper
Jabbari 2008 ^{1035,1036}	Review of an RCT - we already have the full RCT published paper
Jabbari 2011 ^{1036,1038}	SR - used as source of references
Jensen 2011 ^{1074,1076}	systematic review
Jeynes 2008 ^{1078,1078}	SR - used as source of references
Kapural 2007 ^{1115,1115}	cohort study-single intervention
Karnezis 2008 ^{1119,1119}	review article
Kim 2004 ^{1174,1177}	SR - used as source of references
Kim 2010 ^{1174,1181}	Sacro-iliac joint injection
Kim 2013 ^{1174,1179}	cohort study-interclass comparison
Klein 2003 ^{1190,1191}	Incorrect study design. cohort-single intervention
Kroenke 2009 ^{1240,1241}	Review article
Lechmann 2013 ^{1286,1286}	cohort study-single intervention
Lee 2009 ^{1294,1303}	Same intervention in both groups (different doses)
Lee 2009 ^{1302,1303}	non-English study
Lee 2010 ^{1295,1303}	Incorrect study design. cohort study-single intervention
Lee 2010 ^{1298,1303}	Sacro-iliac joint injection. cohort study
Levin 2009 ^{1315,1316}	SR - used as source of references
Lierz 1997 ^{1334,1334}	Abstract
Lierz 2004 ^{1333,1334}	Wrong comparison: intra-class comparison (anesthetic vs. anesthetics)
Lilius 1990 ^{1335,1336}	Not review population. Prognostic data from an RCT previously included in the review
Loeser 2004{LOESER2004}	conference abstract
Loizides 2013 ^{1366,1366}	Same intervention in both groups (just compares different guidance methods)
Lu 2014 ^{1378,1381}	SR - used as source of references
Luukkainen 2002 ^{1389,1389}	Sacro-iliac joint injection
Luukkainen 2007 ^{1388,1389}	Overview of RCTs already published
Manchikanti 2000 ^{1427,1429}	Allocation of intervention was by patient choice. Incorrect study design. Sarapin - not licensed in UK
Manchikanti 2001 ^{1427,1428}	Incorrect interventions. Sarapin is not licensed in the UK
Manchikanti 2001 ^{1427,1430}	cohort study-incorrect intervention (Sarapin not licensed for use in the UK)
Manchikanti 2004 ^{1427,1450}	same drugs in both arms
Manchikanti 2008 ^{1427,1438}	includes patients suffering from radicular pain
Manchikanti 2008 ^{1427,1455}	SR - used as source of references
Manchikanti 2009 ^{1427,1432}	SR - used as source of references

Manchikanti 2009 ^{1427,1433}	SR - used as source of references
Manchikanti 2010 ^{1427,1444}	SR - used as source of references
Manchikanti 2012 ^{1427,1434}	systematic review
Manchikanti 2012 ^{1427,1448}	Incorrect study design. cohort study: no intervention reported
Manchikanti 2012 ^{1427,1447}	cohort study-does not report interventions
Manchikanti 2013 ^{1427,1431}	SR / guidelines - used as source of references
Manchikanti 2014 ^{1427,1435}	Further discussion of a previously published trial, which we already have looked at for this review
Manchikanti 2014{Manchikanti, 2015 MANCHIKANTI2014F /id}	SR - used as source of references
Manchikanti 2015 ^{1427,1449}	Data from previous published trials already included in the review
Mandel 2013 ^{1459,1459}	cohort study-incorrect population
Marks 1992 ^{1476,1476}	same steroid injected in both groups
Mckenzie-brown 2005 ¹⁵¹⁴	SR - used as source of references
Mcquay 1997 ^{1516,1516}	SR - used as source of references
Miyakoshi 2007 ^{1544,1544}	interclass comparison
Moskovich 1996 ^{1583,1583}	Narrative review
Murakami 2007 ^{1598,1598}	cohort study-incorrect population: Sacroiliac joint pain
Murakami 2008 ^{1598,1599}	Incorrect study design. cohort study-incorrect population: sacroiliac joint pain
Nachtnebel 2009 ^{1606,1606}	SR - used as source of references
Nagarajan 2007 ^{1607,1607}	Incorrect study design. cohort study-single intervention
Nampiarampil 2012 ^{1613,1613}	review article
Naumann 2008 ^{1618,1618}	Review article
Ney 2006 ^{1634,1634}	Incorrect study design. cohort study-single intervention
Oh 2004 ^{1669,1669}	Radiofrequency lesioning is an approved "other treatment" in this guideline only in facet joints. RF in this study was non-facet joint
Orozco 2011 ^{1688,1688}	Incorrect study design. cohort study-single intervention
Pach 2011 ^{1700,1700}	Wrong intervention: verum (homeopathy)
Paoloni 2009 ^{1707,1707}	does not include intervention specified in protocol
Paradiso 2005 ^{1711,1711}	cohort study-non-protocol intervention: oxygen-ozone
Parr 2009 ^{1727,1727}	SR - used as source of references
Parr 2012 ^{1727,1728}	SR - used as source of references
Paz-valinas 2006 ¹⁷⁴⁰	non-protocol treatment
Peng 2010 ^{1743,1743}	Wrong intervention: methylene blue
Perry 1994 ^{1756,1756}	review piece
Peterson 2010 ^{1764,1764}	SR - used as source of references. review article
Quinet 1979 ^{1803,1803}	Review article
Qureshi 2013 ^{1805,1805}	Same intervention in both groups
Rabago 2005 ^{1808,1808}	SR - used as source of references
Radcliff 2012 ^{1812,1812}	cohort study-incorrect population (Sciatica only)
Raffaelli 2006 ^{1815,1815}	Wrong intervention: morphine

Revel 1998 ^{1848,1849}	prognostic study and does not report outcomes other than immediately post injection.
Reverberi 2005 ^{1850,1850}	cohort-Radiofrequency denervation was not in facet joint
Ribeiro 2013 ^{1852,1852}	Wrong comparison: intra class (steroid vs. steroid)
Rivest 1998 ^{1863,1863}	cohort study-both groups received same intervention`
Rocha 2014 ^{1865,1865}	No comparator group
Rupert 2009 ^{1891,1892}	SR - used as source of references
Scott 2009 ^{1961,1961}	SR - used as source of references
Shin 2013 ^{1992,1993}	Wrong comparison: different needles compared
Shin 2015 ^{1992,1994}	Wrong intervention- discectomy followed by injection. Unclear if injections for surgical pain or non-specific low back pain
Singh 2013 ^{2008,2009}	SR - used as source of references
Slipman 2003 ^{2028,2028}	SR - used as source of references
Spiker 2012 ^{2056,2056}	SR - used as source of references
Staal 2008 ^{2063,2064}	SR - used as source of references
Staal 2009 ^{2062,2064}	SR - used as source of references
Staal 2013 ^{2064,2065}	Narrative review
Straube 2013 ^{2084,2085}	SR - used as source of references
Subin 2003 ^{2088,2088}	No outcomes of interest reported
Tobinick 2004 ^{2146,2146}	Mixed chronic pain (not just low back pain). cohort study
Tonkovich-quaranta 2000 ²¹⁴⁹	review article
Tran 2000 ^{2155,2155}	Incorrect study design
Uyttendaele 1981 ^{2188,2188}	Incorrect study design. cohort study-no intervention details given
Wald 2014 ^{2275,2275}	Incorrect study design. -cohort study(single intervention)
Waseem 2011 ^{2291,2291}	cochrane review
White 2007 ^{2317,2319}	Incorrect study design. cohort study-incorrect population: mixed LBP and neck
Williams 1989 ^{2339,2343}	Incorrect study design
Williams 2007 ^{2335,2343}	cohort study-same intervention in both groups
Wittenberg 2001 ^{2351,2351}	Not interventions of interest
Wong 2010 ^{2353,2353}	review paper
Wu 2009 ^{2359,2359}	Wrong interventions: collagenase + oxygen ozone vs. surgery
Yang 1994 ^{2374,2374}	Wrong intervention: oxytocin
Yelland 2000 ^{2382,2382}	review article
Yelland 2004 ^{2382,2383}	SR - used as source of references
Zakaria 2007 ^{2400,2400}	SR - used as source of references
Zelle 2005 ^{2403,2403}	review article
Zhang 2011 ^{2408,2409}	SR - used as source of references
Zhuang 2008 ^{2413,2413}	Wrong intervention: herbal injection + acupuncture

L616 Radiofrequency denervation

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Study	Exclusion reason
Anon 2014 ³³	Not an RCT
Babur 1994 ¹⁶⁵	Review article
Banerjee 1976 ¹⁷⁴	Incorrect study design. Mixed chronic pain (not just low back pain)
Birkenmaier 2007 ²⁴²	Wrong comparison: diagnostic blocks compared
Bogduk 2000 ²⁶⁵	Cost-effectiveness analysis with no clinical data
Boswell 2007 ²⁷⁹	SR - used as source of references
Buijs 2004 ³²⁷	Wrong comparisons: RF denervation by temperature vs. voltage
Calodney 2004 ³⁵³	Review article
Cho 1997 ⁴²³	Incorrect study design. case-series
Cohen 2010 ⁴⁶⁶	Incorrect interventions. Inappropriate comparison. Compares RF denervation after 0, 1 or 2 Dx blocks
Cohen 2014 ⁴⁶⁷	Erratum to previously published study
Derby 2013 ⁵⁵⁴	Incorrect study design. Compares RF denervation after 0, 1 or 2 Dx blocks. Incorrect interventions. Inappropriate comparison
Dobrogowski 2005 ⁵⁷⁹	Patients randomised to different corticosteroids with their RF denervation.
Duger 2012 ⁵⁹⁹	Pulsed radiofrequency (not an denervation procedure)
Duse 2009 ⁶⁰⁵	Abstract
Falco 2012 ⁶⁴⁴	Systematic review - used as source of references
Falco 2012 ⁶⁴⁵	Systematic review - used as source of references
Falco 2012 ⁶⁴³	Systematic review - used as source of references
Florez 1977 ⁶⁷⁶	Incorrect study design
Gocer 1997 ⁸⁰⁴	Incorrect study design
Gofeld 2006 ⁸⁰⁸	Letter to editor
Hashemi 2014 ⁹¹⁰	Pulsed radiofrequency (not an denervation procedure)
Hickey 1977 ⁹⁵⁵	Incorrect study design
Joo 2013 ¹⁰⁹⁵	Incorrect interventions. Wrong comparison: alcohol denervation
Klessinger 2013 ¹¹⁹³	Incorrect study design
Kroll 2008 ¹²⁴²	Wrong comparison: continuous RF vs. pulsed RF
Lakemeier 2013 ¹²⁶⁴	Wrong population: patients had to have facet joint osteoarthritis
Leggett 2014 ¹³⁰⁹	Systematic review - used as source of references
Li 2014 ¹³²⁷	Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera). Serious spinal pathology (for example, neoplasms, infections or osteoporotic collapse). Mixed chronic pain (not just low back pain)
Lindner 2006 ¹³⁴¹	Incorrect study design
Lu 2012 ¹³⁷⁸	Incorrect study design. Wrong comparison: conventional RF vs. pulsed RF
Melzer 1999 ¹⁵²²	Incorrect study design
Melzer 1999 ¹⁵²³	Incorrect study design
Moon 2013 ¹⁵⁶³	Wrong comparison: RF distal approach vs. RF tunnel approach
Nedelka 2014 ¹⁶²³	Not an RCT (retrospective cohort)
Niemisto 2003 ¹⁶⁴¹	Systematic review - used as source of references

Study	Exclusion reason
Ogsbury 1977 ¹⁶⁶⁷	Incorrect study design
Park 2006 ¹⁷¹⁷	Incorrect study design
Park 2010 ¹⁷¹²	Wrong comparison: RF by CT guidance vs. RF by C-arm guidance
Poetscher 2014 ¹⁷⁸¹	Systematic review - used as source of references
Proschek 2010 ¹⁷⁹⁷	Incorrect study design. Wrong comparison: RF by fluoroscopic guidance vs. RF by SabreSource image guidance system
Rashbaum 1983 ¹⁸²⁷	Incorrect study design
Sanders 1999 ¹⁹¹⁴	Wrong comparison: Intraarticular RF vs. extraarticular RF
Schmid 1999 ¹⁹⁴⁶	Incorrect study design
Sheldon 1986 ¹⁹⁸⁵	Incorrect study design
Van 2005 ²²²⁰	Unable to obtain paper
Van wijk 2008 ²²¹⁷	Incorrect study design
Zhang 2009 ²⁴⁰⁷	Unable to obtain paper

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1627 **Table 16: Studies excluded from the clinical review**

Study	Exclusion reason
Abram 1997 ⁴⁴	SR - used as source of references
Ackerman 2007 ⁴⁸	Wrong comparison: compares different routes not interventions
Ahadian 2011 ⁶⁴	Wrong comparison: compares different doses of the same interventions
Amr 2011 ¹⁰⁴	Wrong intervention: ketamine (not in our protocol)
Anderberg 2007 ¹⁰⁶	Incorrect stratum. Cervical radicular pain
Andersen 1987 ¹⁰⁸	Incorrect study design
Anon 2004 ¹⁰	Article unavailable
Anon 2012 ³²	Incorrect stratum. Incorrect study design
Anon 2014 ³⁵	Incorrect stratum. Epidurals: review of previously published trial with wrong comparison (intra-class)
Anwar 2005 ¹²⁷	Same intervention class in both arms
Aref 2011 ¹³⁵	Wrong comparison: compares different volumes of the same intervention
Aronsohn 2010 ¹⁴⁰	Included in the spinal decompression review
Atlas 2015 ¹⁵³	Epidurals: Commentary on previously published trial that has already been included in our review (Friedly 2014)
Becker 2007 ¹⁹⁴	Wrong intervention: ACS/orthokine not licensed in UK
Bellini 2013 ²⁰⁰	SR - used as source of references
Benny 2011 ²⁰⁹	SR - used as source of references
Benoist 2012 ²¹⁰	SR of SRs
Benyamin 2012 ²¹²	Incorrect stratum. SR
Benzon 1986 ²¹⁴	SR - used as source of references
Bergeron 1999 ²¹⁸	Incorrect stratum. Wrong population: not sciatica
Block 2012 ²⁴⁷	Commentary only

Borms 1988 ²⁷⁶	Wrong route of administration - intramuscular not epidural
Bui 2013 ³²⁶	SR - used as source of references
Burgher 2011 ³²⁹	Wrong comparison: clonidine (outside our protocol)
Buttermann 2004 ³³⁷	Incorrect study design
Buttermann 2012 ³³⁶	Unable to obtain study
Byun 2014 ³⁴²	Wrong comparison: within class
Candido 2008 ³⁵⁸	Wrong comparison: different route of administration
Castagnera 1994 ³⁷⁰	Incorrect stratum. Cervical pain, not LBP
Chang-chien 2014 ³⁸⁴	SR - used as source of referenecs
Chapman 1981 ³⁸⁸	Incorrect stratum. Abstract only
Choi 2013 ⁴²⁴	SR - uesd as source of references
Chou 2015 ⁴³²	Epidurals: SR - used as source of references
Cocelli 2009 ⁴⁵⁹	Wrong comparison: intra-class
Cohen 2007 ⁴⁶³	Electronic citation of a trial
Cohen 2010 ⁴⁶⁶	Wrong interventions and comparisons. Incorrect stratum
Cohen 2012 ⁴⁶⁹	Wrong comparison: image guided vs. non-image guided
Cohen 2013 ⁴⁶⁸	SR - used as source of references
Cohen 2015 ⁴⁶⁵	Incorrect stratum. inappropriate comparison
Dallas 1987 ⁵¹¹	Crossover study
Dashfield 2005 ⁵²²	Wrong comparison: different routes of administration
Depalma 2005 ⁵⁴⁹	SR - used as source of references
Dilke 1973 ⁵⁷³	Wrong tratment: no epidural arm
Dreyfuss 2006 ⁵⁹⁴	Incorrect stratum. Cervical pain
Engel 2014 ⁶²³	SR - used as source of references
Evansa 2015 ⁶³⁹	Epidurals: Wrong population: includes spondylolisthesis pts
Friedman 2008 ⁷⁰¹	Wrong intervention: intramuscular not epidural
Galhom 2013 ⁷⁴⁴	Incorrect stratum. Wrong compariosn: different routes of administration
Gelalis 2009 ⁷⁶⁸	Wrong comparison: different routes of administration
Gerszten 2010 ⁷⁷⁵	Included in the spinal decompression review for sciatica
Ghahreman 2011 ⁷⁷⁶	Wrong study design: predictors of response from another RCT (we have already included the RCT)
Ghai 2013 ⁷⁷⁸	Wrong comparison: intra-class
Ghai 2014 ⁷⁷⁷	Wrong comaprison: different routes of administration
Gharibo 2011 ⁷⁷⁹	Wrong comparison: compares different routes of administration
Grayson 2012 ⁸²⁵	Letter
Grevsten 1975 ⁸²⁹	Not our guideline condition
Gupta 1987 ⁸⁵⁰	Incorrect study design
Gupta 2014 ⁸⁵¹	Wrong comparison: different routes of administration
Haimovic 1986 ⁸⁷⁵	Wrog intervention: oral (not epidural) steroid
Hashemi 2015 ⁹⁰⁹	Wrong comparison: intra-class
Hee 2007 ⁹²⁹	Wrong comparison: compares different routes of administration

Hery 1987 ⁹⁵²	Abstract
Iversen 2011 ¹⁰³⁴	Wrong comparison: subcutaneous saline. Data for the correct comparison arm (3rd arm = epidural saline) has not been reported.
Jee 2013 ¹⁰⁶⁴	Incorrect stratum. Cervical pain
Kang 2011 ¹¹¹¹	Wrong comparison: intra-class comparison
Kawu 2012 ¹¹³⁴	Incorrect study design. Case-series/before and after
Khan 2010 ¹¹⁵³	Unable to obtain paper
Kim 2011 ¹¹⁷⁵	Wrong comparison: hyaluronidase (off protocol)
Kim 2011 ¹¹⁵⁸	Wrong comparison: intra-class
Kim 2013 ¹¹⁷⁶	Wrong comparison: steroid after balloon treatment vs. steroid without balloon treatment
Kloth 2011 ¹¹⁹⁵	Incorrect stratum. Cervical pain
Koh 2013 ¹²¹¹	Wrong comparison: intra-class
Kolsi 2000 ¹²¹⁵	Incorrect stratum. Sciatica or femoral neuralgia
Lee 2009 ¹²⁹⁶	Incorrect stratum. Cervical pain
Lee 2013 ¹³⁰⁵	Incorrect stratum. Cervical pain
Lierz 1997 ¹³³⁴	Abstract
Lierz 2004 ¹³³³	Wrong comparison: intra-class (anaesthetic vs. anaesthetic)
Macvicar 2013 ¹⁴⁰¹	SR - used as source of references
Maity 2012 ¹⁴¹¹	Wrong comparison: epidural opioid
Manchikanti 2008 ¹⁴⁵²	Incorrect stratum. Hernia OR radiculitis (written in methods section)
Manchikanti 2010 ¹⁴⁴¹	Incorrect stratum. Cervical pain
Manchikanti 2011 ¹⁴⁵³	Incorrect stratum. Hernia OR radiculitis (written in methods section)
Manchikanti 2012 ¹⁴³⁹	Included in spinal injections review - not sciatica population
Manchikanti 2012 ¹⁴⁴²	Incorrect stratum. Cervical pain
Manchikanti 2012 ¹⁴³⁴	SR - used as source of references
Manchikanti 2012 ¹⁴³⁶	Preliminary data from only 60 patients in the trial
Manchikanti 2013 ¹⁴²⁶	HE analysis only
Manchikanti 2013 ¹⁴⁴⁰	Included in spinal injections review - not sciatica population
Manchikanti 2013 ¹⁴⁴³	Incorrect stratum. Cervical pain
Manchikanti 2013 ¹⁴⁵⁴	Incorrect stratum. Mixed population - hernia OR sciatica (50% sciatica)
Manchikanti 2014 ¹⁴²⁵	SR - used as source of references
Mcgregor 2001 ¹⁵⁰⁹	Wrong comparisons: different routes of administration
Murata 2009 ¹⁶⁰⁰	Treatment is a block of the nerve for back pain, not for the sciatica (leg pain)
Ng 2004 ¹⁶³⁵	Cohort study. Incorrect study design
Ngai 2014 ¹⁶³⁶	Epidurals: Short review of previously published trial
Ohtori 2012 ¹⁶⁷⁴	Wrong population: spondylolysis or spondylolisthesis
Ohtori 2012 ¹⁶⁷¹	Wrong population: spondylitis or spondylolisthesis
Okoro 2010 ¹⁶⁷⁶	Wrong administration route: subcutaneous not epidural
Owlia 2007 ¹⁶⁹⁴	Wrong comparison: different doses of steroid

Park 2010 ¹⁷¹⁴	Wrong comparison: intra-class
Park 2013 ¹⁷¹³	Wrong intervention: epidural morphine
Park 2013 ¹⁷¹⁸	Incorrect stratum. Wrong population: sacroiliac arthritis
Pasqualucci 2007 ¹⁷²⁹	Incorrect stratum. cervical pain
Pérez 1992 ¹⁷⁵¹	Abstract. In Italian
Pimentel 2014 ¹⁷⁷²	SR - used as source of references
Pinto 2012 ¹⁷⁷⁶	SR - used as source of references
Pirbudak 2003 ¹⁷⁷⁷	Wrong intervention and comparison: both arms contain oral agents
Quraishi 2012 ¹⁸⁰⁴	SR - used as source of references
Rados 2011 ¹⁸¹⁴	Wrong comparison: different routes of administration
Rados 2013 ¹⁸¹³	Wrong comparison: different routes of administration
Rastogi 1994 ¹⁸³¹	Incorrect stratum. Wrong population: some without sciatica, some with spondylosis and spondylolisthesis
Revel 1996 ¹⁸⁴⁷	Incorrect stratum. Wrong population: sciatica from post-operative lumbar spinal stenosis
Reverberi 2005 ¹⁸⁵⁰	Incorrect study design
Rezende 2015 ¹⁸⁵¹	Wrong comparison: intra-class
Ridley 1988 ¹⁸⁵⁵	Crossover study
Sayegh 2009 ¹⁹³²	Incorrect stratum
Sayle-creer 1969 ¹⁹³³	Incorrect study design
Schuermans 1988 ¹⁹⁵⁶	Wrong route of administration: intramuscular not epidural
Shamliyan 2014 ¹⁹⁷⁸	SR - used as source of references
Song 1995 ²⁰⁴⁷	Incorrect interventions
Tauheed 2014 ²¹¹³	Wrong comparison: clonidine (not in protocol) in the 2 comparator arms
Thomas 2003 ²¹³¹	Wrong comparison: different route of administration
Vad 2002 ²¹⁸⁹	Not true randomised study - randomised by patient choice (written in the abstract)
Valat 2006 ²¹⁹¹	SR - used as source of references
Van zundert 2009 ²²¹⁹	Narrative
Veihelmann 2006 ²²²⁶	Wrong intervention: epidural neuroplasty
Walker 1998 ²²⁷⁶	Conference abstract
Waseem 2011 ²²⁹¹	SR - used as source of references
Weiner 2012 ²³⁰⁸	Commentary
Wewalka 2012 ²³¹⁶	Incorrect study design
Whynes 2012 ²³²¹	HE analysis. Incorrect stratum
Williams 2013 ²³³⁴	Incorrect stratum. Irrelevant review
Wilson-macdonald 2005 ²³⁴⁸	Wrong comparison: intramuscular injection of steroid + anesthetic (not in our protocol) vs. epidural steroid
Wu 2015 ²³⁵⁸	Incorrect stratum. wrong comparison - nucleoplasty
Yates 1978 ²³⁷⁸	Incorrect stratum. Crossover study
Yosry 2008 ²³⁹¹	Wrong comparison: image-guided vs. non-image guided arms

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1630 **Table 17: Studies excluded from the clinical review**

Reference	Reason for exclusion
Abramovitz et al., 1991 ⁴⁵	Multivariable analysis not adjusted for key confounder
Adogwa et al, 2012 ⁵⁵	Incorrect study design: presentation
Adogwa et al, 2014 ⁵⁴	Multivariable analysis not adjusted for key confounder and no relevant outcomes reported
Ahn et al, 2009 ⁶⁹	No relevant prognostic factors reported
Anderson et al,2009 ¹¹⁶	Incorrect population: neck/cervical patients
Anderson 2015 ¹¹⁵	Wrong population: mixed population of lumabr fusion patients - some had spondylolisthesis and spondylosis
Basler et al, 2007 ¹⁸⁹	Univariate study
Bernard et al, 1993 ²²³	Univariate study
Bieliauskas et al, 1994 ²³⁹	Incorrect population: greater than 30% of population with failed back surgery
Carreon 2009 ³⁶⁶	Incorrect study design :Letter to editor
Chang et al, 2005 ³⁸³	Univariate study
Chou et al, 2011 ⁴²⁹	Systematic review: references checked for relevant studies
Christensen et al, 1996 ⁴⁴⁵	Incorrect population: greater than 30% of population with Spondylolisthesis
Cook 2015 ⁴⁷⁸	
Deberard et al, 2002 ⁵³⁵	Univariate study
Dewing et al, 2008 ⁵⁶⁰	Univariate study
Deutsch 2010, ⁵⁵⁸	Univariate study
Djurasovic et al, 2011 ⁵⁷⁸	Multivariable analysis not adjusted for key confounder and no relevant prognostic factor reported no relevant prognostic factor reported
Djurasovic et al, 2012 ⁵⁷⁷	No relevant prognostic factor reported
El Barzouhi et al, 2013 ⁶¹⁷	Univariate study
Espersen et al, 1984 ⁶³⁴	Univariate study
Fisher et al,2004 ⁶⁷¹	No relevant prognostic factor reported: pain and disability score together
Graver ET AL, 1999 ⁴⁵	Multivariable analysis not adjusted for key confounder
Greenough et al,1994 ⁸²⁸	Incorrect population: greater than 30% of population with failed back surgery and Spondylolisthesis
Hagg et al, 2003 ⁸⁶⁸	No multiple variable analysis reported for outcomes specified in the protocol
Havakeshian 2013 ⁹¹⁵	Incorrect study design: presentation with no relevant prognostic factor reported
Hee et al, 2003 ⁹²⁸	No relevant prognostic factor reported
Herno 1995 ⁹⁴⁸	Incorrect population: greater than 30% of population with failed back surgery
Herno,A 1995 ⁹⁴⁸	Incorrect study design: thesis with no relevant outcomes reported
Hodges et al, 2001 ⁹⁷⁶	Univariate study
Jonsson et al, 1997 ¹⁰⁹⁴	No relevant prognostic factor reported
Junge et al,1996 ¹⁰⁹⁷	Univariate study

Reference	Reason for exclusion
Kagaya et al, 2005 ¹¹⁰⁰	Univariate study
Katz et al, 1997 ¹¹²⁴	Univariate study
Katz et al, 1999 ¹¹²⁵	Multivariable analysis not adjusted for key confounder
Kim et al, 2014 ¹¹⁶⁶	No independent analysis of the effect of the prognostic factor reported
Kim et al, 2015 ¹¹⁶⁵	No relevant outcomes reported in the study
Kleinstueck et al, 2011 ¹¹⁹²	Multivariable analysis not adjusted for key confounder and no relevant prognostic factor reported
Kohlboeck et al, 2004 ¹²¹³	Univariate study
Komori et al, 2002 ¹²¹⁷	Univariate study
Kosteljanetz et al, 1984 ¹²²⁸	Univariate study
Kuittinen et al, 2014 ¹²⁴⁷	Multivariable analysis not adjusted for key confounder and no relevant prognostic factor reported
Kumar et al, 2001 ¹²⁴⁹	Univariate study
Lewis et al, 1987 ¹³²²	No relevant prognostic factor reported
Long et al, 1980 ¹³⁷¹	Univariate study
Loupasis et al, 1999 ¹³⁷⁶	Univariate study
Manniche et al, 1994 ¹⁴⁶³	Univariate study
Mariconda et al, 2006 ¹⁴⁷²	Multivariable analysis not adjusted for key confounder and no relevant prognostic factor reported
Marshman et al, 2010 ¹⁴⁷⁹	Univariate study
McGregor et al, 2002 ¹⁵¹⁰	Univariate study
Melgar et al, 2014 ¹⁵²¹	No relevant prognostic factor reported
Moore et al, 1994 ¹⁵⁶⁶	Univariate study
Motiei-Langroudi et al, 2014 ¹⁵⁸⁶	Univariate study
Nygaard et al, 1994 ¹⁶⁵⁷	Univariate study
Nguyen et al, 2011 ¹⁶³⁷	No relevant outcomes reported
Ronnberg et al, 2007 ¹⁸⁷⁷	Univariate study
Santavirta et al, 1996 ¹⁹¹⁷	Univariate study
Sedighi et al, 2014 ¹⁹⁶⁵	No relevant prognostic factors reported
Shi et al, 2012 ¹⁹⁸⁹	Univariate study
Sigmundsson et al, 2014 ²⁰⁰¹	No relevant prognostic factor reported
Sinikallio et al, 2009 ²⁰¹³	Multivariable analysis not confounded for key confounder
Sinigaglia et al, 2009 ²⁰¹²	No relevant prognostic factor reported
Soroceanu et al, 2012 ²⁰⁵²	Multivariable analysis not adjusted for key confounder and no relevant prognostic factor reported
Taylor et al, 2000 ²¹¹⁸	Multivariable analysis not adjusted for key confounder
Tsai et al, 2007 ²¹⁶⁴	No relevant outcomes reported for prognostic factor
Vialle 2015 ²²³³	Wrong population: degenerative disorders of lumbar spine (unclear what this includes and if sciatica only)
Voorhies et al, 2007 ²²⁶⁰	Multivariable analysis not adjusted for key confounder
Willems et al, 2007 ²³³²	Multivariable analysis not adjusted for key confounder and no relevant prognostic factor reported no relevant prognostic factor reported
Willems 2013 ²³³¹	Incorrect study design: thesis with no relevant prognostic factor reported

L619 Disc replacement

1633 **Table 18: Studies excluded from the clinical review**

Study	Exclusion reason
Aghayev 2010 ⁶¹	Incorrect interventions. Inappropriate comparison. Intraclass comparison
Aghayev 2014 ⁵⁹	Incorrect study design. Case series (order cancelled)
Aghayev 2014 ⁶⁰	Incorrect study design. Case series
Ahrens 2009 ⁷⁰	Incorrect study design. Case series
Andrade 2013 ¹²²	Non-systematic review; non relevant to review question
Anekstein 2015 ¹²⁴	Not guideline condition. Mixed chronic pain (not just low back pain). Incorrect population: spondylolisthesis
Anon 2004 ¹¹	SR - used as source of references
Anon 2005 ¹⁴	SR - used as source of references
Anon 2007 ²⁵	Systematic review: literature search not sufficiently rigorous. SR - used as source of references
Assaker 2015 ¹⁴⁶	Not review population. Includes people with spondylolisthesis. Inappropriate comparison. No comparator
Bao 2007 ¹⁷⁶	Incorrect study design. Case series; pre-clinical studies
Berg 2011 ²¹⁵	Incorrect study design. Thesis
Berlemann 2009 ²²¹	Incorrect study design. Incorrect interventions. Case series; nucleus replacement
Bernsmann 2001 ²²⁴	Incorrect interventions. Inappropriate comparison. Fat graft vs no fat graft for laminectomy
Bertagnoli 2005 ²²⁹	Incorrect study design. Case series
Bertagnoli 2006 ²²⁷	Inappropriate comparison. Incorrect interventions. All had total disc arthroplasty; comparison of smokers vs non smokers. . Not guideline condition. Spondylosis population
Bertagnoli 2006 ²²⁶	Incorrect study design. Case series
Bertagnoli 2006 ²²⁸	Incorrect study design. Case series
Blondel 2011 ²⁵³	Incorrect study design. Case series
Blumenthal 2003 ²⁵⁶	Incorrect study design. Incorrect interventions. Case series; same implant at different levels
Blumenthal 2005 ²⁵⁵	Not review population. People with back and/or leg pain
Botelho 2008 ²⁸³	Incorrect study design
Bronsard 2011 ²⁹⁹	Incorrect study design. Case series
Cakir 2009 ³⁵⁰	Incorrect study design. Case series
Chung 2006 ⁴⁵⁰	Incorrect study design. Case series
Daneyemez 1999 ⁵¹⁶	Incorrect study design. Case series
David 1993 ⁵²⁶	Incorrect study design. Case series
De kleuver 2003 ⁵³¹	SR - used as source of references
Delamarter 2003 ⁵⁴¹	Incorrect study design. Abstract. Not review population. People with Back and/or leg pain
Delamarter 2005 ⁵⁴⁰	Incorrect study design. Abstract. Not review population. People with Back and/or leg pain
Delamarter 2011 ²⁴¹⁶	Not review population. People with back and/or leg (radicular) pain

Di silvestre 2009 ⁵⁶⁹	Incorrect interventions. Inappropriate comparison. 2 level vs 1 level disc replacement
Errico 2004 ⁶³²	Incorrect study design. Narrative review
Freeman 2006 ⁶⁹⁶	SR - used as a source of references
Gamradt 2005 ⁷⁴⁷	SR - used as a source of references
Geisler 2004 ⁷⁶³	Not review population. People with back and/or leg pain
Geisler 2008 ⁷⁶⁴	Not review population. People with back and/or leg pain
Goins 2005 ⁸¹⁰	Incorrect study design. Narrative review
Griffith 1994 ⁸³²	Incorrect study design. Case series
Hagg 2006 ⁸⁶⁹	Fusion vs non surgical treatment. Incorrect interventions. Inappropriate comparison
Hakkinen 2007 ⁸⁷⁶	Incorrect study design. Case series
Health quality ontario 2006 ⁹²⁴	SR - used as a source of references
Huang 2004 ⁹⁹³	Incorrect study design. Narrative review
Huang 2005 ⁹⁹⁴	Incorrect study design. Case series
Huang 2006 ⁹⁹⁵	Incorrect study design. Case series
Ilharreborde 2005 ¹⁰¹⁵	Incorrect study design. Abstract only
Jacobs 2013 ¹⁰⁴⁴	SR - used as source of references
Jensen 1996 ¹⁰⁷⁶	Inappropriate comparison. Incorrect interventions. Free fat transplantation vs no free fat transplantation in laminectomy
Jin 2003 ¹⁰⁸⁰	Incorrect study design. Case series
Kagaya 2005 ¹¹⁰⁰	Inappropriate comparison. Incorrect interventions. Quality of life before vs after surgery
Kasliwal 2012 ¹¹²²	Incorrect study design. Case series
Katsimihis 2010 ¹¹²³	Incorrect study design. Case series
Kim 2003 ¹¹⁸⁰	Not guideline condition. Incorrect study design. People with neurologic disturbance (neurogenic intermittent claudication) and/or severe back pain. Case series
Kim 2007 ¹¹⁶⁰	Incorrect study design. Case series
Kishen 2010 ¹¹⁸⁶	SR - used as source of references
Lazennec 2014 ¹²⁷⁹	Incorrect study design. Case series (order was cancelled)
Le huec 2005 ¹²⁸¹	Incorrect study design. Case series
Le huec 2005 ¹²⁸⁰	Incorrect study design. Case series
Leckie 2009 ¹²⁸⁷	Incorrect study design. Narrative review
Lee 2014 ¹²⁹¹	Incorrect study design. Case series
Lemcke 2010 ¹³¹¹	Not review population. Incorrect interventions. Low back pain and/or persisting pain radiating to lower extremities. Nucleoplasty vs disc decompressor
Levin 2007 ¹³¹⁴	Not review population. People with primarily back and/or radicular pain
Levine 2000 ¹³¹⁷	Not guideline condition. Mixed chronic pain (not just low back pain). Incorrect study design. Narrative review
Lu 2015 ¹³⁸⁰	Incorrect study design. Case series
Lu 2015 ¹³⁷⁹	No comparator arm. Incorrect study design
Maestretti 2011 ¹⁴⁰⁵	Incorrect study design. Case series
Magnussen 2011 ¹⁴⁰⁷	Incorrect study design. Commentary and abstract
Markwalder 2011 ¹⁴⁷⁷	Incorrect study design. Case series (order was cancelled)
Matejka 2012 ¹⁴⁸²	Article in Czech (order was cancelled)

Mayer 2002 ¹⁴⁹⁰	Not guideline condition. Mixed chronic pain (not just low back pain). Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera). Incorrect study design. Case series
Mcafee 2003 ¹⁵⁰⁰	Not guideline condition. Some patients had spondylosis
Mcafee 2003 ¹⁵⁰¹	Not guideline condition. Some patients had spondylosis, leg or back pain
Mcafee 2003 ¹⁴⁹⁷	Incorrect study design. Narrative review and case report
Mcafee 2004 ¹⁴⁹⁹	Incorrect study design. Narrative review
Mcafee 2007 ¹⁴⁹⁸	Incorrect study design. Not guideline condition. Mixed chronic pain (not just low back pain). Case series
Mostofi 2015 ¹⁵⁸⁵	Incorrect study design. Case series
Mundy 2003 ¹⁵⁹⁶	Incorrect study design. Narrative review
Ohnmeiss 2010 ¹⁶⁷⁰	Not guideline condition. Incorrect study design. Some patients had spondylolisthesisPost hoc analysis of RCTs
Park 2012 ¹⁷¹⁵	Incorrect study design. Case series
Parkinson 2013 ¹⁷²⁵	Wrong population: LBP and OR sciatica (some pts had sciatica only). Incorrect study design. Not review population
Parkinson 2013 ¹⁷²⁴	Not guideline condition. People with axial back pain and/or radicular pain
Pimenta 2010 ¹⁷⁷¹	Incorrect study design (cohort)
Pimenta 2012 ¹⁷⁷⁰	Inappropriate comparison. Intra-class comparison of different nucleus replacement devices
Puolakka 2008 ¹⁸⁰¹	Not guideline condition. Incorrect study design. Back pain and/or muscle weakness. Case series
Rainey 2012 ¹⁸¹⁸	Incorrect study design (cohort)
Resnick 2007 ¹⁸⁴⁶	Incorrect study design. Narrative review
Rischke 2015 ¹⁸⁶⁰	Not review population. Unclear intervention population inclusion criteria. Not Define
Ross 2007 ¹⁸⁸⁰	Incorrect study design. Case series
Sasani 2009 ¹⁹²²	Incorrect study design. Case series
Sasso 2007 ¹⁹²⁵	Not guideline condition. Not review population
Sasso 2008 ¹⁹²³	Not guideline condition. Cervical arthroplasty
Sasso 2011 ¹⁹²⁶	Not guideline condition. Cervical disc herniations or spondylosis
Schlussmann 2009 ¹⁹⁴⁵	Inappropriate comparison. Intra-class comparison: monosegmental vs bisegmental total disc arthroplasty
Schoenfeld 2011 ¹⁹⁵¹	Incorrect study design. Commentary
Schroven 2006 ¹⁹⁵⁵	Cohort study
Selviaridis 2010 ¹⁹⁷¹	Not guideline condition. Incorrect study design. Low back pain and/or sciatica. Case series
Siepe 2008 ¹⁹⁹⁹	Inappropriate comparison
Siepe 2009 ²⁰⁰⁰	Incorrect study design. Case series
Siepe 2014 ¹⁹⁹⁸	Case series (order was cancelled). Incorrect study design
Silber 2006 ²⁰⁰³	Not guideline condition. Cervical degenerative disease
Sinigaglia 2009 ²⁰¹²	Inappropriate comparison. Intra-class comparison
Tepper 2006 ²¹²³	Abstract only
Thavaneswaran 2014 ²¹²⁸	SR - used as source of references
Trincat 2015 ²¹⁵⁷	Incorrect study design. Case series (order was cancelled)
Tropiano 2003 ²¹⁶¹	Incorrect study design. Case series
Tropiano 2005 ²¹⁵⁹	Incorrect study design. Case series
Tropiano 2006 ²¹⁶⁰	Incorrect study design. Article of description of surgical technique
Trouillier 2006 ²¹⁶²	Incorrect study design. Case series
Tsou 2004 ²¹⁶⁷	Incorrect study design. Case series
Tumialan 2010 ²¹⁷²	Incorrect study design (cohort)

Van de kelft 2012 ²¹⁹³	Incorrect study design. Case series
Van den eerenbeemt 2010 ²¹⁹⁴	Systematic review: methods are not adequate/unclear. Ordered to identify any relevant paper
Vital 2014 ²²⁵²	Incorrect study design. Narrative review
Vlayen 2006 ²²⁵⁴	Ordered for identification of any relevant studies
Yaszay 2008 ²³⁷⁷	Incorrect study design. Case series/post-hoc analysis of one arm only of an RCT
Zhang 2009 ²⁴¹¹	Incorrect study design. Case series
Zigler 2004 ²⁴¹⁸	Not review population. People with back and/or leg pain
Zigler 2007 ²⁴¹⁴	Not review population. People with back and/or leg (radicular) pain

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L20 Spinal fusion

1636 **Table 19: Studies excluded from the clinical review**

Study	Exclusion reason
Abbott 2011 ^{38,38}	incorrect population: LBP population with or without Sciatica or Sciatica only
Allen 2009 ^{94,95}	Review of literature
Andersen 2003 ^{109,110}	intra-class comparison
Andersen 2008 ^{109,112}	intra-class comparison
Andersen 2009 ^{109,111}	intra-class comparison
Andersson 2006 ^{119,121}	systematic review
Anon 2004 ¹¹	NICE guideline with no references
Anon 2005 ¹⁴	unable to obtain article
Anon 2006 ²²	technology assessment: review of literature
Arnold 2009 ^{138,138}	single intervention study
Azzazi 2010 ^{164,164}	incorrect comparison and intra-class comparison
Berg 2011 ^{215,216}	incorrect population
Bjarke christensen 2002 ^{244,244}	intra-class comparison
Blumenthal 2005 ^{255,256}	incorrect population: Patients with or without sciatica
Bogduk 1000 ²⁶⁴	review
Botelho 2008 ^{283,283}	Letter in response to an excluded study
Bradley 2012 ^{286,286}	Single intervention study. single intervention
Burkus 2002 ^{330,330}	intra-class comparison
Bydon 2014 ^{339,340}	systematic review
Carreon 2008 ^{365,365}	systematic review
Chaudhary 2011 ^{394,394}	systematic review
Choma 2011 ^{427,427}	systematic review
Chou 2009 ^{431,440}	Review of literature
Chou 2014 ^{430,440}	Incorrect population: patients with burst fractures
Christensen 2002 ^{444,447}	intra-class comparison
Christensen 2004 ^{443,447}	review as part of a book
Christensen 2014 ^{442,447}	intra-class comparison
Dahdaleh 2013 ^{509,509}	intra-class comparison

Study	Exclusion reason
Daubs 2011 ^{525,525}	systematic review
Delamarter 2011 ^{2415,2416}	incorrect population: only Sciatica population
Deyo 2005 ^{561,563}	protocol only; paper now published
Dong 2014 ^{585,585}	intra-class comparison
El shazly 2013 ⁶²⁰	incorrect comparison: intra-class and recurrent herniation population
Fayssoux 2010 ^{652,652}	health economic study
Freeman 2007 ^{693,694}	intra-class comparison
Freeman 2007 ^{693,695}	health economic study
Fritzell 2000 ^{720,720}	item not ordered
Fritzell 2002 ^{720,721}	intra-class comparison
Fritzell 2002 ^{718,720}	intra-class comparison
Fritzell 2003 ^{719,720}	intra-class comparison
Fritzell 2004 ^{720,722}	health economic study
Geisler 2007 ^{763,766}	incorrect population: Patients with or without sciatica
Geisler 2008 ^{763,765}	incorrect population: Patients with or without sciatica
Gibson 1999 ^{787,790}	Cochrane review
Guo 2007 ^{847,848}	item not ordered: non-English paper
Guyer 2009 ^{853,853}	incorrect population: Patients with or without sciatica
Hacker 1997 ^{857,857}	intra-class comparison
Haid 2004 ^{872,872}	intra-class comparison
Hayes 2012 ^{919,920}	intra-class comparison
Hoy 2013 ^{989,990}	intra-class comparison
Hurlbert 2013 ^{998,998}	intra-class comparison
Ibrahim 2008 ^{1012,1012}	meta-analysis
Inamdar 2006 ^{1017,1017}	intra-class comparison
Jacobs 2012 ^{1041,1046}	Cochrane review
Jacobs 2013 ^{1041,1044}	systematic review
Kai 2014 ^{1102,1102}	intra-class comparison
Karabekir 2008 ^{1116,1116}	incorrect comparison: intra-class
Kasis 2009 ^{1121,1121}	Incorrect population: patients with spondylolisthesis included
Katz 1997 ^{1124,1124}	incorrect population: patients with sciatica only included
Kersten 2014 ^{1148,1148}	intra-class comparison
Kim 2006 ^{1169,1174}	intra-class comparison
Kim 2015 ^{1162,1174}	incorrect population: only Sciatica population
Korovessis 2012 ^{1226,1226}	intra-class comparison
Korsgaard 2002 ^{1227,1227}	intra-class comparison
Kwon 2006 ^{1258,1258}	Review of literature
Lee 2015 ^{1303,1307}	Cohort study- sufficient RCT evidence available for fusion versus other types of surgery comparison
Lee 2015 ^{1299,1303}	Incorrect population: neck and spine fusion surgery reported together
Liu 2014 ^{1357,1359}	meta-analysis
Malmivaara 2007 ^{1418,1420}	Intra-class comparison: combination surgery in one arm
Malmivaara 2007 ^{1418,1419}	incorrect comparison: segmental decompression and facetectomy plus fusion versus non operative treatment

Study	Exclusion reason
Manchikanti 2013 ^{1427,1437}	incorrect intervention: adhesiolysis
Manchikanti 2015 ^{1427,1457}	systematic review-used to check for references
Mannion 2013 ^{1468,1469}	review
Mannion 2014 ^{1467,1468}	Review of literature
Mayer 2014 ^{1492,1493}	systematic review
McGirt 2015 ^{1508,1508}	Cohort study- sufficient RCT evidence available for fusion versus other types of surgery comparison
Mirza 2007 ^{1541,1541}	systematic review
Mirza 2013 ^{1541,1542}	incorrect intervention: combination of studies
Mroz 2011 ^{1589,1589}	Review of literature
Nordin 2006 ^{1650,1650}	Review of literature
North American spine society board of directors 2003 ¹⁶⁵²	protocol only
Noshchenko 2014 ^{1654,1654}	systematic review
Ohtori 2011 ^{1672,1673}	intra-class comparison
Park 2010 ^{1716,1717}	incorrect intervention: laminectomy
Parker 2012 ^{1719,1723}	incorrect population
Parkinson 2013 ^{1725,1725}	health economic study
Phillips 2013 ^{1768,1768}	literature review
Putzier 2009 ^{1802,1802}	incorrect population and intra-class comparison
Qureshi 2013 ^{1805,1806}	health economic study
Rischke 2015 ^{1860,1860}	Cohort study- sufficient RCT evidence available for fusion versus other types of surgery comparison
Saltychev 2014 ^{1908,1908}	meta-analysis
Sasso 2004 ^{1924,1924}	intra-class comparison
Sasso 2007 ^{1924,1925}	incorrect population
Shen 2014 ^{1986,1986}	intra-class comparison
Shin 2009 ^{1992,1992}	incorrect population and combination comparison
Shunwu 2010 ^{1997,1997}	intra-class comparison
Silber 2002 ^{2002,2002}	Review of literature
Singh 2007 ^{2009,2009}	incorrect intervention
Slatis 2011 ^{2026,2026}	incorrect population: patients with spondylolisthesis included
Soegaard 2006 ^{2042,2042}	systematic review
Soegaard 2007 ^{2041,2042}	health economic study
Soegaard 2007 ^{2042,2043}	health economic study
Sogaard 2008 ^{2045,2045}	health economic study
Takeshima 2000 ^{2107,2107}	Abstract
Thavaneswaran 2014 ^{2128,2128}	systematic review
Thomsen 1997 ^{2140,2140}	incorrect population and intra-class comparison
Tian 2013 ^{2144,2144}	meta-analysis
Van den eerenbeemt 2010 ²¹⁹⁴	systematic review
Van der schAAF 1999 ²¹⁹⁸	incorrect population: greater than 30% of patients were failed back surgery cases
Videbaek 2006 ^{2243,2243}	intra-class comparison

Study	Exclusion reason
Videbaek 2006 ^{2242,2243}	intra-class comparison
Virk 2012 ^{2249,2249}	Health economics study
Wang 2014 ^{2285,2287}	meta-analysis-used as source of references
Weinstein 2008 ^{2309,2310}	Incorrect intervention: laminectomy
Willems 2013 ^{2330,2332}	systematic review
Xie 2007 ^{2360,2360}	incorrect comparison: combination treatment
Yang 2015 ^{2374,2375}	Incorrect population: spondylolisthesis and neurogenic claudication population included
Zdeblick 1993 ^{2402,2402}	single intervention review
Zigler 2003 ^{2415,2415}	incorrect population: includes Sciatica only population
Zigler 2007 ^{2414,2415}	incorrect population: includes Sciatica only population
Zigler 2012 ^{2415,2417}	incorrect population: includes Sciatica only population

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L21 Spinal decompression

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Study	Exclusion reason
Adogwa 2012 ^{53,56}	Wrong population: segment disease
Adogwa 2013 ^{52,56}	Wrong intervention: revision surgery - not in our scope
Ahn 2000 ^{68,68}	Wrong population
Akagi 2010 ^{71,71}	Not sciatica
Alaranta 1986 ^{77,77}	Not answer the question - Treatment after surgery
Alfieri 2012 ^{87,87}	SR - used as source of references
Ali 2013 ^{89,91}	Wrong population: back or neck pain, not all sciatica
Al-khalaf 2003{Al-Khalaf, 2003 ALKHALAF2003 /id}	Does not answer the question: Treatment post- surgery
Allen 1990 ^{94,94}	Intra-class comparison: automated versus manual discectomy
Almadni 2010 ^{97,97}	Abstract
Amoretti 2013 ^{102,102}	Does not answer the question: compares surgery (one type) in 2 different groups of patients
Amundsen 2000 ^{105,105}	Wrong interventions: mixed types of surgery
Andersson 2006 ^{119,120}	Letter
Anon 2004 ¹¹	Guideline; wrong intervention
Anon 2005 ²¹	SR - used as source of references
Anon 2005 ²⁰	Not in English
Anon 2007 ²⁵	SR - used as source of references
Arai 2014 ^{132,132}	Cohort study, but intra-class comparison
Aronsohn 2010 ^{140,140}	Unable to obtain article
Arts 2011 ^{142,143}	Letter
Arts 2013 ^{141,143}	Review
Atlas 1996 ^{155,155}	Cohort study, but already have sufficient RCT data in the review for this comparison (discectomy vs. UC)
Atlas 1996 ^{154,155}	Cohort study, but already have sufficient RCT data in the review for this

Study	Exclusion reason
	comparison (discectomy vs. UC)
Atlas 2000 ^{155,156}	Cohort study, but already have sufficient RCT data in the review for this comparison (discectomy vs. UC)
Atlas 2005 ^{155,157}	Cohort study, but already have sufficient RCT data in the review for this comparison (discectomy vs. UC)
Atlas 2005 ^{155,158}	Cohort study, but already have sufficient RCT data in the review for this comparison (discectomy vs. UC)
Atlas 2010 ^{155,159}	Subgroup analysis of SPORT trial (already included main data in review). Subgroups irrelevant to review question.
Awad 2006 ^{162,162}	SR - used as source of references
Baek 2012 ^{166,166}	Wrong population: no mention of sciatica - just all hernia patients
Banken 2005 ^{175,175}	SR - used as source of references
Barth 2008 ^{183,183}	intra-class comparison
Barth 2008 ^{183,184}	intra-class comparison
Bernstein 2001 ^{225,225}	SR - used as source of references
Beyer 2013 ^{235,235}	Incorrect stratum. Not sciatica population
Birkmeyer 1999 ^{243,243}	SR - used as source of references
Boden 2014 ^{259,260}	Abstract
Bogduk 2002 ^{264,266}	Incorrect stratum. Not sciatica pts.
Bohmfolk 1991 ^{268,268}	Letter
Bokov 2010 ^{269,269}	Wrong comparison: nucleoplasty
Boswell 2007 ^{280,282}	SR - used as source of references
Brouwer 2009 ^{304,304}	Study protocol
Brouwer 2015 ^{303,304}	covered by NICE interventional procedures guidance 357 (2010)
Brown 2012 ^{305,308}	wrong comparison: sacroiliac joint injection (not in our scope)
Brox 2010 ^{311,314}	Wrong population: not sciatica
Butterman 2004 ³³⁸	No relevant outcomes reported
Bydon 2013 ^{340,340}	SR. Wrong condition - cysts
Carey 2005 ^{360,360}	Short article / Review
Celik 2010-1 ^{376,376}	Intra-class comparison
Chen 2015 ^{396,398}	Not answer the question: Treatment post-surgery
Chitragran 2012 ^{419,419}	Wrong intervention: nucleoplasty
Cho 2007 ^{420,423}	incorrect comparison: intra-class comparison
Choi 2014 ^{424,425}	incorrect intervention: decompression therapy (non-surgical)
Chopko 2013 ^{428,428}	Not sciatica population
Chou 2009 ^{436,440}	Guideline
Chou 2009 ^{433,440}	Guideline
Crawshaw 1984 ^{492,492}	Wrong comparison: chemonucleolysis
Crockett 2014 ^{494,494}	Unable to obtain article
Dagenais 2010 ^{505,506}	Guideline
Daneyemez 1999 ^{516,516}	Incorrect study design. Case-series
Dasenbrock 2012 ^{521,521}	SR/MA - intra-class comparison
De seze 2013{de Seze, 2013 DESEZE2013 /id}	Incorrect study design. Case-series
Dedering 2004 ^{536,536}	Wrong comparison: intra-class

Study	Exclusion reason
Deinsberger 2006 ^{538,538}	Wrong population: spinal cysts
Demircan 1992 ^{545,545}	Abstract
Derby 2008 ^{551,552}	Review article
Don 2008 ^{583,583}	Review article
Dora 2002 ^{587,587}	Does not answer the question: not Treatment
Dubourg 2002 ^{597,597}	Does not answer the question: not at Treatment study
Dvorak 1988 ^{606,606}	Cohort study but groups irrelevant to review question: people with pension vs. no pension
Ebenbichler 2015 ^{610,610}	Does not answer the question: Treatment post-surgery
Ecri 2004 ^{611,611}	Unable to obtain article
Ecri 2005 ^{611,612}	paper could not be sourced
Eichen 2014 ^{614,614}	SR - used as source of references
Ejeskar 1983 ^{616,616}	Wrong intervention: chemonucleolysis
El barzouhi 2014 ^{617,619}	Unable to obtain article
Epstein 2004 ^{625,625}	Wrong population: spinal cysts. SR
Fakouri 2011 ^{641,641}	Wrong population: not sciatica
Fakouri 2015 ^{641,642}	SR - used as source of references
Fitzsimmons 2014 ^{673,674}	Different Treatment pathways looked at, not individual interventions compared
Franke 2009 ^{690,691}	Wrong comparison: nucleotomy
Freeman 2005 ^{693,693}	Cross-over RCT
Freeman 2007 ^{693,694}	Wrong intervention and comparison: fusion vs. fusion
Freeman 2008 ^{693,697}	SR - used as source of references
Fu 2005 ^{730,730}	incorrect comparison: intra-class; level of detail: is decompression with or without fusion not in scope
Fu 2008 ^{730,731}	Intraclass comparison: laminoforaminotomy vs. laminectomy
Garcia 2013 ^{749,751}	Does not answer the question: Treatment post-surgery
Gerges 2010 ^{774,774}	SR - used as source of references
Giannadakis 2015 ⁷⁸⁵	Intra-class comparison
Gibson 2000 ^{786,790}	Cochrane systematic review: used as reference list
Gibson 2007 ^{789,790}	Cochrane SR - used as source of references
Gibson 2007 ^{788,790}	Cochrane SR - used as source of references
Greenfield 2003 ^{827,827}	conference abstract
Guo 2005 ^{848,848}	Not in English
Guo 2007 ^{847,848}	Not in English
Hadzic 2013 ^{861,861}	Presentation
Haefeli 2008 ^{862,862}	Incorrect stratum. no outcomes of interest reported
Haughton 2003 ^{914,914}	SR - used as source of references
Hazard 1989 ^{922,922}	Does not answer our question: wrong intervention
Heid 2008 ^{930,930}	Does not answer the question: Treatment post-surgery
Hellum 2011 ^{932,932}	Wrong intervention/comparison: prosthesis vs. rehabilitation
Herkowitz 1991 ^{946,946}	Wrong population: spondylolisthesis. Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera)
Hirsch 2009 ^{975,975}	SR - used as source of references

Study	Exclusion reason
Hong 2015 ^{986,987}	SR - used as source of references
Ibrahim 2008 ^{1012,1013}	SR - used as source of references
Indrakanti 2012 ^{1020,1020}	SR of HE analysis papers
Islam 2013 ^{1024,1024}	Incorrect study design. Case-series
Issack 2012 ^{1026,1026}	Review article
Jacobs 2011 ^{1041,1045}	SR - used as source of references
Jacobs 2012 ^{1041,1047}	SR - used as source of references
Jacobs 2013 ^{1041,1048}	SR - used as source of references
Jacobs 2013 ^{1041,1043}	SR - used as source of references
Jarrett 2012 ^{1057,1057}	SR - used as source of references
Jirattanaphochai 2007 ^{1081,1081}	Does not answer the question: post-surgery Treatment
Jirattanaphochai 2008 ^{1081,1082}	Does not answer question: post-surgery Treatment
Jo 2014 ^{1083,1083}	All pts. had surgery. and comparison is those with history vs. those without history of surgery
Johansson 2009 ^{1085,1085}	Does not answer the question: post-surgery Treatment
Jurecki-tiller 2007 ¹⁰⁹⁸	SR - used as source of references
Kamper 2014 ^{1109,1110}	SR/MA - used as source of references
Karabekir 2008 ^{1116,1116}	incorrect comparison: study compares two different fusion techniques with one treatment arm also having a decompression: doesn't inform the review question
Kawakami 2013 ^{1132,1132}	Cohort study but mixed population of sciatica or claudication
Kim 2003 ^{1171,1174}	Wrong comparison: combination Treatment - surgery + oxiplex gel
Kim 2004 ^{1170,1174}	Wrong comparison: combination Treatment - discectomy + oxiplex gel
Kim 2015 ^{1164,1174}	incorrect population: patient choice too narrow for study to be useful as all patients had type 2 diabetes
Kim 2015 ^{1163,1174}	Incorrect study design. Case-series
Kim 2015 ¹¹⁷²	Breakdown of spine surgery not reported
Knape 1970 ^{1196,1196}	Does not answer the question: post-surgery Treatment
Knight 2001 ^{1198,1198}	SR - used as source of references
Knight 2009 ^{1197,1198}	Wrong comparison: nucleoplasty
Komp 2015 ^{1218,1218}	Intra-class comparison: interlaminar vs. microsurgical laminotomy
Kondrashov 2006 ^{1219,1219}	Incorrect study design. Case-series
Kong 2007 ^{1220,1220}	Wrong intervention/comparison: implantation versus fusion
Konnopka 2012 ^{1222,1222}	Case-series and prognostic study. Incorrect study design
Korkmaz dilmen 2010 ^{1225,1225}	Does not answer question: post-surgery Treatment
Kotil 2014 ^{1230,1230}	Not sciatica population
Kreiner 2014 ^{1239,1239}	Guideline
Krugluger 2000 ^{1243,1243}	Wrong intervention: chemonucleolysis
Laurysen 2015 ¹²⁷⁵	Incorrect population: patients with spondylolisthesis included(from Patel 2014)
Lee 1996 ^{1303,1303}	Not in English
Lee 2013 ^{1290,1303}	Wrong intervention: combination of laminectomy + flavectomy
Lee 2015 ¹³⁰⁴	Intra-class comparison
Levy 2012 ^{1318,1318}	SR - used as source of references

Study	Exclusion reason
Lewis 2015 ^{1322,1324}	Unable to obtain article
Livesey 2000 ^{1361,1361}	Abstract
Loguidice 2011 ^{1365,1365}	SR - used as source of references
Lonne 2015 ^{1373,1373}	Neurogenic claudication population but not with sciatica
Lopez 2005 ^{1374,1374}	Not in English
Lorish 1998 ^{1375,1375}	All pts. had same surgery
Luhmann 2003 ^{1383,1383}	Not in English
Luhmann 2005 ^{1383,1384}	SR - used as source of references
Macario 2006 ^{1390,1390}	SR - used as source of references
Madan 2003 ^{1402,1402}	Wrong population: unclear sciatica
Majeed 2013 ^{1413,1413}	Cohort study but intra-class comparison
Malmivaara 2007 ^{1418,1420}	Wrong population: some had spondylolisthesis and some with buttock pain and not all leg.
Malmivaara 2007 ^{1418,1419}	Wrong population: not sciatica
Malter 1996 ^{1422,1422}	Wrong intervention: chemonucleolysis
Malter 1996 ^{1422,1423}	HE paper - no clinical effectiveness data
Manchikanti 2009 ^{1427,1445}	SR - used as source of references
Manchikanti 2013 ^{1427,1446}	SR - used as source of references
Manchikanti 2013 ^{1427,1456}	SR - used as source of references
Manchikanti 2013 ^{1427,1451}	SR - used as source of references
Mannion 2010 ^{1468,1470}	Case-series. Incorrect study design
Mariconda 2002 ^{1471,1471}	incorrect population: Spondylolisthesis population
Marin 2005 ^{1473,1473}	Wrong comparison: nucleoplasty
Markova 2007 ^{1475,1475}	SR - used as source of references
Mazanec 2007 ^{1495,1495}	Overview of a previously published trial (SPORT) that has been included in our review
Mcculloch 1981 ^{1507,1507}	Case-series. Wrong intervention: chemonucleolysis
Moojen 2010 ^{1560,1560}	Study protocol
Moojen 2013 ¹⁵⁵⁹	Incorrect population: neurogenic claudication with no leg pain reference
Moojen 2015 ¹⁵⁶¹	Incorrect population: neurogenic claudication with no leg pain reference
Munting 2015 ^{1597,1597}	Wrong population: some had spondylolisthesis. Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera)
Neblett 2014 ^{1621,1622}	Unable to obtain article
Nerland 2015 ¹⁶²⁶	Intra-class comparison
Niskanen 2002 ^{1644,1644}	Not mention sciatica
Nykvist 1995 ^{1659,1659}	Cohort study, but already have sufficient RCT data in the review for this comparison (discectomy vs. UC)
Ohtori 2011 ^{1673,1673}	Wrong intervention/comparisons. All arms included in fusion review.
Overdevest 2015 ^{1692,1692}	intra-class comparison
Pappas 1992 ^{1710,1710}	incorrect comparison: intra-class comparison
Parker 2010 ^{1723,1723}	Incorrect study design. Case-series
Parker 2013 ^{1720,1723}	Intra-class comparison
Parker 2013 ^{1722,1723}	Intra-class comparison
Parker 2015 ¹⁷²¹	Economic study excluded from HE analysis

Study	Exclusion reason
Patel 2014 ^{1730,1733}	Wrong population: some pts. had spondylolisthesis. Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera)
Patel 2015 ^{1730,1732}	incorrect comparison-intra-class
Pauza 2002 ^{1737,1737}	Unable to obtain article
Pauza 2003 ^{1737,1738}	Abstract
Pauza 2004 ^{1737,1739}	Mixed population: only 27% had sciatica
Pauza 2004 ^{1736,1737}	Abstract
Pichon 2011 ^{1769,1769}	Not in English
Pneumaticos 2010 ^{1779,1780}	case-control study. Incorrect study design
Postacchini 1987 ^{1791,1791}	Wrong comparison: chemonucleolysis
Postacchini 1993 ^{1789,1791}	intra-class comparison
Rajasekaran 2013 ^{1820,1820}	Neurogenic claudication population but not with sciatica. Intra-class comparison: 2 types of decompression (midline vs. spinous process splitting)
Ran 2015 ^{1822,1822}	SR - used as source of references
Revel 1993 ^{1848,1848}	Wrong comparison: chemonucleolysis
Reverberi 2005 ^{1850,1850}	Not an RCT - cohort study
Rompe 1999 ^{1875,1875}	Intra-class comparison
Rossi 1993 ^{1881,1881}	Not in English
Saberski 2000 ^{1899,1899}	Wrong comparison: treatment via spinal canal endoscopy (but no details of what was given in the endoscopy arm)
Satoh 2006 ^{1927,1927}	No mention of sciatica
Schick 2009 ^{1943,1943}	intra-class comparison
Sedighi 2014 ^{1965,1965}	Wrong comparison: nucleotomy and osteotomy
Shamji 2014 ^{1977,1977}	Conference abstract
Shareef 2014 ^{1980,1980}	incorrect comparison: intra-class comparison
Singh 2009 ^{2009,2010}	SR - used as source of references
Singh 2013 ^{2009,2011}	SR - used as source of references
Slatis 2011 ^{2026,2026}	incorrect population: patients with Spondylolisthesis (% not reported)
Slotman 1996 ^{2030,2030}	intra-class comparison
Smith 2013 ^{2031,2036}	SR - used as source of references
Smorgick 2013 ^{2037,2037}	Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera). Wrong population: spondylolisthesis
Sutheerayongprasert 2012 ²⁰⁹²	Cohort study, but already have sufficient RCT data in the review for this comparison (discectomy vs. UC)
Swezey 1996 ^{2099,2099}	Inflammatory causes of back pain (for example, ankylosing spondylitis or diseases of the viscera). Wrong population: some pts. had spondylolisthesis
Takeshima 2000 ^{2107,2107}	Abstract
Tharin 2012 ^{2127,2127}	Abstract
Thomas 2007 ^{2132,2135}	Cohort study, but already have sufficient RCT data in the review for this comparison (discectomy vs. UC)
Thome 2005 ^{2138,2138}	intra-class comparison
Thomé 2005 ^{2137,2137}	intra-class comparison
Thome 2006 ^{2136,2138}	Abstract

Study	Exclusion reason
Wang 2013 ^{2284,2285}	All pts. had discectomy
Wu 2015 ^{2358,2359}	Wrong intervention: nucleoplasty
Xinyu 2009 ^{2362,2362}	incorrect comparison: intra-class comparison
Yaman 2015 ^{2371,2371}	Wrong population: not mention sciatica

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1 Appendix M: Excluded health economic studies

M.1 Clinical Examination

3 None.

M.2 Risk assessment and stratification

Reference	Reason for exclusion
Fritz 2003 ^{706,710}	This study was excluded due to limited applicability and the availability of more applicable evidence. ^{129,130} US resource use and cost data (1997-1999) may not reflect current NHS context. QALYs were not used as the health outcome measure (SF-36 reported, however QALYs were not calculated).

M.3 Imaging

Reference	Reason for exclusion
Kerry 2000 ¹¹⁴⁷	This study was excluded due to a combination of limited applicability and very serious methodological limitations. QALYs were not used as the health outcome measure (SF-36 reported, however QALYs were not calculated). Resource use and unit cost data from 1995-1999 judged unlikely to be applicable to current UK NHS practice.
Kendrick 2001 ¹¹⁴¹ Miller 2002 ¹⁵³⁷	This study was excluded due to a combination of limited applicability and very serious methodological limitations. QALYs were not used as the health outcome measure (EQ-5D reported, however QALYs were not calculated). Instead patient satisfaction is used in bootstrapping analysis, which does not appear in the study protocol. Resource use and cost year not reported, but the enrolment year was prior to 1999. This means the study is unlikely to be applicable to current UK NHS practice.
Jensen 2010 ¹⁰⁷²	This study was selectively excluded due to a combination of limited applicability, potentially serious limitations, and the availability of more applicable evidence. This study only reported the direct cost of the interventions from a Danish perspective, which is unlikely to reflect UK NHS costs.
Graves 2014 ⁸²²	This study was selectively excluded due to methodological limitations and the availability of more applicable evidence. This study considers costs but is not a cost-utility analysis (no cost per QALY is calculated). In addition, it is not based on a RCT and comes from the US. Hence it is unlikely to reflect current UK NHS practice.
Jarvik 2015 ¹⁰⁶¹	This study was selectively excluded due to methodological limitations and the availability of more applicable evidence. QALYs were not used as the health outcome measure (EQ-5D reported, however QALYs were not calculated), although this is because no significant difference in quality of life between interventions was seen.
Webster 2014 ²³⁰²	This study was assessed as not applicable as it did not include any health outcome data, and cost data were from the USA and judged unlikely to be applicable to current UK NHS practice.

M.4 Self-management

Reference	Reason for exclusion
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Cherkin 2001 ⁴⁰⁹	This study was assessed as not applicable. USA resource use from 1997/8 (cost year unclear) judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome measure.
Lewis 2011 ¹³²³	This study was selectively excluded due to a combination of applicability and methodological limitations. While the intervention met the review protocol the majority of the comparators did not. In addition the NMA on which the analysis was based was not included in the clinical review.
Fitzsimmons 2014 ⁶⁷³	This study was selectively excluded due to a combination of applicability and methodological limitations. While the intervention met the review protocol the majority of the comparators did not. In addition the NMA on which the analysis was based was not included in the clinical review.
Hemmila 2002 ⁹³⁵	This study was assessed as not applicable. Finnish resource use and costs from 1994 judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome measure.

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M.5 Exercise

Reference	Reason for exclusion
Aboagye2015 ^{43,43}	This paper was assessed as only partially applicable with potentially serious limitations. There were concerns over the population included in the study. The reported cost for physiotherapists is high and is unlikely to be consistent with a UK setting. It is not clear how the QALYs were calculated as no details are given on how the utilities values at each time point and for each subgroup (adherent and non-adherent) were combined to obtain QALYs. The study was also excluded from clinical review due to outcome reporting.
Seferlis 2000 ¹⁹⁶⁷	This study was assessed as not applicable. Swedish resource use and costs from 1996 judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome measure. Study was excluded from clinical review (due to outcome reporting).
Henchoz 2010 ⁹³⁷	This study was assessed as not applicable. Total or incremental costs could not be extracted for an NHS perspective only and indirect costs accounted for the majority of the total costs. In addition, Swiss resource use data and units costs from 2008 may not reflect current NHS context.

M.6 Postural therapy

10 None.

M.7 Orthotics

12 None.

M.8 Manual therapy

Reference	Reason for exclusion
Cherkin 2001 ⁴⁰⁹	This study was assessed as not applicable. USA resource use from 1997/8 (cost year unclear) judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome measure.
Lewis 2011 ¹³²³	This study was selectively excluded due to a combination of applicability

Reference	Reason for exclusion
	and methodological limitations. While the intervention met the review protocol the majority of the comparators did not. In addition the NMA on which the analysis was based was not included in the clinical review.
Fitzsimmons 2014 ⁶⁷³	This study was selectively excluded due to a combination of applicability and methodological limitations. While the intervention met the review protocol the majority of the comparators did not. In addition the NMA on which the analysis was based was not included in the clinical review.
Cook 2008 ⁴⁷⁵	This study was assessed as not applicable. USA resource use and costs from 1988-2005 judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome measure.
Crow 2009 ⁴⁹⁵	This study was selectively excluded due to a combination of applicability and methodological limitations. USA resource use data (2002-2005) and unit costs (2006) may not reflect the current NHS context and QALYs were not used as the health outcome measure; the analysis is based on a cohort study that was not included in the clinical review for the guideline.
Fritz 2006 ⁷⁰⁸	This study was selectively excluded due to a combination of applicability and methodological limitations. USA resource use data and unit costs from 2004 may not reflect the current NHS context and QALYs were not used as the health outcome measure; the analysis is based on a cohort study that was not included in the clinical review for the guideline.
Kominski 2005 ¹²¹⁶	This study was assessed as not applicable. USA resource use and costs from 1995-1998 judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome measure.
Seferlis 2000 ¹⁹⁶⁷	This study was assessed as not applicable. Swedish resource use and costs from 1996 judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome measure. Study was excluded from clinical review (due to outcome reporting).
Hemmila 2002 ⁹³⁵	This study was assessed as not applicable. Finnish resource use and costs from 1994 judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome measure.

ML9 Acupuncture

Reference	Reason for exclusion
Cherkin 2001 ⁴⁰⁹	This study was assessed as not applicable. USA resource use from 1997/8 (cost year unclear) judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome measure.
Kim 2010 ¹¹⁷³	This study was assessed as not applicable. Total or incremental costs could not be extracted for an NHS perspective only and indirect costs are considered likely to account for a significant proportion of total costs. In addition, costs and health effects were discounted at a non-reference case rate (5%) and reporting about utility data used in the analysis was unclear.
Witt 2006 ²³⁵⁰	This study was assessed as not applicable. Total or incremental costs could not be extracted for an NHS perspective only and indirect costs are considered likely to account for a significant proportion of total costs. In addition, German resource use from 2001-2004 may not reflect current NHS context and the cost year was unclear. QALYs were estimated using a non-reference case measure (SF-6D).

Reference	Reason for exclusion
Taylor2013 ^{2116,2119}	This paper was selectively excluded as QALYs were not reported and there were methodological concerns about the conversion of SMDs from meta-analysis into DALYs averted. Costs and resource utilisation were not reported clearly.

M.10 Electrotherapy

Reference	Reason for exclusion
Pivec2013 ^{1778,1778}	This paper was assessed as not applicable. The paper only includes costs from a US perspective which were judged unlikely to be applicable to a UK NHS perspective.

M.11 Psychological

Reference	Reason for exclusion
Newcomer 2008 ¹⁶²⁸	This study was selectively excluded due to a combination of limited applicability and very serious methodological limitations. USA resource use data (2000-2002) and unit costs (2002) may not reflect current NHS context, QALYs were not used as the health outcome measure and intervention costs were not addressed.
Norton2015 ^{1653,1653}	This paper was excluded because it a US perspective analysis of Lamb 2010 which is already included in the analysis.

M.12 Pharmacological

Reference	Reason for exclusion
Fritz 2013 ^{706,707}	This study was selectively excluded due to a combination of applicability and methodological limitations, USA 2004-2008 resource use and costs from claims data may not reflect the current NHS context and QALYs were not used as the health outcome measure (health outcome was not assessed); the analysis is based on a cohort study that was not included in the clinical review for the guideline and is a multivariate generalised linear model that does not report total or incremental costs for the different pharmacological variables of interest (only a regression coefficient and the increase in total cost per unit increase in variable).
Wielage2013A ^{2323,2324}	This study was assessed as not applicable. Total or incremental costs could not be extracted for a healthcare payer perspective only; unclear if non-health costs are likely to change the cost-effectiveness result. In addition, Canadian resource use data and unit costs (2011) may not reflect current NHS context, the EQ5D tariff used is unclear and costs and health effects were discounted at a non-reference case rate (5%).

M.13 MBR

Reference	Reason for exclusion
Gatchel 2003 ⁷⁵⁶	This study was assessed as not applicable. USA resource use (year not stated) and unit cost (2002) data judged unlikely to be applicable to current UK NHS context. QALYs were not used as the health outcome measure.
Moffett 1999 ¹⁵⁵⁰	This study was assessed as not applicable. UK resources use and costs from before 1999 judged unlikely to be applicable to current UK NHS context.
NCCPC 2009A ¹⁶¹⁵	This study was assessed as not applicable. Analysis based on clinical data

Reference	Reason for exclusion
	from an RCT with a mixed pain population excluded from the review for the guideline.
Skouen 2002 ²⁰²³	This study was assessed as not applicable. Norwegian resources use and costs from before 1999 judged unlikely to be applicable to current UK NHS context. In addition, QALYs were not used as the health outcome.

M.14 Return to work

20 None.

M.15 Spinal injections

22 None.

M.16 Radiofrequency denervation

24 None.

M.17 Epidurals

Reference	Reason for exclusion
Peterson2013 ^{1763,1764}	This study was selectively excluded due to a combination of limited applicability and very serious methodological limitations. Swiss resource use data (2010-2011) and unit costs (date unclear) may not reflect current NHS context. QALYs were not used as the health outcome measure. The analysis is based on a cohort study that was not included in the clinical review for the guideline. Furthermore the follow-up is short (1 month) and no sensitivity analyses undertaken. Only the cost of interventions included, no downstream costs reported and the source of unit costs is unclear.
Lewis 2011 ¹³²³	This study was selectively excluded due to a combination of applicability and methodological limitations. While the intervention met the review protocol the majority of the comparators did not. In addition the NMA on which the analysis was based was not included in the clinical review.
Fitzsimmons 2014 ⁶⁷³	This study was selectively excluded due to a combination of applicability and methodological limitations. While the intervention met the review protocol the majority of the comparators did not. In addition the NMA on which the analysis was based was not included in the clinical review.
Spijker-Huiges 2015 ²⁰⁵⁵	This study was selectively excluded due to a combination of limited applicability and very serious methodological limitations. Costs were reported from a societal perspective (including loss of productivity) and direct medical costs could not be separated. We could not use the QALY and analyse them with the costs reported in the previous study from the same group as the QALY calculation did not match with the SF36 changes reported for the two interventions.
Udeh2015 {Udeh, 2015 UDEH2015 /id}	This paper was selectively excluded due to serious methodological concerns. Complication costs after 90 days of procedure were not included and the source of outcome data was not clear. The translation of outcome data to QALY gains was also unclear, and some strong assumptions were made to adjust QALYs for the model.

M.18 Surgery and prognostic factors

27 None.

M.19 Spinal decompression

Reference	Reason for exclusion
Hansson 2007 ⁹⁰³	This study was assessed as not applicable because the resource use data are from 1995 and the study was conducted in Sweden.
Udeh2015 {Udeh, 2015 UDEH2015 /id}	This paper was selectively excluded due to serious methodological concerns. Complication costs after 90 days of procedure were not included and the source of outcome data was not clear. The translation of outcome data to QALY gains was also unclear, and some strong assumptions were made to adjust QALYs for the model.

M.20 Spinal fusion

30 None.

M.21 Disc replacement

Reference	Reason for exclusion
Berg 2011 ²¹⁵	Study based on the same data reported in the included study by Fritzell et al (2011). ⁷¹⁷

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1 Appendix N: Cost-effectiveness analysis: 2 Radiofrequency denervation

N.1 Introduction

4 The clinical review showed that radiofrequency denervation (RFD) is clinically effective at improving
5 the pain score outcome for individuals that have severe low back pain. Therefore an economic model
6 was prioritised to assess whether the increase in effectiveness associated with RFD justifies the
7 incremental costs. The clinical question that the model tries to address is:

8 What is the clinical and cost effectiveness of radiofrequency denervation for facet joint pain in the
9 management of non-specific LBP?

N.2 Methods

N.2.1 Model overview

N.2.1.1 Comparators

13 In our model RFD is compared to usual care, defined as active management in primary care. The RFD
14 intervention consists of an initial diagnostic block which identifies patients who are likely to respond
15 to the RFD; we have not looked at the literature comparing the effectiveness of different numbers of
16 diagnostic blocks as part of the guideline and therefore are unable to comment on the efficacy of
17 different numbers of blocks. We are therefore going to use the mean number of blocks used in the
18 trials that inform the review (i.e. 1). After the diagnostic block, some patients will end up not
19 receiving RFD should the diagnostic block be negative. If the diagnostic block is positive, the model
20 includes the possibility that the individual refuses the actual RFD intervention or that the response to
21 the block leads to an adequate reduction in pain and RFD is not immediately necessary.

N.2.1.2 Population

23 The population in the model is people with low back pain and symptoms suggestive of facet joint
24 origin that has not resolved despite non-invasive management. The population reflects the RCTs
25 identified in clinical review which is informing the clinical data, therefore it consists of people that
26 have failed conservative treatment (non-invasive interventions) and whose mean pain score is more
27 than 4. The model starts at the referral point, therefore people meeting these criteria would be
28 referred to a person who will assess for eligibility.

N.2.1.3 Time horizon, perspective, discount rates used

30 The time horizon reflects the duration of the effect of the intervention, taking into account the
31 duration of the diagnostic block and the duration of the RFD, which is assumed to be conducted only
32 once in the base case. Therefore in the deterministic base case a time horizon of 28 months was
33 implemented, while in the probabilistic analysis this is linked to the duration of the effect for each
34 simulation. In a sensitivity analysis where a repeat procedure is included, the time horizon is
35 extended to incorporate the duration of the second procedure too. Therefore in this scenario the
36 time horizon is extended to 52 months in the deterministic analysis.

37 As mortality will not be impacted by interventions a lifetime horizon was not deemed necessary.
38 Once the effect of the intervention has worn off any further costs and health effects will be equal in
39 both arms meaning expanding the time horizon will not affect the results.

40 A UK NHS/PSS perspective will be taken in line with the NICE reference case for clinical guidelines.
41 The analysis will follow the standard assumptions of the reference case including discounting at 3.5%
42 for costs and health effects, and incremental analysis is conducted. A sensitivity analysis using a
43 discount rate 1.5% for costs health benefits is conducted.

N.2.4.4 Deviations from NICE reference case

45 Health-related quality of life (HRQoL) data was not available directly from the clinical evidence;
46 therefore EQ-5D had to be estimated by mapping from the pain score outcome. A mapping algorithm
47 was found in a published study from the US where pain scores were mapped to EQ-5D using a US
48 tariff instead of UK tariff.

N.2.2 Approach to modelling

50 In order to take into account natural mortality and a possible repetition of RFD, a Markov model was
51 developed. In the RFD arm, people are first given a diagnostic block; if this is negative the individual
52 goes to the usual care arm; if this is positive, individuals can have the following possibilities:
53 A. prolonged response to the block and RFD is delayed
54 B. no prolonged response and they are offered RFD directly

55 In both cases, after a positive block individuals can also choose to decline RFD. If the RFD is declined,
56 in scenario A they move to the usual care arm after the effect of the block wears off, while in
57 scenario B they move to the usual care arm immediately. In the base case RFD is performed only
58 once, either with or without an initial prolonged response with diagnostic block. In a sensitivity
59 analysis, RFD is repeated after the effect of the first RFD wears off.

60 Based on the data available from the clinical review conducted for this question, the treatment effect
61 incorporated is pain score; health-related quality of life (HRQoL) is then attached to pain scores using
62 a mapping study (see section N.2.3.6). Adverse events will not be considered as the only reported
63 adverse event in the RCTs was immediate pain from the intervention, which was considered
64 negligible and difficult to quantify.

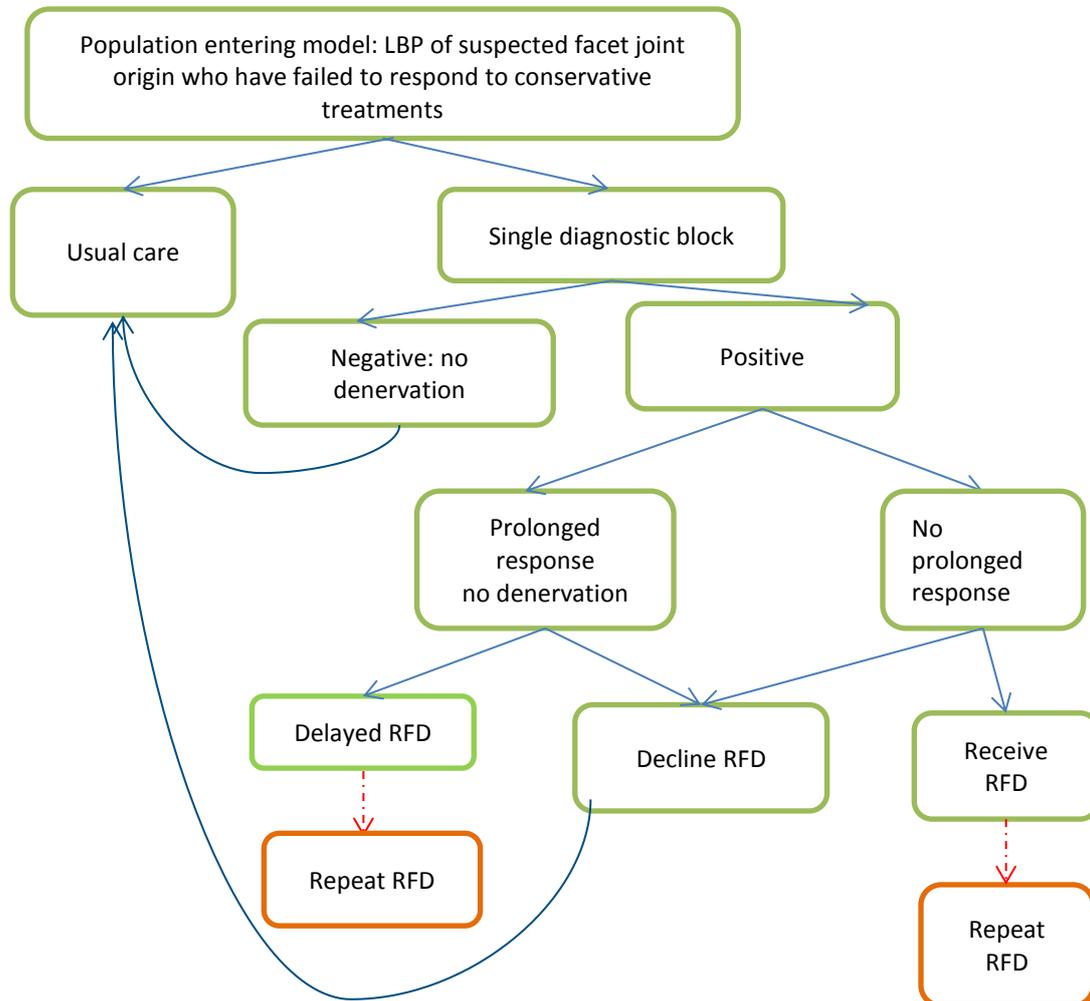
65 The approach we adopted for estimating the pain score reflects the fact that in the model RFD is
66 compared to usual care while in the clinical review the comparator was sham. In an economic model
67 this would not be the ideal comparator as it would not be the alternative in real life and also sham
68 would be still associated with the same costs as the intervention. Therefore in the base case we
69 assumed that individuals in the usual care arm have no improvement from the baseline pain score
70 observed in the RFD arm of the included RCTs. This assumption is varied in a sensitivity analysis
71 around the pain score outcome, where the score observed in the sham arm of the RCTs is used for
72 the usual care arm in the model.

N.2.2.3 Model structure

74 The overall model structure is explained in **Figure 1386**. **Figure 1387** shows the initial part of the
75 model: after the decision node individuals in the usual care arm enter a Markov model; individuals in
76 the RFD arm will go through some initial chance nodes which define the proportion of patients
77 having a positive diagnostic block (p_1), those having a prolonged response after an initial positive
78 block (p_2), those undergoing initial RFD ($1-p_3$) and those who decline RFD (p_3). They will then enter
79 the appropriate Markov model (usual care, prolonged response to diagnostic block, or RFD). All the
80 Markov models have a one month cycle length and the same time horizon defined as the maximum
81 duration of effect.

82

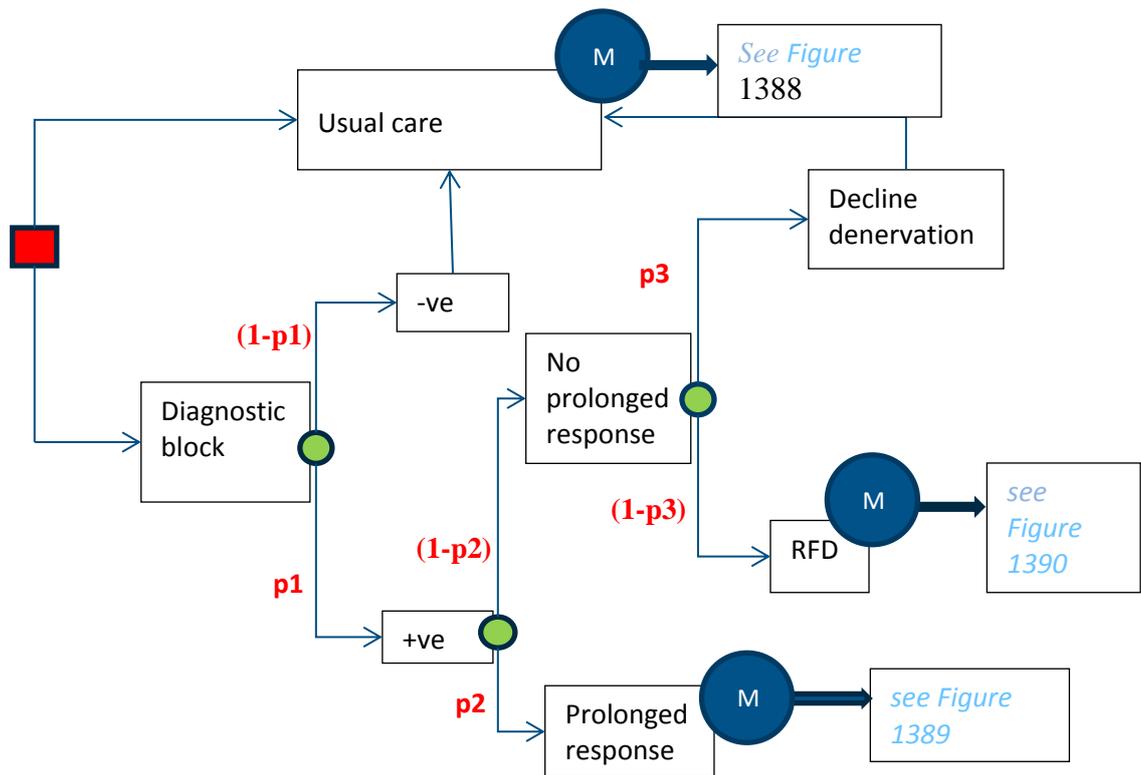
83 **Figure 1386 - overall model structure**



84

85 The boxes in orange represent those options included only in a sensitivity analysis.

86 **Figure 1387 - Initial part of the economic model**



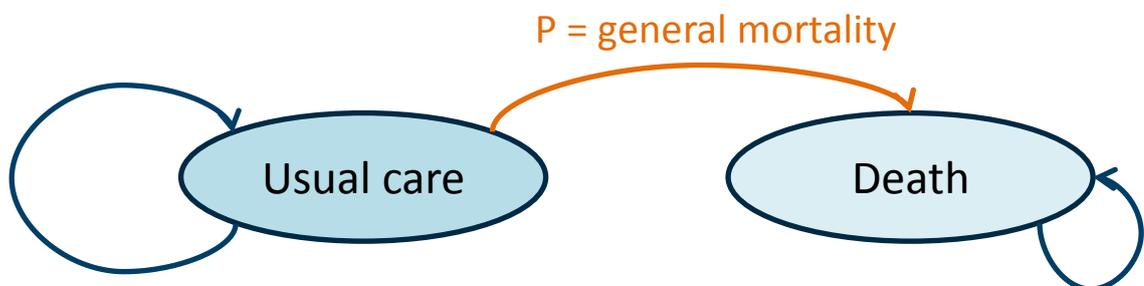
87

88 The red square represents the decision node; the green circle represents the chance node.

89 p_1 , p_2 , and p_3 represent the probabilities following a chance node, respectively the probability of a
 90 positive diagnostic block, of a prolonged response with a positive diagnostic block and of patients
 91 declining denervation. Boxes with the blue M circle represent those points where Markov states
 92 were initiated.

93 There are three Markov models embedded in the model: one to represent the usual care arm (**Figure**
 94 **1388**), one to represent a prolonged response to diagnostic block (**Figure 1389**), and finally one
 95 representing RFD (**Figure 1390**).

96 **Figure 1388 - Markov model - usual care**

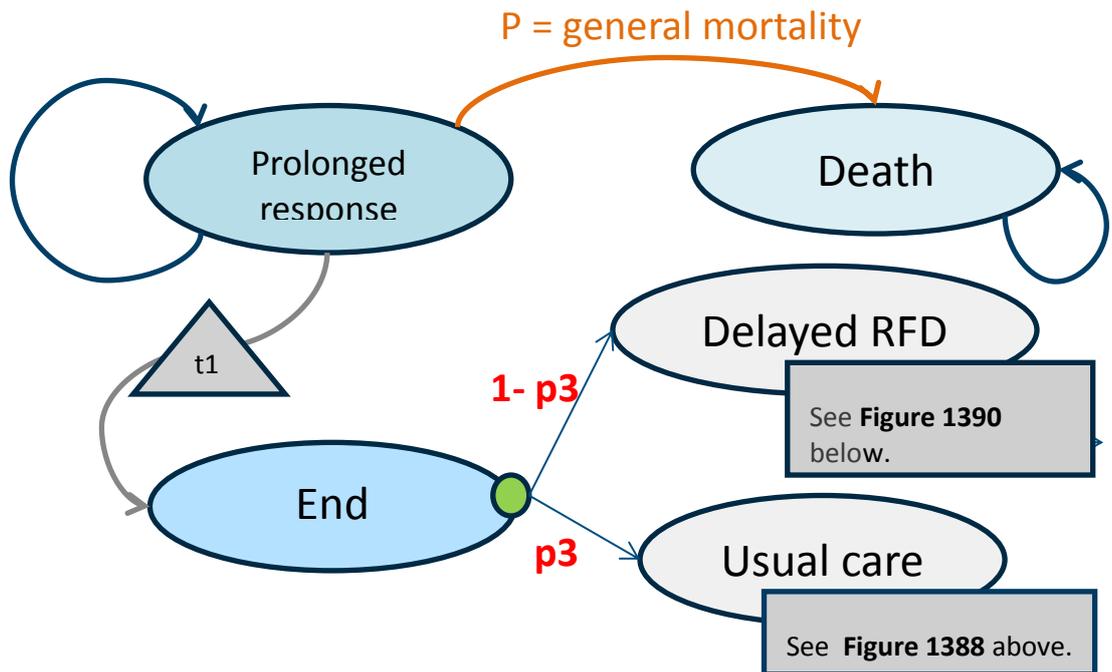


97

98 In the usual care arm people can only remain in that health state or transit to the death state.

99

100 **Figure 1389 - Markov model - Prolonged response**

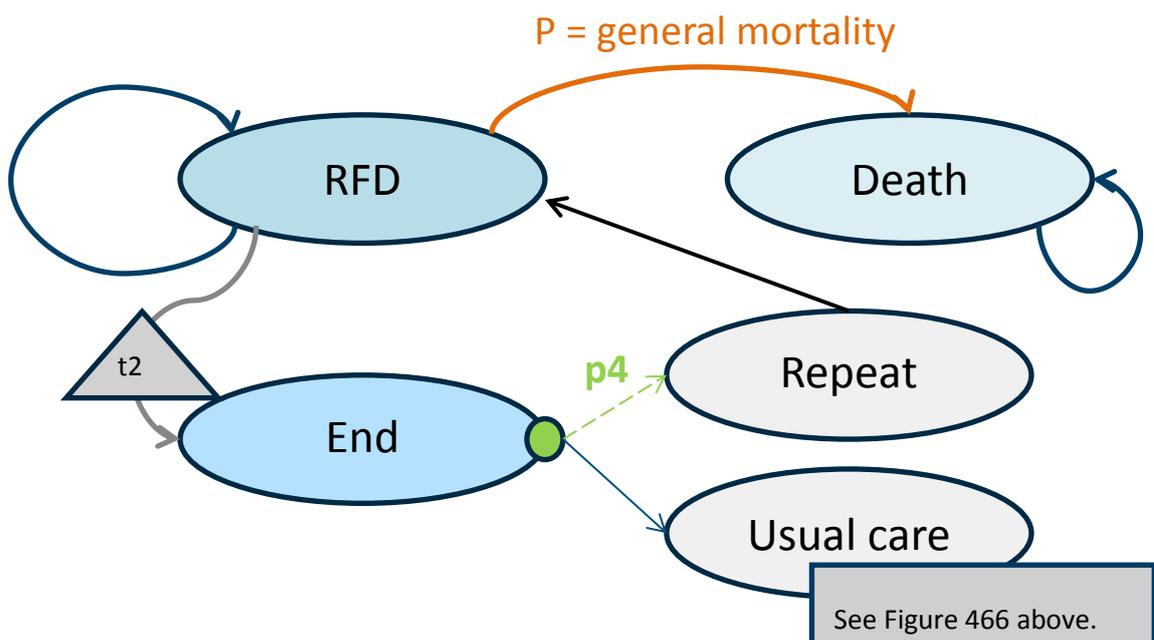


101

102

103 People either transit to the death state or remain in the prolonged response state until the time t_1 ,
 104 which corresponds to the duration of the response to a prolonged response to nerve block. After the
 105 end of response, some patients will have RFD whilst some will still choose to decline the surgery. This
 106 is represented with probability p_3 . If the individual continues to have the surgery then they move to
 107 the RFD state, detailed in **Figure 1390** below.

108 **Figure 1390 - Denervation part of the model**



109

110 People either transit to the death state or remain in the RFD state until the time **t2**, which
 111 corresponds to the duration of the response to RFD. After the end of response, in the base case
 112 people transit to the usual care state, while in a sensitivity analysis some patients will have a repeat
 113 RFD, according to probability p4, and in this case the outcomes of the initial procedure will be used.

114 Each health state will have utilities attached according to the pain score achieved with the strategy
 115 characterizing the health state (see N.2.3.4). Costs used in the model are only one-off costs and
 116 therefore are attached to events/procedures rather than to health states (see N.2.3.7).

N.2.272 Uncertainty

118 The model was built probabilistically to take account of the uncertainty around input parameter
 119 point estimates. A probability distribution was defined for each model input parameter. When the
 120 model was run, a value for each input was randomly selected simultaneously from its respective
 121 probability distribution; mean costs and mean QALYs were calculated using these values. The model
 122 was run repeatedly – 10,000 times for the base case – and results were summarised.

123 The way in which distributions are defined reflects the nature of the data, so for example utilities
 124 were given a beta distribution, which is bounded by 0 and 1, reflecting that a quality of life weighting
 125 will not be outside this range. All of the variables that were probabilistic in the model and their
 126 distributional parameters are detailed in **Table 21** and in the relevant input summary tables in
 127 Section N.2.3.1. Probability distributions in the analysis were parameterised using error estimates
 128 from data sources.

129 **Table 21: Description of the type and properties of distributions used in the probabilistic**
 130 **sensitivity analysis**

Parameter	Type of distribution	Properties of distribution
Probabilities	Beta	Bounded between 0 and 1. As the sample size and the number of events were specified alpha and Beta values were calculated as follows: Alpha = (number of patients hospitalised) Beta = (Number of patients) – (number of patients hospitalised)
Probabilities based on expert opinion	Beta	Derived from a mean and SE assuming the SE is 20 % of the mean Alpha = $\text{mean}^2 \times [(1-\text{mean})/\text{SE}^2] - \text{mean}$ Beta = $\text{Alpha} \times [(1-\text{mean})/\text{mean}]$
Utilities Mean pain scores (adjusted to fit on a scale from 0 to 1)	Beta	Bounded between 0 and 1. Derived from mean and its standard error, using the method of moments, or assuming the SE is 20% of the mean. Alpha and Beta values were calculated as follows: Alpha = $\text{mean}^2 \times [(1-\text{mean})/\text{SE}^2] - \text{mean}$ Beta = $\text{Alpha} \times [(1-\text{mean})/\text{mean}]$
Utilities decrements NHS Reference Costs Duration of effectiveness	Gamma	Bounded at 0, positively skewed. Derived from mean and its standard error. Alpha and Lambda values were calculated as follows: Alpha = $(\text{mean}/\text{SE})^2$ Beta = $\text{mean}/(\text{SE}^2)$
Difference in pain score	Lognormal	Where appropriate, the lognormal distribution may provide a better fit than the gamma distribution for costs. The natural log of the mean was calculated as follows:

Parameter	Type of distribution	Properties of distribution
		Mean = $\ln(\text{mean})$ SE = $(\ln(\text{UpperCI}) - \ln(\text{lowerCI})) / (1.96 * 2)$

131

132 The following variables were left deterministic (that is, they were not varied in the probabilistic
 133 analysis):

- 134 • the cost-effectiveness threshold (which was deemed to be fixed by NICE),
- 135 • the resource, including time and cost of staff, required to implement each strategy (assumed to
 136 be fixed according to national pay scales and programme content)

137 In addition, various deterministic sensitivity analyses were undertaken to test the robustness of
 138 model assumptions. In these, one or more inputs were changed and the analysis rerun to evaluate
 139 the impact on results and whether conclusions on which intervention should be recommended
 140 would change.

N.2.13 Model inputs

N.2.13.1 Summary table of model inputs

143 Model inputs were based on clinical evidence identified in the systematic review undertaken for the
 144 guideline, supplemented by additional data sources as required. Model inputs were validated with
 145 clinical members of the GDG. A summary of the model inputs used in the base-case (primary)
 146 analysis is provided in Table 22 below. More details about sources, calculations and rationale for
 147 selection can be found in the sections following this summary table.

148 **Table 22: Summary of base-case model inputs**

Input	Point estimate	Probability distribution and parameters	Source
Probabilities			
Probability of a positive diagnostic block	69%	Beta $\alpha = 261 \quad \beta = 115$	Nath 2008 ¹⁶¹⁴
Probability of declining RFD after a positive diagnostic block	10%	Beta $\alpha = 22.4 \quad \beta = 201.6$	GDG opinion
Probability of a prolonged response to diagnostic block	15%	Beta $\alpha = 21.1 \quad \beta = 119.6$	GDG opinion
Proportion of patients repeating RFD after the effect of the first RFD wears off	10%	Beta $\alpha = 22.4 \quad \beta = 201.6$	GDG opinion
Effectiveness			
Pain score – prolonged diagnostic block (base case)	Same as RFD		Assumption
Pain score – usual care (base case)	5.7	Beta $\alpha = 10.18 \quad \beta = 7.68$ (multiplied by 10)	Pain score from weighted average of baseline score in the RFD arms of the included

Input	Point estimate	Probability distribution and parameters	Source
			RCTs (Gallagher 1994, Leclaire 2001, Tekin 2007, Van Kleef 1999, Nath 2008)
Pain score - RFD (base case)	3.7	Beta $\alpha = 15.38$ $\beta = 26.188$ (multiplied by 10)	Pain score from weighted average of score at the longest follow up in the RFD arms of the included RCTs (Gallagher 1994, Leclaire 2001, Tekin 2007, Van Kleef 1999, Nath 2008)
Pain score – RFD (without Leclaire)	3.4	Beta $\alpha = 16.16$ $\beta = 31.37$ (multiplied by 10)	
Pain score – usual care (without Leclaire)	5.9	Beta $\alpha = 9.66$ $\beta = 6.713$ (multiplied by 10)	
Pain score – usual care (sensitivity analysis)	4.8	Beta $\alpha = 12.52$ $\beta = 13.563$ (multiplied by 10)	Pain score at baseline for the placebo arm (Gallagher 1994, Leclaire 2001, Tekin 2007, Van Kleef 1999, Nath 2008)
Mean difference in change from baseline between RFD and placebo (within 4 months)	1.83	Lognormal $\ln(\text{mean})=0.59$ $SE = 0.169$	Gallagher 1994, Leclaire 2001, Tekin 2007, Van Kleef 1999
Mean difference in change from baseline between RFD and placebo (after 4 months)	1.57	Lognormal $\ln(\text{mean})=0.4281$ $SE = 0.2142$	Gallagher 1994, Tekin 2007, Nath 2008
Duration of pain relief with a prolonged diagnostic block	4 months	Gamma $\alpha = 61.51$ $\lambda = 15.38$	GDG opinion
Duration of pain relief with RFD	24 months	Gamma $\alpha = 61.31$ $\lambda = 2.555$	GDG opinion
Quality of life data			
See Table 26	Varies according to score		Mapping from pain score to EQ5D – based on Mueller et al. 2013 ¹⁵⁹¹
Costs			
Unit cost - initial appointment	£168	Gamma $\alpha = 5.583$ $\lambda = 0.033$	NHS Reference Cost 2013/14 - consultant-led, first non-admitted face to face, Service: pain management
Unit cost - diagnostic block procedure	£546	Gamma $\alpha = 5.176$ $\lambda = 0.01$	NHS Reference Cost 2013/14 - HRG code

Input	Point estimate	Probability distribution and parameters	Source
			AB05Z - intermediate pain procedure – day case
Unit cost - follow up visit	£121	Gamma $\alpha=3.689 \lambda=0.0305$	NHS Reference Cost 2013/14 – Consultant or non-consultant-led outpatient appointment, service: pain management
Unit cost - RFD procedure	£618	Gamma $\alpha=5.418 \lambda=0.0088$	NHS Reference Cost 2013/14 – HRG code AB08Z - pain radiofrequency treatments – day case
Cost of usual care per year	£0	None	Assumption – cost of intervention calculated as an incremental compared to usual care so its cost does not influence the incremental analysis
Total cost for patients undergoing RFD the first time with no prolonged response to the diagnostic block (based on unit costs described below)	£1,574	None – function of unit costs	Cost initial appointment + Cost block procedure + Cost follow up visit + Cost RFD procedure + Cost follow up visit
Total cost for patients undergoing RFD the first time with a prolonged response to the diagnostic block (based on unit costs described below)	£1,742	None – function of unit costs	Cost initial appointment + Cost block procedure + Cost follow up visit + Cost initial appointment + Cost RFD procedure + Cost follow up visit
Cost of repeating RFD (based on unit costs described below)	£907	None – function of unit costs	Cost initial appointment + Cost RFD procedure + Cost follow up visit
Other model settings			
Initial age of individuals in the model	52	None	Weighted average from the RFD arms of the included RCTs (Gallagher 1994, Leclaire 2001, Tekin 2007, Van Kleef 1999, Nath 2008)
Proportion male/female	35/65	None	Weighted average from the RFD arms of the included RCTs (Gallagher 1994, Leclaire 2001, Tekin 2007, Van Kleef

Input	Point estimate	Probability distribution and parameters	Source
			1999, Nath 2008)
Time horizon - base case	28 months	None	Calculated as: duration of pain relief with a prolonged diagnostic block + duration of pain relief with RFD
Discount costs	3.5%	None	NICE Reference Case
Discount effects	3.5%	None	NICE Reference Case

149

N.2.502 Initial cohort settings

151 The initial age (52 years) and the proportion male/female (35/65) were obtained from the weighted
 152 average of the RFD arm in the RCTs included in the meta-analysis conducted for this question.

153 These data only influences the baseline mortality which was the same as for the general UK
 154 population reported in the National Life Tables for the years 2011-2013.{ONS2013}

N.2.553 Probability data

156 Probability of a positive diagnostic block was reported in three of the included RCTs.

157 In the study by Gallagher et al (1994)⁷⁴⁶ out of the 60 patients enrolled in the study, 19 (31.67%) had
 158 a negative response to the diagnostic block, 30 (50%) had a positive response and 11 (18.33%) had an
 159 equivocal response. This was not ideal as in our model we are considering only a dichotomous
 160 outcome (either positive or negative block).

161 Also the study by Leclaire et al (2001)¹²⁸⁸ reported how many patients had a positive diagnostic block,
 162 however the GDG did not believe this figure (92%) was realistic and it was not used to inform this
 163 parameter. For the same reason, in a sensitivity analysis this study was excluded from the meta-
 164 analysis informing the effectiveness data as in the study there were probably too many false
 165 positives to diagnostic block. Therefore also people not eligible for RFD received this intervention,
 166 making its effectiveness appear worse than what it would be in reality.

167 In the study by Nath et al (2008)¹⁶¹⁴ out of 376 patients enrolled, 115 (31%) had a negative block,
 168 while 261 (69%) had a positive block. Positive diagnostic block was defined as 80% relief of pain. The
 169 GDG considered these estimates reasonable and also considering the larger sample size of this study
 170 it was selected to inform this parameter. However a sensitivity analysis will also be conducted on
 171 these values.

172 All the other probability data in the model (ie probability of declining denervation, probability of a
 173 prolonged response after a diagnostic block, probability of repeating RFD after an initial one) were
 174 based on GDG expert opinion.

N.2.554 Effectiveness data

176 Change in pain score measured on the Visual Analogue Scale (VAS) was the intermediate outcome
 177 obtained from the systematic review of clinical evidence conducted for the guideline. In this review
 178 RFD was compared to sham and the change in pain score was estimated for both at follow up.
 179 However in the economic model RFD was compared to usual care, therefore the placebo effect
 180 which could be influencing the outcome in the sham arm of the RCTs should be removed from the
 181 effectiveness of the usual care arm. To do this, the pain score in the usual care intervention was

182 assumed to be the same as the weighted pain score at baseline in the RFD arm of the RCTs included
 183 in the meta-analysis, as patients in the usual care arm do not receive any intervention, while the pain
 184 score after patients receive RFD was the same as that observed at follow-up in the RFD arm of the
 185 same RCTs (weighted average).

186 We realise that using the baseline pain score in the usual care intervention would overestimate the
 187 effectiveness of RFD as in reality some patients would also have some spontaneous improvement in
 188 pain score over time. For this reason, the base case assumption was varied in a sensitivity analysis
 189 where the effectiveness from the sham arm of the RCTs at follow up was used to estimate the
 190 effectiveness of usual care and the incremental change with the RFD arm was used to estimate the
 191 intervention effectiveness. There is the possibility of false positive results from the diagnostic block.
 192 This is however taken into account in the mean reduction of pain score in the RFD arm, which would
 193 be greater if false positives were minimised.

194 Another assumption is that pain score associated with a prolonged response to diagnostic block is
 195 equal to the score with RFD.

196 The studies used to estimate the pain score data and the final scores are reported in **Table 23** below;
 197 to note there was no significant difference between the mean values and the mean weighted values.

198 **Table 23: Base case pain score data**

Studies included in the meta-analysis			Usual care		RFD	
	N	Weighting value	Mean baseline	Weighted baseline	Mean follow up	Weighted follow up
Gallagher 1994	18	0.167	5.8	0.97	4.4	0.73
Leclaire 2001	35	0.324	5.19	1.68	4.4	1.43
Tekin 2007	20	0.185	6.5	1.20	2.4	0.44
Van Kleef 1999	15	0.139	5.2	0.72	2.83	0.39
Nath 2008	20	0.185	5.98	1.11	3.88	0.72
TOTAL			5.7	5.7	3.6	3.7

199

200 In the base case the pain score for usual care was 5.7 as estimated at baseline while for RFD was 3.7
 201 as measured at the latest study follow-up.

202 In the sensitivity analysis using the sham data, we estimated the pain score for the usual care arm as
 203 the follow up score in the sham arm and this is reported in **Table 24** below.

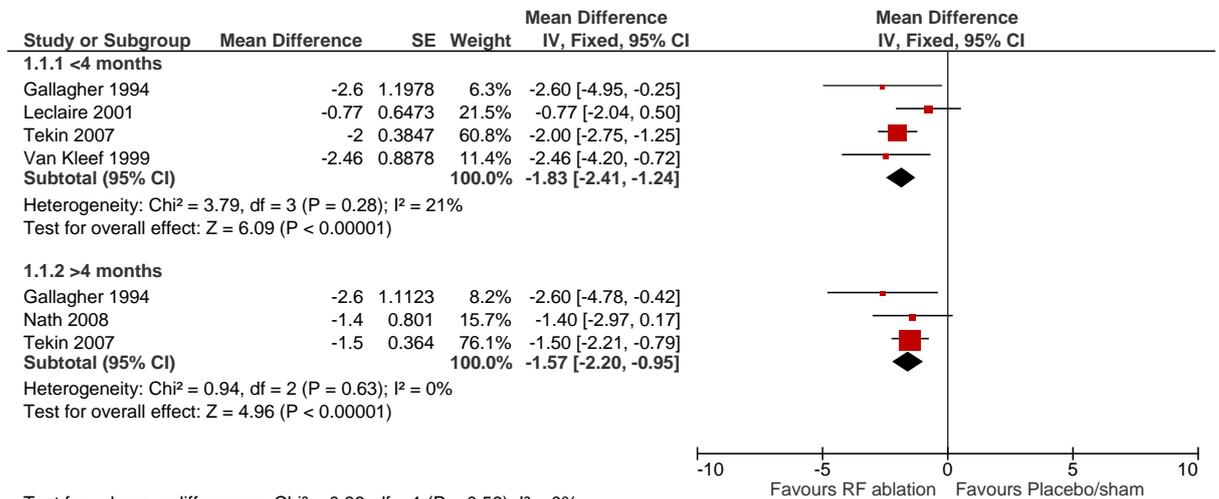
204 **Table 24: Sensitivity analysis - pain score data from sham arm**

Studies included in the meta-analysis			Sham/usual care	
	N	Weighting value	Mean at follow up	Weighted mean at follow up
Gallagher 1994	12	0.121212	7.0	0.8
Leclaire 2001	31	0.313131	5.2	1.6
Tekin 2007	20	0.20202	3.9	0.8
Van Kleef 1999	16	0.161616	4.77	0.8
Nath 2008	20	0.20202	3.68	0.7
TOTAL			4.9	4.8

205 We then applied the mean difference of RFD vs sham obtained from our meta-analysis (see Chapter
 206 23.3 of the Full Guideline and **Figure 1391** below), which was -1.83 at 4 months and -1.57 after 4
 207 months.

208

209 **Figure 1391 - Pain (VAS 0 -10) from our meta-analysis**



210

211 This gave a mean pain score of 2.97 (within 4 months) and 3.23 (after 4 months) in the RFD
 212 intervention.

213 In a second sensitivity analysis we excluded the study by Leclaire et al (2001) from the meta-analysis
 214 as in this study a very high proportion of participants were categorised as having a positive diagnostic
 215 block, which could be due to a less strict definition of positive diagnostic block and could lead to a
 216 high number of false positives (ie people receiving RFD who could not actually benefit from it) and a
 217 consequently smaller effect size of the intervention. The pain score calculated when this study was
 218 taken out is reported in **Table 25** below.

219 **Table 25: Sensitivity analysis - pain score data excluding Leclaire 2001**

Studies included in the meta-analysis			Usual care		RFD	
	N	Weighting value	Mean baseline	Weighted baseline	Mean follow up	Weighted follow up
Gallagher 1994	18	0.247	5.8	1.43	4.4	1.08
Tekin 2007	20	0.274	6.5	1.78	2.4	0.66
Van Kleef 1999	15	0.205	5.2	1.07	2.83	0.58
Nath 2008	20	0.274	5.98	1.64	3.88	1.06
TOTAL			5.9	5.9	3.4	3.4

220

221 When this study was excluded, the difference in pain score between baseline and after intervention
 222 was larger than in the base case.

N.2.35 Duration of effectiveness

224 No data were found from the included RCTs regarding the duration of effectiveness (change in pain
 225 score) observed with either RFD or the prolonged diagnostic block. These data were based on GDG
 226 assumptions and were varied in a sensitivity analysis.

N.2376 Utilities

228 No direct data estimating quality of life related to the intervention were available. One study
 229 reported SF-36 data however this was the study by Van Wijk et al. 2005²²¹⁸ which used an intra-
 230 articular joint injection as opposed to a true diagnostic block. As a result the GDG felt that this study
 231 was not discriminating which patients may benefit from RFD and therefore the effect size is likely to
 232 be reduced. Furthermore this study did not report fully all 8 domains for SF-36.

233 A quality of life search was conducted to help identify any relevant mapping studies that may allow
 234 low back pain outcomes to be mapped to EQ-5D. From this search the following potentially relevant
 235 papers were identified:

- 236 • Rundell et al 2014:³⁴ mapping of RMDQ to EQ-5D. An algorithm is provided. Authors highlight
 237 concerns with generalizability to other populations. This study is not relevant as the studies for
 238 radiofrequency denervation reported no difference for RMDQ.
- 239 • Khan et al. 2014:¹¹⁵⁴ mapping RMDQ to EQ-5D. An algorithm is available. This study is not relevant
 240 as the studies for radiofrequency denervation reported no difference for RMDQ.
- 241 • Carreon et al. 2013:³⁶⁴ mapping of the following three outcomes ODI, back pain (NRS) and leg pain
 242 (NRS) together to generate EQ-5D. Although a mapping algorithm is provided by the study, the
 243 authors conclude that this mapping cannot be accurately done. In addition, this study is not
 244 relevant as the studies for radiofrequency denervation reported no difference for ODI and leg
 245 pain was not an outcome we are looking to map.
- 246 • Mueller et al. 2013:¹⁵⁹¹ US study looking at correlation between EQ-5D and other individual health
 247 outcomes including ODI, leg pain NRS and back pain NRS in patients with degenerative lumbar
 248 spine pathology. Of note this study uses the US EQ-5D tariff. Furthermore the study has not
 249 conducted any regression analyses to adjust for baseline characteristics.

250 No studies were identified which attributed EQ-5D utility estimates for responder and non-
 251 responders. Therefore it is not possible to use the dichotomous responder analysis outcome from the
 252 clinical review or to dichotomise continuous outcomes from the clinical review into ‘responders’ and
 253 ‘non-responders’ to estimate QALYs.

254 We decided to use the mapping study by Mueller et al. (2013)¹⁵⁹¹ which estimated the EQ5D scores
 255 reported in the table below together with the sample size in each back pain score group used to
 256 estimate the EQ-5D scores.

257 **Table 26 - estimated EQ5D scores based on back pain scores**

Back pain score	N	EQ-5D score (SD)
0	293	0.838 (0.201)
1	386	0.817 (0.147)
2	412	0.753 (0.141)
3	540	0.711 (0.155)
4	572	0.667 (0.167)
5	931	0.630 (0.183)
6	1035	0.586 (0.198)
7	1438	0.513 (0.209)
8	1527	0.406 (0.186)
9	727	0.325 (0.162)
10	524	0.314 (0.878)

258

259 This study has some important limitations: it uses the US EQ-5D tariff (as opposed to the UK tariff)
 260 and no regression analyses were conducted to adjust for baseline characteristics.

261 Values were inserted in a table in TreeAge and a linear extrapolation was selected to obtain values
 262 between integer pain scores. This resulted in the EQ5D values associated with the different pain
 263 scores used in the model as reported in **Table 27**.

264 **Table 27: Utility data attached to pain score data used in the model**

Analyses	Usual care		RFD	
	Pain score	Associated EQ-5D	Pain score	Associated EQ-5D
Base case	5.7	0.5992	3.6	0.6846
Sensitivity analysis – sham at follow-up	4.8	0.6374	2.97 (<4 m)	0.7123 (<4m)
			3.23 (>4 m)	0.7001 (>4m)
Sensitivity analysis – excluding Leclaire 2001	5.9	0.5904	3.4	0.6934

265 The utility score associated with a prolonged diagnostic block was the same as the one for the RFD
 266 intervention but this had a different duration.

267 In a sensitivity analysis where prolonged response to diagnostic block was assumed to reduce pain
 268 score to 4, the associated utility value was 0.667.

N.2.6.7 Resource use and costs

270 All the patients having a diagnostic block (every patient in the RFD arm) will incur the costs of the
 271 following event:

1. Initial outpatient appointment	£168	Based on a Consultant-led outpatient appointment, First Non-Admitted Face to Face Attendance, Service: Pain management (NHS reference costs 2013/2014)
2. Diagnostic block	£521	Based on HRG code: AB05Z Intermediate Pain Procedures (NHS reference costs 2013/2014)
3. Follow-up appointment (telephone/face-to-face)	£121	Based on non-Consultant-led outpatient appointment, Follow-up Non-Admitted Non-Face to Face Attendance, Service: Pain management / Consultant-led outpatient appointment, Follow-up Non-Admitted Face to Face Attendance, Service: Pain management (NHS reference costs 2013/2014)

272 After a positive block, if patients undergo the actual RFD they will incur these additional costs:

1. Radiofrequency denervation	£640	Based on HRG code: AB08Z - Pain Radiofrequency Treatments (NHS reference costs 2013/2014)
2. Follow-up appointment (telephone/face-to-face)	£121	Based on non-Consultant-led outpatient appointment, Follow-up Non-Admitted Non-Face to Face Attendance, Service: Pain management / Consultant-led outpatient appointment, Follow-up Non-Admitted Face to Face Attendance, Service: Pain management (NHS reference costs 2013/2014)

273 Patients who go for a denervation after an initial prolonged response of diagnostic block or after the
 274 initial RFD effectiveness has worn off will incur these additional costs:

1. Initial outpatient appointment	£168	Based on a Consultant-led outpatient appointment, First Non-Admitted Face to Face Attendance, Service: Pain management (NHS reference costs 2013/2014)
2. Radiofrequency	£640	Based on HRG code: AB08Z - Pain Radiofrequency Treatments (NHS reference costs 2013/2014)

denervation		reference costs 2013/2014)
3. Follow-up appointment (telephone/face-to-face)	£121	Based on non-Consultant-led outpatient appointment, Follow-up Non-Admitted Non-Face to Face Attendance, Service: Pain management / Consultant-led outpatient appointment, Follow-up Non-Admitted Face to Face Attendance, Service: Pain management (NHS reference costs 2013/2014)

275 Patients receiving usual care will not incur any additional costs compared to patients who have
 276 received a RFD or a prolonged response to diagnostic block. This is a very conservative assumption as
 277 in reality some evidence showed a more intense resource use in the usual care arm in terms of GP
 278 visits and medication. The cost of usual care will be varied in a sensitivity analysis.

N2294 Computations

280 The model was constructed in TreeAge 2015 and was evaluated by cohort simulation. Time
 281 dependency was built in by cross referencing the cohorts age as a respective risk factor for mortality.

282 A half-cycle correction was not applied as the cycle length was considered already quite short. Life
 283 years for the cohort were computed each cycle. To calculate QALYs for each cycle, Q(t), the time
 284 spent in the alive state of the model (1 month or 0.08 years) was weighted by a utility value that is
 285 dependent on the time spent in the model and the treatment effect. QALYs were then discounted to
 286 reflect time preference (discount rate 3.5%). QALYs during the first cycle were not discounted. The
 287 total discounted QALYs were the sum of the discounted QALYs per cycle.

288 Costs per cycle, C(t), were calculated in the same way as QALYs. Costs were discounted to reflect
 289 time preference (discount rate 3.5%) in the same way as QALYs using the following formula:

290 Discount formula:

$$\text{Discounted total} = \frac{\text{Total}}{(1+r)^n}$$

Where:
 r=discount rate per annum
 n=time (years)

N2215 Sensitivity analyses

292 A series of sensitivity analyses were conducted to test the robustness of parameters and
 293 assumptions.

294 SA1 – Repeat denervation

295 In this sensitivity analysis, after the effect of the first RFD wears off patients receive another one.

296 SA2 - Pain score – sham

297 in this analysis, the pain score for the usual care arm is the same as the one reported in **Table 24** (4.8)
 298 and to estimate the pain score for the RFD intervention we applied the mean difference of RFD vs
 299 sham obtained from our meta-analysis (see Chapter 23 of the Full Guideline), which was -1.83 at 4
 300 months and -1.57 after 4 months. This gave a mean pain score of 2.97 (within 4 months) and 3.23
 301 (after 4 months) in the RFD intervention.

302 SA3 – Pain score – excluding Leclaire 2001

303 The pain scores for intervention and usual care were estimated excluding Leclaire 2001.¹²⁸⁸ Values
 304 are reported in **Table 25**.

305 **SA4 – Pain score diagnostic block 4 points**

306 A positive diagnostic block was assumed to be a bit less effective than RFD (pain score = 4).

307 **SA5 - Cost of referral to an interface clinic**

308 The cost of a referral appointment in a community interface clinic was added to the RFD arm of the
309 model. This cost is approximately 80% of the cost of a consultant-led first outpatient attendance in
310 hospital, that is £134.

311 **SA6 - Positive diagnostic block**

312 Threshold analysis on the probability of a positive diagnostic block.

313 **SA7 - Durations of effects of both RFD and block**

314 In a two-way sensitivity analysis the duration of pain relief in both diagnostic block and RFD were
315 decreased to 0 and 4 months respectively.

316 **SA8 – Proportion declining RFD**

317 Threshold analysis on the probability of declining RFD.

318 **SA9 – Proportion repeating RFD**

319 Threshold analysis on the proportion of patients repeating RFD within SA1.

320 **SA10 – Repeat denervation and duration of effect of RFD**

321 After the effect of the first RFD wears off patients receive another and the duration of effect of RFD is
322 varied in a threshold analysis.

323 **SA11 – 1.5% discounting for both costs and health benefits**

324 Costs and QALYs were discounted by 1.5%

NB25 Model validation

326 The model was developed in consultation with the GDG; model structure, inputs and results were
327 presented to and discussed with the GDG for clinical validation and interpretation.

328 The model was systematically checked by the health economist undertaking the analysis; this
329 included inputting null and extreme values and checking that results were plausible given inputs. The
330 model was peer reviewed by a second experienced health economist from the NCGC; this included
331 systematic checking of many of the model calculations.

NB27 Estimation of cost effectiveness

333 The widely used cost-effectiveness metric is the incremental cost-effectiveness ratio (ICER). This is
334 calculated by dividing the difference in costs associated with 2 alternatives by the difference in
335 QALYs. The decision rule then applied is that if the ICER falls below a given cost per QALY threshold
336 the result is considered to be cost effective. If both costs are lower and QALYs are higher the option
337 is said to dominate and an ICER is not calculated.

$$ICER = \frac{Costs(B) - Costs(A)}{QALYs(B) - QALYs(A)}$$

Where: Costs(A) = total costs for option A; QALYs(A) = total QALYs for option A

Cost-effective if:
 • ICER < Threshold

338 Results are also presented graphically where total costs and total QALYs for each strategy are shown.
 339 Comparisons not ruled out by dominance or extended dominance are joined by a line on the graph
 340 where the slope represents the incremental cost-effectiveness ratio.

NB218 Interpreting Results

342 This analysis will inform the question of whether radiofrequency denervation is cost-effective in
 343 people where symptoms indicate a facet joint cause.

344 NICE's report 'Social value judgements: principles for the development of NICE guidance'¹⁶¹⁶ sets out
 345 the principles that GDGs should consider when judging whether an intervention offers good value for
 346 money. In general, an intervention was considered to be cost effective if either of the following
 347 criteria applied (given that the estimate was considered plausible):

- 348 • The intervention dominated other relevant strategies (that is, it was both less costly in terms of
 349 resource use and more clinically effective compared with all the other relevant alternative
 350 strategies), or
- 351 • The intervention costs less than £20,000 per quality-adjusted life-year (QALY) gained compared
 352 with the next best strategy.

NB3 Results

NB341 Base case

355 The base case probabilistic results show that RFD is cost effective (**Table 28**).

356 **Table 28: Base case results – probabilistic analysis**

Strategy	Mean cost per patient	Incremental costs	Mean QALYs per patient	Incremental QALYs	ICER (£ per QALY gained)	Probability that strategy is most cost-effective [£20k per QALY]
Usual care	0		2.1402	0	0	30%
RFD	1282	1282	2.2549	0.1147	11,178	70%

357

358 Similar results were observed in the deterministic analysis reported in **Table 29**.

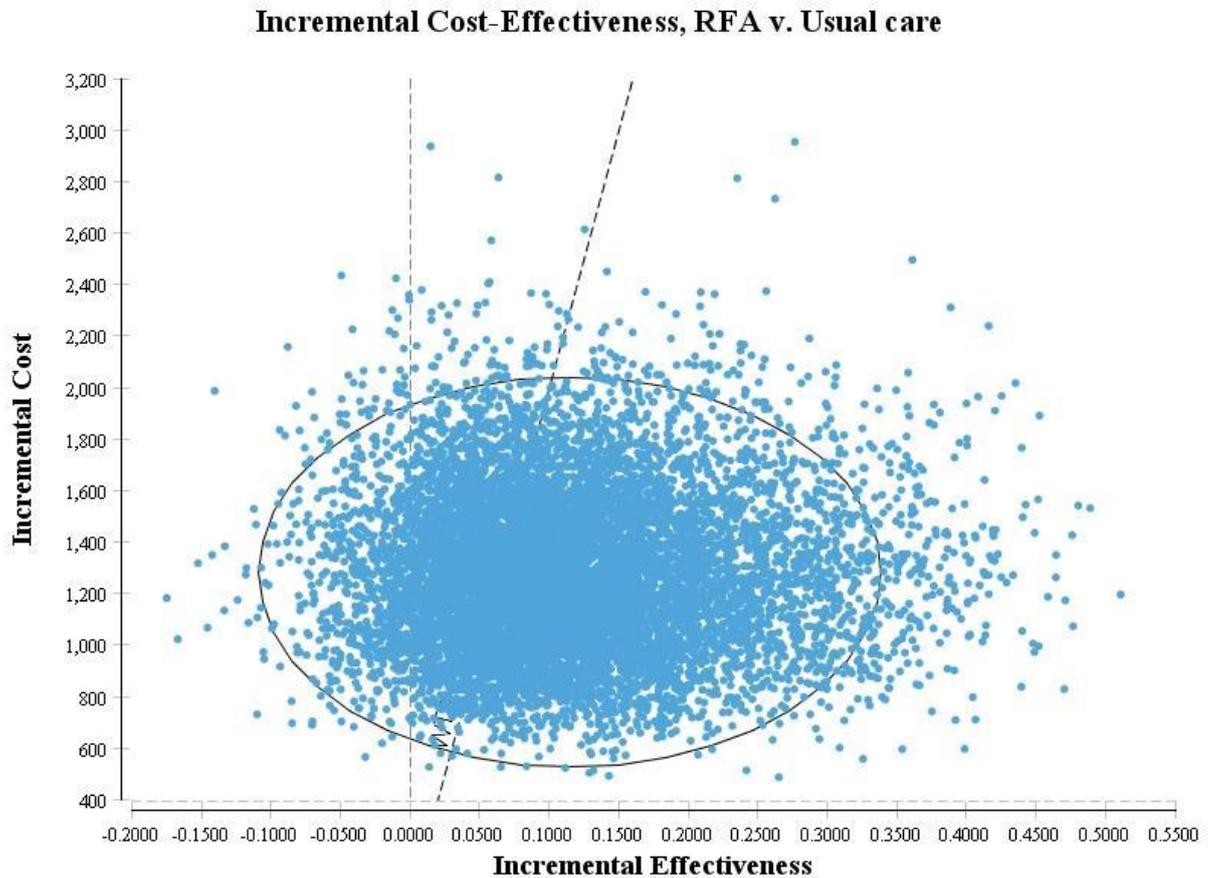
359 **Table 29: Base case results – deterministic analysis**

Strategy	Mean cost per patient	Incremental costs	Mean QALYs per patient	Incremental QALYs	ICER
Usual care	0		2.1704		
RFD	1,307	1,307	2.2662	0.0957	13,658

360

361

362 **Figure 1392 - scatterplot of incremental cost and effect of RFD vs usual care in 10,000 simulations,**
 363 **each one represented by a dot. The ellipse represents the 95% confidence interval while**
 364 **the dotted bold line represents the £20,000 per QALY threshold. 70% of the dots are**
 365 **plotted under this line as in these simulations RFD was more cost effective than usual**
 366 **care.**



367

NB32 Sensitivity analyses

369 A wide range of sensitivity analyses were undertaken in which key assumptions and parameters were
 370 varied. These are explained in N.2.5 and the main deterministic results are listed in **Table 30**.

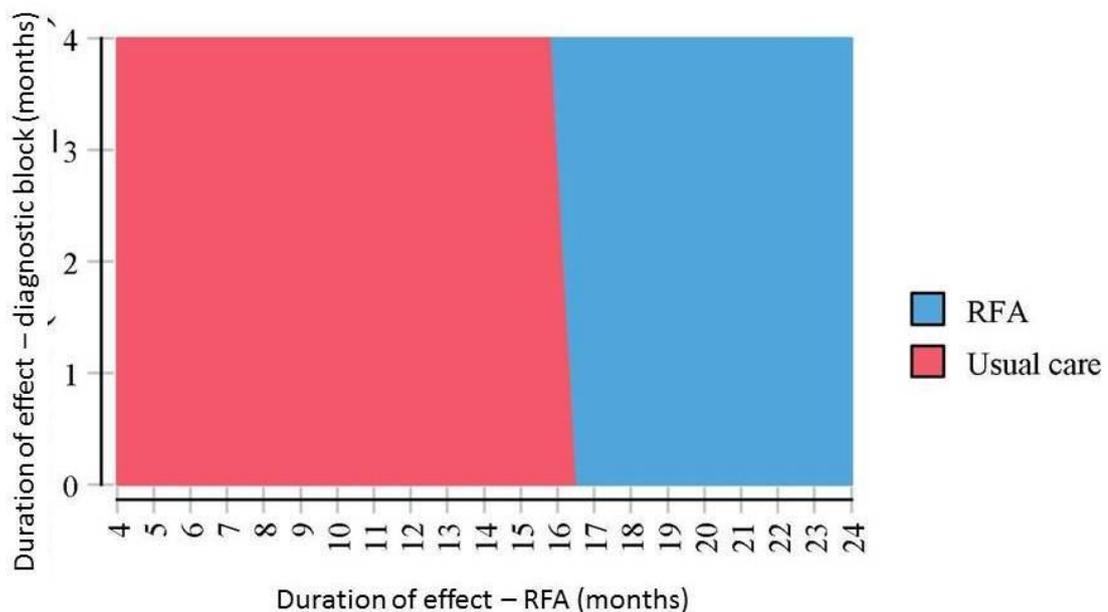
371 **Table 30: Results of sensitivity analyses SA1-SA9**

Sensitivity analysis	Result
SA1: Repeat denervation	ICER RFD vs usual care = £13,954
SA2: Pain score - sham	ICER RFD vs usual care = £16,896
SA3: Pain score – excluding Leclaire 2001	ICER RFD vs usual care = £10,741
SA4: Pain score diagnostic block 4 points	ICER RFD vs usual care = £13,722
SA5: Cost of referral to an interface clinic	ICER RFD vs usual care = £15,062
SA6: positive diagnostic block	RFD is cost effective if the probability of a positive diagnostic block is at least 40%
SA7: duration of effects of both RFD and block	See Figure 1393 – duration of diagnostic block effect does not have any impact, while usual care becomes cost effective when duration of RFD is less than 16 months

SA8: proportion declining RFD	RFD is cost effective if the probability of a declining RFD is less than 50%
SA9: proportion repeating RFD (+SA1)	RFD is always cost effective (ICER ranges from £13,658 per QALY when 0% of patients repeat RFD to £16,270 per QALY when 100% of patients repeat RFD)
SA10: Repeat denervation and duration of effect of RFD	Usual care becomes cost effective when duration of RFD is less than 16 months
SA11: 1.5% discounting for costs and health benefits	ICER RFD vs usual care = £13,388

372

373 **Figure 1393 - Two way sensitivity analysis on the duration of effect for both diagnostic block and**
 374 **RFD. The red-shaded area is where usual care is cost-effective; the blue area is where**
 375 **RFD is cost-effective.**



376

377

N4 Discussion

N4.1 Summary of results

380 The main results, both probabilistic and deterministic, show that RFD is cost effective in the model
 381 population. These results were also quite robust to changes to the inputs, especially on the
 382 effectiveness inputs.

N4.2 Limitations and interpretation

384 The model was built around some important assumptions such as the duration of pain relief after a
 385 prolonged response to diagnostic block and RFD.

386 There were also some deviations from the NICE reference case, such as the use of mapping functions
 387 to estimate EQ5D values from an intermediate outcome and the use of the USA EQ5D tariffs. The
 388 uncertainty around the EQ5D scores could not be captured in the probabilistic model as the software

389 did not allow us to link probabilistic value of the pain score to a distribution around the relevant
390 utility value, as these were looked up in a table linking pain scores to utilities.

391 Another important limitation of the model is the quality of the clinical evidence around the
392 effectiveness of RFD; these studies were low quality and their limitations are explained in Chapter
393 23.3 of the guideline. We also did not have data on RFD vs usual care and we had to assume people
394 in the usual care arm would maintain the initial pain score, while in reality there could be an
395 improvement over time. This was however addressed in a sensitivity analysis where data from the
396 placebo arm were used instead.

397 The GDG considered the various limitations of the model together with the main results and
398 concluded that although RFD is a cost effective intervention in the base case analysis and in various
399 sensitivity analyses, there is not enough confidence to make a firm recommendation for this
400 intervention. In addition, as the low back pain population is wide, there are concerns on the potential
401 cost impact of a firm recommendation if many people were eligible for the intervention.

N403 Generalisability to other populations or settings

403 The population in our model was suspected of having pain of facet joint origin; people with a
404 different type of pain would not be expected to benefit from RFD and therefore it would not be cost
405 effective for them. The model was based on clinical studies which included people who had baseline
406 pain levels of at least 4 on a visual analogue scale. RFD might not be cost effective for people with a
407 less severe pain score baseline.

N404 Comparisons with published studies

409 One economic study by van Wijk et al (2005) comparing RFD with sham lesion (intervention costs
410 only applied to the intervention arm) found that performing RFD costs on average £197 per patient,
411 which looks like an underestimate compared to the NHS Reference Cost data used in our analysis.
412 The clinical outcomes showed some benefit for the RFD arm with regards to health related quality of
413 life and the global perception of reduction in back pain and pain responder criteria. No incremental
414 analysis was conducted and it was not possible to conclude from this study whether RFD was cost-
415 effective compared to sham. Furthermore, this study had applicability and methodological issues as
416 Dutch resource use data (1996-1999) and unit costs (year not reported, assumed to be 2003) may
417 not reflect current NHS context and the time horizon was quite short (3 months).

N405 Conclusions

419 The GDG considered the various limitations of the model together with the main results and
420 concluded that although RFD is a cost effective intervention in the base case analysis and in various
421 sensitivity analyses, there is not enough confidence to make a firm recommendation for this
422 intervention. In addition, as the low back pain population is wide, there are concerns on the potential
423 cost impact of a firm recommendation if many people were eligible for the intervention

424

425 Appendix O: Research recommendations

021 Laser therapy

427 **Research question: What is the clinical and cost-effectiveness of laser therapy in the management**
428 **of low back pain and sciatica?**

429 **Why this is important:**

430 Laser therapy involves the non-invasive application of a single wavelength of light to the skin over
431 the painful area using a probe. There are various laser devices and probe configurations in clinical
432 use. The light is absorbed in the tissues and it is hypothesised that this results in local heating and
433 effects on local chemical activity and cellular behaviour. It is through those effects that laser therapy
434 is purported to have an anti-inflammatory effect and promote tissue repair.²³⁹²

435 Conflicting evidence was found comparing laser with sham and usual care for pain and disability
436 outcomes. While evidence of clinical benefit was observed in some comparisons for pain and
437 disability there were concerns with the quality and applicability of the evidence (see the LETR for
438 electrotherapies). There remains uncertainty regarding the efficacy and effectiveness of laser
439 therapy, though there is some promising evidence. There is therefore a need for high quality trials
440 into the effectiveness and cost effectiveness of laser therapy for low back pain with and without
441 sciatica.

442 **Criteria for selecting high-priority research recommendations:**

PICO question	Population: People with non-specific low back pain with or without sciatica Intervention(s): Laser therapy and usual care Comparison: Sham laser therapy and usual care Outcome(s): Pain, disability, quality of life, cost
Importance to patients or the population	If laser therapy offers clinically important benefits over sham laser therapy when added to care, at a reasonable cost threshold then it may be an important modality to enhance clinical outcome in this patient group.
Relevance to NICE guidance	This research will reduce the existing uncertainty regarding the effectiveness and cost-effectiveness of laser therapy and enable future guidelines to clearly recommend for or against the use of laser therapy.
Relevance to the NHS	A clear recommendation for or against laser therapy will offer clinicians clearer guidance on best care for low back pain. A recommendation for laser therapy is likely to require the purchase of new equipment and staff training.
National priorities	Low back pain comes under the long-term condition directorate in the UK.
Current evidence base	Conflicting evidence was found comparing laser with sham and usual care for pain and disability outcomes. While evidence of clinical benefit was observed in some comparisons for pain and disability there were concerns with the quality and applicability of the evidence (see the LETR for electrotherapies). There remains uncertainty regarding the efficacy and effectiveness of laser therapy, though there is some promising evidence. There is therefore a need for a conclusive study into the effectiveness and cost effectiveness of laser therapy for low back pain with and without sciatica.
Equality	The recommendation is unlikely to impact on equality issues.
Study design	Randomised controlled trial with corresponding economic analysis.
Feasibility	The trial is feasible and should be straightforward to carry out. There are challenges associated with the design of adequate sham controls for higher-intensity laser therapy that delivers a sensation of heating that will require

	specific consideration when designing the trial.
Other comments	Low intensity laser therapy is easy to design sham controls for since it delivers no sensation beyond the pressure of the probe.
Importance	<ul style="list-style-type: none"> • Medium: the research is relevant to the recommendations in the guideline, but the research recommendations are not key to future updates.

443

012 Benzodiazepenes

445 **Research question: What is the clinical and cost-effectiveness of benzodiazepines for the acute**
446 **management of non-specific low back pain?**

447 **Why this is important:**

448 Guidelines from many countries have advocated that muscle relaxants be considered for short-term
449 use in patients with low back pain when the paraspinal muscles are in spasm. The evidence for this
450 mainly comes from studies on medications that are not licenced for this use in the United Kingdom.
451 The 2009 NICE guideline makes the recommendation to consider prescribing diazepam as a muscle
452 relaxant in this scenario, but the evidence base to support this particular drug is extremely small.
453 Benzodiazepines are not without risk of harm even in the short-term. There is therefore a need to
454 determine whether diazepam is cost-effective in the management of acute low back pain.

455 **Criteria for selecting high-priority research recommendations:**

PICO question	<p>Population: Adults presenting with suspected non-specific low back pain of <= 6 weeks duration.</p> <p>It is important that the population be as representative as possible of people who present with acute low back pain in primary or urgent care settings. Exclusions to include serious spinal pathology, pregnancy, severe psychiatric illness, inability to complete research questionnaires, previous benzodiazepine dependence.</p> <p>Intervention(s): Diazepam, short-term usage up to 2 weeks duration Comparison: Placebo Outcome(s): Critical</p> <ul style="list-style-type: none"> • Health-related quality of life (for example, SF-12, SF-36 or EQ-5D). • Pain severity (for example, visual analogue scale [VAS] or numeric rating scale [NRS]). • Function measured by disability scores (for example, the Roland-Morris disability questionnaire or the Oswestry disability index) • Psychological distress (HADS, GHQ, BPI, BDI, STAI) <p>Important</p> <ul style="list-style-type: none"> • Responder criteria (pain and function) • Return to work • Adverse events: <ul style="list-style-type: none"> ○ Morbidity, including cognitive impairment ○ mortality <p>Healthcare utilisation (prescribing, investigations, hospitalisation or health professional visit)</p>
Importance to patients or the population	To determine whether diazepam is an appropriate medication to consider offering to the above population

Relevance to NICE guidance	To establish whether or not diazepam should be recommended or not in the NICE guideline on the management of acute low back.
Relevance to the NHS	Although diazepam is a relatively low cost medication it is associated with the potential for harm to patients.
National priorities	Low back pain comes under the long-term condition directorate in the UK.
Current evidence base	The NICE Low Back Pain Guideline (2015) identified a small number of trials involving tizanidine and single studies for baclofen, diazepam, cyclobenzaprine and orphenadrine. There was little or no information with respect to important outcomes such as function, distress and quality of life. There was conflicting evidence for the effectiveness of tizanidine for low back pain, with some showing benefit and some not. In addition there was evidence of adverse events occurring in people taking muscle relaxants.
Equality	N/A
Study design	Randomised controlled trial with corresponding economic analysis
Feasibility	Given that muscle relaxants are only recommended for short-term use any effect on the main outcomes should be apparent within a short time frame. Consideration should be given as how to recruit patients that is representative of the desired population described previously.
Other comments	It is important that the patients in both arms of the trial are adequately described using the CONSORT statement. The question is to whether diazepam adds any benefit to the usual care of patients with acute low back. Therefore the management given to both intervention and comparator groups should be optimal, in line with current best practice guidelines and the same apart from the use of diazepam.
Importance	<ul style="list-style-type: none"> High: the research is essential to inform future updates of key recommendations in the guideline.

0.3 Weak opioids

457 **Research question: What is the clinical and cost-effectiveness of codeine with or without**
458 **paracetamol for the acute management of non-specific low back pain?**

459 **Why this is important:**

460 Codeine, often in combination with paracetamol, is commonly prescribed in primary care to people
461 presenting with acute low back. This is often the case for people who are intolerant of NSAIDs or for
462 whom there are contra-indications to these medications. Whilst there is evidence that opioids are
463 not effective in chronic low back pain, there are relatively few studies that look at the acute low back
464 pain scenario that is commonly experienced in primary care. In addition it is not known whether the
465 addition of paracetamol to codeine has a synergistic effect in the treatment of back pain.

466 **Criteria for selecting high-priority research recommendations:**

PICO question	<p>Population:</p> <p>Adults presenting with suspected non-specific low back pain with or without sciatica of <= 6 weeks duration.</p> <p>It is important that the population be as representative as possible of people who present with acute low back pain in primary or urgent care settings.</p> <p>Exclusions to include serious spinal pathology, pregnancy, severe psychiatric illness, inability to complete research questionnaires, known allergy to or intolerance of codeine or paracetamol.</p> <p>Intervention(s): Codeine with or without paracetamol, short duration usage only.</p> <p>Comparison: Placebo</p> <p>Outcome(s):</p>
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	<p>Critical</p> <ul style="list-style-type: none"> • Health-related quality of life (for example, SF-12, SF-36 or EQ-5D). • Pain severity (for example, visual analogue scale [VAS] or numeric rating scale [NRS]). • Function measured by disability scores (for example, the Roland-Morris disability questionnaire or the Oswestry disability index) • Psychological distress (HADS, GHQ, BPI, BDI, STAI) <p>Important</p> <ul style="list-style-type: none"> • Responder criteria (pain and function) • Return to work • Adverse events: <ul style="list-style-type: none"> ○ Morbidity, including drowsiness and constipation ○ mortality <p>Healthcare utilisation (prescribing, investigations, hospitalisation or health professional visit)</p>
Importance to patients or the population	To determine whether codeine with or without paracetamol is an effective and cost-effective treatment for acute low back pain.
Relevance to NICE guidance	To establish whether or not codeine with or without paracetamol should be recommended or not in the NICE guideline for the management of acute low back.
Relevance to the NHS	Codeine with or without paracetamol is commonly prescribed in primary and is associated with the potential for harm to patients. Use in the acute scenario may lead to dependence in the long-term.
National priorities	Low back pain comes under the long-term condition directorate in the UK.
Current evidence base	The NICE Low Back Pain Guideline (2015) identified a small number of trials that looked at the use of opioids in acute low back pain. None of these examined the use of codeine with or without paracetamol.
Equality	N/A
Study design	Randomised controlled trial with corresponding economic analysis.
Feasibility	It is anticipated that given the research question that it is feasible to perform the trial within a relatively short time frame.
Other comments	It is important that the patients in both arms of the trial are adequately described using the CONSORT statement. The question is to whether codeine with or without paracetamol adds anything to the care of people with acute low back pain. Therefore the management given to both intervention and comparator groups should be optimal, in line with best practice guidelines and the same apart from the use of codeine with or without paracetamol.
Importance	<ul style="list-style-type: none"> • High: the research is essential to inform future updates of key recommendations in the guideline.

467

0.4 Long-term support

469 **Research question: What is the cost-effectiveness of providing long term support (>12 months) for**
470 **people with chronic, non-specific low back pain with or without sciatica, in reducing health care**
471 **utilization?**

472 **Why this is important:**

473 Chronic non-specific low back pain is a very common, potentially disabling, long-term health
474 condition and by definition not amenable to curative medical treatment. In the absence of effective

475 self-management strategies people with long-term conditions are likely to disengage from their
476 normal roles, becoming increasingly disabled and dependent on health and social care.

477 The Kings Fund 2013 long term conditions report cites evidence that multidisciplinary rehabilitation
478 programmes (MBR), in the form of self-management support, have been shown to reduce unplanned
479 hospital admissions for other long term conditions such as chronic obstructive pulmonary disease
480 and asthma and to improve adherence to treatment and medication, but evidence that this
481 translates into cost savings, particularly in reduced healthcare utilization is unclear.^{1619,1619}

482 Further the cost effectiveness of providing long term support beyond MBR programmes for people
483 with non-specific low back pain is unknown.

484 **Criteria for selecting high-priority research recommendations:**

PICO question	<p>Population: Adults with chronic (>3 months) non-specific low back pain with or without sciatica</p> <p>Intervention: Support programmes led either by health and social care professionals, lay or co-led.</p> <p>Comparison: Usual care</p> <p>Outcomes:</p> <p>Critical</p> <p>Health-related quality of life (for example, SF-12, SF-36 or EQ-5D). Function measured by disability scores (e.g. RMDQ or ODI) Psychological distress (HADS, GHQ, BPI, BDI, STAI) Healthcare utilisation (prescribing, investigations, hospitalisation and both health professional frequency and quality of visit)</p> <p>Important</p> <p>Return to work Perceived pain severity (e.g. visual analogue scale [VAS] or <i>numerical scale</i> [NRS]). Psychological constructs (e.g. catastrophisation, fear-avoidance, self-efficacy)</p> <p>Adverse events:</p> <p>Morbidity Mortality</p>
Importance to patients or the population	<p>Reduced iatrogenic harm from reduction in inappropriate repeated healthcare prescribing and reduced investigations including imaging, hospitalisation or health professional visits and invasive interventions.</p> <p>Improved quality of life through reduction of unwanted medication side effects and improvement in physical, psychological and social function</p> <p>Improvement in mood and confidence</p> <p>Return to meaningful activities of daily living including employment</p>
Relevance to NICE guidance	<p>Evidence of the cost effectiveness of this form of support would enable recommendation for provision of care at the end of the LBP pathway and would inform future updates of this guideline.</p>
Relevance to the NHS	<p>Evidence for a long term treatment option for people with chronic non-specific low back pain has potential for significantly reduced healthcare costs over a lifetime of care.</p>
National priorities	<p>Highly relevant to DWP return to work policy</p>
Current evidence base	<p>A review of rehabilitation programmes provided some evidence of benefit of such programmes, but we were unable to state the content of the programme, nor whether this would have long term benefit. On average, the trial durations were 8 weeks long with an average follow up of 10 months, therefore the evidence did not inform long term support.</p>

Equality	The research should be undertaken across multiple sites to control for variables such as socio-economic status, levels of unemployment and access to services in rural areas. Recruitment of proportionate numbers of men and women and ethnic minorities to represent the population.
Study design	Multicentre Randomised controlled trial Comparator best usual care.
Feasibility	This should be undertaken over a minimum of 24 months with a minimum follow-up period of a further 12 months.
Other comments	-
Importance	<ul style="list-style-type: none"> • Medium: the research is relevant to the recommendations in the guideline, but the research recommendations are not key to future updates.

485

Q35 Radiofrequency denervation

487 **Research question: What is the clinical and cost effectiveness of radiofrequency denervation for**
488 **chronic low back pain in the long term?**

489 **Why this is important:**

490 The lumbar facet joints are pairs of joints that stabilize and guide motion in the spine. These joints
491 and periarticular structures are well innervated by the medial branches of the dorsal rami. The
492 prevalence of pain thought to be arising from the facet joints and periarticular structures in
493 heterogeneous populations using local anaesthetic nerve blockade (medial branch block), where 75–
494 100% pain relief is used as a criterion standard, is thought to be 25–40%.^{1427,1429}

495 The current guidance recommends that for people with non-specific low back pain who have failed
496 to respond to conservative management, local anaesthetic medial branch nerve blockade to
497 determine the presence or absence of a pain arising from the facet joints and periarticular structures
498 may be offered. Those who experience significant but short term relief may then be offered a
499 neurodestructive procedure called ‘radiofrequency denervation’ in an attempt to achieve longer
500 term pain relief.

501 Radiofrequency denervation has evolved as a treatment for spinal pain over the last 40 years and is a
502 minimally invasive and percutaneous procedure performed under local anaesthesia or light
503 intravenous sedation. Radiofrequency energy is delivered along an insulated needle in contact with
504 the target nerves. This focussed electrical energy heats and denatures the nerve. This process may
505 allow axons to regenerate with time requiring the repetition of the radiofrequency procedure.

506 The duration of pain relief following radiofrequency denervation is uncertain. Data from randomised
507 controlled trials suggests relief is maintained for at least 6-12 months but no study has reported
508 longer term outcomes. Pain relief for more than two years would not be an unreasonable clinical
509 expectation.

510 The de novo economic model undertaken for this guideline for radiofrequency denervation
511 suggested that the treatment is likely to be cost effective provided the duration exceeds 16 months.

512 If radiofrequency denervation is repeated, we do not know whether the outcomes and duration of
513 these outcomes are similar to the initial treatment. If repeated radiofrequency denervation is to be
514 offered, we need to be more certain that this intervention is both effective and cost effective.

515 **Criteria for selecting high-priority research recommendations:**

PICO question	<p>Population: People with chronic low back pain who have not improved despite guideline recommended conservative management and who have moderate to severe pain (VAS>5) and who have responded to a local anaesthetic medial branch nerve block.</p> <p>Intervention(s): Radiofrequency denervation of the lumbar medial branches of the dorsal rami and usual care.</p> <p>Comparison: 1. Sham radiofrequency denervation and usual care 2. Usual care</p> <p>Outcome(s): Critical:</p> <ol style="list-style-type: none"> 1. Health-related quality of life. 2. Pain severity. 3. Function measured by disability scores. 4. Psychological distress. 5. Healthcare utilisation (prescribing, investigations, hospitalisation or health professional visit) <p>Important:</p> <p>Important</p> <ol style="list-style-type: none"> 6. Responder criteria (pain and function) 7. Adverse events: <ol style="list-style-type: none"> 7.1. morbidity 7.2. mortality 8. Return to work
Importance to patients or the population	<p>This research would inform guidance about whether repeated radiofrequency denervation is effective and cost effective (i.e. of same or greater duration and effect size as initial radiofrequency denervation).</p>
Relevance to NICE guidance	<p>Current NICE guidance recommends this intervention but is unable to recommend repeat denervation due to lack of evidence. This study would improve the strength of the current recommendation, provide much needed clarity about the long term effects of radiofrequency denervation and inform a recommendation about the provision of repeat procedures.</p>
Relevance to the NHS	<p>Repeated interventions for any long term condition require robust evidence that they are both clinically and cost effective.</p>
National priorities	<p>The question is highly relevant to the provision of a cost effective treatments in the NHS, and minimisation of economic burden from musculoskeletal disability.</p>
Current evidence base	<p>The available randomised trials of radiofrequency denervation for low back pain provide outcome measures up to 12 months. No studies have evaluated long term outcome.</p> <p>There are no randomised controlled trials evaluating efficacy, duration or cost effectiveness of repeated radiofrequency denervation. The suggestion that repeated radiofrequency denervation may be as efficacious as the initial treatment comes primarily from retrospective reviews.</p>
Equality	<p>N/A</p>
Study design	<p>Randomised controlled trial:</p> <ul style="list-style-type: none"> Intervention + usual care Sham + usual care Usual care alone <p>Crossover to active treatment at 3 months</p> <p>Responders (>50% pain relief for at least 16 months following active treatment) followed up annually for 5 years</p>

	Repeat active intervention allowable
Feasibility	Previous trials of radiofrequency denervation vs. sham have been completed successfully. No ethical issues.
Other comments	Commercial funding may be available.
Importance	<ul style="list-style-type: none"> High: the research is essential to inform future updates of key recommendations in the guideline.

516

6.6 Epidural injections

518 **Research question: What is the clinical and cost effectiveness of image guided compared to non-**
519 **image guided epidural injections for people with acute sciatica?**

520 **Why this is important:**

521 Epidural injection of therapeutic substances that include corticosteroids is commonly offered to
522 people with sciatica. Epidural injection might improve symptoms, reduce disability and speed up
523 return to normal activities. Several different procedures have been developed for epidural delivery of
524 corticosteroids. Some practitioners inject substances through the caudal opening to the spinal canal
525 in the sacrum (caudal epidural), whereas others direct the injection through the foraminal space at
526 the presumed level of nerve root irritation (transforaminal epidural). There is a rationale that
527 transforaminal epidurals might be most effective, by ensuring delivery of corticosteroids directly to
528 the region in which the nerve root might be compromised. However, transforaminal epidural
529 injection requires imaging, usually within a specialist setting, potentially limiting treatment access
530 and increasing costs. Caudal epidural injection might be undertaken without imaging, or with
531 ultrasound guidance in a non-specialist setting, but, it has been argued, the drug might not reach the
532 affected nerve root and therefore this approach might not be as effective as would be transforaminal
533 injection. Empirical evidence that one approach is clearly superior to the other is currently lacking.
534 Access to the two procedures varies between healthcare providers, and patients who do not respond
535 to caudal corticosteroid injection might subsequently receive image guided epidural injection. People
536 with sciatica might therefore currently experience unnecessary symptoms at unnecessary cost to the
537 NHS than would be the case if the most cost effective modes of delivering epidural corticosteroid
538 injections were used.

539 **Criteria for selecting high-priority research recommendations:**

PICO question	<p>Population: People with acute sciatica</p> <p>Intervention(s): Injection of corticosteroid into the epidural space.</p> <p>Comparison: Image-guided transforaminal corticosteroid injection plus non-image guided caudal placebo injection v. non-image guide caudal corticosteroid injection plus image guided transforaminal placebo injection.</p> <p>Outcome(s):</p> <p>Critical:</p> <ol style="list-style-type: none"> 1. Health-related quality of life. 2. Pain severity. 3. Function measured by disability scores. 4. Psychological distress. 5. Healthcare utilisation (prescribing, investigations, hospitalisation or health professional visit) <p>Important:</p> <p>Important</p>
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	<p>6. Responder criteria (pain and function)</p> <p>7. Adverse events:</p> <p>7.1. morbidity</p> <p>7.2. mortality</p> <p>8. Return to work</p>
Importance to patients or the population	Guidance on the most cost-effective means by which to offer epidural injection of corticosteroids for sciatica should enable consistent and optimal delivery throughout the NHS, thereby improving patient outcomes and reducing NHS costs. Implementation of such guidance has implications for the distribution of services between specialist and non-specialist settings.
Relevance to NICE guidance	Future NICE guidance on the management of sciatica would specify the route of corticosteroid administration for epidural injection and thereby encourage practices that would be most cost effective.
Relevance to the NHS	Caudal epidural injections can often be provided within a non-specialist setting (e.g. primary care practice), whereas image-guided, transforaminal epidural injection requires more specialist equipment and expertise, usually only available within a secondary care setting. Empirical evidence that caudal epidural has superior cost efficacy might reduce secondary care referrals for sciatica. Clear evidence that transforaminal epidural injection were more cost effective might lead to decommissioning of caudal epidurals for the treatment of sciatica, and reallocation of resources to secondary care services.
National priorities	The question is highly relevant to the provision of a cost effective NHS, and minimisation of economic burden from musculoskeletal disability.
Current evidence base	The current evidence base supports consideration of epidural corticosteroid injection for people with acute sciatica, but is insufficient to recommend one approach over the other. Epidural corticosteroid injection might improve leg pain and quality of life. Head to head trials have not compared caudal with image guided epidural injections.
Equality	This research recommendation is intended to address inequalities that arise within the NHS due to heterogeneous care provision across the UK. Geographical heterogeneity often reflects underlying inequalities between social classes and ethnic groups.
Study design	Blinded, randomised-controlled trial comparing image guided transforaminal with non-image guided caudal epidural injection of corticosteroid for acute sciatica.
Feasibility	Previous RCTs of epidural injections compared to placebo or other active treatments have been successfully completed. Acute sciatica is a common condition. There are no fundamental ethical or technical issues. Double-blinding would require provision of placebo injections (i.e. each participant would receive injections, active or placebo, by both caudal and transforaminal routes). This would require a trial environment that might not reflect the non-specialist environment in which caudal epidurals might be delivered, thereby compromising health economic analysis.
Other comments	Corticosteroids and local anaesthetic agents used for epidural injections are typically beyond patent and it is unlikely that significant commercial funding would be available for this trial.
Importance	<ul style="list-style-type: none"> • High: the research is essential to inform future updates of key recommendations in the guideline.

4.7 Spinal fusion

542 **Research question: Should people with non-specific low back pain be offered spinal fusion as a**
543 **surgical option?**

544 **Why this is important:**

545 Non-specific low back pain affects a large number of individuals in UK. The condition has a huge cost
546 to the individual, society and the country's economy. Over the past 2 decades, an increasing number
547 of procedures have been proposed for the surgical management of LBP. These include but are not
548 limited to surgical fixation with internal metal-work applied from the back, front, side or any
549 combination of the three routes. The cost of these operations has escalated and with the advent of
550 minimally invasive approaches more of the operations are performed with uncertain benefit. As well
551 as the monetary cost, there are complications associated with the surgical approaches with some
552 studies reporting around 20% complication rate in the short to medium term. There has been several
553 studies (randomized and cohort) looking at the clinical effectiveness of spinal fusion versus usual
554 care, no surgery, different surgeries, and other treatments. The studies collectively fail to show clear
555 advantage of fusion but do show some modest benefit in some elements of pain, function and
556 quality of life as well a reduction in healthcare utilisation. It is not known what treatments should
557 have been tried prior to the consideration of surgery. The studies generally suffer from low number
558 of patients, large cross over and in case selection bias. We therefore propose a large, multi-centre
559 randomized trial with sufficient power to answer these important questions.

560 **Criteria for selecting high-priority research recommendations:**

PICO question	<p>Population Adult population 16 or over with suspected lower back pain with or without or without sciatica</p> <p>Interventions Spinal fusion via posterior route only either open or minimally invasive</p> <p>Comparison with Usual care Other treatments</p> <p>Outcomes: Critical</p> <ul style="list-style-type: none"> • Health-related quality of life (for example, SF-12, SF-36 or EQ-5D). • Pain severity (for example, visual analogue scale [VAS] or numeric rating scale [NRS]). • Function measured by disability scores (for example, the Roland-Morris disability questionnaire or the Oswestry disability index). • Psychological distress (HADS, GHQ, BPI, BDI, STAI) <p>Important</p> <ul style="list-style-type: none"> • Adverse events: <ul style="list-style-type: none"> ○ post-operative complications (e.g. infection) ○ increased risk of requiring surgery at adjacent segments ○ Mortality. • Revision rate • Failure rate <p>Healthcare utilisation (prescribing, investigations, hospitalisation or health professional visit)</p>
Importance to patients or the population	The impact on the UK based population will be high as the condition of back pain is extremely common and troublesome, with a high cost. The condition has relapsing and remitting nature and most individuals try a number of treatment

	options in the pathway before the consideration of surgery. The “pre surgical cost” can therefore be considerable and potentially unnecessary cost to the patient and healthcare provision.
Relevance to NICE guidance	There is uncertainty regarding the effectiveness of spine fusion surgery in back pain and that is reflected in the NICE guidelines. A large randomized multi-centre trial with sufficient numbers can alter the NICE guidelines and reduce uncertainty.
Relevance to the NHS	The cost to the NHS of spine fusion is high and increasing. The effectiveness of surgery is uncertain and long term cost of health care utilisation re-operation and complication cost is likely to be very high.
National priorities	The time off work and the economic cost associated with recurrent back pain is likely to be high. The governments, well-being and happiness drive makes this very common and disabling condition worthy of a target for potential cure with surgery?
Current evidence base	There are limited number of randomized trials with low numbers and high risks of bias. The studies suffer from high cross over numbers
Equality	There are no equality issues of note
Study design	We recommend a multi-centre randomized controlled trial with corresponding economic analysis of adults with LBP with or without sciatica. The outcome measures listed above to be assessed in a blinded manner.
Feasibility	Due to the prevalence of the condition and large number of operations already carried out for this condition feasibility is not a major issue
Other comments	It would be important to minimise the cross over in the studies by design, for example to reassure patients that after the trial period other modalities of treatment are open to them. Furthermore, the funding should not be exclusively sourced from the industry as this would add potential bias..
Importance	<ul style="list-style-type: none"> • High: the research is essential to inform future updates of key recommendations in the guideline.

561 Appendix P: Additional information

562 Red flags

563 The following information was taken from NICE Referral Advice: A guide to appropriate referral from
564 general to specialist services. 2001

565 The majority of patients with acute low back pain can be managed in primary care. They should,
566 however, be referred to a specialist service if:

★★★★	They have neurological features of cauda equina syndrome (sphincter disturbance, progressive motor weakness, perineal anaesthesia, or evidence of bilateral nerve root involvement)
★★★	Serious spinal pathology is suspected (preferably seen within 1 week)
★★★	They develop progressive neurological deficit (weakness, anaesthesia) (preferably seen within 1 week)
★★★	They have nerve root pain that is not resolving after 6 weeks (preferably seen within 3 weeks)
★★	An underlying inflammatory disorder such as ankylosing spondylitis is suspected
★★	They have simple back pain and have not resumed their normal activities in 3 months. The effects of pain will vary and could include reduced quality of life, functional capacity, independence or psychological wellbeing.

567 Key to referral timings

568 Arrangements should be made so that the patient:

569 ★★★★★ is seen immediately^a

570 ★★★ is seen urgently^b

571 ★★ is seen soon^b

572 ★ has a routine appointment^b

573 *a Within a day.*

574 *b Health authorities, trusts and primary care organisations should work to local definitions of maximum waiting times in each of these categories. The multidisciplinary advisory groups considered a maximum waiting time of 2 weeks to be appropriate for the urgent category.*

577

P7.2 Risk assessment tools and stratification

579 **Table 31: Description of risk tool contents identified from papers included in the review**

	No. item	Description
Chronic Pain Risk Item Set ^{2257,2259}	22	<p>A score derived from an original Chronic Pain Risk Score, a tool assessing pain intensity, pain interference with activities, number of activity limitation days due to pain, pain persistence in the past 6 months, a depressive symptom scale and the number of painful anatomic sites. The simplified Chronic Pain Risk Item Set includes:</p> <ul style="list-style-type: none"> • 3 items on back pain intensity (scored on a 0-10 scale) <ul style="list-style-type: none"> ○ Average/usual pain ○ Worst pain ○ Pain right now • 3 items on back pain-related activity interference (scored on a 0-10 scale) <ul style="list-style-type: none"> ○ Interference with usual activities ○ Interference with social and family activities ○ Interference with work or housework activities • 1 item on Back pain persistence (back pain days in the prior 6 months) • 7 items from the Pain health questionnaire(PHQ)-15, assessing an expanded number of pain sites and pain bothersomeness rating for each site (response format: not bothered at all, bothered a little, bothered a lot; score obtained by summing all ratings) <ul style="list-style-type: none"> ○ Back pain ○ Stomach pain ○ Pain in arms, legs, or joints ○ Headaches ○ Neck pain ○ Pelvic/groin pain ○ Widespread pain • 8 items from the Pain Health Questionnaire (PHQ)-8 to assess depressive symptoms severity
Eleven-Item version of the Tampa Scale of Kinesiophobia (TSK-11) ^{206,206}	11	<p>11-item questionnaire derived from an original 17-item Tampa Scale of Kinesiophobia. TSK-11 evaluates the degree of fear on movement and injury or re-injury in individuals with low back pain. Items are scored from 1 (strongly disagree) to 4 (strongly agree). Potential scores range 11-44, with higher scores indicating greater fear on movement and injury or re-injury due to pain.</p>
Fear Avoidance Beliefs Questionnaire (FABQ) ^{206,206}	4+7	<p>A questionnaire assessing fear avoidance beliefs specific to low back pain. It consists of a 4-items physical activity scale (FABQ-PA, score range 0-24) and a 7-items work scale (FABQ-W, score range 0-42).</p> <p>4-item physical activity scale (FABQ-PA) statements:</p> <ul style="list-style-type: none"> • Physical activity makes my pain worse • Physical activity might harm my back • I should not do physical activities which (might) make my pain worse • I cannot do physical activities which (might) make my pain worse <p>7-item work scale (FABQ-W) statements:</p> <ul style="list-style-type: none"> • My pain was caused by my work or by an accident at work • My work aggravated my pain • My work is too heavy for me • My work makes or would make my pain worse • My work might harm my back • I should not do my normal work with my present pain • I do not think that I will be back to my normal work within 3 months <p>Each item is scored on a 'completely disagree' (0) – 'unsure' (3) – 'completely agree' (6) scale. Total score for each subscale is calculated as the total sum of scores of all items in that subscale. Higher levels indicate higher levels of fear avoidance beliefs.</p> <p>http://www.udel.edu/PT/PT%20Clinical%20Services/journalclub/caserounds/05_06/mar06/FABQ1.pdf</p>
Hancock CPR (clinical prediction rule) ^{2333,2343}	3	<p>A 3-item clinical prediction rule for the identification of patients with acute low back pain (within 12 weeks of symptom onset), presenting to primary care, likely to recover rapidly from acute low back pain.</p> <ul style="list-style-type: none"> • Baseline pain. Feature associated with a more rapid recovery: $\leq 7/10$ on numerical

	No. item	Description
		<p>pain rating scale</p> <ul style="list-style-type: none"> • Duration of current symptoms. Feature associated with a more rapid recovery: ≤ 5 days • Number of previous episodes of low back pain. Feature associated with a more rapid recovery: ≤ 1 previous episodes <p>Status on the prediction rule is determined by calculating the number of predictors of recovery present. On the basis of the number of positive features present (0, 1, 2, or 3 features positive), each patient can be assigned to one of 4 strata, representing their status on the prediction rule.</p> <p><i>Hancock MJ et al. Can rate of recovery be predicted in patients with acute low back pain? Development of a clinical prediction rule. European Journal of Pain 2009; 13:51-55</i></p>
Low back pain perception scale ^{1067,1068}	5	<p>A scale on low back pain perception containing a total of 5 items:</p> <ul style="list-style-type: none"> • Worrying • Coping • Limitations due to low back pain • Expectation regarding pain relief • Pain interference. <p>All items have a yes/no response format; the total score is derived by totalling number of 'yes' responses. Higher scores indicate greater risk.</p>
Nine-Item Patient Health Questionnaire (PHQ-9) ^{206,206}	9	<p>A 9-item questionnaire used to assess degree to which depressive symptoms have on a patient with low back pain (scores range from 0-27).</p> <ul style="list-style-type: none"> • Little interest or pleasure in doing things • Feeling down, depressed or hopeless • Trouble falling or staying asleep, or sleeping too much • Feeling tired or having little energy • Poor appetite or overeating • Feeling bad about yourself – or that you are a failure or have let yourself or your family down • Trouble concentrating on things, such as reading the newspaper or watching television • Moving or speaking so slowly that other people could have noticed, or being so fidgety or restless that you have been moving around a lot more than usual • Thoughts that you would be better off dead or of hurting yourself in some way <p>Each item is scored on a 'not at all' (0) – 'nearly every day' (3) scale. Total score is calculated by adding up responses to all items. High scores indicate elevated depressive symptoms (major depression is diagnosed if ≥ 5 depressive symptom criteria have been present more than half the days in the past 2 weeks and one of the symptoms is depressed mood or anhedonia). http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1495268/pdf/jgi_01114.pdf</p>
Örebro Musculoskeletal Screening Questionnaire (ÖMSPQ, modified version of ÖMSPQ) ^{741,741}	25 (21)	<p>The Örebro Musculoskeletal Screening Questionnaire (ÖMSPQ) is a modified version of the original Örebro Musculoskeletal Pain Questionnaire (ÖMSPQ). Four critical characteristics of the original questionnaire are retained in the ÖMSPQ: question number and order, scoring format and total score. All scored 21 ÖMSPQ items are included in the ÖMSPQ, with one being renamed and 4 additional ADL being combined with the physical function questions.</p> <ol style="list-style-type: none"> 1. Region. Where do you have your pain/problem? Back or neck, arm, leg, both sides, several body areas. 2. Absenteeism. Due to your pain/problem, how many days of work or 'normal daily routine' have you missed? '0 days' (1), '1-2 days' (2), '3-7 days' (3), '8-14 days' (4), '15-28 days' (5), '1 month' (6), '2 months' (7), '3-6 months' (8), '6-12 months' (9), 'over 1 year' (10) 3. Duration. How long have you had your current pain/problem? '0-1 weeks' (1), '1-2 weeks' (2), '3-4 weeks' (3), '4-5 weeks' (4), '6-8 weeks' (5), '9-11 weeks' (6), '3-6 months' (7), '6-9 months' (7), '9-12 months' (9), 'over 1 year' (10) 4. Burdensome. Do you feel your work or normal daily routine is a burden to you (eg heavy or monotonous)? 'Not at all' (0) – 'extremely' (10) 5. Intensity acute. How would you rate your pain/problem during the past week, or since the injury if less than a week ago? 'No pain/problem' (0) – 'worst possible' (10) 6. Severity chronic. Since your injury (or in the past 3 months if it is not a recent injury), in general, how has your pain/problem been? 'No pain/problem' (0) – 'worst possible' (10) 7. Frequency. Since your injury (or in the past 3 months if it is not a recent injury), in general, how often is your pain/problem present? 'Never' (0) – 'all the time' (10)

	No. item	Description
		<p>8. Coping. Over the last week, or since the injury if it were less than a week ago, on an average day, how well can you cope with or control your pain/problem? 'Not at all' (0) – 'completely' (10)</p> <p>9. Anxiety. Over the last week or since the injury if it were less than a week ago, on an average day, how tense or anxious have you felt? 'Not at all' (0) – 'extremely' (10)</p> <p>10. Depression. Over the last week or since the injury if it were less than a week ago, on an average day, how depressed or 'down' have you felt? 'Not at all' (0) – 'extremely' (10)</p> <p>11. Recovery expectation problem. In your view how large is the risk that your current pain/problem may become persistent? 'No risk' (0) – 'very large risk' (10)</p> <p>12. Recovery expectation work. What are the chances you will be doing your work or normal daily routine in 6 months' time? 'No chance' (0) – 'very large chance' (10)</p> <p>13. Job satisfaction. How satisfied are you with your current life situation (work/normal daily routine, home, friends)? 'Not at all' (0) – 'completely' (10)</p> <p>14. Fear-avoid: activity. Physical activity makes my pain/problem worse. 'Completely disagree' (0) – 'Completely agree' (10)</p> <p>15. Fear-avoid: stop work. An increase in my pain/problem tells me I should stop what I am doing until my pain/problem decreases. 'Completely disagree' (0) – 'Completely agree' (10)</p> <p>16. Fear-avoid: not work. I should not do my work or normal daily routine with my present pain/problem. 'Completely disagree' (0) – 'Completely agree' (10)</p> <p>17. Light work/chores. I can manage light work for up to an hour (eg lift, carry or move light objects < 5 kg). 'Not at all' (0) – 'completely' (10)</p> <p>18. Walk/recreation. I can walk for an hour or participate in my normal light recreational or sporting activities. 'Not at all' (0) – 'completely' (10)</p> <p>19. Home activity. I can manage my regular home activities and chores (cleaning, steps, use a chair, family duties, etc). 'Not at all' (0) – 'completely' (10)</p> <p>20. ADL and social. I can manage my regular daily routine and social activities (shopping, transport or seeing friends). 'Not at all' (0) – 'completely' (10)</p> <p>21. Sleep/move in bed. I can sleep at night or move normally in bed. 'Not at all' (0) – 'completely' (10)</p> <p>Items are rated 0 to 10 points where higher scores indicate increased risk. Scores for items 8, 12, 13 and 17 to 21 are reversed and calculated as (10 - score). The item assessing pain sites is scored counting the number of pain sites and multiplying by 2. Total score is calculated as the total sum of scores of all items (score range: 0-210), with high scores indicating increased risk of poor outcome. Cut-off ranges in ÖMSPQ are used to indicate low (<95), moderate (95-112) and high (>112) risk of delayed recovery from low back pain.</p>
<p>Örebro Musculoskeletal Pain Questionnaire (ÖMPQ, Acute Low Back Pain Screening Questionnaire) {Dagfinrud, 2013 DAGFINRUD2013 /id;Gabel, 2011 GABEL2011 /id;Jellema, 2007 JELLEMA2007A /id;Maher, 2009 MAHER2009 /id;Heneweer, 2007 HENEWEER2007 /id}</p>	<p>25 (21)</p>	<p>25-questions questionnaire, of which 21 are scored on a 0-10 points response scale. The 21 scored items assess 5 proposed constructs: function, pain, psychological (mood, perceptions of work, patients' estimate of prognosis), fear avoidance and miscellaneous.</p> <ul style="list-style-type: none"> • Items 1–3 concern the number of regions of the body affected by pain, the duration of pain and the duration of sick leave from work in the previous 18 months because of pain. • Items 4 and 13 focus on the patients' perception of their work (is their work heavy, are they satisfied with their job). • Items 5–8 assess the patient's perception of pain (current pain intensity, average pain intensity, pain frequency) and coping strategies (control over pain). • Items 9–12 assess the patient's feelings of anxiety, depression, their perception of pain becoming chronic and their chance of getting back to work in a 6-months' time. • Items 14–16 involve fear avoidance beliefs and behaviours in response to pain. • Items 17–21 focus on activities of daily living (light working, walking, household work, shopping, sleeping). <p>Items are rated 0 to 10 points where higher scores indicate increased risk. Scores for items 8, 12, 13 and 17 to 21 are reversed and calculated as (10 - score). The item assessing pain sites is scored counting the number of pain sites and multiplying by 2. Total score is calculated as the total sum of scores of all items (score range: 0-210), with high scores indicating increased risk of poor outcome. Cut-off ranges in ÖMSPQ are used to indicate low (90-100) and high (105-119) risk of prolonged recovery from low back pain. Some Authors^{508,1066} use different risk thresholds (based on sensitivity and specificity thresholds and Linton & Hallden 1998): low risk (score <90), moderate risk (score 90-105) and high risk for prolonged disability</p>

	No. item	Description
		(score > 105). http://www.oru.se/PageFiles/12103/Screening%20eng.pdf http://occm.oxfordjournals.org/content/58/6/447.full.pdf+html
Pain Catastrophizing Scale ^{206,206}	13	<p>A 13-item questionnaire (score range 0-52) assessing the degree of catastrophic cognitions due to low back pain.</p> <ul style="list-style-type: none"> • I worry all the time about whether the pain will end (helplessness) • I feel I can't go on (helplessness) • It's terrible and I think it's never going to get any better (helplessness) • It's awful and I feel that it overwhelms me (helplessness) • I feel I can't stand it anymore (helplessness) • I become afraid that the pain will get worse (magnification) • I keep thinking of other painful events (magnification) • I anxiously want the pain to go away (rumination) • I can't seem to jeep it out of my mind (rumination) • I keep thinking about how much it hurts (rumination) • I keep thinking about how badly I want the pain to stop (rumination) • There is nothing I can do to reduce the intensity of the pain (helplessness) • I wonder whether something serious may happen (magnification) <p>Each item is scored on a 'not at all' (0) – 'all the time' (5) scale. The total score is calculated by adding up responses to all items. Higher scores indicate higher levels of pain catastrophizing. Three subscales (PCS rumination, PCS magnification, PCS helplessness) scores are computed by summing up the responses to the relevant items. <i>Sullivan MJL, Bishop SR, Pivik J. The Pain Catastrophizing Scale: Development and validation. Psychological Assessment 1995; 7(4):524-532.</i></p>
Spinal manipulation clinical prediction rule ^{414,415}	5	<p>A clinical prediction rule for the identification of patients with low back pain who are likely to benefit from a manipulation intervention (achieving at least 50% improvement in disability within 1 week with a maximum of 2 manipulation interventions). It contains 5 criteria:</p> <ul style="list-style-type: none"> • Duration of current episode of low back pain. Definition of positive outcome: < 16 days • Extent of distal symptoms (assessed with a body diagram; distribution is categorized as being in the back, buttock, thigh or leg (distal to the knee) as described by Werneke et al, Spine 1993). Definition of positive outcome: no symptoms extending distal to the knee • FABQ (Fear Avoidance Beliefs Questionnaire) work subscale score (7 items with potential score range 0-42; higher scores representing increased fear avoidance beliefs). Definition of positive outcome: < 19 points • Segmental mobility testing (tested over the spinous processes of the vertebrae with the patient prone and the neck in neutral rotation. The examiner applies a gentle but firm, anteriorly directed pressure with their hand on the spinous process and assesses a segment as normal, hypomobile or hypermobile on the basis of their anticipation of what normal mobility would feel like at that level, compared with the mobility detected in the segments above and below). Definition of positive outcome: ≥ 1 hypomobile segment in the lumbar spine • Hip internal rotation range of motion (tested bilaterally with the patient lying prone and with the cervical spine at the midline. The leg opposite that to be measured is placed in approximately 30 degrees of hip abduction, to enable the tested hip to be freely moved. The lower extremity of the side to be tested is kept in line with the body, and the knee on that side is flexed to 90 degrees. A gravity inclinometer is placed on the distal aspect of the fibula in line with the bone. Internal rotation is measured at the point in which the pelvis first begins to move). Definition of positive outcome: ≥ 1 hip with > 35 degrees of internal rotation range of motion. <p>A threshold of ≥4 criteria identifies a positive outcome and < 3 a negative outcome, based on Flynn et al (2002).</p>
STarT Back Screening Tool (SBT) ^{206,206} ^{207,1580}	9	<p>A 9-item questionnaire about physical and psychosocial predictors of back pain used to categorize patients with Low Back Pain in primary care settings, based on risk for poor disability outcomes. It has been translated into several languages and has cross-cultural validity.</p> <p>9 Items:</p> <ul style="list-style-type: none"> • Radiating leg pain • Pain elsewhere (shoulder or neck)

	No. item	Description
		<ul style="list-style-type: none"> • Disability (walking) • Disability (self-care) • Fear • Anxiety • Pessimistic patient expectations • Low mood • Bothersomeness <p>Each item is scored dichotomously, either 0 or 1. All items have a 'disagree' (0)/'agree' (1) response format, except from the bothersomeness item, which has a 'not at all' (0)/ 'slightly' (0)/ 'moderately' (0)/ 'very much' (1)/ 'extremely' (1) response format.</p> <p>Two scores are finally calculated:</p> <ul style="list-style-type: none"> • SBT overall score (0-9): determined by the sum of all positive responses. • SBT psychosocial subscale score (0-5): determined by the sum of all items related to fear, anxiety, catastrophizing, depression and bothersomeness. <p>On the basis of both scores, patients are categorized into 3 groups:</p> <ul style="list-style-type: none"> • SBT high risk group (overall score ≥ 4): high levels of psychosocial prognostic factors are present with or without physical factors present, • SBT medium risk group (overall score > 3, psychosocial subscale score < 4): physical and psychosocial factors are present but not a high levels of psychosocial factors, • SBT low risk group (overall score 0-3): few prognostic factors are present. <p>When SBT is administered at 2 time points (cf Beneciuck et al 2014, SBT administered at intake and after 4 weeks), a SBT change categorization may be used to describe the variation in the patients' SBT overall score (determined by summing all positive responses, 0-9) over time:</p> <ul style="list-style-type: none"> • Improved: SBT risk categorization changed from medium to low, high to low or high to medium risk • Stable: SBT risk categorization remained low or medium risk • Worsened: SBT risk categorization changed from low to medium, low to high, medium to high, or remained high risk. <p>http://www.keele.ac.uk/media/keeleuniversity/group/startback/Keele_STarT_Back9_item-7.pdf</p>

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583 **Appendix Q: NICE technical team**

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Name	Role
Chris Carson	Guideline Lead
Mark Baker	Clinical Advisor
Steven Barnes	Technical Lead
Ross Maconachie	Health Economist
Louise Shires	Guideline Commissioning Manager (until November 2015)
Rupert Franklin	Guideline Commissioning Manager
Jill Peacock	Guideline Coordinator (until October 2015)
Trudie Willingham	Guideline Coordinator
Gareth Haman	Editor

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586 References

- 587 1 Low back pain: comparison of chiropractic and hospital outpatient treatment. *BMJ*. 1990;
588 301(6747):341-342
- 589 2 Conservative treatment of acute low-back pain: a prospective randomized trial: McKenzie
590 method of treatment versus patient education in "mini-back school". *Spine*. 1991; 16(8):1008-
591 1009
- 592 3 Effect of traction in low back pain - primary research. Healthcare Insurance Board/College voor
593 Zorgverzekeringen (CVZ), 1997
- 594 4 Alexander technique. *Health Which*. 1999; 99(2):26-27
- 595 5 Paucity of evidence supporting lumbar belts and braces. *Joint Letter*. 2000; 6(5):50
- 596 6 Epidural corticosteroid injections most effective soon after symptom onset. *Current Pain and*
597 *Headache Reports*. 2001; 5(1):2
- 598 7 Epidural analgesia: Does it cause chronic backache? *Medicine Today*. 2002; 3(11):10
- 599 8 Electroacupuncture reduces back pain in elderly patients: treatment plus physical therapy
600 better than sham acupuncture. *Acupuncture Today*. 2003; 4(8):1
- 601 9 Acupuncture is effective for chronic LBP in older patients (n=55). *Acupuncture in Medicine*.
602 2004; 22(3):161
- 603 10 Fluoroscopically guided transforaminal epidural steroid injections for lumbar radicular pain.
604 2004
- 605 11 Prosthetic intervertebral disc replacement. 2004. Available from:
606 http://www.spitjudms.ro/_files/protocoale_terapeutice/neurochirurgie/ipg100guidance.pdf
- 607 12 AcBUS standards: massotherapy and kinesiotherapy in low back pain (AcBUS= healthcare best
608 practice agreements). 2005
- 609 13 Acupuncture effective for chronic back pain. *Journal of Family Practice*. 2005; 54(8):664
- 610 14 Artificial vertebral disc replacement. Technology Evaluation Center Assessment Program
611 Executive Summary. 2005; 20:1-2
- 612 15 Bed rest bad for back pain, ineffective for sciatica. *American Family Physician*. 2005; 72(2):329
- 613 16 COX-2 inhibitors (etoricoxib) for the treatment of non-malignant chronic low back pain.
614 Alberta Heritage Foundation for Medical Research (AHFMR), 2005
- 615 17 Option of acupuncture for back pain (n=241). *Acupuncture in Medicine*. 2005; 23(3):149-150
- 616 18 Physical therapy adds little to back pain treatment. *Journal of Family Practice*. 2005; 54(1):19
- 617 19 Routine physiotherapy is as effective as one advice and assessment session for reducing
618 disability in people with low back pain. *Evidence-Based Healthcare and Public Health*. 2005;
619 9(2):129-130

- 620 20 The implementation of a guideline on the management of the lumbosacral radicular syndrome
621 among general practitioners, physiotherapists, radiologists, neurologists, neurologic surgeons
622 and orthopedic surgeons: a shared care project in two hospitals. 2005
- 623 21 Vertebral axial decompression for low back pain. WorkSafe BC, 2005. Available from:
624 <http://www.chirobase.org/06DD/vaxd/australian.pdf>
- 625 22 Spinal fusion for the treatment of low back pain secondary to lumbar degenerative disc
626 disease. Agency for Healthcare Research and Quality (AHRQ), 2006. Available from:
627 <http://www.cms.gov/Medicare/Coverage/DeterminationProcess/downloads/id41ta.pdf>
- 628 23 Yoga effective for back pain. Journal of Family Practice. 2006; 55(3):186
- 629 24 A second look at back belts. Back Letter. 2007; 22(12):138
- 630 25 Artificial lumbar disc replacement. Technology Evaluation Center Assessment Program
631 Executive Summary. 2007; 22(2):1-3
- 632 26 Etoricoxib: new drug. Avoid using cox-2 inhibitors for pain. Prescrire International. 2007;
633 16(92):223-227
- 634 27 What is the evidence for spinal manipulation in the management of sciatica? Clinical
635 Chiropractic. 2011; 14(2):64-65
- 636 28 A Pilot Randomized Controlled Trial Evaluating Three Treatments for Pregnancy-Related Low
637 Back Pain: Exercise, Spinal Manipulation, and Neuroemotional Technique. Journal of Midwifery
638 & Women's Health. 2012; 57(5):537
- 639 29 Effects of core stability training on patients with chronic low back pain. Journal of
640 Rehabilitation Medicine. 2012;43
- 641 30 Evaluating Acupuncture and Standard care for pregnant women with low BACK pain (EASE
642 BACK trial): a feasibility and pilot study. Health Technology Assessment, 2012. Available from:
643 <http://www.nets.nihr.ac.uk/projects/hta/106905>
- 644 31 The advice on physical activity Irish general practitioner in primary care give low back pain
645 patients... ISCP Conference 2011. Physiotherapy Ireland. 2012; 33(1):59
- 646 32 Ultrasound-guided injection for back pain. Journal of Rehabilitation Medicine. 2012;18-19
- 647 33 Erratum to "The Effectiveness of Endoscopic Radiofrequency Denervation of Medial Branch for
648 Treatment of Chronic Low Back Pain" by Jeong SY, et al. (J Korean Neurosurg Soc 56 : 338-343,
649 2014). Journal of Korean Neurosurgical Society. 2014; 56(5):454
- 650 34 Mapping a patient-reported functional outcome measure to a utility measure for comparative
651 effectiveness and economic evaluations in older adults with low back pain. Medical Decision
652 Making. 2014; 34(7):873-883
- 653 35 Ultrasound-Guided vs. Fluoroscopy-Guided Caudal Epidural Steroid Injection for the Treatment
654 of Unilateral Lower Lumbar Radicular Pain: A Prospective, Randomized, Single-Blind Clinical
655 Study. Ultrasound Quarterly. 2014; 30(2):160
- 656 36 Specific rehabilitation exercise for the treatment of patients with chronic low back pain.
657 Journal of Physical Therapy Science. 2015; 27(8):2413-2417

- 658 37 Abbasi M, Dehghani M, Keefe FJ, Jafari H, Behtash H, Shams J. Spouse-assisted training in pain
659 coping skills and the outcome of multidisciplinary pain management for chronic low back pain
660 treatment: a 1-year randomized controlled trial. *European Journal of Pain*. 2012; 16(7):1033-
661 1043
- 662 38 Abbott AD, Tyni-Lenne R, Hedlund R. Leg pain and psychological variables predict outcome 2-3
663 years after lumbar fusion surgery. *European Spine Journal*. 2011; 20(10):1626-1634
- 664 39 Abdel Shaheed C, Maher CG, Williams KA, McLachlan AJ. Interventions available over the
665 counter and advice for acute low back pain: systematic review and meta-analysis. *Journal of*
666 *Pain*. 2014; 15(1):2-15
- 667 40 Abdi S, Datta S, Lucas LF. Role of epidural steroids in the management of chronic spinal pain: a
668 systematic review of effectiveness and complications. *Pain Physician*. 2005; 8(1):127-143
- 669 41 Abdi S, Datta S, Trescot AM, Schultz DM, Adlaka R, Atluri SL et al. Epidural steroids in the
670 management of chronic spinal pain: a systematic review. *Pain Physician*. 2007; 10(1):185-212
- 671 42 Abenhaim L, Bergeron AM. Twenty years of randomized clinical trials of manipulative therapy
672 for back pain: a review. *Clinical and Investigative Medicine*. 1992; 15(6):527-535
- 673 43 Aboagye E, Karlsson ML, Hagberg J, Jensen I. Cost-effectiveness of early interventions for non-
674 specific low back pain: a randomized controlled study investigating medical yoga, exercise
675 therapy and self-care advice. *Journal of Rehabilitation Medicine*. 2015; 47(2):167-173
- 676 44 Abram SE. Epidural steroid injections for the treatment of lumbosacral radiculopathy. *Journal*
677 *of Back and Musculoskeletal Rehabilitation*. 1997; 8(2):135-149
- 678 45 Abramovitz JN, Neff SR. Lumbar disc surgery: results of the Prospective Lumbar Discectomy
679 Study of the Joint Section on Disorders of the Spine and Peripheral Nerves of the American
680 Association of Neurological Surgeons and the Congress of Neurological Surgeons.
681 *Neurosurgery*. 1991; 29(2):301-308
- 682 46 Abrishamkar S, Aminmansour B, Arti H. The effectiveness of computed tomography scans
683 versus magnetic resonance imaging for decision making in patients with low back pain and
684 radicular leg pain. *Journal of Research in Medical Sciences*. 2006; 11(6):351-354
- 685 47 Ackerman SJ, Steinberg EP, Bryan RN, BenDebba M, Long DM. Patient characteristics
686 associated with diagnostic imaging evaluation of persistent low back problems. *Spine*. 1997;
687 22(14):1634-1641
- 688 48 Ackerman WE, Ahmad M. The efficacy of lumbar epidural steroid injections in patients with
689 lumbar disc herniations. *Anesthesia and Analgesia*. 2007; 104(5):1217-contents
- 690 49 Ackerman WE, Ahmad M. Pain relief with intraarticular or medial branch nerve blocks in
691 patients with positive lumbar facet joint SPECT imaging: a 12-week outcome study. *Southern*
692 *Medical Journal*. 2008; 101(9):931-934
- 693 50 Adamczyk A, Kiebzak W, Wilk-Franczuk M, Sliwinski Z. Effectiveness of holistic physiotherapy
694 for low back pain. *Ortopedia, Traumatologia, Rehabilitacja*. 2009; 11(6):562-576
- 695 51 Added MAN, Costa LOP, Fukuda TY, de Freitas DG, Salomao EC, Monteiro RL et al. Efficacy of
696 adding the Kinesio Taping method to guideline-endorsed conventional physiotherapy in

- 697 patients with chronic nonspecific low back pain: a randomised controlled trial. *BMC*
698 *Musculoskeletal Disorders*. 2013; 14:301
- 699 52 Adogwa O, Owens R, Karikari I, Agarwal V, Gottfried ON, Bagley CA et al. Revision lumbar
700 surgery in elderly patients with symptomatic pseudarthrosis, adjacent-segment disease, or
701 same-level recurrent stenosis. Part 2. A cost-effectiveness analysis. *Journal of Neurosurgery:*
702 *Spine*. 2013; 18(2):147-153
- 703 53 Adogwa O, Parker SL, Shau DN, Mendenhall SK, Devin CJ, Cheng JS et al. Cost per quality-
704 adjusted life year gained of laminectomy and extension of instrumented fusion for adjacent-
705 segment disease: defining the value of surgical intervention. *Journal of Neurosurgery: Spine*.
706 2012; 16(2):141-146
- 707 54 Adogwa O, Carr K, Fatemi P, Verla T, Gazcon G, Gottfried O et al. Psychosocial factors and
708 surgical outcomes: are elderly depressed patients less satisfied with surgery? *Spine*. 2014;
709 39(19):1614-1619
- 710 55 Adogwa O, Parker SL, Shau DN, Mendenhall SK, Aaronson OS, Cheng JS et al. Preoperative Zung
711 Depression Scale predicts outcome after revision lumbar surgery for adjacent segment disease,
712 recurrent stenosis, and pseudarthrosis. *Spine Journal*. 2012; 12(3):179-185
- 713 56 Adogwa O, Paul AR, Anderson WN, Aaronson O, Cheng JS, McGirt MJ. Utility of minimum
714 clinically important difference in assessing pain, disability, and health state after transforaminal
715 lumbar interbody fusion for degenerative lumbar spondylolisthesis. *Journal of Neurosurgery:*
716 *Spine*. 2011; 14(5):598-604
- 717 57 Aebischer B, Hill JC, Hilfiker R, Karstens S. German Translation and Cross-Cultural Adaptation of
718 the STarT Back Screening Tool. *PloS One*. 2015; 10(7):e0132068
- 719 58 Aghababian RV, Volturo GA, Heifetz IN. Comparison of diflunisal and naproxen in the
720 management of acute low back strain. *Clinical Therapeutics*. 1986; 9(Suppl.C):47-51
- 721 59 Aghayev E, Elfering A, Schizas C, Mannion AF. Factor analysis of the North American Spine
722 Society outcome assessment instrument: A study based on a spine registry of patients treated
723 with lumbar and cervical disc arthroplasty. *Spine Journal*. 2014; 14(6):916-924
- 724 60 Aghayev E, Etter C, Barlocher C, Sgier F, Otten P, Heini P et al. Five-year results of lumbar disc
725 prostheses in the SWISSspine registry. *European Spine Journal*. 2014; 23(10):2114-2126
- 726 61 Aghayev E, Roder C, Zweig T, Etter C, Schwarzenbach O. Benchmarking in the SWISSspine
727 registry: results of 52 Dynardi lumbar total disc replacements compared with the data pool of
728 431 other lumbar disc prostheses. *European Spine Journal*. 2010; 19(12):2190-2199
- 729 62 Agnihotri J, Connolly S, Kirsling A, Khazey K, Harden R. Differing responses to functional tests
730 among LBP and KOA populations. *Journal of Pain*. 2015; 16(4 Suppl 1):S6
- 731 63 Agrifoglio E, Benvenuti M, Gatto P, Albanese L, Cherubino P, Marinoni EC et al. Aceclofenac: A
732 new NSAID in the treatment of acute lumbago. Multicentre single blind study vs diclofenac.
733 *Acta Therapeutica*. 1994; 20(1-2):33-45
- 734 64 Ahadian FM, McGreevy K, Schulteis G. Lumbar transforaminal epidural dexamethasone: a
735 prospective, randomized, double-blind, dose-response trial. *Regional Anesthesia and Pain*
736 *Medicine*. 2011; 36(6):572-578

- 737 65 Ahlgren SA, Hansen T. The use of lumbosacral corsets prescribed for low back pain. *Prosthetics and Orthotics International*. 1978; 2(2):101-104
738
- 739 66 Ahlqwist A, Hagman M, Kjellby-Wendt G, Beckung E. Physical therapy treatment of back
740 complaints on children and adolescents. *Spine*. 2008; 33(20):E721-E727
- 741 67 Ahmed R, Shakil-Ur-Rehman S, Sibtain F. Comparison between Specific Lumbar Mobilization
742 and Core-Stability Exercises with Core-Stability Exercises Alone in Mechanical low back pain.
743 *Pakistan Journal of Medical Sciences*. 2014;
- 744 68 Ahn UM, Ahn NU, Buchowski JM, Garrett ES, Sieber AN, Kostuik JP. Cauda equina syndrome
745 secondary to lumbar disc herniation: a meta-analysis of surgical outcomes. *Spine*. 2000;
746 25(12):1515-1522
- 747 69 Ahn Y, Lee S-H, Lee JH, Kim JU, Liu WC. Transforaminal percutaneous endoscopic lumbar
748 discectomy for upper lumbar disc herniation: clinical outcome, prognostic factors, and
749 technical consideration. *Acta Neurochirurgica*. 2009; 151(3):199-206
- 750 70 Ahrens M, Tsantrizos A, Donkersloot P, Martens F, Lauweryns P, Le Huec JC et al. Nucleus
751 replacement with the DASCOR disc arthroplasty device: Interim two-year efficacy and safety
752 results from two prospective, non-randomized multicenter european studies. *Spine*. 2009;
753 34(13):1376-1384
- 754 71 Akagi R, Aoki Y, Ikeda Y, Nakajima F, Ohtori S, Takahashi K et al. Comparison of early and late
755 surgical intervention for lumbar disc herniation: is earlier better? *Journal of Orthopaedic
756 Science*. 2010; 15(3):294-298
- 757 72 Akhmadeeva L, Rayanova G, Blinova N, Veytsman B. The effects of transcutaneous electrical
758 nerve stimulation (TENS) for patients with low back pain: First two randomized controlled trials
759 in Russia with dynamic TENS devices. *Journal of Neurology*. 2014; 261(Suppl.1):S110
- 760 73 Aksoy C, Karan A, Diracoglu D. Low back pain: Results of an open clinical trial comparing the
761 standard treatment alone to the combination of standard treatment and thicolchicoside.
762 *Journal of Orthopaedics and Traumatology*. 2002; 3(2):103-108
- 763 74 Al Nezari NH, Schneiders AG, Hendrick PA. Neurological examination of the peripheral nervous
764 system to diagnose lumbar spinal disc herniation with suspected radiculopathy: a systematic
765 review and meta-analysis. *Spine Journal*. 2013; 13(6):657-674
- 766 75 Al KA, Nurmikko T, Nash T. Has Botulinum Toxin a Role in the Management of Chronic Low
767 Back Pain? 9th World Congress on Pain. 1999; 22-27:181
- 768 76 Alaranta H, Hurme M, Einola S, Kallio V, Knuts LR, Torma T. Rehabilitation after surgery for
769 lumbar disc herniation: results of a randomized clinical trial. *International Journal of
770 Rehabilitation Research*. 1986; 9(3):247-257
- 771 77 Alaranta H, Hurri H. Compliance and subjective relief by corset treatment in chronic low back
772 pain. *Scandinavian Journal of Rehabilitation Medicine*. 1988; 20(3):133-136
- 773 78 Alaranta H, Rytokoski U, Rissanen A, Talo S, Ronnema T, Karppi SL. Progressive work
774 hardening program for patients with low back pain: a controlled clinical trial.
775 *Kansaneläkelaitoksen Julkaisuja ML:103*. 1991;

- 776 79 Alaranta H, Rytokoski U, Rissanen A, Talo S, Ronnema T, Puukka P et al. Intensive physical and
777 psychosocial training program for patients with chronic low back pain. A controlled clinical trial.
778 Spine. 1994; 19(12):1339-1349
- 779 80 Alayat MSM, Atya AM, Ali MME, Shosha TM. Long-term effect of high-intensity laser therapy in
780 the treatment of patients with chronic low back pain: a randomized blinded placebo-controlled
781 trial. Lasers in Medical Science. 2014; 29(3):1065-1073
- 782 81 Albaladejo C, Kovacs FM, Royuela A, del Pino R, Zamora J, Spanish Back Pain Research Network.
783 The efficacy of a short education program and a short physiotherapy program for treating low
784 back pain in primary care: a cluster randomized trial. Spine. 2010; 35(5):483-496
- 785 82 AlBedah A, Khalil M, Eloeemy A, Hussein AA, AlQaed M, Al Mudaiheem A et al. The Use of Wet
786 Cupping for Persistent Nonspecific Low Back Pain: Randomized Controlled Clinical Trial. Journal
787 of Alternative and Complementary Medicine. 2015; 21(8):504-508
- 788 83 Albert HB, Manniche C, Sorensen JS, Deleuran BW. Antibiotic treatment in patients with low-
789 back pain associated with Modic changes Type 1 (bone oedema): a pilot study. British Journal
790 of Sports Medicine. 2008; 42(12):969-973
- 791 84 Aleksiev AR. Ten-year follow-up of strengthening versus flexibility exercises with or without
792 abdominal bracing in recurrent low back pain. Spine. 2014; 39(13):997-1003
- 793 85 Alexandre NM, de Moraes MA, Correa Filho HR, Jorge SA. Evaluation of a program to reduce
794 back pain in nursing personnel. Revista De Saude Publica. 2001; 35(4):356-361
- 795 86 Alfieri A, Gazzeri R, Prell J, Scheller C, Rachinger J, Strauss C et al. Role of lumbar interspinous
796 distraction on the neural elements. Neurosurgical Review. 2012; 35(4):477-484
- 797 87 Alford DP. Chronic back pain with possible prescription opioid misuse. JAMA. 2013; 309(9):919-
798 925
- 799 88 Ali AA. Management of the first episode of acute low back pain: a comparison between two
800 treatment protocols (PhD). Spine. 2002; Affect/Analysis/Clin
- 801 89 Ali TA. Stabilization exercises for patients with low back pain 54. **2006. Ph D 260 p
802 2006;(Texas Woman's University)
- 803 90 Ali YM, Sarwar JM, Hossain MS, Sarker MC, Kayes MN, Rahman MM. Percutaneous laser disc
804 decompression: A minimally invasive procedure for the treatment of intervertebral disc
805 prolapse - The Bangladesh perspective. Photonics and Lasers in Medicine. 2013; 2(3):249-254
- 806 91 Allan L, Richarz U, Simpson K, Slappendel R. Transdermal fentanyl versus sustained release oral
807 morphine in strong-opioid naive patients with chronic low back pain. Spine. 2005; 30(22):2484-
808 2490
- 809 92 Allen C, Glasziou P, Del Mar C. Bed rest: a potentially harmful treatment needing more careful
810 evaluation. Lancet. 1999; 354(9186):1229-1233
- 811 93 Allen RC, Morrow RE. Comparative analysis of automated versus manual percutaneous lumbar
812 discectomy A retrospective study of 1123 cases. Journal of Neurological and Orthopaedic
813 Medicine and Surgery. 1990; 11(2):115-120

- 814 94 Allen RT, Rihn JA, Glassman SD, Currier B, Albert TJ, Phillips FM. An evidence-based approach to
815 Spine surgery. *American Journal of Medical Quality*. 2009; 24(Suppl.6):15S-24S
- 816 95 Allison GT. Abdominal muscle feedforward activation in patients with chronic low back pain is
817 largely unaffected by 8 weeks of core stability training. *Journal of Physiotherapy*. 2012;
818 58(3):200
- 819 96 Almadni K, Yen D. Single-dose intrathecal morphine for postoperative pain control following
820 lumbar spine surgery. *Canadian Journal of Surgery*. 2010; 53(3 Suppl.):S31-S32
- 821 97 Alp A, Mengi G, Atik T, Mert M, Avsarotlu H. The evaluation of the efficacy of core stabilization
822 exercises on female patients with chronic low back pain, Kronik bel atrili kadin hastalarda core-
823 stabilizasyon egzersizi etkinlitiinin detlendirilmesi. *Spine*. 2011; 57:249
- 824 98 Altmaier EM, Lehmann TR, Russell DW, Weinstein JN, Kao CF. The effectiveness of
825 psychological interventions for the rehabilitation of low back pain: a randomized controlled
826 trial evaluation. *Pain*. 1992; 49(3):329-335
- 827 99 Altman RD, Smith HS. Opioid therapy for osteoarthritis and chronic low back pain.
828 *Postgraduate Medicine*. 2010; 122(6):87-97
- 829 100 Ammendolia C, Kerr MS, Bombardier C. Back belt use for prevention of occupational low back
830 pain: a systematic review. *Journal of Manipulative and Physiological Therapeutics*. 2005;
831 28(2):128-134
- 832 101 Amoretti N, Huwart L, Marcy P-Y, Foti P, Hauger O, Boileau P. CT- and fluoroscopy-guided
833 percutaneous discectomy for lumbar radiculopathy related to disc herniation: A comparative
834 prospective study comparing lateral to medial herniated discs. *Skeletal Radiology*. 2013;
835 42(1):49-53
- 836 102 Amos Z, Yoav M, Guy A, Adi F, Yigal M, Shmuel BH. A randomised controlled trial of an
837 integrative approach utilising acupuncture for back and neck pain in an emergency department
838 setting. *European Journal of Integrative Medicine*. 2012; 4(Suppl.1):23-24
- 839 103 Amr YM. Effect of addition of epidural ketamine to steroid in lumbar radiculitis: one-year
840 follow-up. *Pain Physician*. 2011; 14(5):475-481
- 841 104 Amundsen T, Weber H, Nordal HJ, Magnaes B, Abdelnoor M, Lilleås F. Lumbar spinal stenosis:
842 conservative or surgical management?: A prospective 10-year study. *Spine*. 2000; 25(11):1424-
843 1435
- 844 105 Anderberg L, Annertz M, Persson L, Brandt L, Saveland H. Transforaminal steroid injections for
845 the treatment of cervical radiculopathy: a prospective and randomised study. *European Spine*
846 *Journal*. 2007; 16(3):321-328
- 847 106 Andersen JC. Is immediate imaging important in managing low back pain? *Journal of Athletic*
848 *Training*. 2011; 46(1):99-102
- 849 107 Andersen KH, Mosdal C. Epidural application of cortico-steroids in low-back pain and sciatica.
850 *Acta Neurochirurgica*. 1987; 87(1-2):52-53
- 851 108 Andersen RB, Halskov O. A double-blind clinical comparison of proquazone and naproxen in the
852 treatment of patients with symptoms of lumbar nerve root compression syndrome.
853 *Scandinavian Journal of Rheumatology Supplement*. 1978;(21):18-20

- 854 109 Andersen T, Christensen FB, Hansen ES, Bungler C. Pain 5 years after instrumented and non-
855 instrumented posterolateral lumbar spinal fusion. *European Spine Journal*. 2003; 12(4):393-399
- 856 110 Andersen T, Christensen FB, Niedermann B, Helmig P, Hoy K, Hansen ES et al. Impact of
857 instrumentation in lumbar spinal fusion in elderly patients: 71 patients followed for 2-7 years.
858 *Acta Orthopaedica*. 2009; 80(4):445-450
- 859 111 Andersen T, Videbaek TS, Hansen ES, Bungler C, Christensen FB. The positive effect of
860 posterolateral lumbar spinal fusion is preserved at long-term follow-up: A RCT with 11-13 year
861 follow-up. *European Spine Journal*. 2008; 17(2):272-280
- 862 112 Anderson BD. Randomized clinical trial comparing active versus passive approaches to the
863 treatment of recurrent and chronic low back pain 55. **2005. Ph D 206 p 2005;(University of
864 Miami)
- 865 113 Anderson BD, Butler MN, Roach KE. A randomized controlled study examining the effects of
866 pilates on pain and disability in subjects with chronic and recurrent low back pain. (Abstract).
867 *Journal of Orthopaedic and Sports Physical Therapy*. 2006; 36(1):A18
- 868 114 Anderson JT, Haas AR, Percy R, Woods ST, Ahn UM, Ahn NU. Clinical depression is a strong
869 predictor of poor lumbar fusion outcomes among workers' compensation subjects. *Spine*.
870 2015; 40(10):748-756
- 871 115 Anderson PA, Subach BR, Riew KD. Predictors of outcome after anterior cervical discectomy
872 and fusion: a multivariate analysis. *Spine*. 2009; 34(2):161-166
- 873 116 Anderson R, Meeker WC, Wirick BE, Mootz RD, Kirk DH, Adams A. A meta-analysis of clinical
874 trials of spinal manipulation. *Journal of Manipulative and Physiological Therapeutics*. 1992;
875 15(3):181-194
- 876 117 Andersson G, Johansson C, Nordlander A, Asmundson GJ. Chronic pain in older adults: a
877 controlled pilot trial of a brief cognitive-behavioural group treatment. *Behavioural and
878 Cognitive Psychotherapy*. 2012; 40(2):239-244
- 879 118 Andersson GB, Lucente T, Davis AM, Kappler RE, Lipton JA, Leurgans S. A comparison of
880 osteopathic spinal manipulation with standard care for patients with low back pain. *New
881 England Journal of Medicine*. 1999; 341(19):1426-1431
- 882 119 Andersson GB, Mekhail NA, Block JE. Intradiscal electrothermal therapy (IDET). *Spine*. 2006;
883 31(12):1402-1403
- 884 120 Andersson GBJ, Mekhail NA, Block JE. Treatment of intractable discogenic low back pain. A
885 systematic review of spinal fusion and intradiscal electrothermal therapy (IDET). *Pain Physician*.
886 2006; 9(3):237-248
- 887 121 Andrade NS, Flynn JP, Bartanusz V. Twenty-year perspective of randomized controlled trials for
888 surgery of chronic nonspecific low back pain: Citation bias and tangential knowledge. *Spine
889 Journal*. 2013; 13(11):1698-1704
- 890 122 Andrusaitis SF, Brech GC, Vitale GF, Greve JM. Trunk stabilization among women with
891 chronic lower back pain: a randomized, controlled, and blinded pilot study. *Clinics*. 2011;
892 66(9):1645-1650

- 893 123 Anekstein Y, Floman Y, Smorgick Y, Rand N, Millgram M, Mirovsky Y. Seven years follow-up for
894 total lumbar facet joint replacement (TOPS) in the management of lumbar spinal stenosis and
895 degenerative spondylolisthesis. *European Spine Journal*. 2015; 24(10):2306-2314
- 896 124 Anema JA, Steenstra IA, Bongers PM, de Vet HC, Knol DL, Loisel P et al. Multidisciplinary
897 rehabilitation for subacute low back pain: graded activity or workplace intervention or both? a
898 randomized controlled trial. *Spine*. 2007; 32(3):291-298
- 899 125 Anon. Massage surprisingly effective for chronic back pain: acupuncture and education
900 comparatively ineffective in new randomized trial. *Joint Letter*. 1999; 5(1):3
- 901 126 Anwar A, Zaidah I, Rozita R. Prospective randomised single blind study of epidural steroid
902 injection comparing triamcinalone acetonide with methylprednisolone acetate. *APLAR Journal
903 of Rheumatology*. 2005; 8(1):51-53
- 904 127 Aoki T, Kuroki Y, Kageyama T, Irimajiri S, Mizushima Y, Yamamoto K. Multicentre double-blind
905 comparison of piroxicam and indomethacin in the treatment of lumbar diseases. *European
906 Journal of Rheumatology and Inflammation*. 1983; 6(3):247-252
- 907 128 Apeldoorn AT, Bosmans JE, Ostelo RW, de Vet HC, van Tulder MW. Cost-effectiveness of a
908 classification-based system for sub-acute and chronic low back pain. *European Spine Journal*.
909 2012; 21(7):1290-1300
- 910 129 Apeldoorn AT, Ostelo RW, van Helvoirt H, Fritz JM, de Vet HCW, van Tulder MW. The cost-
911 effectiveness of a treatment-based classification system for low back pain: design of a
912 randomised controlled trial and economic evaluation. *BMC Musculoskeletal Disorders*. 2010;
913 11:58
- 914 130 Apeldoorn AT, Ostelo RW, van Helvoirt H, Fritz JM, Knol DL, van Tulder MW et al. A randomized
915 controlled trial on the effectiveness of a classification-based system for subacute and chronic
916 low back pain. *Spine*. 2012; 37(16):1347-1356
- 917 131 Arai Y, Hirai T, Yoshii T, Sakai K, Kato T, Enomoto M et al. A prospective comparative study of 2
918 minimally invasive decompression procedures for lumbar spinal canal stenosis: unilateral
919 laminotomy for bilateral decompression (ULBD) versus muscle-preserving interlaminar
920 decompression (MILD). *Spine*. 2014; 39(4):332-340
- 921 132 Arbus L, Fajadet B, Aubert D, Morre M, Goldberger E. Activity of tetrazepam (Myolastan) in low
922 back pain. A double-blind trial v. placebo. *Clinical Trials Journal*. 1990; 27(4):258-267
- 923 133 Arden NK, Price C, Reading I, Stubbing J, Hazelgrove J, Dunne C et al. A multicentre randomized
924 controlled trial of epidural corticosteroid injections for sciatica: the WEST study.
925 *Rheumatology*. 2005; 44(11):1399-1406
- 926 134 Aref AM, Fawzy M, Hamimy W, Shawky M. The effectiveness of volume versus concentration of
927 the epidural steroid injections through transforaminal approach. *Egyptian Journal of
928 Anaesthesia*. 2011; 27(1):61-65
- 929 135 Argueta-Bernal G. Behavioral approaches for chronic low back pain. *Seminars in Pain Medicine*.
930 2004; 2(3):197-202
- 931 136 Arkuszewski Z. The efficacy of manual treatment in low back pain: a clinical trial. *Manual Med*.
932 1986; 2:68-71

- 933 137 Arnold PM, Robbins S, Paullus W, Faust S, Holt R, McGuire R. Clinical outcomes of lumbar
934 degenerative disc disease treated with posterior lumbar interbody fusion allograft spacer: a
935 prospective, multicenter trial with 2-year follow-up. *American Journal of Orthopedics*. 2009;
936 38(7):E115-E122
- 937 138 Aronow R, Solomone-Aronow B. Backache relief and postural control factors from the foot up.
938 Part V. *Digest of Chiropractic Economics*. 1986; 29(1):44-49
- 939 139 Aronsohn J, Chapman K, Soliman M, Shah T, Costandi S, Michael R et al. Percutaneous
940 microdiscectomy versus epidural injection for management of chronic spinal pain. *Proceedings*
941 *of the Western Pharmacology Society*. 2010; 53:16-19
- 942 140 Arts MP. Reply to the letter to the editor of R. Q. Knight concerning Does minimally invasive
943 lumbar disc surgery result in less muscle injury than conventional surgery? A randomized
944 controlled trial by M. Arts, R. Brand, et al. (2011) *Eur Spine J* 20(1):51-57. doi:10.1007/s00586-
945 012-2491-9. *European Spine Journal*. 2013; 22(4):899
- 946 141 Arts MP, Peul WC. Timing and minimal access surgery for sciatica: A summary of two
947 randomized trials. *Acta Neurochirurgica*. 2011; 153(5):967-974
- 948 142 Arts MP, Peul WC, Brand R, Koes BW, Thomeer RTWM. Cost-effectiveness of microendoscopic
949 discectomy versus conventional open discectomy in the treatment of lumbar disc herniation: a
950 prospective randomised controlled trial [ISRCTN51857546]. *BioMedical Central*
951 *Musculoskeletal Disorders*. 2006; 7:42
- 952 143 Arul Prakasam KC, Salman P, Senthilkumar N. Comparative assessment of analgesic effect of
953 different NSAID's in the management of low back pain. *International Journal of Pharmtech*
954 *Research*. 2011; 3(3):1260-1264
- 955 144 Ash LM, Modic MT, Obuchowski NA, Ross JS, Brant-Zawadzki MN, Grooff PN. Effects of
956 diagnostic information, per se, on patient outcomes in acute radiculopathy and low back pain.
957 *American Journal of Neuroradiology*. 2008; 29(6):1098-1103
- 958 145 Assaker R, Ritter-Lang K, Vardon D, Litrico S, Fuentes S, Putzier M et al. Maverick total disc
959 replacement in a real-world patient population: a prospective, multicentre, observational
960 study. *European Spine Journal*. 2015; 24(9):2047-2055
- 961 146 Assendelft Willem JJ, Morton SC, Yu E, I, Suttorp MJ, Shekelle PG. Spinal manipulative therapy
962 for low-back pain. *Cochrane Database of Systematic Reviews*. 2013; Issue 1:CD000447.
963 DOI:10.1002/14651858.CD000447.pub3
- 964 147 Assendelft WJ, Koes BW, van der Heijden GJ, Bouter LM. The efficacy of chiropractic
965 manipulation for back pain: blinded review of relevant randomized clinical trials. *Journal of*
966 *Manipulative and Physiological Therapeutics*. 1992; 15(8):487-494
- 967 148 Assendelft WJ, Koes BW, van der Heijden GJ, Bouter LM. The effectiveness of chiropractic for
968 treatment of low back pain: an update and attempt at statistical pooling. *Journal of*
969 *Manipulative and Physiological Therapeutics*. 1996; 19(8):499-507
- 970 149 Assendelft WJ, Morton SC, Yu EI, Suttorp MJ, Shekelle PG. Spinal manipulative therapy for low
971 back pain. A meta-analysis of effectiveness relative to other therapies. *Annals of Internal*
972 *Medicine*. 2003; 138(11):871-881

- 973 150 Atalay A, Arslan S, Dincer F. Psychosocial function, clinical status, and radiographic findings in a
974 group of chronic low back pain patients. *Rheumatology International*. 2001; 21(2):62-65
- 975 151 Atkinson J, Kremer EF, Garfin SR. Psychopharmacological agents in the treatment of pain.
976 *Journal of Bone and Joint Surgery - American Volume*. 1985; 67(2):337-342
- 977 152 Atlas SJ. Randomised controlled trial: Epidural steroid injections are not effective for patients
978 with lumbar spinal stenosis. *Evidence-Based Medicine*. 2015; 20(1):16
- 979 153 Atlas SJ, Deyo RA, Keller RB, Chapin AM, Patrick DL, Long JM et al. The Maine Lumbar Spine
980 Study, Part II. 1-year outcomes of surgical and nonsurgical management of sciatica. *Spine*.
981 1996; 21(15):1777-1786
- 982 154 Atlas SJ, Deyo RA, Keller RB, Chapin AM, Patrick DL, Long JM et al. The Maine Lumbar Spine
983 Study, Part III. 1-year outcomes of surgical and nonsurgical management of lumbar spinal
984 stenosis. *Spine*. 1996; 21(15):1787-5
- 985 155 Atlas SJ, Keller RB, Robson D, Deyo RA, Singer DE. Surgical and nonsurgical management of
986 lumbar spinal stenosis: four-year outcomes from the maine lumbar spine study. *Spine*. 2000;
987 25(5):556-562
- 988 156 Atlas SJ, Keller RB, Wu YA, Deyo RA, Singer DE. Long-term outcomes of surgical and nonsurgical
989 management of lumbar spinal stenosis: 8 to 10 year results from the maine lumbar spine
990 study. *Spine*. 2005; 30(8):936-943
- 991 157 Atlas SJ, Keller RB, Wu YA, Deyo RA, Singer DE. Long-term outcomes of surgical and nonsurgical
992 management of sciatica secondary to a lumbar disc herniation: 10 year results from the maine
993 lumbar spine study. *Spine*. 2005; 30(8):927-935
- 994 158 Atlas SJ, Tosteson TD, Blood EA, Skinner JS, Pransky GS, Weinstein JN. The impact of workers'
995 compensation on outcomes of surgical and nonoperative therapy for patients with a lumbar
996 disc herniation: SPORT. *Spine*. 2010; 35(1):89-97
- 997 159 Aure OF, Nilsen JH, Vasseljen O. Manual therapy and exercise therapy in patients with chronic
998 low back pain: a randomized, controlled trial with 1-year follow-up. *Spine*. 2003; 28(6):525-2
- 999 160 Avery S, O'Driscoll ML. Randomised controlled trials on the efficacy of spinal manipulation
1000 therapy in the treatment of low back pain. *Physical Therapy Reviews*. 2004; 9(3):146-152
- 1001 161 Awad JN, Moskovich R. Lumbar disc herniations: surgical versus nonsurgical treatment. *Clinical
1002 Orthopaedics and Related Research*. 2006; 443:183-197
- 1003 162 Azevedo DC, Van Dillen LR, Santos HdO, Oliveira DR, Ferreira PH, Costa LOP. Movement System
1004 Impairment-Based Classification Versus General Exercise for Chronic Low Back Pain: Protocol of
1005 a Randomized Controlled Trial. *Physical Therapy*. 2015; 95(9):1287-1294
- 1006 163 Azzazi A, Elhawary Y. Dynamic stabilization using X-stop versus transpedicular screw fixation in
1007 the treatment of lumbar canal stenosis; Comparative study of the clinical outcome.
1008 *Neurosurgery Quarterly*. 2010; 20(3):165-169
- 1009 164 Babur H. Facet rhizotomy for cervical radiculitis. *Mount Sinai Journal of Medicine, New York*.
1010 1994; 61(3):265-271

- 1011 165 Baek GS, Kim YS, Lee MC, Song JW, Kim SK, Kim IH. Fragmentectomy versus Conventional
1012 Microdiscectomy in Single-Level Lumbar Disc Herniations : Comparison of Clinical Results and
1013 Recurrence Rates. *Journal of Korean Neurosurgical Society*. 2012; 52(3):210-214
- 1014 166 Baekgaard P, Busch E, Lund C, Asmussen K, Bendix, T. Cardiovascular conditioning (aerobics)
1015 versus resistance training as a treatment for chronic low back pain. *Orthopaedic-Transactions*.
1016 1996; 20(4)
- 1017 167 Bailey GW. The psychological treatment of back pain: A meta-analysis. *Dissertation Abstracts*
1018 *International: Section B: Sciences and Engineering*. 2002; 63(1-B):515
- 1019 168 Bajpai J, Saini S, Singh R. Clinical correlation of magnetic resonance imaging with symptom
1020 complex in prolapsed intervertebral disc disease: A cross-sectional double blind analysis.
1021 *Journal of Craniovertebral Junction and Spine*. 2013; 4(1):16-20
- 1022 169 Bakshi R, Thumb N, Broll H, Klein G, Mayrhofer F, Rainer F et al. Treatment of acute
1023 lumbosacral back pain with diclofenac resinate. Results of a double-blind comparative trial
1024 versus piroxicam. *Drug Investigation*. 1994; 8(5):288-293
- 1025 170 Balague F. Injections and low back pain: Outcome and randomized controlled trials. *Bulletin:*
1026 *Hospital for Joint Diseases*. 1996; 55(4):185-190
- 1027 171 Balthazard P, de Goumoens P, Rivier G, Demeulenaere P, Ballabeni P, Deriaz O. Manual therapy
1028 followed by specific active exercises versus a placebo followed by specific active exercises on
1029 the improvement of functional disability in patients with chronic non specific low back pain: a
1030 randomized controlled trial. *BMC Musculoskeletal Disorders*. 2012; 13:162
- 1031 172 Banerjee T, Pittman HH. Facet rhizotomy. Another armamentarium for treatment of low
1032 backache. *North Carolina Medical Journal*. 1976; 37(7):354-360
- 1033 173 Banken R. Intradiscal electrothermal therapy for discogenic low back pain. *Agence d'Evaluation*
1034 *des Technologies et des Modes d'Intervention en Sante (AETMIS)*, 2005. Available from:
1035 http://www.inesss.qc.ca/fileadmin/doc/AETMIS/Rapports/Traitements/2005_02_res_en.pdf
- 1036 174 Bao QB, Songer M, Pimenta L, Werner D, Reyes-Sanchez A, Balsano M et al. Nubac disc
1037 arthroplasty: preclinical studies and preliminary safety and efficacy evaluations. *SAS Journal*.
1038 2007; 1(1):36-45
- 1039 175 Baratta RR. A double-blind comparative study of carisoprodol, propoxyphene, and placebo in
1040 the management of low back syndrome. *Current Therapeutic Research - Clinical and*
1041 *Experimental*. 1976; 20(3):233-240
- 1042 176 Baratta RR. A double-blind study of cyclobenzaprine and placebo in the treatment of acute
1043 musculoskeletal conditions of the low back. *Current Therapeutic Research - Clinical and*
1044 *Experimental*. 1982; 32(5):646-652
- 1045 177 Barker KL, Elliott CJ, Sackley CM, Fairbank JCT. Treatment of chronic back pain by sensory
1046 discrimination training. A Phase I RCT of a novel device (FairMed) vs. TENS. *BMC*
1047 *Musculoskeletal Disorders*. 2008; 9:97
- 1048 178 Barnes D, Smith D, Gatchel RJ, Mayer TG. Psychosocioeconomic predictors of treatment
1049 success/failure in chronic low-back pain patients. *Spine*. 1989; 14(4):427-430

- 1050 179 Baron R, Kern U, Muller M, Dubois C, Falke D, Steigerwald I. Effectiveness and Tolerability of a
1051 Moderate Dose of Tapentadol Prolonged Release for Managing Severe, Chronic Low Back Pain
1052 with a Neuropathic Component: An Open-label Continuation Arm of a Randomized Phase 3b
1053 Study. *Pain Practice*. 2015; 15(5):471-486
- 1054 180 Barone D, Gangaway JM. Aquatic physical therapy for low back pain: what are the outcomes?
1055 *Journal of Aquatic Physical Therapy*. 2007; 15(2):18-24
- 1056 181 Barth M, Diepers M, Weiss C, Thome C. Two-year outcome after lumbar microdiscectomy
1057 versus microscopic sequestrectomy: part 2: radiographic evaluation and correlation with
1058 clinical outcome. *Spine*. 2008; 33(3):273-279
- 1059 182 Barth M, Weiss C, Thome C. Two-year outcome after lumbar microdiscectomy versus
1060 microscopic sequestrectomy: part 1: evaluation of clinical outcome. *Spine*. 2008; 33(3):265-272
- 1061 183 Bartleson JD. Evidence for and against the use of opioid analgesics for chronic nonmalignant
1062 low back pain: a review. *Pain Medicine*. 2002; 3(3):260-271
- 1063 184 Bartynski WS, Rothfus WE. Pain improvement after intradiskal lidocaine administration in
1064 provocation lumbar diskography: Association with diskographic contrast leakage. *American
1065 Journal of Neuroradiology*. 2007; 28(7):1259-1265
- 1066 185 Basler HD, Jakle C, Kroner-Herwig B. Incorporation of cognitive-behavioral treatment into the
1067 medical care of chronic low back patients: a controlled randomized study in German pain
1068 treatment centers. *Patient Education and Counseling*. 1997; 31(2):113-124
- 1069 186 Basler HD, Rehfisch HP. Follow-up results of a cognitive-behavioural treatment for chronic pain
1070 in a primary care setting. *Psychology and Health*. 1990; 4(4):293-304.
1071 DOI:<http://dx.doi.org/10.1080/08870449008400398>
- 1072 187 Basler HD, Zimmer C. Does dysphoric mood really predict the outcome of lumbar surgery?
1073 Methodological pitfalls in psychological research. *European Journal of Pain*. 1997; 1(3):197-205
- 1074 188 Basmajian JV. Acute back pain and spasm. A controlled multicenter trial of combined analgesic
1075 and antispasm agents. *Spine*. 1989; 14(4):438-439
- 1076 189 Basson A, Stewart A. Physiotherapy management of low back pain - a review of surveys. *South
1077 African Journal of Physiotherapy*. 2011; 67(1):17-20
- 1078 190 Bean DJ, Johnson MH, Kydd RR. Relationships between psychological factors, pain, and
1079 disability in complex regional pain syndrome and low back pain. *Clinical Journal of Pain*. 2014;
1080 30(8):647-653
- 1081 191 Beattie A, Shaw A, Yardley L, Little P, Sharp D. Participating in and delivering the ATEAM trial
1082 (Alexander technique lessons, exercise, and massage) interventions for chronic back pain: A
1083 qualitative study of professional perspectives. *Spine*. 2010; 18(3-4):119-127
- 1084 192 Becker C, Heidersdorf S, Drewlo S, de Rodriguez SZ, Kramer J, Willburger RE. Efficacy of
1085 epidural perineural injections with autologous conditioned serum for lumbar radicular
1086 compression: an investigator-initiated, prospective, double-blind, reference-controlled study.
1087 *Spine*. 2007; 32(17):1803-1808
- 1088 193 Beggs R, Holtzman S. Yoga as an intervention for chronic low back pain: A metaanalytic review.
1089 *Spine*. 2012; 13(4 SUPPL. 1):S11

- 1090 194 Beissner K, Parker SJ, Henderson CRJ, Pal A, Iannone L, Reid MC. A cognitive-behavioral plus
1091 exercise intervention for older adults with chronic back pain: Race/ethnicity effect? *Journal of*
1092 *Aging and Physical Activity*. 2012; 20(2):246-265
- 1093 195 Bekkering GE, Hendriks HJM, van Tulder MW, Knol DL, Hoeijenbos M, Oostendorp RAB et al.
1094 Effect on the process of care of an active strategy to implement clinical guidelines on
1095 physiotherapy for low back pain: a cluster randomised controlled trial. *Quality and Safety in*
1096 *Health Care*. 2005; 14(2):107-112
- 1097 196 Beladev N, Masharawi Y. The effect of group-exercising on females with non-specific chronic
1098 low back pain in a sitting position: A pilot study. *Spine*. 2011; 24(3):181-188
- 1099 197 Bell JA, Burnett A. Exercise for the primary, secondary and tertiary prevention of low back pain
1100 in the workplace: a systematic review. *Journal of Occupational Rehabilitation*. 2009; 19(1):8-24
- 1101 198 Bellini M, Barbieri M. Systemic effects of epidural steroid injections. *Anaesthesiology Intensive*
1102 *Therapy*. 2013; 45(2):93-98
- 1103 199 Bello AI, Kalu NH, Adegoke BOA, Agyepong-Badu S. Hydrotherapy versus land-based exercises
1104 in the management of chronic low back pain: A comparative study. *Journal of Musculoskeletal*
1105 *Research*. 2010; 13(4):159-165
- 1106 200 Ben Salah Frih Z, Fendri Y, Jellad A, Boudoukhane S, Rejeb N. Efficacy and treatment
1107 compliance of a home-based rehabilitation programme for chronic low back pain: a
1108 randomized, controlled study. *Annals of Physical and Rehabilitation Medicine*. 2009; 52(6):485-
1109 496
- 1110 201 Bendix AF, Bendix T, Labriola M, Boekgaard P. Functional restoration for chronic low back pain.
1111 Two-year follow-up of two randomized clinical trials. *Spine*. 1998; 23(6):717-725
- 1112 202 Bendix AF, Bendix T, Ostensfeld S, Bush E, Andersen. Active treatment programs for patients
1113 with chronic low back pain: a prospective, randomized, observer-blinded study. *European*
1114 *Spine Journal*. 1995; 4(3):148-152
- 1115 203 Bendix T, Bendix A, Labriola M, Haestrup C, Ebbehøj N. Functional restoration versus
1116 outpatient physical training in chronic low back pain: a randomized comparative study. *Spine*.
1117 2000; 25(19):2494-2500
- 1118 204 Beneciuk JM, Bishop MD, Fritz JM, Robinson ME, Asal NR, Nisenzon AN et al. The STarT back
1119 screening tool and individual psychological measures: evaluation of prognostic capabilities for
1120 low back pain clinical outcomes in outpatient physical therapy settings. *Physical Therapy*. 2013;
1121 93(3):321-333
- 1122 205 Beneciuk JM, Robinson ME, George SZ. Subgrouping for patients with low back pain: a
1123 multidimensional approach incorporating cluster analysis and the STarT Back Screening Tool.
1124 *Journal of Pain*. 2015; 16(1):19-30
- 1125 206 Benny B, Azari P. The efficacy of lumbosacral transforaminal epidural steroid injections: a
1126 comprehensive literature review. *Journal of Back and Musculoskeletal Rehabilitation*. 2011;
1127 24(2):67-76
- 1128 207 Benoist M, Boulu P, Hayem G. Epidural steroid injections in the management of low-back pain
1129 with radiculopathy: an update of their efficacy and safety. *European Spine Journal*. 2012;
1130 21(2):204-213

- 1131 208 Benyamin RM, Manchikanti L, Parr AT, Diwan S, Singh V, Falco FJE et al. The effectiveness of
1132 lumbar interlaminar epidural injections in managing chronic low back and lower extremity
1133 pain. *Pain Physician*. 2012; 15(4):E363-E404
- 1134 209 Benyamin RM, Wang VC, Vallejo R, Singh V, Helm li S. A systematic evaluation of thoracic
1135 interlaminar epidural injections. *Pain Physician*. 2012; 15(4):E497-E514
- 1136 210 Benyamin RM, Staats PS. MiDAS ENCORE: Randomized Controlled Study Design and Protocol.
1137 *Pain Physician*. 2015; 18(4):307-316
- 1138 211 Benzon HT. Epidural steroid injections for low back pain and lumbosacral radiculopathy. *Pain*.
1139 1986; 24(3):277-295
- 1140 212 Berg S. On total disc replacement. *Acta Orthopaedica*. Sweden 2011; 82(Suppl.343):1-34
- 1141 213 Berg S, Fritzell P, Tropp H. Sex life and sexual function in men and women before and after
1142 total disc replacement compared with posterior lumbar fusion. *Spine Journal*. 2009; 9(12):987-
1143 994
- 1144 214 Berger L, Calleja MJ, Maligorne M, Avenas K. Prospective study: Evaluation of the thermoulded
1145 foot orthoses effects. *Annals of Physical and Rehabilitation Medicine*. 2013; 56(Suppl.1):e25
- 1146 215 Bergeron L, Girard M, Drolet P, Grenier Y, Le Truong HH, Boucher C. Spinal procaine with and
1147 without epinephrine and its relation to transient radicular irritation. *Canadian Journal of*
1148 *Anaesthesia*. 1999; 46(9):846-849
- 1149 216 Bergstrom C, Jensen I, Hagberg J, Busch H, Bergstrom G. Effectiveness of different
1150 interventions using a psychosocial subgroup assignment in chronic neck and back pain
1151 patients: a 10-year follow-up. *Disability and Rehabilitation*. 2012; 34(2):110-118
- 1152 217 Bergstrom G, Hagberg J, Busch H, Jensen I, Bjorklund C. Prediction of sickness absenteeism,
1153 disability pension and sickness presenteeism among employees with back pain. *Journal of*
1154 *Occupational Rehabilitation*. 2014; 24(2):278-286
- 1155 218 Berlemann U, Schwarzenbach O. An injectable nucleus replacement as an adjunct to
1156 microdiscectomy: 2 year follow-up in a pilot clinical study. *European Spine Journal*. 2009;
1157 18(11):1706-1712
- 1158 219 Berman BM, Singh BB. Chronic low back pain: An outcome analysis of a mind-body
1159 intervention. *Spine*. 1997; 5(1):29-35
- 1160 220 Bernard TNJ. Repeat lumbar spine surgery. Factors influencing outcome. *Spine*. 1993;
1161 18(15):2196-2200
- 1162 221 Bernsmann K, Krämer J, Ziozios I, Wehmeier J, Wiese M. Lumbar micro disc surgery with and
1163 without autologous fat graft. A prospective randomized trial evaluated with reference to
1164 clinical and social factors. *Archives of Orthopaedic and Traumatic Surgery*. 2001; 121(8):476-
1165 480
- 1166 222 Bernstein RM. Injections and surgical therapy in chronic pain. *Clinical Journal of Pain*. 2001;
1167 17(4 Suppl.):S94-104
- 1168 223 Bertagnoli R, Yue JJ, Fenk-Mayer A, Eerulkar J, Emerson JW. Treatment of symptomatic
1169 adjacent-segment degeneration after lumbar fusion with total disc arthroplasty by using the

- 1170 prodisc prosthesis: a prospective study with 2-year minimum follow up. Journal of
1171 Neurosurgery: Spine. 2006; 4(2):91-97
- 1172 224 Bertagnoli R, Yue JJ, Kershaw T, Shah RV, Pfeiffer F, Fenk-Mayer A et al. Lumbar total disc
1173 arthroplasty utilizing the ProDisc prosthesis in smokers versus nonsmokers: a prospective study
1174 with 2-year minimum follow-up. Spine. 2006; 31(9):992-997
- 1175 225 Bertagnoli R, Yue JJ, Nanieva R, Fenk-Mayer A, Husted DS, Shah RV et al. Lumbar total disc
1176 arthroplasty in patients older than 60 years of age: a prospective study of the ProDisc
1177 prosthesis with 2-year minimum follow-up period. Journal of Neurosurgery: Spine. 2006;
1178 4(2):85-90
- 1179 226 Bertagnoli R, Yue JJ, Shah RV, Nanieva R, Pfeiffer F, Fenk-Mayer A et al. The treatment of
1180 disabling single-level lumbar discogenic low back pain with total disc arthroplasty utilizing the
1181 Prodisc prosthesis: a prospective study with 2-year minimum follow-up. Spine. 2005;
1182 30(19):2230-2236
- 1183 227 Bertocco P, Montesano A, Baccalaro G, Parisio C, Vismara L. Controlled study on the efficacy of
1184 two different treatments in obese patients affected by chronic low back pain, assessed by an
1185 isokinetic device: Analysis of muscle strength and spine mobility. Europa Medicophysica. 2002;
1186 38(4):187-193
- 1187 228 Bertozzi L, Villafane JH, Capra F, Reci M, Pillastrini P. Effect of an exercise programme for the
1188 prevention of back and neck pain in poultry slaughterhouse workers. Occupational Therapy
1189 International. 2015; 22(1):36-42
- 1190 229 Berwick DM, Budman S, Feldstein M. No clinical effect of back schools in an HMO. A
1191 randomized prospective trial. Spine. 1989; 14(3):338-344
- 1192 230 Besen E, Young AE, Shaw WS. Returning to work following low back pain: Towards a model of
1193 individual psychosocial factors. Journal of Occupational Rehabilitation. 2015; 25(1):25-37
- 1194 231 Betten C, Sandell C, Hill JC, Gutke A. Cross-cultural adaptation and validation of the Swedish
1195 STarT Back Screening Tool. European Journal of Physiotherapy. 2015; 17(1):29-36
- 1196 232 Beyer F, Yagdiran A, Neu P, Kaulhausen T, Eysel P, Sobottke R. Percutaneous interspinous
1197 spacer versus open decompression: a 2-year follow-up of clinical outcome and quality of life.
1198 European Spine Journal. 2013; 22(9):2015-2021
- 1199 233 Bi X, Zhao J, Zhao L, Liu Z, Zhang J, Sun D et al. Pelvic floor muscle exercise for chronic low back
1200 pain. Journal of International Medical Research. 2013; 41(1):146-152
- 1201 234 Bialosky JE, Bishop MD, Robinson ME, Zeppieri GJ, George SZ. Spinal manipulative therapy has
1202 an immediate effect on thermal pain sensitivity in people with low back pain: a randomized
1203 controlled trial. Physical Therapy. 2009; 89(12):1292-1303
- 1204 235 Bicket MC, Gupta A, Brown CH, Cohen SP. Epidural injections for spinal pain: a systematic
1205 review and meta-analysis evaluating the "control" injections in randomized controlled trials.
1206 Anesthesiology. 2013; 119(4):907-931
- 1207 236 Bieliauskas LA, Graziano GP, Kullgren K, Roper BL. Failed back surgeries and minnesota
1208 multiphasic personality inventory (MMPI) profiles. Journal of Clinical Psychology in Medical
1209 Settings. 1994; 1(2):161-166

- 1210 237 Bigos SJ, Holland J, Holland C, Webster JS, Battie M, Malmgren JA. High-quality controlled trials
1211 on preventing episodes of back problems: systematic literature review in working-age adults.
1212 Spine Journal. 2009; 9(2):147-168
- 1213 238 Biondi D, Xiang J, Benson C, Etropolski M, Moskovitz B, Rauschkolb C. Tapentadol immediate
1214 release versus oxycodone immediate release for treatment of acute low back pain. Pain
1215 Physician. 2013; 16(3):E237-E246
- 1216 239 Birkenmaier C, Veihelmann A, Trouillier HH, Hausdorf J, on Schulze Pellengahr C. Medial branch
1217 blocks versus pericapsular blocks in selecting patients for percutaneous cryodestruction of
1218 lumbar facet joints. Regional Anesthesia and Pain Medicine. 2007; 32(1):27-33
- 1219 240 Birkmeyer NJ, Weinstein JN. Medical versus surgical treatment for low back pain: evidence and
1220 clinical practice. Effective Clinical Practice. 1999; 2(5):218-227
- 1221 241 Bjarke Christensen F, Stender Hansen E, Laursen M, Thomsen K, Bunger CE. Long-term
1222 functional outcome of pedicle screw instrumentation as a support for posterolateral spinal
1223 fusion: randomized clinical study with a 5-year follow-up. Spine. 2002; 27:1269-1277
- 1224 242 Bland P. Group CBT is a cost-effective option for persistent back pain. Practitioner. 2010;
1225 254(1728):7
- 1226 243 Blazek M, Keszthelyi B, Varhelyi M, Korosi O. Comparative study of Biarison and Voltaren in
1227 acute lumbar pain and lumbo-ischialgia. Ther Hung. 1986; 34(3):163-166
- 1228 244 Block JP. Epidural steroid or etanercept injections have limited to no benefit for subacute
1229 sciatica. Journal of Clinical Outcomes Management. 2012; 19(6):245-247
- 1230 245 Blomberg S, Hallin G, Grann K, Berg E, Sennerby U. Manual therapy with steroid injections--a
1231 new approach to treatment of low back pain. A controlled multicenter trial with an evaluation
1232 by orthopedic surgeons. Spine. 1994; 19(5):569-577
- 1233 246 Blomberg S, Svardsudd K, Mildemberger F. A controlled, multicentre trial of manual therapy in
1234 low-back pain. Initial status, sick-leave and pain score during follow-up. Scandinavian Journal of
1235 Primary Health Care. 1992; 10(3):170-178
- 1236 247 Blomberg S, Svardsudd K, Tibblin G. Manual therapy with steroid injections in low-back pain.
1237 Improvement of quality of life in a controlled trial with four months' follow-up. Scandinavian
1238 Journal of Primary Health Care. 1993; 11(2):83-90
- 1239 248 Blomberg S, Svardsudd K, Tibblin G. A randomized study of manual therapy with steroid
1240 injections in low-back pain. Telephone interview follow-up of pain, disability, recovery and drug
1241 consumption. European Spine Journal. 1994; 3(5):246-254
- 1242 249 Blomberg S, Tibblin G. A controlled, multicentre trial of manual therapy with steroid injections
1243 in low-back pain: Functional variables, side effects and complications during four months
1244 follow-up. Clinical Rehabilitation. 1993; 7(1):49-62
- 1245 250 Blondel B, Tropiano P, Gaudart J, Huang RC, Marnay T. Clinical results of lumbar total disc
1246 arthroplasty in accordance with Modic signs, with a 2-year-minimum follow-up. Spine. 2011;
1247 36(26):2309-2315
- 1248 251 Bloodworth DM, Nguyen BN, Garver W, Moss F, Pedroza C, Tran T et al. Comparison of
1249 stochastic vs. conventional transcutaneous electrical stimulation for pain modulation in

- 1250 patients with electromyographically documented radiculopathy. *American Journal of Physical*
1251 *Medicine and Rehabilitation*. 2004; 83(8):584-591
- 1252 252 Blumenthal S, McAfee PC, Guyer RD, Hochschuler SH, Geisler FH, Holt RT et al. A prospective,
1253 randomized, multicenter Food and Drug Administration Investigational Device Exemptions
1254 study of lumbar total disc replacement with the CHARITE artificial disc versus lumbar fusion -
1255 Part I: Evaluation of clinical outcomes. *Spine*. 2005; 30(14):1565-1575
- 1256 253 Blumenthal SL, Ohnmeiss DD, Guyer RD, Hochschuler SH. Prospective study evaluating total
1257 disc replacement: preliminary results. *Journal of Spinal Disorders and Techniques*. 2003;
1258 16(5):450-454
- 1259 254 Boah A, Kwong L, Weinberg J, Sherman K, Saper R. Characteristics of treatment adherence in
1260 low-income minority participants in a yoga dosing study for chronic low back pain. *Spine*. 2012;
1261 12
- 1262 255 Bodack MP, Monteiro M. Therapeutic exercise in the treatment of patients with lumbar spinal
1263 stenosis. *Clinical Orthopaedics and Related Research*. 2001;(384):144-152
- 1264 256 Boden SD. Bed rest and normal daily activity were equivalent for acute low-back pain. *Journal*
1265 *of Bone and Joint Surgery - American Volume*. 2003; 85(5):975
- 1266 257 Boden SD. Spinescope. *Seminars in Spine Surgery*. 2014; 26(1):56-60
- 1267 258 Boezaart AP, Eksteen JA, Spuy GV, Rossouw P, Knipe M. A controlled, multicentre trial of
1268 manual therapy with steroid injections in low-back pain: functional variables, side effects and
1269 complications during four months follow-up. *Spine*. 1999; 24(11):1131-1137
- 1270 259 Boezaart AP, Eksteen JA, Spuy GV, Rossouw P, Knipe M. Intrathecal Morphine: Double-Blind
1271 Evaluation of Optimal Dosage for Analgesia After Major Lumbar Spinal Surgery. *Spine*. 1999;
1272 24(11):1131-1137
- 1273 260 Bogduk N. A narrative review of intra-articular corticosteroid injections for low back pain. *Pain*
1274 *Medicine*. 2005; 6(4):287-296
- 1275 261 Bogduk N, Andersson G. Is spinal surgery effective for back pain? *F1000 Medicine Reports*.
1276 2009; 1:60
- 1277 262 Bogduk N, Holmes S. Controlled zygapophysial joint blocks: the travesty of cost-effectiveness.
1278 *Pain Medicine*. 2000; 1(1):24-34
- 1279 263 Bogduk N, Karasek M. Two-year follow-up of a controlled trial of intradiscal electrothermal
1280 anuloplasty for chronic low back pain resulting from internal disc disruption. *Spine Journal*.
1281 2002; 2(5):343-350
- 1282 264 Bogefeldt J, Grunnesjo MI, Svardsudd K, Blomberg S. Sick leave reductions from a
1283 comprehensive manual therapy programme for low back pain: the Gotland Low Back Pain
1284 Study. *Clinical Rehabilitation*. 2008; 22(6):529-541
- 1285 265 Bohmfalk GL, Contreras FL, Ross DA, Barbaro NM, Drasner K. Use of intrathecally administered
1286 morphine in the treatment of postoperative pain after lumbar spinal surgery: A prospective,
1287 double-blind, placebo-controlled study [1]. *Neurosurgery*. 1991; 29(5):795

- 1288 266 Bokov A, Skorodumov A, Isrelov A, Stupak Y, Kukarin A. Differential treatment of nerve root
1289 compression pain caused by lumbar disc herniation applying nucleoplasty. *Pain Physician*.
1290 2010; 13(5):469-480
- 1291 267 Bonaiuti D, Gatti R, Raschi A, Cantarelli L, Sirtori V. Manual autotrraction: preliminary study on
1292 the effectiveness of a new device for back pain treatment. *Europa Medicophysica*. 2004;
1293 40(2):75-81
- 1294 268 Bonetti F, Curti S, Mattioli S, Mugnai R, Vanti C, Violante FS et al. Effectiveness of a 'Global
1295 Postural Reeducation' program for persistent low back pain: a non-randomized controlled trial.
1296 *BMC Musculoskeletal Disorders*. 2010; 11:285
- 1297 269 Boogar IR, Tabatabaeian M. Effect of cognitive-behavioral group therapy on depression of the
1298 patients with chronic low back pain: A 4-months follow up. *Koomesh*. 2012; 13(2):209-217
- 1299 270 Borenstein DG, Lacks S, Wiesel SW. Cyclobenzaprine and naproxen versus naproxen alone in
1300 the treatment of acute low back pain and muscle spasm. *Clinical Therapeutics*. 1990;
1301 12(2):125-131
- 1302 271 Borges J, Baptista AF, Santana N, Souza I, Kruschewsky RA, Galvao-Castro B et al. Pilates
1303 exercises improve low back pain and quality of life in patients with HTLV-1 virus: a randomized
1304 crossover clinical trial. *Journal of Bodywork and Movement Therapies*. 2014; 18(1):68-74
- 1305 272 Borman P, Keskin D, Bodur H. The efficacy of lumbar traction in the management of patients
1306 with low back pain. *Rheumatology International*. 2003; 23(2):82-86
- 1307 273 Borms T. Comparison of injectable formulations of tiaprofenic acid and ketoprofen in acute
1308 lumbar sciatica. Single-blind randomised trial. *Drugs*. 1988; 35(Suppl.1):85-87
- 1309 274 Borys C, Lutz J, Strauss B, Altmann U. Effectiveness of a Multimodal Therapy for Patients with
1310 Chronic Low Back Pain Regarding Pre-Admission Healthcare Utilization. *PloS One*. 2015;
1311 10(11):e0143139
- 1312 275 Bosch HC, Sigmund R, Hettich M. Efficacy and tolerability of intramuscular and oral meloxicam
1313 in patients with acute lumbago: a comparison with intramuscular and oral piroxicam. *Current
1314 Medical Research and Opinion*. 1997; 14(1):29-38
- 1315 276 Boswell MV, Colson JD, Sehgal N, Dunbar EE, Epter R. A systematic review of therapeutic facet
1316 joint interventions in chronic spinal pain. *Pain Physician*. 2007; 10(1):229-253
- 1317 277 Boswell MV, Hansen HC, Trescot AM, Hirsch JA. Epidural steroids in the management of chronic
1318 spinal pain and radiculopathy. *Pain Physician*. 2003; 6(3):319-334
- 1319 278 Boswell MV, Shah RV, Everett CR, Sehgal N, McKenzie Brown AM, Abdi S et al. Interventional
1320 techniques in the management of chronic spinal pain: evidence-based practice guidelines. *Pain
1321 Physician*. 2005; 8(1):1-47
- 1322 279 Boswell MV, Trescot AM, Datta S, Schultz DM, Hansen HC, Abdi S et al. Interventional
1323 techniques: evidence-based practice guidelines in the management of chronic spinal pain. *Pain
1324 Physician*. 2007; 10(1):7-111
- 1325 280 Botelho RV. Re: Sasso R, Heller J, Hacker B, Smucker J. Artificial disc versus fusion. A
1326 prospective, randomized study with 2-years follow-up on 99 patients. *Spine* 2007;32:2933-40.
1327 *Spine*. 2008; 33(10):1156-1157

- 1328 281 Bourne IH. Treatment of chronic back pain. Comparing corticosteroid-lignocaine injections with
1329 lignocaine alone. *Practitioner*. 1984; 228(1389):333-338
- 1330 282 Bourne IHJ, Bourne S. Tender point injection of corticosteroid in the treatment of backache.
1331 *Acupuncture in Medicine*. 2000; 18(1):32-40
- 1332 283 Bradley WD, Hisey MS, Verma-Kurvari S, Ohnmeiss DD. Minimally invasive trans-sacral
1333 approach to L5-S1 interbody fusion: Preliminary results from 1 center and review of the
1334 literature. *International Journal of Spine Surgery*. 2012; 6(1):110-114
- 1335 284 Brannan SK, Mallinckrodt CH, Brown EB, Wohlreich MM, Watkin JG, Schatzberg AF. Duloxetine
1336 60 mg once-daily in the treatment of painful physical symptoms in patients with major
1337 depressive disorder. *Journal of Psychiatric Research*. 2005; 39(1):43-53
- 1338 285 Brennan GP, Fritz JM, Hunter SJ, Thackeray A, Delitto A, Erhard RE. Identifying subgroups of
1339 patients with acute/subacute "nonspecific" low back pain: results of a randomized clinical trial.
1340 *Spine*. 2006; 31(6):623-631
- 1341 286 Briggs VG, Li W, Kaplan MS, Eskander MS, Franklin PD. Injection treatment and back pain
1342 associated with degenerative lumbar spinal stenosis in older adults. *Pain Physician*. 2010;
1343 13(6):E347-E355
- 1344 287 Brinton M. Effects of posture-specific therapeutic exercise on chronic back pain and disability
1345 [PhD Thesis]. Brigham Young University, 1999. Available from: Record Available:
1346 <http://onlinelibrary.wiley.com/o/cochrane/clcentral/articles/636/CN-00623636/frame.html>
- 1347 288 Brizzi A, Giusti A, Giacchetti P, Stefanelli S, Provinciali L, Ceravolo MG. A randomised controlled
1348 trial on the efficacy of hydroelectrophoresis in acute recurrences in chronic low back pain
1349 patients. *Europa Medicophysica*. 2004; 40(4):303-309
- 1350 289 Brodke DS, Ritter SM. Nonoperative management of low back pain and lumbar disc
1351 degeneration. *Journal of Bone and Joint Surgery - American Volume*. 2004; 86A(8):1810-1818
- 1352 290 Bronfort G, Evans RL, Anderson AV, Schellhas KP, Garvey TA, Marks RA et al. Nonoperative
1353 treatments for sciatica: a pilot study for a randomized clinical trial. *Journal of Manipulative and
1354 Physiological Therapeutics*. 2000; 23(8):536-544
- 1355 291 Bronfort G, Goldsmith CH, Nelson CF, Boline PD, Anderson AV. Trunk exercise combined with
1356 spinal manipulative or NSAID therapy for chronic low back pain: a randomized, observer-
1357 blinded clinical trial. *Journal of Manipulative and Physiological Therapeutics*. 1996; 19(9):570-
1358 582
- 1359 292 Bronfort G, Maiers M, Evans R, Westrom K. Individualized chiropractic and integrative care for
1360 low back pain: A randomized clinical trial. *BMC Complementary and Alternative Medicine*.
1361 2012; 12(Suppl.1):P185
- 1362 293 Bronfort G, Evans RL, Maiers M, Anderson AV. Spinal manipulation, epidural injections, and
1363 self-care for sciatica: a pilot study for a randomized clinical trial. *Journal of Manipulative and
1364 Physiological Therapeutics*. 2004; 27(8):503-508
- 1365 294 Bronfort G, Haas M, Evans RL, Bouter LM. Efficacy of spinal manipulation and mobilization for
1366 low back pain and neck pain: a systematic review and best evidence synthesis. *Spine*. 2004;
1367 4(3):335-356

- 1368 295 Bronfort G, Maiers MJ, Evans RL, Schulz CA, Bracha Y, Svendsen KH et al. Supervised exercise,
1369 spinal manipulation, and home exercise for chronic low back pain: a randomized clinical trial.
1370 Spine. 2011; 11(7):585-598
- 1371 296 Bronsard N, Litrico S, Hovorka I, Paquis P, Gastaud B, Daideri G et al. Medicoeconomic
1372 evaluation of total disc replacement based on French National Health Care System data.
1373 Orthopaedics and Traumatology, Surgery and Research. 2011; 97(5):533-540
- 1374 297 Brooks C, Kennedy S, Marshall PWM. Specific trunk and general exercise elicit similar changes
1375 in anticipatory postural adjustments in patients with chronic low back pain: a randomized
1376 controlled trial. Spine. 2012; 37(25):E1543-E1550
- 1377 298 Brosseau L, Milne S, Robinson V, Marchand S, Shea B, Wells G et al. Efficacy of the
1378 transcutaneous electrical nerve stimulation for the treatment of chronic low back pain: a meta-
1379 analysis. Spine. 2002; 27(6):596-603
- 1380 299 Brotz D, Maschke E, Burkard S, Engel C, Manz C, Ernemann U et al. Is there a role for
1381 benzodiazepines in the management of lumbar disc prolapse with acute sciatica? Pain. 2010;
1382 149(3):470-475
- 1383 300 Brouwer PA, Brand R, van den Akker-van Marle, Jacobs WCH, Schenk B, van den Berg-
1384 Huijsmans A et al. Percutaneous laser disc decompression versus conventional
1385 microdiscectomy in sciatica: a randomized controlled trial. Spine Journal. 2015; 15(5):857-865
- 1386 301 Brouwer PA, Peul WC, Brand R, Arts MP, Koes BW, van den Berg AA et al. Effectiveness of
1387 percutaneous laser disc decompression versus conventional open discectomy in the treatment
1388 of lumbar disc herniation; design of a prospective randomized controlled trial. BMC
1389 Musculoskeletal Disorders. 2009; 10:49
- 1390 302 Brown BRJ, Womble J. Cyclobenzaprine in intractable pain syndromes with muscle spasm.
1391 JAMA. 1978; 240(11):1151-1152
- 1392 303 Brown FLJ, Bodison S, Dixon J, Davis W, Nowoslawski J. Comparison of diflunisal and
1393 acetaminophen with codeine in the treatment of initial or recurrent acute low back strain.
1394 Clinical Therapeutics. 1986; 9(Suppl.C):52-58
- 1395 304 Brown KC, Sirles AT, Hilyer JC, Thomas MJ. Cost-effectiveness of a back school intervention for
1396 municipal employees. Spine. 1992; 17(10):1224-1228
- 1397 305 Brown LL. A double-blind, randomized, prospective study of epidural steroid injection vs. the
1398 mild procedure in patients with symptomatic lumbar spinal stenosis. Pain Practice. 2012;
1399 12(5):333-341
- 1400 306 Brown RL, Fleming MF, Patterson JJ. Chronic opioid analgesic therapy for chronic low back pain.
1401 Journal of the American Board of Family Practice. 1996; 9(3):191-204
- 1402 307 Browning R, Jackson JL, O'Malley PG. Cyclobenzaprine and back pain: a meta-analysis. Archives
1403 of Internal Medicine. 2001; 161(13):1613-1620
- 1404 308 Brox JI, Nygaard OP, Holm I, Keller A, Ingebrigtsen T, Reikeras O. Four-year follow-up of surgical
1405 versus non-surgical therapy for chronic low back pain. Annals of the Rheumatic Diseases. 2010;
1406 69(9):1643-1648

- 1407 309 Brox JI, Storheim K, Grotle M, Tveito TH, Indahl A, Eriksen HR. Systematic review of back
1408 schools, brief education, and fear-avoidance training for chronic low back pain. *Spine Journal*.
1409 2008; 8(6):948-958
- 1410 310 Brox JI, Reikeras O, Nygaard O, Sorensen R, Indahl A, Holm I et al. Lumbar instrumented fusion
1411 compared with cognitive intervention and exercises in patients with chronic back pain after
1412 previous surgery for disc herniation: a prospective randomized controlled study. *Spine*. 2006;
1413 122(1-2):145-155
- 1414 311 Brox JI, Sorensen R, Friis A, Nygaard O, Indahl A, Keller A et al. Randomized clinical trial of
1415 lumbar instrumented fusion and cognitive intervention and exercises in patients with chronic
1416 low back pain and disc degeneration. *Spine*. 2003; 28(17):1913-1921
- 1417 312 Brox JI, Storheim K, Grotle M, Tveito TH, Indahl A, Eriksen HR. Evidence-informed management
1418 of chronic low back pain with back schools, brief education, and fear-avoidance training. *Spine*
1419 *Journal*. 2008; 8(1):28-39
- 1420 313 Bru E, Mykletun RJ, Berge WT, Svebak S. Effects of different psychological interventions on
1421 neck, shoulder and low back pain in female hospital staff. *Psychology and Health*. 1994;
1422 9(5):371-382. DOI:<http://dx.doi.org/10.1080/08870449408407495>
- 1423 314 Bruce-Low S, Smith D, Burnet S, Fisher J, Bissell G, Webster L. One lumbar extension training
1424 session per week is sufficient for strength gains and reductions in pain in patients with chronic
1425 low back pain ergonomics. *Ergonomics*. 2012; 55(4):500-507
- 1426 315 Brunner E, De Herdt A, Minguet P, Baldew SS, Probst M. Can cognitive behavioural therapy
1427 based strategies be integrated into physiotherapy for the prevention of chronic low back pain?
1428 A systematic review. *Disability and Rehabilitation*. 2013; 35(1):1-10
- 1429 316 Brunton S, Wang F, Edwards SB, Crucitti AS, Ossanna MJ, Walker DJ et al. Profile of adverse
1430 events with duloxetine treatment: a pooled analysis of placebo-controlled studies. *Drug Safety*.
1431 2010; 33(5):393-407
- 1432 317 Bruyere O, Demoulin M, Beudart C, Hill JC, Maquet D, Genevay S et al. Validity and reliability
1433 of the French version of the STarT Back screening tool for patients with low back pain. *Spine*.
1434 2014; 39(2):E123-E128
- 1435 318 Bruyere O, Demoulin M, Brereton C, Humblet F, Flynn D, Hill JC et al. Translation validation of a
1436 new back pain screening questionnaire (the STarT Back Screening Tool) in French. *Archives of*
1437 *Public Health*. 2012; 70(1):12
- 1438 319 Buenaventura RM, Datta S, Abdi S, Smith HS. Systematic review of therapeutic lumbar
1439 transforaminal epidural steroid injections. *Pain Physician*. 2009; 12(1):233-251
- 1440 320 Buffum MD, Sands L, Miaskowski C, Brod M, Washburn A. A clinical trial of the effectiveness of
1441 regularly scheduled versus as-needed administration of acetaminophen in the management of
1442 discomfort in older adults with dementia. *Journal of the American Geriatrics Society*. 2004;
1443 52(7):1093-1097
- 1444 321 Buhrman M, Faltenhag S, Strom L, Andersson G. Controlled trial of Internet-based treatment
1445 with telephone support for chronic back pain. *Pain*. 2004; 111(3):368-377

- 1446 322 Buhrman M, Nilsson-Ihrfeldt E, Jannert M, Strom L, Andersson G. Guided internet-based
1447 cognitive behavioural treatment for chronic back pain reduces pain catastrophizing: a
1448 randomized controlled trial. *Journal of Rehabilitation Medicine*. 2011; 43(6):500-505
- 1449 323 Bui J, Bogduk N. A systematic review of the effectiveness of CT-guided, lumbar transforaminal
1450 injection of steroids. *Pain Medicine*. 2013; 14(12):1860-1865
- 1451 324 Buijs EJ, van Wijk RMAW, Geurts JWM, Weeseman RR, Stolker RJ, Groen GG. Radiofrequency
1452 lumbar facet denervation: a comparative study of the reproducibility of lesion size after 2
1453 current radiofrequency techniques. *Regional Anesthesia and Pain Medicine*. 2004; 29(5):400-
1454 407
- 1455 325 Burgess FW. Opioid therapy for chronic painful conditions. *Medicine and Health, Rhode Island*.
1456 2001; 84(10):323-326
- 1457 326 Burgher AH, Hoelzer BC, Schroeder DR, Wilson GA, Huntoon MA. Transforaminal epidural
1458 clonidine versus corticosteroid for acute lumbosacral radiculopathy due to intervertebral disc
1459 herniation. *Spine*. 2011; 36(5):E293-E300
- 1460 327 Burkus JK, Gornet MF, Dickman CA, Zdeblick TA. Anterior lumbar interbody fusion using
1461 rhBMP-2 with tapered interbody cages. *Journal of Spinal Disorders*. 2002; 15(5):337-349
- 1462 328 Burton AK, Waddell G, Tillotson KM, Summerton N. Information and advice to patients with
1463 back pain can have a positive effect. A randomized controlled trial of a novel educational
1464 booklet in primary care. *Spine*. 1999; 24(23):2484-2491
- 1465 329 Busanich BM, Verscheure SD. Does McKenzie therapy improve outcomes for back pain? *Journal*
1466 *of Athletic Training*. 2006; 41(1):117-119
- 1467 330 Busch H, Bodin L, Bergstrom G, Jensen IB. Patterns of sickness absence a decade after pain-
1468 related multidisciplinary rehabilitation. *Pain*. 2011; 152(8):1727-1733
- 1469 331 Bush T, Cherkin D, Barlow W. The impact of physician attitudes on patient satisfaction with
1470 care for low back pain. *Archives of Family Medicine*. 1993; 2(3):301-305
- 1471 332 Bussing A, Ostermann T, Ludtke R, Michalsen A. Effects of yoga interventions on pain and pain-
1472 associated disability: a meta-analysis. *Journal of Pain*. 2012; 13(1):1-9
- 1473 333 Buttermann GR. Intradiscal injection therapy for degenerative chronic discogenic low back pain
1474 with end plate Modic changes. *Spine Journal*. 2012; 12(2):176-177
- 1475 334 Buttermann GR. The effect of spinal steroid injections for degenerative disc disease. *Spine*
1476 *Journal*. 2004; 4(5):495-505
- 1477 335 Buttermann GR. Treatment of lumbar disc herniation: epidural steroid injection compared with
1478 discectomy. *Journal of Bone and Joint Surgery - American Volume*. 2004; 86(4):670-679
- 1479 336 Bydon M, Garza-Ramos R, Macki M, Baker A, Gokaslan AK, Bydon A. Lumbar fusion versus
1480 nonoperative management for treatment of discogenic low back pain: A systematic review and
1481 meta-analysis of randomized controlled trials. *Journal of Spinal Disorders and Techniques*.
1482 2014; 27(5):297-304
- 1483 337 Bydon M, Papadimitriou K, Witham T, Wolinsky JP, Sciubba D, Gokaslan Z et al. Treatment of
1484 spinal synovial cysts. *World Neurosurgery*. 2013; 79(2):375-380

- 1485 338 Bystrom MG, Rasmussen-Barr E, Grooten WJA. Motor control exercises reduces pain and
1486 disability in chronic and recurrent low back pain: a meta-analysis. *Spine*. 2013; 38(6):E350-E358
- 1487 339 Byun JM, Park HS, Woo JH, Kim J. The effects of a forceful transforaminal epidural steroid
1488 injection on radicular pain: A preliminary study. *Korean Journal of Pain*. 2014; 27(4):334-338
- 1489 340 Cabitza P, Randelli P. Efficacy and safety of eperisone in patients with low back pain: a double
1490 blind randomized study. *European Review for Medical and Pharmacological Sciences*. 2008;
1491 12(4):229-235
- 1492 341 Cacciatore TW, Gurfinkel VS, Horak FB, Cordo PJ, Ames KE. Increased dynamic regulation of
1493 postural tone through Alexander Technique training. *Human Movement Science*. 2011;
1494 30(1):74-89
- 1495 342 Cacciatore TW, Horak FB, Henry SM. Improvement in automatic postural coordination
1496 following Alexander technique lessons in a person with low back pain. *Physical Therapy*. 2005;
1497 85(6):565-578
- 1498 343 CADTH. Platelet rich plasma lumbar disc injections for lower back pain: clinical effectiveness,
1499 safety, and guidelines. Canadian Agency for Drugs and Technologies in Health (CADTH), 2014.
1500 Available from: [http://www.cadth.ca/media/pdf/htis/mar-](http://www.cadth.ca/media/pdf/htis/mar-2014/RB0649%20Platelet%20Rich%20Plasma%20Final.pdf)
1501 [2014/RB0649%20Platelet%20Rich%20Plasma%20Final.pdf](http://www.cadth.ca/media/pdf/htis/mar-2014/RB0649%20Platelet%20Rich%20Plasma%20Final.pdf)
- 1502 344 Cahana A, Mavrocordatos P, Geurts JWM, Groen GJ. Do minimally invasive procedures have a
1503 place in the treatment of chronic low back pain? *Expert Review of Neurotherapeutics*. 2004;
1504 4(3):479-490
- 1505 345 Cai C, Pua YH, Lim KC. A clinical prediction rule for classifying patients with low back pain who
1506 demonstrate short-term improvement with mechanical lumbar traction. *European Spine*
1507 *Journal*. 2009; 18(4):554-561
- 1508 346 Cairns MC, Foster NE, Wright C. Randomized controlled trial of specific spinal stabilization
1509 exercises and conventional physiotherapy for recurrent low back pain. *Spine*. 2006;
1510 31(19):E670-E681
- 1511 347 Cakir B, Schmidt R, Mattes T, Fraitzl CR, Reichel H, Kafer W. Index level mobility after total
1512 lumbar disc replacement: is it beneficial or detrimental? *Spine*. 2009; 34(9):917-923
- 1513 348 Cakit BD, Genc H, Erdem HR, Saracoglu M, Kosar U. The role of intraarticular injecton in
1514 diagnosis and treatment of sacroiliac joint dysfunction. *Journal of Musculoskeletal Pain*. 2007;
1515 15(3):57-63
- 1516 349 Callaghan MJ. Evaluation of a back rehabilitation group for chronic low back pain in an out-
1517 patient setting. *Spine*. 1994; 80(10):677-681
- 1518 350 Calodney A. Radiofrequency denervation of the lumbar zygapophysial joints. *Techniques in*
1519 *Regional Anesthesia and Pain Management*. 2004; 8(1):35-40
- 1520 351 Cambron JA. Chiropractic care vs medical care for low back pain: Assessment of long-term
1521 follow-up data. **2005. Ph D 158 p 2005;(University of Illinois at Chicago, Health Sciences
1522 Center)
- 1523 352 Cambron JA, Gudavalli MR, Hedeker D, McGregor M, Jedlicka J, Keenum M et al. One-year
1524 follow-up of a randomized clinical trial comparing flexion distraction with an exercise program

- 1525 for chronic low-back pain. *Journal of Alternative and Complementary Medicine*. 2006;
1526 12(7):659-668
- 1527 353 Canadian Agency for Drugs and Technologies in Health. Facet joint injection as diagnostic and
1528 therapeutic tools for pain of the cervical and lumbar spine: a review of clinical and cost-
1529 effectiveness. Canada. Ottawa: Canadian Agency for Drugs and Technologies in Health
1530 (CADTH), 2011. Available from: [http://www.cadth.ca/media/pdf/htis/jan-](http://www.cadth.ca/media/pdf/htis/jan-2011/L0246_Facet_Joint_Injections.pdf)
1531 [2011/L0246_Facet_Joint_Injections.pdf](http://www.cadth.ca/media/pdf/htis/jan-2011/L0246_Facet_Joint_Injections.pdf)
- 1532 354 Canadian Coordinating Office for Health Technology Assessment. Spinal manipulation for lower
1533 back pain. Canada. Ottawa: Canadian Coordinating Office for Health Technology Assessment
1534 (CCOHTA), 2002. Available from: <https://www.ccohta.ca>
- 1535 355 Candido KD, Raghavendra MS, Chinthagada M, Badiie S, Trepashko DW. A prospective
1536 evaluation of iodinated contrast flow patterns with fluoroscopically guided lumbar epidural
1537 steroid injections: the lateral parasagittal interlaminar epidural approach versus the
1538 transforaminal epidural approach. *Anesthesia and Analgesia*. 2008; 106(2):638-contents
- 1539 356 Canter PH. Mindfulness meditation compared to waiting list in chronic low back pain:
1540 Commentary. *Focus on Alternative and Complementary Therapies*. 2007; 12(4):278-279
- 1541 357 Carey TS. A randomized, double-blind, controlled trial: Intradiscal electrothermal therapy
1542 versus placebo for the treatment of chronic discogenic low back pain: Point of view. *Spine*.
1543 2005; 30(21):2378
- 1544 358 Carlsson CP, Sjolund BH. Acupuncture for chronic low back pain: a randomized placebo-
1545 controlled study with long-term follow-up. *Clinical Journal of Pain*. 2001; 17(4):296-305
- 1546 359 Carr JL, Klaber Moffett JA, Howarth E, Richmond SJ, Torgerson DJ, Jackson DA et al. A
1547 randomized trial comparing a group exercise programme for back pain patients with individual
1548 physiotherapy in a severely deprived area. *Disability and Rehabilitation*. 2005; 27(16):929-937
- 1549 360 Carragee EJ, Alamin TF, Miller JL, Carragee JM. Discographic, MRI and psychosocial
1550 determinants of low back pain disability and remission: a prospective study in subjects with
1551 benign persistent back pain. *Spine Journal*. 2005; 5(1):24-35
- 1552 361 Carreon LY, Bratcher KR, Das N, Nienhuis JB, Glassman SD. Estimating EQ-5D values from the
1553 Oswestry Disability Index and numeric rating scales for back and leg pain. *Spine*. 2014;
1554 39(8):678-682
- 1555 362 Carreon LY, Glassman SD, Howard J. Fusion and nonsurgical treatment for symptomatic lumbar
1556 degenerative disease: a systematic review of Oswestry Disability Index and MOS Short Form-36
1557 outcomes. *Spine Journal*. 2008; 8(5):747-755
- 1558 363 Carreon LY, Glassman SD, Djurasovic M, Dimar JR, Johnson JR, Puno RM et al. Are preoperative
1559 health-related quality of life scores predictive of clinical outcomes after lumbar fusion? *Spine*.
1560 2009; 34(7):725-730
- 1561 364 Carson JW, Keefe FJ, Lynch TR, Carson KM, Goli V, Fras AM et al. Loving-kindness meditation for
1562 chronic low back pain: results from a pilot trial. *Journal of Holistic Nursing*. 2005; 23(3):287-304
- 1563 365 Carter IR, Lord JL. Clinical inquiries. How effective are exercise and physical therapy for chronic
1564 low back pain? *Journal of Family Practice*. 2002; 51(3):209

- 1565 366 Casale R. Acute low back pain. Symptomatic treatment with a muscle relaxant drug. *Clinical*
1566 *Journal of Pain*. 1988; 4(2):81-88
- 1567 367 Castagnera L, Maurette P, Pointillart V, Vital JM, Erny P, Sénégas J. Long-term results of cervical
1568 epidural steroid injection with and without morphine in chronic cervical radicular pain. *Pain*.
1569 1994; 58(2):239-243
- 1570 368 Castro-Sanchez AM, Lara-Palomo IC, Mataran-Penarrocha GA, Fernandez-Sanchez M, Sanchez-
1571 Labraca N, Arroyo-Morales M. Kinesio Taping reduces disability and pain slightly in chronic
1572 non-specific low back pain: a randomised trial. *Journal of Physiotherapy*. 2012; 58(2):89-95
- 1573 369 Ceccherelli F, Rigoni MT, Gagliardi G, Ruzzante L. Comparison of superficial and deep
1574 acupuncture in the treatment of lumbar myofascial pain: a double-blind randomized controlled
1575 study. *Clinical Journal of Pain*. 2002; 18(3):149-153
- 1576 370 Cecchi F, Molino-Lova R, Chiti M, Pasquini G, Paperini A, Conti AA et al. Spinal manipulation
1577 provides better short and long-term reduction in pain and disability for patients with non-
1578 specific chronic low back pain. *Focus on Alternative and Complementary Therapies*. 2010;
1579 15(2):137-138
- 1580 371 Cecchi F, Negrini S, Pasquini G, Paperini A, Conti AA, Chiti M et al. Predictors of functional
1581 outcome in patients with chronic low back pain undergoing back school, individual
1582 physiotherapy or spinal manipulation. *European Journal of Physical Medicine and*
1583 *Rehabilitation*. 2012; 48(3):371-378
- 1584 372 Cecchi F, Molino-Lova R, Chiti M, Pasquini G, Paperini A, Conti AA et al. Spinal manipulation
1585 compared with back school and with individually delivered physiotherapy for the treatment of
1586 chronic low back pain: a randomized trial with one-year follow-up. *Clinical Rehabilitation*. 2010;
1587 24(1):26-36
- 1588 373 Celik SE, Celik S, Goksu K, Kara A, Ince I. Microdecompressive laminotomy with a 5-year follow-
1589 up period for severe lumbar spinal stenosis. *Journal of Spinal Disorders and Techniques*. 2010;
1590 23(4):229-235
- 1591 374 Cerrada C, Weinberg J, Dresner D, Boah A, Sherman K, Saper R. Comparison of paper surveys
1592 and computer-assisted telephone interviews in a randomized controlled trial of yoga for low
1593 back pain. *Spine*. 2012; 12
- 1594 375 Chambers H. Physiotherapy and lumbar facet joint injections as a combination treatment for
1595 chronic low back pain. A narrative review of lumbar facet joint injections, lumbar spinal
1596 mobilizations, soft tissue massage and lower back mobility exercises. *Musculoskeletal Care*.
1597 2013; 11(2):106-120
- 1598 376 Chan CW, Mok NW, Yeung EW. Aerobic exercise training in addition to conventional
1599 physiotherapy for chronic low back pain: a randomized controlled trial. *Spine*. 2011;
1600 92(10):1681-1685
- 1601 377 Chan HN, Fam J, Ng BY. Use of antidepressants in the treatment of chronic pain. *Annals of the*
1602 *Academy of Medicine, Singapore*. 2009; 38(11):974-979
- 1603 378 Chandanwale AS, Chopra A, Goregaonkar A, Medhi B, Shah V, Gaikwad S et al. Evaluation of
1604 eperisone hydrochloride in the treatment of acute musculoskeletal spasm associated with low
1605 back pain: a randomized, double-blind, placebo-controlled trial. *Journal of Postgraduate*
1606 *Medicine*. 2011; 57(4):278-285

- 1607 379 Chang WD, Wang YS, Chou CS, Chen WJ, Huang YS, Liaw SY. Functional approach to treatment
1608 of back pain in primary care: a preliminary report. *Spine*. 1994; 53(6):338-345
- 1609 380 Chang Y, Singer DE, Wu YA, Keller RB, Atlas SJ. The effect of surgical and nonsurgical treatment
1610 on longitudinal outcomes of lumbar spinal stenosis over 10 years. *Journal of the American*
1611 *Geriatrics Society*. 2005; 53(5):785-792
- 1612 381 Chang-Chien GC, Knezevic NN, McCormick Z, Chu SK, Trescot AM, Candido KD. Transforaminal
1613 versus interlaminar approaches to epidural steroid injections: a systematic review of
1614 comparative studies for lumbosacral radicular pain. *Pain Physician*. 2014; 17(4):E509-E524
- 1615 382 Chaparro LE, Furlan AD, Deshpande A, Mailis-Gagnon A, Atlas S, Turk DC. Opioids compared
1616 with placebo or other treatments for chronic low back pain: an update of the Cochrane Review.
1617 *Spine*. 2014; 39(7):556-563
- 1618 383 Chapman JA, Smith L, Little P, Cantrell E, Langridge J, Pickering R. The 'back home' leaflet:
1619 developing a self-management leaflet for people with acute low back pain. *Journal of Back and*
1620 *Musculoskeletal Rehabilitation*. 1997; 9(1):61-63
- 1621 384 Chapman SL, Brena SF. Learned helplessness and responses to nerve blocks in chronic low back
1622 pain patients. *Pain*. 1982; 14(4):355-364
- 1623 385 Chapman SL, Brena SF, Hammonds WD. Placebo and nocebo responses to sympathetic
1624 injections of bupivacaine and saline in patients with chronic low back pain. *Pain*. 1981;
1625 10(Suppl. 1):S226
- 1626 386 Chapman SL, Pemberton JS. Prediction of treatment outcome from clinically derived MMPI
1627 clusters in rehabilitation for chronic low back pain. *Clinical Journal of Pain*. 1994; 10(4):267-276
- 1628 387 Charlusz M, Gasztych J, Irzmanski R, Kujawa J. Comparative analysis of analgesic efficacy of
1629 selected physiotherapy methods in low back pain patients. *Ortopedia, Traumatologia,*
1630 *Rehabilitacja*. 2010; 12(3):225-236
- 1631 388 Charrette MN. Orthotic support for low back pain. *American Chiropractor*. 1998; 20(3):40
- 1632 389 Charrette MN. Firm footing. Orthotic support for low back pain. *Chiropractic Journal*. 2003;
1633 17(6):21
- 1634 390 Chaudhary KS, Groff MW. Minimally invasive transforaminal lumbar interbody fusion for
1635 degenerative spine. *Techniques in Orthopaedics*. 2011; 26(3):146-155
- 1636 391 Cheatle M, Esterhai J. Pelvic traction as treatment for acute back pain. *Spine*. 1991;
1637 16(12):1379-1381
- 1638 392 Chen CY, Chang CW, Lee ST, Chen YC, Tang SF-T, Cheng CH et al. Is rehabilitation intervention
1639 during hospitalization enough for functional improvements in patients undergoing lumbar
1640 decompression surgery? A prospective randomized controlled study. *Clinical Neurology and*
1641 *Neurosurgery*. 2015; 129(Suppl.1):S41-S46
- 1642 393 Chen SM, Alexander R, Lo SK, Cook J. Effects of Functional Fascial Taping on pain and function
1643 in patients with non-specific low back pain: a pilot randomized controlled trial. *Clinical*
1644 *Rehabilitation*. 2012; 26(10):924-933

- 1645 394 Chen X. Comparative study on acupuncture needling methods for sciatica: Routine needling vs.
1646 Point-to-point penetration and deep puncture. *American Journal of Acupuncture*. 1998;
1647 26(1):37-41
- 1648 395 Chen X, Wang Z, Liang Y. Effectiveness of non-surgical treatment of lumbar disc herniation: A
1649 systematic review. *Chinese Journal of Evidence-Based Medicine*. 2012; 12(7):861-866
- 1650 396 Chen Y-T. Effect of treadmill walking training on trunk muscles endurance in people with and
1651 without low back pain. *Journal of Rehabilitation Medicine (Stiftelsen*
1652 *Rehabiliteringsinformation)*. 2012;77
- 1653 397 Chen YC, Chou SW, Tseng HM, Liu WY, Ke YJ, Lin YH. Physical fitness of patients with
1654 nonspecific low back pain who performed a progressive four-week fitness exercise program.
1655 *Journal of Physical Therapy Science*. 2012; 24(8):725-729
- 1656 398 Chen YL. Effectiveness of a new back belt in the maintenance of lumbar lordosis while sitting: a
1657 pilot study. *International Journal of Industrial Ergonomics*. 2003; 32(4):299-304
- 1658 399 Chenot JF, Becker A, Leonhardt C, Keller S, Donner-Banzhoff N, Baum E et al. Use of
1659 complementary alternative medicine for low back pain consulting in general practice: a cohort
1660 study. *BMC Complementary and Alternative Medicine*. 2007; 7:42
- 1661 400 Cherkin D. A randomized trial comparing chiropractic manipulation, mckenzie therapy and an
1662 education booklet for low back pain. *Deutsche Zeitschrift Fur Akupunktur*. 2000; 43(1):40
- 1663 401 Cherkin D, Deyo R, Battie M, Street J, Barlow W. A comparison of physical therap, chiropractic
1664 manipulation and provision of an educational booklet for the treatment of patients with low
1665 back pain. *New England Journal of Medicine*. 1998; 339(15):1021-1029
- 1666 402 Cherkin D, Deyo RA, Berg AO, Bergman JJ, Lishner DM. Evaluation of a physician education
1667 intervention to improve primary care for low-back pain. I. Impact on physicians. *Spine*. 1991;
1668 16(10):1168-1172
- 1669 403 Cherkin DC, Deyo RA, Battie M, Street J, Barlow W. Chiropractic manipulation and McKenzie
1670 physiotherapy were not effective for low back pain. *ACP Journal Club*. 1999; 130(2):42
- 1671 404 Cherkin DC, Deyo RA, Street JH, Hunt M, Barlow W. Pitfalls of patient education. Limited
1672 success of a program for back pain in primary care. *Spine*. 1996; 21(3):345-355
- 1673 405 Cherkin DC, Eisenberg D, Sherman KJ, Barlow W, Kaptchuk TJ, Street J et al. Randomized trial
1674 comparing traditional Chinese medical acupuncture, therapeutic massage, and self-care
1675 education for chronic low back pain. *Archives of Internal Medicine*. 2001; 161(8):1081-1088
- 1676 406 Cherkin DD. A randomized trial comparing chiropractic manipulation, mckenzie therapy and an
1677 education booklet for low back pain. *International Conference On Spinal Manipulation*.
1678 1996;103-104
- 1679 407 Cherkin DC, Sherman KJ, Balderson BH, Turner JA, Cook AJ, Stoelb B et al. Comparison of
1680 complementary and alternative medicine with conventional mind-body therapies for chronic
1681 back pain: protocol for the Mind-body Approaches to Pain (MAP) randomized controlled trial.
1682 *Trials*. 2014; 15(1):211

- 1683 408 Cherkin DC, Sherman KJ, Deyo RA, Shekelle PG. A review of the evidence for the effectiveness,
1684 safety, and cost of acupuncture, massage therapy, and spinal manipulation for back pain.
1685 *Annals of Internal Medicine*. 2003; 138(11):898-906
- 1686 409 Childers MK, Borenstein D, Brown RL, Gershon S, Hale ME, Petri M et al. Low-dose
1687 cyclobenzaprine versus combination therapy with ibuprofen for acute neck or back pain with
1688 muscle spasm: a randomized trial. *Current Medical Research and Opinion*. 2005; 21(9):1485-
1689 1493
- 1690 410 Childs JD. Validation of a clinical prediction rule to identify patients likely to benefit from spinal
1691 manipulation: A randomized clinical trial. ** 2003. Ph D 296 p 2003;(University of Pittsburgh)
- 1692 411 Childs JD, Fritz JM, Flynn TW, Irrgang JJ, Johnson KK, Majkowski GR et al. A clinical prediction
1693 rule to identify patients with low back pain most likely to benefit from spinal manipulation: a
1694 validation study. *Annals of Internal Medicine*. 2004; 141(12):920-928
- 1695 412 Childs JD, Flynn TW. Clinical decision making for low back pain: a step in the right direction.
1696 *Journal of Orthopaedic and Sports Physical Therapy*. 2014; 44(1):1-2
- 1697 413 Childs JD, Fritz JM, Wu SS, Flynn TW, Wainner RS, Robertson EK et al. Implications of early and
1698 guideline adherent physical therapy for low back pain on utilization and costs. *BMC Health
1699 Services Research*. 2015; 15:150
- 1700 414 Childs JD, Teyhen DS, Van Wyngaarden JJ, Dougherty BF, Ladislav BJ, Helton GL et al. Predictors
1701 of web-based follow-up response in the Prevention Of Low Back Pain In The Military Trial
1702 (POLM). *BMC Musculoskeletal Disorders*. 2011; 12:132
- 1703 415 Chitragran R, Poopitaya S, Tassanawipas W. Result of percutaneous disc decompression using
1704 nucleoplasty in Thailand: a randomized controlled trial. *Journal of the Medical Association of
1705 Thailand*. 2012; 95 Suppl 10:S198-S205
- 1706 416 Cho DY, Lin HL, Lee WY, Lee HC. Split-spinous process laminotomy and discectomy for
1707 degenerative lumbar spinal stenosis: a preliminary report. *Journal of Neurosurgery: Spine*.
1708 2007; 6(3):229-239
- 1709 417 Cho HK, Moon W, Kim J. Effects of yoga on stress and inflammatory factors in patients with
1710 chronic low back pain: A non-randomized controlled study. *European Journal of Integrative
1711 Medicine*. 2015; 7(2):118-123
- 1712 418 Cho I, Jeon C, Lee S, Lee D, Hwangbo G. Effects of lumbar stabilization exercise on functional
1713 disability and lumbar lordosis angle in patients with chronic low back pain. *Journal of Physical
1714 Therapy Science*. 2015; 27(6):1983-1985
- 1715 419 Cho J, Park YG, Chung SS. Percutaneous radiofrequency lumbar facet rhizotomy in mechanical
1716 low back pain syndrome. *Stereotactic and Functional Neurosurgery*. 1997; 68(1-4 Pt 1):212-217
- 1717 420 Choi HJ, Hahn S, Kim CH, Jang BH, Park S, Lee SM et al. Epidural steroid injection therapy for
1718 low back pain: a meta-analysis. *International Journal of Technology Assessment in Health Care*.
1719 2013; 29(3):244-253
- 1720 421 Choi J, Hwangbo G, Park J, Lee S. The effects of manual therapy using joint mobilization and
1721 flexion-distraction techniques on chronic low back pain and disc heights. *Journal of Physical
1722 Therapy Science*. 2014; 26(8):1259-1262

- 1723 422 Cholewicki J, Lee AS, Peter Reeves N, Morrisette DC. Comparison of trunk stiffness provided by
1724 different design characteristics of lumbosacral orthoses. *Clinical Biomechanics*. 2010;
1725 25(2):110-114
- 1726 423 Choma TJ, Schuster JM, Norvell DC, Dettori JR, Chutkan NB. Fusion versus nonoperative
1727 management for chronic low back pain: Do comorbid diseases or general health factors affect
1728 outcome? *Spine*. 2011; 36(21 SUPPL.):S87-S95
- 1729 424 Chopko BW. Long-term results of percutaneous lumbar decompression for LSS: Two-year
1730 outcomes. *Clinical Journal of Pain*. 2013; 29(11):939-943
- 1731 425 Chou D, Samartzis D, Bellabarba C, Patel A, Luk KDK, Kisser JMS et al. Degenerative magnetic
1732 resonance imaging changes in patients with chronic low back pain: a systematic review. *Spine*.
1733 2011; 36(21 Suppl):S43-S53
- 1734 426 Chou P-H, Ma H-L, Wang S-T, Liu C-L, Chang M-C, Yu W-K. Fusion may not be a necessary
1735 procedure for surgically treated burst fractures of the thoracolumbar and lumbar spines.
1736 *Journal of Bone and Joint Surgery - American Volume*. 2014; 96(20):1724-1731
- 1737 427 Chou R, Baisden J, Carragee EJ, Resnick DK, Shaffer WO, Loeser JD. Surgery for low back pain: A
1738 review of the evidence for an American pain society clinical practice guideline. *Spine*. 2009;
1739 34(10):1094-1109
- 1740 428 Chou R, Hashimoto R, Friedly J, Fu R, Bougatsos C, Dana T et al. Epidural Corticosteroid
1741 Injections for Radiculopathy and Spinal Stenosis: A Systematic Review and Meta-analysis.
1742 *Annals of Internal Medicine*. 2015; 163(5):373-381
- 1743 429 Chou R, Loeser JD, Owens DK, Rosenquist RW, Atlas SJ, Baisden J et al. Interventional therapies,
1744 surgery, and interdisciplinary rehabilitation for low back pain: An evidence-based clinical
1745 practice guideline from the American pain society. *Spine*. 2009; 34(10):1066-1077
- 1746 430 Chou R. Low back pain (chronic). *Clinical Evidence*. 2010; 10:1116
- 1747 431 Chou R, Atlas SJ, Stanos SP, Rosenquist RW. Nonsurgical interventional therapies for low back
1748 pain: a review of the evidence for an American Pain Society clinical practice guideline. *Spine*.
1749 2009; 34(10):1078-1093
- 1750 432 Chou R, Baisden J, Carragee EJ, Resnick DK, Shaffer WO, Loeser JD. Surgery for low back pain: a
1751 review of the evidence for an American Pain Society Clinical Practice Guideline. *Spine*. 2009;
1752 34(10):1094-1109
- 1753 433 Chou R, Fu R, Carrino JA, Deyo RA. Imaging strategies for low-back pain: systematic review and
1754 meta-analysis. *Lancet*. 2009; 373(9662):463-472
- 1755 434 Chou R, Huffman LH, American Pain Society, American College of Physicians. Medications for
1756 acute and chronic low back pain: a review of the evidence for an American Pain
1757 Society/American College of Physicians clinical practice guideline. *Annals of Internal Medicine*.
1758 2007; 147(7):505-514
- 1759 435 Chou R, Huffman LH, American Pain Society, American College of Physicians.
1760 Nonpharmacologic therapies for acute and chronic low back pain: a review of the evidence for
1761 an American Pain Society/American College of Physicians clinical practice guideline. *Annals of*
1762 *Internal Medicine*. 2007; 147(7):492-504

- 1763 436 Chou R, Peterson K, Helfand M. Comparative efficacy and safety of skeletal muscle relaxants
1764 for spasticity and musculoskeletal conditions: a systematic review. *Journal of Pain and*
1765 *Symptom Management*. 2004; 28(2):140-175
- 1766 437 Chown M, Whittamore L, Rush M, Allan S, Stott D, Archer M. A prospective study of patients
1767 with chronic back pain randomised to group exercise, physiotherapy or osteopathy. *Spine*.
1768 2008; 94(1):21-28
- 1769 438 Christensen A, Hoy K, Bungler C, Helmig P, Hansen ES, Andersen T et al. Transforaminal lumbar
1770 interbody fusion vs. posterolateral instrumented fusion: Cost-utility evaluation along side an
1771 RCT with a 2-year follow-up. *European Spine Journal*. 2014; 23(5):1137-1143
- 1772 439 Christensen FB. Lumbar spinal fusion. Outcome in relation to surgical methods, choice of
1773 implant and postoperative rehabilitation. *Acta Orthopaedica Scandinavica Supplementum*.
1774 2004; 75(313):2-43
- 1775 440 Christensen FB, Hansen ES, Eiskjaer S, Hoy K, Helmig P, Neumann P et al. Circumferential
1776 lumbar spinal fusion with brantigan cage versus posterolateral fusion with titanium cotrel-
1777 dubousset instrumentation: A prospective, randomized clinical study of 146 patients. *Spine*.
1778 2002; 27(23):2674-2683
- 1779 441 Christensen FB, Karlslose B, Hansen ES, Bungler CE. Radiological and functional outcome after
1780 anterior lumbar interbody spinal fusion. *European Spine Journal*. 1996; 5(5):293-298
- 1781 442 Christensen FB, Laurberg I, Bungler CE. Importance of the back-cafe concept to rehabilitation
1782 after lumbar spinal fusion: a randomized clinical study with a 2-year follow-up. *Spine*. 2003;
1783 28(23):2561-2569
- 1784 443 Christensen KD. Low back pain and ambulatory traction. *Digest of Chiropractic Economics*.
1785 1993; 35(4):32-33
- 1786 444 Christiansen S, Oettingen G, Dahme B, Klinger R. A short goal-pursuit intervention to improve
1787 physical capacity: a randomized clinical trial in chronic back pain patients. *Pain*. 2010;
1788 149(3):444-452
- 1789 445 Chung JW, Zeng Y, Wong TK. Drug therapy for the treatment of chronic nonspecific low back
1790 pain: systematic review and meta-analysis. *Pain Physician*. 2013; 16(6):E685-E704
- 1791 446 Chung SS, Lee CS, Kang CS. Lumbar total disc replacement using ProDisc II: a prospective study
1792 with a 2-year minimum follow-up. *Journal of Spinal Disorders and Techniques*. 2006; 19(6):411-
1793 415
- 1794 447 Chuter V, Spink M, Searle A, Ho A. The effectiveness of shoe insoles for the prevention and
1795 treatment of low back pain: a systematic review and meta-analysis of randomised controlled
1796 trials. *BMC Musculoskeletal Disorders*. 2014; 15:140
- 1797 448 Clare HA, Adams R, Maher CG. A systematic review of efficacy of McKenzie therapy for spinal
1798 pain. *Australian Journal of Physiotherapy*. 2004; 50(4):209-216
- 1799 449 Clarke J, van Tulder MW, Blomberg S, de Vet H, van der Heijden G, Bronfort G. Traction for low
1800 back pain with or without sciatica: an updated systematic review within the framework of the
1801 Cochrane collaboration. *Spine*. 2006; 31(14):1591-1599

- 1802 450 Cleland JA, Childs JD, Palmer JA, Eberhart S. Slump stretching in the management of non-
1803 radicular low back pain: a pilot clinical trial. *Orthopaedic Division Review*. 2007; 2007(4):11-12
- 1804 451 Cleland JA, Fritz JM, Kulig K, Davenport TE, Eberhart S, Magel J et al. Comparison of the
1805 effectiveness of three manual physical therapy techniques in a subgroup of patients with low
1806 back pain who satisfy a clinical prediction rule: A randomized clinical trial. *Spine*. 2009;
1807 34(25):2720-2729
- 1808 452 Cleland JA, Childs JD, Palmer JA, Eberhart S. Slump stretching in the management of non-
1809 radicular low back pain: a pilot clinical trial. *Manual Therapy*. 2006; 11(4):279-286
- 1810 453 Cleland JA, Fritz JM, Childs JD, Kulig K. Comparison of the effectiveness of three manual
1811 physical therapy techniques in a subgroup of patients with low back pain who satisfy a clinical
1812 prediction rule: study protocol of a randomized clinical trial [NCT00257998]. *BMC*
1813 *Musculoskeletal Disorders*. 2006; 7:11
- 1814 454 Coats TL, Borenstein DG, Nangia NK, Brown MT. Effects of valdecoxib in the treatment of
1815 chronic low back pain: results of a randomized, placebo-controlled trial. *Clinical Therapeutics*.
1816 2004; 26(8):1249-1260
- 1817 455 Cocelli LP, Karakurum G, Cebesoy O, Karadasli H, Oner U. Clinical comparison of effectiveness
1818 of epidural triamcinolone and betamethasone in discal radiculalgia: A prospective, randomized
1819 study. *Journal of Musculoskeletal Pain*. 2009; 17(3):281-286
- 1820 456 Coddling C, Levinsky D, Hale M, Thomas J, Lockhart E, Jain R. Analgesic efficacy and safety of
1821 controlled-release hydrocodone and acetaminophen tablets, dosed twice daily, for moderate
1822 to severe mechanical chronic low-back pain: A randomized, double-blind, placebo-controlled
1823 withdrawal trial. *Journal of Pain*. 2008; 9(4 Suppl):38
- 1824 457 Cohen JE, Goel V, Frank JW, Bombardier C, Peloso P, Guillemin F. Group education
1825 interventions for people with low back pain. An overview of the literature. *Spine*. 1994;
1826 19(11):1214-1222
- 1827 458 Cohen MJ, Heinrich RL, Naliboff BD, Collins GA, Bonebakker AD. Group outpatient physical and
1828 behavioral therapy for chronic low back pain. *Journal of Clinical Psychology*. 1983; 39(3):326-
1829 333
- 1830 459 Cohen SP. Efficacy of epidural etanercept in the treatment of sciatica. 2007. Available from:
1831 <https://www.clinicaltrials.gov/ct2/show/NCT00364572> [Last accessed: 21 April 15 A.D.]
- 1832 460 Cohen SP. Epidural steroid injections for low back pain. *BMJ*. 2011; 343:d5310
- 1833 461 Cohen SP, Hanling S, Bicket MC, White RL, Veizi E, Kurihara C et al. Epidural steroid injections
1834 compared with gabapentin for lumbosacral radicular pain: multicenter randomized double
1835 blind comparative efficacy study. *BMJ*. 2015; 350:h1748
- 1836 462 Cohen SP, Williams KA, Kurihara C, Nguyen C, Shields C, Kim P et al. Multicenter, randomized,
1837 comparative cost-effectiveness study comparing 0, 1, and 2 diagnostic medial branch (facet
1838 joint nerve) block treatment paradigms before lumbar facet radiofrequency denervation.
1839 *Anesthesiology*. 2010; 113(2):395-405
- 1840 463 Cohen SP, Atanelov L, Rammasubu C, Amasha R, Kurihara C, Verdun A et al. Can changes in
1841 vital signs be used to predict the response to lumbar facet blocks and radiofrequency

- 1842 denervation? A prospective, correlational study. *Regional Anesthesia and Pain Medicine*. 2014;
1843 39(4):333-340
- 1844 464 Cohen SP, Bicket MC, Jamison D, Wilkinson I, Rathmell JP. Epidural steroids: a comprehensive,
1845 evidence-based review. *Regional Anesthesia and Pain Medicine*. 2013; 38(3):175-200
- 1846 465 Cohen SP, Gupta A, Strassels SA, Christo PJ, Erdek MA, Griffith SR et al. Effect of MRI on
1847 treatment results or decision making in patients with lumbosacral radiculopathy referred for
1848 epidural steroid injections: a multicenter, randomized controlled trial. *Archives of Internal
1849 Medicine*. 2012; 172(2):134-142
- 1850 466 Coletta R, Maggiolo F, Tizio S. Etofenamate and transcutaneous electrical nerve stimulation
1851 treatment of painful spinal syndromes. *International Journal of Clinical Pharmacology
1852 Research*. 1988; 8(4):295-298
- 1853 467 Collazo CE. Exercise and auricular acupuncture for chronic low-back pain. *Revista Internacional
1854 De Acupuntura*. 2012; 6(1):31-32
- 1855 468 Conijn FJJ. A randomized trial of medical care with and without physical therapy and
1856 chiropractic care with and without physical modalities for patients with low back pain: 6-month
1857 follow-up outcomes from the UCLA low back pain study. *Spine*. 2003; 28(14):1625-1626
- 1858 469 Conijn FJJ. Re: Hurwitz EL, Morgenstern H, Harber P, et al. A randomized trial of medical care
1859 with and without physical therapy and chiropractic care with and without physical modalities
1860 for patients with low back pain: 6-month follow-up outcomes from the UCLA low back pain
1861 study. *Spine* 2002; 27:2193-204. *Spine*. 2003; 28(21):2486
- 1862 470 Conn A, Buenaventura RM, Datta S, Abdi S, Diwan S. Systematic review of caudal epidural
1863 injections in the management of chronic low back pain. *Pain Physician*. 2009; 12(1):109-135
- 1864 471 Cook C, Cook A, Worrell T. Manual therapy provided by physical therapists in a hospital-based
1865 setting: a retrospective analysis. *Journal of Manipulative and Physiological Therapeutics*.
1866 United States 2008; 31(5):338-343
- 1867 472 Cook C, Hegedus E. Diagnostic utility of clinical tests for spinal dysfunction. *Manual Therapy*.
1868 2011; 16(1):21-25
- 1869 473 Cook C, Learman K, Showalter C, Kabbaz V, O'Halloran B. Early use of thrust manipulation
1870 versus non-thrust manipulation: a randomized clinical trial. *Manual Therapy*. 2013; 18(3):191-
1871 198
- 1872 474 Cook CE, Arnold PM, Passias PG, Frempong-Boadu AK, Radcliff K, Isaacs R et al. Predictors of
1873 pain and disability outcomes in one thousand, one hundred and eight patients who underwent
1874 lumbar discectomy surgery. *International Orthopaedics*. 2015; 39(11):2143-2151
- 1875 475 Cook CE, Showalter C, Kabbaz V, O'Halloran B. Can a within/between-session change in pain
1876 during reassessment predict outcome using a manual therapy intervention in patients with
1877 mechanical low back pain? *Manual Therapy*. 2012; 17(4):325-329
- 1878 476 Cooper K, Wilcock S. The effectiveness of peer support interventions for community-dwelling
1879 adults with chronic non-cancer pain: A systematic review protocol. *JB I Database of Systematic
1880 Reviews and Implementation Reports*. 2013; 11(7):348-355

- 1881 477 Corey DT, Koepfler LE, Etlin D, Day HI. A limited functional restoration program for injured
1882 workers: A randomized trial. *Journal of Occupational Rehabilitation*. 1996; 6(4):239-249
- 1883 478 Coric D, Pettine K, Sumich A, Boltes MO. Prospective study of disc repair with allogeneic
1884 chondrocytes presented at the 2012 Joint Spine Section Meeting. *Journal of Neurosurgery:*
1885 *Spine*. 2013; 18(1):85-95
- 1886 479 Costa LOP, Maher CG, Latimer J, Hodges PW, Herbert RD, Refshauge KM et al. Motor control
1887 exercise for chronic low back pain: a randomized placebo-controlled trial. *Spine*. 2009;
1888 89(12):1275-1286
- 1889 480 Costantino C, Marangio E, Coruzzi G. Mesotherapy versus Systemic Therapy in the Treatment
1890 of Acute Low Back Pain: A Randomized Trial. *Evidence-Based Complementary and Alternative*
1891 *Medicine*. 2011; 2011:317183
- 1892 481 Cote P, Mior SA, Vernon H. The short-term effect of a spinal manipulation on pain/pressure
1893 threshold in patients with chronic mechanical low back pain. *Journal of Manipulative and*
1894 *Physiological Therapeutics*. 1994; 17(6):364-368
- 1895 482 COWAN IC, MAPES RE. CARISOPRODOL IN THE MANAGEMENT OF MUSCULOSKELETAL
1896 DISORDERS. A CONTROLLED TRIAL. *Annals of Physical Medicine*. 1963; 7(4):140-143
- 1897 483 Coxhead CE. A clinical trial of the management of sciatica with or without low back pain. *Spine*.
1898 1974; 60(3):72-74
- 1899 484 Coxhead CE, Inskip H, Meade TW, North WR, Troup JD. Multicentre trial of physiotherapy in the
1900 management of sciatic symptoms. *Lancet*. 1981; 1(8229):1065-1068
- 1901 485 Cramer GD, Humphreys CR, Hondras MA, McGregor M, Triano JJ. The Hmax/Mmax ratio as an
1902 outcome measure for acute low back pain. *Journal of Manipulative and Physiological*
1903 *Therapeutics*. 1993; 16(1):7-13
- 1904 486 Cramer H, Haller H, Lauche R, Dobos G. Mindfulness-based stress reduction for low back pain.
1905 A systematic review. *BMC Complementary and Alternative Medicine*. 2012; 12:162
- 1906 487 Crawshaw C, Frazer AM, Merriam WF. A comparison of surgery and chemonucleolysis in the
1907 treatment of sciatica. A prospective randomized trial. *Spine*. 1984; 9(2):195-198
- 1908 488 Critchley DJ, Ratcliffe J, Noonan S, Jones RH, Hurley M, V. Effectiveness and cost-effectiveness
1909 of three types of physiotherapy used to reduce chronic low back pain disability: a pragmatic
1910 randomized trial with economic evaluation. *Spine*. 2007; 32(14):1474-1481
- 1911 489 Crockett MT, Moynagh M, Long N, Kilcoyne A, Dicker P, Synnott K. Ozone-augmented
1912 percutaneous discectomy: a novel treatment option for refractory discogenic sciatica. *Clinical*
1913 *Radiology*. 2014; 69(12):1280-1286
- 1914 490 Crow WT, Willis DR. Estimating cost of care for patients with acute low back pain: a
1915 retrospective review of patient records. *Journal of the American Osteopathic Association*.
1916 2009; 109(4):229-233
- 1917 491 Cubukcu S, Karsli B, Alimoglu MK. Meralgia paresthetica and low back pain. *Journal of Back and*
1918 *Musculoskeletal Rehabilitation*. 2004; 17(3-4):135-139

- 1919 492 Cuesta-Vargas AI, Adams N, Salazar JA, Belles A, Hazanas S, Arroyo-Morales M. Deep water
1920 running and general practice in primary care for non-specific low back pain versus general
1921 practice alone: randomized controlled trial. *Clinical Rheumatology*. 2012; 31(7):1073-1078
- 1922 493 Cuesta-Vargas AI, Garcia-Romero JC, Arroyo-Morales M, Diego-Acosta AM, Daly DJ. Exercise,
1923 manual therapy, and education with or without high-intensity deep-water running for
1924 nonspecific chronic low back pain: a pragmatic randomized controlled trial. *American Journal
1925 of Physical Medicine and Rehabilitation*. 2011; 90(7):526-528
- 1926 494 Cuesta-Vargas AI, Gonzalez-Sanchez M. Spanish version of the screening Orebro
1927 musculoskeletal pain questionnaire: a cross-cultural adaptation and validation. *Health and
1928 Quality of Life Outcomes*. 2014; 12:157
- 1929 495 Cunningham C, Flynn TA, Toole CM, Ryan RG, Gueret PWJ, Bulfin S et al. Working Backs Project
1930 - implementing low back pain guidelines. *Occupational Medicine*. 2009; 58(8):580-583
- 1931 496 Cunningham S. Diagnostic accuracy: sensitivity and specificity of the ScreenAssist Lumbar
1932 Questionnaire in comparison with primary care provider tests and measures of low back pain: a
1933 pilot study. *Journal of Manual and Manipulative Therapy*. 2013; 21(1):48-59
- 1934 497 Curnow D, Cobbin D, Wyndham J, Choy STB. Altered motor control, posture and the Pilates
1935 method of exercise prescription. *Journal of Bodywork and Movement Therapies*. 2009;
1936 13(1):104-111
- 1937 498 da Fonseca JL, Magini M, de Freitas TH. Laboratory gait analysis in patients with low back pain
1938 before and after a pilates intervention. *Journal of Sport Rehabilitation*. 2009; 18(2):269-282
- 1939 499 Dagenais S, Gay RE, Tricco AC, Freeman MD, Mayer JM. NASS Contemporary Concepts in Spine
1940 Care: spinal manipulation therapy for acute low back pain. *Spine Journal*. 2010; 10(10):918-940
- 1941 500 Dagenais S, Haldeman S, Wooley JR. Intraligamentous injection of sclerosing solutions
1942 (prolotherapy) for spinal pain: a critical review of the literature. *Spine Journal*. 2005; 5(3):310-
1943 328
- 1944 501 Dagenais S, Tricco AC, Haldeman S. Synthesis of recommendations for the assessment and
1945 management of low back pain from recent clinical practice guidelines. *Spine Journal*. 2010;
1946 10(6):514-529
- 1947 502 Dagenais S, Yelland MJ, Del MC, Schoene ML. Prolotherapy injections for chronic low-back
1948 pain. *Cochrane Database of Systematic Reviews*. 2007; Issue 2:CD004059.
1949 DOI:10.1002/14651858.CD004059.pub3
- 1950 503 Dahdaleh NS, Nixon AT, Lawton CD, Wong AP, Smith ZA, Fessler RG. Outcome following
1951 unilateral versus bilateral instrumentation in patients undergoing minimally invasive
1952 transforaminal lumbar interbody fusion: a single-center randomized prospective study.
1953 *Neurosurgical Focus*. 2013; 35(2):E13
- 1954 504 Dahm KT, Brurberg KG, Jamtvedt G, Hagen KB. Advice to rest in bed versus advice to stay active
1955 for acute low-back pain and sciatica. *Cochrane Database of Systematic Reviews*. 2010; Issue
1956 6:CD007612. DOI:10.1002/14651858.CD007612.pub2
- 1957 505 Dallas TL, Lin RL, Wu W-H, Wolskee P. Epidural morphine and methylprednisolone for low-back
1958 pain. *Anesthesiology*. 1987; 67(3):408-411

- 1959 506 Damush TM, Weinberger M, Clark DO, Tierney WM, Rao JK, Perkins SM et al. Acute low back
1960 pain self-management intervention for urban primary care patients: Rationale, design, and
1961 predictors of participation. *Arthritis Care and Research*. 2002; 47(4):372-379
- 1962 507 Damush TM, Weinberger M, Perkins SM, Rao JK, Tierney WM, Qi R et al. Randomized trial of a
1963 self-management program for primary care patients with acute low back pain: short-term
1964 effects. *Arthritis and Rheumatism*. 2003; 49(2):179-186
- 1965 508 Damush TM, Weinberger M, Perkins SM, Rao JK, Tierney WM, Qi R et al. The long-term effects
1966 of a self-management program for inner-city primary care patients with acute low back pain.
1967 *Archives of Internal Medicine*. 2003; 163(21):2632-2638
- 1968 509 Dananberg HJ, Guiliano M. Chronic low-back pain and its response to custom-made foot
1969 orthoses. *Journal of the American Podiatric Medical Association*. 1999; 89(3):109-117
- 1970 510 Daneyemez M, Sali A, Kahraman S, Beduk A, Seber N. Outcome analyses in 1072 surgically
1971 treated lumbar disc herniations. *Minimally Invasive Neurosurgery*. 1999; 42(2):63-68
- 1972 511 Dankaerts W, O'Sullivan PB, Straker LM, Burnett AF, Skouen JS. The inter-examiner reliability of
1973 a classification method for non-specific chronic low back pain patients with motor control
1974 impairment. *Manual Therapy*. 2006; 11(1):28-39
- 1975 512 Dankaerts W, O'Sullivan P, Burnett A, Straker L, Davey P, Gupta R. Discriminating healthy
1976 controls and two clinical subgroups of nonspecific chronic low back pain patients using trunk
1977 muscle activation and lumbosacral kinematics of postures and movements: a statistical
1978 classification model. *Spine*. 2009; 34(15):1610-1618
- 1979 513 Das SK, Mohanty RK, Nanda DK, Misra S. A clinical trial of epidural steroid injection (depo-
1980 medrol) in the treatment of chronic low back pain. *Journal of Anaesthesiology Clinical
1981 Pharmacology*. 2004; 20(2):157-160
- 1982 514 Dascanio VC, Birks Y, Torgerson D. A pilot factorial randomised cohort trial of manual therapy
1983 or acupuncture for low back pain. *Trials*. 2011; 12
- 1984 515 Dasenbrock HH, Juraschek SP, Schultz LR, Witham TF, Sciubba DM, Wolinsky JP et al. The
1985 efficacy of minimally invasive discectomy compared with open discectomy: a meta-analysis of
1986 prospective randomized controlled trials. *Journal of Neurosurgery: Spine*. 2012; 16(5):452-462
- 1987 516 Dashfield AK, Taylor MB, Cleaver JS, Farrow D. Comparison of caudal steroid epidural with
1988 targeted steroid placement during spinal endoscopy for chronic sciatica: a prospective,
1989 randomized, double-blind trial. *British Journal of Anaesthesia*. 2005; 94(4):514-519
- 1990 517 Datta S, Benyamin RM, Manchikanti L. Evidence-based practice of lumbar epidural injections.
1991 *Techniques in Regional Anesthesia and Pain Management*. 2009; 13(4):281-287
- 1992 518 Datta S, Lee M, Falco FJE, Bryce DA, Hayek SM. Systematic assessment of diagnostic accuracy
1993 and therapeutic utility of lumbar facet joint interventions. *Pain Physician*. 2009; 12(2):437-460
- 1994 519 Daubs MD, Norvell DC, McGuire R, Molinari R, Hermsmeyer JT, Fourney DR et al. Fusion versus
1995 nonoperative care for chronic low back pain: Do psychological factors affect outcomes? *Spine*.
1996 2011; 36(21 SUPPL.):S96-S109
- 1997 520 David T. Lumbar disc prosthesis. Surgical technique, indications and clinical results in 22
1998 patients with a minimum of 12 months follow-up. *European Spine Journal*. 1993; 1(4):254-259

- 1999 521 Davies RA, Maher CG, Hancock MJ. A systematic review of paracetamol for non-specific low
2000 back pain. *European Spine Journal*. 2008; 17(11):1423-1430
- 2001 522 Davoli L, Ciotti G, Biondi M, Passeri M. Piroxicam-beta-cyclodextrin in the treatment of low-
2002 back pain. Controlled study vs etodolac. *Current Therapeutic Research - Clinical and*
2003 *Experimental*. 1989; 46(5):940-947
- 2004 523 Dayer-Berenson L. The effect of a culturally competent educational intervention with African
2005 American chronic-low-back-pain patients University of Medicine and Dentistry of New Jersey;
2006 2011.
- 2007 524 De Bruijn C, Goossens M, de Bie R, Ament A, Geraets J, Dinant GJ. Cost-effectiveness of an
2008 education and activation program for patients with acute and subacute shoulder complaints
2009 compared to usual care. *International Journal of Technology Assessment in Health Care*. 2007;
2010 23(1):80-88
- 2011 525 de Kleuver M, Oner FC, Jacobs WCH. Total disc replacement for chronic low back pain:
2012 background and a systematic review of the literature. *European Spine Journal*. 2003; 12(2):108-
2013 116
- 2014 526 de Oliveira RF, Liebano RE, Costa LdCM, Rissato LL, Costa LOP. Immediate effects of region-
2015 specific and non-region-specific spinal manipulative therapy in patients with chronic low back
2016 pain: a randomized controlled trial. *Physical Therapy*. 2013; 93(6):748-756
- 2017 527 de Sousa K, Orfale AG, Meireles SM, Leite JR, Natour J. Assessment of a biofeedback program
2018 to treat chronic low back pain. *Journal of Musculoskeletal Pain*. 2009; 17(4):369-377.
2019 DOI:<http://dx.doi.org/10.3109/10582450903284828>
- 2020 528 Deberard MS, Masters KS, Colledge AL, Schleusener RL, Schlegel JD. Pre-surgical psychological
2021 screenings for lumbar fusion: A look at real world practice. *Psychology, Health and Medicine*.
2022 2002; 7(4):411-424
- 2023 529 Dederling A, Elfving B, Nemeth G. EMG recovery and ratings after back extensor fatigue in
2024 patients with lumbar disc herniation and healthy subjects. *European Journal of Applied*
2025 *Physiology*. 2004; 92(1-2):150-159
- 2026 530 Dehlin O, Berg S, Andersson GB, Grimby G. Effect of physical training and ergonomic
2027 counselling on the psychological perception of work and on the subjective assessment of low-
2028 back insufficiency. *Scandinavian Journal of Rehabilitation Medicine*. 1981; 13(1):1-9
- 2029 531 Deinsberger R, Kinn E, Ungersbock K. Microsurgical treatment of juxta facet cysts of the lumbar
2030 spine. *Journal of Spinal Disorders and Techniques*. 2006; 19(3):155-160
- 2031 532 del Pozo-Cruz B, Gusi N, del Pozo-Cruz J, Adsuar JC, Hernandez-Mocholi M, Parraca JA. Clinical
2032 effects of a nine-month web-based intervention in subacute non-specific low back pain
2033 patients: a randomized controlled trial. *Clinical Rehabilitation*. 2013; 27(1):28-39
- 2034 533 Delamarter RB, Bae HW, Pradhan BB. Clinical results of ProDisc-II lumbar total disc
2035 replacement: report from the United States clinical trial. *Orthopedic Clinics of North America*.
2036 2005; 36(3):301-313
- 2037 534 Delamarter RB, Fribourg DM, Kanim LEA, Bae H. ProDisc artificial total lumbar disc
2038 replacement: introduction and early results from the United States clinical trial. *Spine*. 2003;
2039 28(20):S167-S175

- 2040 535 Delitto A, Cibulka MT, Erhard RE, Bowling RW, Tenhula JA. Evidence for use of an extension-
2041 mobilization category in acute low back syndrome: a prescriptive validation pilot study.
2042 Physical Therapy. 1993; 73(4):216-218
- 2043 536 Delitto A, Erhard RE, Bowling RW. A treatment-based classification approach to low back
2044 syndrome: identifying and staging patients for conservative treatment. Physical Therapy. 1995;
2045 75(6):470-479
- 2046 537 Demir S, Dulgeroglu D, Cakci A. Effects of dynamic lumbar stabilization exercises following
2047 lumbar microdiscectomy on pain, mobility and return to work. Randomized controlled trial.
2048 European Journal of Physical Medicine and Rehabilitation. 2014; 50(6):627-640
- 2049 538 Demircan MN. Use of intrathecally administered morphine in the treatment of postoperative
2050 pain after lumbar spinal surgery: A prospective, double-blind, placebo-controlled study [1].
2051 Neurosurgery. 1992; 30(5):811
- 2052 539 Demoulin C, Maquet D, Tomasella M, Croisier J, Crielaard J, Vanderthommen M. Benefits of a
2053 physical training program after back to school for chronic low back pain patients. Journal of
2054 Musculoskeletal Pain. 2006; 14(2):21-31
- 2055 540 Demoulin C, Marty M, Genevay S, Vanderthommen M, Mahieu G, Henrotin Y. Effectiveness of
2056 preventive back educational interventions for low back pain: a critical review of randomized
2057 controlled clinical trials. European Spine Journal. 2012; 21(12):2520-2530
- 2058 541 Denis A, Zelmar A, Le Pogam MA, Chaleat-Valayer E, Bergeret A, Colin C. The PRESLO study:
2059 evaluation of a global secondary low back pain prevention program for health care personnel
2060 in a hospital setting. Multicenter, randomized intervention trial. BMC Musculoskeletal
2061 Disorders. 2012; 13:234
- 2062 542 DePalma MJ, Bhargava A, Slipman CW. A critical appraisal of the evidence for selective nerve
2063 root injection in the treatment of lumbosacral radiculopathy. Archives of Physical Medicine and
2064 Rehabilitation. 2005; 86(7):1477-1483
- 2065 543 DePalma MJ, Ketchum JM, Queler ED, Trussell BS. Prospective pilot study of painful lumbar
2066 facet joint arthropathy after intra-articular injection of hylan G-F 20. PM and R. 2009;
2067 1(10):908-915
- 2068 544 Derby R, Eek B, Lee S-H, Seo KS, Kim B-J. Comparison of intradiscal restorative injections and
2069 intradiscal electrothermal treatment (IDET) in the treatment of low back pain. Pain Physician.
2070 2004; 7(1):63-66
- 2071 545 Derby R, Baker RM, Lee CH. Evidence-informed management of chronic low back pain with
2072 minimally invasive nuclear decompression. Spine Journal. 2008; 8(1):150-159
- 2073 546 Derby R, Lee SH, Chen Y, Kim BJ, Lee CH, Hong YK et al. The influence of psychologic factors on
2074 diskography in patients with chronic axial low back pain. Archives of Physical Medicine and
2075 Rehabilitation. 2008; 89(7):1300-1304
- 2076 547 Derby R, Melnik I, Lee JE, Lee SH. Cost comparisons of various diagnostic medial branch block
2077 protocols and medial branch neurotomy in a private practice setting. Pain Medicine. 2013;
2078 14(3):378-391
- 2079 548 Descarreaux M, Normand MC, Laurencelle L, Dugas C. Evaluation of a specific home exercise
2080 programme for low back pain... symposium proceedings of the World Federation of

- 2081 Chiropractic 6th Biennial Congress, Paris, France, 21-26 May 2001. *European Journal of*
2082 *Chiropractic*. 2002; 49(1):94-95
- 2083 549 Descarreux M, Normand MC, Laurencelle L, Dugas C. Evaluation of a specific home exercise
2084 program for low back pain. *Journal of Manipulative and Physiological Therapeutics*. 2002;
2085 25(8):497-503
- 2086 550 Dettori JR, Bullock SH, Sutlive TG, Franklin RJ, Patience T. The effects of spinal flexion and
2087 extension exercises and their associated postures in patients with acute low back pain. *Spine*.
2088 1995; 20(21):2303-2312
- 2089 551 Deutsch H. The predictive value of the baseline Oswestry Disability Index in lumbar disc
2090 arthroplasty. *Neurosurgical Focus*. 2010; 28(6):E7
- 2091 552 Deutscher D, Werneke M, Gottlieb D, Fritz J, Resnik L. Physical Therapistsâ€™ Level of
2092 McKenzie Education, Functional Outcomes, and Utilization in Patients With Low Back Pain.
2093 *Journal of Orthopaedic & Sports Physical Therapy*. 2014; 44(12):925-936
- 2094 553 Dewing CB, Provencher MT, Riffenburgh RH, Kerr S, Manos RE. The outcomes of lumbar
2095 microdiscectomy in a young, active population: correlation by herniation type and level. *Spine*.
2096 2008; 33(1):33-38
- 2097 554 Deyo RA, Diehl AK, Rosenthal M. How many days of bed rest for acute low back pain? A
2098 randomized clinical trial. *New England Journal of Medicine*. 1986; 315(17):1064-1070
- 2099 555 Deyo RA, Diehl AK, Rosenthal M. Reducing roentgenography use. Can patient expectations be
2100 altered? *Archives of Internal Medicine*. 1987; 147(1):141-145
- 2101 556 Deyo RA, Mirza SK, Heagerty PJ, Turner JA, Martin BI. A prospective cohort study of surgical
2102 treatment for back pain with degenerated discs; study protocol. *BMC Musculoskeletal*
2103 *Disorders*. 2005; 6:24
- 2104 557 Deyo RA, Walsh NE, Martin DC, Schoenfeld LS, Ramamurthy S. A controlled trial of
2105 transcutaneous electrical nerve stimulation (TENS) and exercise for chronic low back pain. *New*
2106 *England Journal of Medicine*. 1990; 322(23):1627-1634
- 2107 558 Dharmshaktu P, Tayal V, Kalra BS. Efficacy of antidepressants as analgesics: a review. *Journal of*
2108 *Clinical Pharmacology*. 2012; 52(1):6-17
- 2109 559 Di Cesare A, Giombini A, Di Cesare M, Ripani M, Vulpiani MC, Saraceni VM. Comparison
2110 between the effects of trigger point mesotherapy versus acupuncture points mesotherapy in
2111 the treatment of chronic low back pain: a short term randomized controlled trial.
2112 *Complementary Therapies in Medicine*. 2011; 19(1):19-26
- 2113 560 Di Ciaccio E, Polastri M, Bianchini E, Gasbarrini A. Herniated lumbar disc treated with Global
2114 Postural Reeducation. A middle-term evaluation. *European Review for Medical and*
2115 *Pharmacological Sciences*. 2012; 16(8):1072-1077
- 2116 561 Di Fabio RP. Efficacy of comprehensive rehabilitation programs and back school for patients
2117 with low back pain: a meta-analysis. *Physical Therapy*. 1995; 75(10):865-878
- 2118 562 Di Silvestre M, Bakaloudis G, Lolli F, Vommaro F, Parisini P. Two-level total lumbar disc
2119 replacement. *European Spine Journal*. 2009; 18(Suppl.1):64-70

- 2120 563 Diab AAM, Moustafa IM. The efficacy of lumbar extension traction for sagittal alignment in
2121 mechanical low back pain: a randomized trial. *Spine*. 2013; 26(2):213-220
- 2122 564 Diaz K, Wolf B. Alternative therapies: Yoga and mindfulness-based stress reduction as
2123 adjunctive treatment for chronic axial pain. *Spine*. 2013; 14(4 SUPPL. 1):S90
- 2124 565 Diaz-Arribas MJ, Kovacs FM, Royuela A, Fernandez-Serrano M, Gutierrez-Fernandez L, San
2125 Martin-Pariente O et al. Effectiveness of the Godelieve Denys-Struyf (GDS) method in people
2126 with low back pain: cluster randomized controlled trial. *Physical Therapy*. 2015; 95(3):319-336
- 2127 566 Dilke TF, Burry HC, Grahame R. Extradural corticosteroid injection in management of lumbar
2128 nerve root compression. *BMJ*. 1973; 2(5867):635-637
- 2129 567 Dimaggio A, Mooney V. The McKenzie program: Exercise effective against back pain. *Journal of*
2130 *Musculoskeletal Medicine*. 1987; 12:63-74
- 2131 568 Dimulescu DM, Chiriti G. Posturaltherapyand algo-dysfunctional syndrome in patients with
2132 lumbosacral spine diseases. *Osteoporosis International*. 2013; 24(1 SUPPL. 1):S88-S89
- 2133 569 Ding Y, Yang MY. Electroacupuncture assisted by squatting stances for lumbar disc herniation:
2134 128 cases. *World Journal of Acupuncture - Moxibustion*. 2015; 25(1):47-50
- 2135 570 Djurasovic M, Carreon LY, Crawford CH, Zook JD, Bratcher KR, Glassman SD. The influence of
2136 preoperative MRI findings on lumbar fusion clinical outcomes. *European Spine Journal*. 2012;
2137 21(8):1616-1623
- 2138 571 Djurasovic M, Glassman SD, Howard JM, Copay AG, Carreon LY. Health-related quality of life
2139 improvements in patients undergoing lumbar spinal fusion as a revision surgery. *Spine*. 2011;
2140 36(4):269-276
- 2141 572 Dobrogowski J, Wrzosek A, Wordliczek J. Radiofrequency denervation with or without addition
2142 of pentoxifylline or methylprednisolone for chronic lumbar zygapophysial joint pain.
2143 *Pharmacological Reports*. 2005; 57(4):475-480
- 2144 573 Dobscha SK, Corson K, Leibowitz RQ, Sullivan MD, Gerrity MS. Rationale, design, and baseline
2145 findings from a randomized trial of collaborative care for chronic musculoskeletal pain in
2146 primary care. *Pain Medicine*. 2008; 9(8):1050-1064
- 2147 574 Doherty D. Physiotherapy compared with advice for low back pain: study supports concept of
2148 self management of pain. *BMJ*. 2004; 329(7479):1402-1403
- 2149 575 Domenech J, Banos R, Penalver L, Garcia-Palacios A, Herrero R, Ezzedine A et al. Design
2150 considerations of a randomized clinical trial on a cognitive behavioural intervention using
2151 communication and information technologies for managing chronic low back pain. *BMC*
2152 *Musculoskeletal Disorders*. 2013; 14:142
- 2153 576 Don AS, Carragee E. A brief overview of evidence-informed management of chronic low back
2154 pain with surgery. *Spine Journal*. 2008; 8(1):258-265
- 2155 577 Donaldson S, Romney D, Donaldson M, Skubick D. Randomized study of the application of
2156 single motor unit biofeedback training to chronic low back pain. *Journal of Occupational*
2157 *Rehabilitation*. 1994; 4(1):23-37

- 2158 578 Dong J, Rong L, Feng F, Liu B, Xu Y, Wang Q et al. Unilateral pedicle screw fixation through a
2159 tubular retractor via the Wiltse approach compared with conventional bilateral pedicle screw
2160 fixation for single-segment degenerative lumbar instability: a prospective randomized study.
2161 *Journal of Neurosurgery: Spine*. 2014; 20:53-59
- 2162 579 Donzelli S, Di Domenica E, Cova AM, Galletti R, Giunta N. Two different techniques in the
2163 rehabilitation treatment of low back pain: a randomized controlled trial. *Europa*
2164 *Medicophysica*. 2006; 42(3):205-210
- 2165 580 Dora C, Walchli B, Elfering A, Gal I, Weishaupt D, Boos N. The significance of spinal canal
2166 dimensions in discriminating symptomatic from asymptomatic disc herniations. *European*
2167 *Spine Journal*. 2002; 11(6):575-581
- 2168 581 Doran DM, Newell DJ. Manipulation in treatment of low back pain: a multicentre study. *BMJ*.
2169 1975; 2(5964):161-164
- 2170 582 Doran N. Experiencing Wellness Within Illness: Exploring a Mindfulness-Based Approach to
2171 Chronic Back Pain. *Qualitative Health Research*. 2014; 24(6):749-760
- 2172 583 Dos Santos MM, Guimaraes LS, Souza LO, Vasconcelos MM, Camargo TM, Develly PC et al.
2173 Effectiveness of the Global Posture Reeducation method (GPR) and segmental stretching in the
2174 treatment of chronic back pain: A randomized controlled trial. *Arthritis and Rheumatism*. 2010;
2175 62(Suppl.10):1458
- 2176 584 Dougherty PE, Karuza J, Dunn AS, Savino D, Katz P. Spinal Manipulative Therapy for Chronic
2177 Lower Back Pain in Older Veterans: A Prospective, Randomized, Placebo-Controlled Trial.
2178 *Geriatric Orthopaedic Surgery and Rehabilitation*. 2014; 5(4):154-164
- 2179 585 Dougherty PE, Karuza J, Savino D, Katz P. Evaluation of a modified clinical prediction rule for
2180 use with spinal manipulative therapy in patients with chronic low back pain: a randomized
2181 clinical trial. *Chiropractic and Manual Therapies*. 2014; 22:41
- 2182 586 Downie A, Williams CM, Henschke N, Hancock MJ, Ostelo RWJG, de Vet HCW et al. Red flags to
2183 screen for malignancy and fracture in patients with low back pain: systematic review. *BMJ*.
2184 2013; 347:f7095
- 2185 587 Dreyfuss P, Baker R, Bogduk N. Comparative effectiveness of cervical transforaminal injections
2186 with particulate and nonparticulate corticosteroid preparations for cervical radicular pain. *Pain*
2187 *Medicine*. 2006; 7(3):237-242
- 2188 588 Driessens M, Famaey J-P, Orloff S, Chochrad I, Cleppe D, De BG et al. Efficacy and tolerability of
2189 sustained-release ibuprofen in the treatment of patients with chronic back pain. *Current*
2190 *Therapeutic Research - Clinical and Experimental*. 1994; 55(11):1283-1292
- 2191 589 Du S, Yuan C, Xiao X, Chu J, Qiu Y, Qian H. Self-management programs for chronic
2192 musculoskeletal pain conditions: a systematic review and meta-analysis. *Patient Education and*
2193 *Counseling*. 2011; 85(3):e299-e310
- 2194 590 Dubourg G, Rozenberg S, Fautrel B, Valls-Bellec I, Bissery A, Lang T et al. A pilot study on the
2195 recovery from paresis after lumbar disc herniation. *Spine*. 2002; 27(13):1426-1431
- 2196 591 Dufour N, Thamsborg G, Oefeldt A, Lundsgaard C, Stender S. Treatment of chronic low back
2197 pain: a randomized, clinical trial comparing group-based multidisciplinary biopsychosocial

- 2198 rehabilitation and intensive individual therapist-assisted back muscle strengthening exercises.
2199 Spine. 2010; 35(5):469-476
- 2200 592 Duger C, Kol IO, Kaygusuz K, Gursoy S, Mimaroglu C. Effects of facet joint nerve block addition
2201 to radiofrequency in the treatment of low back pain. HealthMED. 2012; 6(6):2052-2056
- 2202 593 Dunstan DA, Covic T, Tyson GA, Lennie IG. Does the Orebro Musculoskeletal Pain
2203 Questionnaire predict outcomes following a work-related compensable injury? International
2204 Journal of Rehabilitation Research. 2005; 28(4):369-370
- 2205 594 Dupeyron A, Ribinik P, Gelis A, Genty M, Claus D, Herisson C et al. Education in the
2206 management of low back pain. Literature review and recall of key recom. Annals of Physical
2207 and Rehabilitation Medicine. 2011; 54(5):319-335
- 2208 595 DuRant RH, Jay S, Jerath R, Fink S. The influence of anxiety and locus of control on adolescents'
2209 response to naproxen sodium for mild to moderate pain. Journal of Adolescent Health Care.
2210 1988; 9(5):424-430
- 2211 596 Durmus D, Akyol Y, Alayli G, Tander B, Zahiroglu Y, Canturk F. Effects of electrical stimulation
2212 program on trunk muscle strength, functional capacity, quality of life, and depression in the
2213 patients with low back pain: a randomized controlled trial. Rheumatology International. 2009;
2214 29(8):947-954
- 2215 597 Durmus D, Unal M, Kuru O. How effective is a modified exercise program on its own or with
2216 back school in chronic low back pain? A randomized-controlled clinical trial. Journal of Back and
2217 Musculoskeletal Rehabilitation. 2014; 27(4):553-561
- 2218 598 Duse G. Percutaneous radiofrequency neurolesion of lumbar facet joint in low back pain:
2219 Comparison between intraarticular and extraarticular denervation. Pain Practice. 2009; 9:82
- 2220 599 Dvorak J, Valach L, Fuhrmann P, Heim E. The outcome of surgery for lumbar disc herniation. II.
2221 A 4-17 years' follow-up with emphasis on psychosocial aspects. Spine. 1988; 13(12):1423-1427
- 2222 600 Eadie J, Van Der Water A, Tully M, Mechelen W, Boreham C, McDonnagh S et al. The
2223 effectiveness of a walking programme, supervised exercise programme and usual
2224 physiotherapy on sleep disturbance in chronic low back pain: 3-month results of a feasibility
2225 randomized controlled trial. Spine. 2010; 19:274
- 2226 601 Ebadi S, Ansari NN, Naghdi S, Fallah E, Barzi DM, Jalaei S et al. A study of therapeutic
2227 ultrasound and exercise treatment for muscle fatigue in patients with chronic non specific low
2228 back pain: a preliminary report. Journal of Back and Musculoskeletal Rehabilitation. 2013;
2229 26(2):221-226
- 2230 602 Ebadi S, Henschke N, Nakhostin AN, Fallah E, van Tulder MW. Therapeutic ultrasound for
2231 chronic low-back pain. Cochrane Database of Systematic Reviews. 2014; Issue 3:CD009169.
2232 DOI:10.1002/14651858.CD009169.pub2
- 2233 603 Ebenbichler GR, Inschlag S, Pfluger V, Stemberger R, Wiesinger G, Novak K et al. Twelve-year
2234 follow-up of a randomized controlled trial of comprehensive physiotherapy following disc
2235 herniation operation. Clinical Rehabilitation. 2015; 29(6):548-560
- 2236 604 ECRI. Laser discectomy for the treatment of herniated lumbar discs, 2004
- 2237 605 ECRI. Automated percutaneous nucleotomy for herniated lumbar discs, 2005

- 2238 606 Ehrenbrusthoff K, Ryan CG, Schofield PA, Martin DJ. Physical therapy management of older
2239 adults with chronic low back pain: A systematic review. *Journal of Pain Management*. 2012;
2240 5(4):317-329
- 2241 607 Eichen PM, Achilles N, Konig V, Mosges R, Hellmich M, Himpe B et al. Nucleoplasty, a minimally
2242 invasive procedure for disc decompression: a systematic review and meta-analysis of published
2243 clinical studies. *Pain Physician*. 2014; 17(2):E149-E173
- 2244 608 Eisenberg DM, Post DE, Davis RB, Connelly MT, Legedza AT, Hrbek AL et al. Addition of choice
2245 of complementary therapies to usual care for acute low back pain: a randomized controlled
2246 trial. *Spine*. 2007; 32(2):151-158
- 2247 609 Ejeskar A, Nachemson A, Herberts P. Surgery versus chemonucleolysis for herniated lumbar
2248 discs. A prospective study with random assignment. *Clinical Orthopaedics and Related
2249 Research*. 1983;(174):236-242
- 2250 610 El Barzouhi A, Vleggeert-Lankamp CLAM, Lycklama AN, Van der Kallen BF, van den Hout WB,
2251 Verwoerd AJH et al. Magnetic resonance imaging interpretation in patients with sciatica who
2252 are potential candidates for lumbar disc surgery. *PloS One*. 2013; 8(7):e68411
- 2253 611 El Barzouhi A, Vleggeert-Lankamp CLAM, Nijeholt GJ, Van der Kallen BF, van den Hout WB,
2254 Jacobs WCH et al. Magnetic resonance imaging in follow-up assessment of sciatica. *New
2255 England Journal of Medicine*. 2013; 368(11):999-1007
- 2256 612 El Barzouhi A, Vleggeert-Lankamp CLAM, Van der Kallen BF, Nijeholt GJ, van den Hout WB,
2257 Koes BW et al. Back pain's association with vertebral end-plate signal changes in sciatica. *Spine
2258 Journal*. 2014; 14(2):225-233
- 2259 613 Eley C. Magnetic resonance imaging for low back injuries: appropriate use in managing
2260 workers' compensation claims. *AAOHN Journal*. 2006; 54(10):429-433
- 2261 614 Elgueta-Cancino E, Schabrun S, Danneels L, van den Hoorn W, Hodges P. Validation of a Clinical
2262 Test of Thoracolumbar Dissociation in Chronic Low Back Pain. *Journal of Orthopaedic and
2263 Sports Physical Therapy*. 2015; 45(9):703-712
- 2264 615 Engel A, King W, MacVicar J, Standards Division of the International Spine Intervention Society.
2265 The effectiveness and risks of fluoroscopically guided cervical transforaminal injections of
2266 steroids: a systematic review with comprehensive analysis of the published data. *Pain
2267 Medicine*. 2014; 15(3):386-402
- 2268 616 Engers AJ, Jellema P, Wensing M, van der Windt Daniëlle AWM, Grol R, van Tulder MW.
2269 Individual patient education for low back pain. *Cochrane Database of Systematic Reviews*.
2270 2008; Issue 1:CD004057. DOI:10.1002/14651858.CD004057.pub3
- 2271 617 Epstein NE. Lumbar synovial cysts: A review of diagnosis, surgical management, and outcome
2272 assessment. *Journal of Spinal Disorders and Techniques*. 2004; 17(4):321-325
- 2273 618 Ergun H, Polat O, Demirkan NA, Gunalp M, Gurler S. The efficacy, safety, and pharmacokinetics
2274 of intramuscular and oral phenylramidol in patients with low back pain in an emergency
2275 department. *Turkish Journal of Medical Sciences*. 2010; 40(1):71-76
- 2276 619 Erhard RE, Delitto A, Cibulka MT. Relative effectiveness of an extension program and a
2277 combined program of manipulation and flexion and extension exercises in patients with acute
2278 low back syndrome. *Physical Therapy*. 1994; 74(12):1093-1100

- 2279 620 Ernst E. Massage therapy for low back pain: a systematic review. *Journal of Pain and Symptom Management*. 1999; 17(1):65-69
2280
- 2281 621 Ernst E, Canter PH. Chiropractic spinal manipulation treatment for back pain: a systematic
2282 review of randomised clinical trials. *Physical Therapy Reviews*. 2003; 8(2):85-91
- 2283 622 Ernst E, Canter PH. The Alexander technique: a systematic review of controlled clinical trials.
2284 *Forschende Komplementarmedizin Und Klassische Naturheilkunde*. 2003; 10(6):325-329
- 2285 623 Erp RMv, Huijnen IP, Verbunt JA, Smeets RJ. A biopsychosocial primary care intervention (Back
2286 on Track) versus primary care as usual in a subgroup of people with chronic low back pain:
2287 protocol for a randomised, controlled trial. *Journal of Physiotherapy*. 2015; 61(3):155
- 2288 624 Errico TJ. Why a mechanical disc? *Spine Journal*. 2004; 4(6 SUPPL.):151S-157S
- 2289 625 Esmer G, Blum J, Rulf J, Pier J. Mindfulness-based stress reduction for failed back surgery
2290 syndrome: a randomized controlled trial. *Journal of the American Osteopathic Association*.
2291 2010; 110(11):646-652
- 2292 626 Espersen JO, Kosteljanetz M, Halaburt H, Miletic T. Predictive value of radiculography in
2293 patients with lumbago-sciatica. A prospective study (Part II). *Acta Neurochirurgica*. 1984; 73(3-
2294 4):213-221
- 2295 627 Evans DD. Characteristics and outcomes of individuals self-selecting yoga versus physical
2296 therapy for the treatment of chronic low back pain University of Tennessee Health Science
2297 Center; 2009.
- 2298 628 Evans DW, Breen AC, Pincus T, Sim J, Underwood M, Vogel S et al. The effectiveness of a
2299 posted information package on the beliefs and behavior of musculoskeletal practitioners: the
2300 UK Chiropractors, Osteopaths, and Musculoskeletal Physiotherapists Low Back Pain
2301 Management (COMPLEMENT) randomized trial. *Spine*. 2010; 35(8):858-866
- 2302 629 Evans G and Richards S. Low back pain: an evaluation of therapeutic interventions. Bristol.
2303 University of Bristol, Department of Social Medicine, Health Care Evaluation Unit, 1996
- 2304 630 Evans I, Logina I, Vanags I, Borgeat A. Ultrasound versus fluoroscopic-guided epidural steroid
2305 injections in patients with degenerative spinal diseases: a randomised study. *European Journal*
2306 *of Anaesthesiology*. 2015; 32(4):262-268
- 2307 631 Ezzati MK, Karimi N, Zarvar M, Esmaeili K. The effects of supervised core stability training on
2308 athletic and non-athletic patients with mechanical nonspecific chronic low back pain. *Spine*.
2309 2011; 5(1):129
- 2310 632 Fakouri B, Patel V, Bayley E, Srinivas S. Lumbar microdiscectomy versus sequestrectomy/free
2311 fragmentectomy: a long-term (>2 y) retrospective study of the clinical outcome. *Journal of*
2312 *Spinal Disorders and Techniques*. 2011; 24(1):6-10
- 2313 633 Fakouri B, Shetty NR, White TCH. Is sequestrectomy a viable alternative to microdiscectomy? A
2314 systematic review of the literature. *Clinical Orthopaedics and Related Research*. 2015;
2315 473(6):1957-1962
- 2316 634 Falco FJE, Manchikanti L, Datta S, Sehgal N, Geffert S, Onyewu O et al. An update of the
2317 systematic assessment of the diagnostic accuracy of lumbar facet joint nerve blocks. *Pain*
2318 *Physician*. 2012; 15(6):E869-E907

- 2319 635 Falco FJE, Manchikanti L, Datta S, Sehgal N, Geffert S, Onyewu O et al. An update of the
2320 effectiveness of therapeutic lumbar facet joint interventions. *Pain Physician*. 2012; 15(6):E909-
2321 E953
- 2322 636 Falco FJE, Manchikanti L, Datta S, Wargo BW, Geffert S, Bryce DA et al. Systematic review of the
2323 therapeutic effectiveness of cervical facet joint interventions: an update. *Pain Physician*. 2012;
2324 15(6):E839-E868
- 2325 637 Famaey JP, Bruhwylter J, Geczy J, Vandekerckhove K, Appelboom T. Open controlled
2326 randomized multicenter comparison of nimesulide and diclofenac in the treatment of subacute
2327 and chronic low back pain. *Journal of Clinical Research*. 1998; 1:219-238
- 2328 638 Farajirad S, Behdani F, Hebrani P, Farajirad M. Comparison between the effects of amitriptyline
2329 and bupropione on the quality of life and the reduction in the severity of pain in patients with
2330 chronic low-back pain. *Neurosurgery Quarterly*. 2013; 23(4):227-229
- 2331 639 Farasyn A, Meeusen R. Effect of roptrotherapy on pressure-pain thresholds in patients with
2332 subacute nonspecific low back pain 317. *Journal of Musculoskeletal Pain*. 2007; 15(1):41-53
- 2333 640 Farasyn A, Meeusen R, Nijs J. A pilot randomized placebo-controlled trial of roptrotherapy in
2334 patients with subacute non-specific low back pain. *Journal of Back and Musculoskeletal
2335 Rehabilitation*. 2006; 19(4):111-117
- 2336 641 Farham B. Acupuncture and back pain. *South African Medical Journal*. 2006; 96(11):1180
- 2337 642 Farrell JP, Twomey LT. Acute low back pain. Comparison of two conservative treatment
2338 approaches. *Medical Journal of Australia*. 1982; 1(4):160-164
- 2339 643 Fayssoux R, Goldfarb NI, Vaccaro AR, Harrop J. Indirect costs associated with surgery for low
2340 back pain-a secondary analysis of clinical trial data. *Population Health Management*. 2010;
2341 13:9-13
- 2342 644 Fernandez M, Hartvigsen J, Ferreira ML, Refshauge KM, Machado AF, Lemes IR et al. Advice to
2343 Stay Active or Structured Exercise in the Management of Sciatica: A Systematic Review and
2344 Meta-Analysis. *Spine*. 2015; 40(18):1457-1466
- 2345 645 Fernando CK. Conservative treatment of acute low-back pain, a prospective randomized trial:
2346 McKenzie method of treatment versus patient education in mini-back school. *Spine*. 1991;
2347 16(3):391
- 2348 646 Ferrari R. Responsiveness of the Short-Form 36 and Oswestry Disability Questionnaire in
2349 Chronic Nonspecific Low Back and Lower Limb Pain Treated With Customized Foot Orthotics.
2350 *Journal of Manipulative and Physiological Therapeutics*. 2007; 30(6):456-458
- 2351 647 Ferrari R. Report of metatarsal pad intolerance in a cohort of 60 patients treated with
2352 customized foot orthotics. *Journal of Chiropractic Medicine*. 2011; 10(1):25-28
- 2353 648 Ferrari R. Effect of customized foot orthotics in addition to usual care for the management of
2354 chronic low back pain following work-related low back injury. *Journal of Manipulative and
2355 Physiological Therapeutics*. 2013; 36(6):359-363
- 2356 649 Ferreira ML, Ferreira PH, Latimer J, Herbert R, Maher CG. Does spinal manipulative therapy
2357 help people with chronic low back pain? *Australian Journal of Physiotherapy*. 2002; 48(4):277-
2358 284

- 2359 650 Ferreira ML, Ferreira PH, Latimer J, Herbert R, Maher CG. Efficacy of spinal manipulative
2360 therapy for low back pain of less than three months' duration. *Journal of Manipulative and*
2361 *Physiological Therapeutics*. 2003; 26(9):593-601
- 2362 651 Ferreira ML, Ferreira PH, Latimer J, Herbert RD, Hodges PW, Jennings MD et al. Comparison of
2363 general exercise, motor control exercise and spinal manipulative therapy for chronic low back
2364 pain: A randomized trial. *Spine*. 2007; 131(1-2):31-37
- 2365 652 Ferreira PH, Ferreira ML, Maher CG, Refshauge K, Herbert RD, Hodges PW. Changes in
2366 recruitment of transversus abdominis correlate with disability in people with chronic low back
2367 pain. *British Journal of Sports Medicine*. 2010; 44(16):1166-1172
- 2368 653 Ferrell BA, Josephson KR, Pollan AM, Loy S, Ferrell BR. A randomized trial of walking versus
2369 physical methods for chronic pain management. *Aging*. 1997; 9(1-2):99-105
- 2370 654 Fersum KV, Dankaerts W, O'Sullivan PB, Maes J, Skouen JS, Bjordal JM et al. Integration of
2371 subclassification strategies in randomised controlled clinical trials evaluating manual therapy
2372 treatment and exercise therapy for non-specific chronic low back pain: a systematic review.
2373 *British Journal of Sports Medicine*. 2010; 44(14):1054-1062
- 2374 655 Fersum KV, Dankaerts W, O'Sullivan PB, Maes J, Skouen JS, Bjordal JM et al. Integration of
2375 subclassification strategies in randomised controlled clinical trials evaluating manual therapy
2376 treatment and exercise therapy for non-specific chronic low back pain: a systematic review.
2377 *British Journal of Sports Medicine*. 2011; 44(14):1054-1062
- 2378 656 Field J, Newell D. Relationship between STarT Back Screening Tool and prognosis for low back
2379 pain patients receiving spinal manipulative therapy. *Chiropractic and Manual Therapies*. 2012;
2380 20:17
- 2381 657 Field T, Hernandez-Reif M, Diego M, Fraser M. Lower back pain and sleep disturbance are
2382 reduced following massage therapy. *Journal of Bodywork and Movement Therapies*. 2007;
2383 11(2):141-145
- 2384 658 Finan PH, Burns JW, Jensen MP, Nielson WR, Kerns RD. Pain coping but not readiness to change
2385 is associated with pretreatment pain-related functioning. *Clinical Journal of Pain*. 2012;
2386 28(8):687-692
- 2387 659 Fine PG, Department of Anesthesiology SoMUoUSLC. The role of rofecoxib, a cyclooxygenase-
2388 2-specific inhibitor, for the treatment of non-cancer pain: a review. *Journal of Pain*. 2002;
2389 3(4):272-283
- 2390 660 Fink H, Schulz C, Bangerter A, Frizelle S, Baines-Simon A, Noorbaloochi S et al. Education plus
2391 exercise vs. education, exercise and chiropractic care for veterans with chronic low back pain:
2392 A pilot randomized trial. *Spine*. 2012; 12
- 2393 661 Fishbain D. Evidence-based data on pain relief with antidepressants. *Annals of Medicine*. 2000;
2394 32(5):305-316
- 2395 662 Fisher C, Noonan V, Bishop P, Boyd M, Fairholm D, Wing P et al. Outcome evaluation of the
2396 operative management of lumbar disc herniation causing sciatica. *Journal of Neurosurgery*.
2397 2004; 100(4 Suppl.Spine):317-324

- 2398 663 Fitzpatrick OD, Jr. The role of additional information in the compliance, satisfaction,
2399 psychological, and emotion responses of non-surgical patients with low back pain: an
2400 exploratory investigation. *Psychology & Health*. 1995; 10(6):491-505
- 2401 664 Fitzsimmons D, Phillips CJ, Bennett H, Jones M, Williams N, Lewis R et al. Cost-effectiveness of
2402 different strategies to manage patients with sciatica. *Pain*. 2014; 155(7):1318-1327
- 2403 665 Fitzsimmons D, Phillips CJ, Bennett H, Jones M, Williams N, Lewis R et al. Cost-effectiveness of
2404 different strategies to manage patients with sciatica. *Pain*. 2014; 155(7):1318-1327
- 2405 666 Flor H, Birbaumer N. Comparison of the efficacy of electromyographic biofeedback, cognitive-
2406 behavioral therapy, and conservative medical interventions in the treatment of chronic
2407 musculoskeletal pain. *Journal of Consulting and Clinical Psychology*. 1993; 61(4):653-658
- 2408 667 Florez G, Eiras J, Ucar S. Percutaneous rhizotomy of the articular nerve of Luschka for low back
2409 and sciatic pain. *Acta Neurochirurgica*. 1977;(Suppl.24):67-71
- 2410 668 Flowerdew MW, Gadsby JG. A review of the treatment of chronic low back pain with
2411 acupuncture-like transcutaneous electrical nerve stimulation and transcutaneous electrical
2412 nerve stimulation. *Complementary Therapies in Medicine*. 1997; 5(4):193-201
- 2413 669 Flynn TW, Childs JD, Fritz JM. The audible pop from high-velocity thrust manipulation and
2414 outcome in individuals with low back pain. *Journal of Manipulative and Physiological
2415 Therapeutics*. 2006; 29(1):40-45
- 2416 670 Fontana TL, Richardson CA, Stanton WR. The effect of weight-bearing exercise with low
2417 frequency, whole body vibration on lumbosacral proprioception: a pilot study on normal
2418 subjects. *Australian Journal of Physiotherapy*. 2005; 51(4):259-263
- 2419 671 Ford JJ, Hahne AJ, Surkitt LD, Chan AY, Richards MC, Slater SL et al. Individualised
2420 physiotherapy as an adjunct to guideline-based advice for low back disorders in primary care: a
2421 randomised controlled trial. *British Journal of Sports Medicine*. 2015; [epublication]
- 2422 672 Foster L, Clapp L, Erickson M, Jabbari B. Botulinum toxin A and chronic low back pain: a
2423 randomized, double-blind study. *Neurology*. 2001; 56(10):1290-1293
- 2424 673 Foster NE, Hill JC, O'Sullivan P, Hancock M. Stratified models of care. *Best Practice and
2425 Research: Clinical Rheumatology*. 2013; 27(5):649-661
- 2426 674 Foster NE, Konstantinou K, Lewis M, Cairns M. Re: Goldby LJ, Moore AP, Doust J, Trew ME. A
2427 randomised controlled trial investigating the efficiency of musculoskeletal physiotherapy on
2428 chronic low back disorder. *Spine* 2006;31:1083-93. *Spine*. 2006; 31(20):2405-2406
- 2429 675 Fox EJ, Melzack R. Transcutaneous electrical stimulation and acupuncture: comparison of
2430 treatment for low-back pain. *Pain*. 1976; 2(2):141-148
- 2431 676 Frampton JE, Keating GM. Celecoxib: A review of its use in the management of arthritis and
2432 acute pain. *Drugs*. 2007; 67(16):2433-2472
- 2433 677 Franca FR, Burke TN, Caffaro RR, Ramos LA, Marques AP. Effects of muscular stretching and
2434 segmental stabilization on functional disability and pain in patients with chronic low back pain:
2435 a randomized, controlled trial. *Journal of Manipulative and Physiological Therapeutics*. 2012;
2436 35(4):279-285

- 2437 678 Franca FR, Burke TN, Hanada ES, Marques AP. Segmental stabilization and muscular
2438 strengthening in chronic low back pain: a comparative study. *Clinics*. 2010; 65(10):1013-1017
- 2439 679 Franco YRdS, Liebano RE, Moura KF, de Oliveira NTB, Miyamoto GC, Santos MO et al. Efficacy of
2440 the addition of interferential current to Pilates method in patients with low back pain: a
2441 protocol of a randomized controlled trial. *BMC Musculoskeletal Disorders*. 2014; 15:420
- 2442 680 Franke A. Acupuncture massage vs swedish exercises in low back pain sufferers - a randomised
2443 clinical trial in a 2x2 factorial design. *Deutsche Zeitschrift Fur Akupunktur*. 2000; 43(1):41
- 2444 681 Franke A, Gebauer S, Franke K, Brockow T. Acupuncture massage vs Swedish massage and
2445 individual exercises vs group exercises in low back pain sufferers - A randomised controlled
2446 clinical trial in a 2 x 2 factorial design. *Forschende Komplementarmedizin Und Klassische
2447 Naturheilkunde*. 2000; 7(6):286-293
- 2448 682 Franke J, Greiner-Perth R, Boehm H, Mahlfeld K, Grasshoff H, Allam Y et al. Comparison of a
2449 minimally invasive procedure versus standard microscopic discotomy: a prospective
2450 randomised controlled clinical trial. *European Spine Journal*. 2009; 18(7):992-1000
- 2451 683 Freburger JK, Carey TS, Jackman AM, Darter JD, Holmes GM, Agans RP. Exercise instruction for
2452 chronic low-back pain: a comparison of physical therapists, physicians, and chiropractors...
2453 2008 Combined Sections Meeting...Nashville, Tennessee, February 6-9, 2008. *Journal of
2454 Orthopaedic & Sports Physical Therapy*. 2008; 38(1):A63
- 2455 684 Freeman BJ, Fraser RD, Cain CM, Hall DJ, Chapple DC. A randomized, double-blind, controlled
2456 trial: intradiscal electrothermal therapy versus placebo for the treatment of chronic discogenic
2457 low back pain. *Spine*. 2005; 30(21):2369-2378
- 2458 685 Freeman BJ, Steele NA, Sach TH, Hegarty J, Soegaard R. Cost-effectiveness of two forms of
2459 circumferential lumbar fusion: a prospective randomized controlled trial. *Spine*. United
2460 Kingdom 2007; 32(25):2891-2897
- 2461 686 Freeman BJ, Steele NA, Sach TH, Hegarty J, Soegaard R. ISSLS prize winner: cost-effectiveness
2462 of two forms of circumferential lumbar fusion: a prospective randomized controlled trial.
2463 *Spine*. 2007; 32:2891-2897
- 2464 687 Freeman BJC, Davenport J. Total disc replacement in the lumbar spine: a systematic review of
2465 the literature. *European Spine Journal*. 2006; 15(Suppl.3):S439-S447
- 2466 688 Freeman BJC, Mehdian R. Intradiscal electrothermal therapy, percutaneous discectomy, and
2467 nucleoplasty: what is the current evidence? *Current Pain and Headache Reports*. 2008;
2468 12(1):14-21
- 2469 689 Freynhagen R, Baron R, Gockel U, Tolle TR. painDETECT: a new screening questionnaire to
2470 identify neuropathic components in patients with back pain. *Current Medical Research and
2471 Opinion*. 2006; 22(10):1911-1920
- 2472 690 Friedberg MW. Group cognitive behavioral treatment improves chronic low back pain in a cost-
2473 effective manner. *Journal of Clinical Outcomes Management*. 2010; 17(6):245-248
- 2474 691 Friedman BW, Rothberg S. Complementary interventions for emergency department patients
2475 with acute or sub-acute mechanical low back pain. *Annals of Emergency Medicine*. 2015; 66(4
2476 Suppl.1):S114

- 2477 692 Friedman BW, Esses D, Solorzano C, Choi HK, Cole M, Davitt M et al. A randomized placebo-
2478 controlled trial of single-dose IM corticosteroid for radicular low back pain. *Spine*. 2008;
2479 33(18):E624-E629
- 2480 693 Friedman JH, Dighe G. Systematic review of caudal epidural injections in the management of
2481 chronic back pain. *Rhode Island Medical Journal*. 2013; 96(1):12-16
- 2482 694 Friedrich JM, Harrast MA. Lumbar epidural steroid injections: indications, contraindications,
2483 risks, and benefits. *Current Sports Medicine Reports*. 2010; 9(1):43-49
- 2484 695 Friedrich M, Gittler G, Halberstadt Y, Cermak T, Heiller I. Combined exercise and motivation
2485 program: effect on the compliance and level of disability of patients with chronic low back
2486 pain: a randomized controlled trial. *Spine*. 1998; 79(5):475-487
- 2487 696 Friedrich M, Gittler G, Arendasy M, Friedrich KM. Long-term effect of a combined exercise and
2488 motivational program on the level of disability of patients with chronic low back pain. *Spine*.
2489 2005; 30(9):995-1000
- 2490 697 Fritz JM. The efficacy of a homogenous treatment approach versus a classification approach to
2491 the treatment of work-related low back pain. *A randomized clinical trial* 1998.
- 2492 698 Fritz JM, Brennan GP, Hunter SJ, Magel JS. Initial management decisions after a new
2493 consultation for low back pain: implications of the usage of physical therapy for subsequent
2494 health care costs and utilization. *Archives of Physical Medicine and Rehabilitation*. 2013;
2495 94(5):808-816
- 2496 699 Fritz JM, Brennan GP, Leaman H. Does the evidence for spinal manipulation translate into
2497 better outcomes in routine clinical care for patients with occupational low back pain? A case-
2498 control study. *Spine Journal : Official Journal of the North American Spine Society*. 2006;
2499 6(3):289-295
- 2500 700 Fritz JM, Childs JD, Flynn TW. Pragmatic application of a clinical prediction rule in primary care
2501 to identify patients with low back pain with a good prognosis following a brief spinal
2502 manipulation intervention. *BMC Family Practice*. 2005; 6(1):29
- 2503 701 Fritz JM, Delitto A, Erhard RE. Comparison of classification-based physical therapy with therapy
2504 based on clinical practice guidelines for patients with acute low back pain: a randomised
2505 clinical trial. *Spine*. 2003; 28(13):1363-1371
- 2506 702 Fritz JM, Wainner RS, Hicks GE. The use of nonorganic signs and symptoms as a screening tool
2507 for return-to-work in patients with acute low back pain. *Spine*. 2000; 25(15):1925-1931
- 2508 703 Fritz JM, Beneciuk JM, George SZ. Relationship between categorization with the STarT Back
2509 Screening Tool and prognosis for people receiving physical therapy for low back pain. *Physical
2510 Therapy*. 2011; 91(5):722-732
- 2511 704 Fritz JM, Cleland JA, Childs JD. Subgrouping patients with low back pain: evolution of a
2512 classification approach to physical therapy. *Journal of Orthopaedic and Sports Physical
2513 Therapy*. 2007; 37(6):290-302
- 2514 705 Fritz JM, George SZ. Identifying psychosocial variables in patients with acute work-related low
2515 back pain: the importance of fear-avoidance beliefs. *Physical Therapy*. 2002; 82(10):973-983

- 2516 706 Fritz JM, Thackeray A, Childs JD, Brennan GP. A randomized clinical trial of the effectiveness of
2517 mechanical traction for sub-groups of patients with low back pain: study methods and
2518 rationale. *BMC Musculoskeletal Disorders*. 2010; 11:81
- 2519 707 Fritzell P, Berg S, Borgstrom F, Tullberg T, Tropp H. Cost effectiveness of disc prosthesis versus
2520 lumbar fusion in patients with chronic low back pain: randomized controlled trial with 2-year
2521 follow-up. *European Spine Journal*. 2011; 20(7):1001-1011
- 2522 708 Fritzell P, Hagg O, Nordwall A. Complications in lumbar fusion surgery for chronic low back pain
2523 - a comparison of three surgical techniques used in a prospective randomized study - a report
2524 from the Swedish lumbar spine study group. *European Spine Journal*. 2002; 11(S01):S16
- 2525 709 Fritzell P, Hagg O, Nordwall A. Complications in lumbar fusion surgery for chronic low back
2526 pain: Comparison of three surgical techniques used in a prospective randomized study. A
2527 report from the Swedish Lumbar Spine Study Group. *European Spine Journal*. 2003; 12(2):178-
2528 189
- 2529 710 Fritzell P, Hagg O, Wessberg P, Nordwall A. The Swedish Spine Study: Lumbar fusion for chronic
2530 low back pain. A multicentre RCT comparing surgery with physiotherapy. 2000 Annual Meeting
2531 of the Spine Society of Europe In: *Eur Spine J*. 2000; 9
- 2532 711 Fritzell P, Hagg O, Wessberg P, Nordwall A. Chronic low back pain and fusion: A comparison of
2533 three surgical techniques: A prospective multicenter randomized study from the Swedish
2534 Lumbar Spine Study Group. *Spine*. 2002; 27(11):1131-1141
- 2535 712 Fritzell P, Jonsson D, Nordwall A, Andreen O, Appelgren G, Berg S et al. Cost-Effectiveness of
2536 Lumbar Fusion and Nonsurgical Treatment for Chronic Low Back Pain in the Swedish Lumbar
2537 Spine Study: A Multicenter, Randomized, Controlled Trial from the Swedish Lumbar Spine
2538 Study Group. *Spine*. 2004; 29(4):421-434
- 2539 713 Fritzler A, Serafini M. Placebo response to interventional pain procedures and effect on patient
2540 outcome. *Techniques in Regional Anesthesia and Pain Management*. 2011; 15(1):20-27
- 2541 714 Frost EAM, Hsu CY, Sadowsky D. Acupuncture therapy. Comparative values in acute and
2542 chronic pain. *New York State Journal of Medicine*. 1976; 76(5):695-697
- 2543 715 Frost H, Klaber Moffett JA, Moser JS, Fairbank JC. Randomised controlled trial for evaluation of
2544 fitness programme for patients with chronic low back pain. *BMJ*. 1995; 310(6973):151-154
- 2545 716 Frost H, Lamb SE, Klaber Moffett JA, Fairbank JC, Moser JS. A fitness programme for patients
2546 with chronic low back pain: 2-year follow-up of a randomised controlled trial. *Spine*. 1998;
2547 75(2-3):273-279
- 2548 717 Frost H, Lamb SE, Doll HA, Carver PT, Stewart-Brown S. Randomised controlled trial of
2549 physiotherapy compared with advice for low back pain. *BMJ*. 2004; 329(7468):708
- 2550 718 Frymoyer JW. Predicting disability from low back pain. *Clinical Orthopaedics and Related
2551 Research*. 1992;(279):101-109
- 2552 719 Fu TS, Lai PL, Tsai TT, Niu CC, Chen LH, Chen WJ. Long-term results of disc excision for recurrent
2553 lumbar disc herniation with or without posterolateral fusion. *Spine*. 2005; 30(24):2830-2834
- 2554 720 Fu YS, Zeng BF, Xu JG. Long-term outcomes of two different decompressive techniques for
2555 lumbar spinal stenosis. *Spine*. 2008; 33(5):514-518

- 2556 721 Furlan A. A systematic review of massage for low back pain. Focus on Alternative and
2557 Complementary Therapies. 2003; 8(1):58-59
- 2558 722 Furlan AD, Brosseau L, Imamura M, Irvin E. Massage for low-back pain: a systematic review
2559 within the framework of the Cochrane Collaboration Back Review Group. Spine. 2002;
2560 27(17):1896-1910
- 2561 723 Furlan AD, Imamura M, Dryden T, Irvin E. Massage for low-back pain. Cochrane Database of
2562 Systematic Reviews. 2008; Issue 4:CD001929. DOI:10.1002/14651858.CD001929.pub2
- 2563 724 Furlan AD, Imamura M, Dryden T, Irvin E. Massage for low back pain: an updated systematic
2564 review within the framework of the Cochrane Back Review Group. Spine. 2009; 34(16):1669-
2565 1684
- 2566 725 Furlan AD, Sandoval JA, Mailis-Gagnon A, Tunks E. Opioids for chronic noncancer pain: a meta-
2567 analysis of effectiveness and side effects. CMAJ. 2006; 174(11):1589-1594
- 2568 726 Furlan AD, van Tulder MW, Cherkin D, Tsukayama H, Lao L, Koes BW et al. Acupuncture and
2569 dry-needling for low back pain. Cochrane Database of Systematic Reviews. 2005; Issue
2570 1:CD001351. DOI:10.1002/14651858.CD001351.pub2
- 2571 727 Furlan AD, Yazdi F, Tsertsvadze A, Lao L, Sherman K, Ammendolia C et al. Acupuncture for
2572 (sub)acute non-specific low-back pain. Cochrane Database of Systematic Reviews. 2011; Issue
2573 8:CD009265. DOI:10.1002/14651858.CD009265
- 2574 728 Gabel CP, Burkett B, Melloh M. The shortened Orebro Musculoskeletal Screening
2575 Questionnaire: evaluation in a work-injured population. Manual Therapy. 2013; 18(5):378-385
- 2576 729 Gabel CP, Melloh M, Burkett B, Osborne J, Yelland M. The Orebro Musculoskeletal Screening
2577 Questionnaire: validation of a modified primary care musculoskeletal screening tool in an acute
2578 work injured population. Manual Therapy. 2012; 17(6):554-565
- 2579 730 Gabel CP, Melloh M, Yelland M, Burkett B, Roiko A. Predictive ability of a modified Orebro
2580 Musculoskeletal Pain Questionnaire in an acute/subacute low back pain working population.
2581 European Spine Journal. 2011; 20(3):449-457
- 2582 731 Gabis L, Shklar B, Baruch YK, Raz R, Gabis E, Geva D. Pain reduction using transcranial
2583 electrostimulation: a double blind "active placebo" controlled trial. Journal of Rehabilitation
2584 Medicine. 2009; 41(4):256-261
- 2585 732 Gagnon LH. Efficacy of Pilates exercises as therapeutic intervention in treating patients with
2586 low back pain. Spine. Ph D 119 p 2005;(The University of Tennessee)
- 2587 733 Galhom AE, al-Shatouri MA. Efficacy of therapeutic fluoroscopy-guided lumbar spine
2588 interventional procedures. Clinical Imaging. 2013; 37(4):649-656
- 2589 734 Galiano K, Obwegeser AA, Walch C, Schatzer R, Ploner F, Gruber H. Ultrasound-guided versus
2590 computed tomography-controlled facet joint injections in the lumbar spine: a prospective
2591 randomized clinical trial. Regional Anesthesia and Pain Medicine. 2007; 32(4):317-322
- 2592 735 Gallagher J, Petriccione Di Vadi PL, Wedley JR, Hamann W, Ryan P, Chikanza I et al.
2593 Radiofrequency facet joint denervation in the treatment of low back pain: A prospective
2594 controlled double-blind study to assess its efficacy. Pain Clinic. 1994; 7(3):193-198

- 2595 736 Gamradt SC, Wang JC. Lumbar disc arthroplasty. *Spine Journal*. 2005; 5(1):95-103
- 2596 737 Ganesh GS, Chhabra D, Pattnaik M, Mohanty P, Patel R, Mrityunjay K. Effect of trunk muscles
2597 training using a star excursion balance test grid on strength, endurance and disability in
2598 persons with chronic low back pain. *Journal of Back and Musculoskeletal Rehabilitation*. 2015;
2599 28(3):521-530
- 2600 738 Garcia AN, Costa LdCM, da Silva TM, Gondo FLB, Cyrillo FN, Costa RA et al. Effectiveness of back
2601 school versus McKenzie exercises in patients with chronic nonspecific low back pain: a
2602 randomized controlled trial. *Physical Therapy*. 2013; 93(6):729-747
- 2603 739 Garcia AN, Costa LdCM, Hancock MJ, de Almeida MO, de Souza FS, Costa LOP. Efficacy of the
2604 McKenzie method in patients with chronic nonspecific low back pain: a protocol of randomized
2605 placebo-controlled trial. *Physical Therapy*. 2015; 95(2):267-273
- 2606 740 Garcia RM, Cassinelli EH, Messerschmitt PJ, Furey CG, Bohlman HH. A multimodal approach for
2607 postoperative pain management after lumbar decompression surgery: a prospective,
2608 randomized study. *Journal of Spinal Disorders and Techniques*. 2013; 26(6):291-297
- 2609 741 Garvey TA, Marks MR, Wiesel SW. A prospective, randomized, double-blind evaluation of
2610 trigger-point injection therapy for low-back pain. *Spine*. 1989; 14(9):962-964
- 2611 742 Gatchel RJ, Mayer TG, Capra P, Barnett J, Diamond P. Million Behavioral Health Inventory: its
2612 utility in predicting physical function in patients with low back pain. *Archives of Physical
2613 Medicine and Rehabilitation*. 1986; 67(12):878-882
- 2614 743 Gatchel RJ, Polatin PB, Kinney RK. Predicting outcome of chronic back pain using clinical
2615 predictors of psychopathology: a prospective analysis. *Health Psychology*. 1995; 14(5):415-420
- 2616 744 Gatchel RJ, Polatin PB, Mayer TG. The dominant role of psychosocial risk factors in the
2617 development of chronic low back pain disability. *Spine*. 1995; 20(24):2702-2709
- 2618 745 Gatchel RJ, Polatin PB, Noe C, Gardea M, Pulliam C, Thompson J. Treatment- and cost-
2619 effectiveness of early intervention for acute low-back pain patients: a one-year prospective
2620 study. *Journal of Occupational Rehabilitation*. United States 2003; 13(1):1-9
- 2621 746 Gatti R, Faccendini S, Tettamanti A, Barbero M, Balestri A, Calori G. Efficacy of trunk balance
2622 exercises for individuals with chronic low back pain: a randomized clinical trial. *Spine*. 2011;
2623 41(8):542-552
- 2624 747 Gatty CM, Turner M, Buitendorp DJ, Batman H. The effectiveness of back pain and injury
2625 prevention programs in the workplace. *Work*. 2003; 20(3):257-266
- 2626 748 Gavin TM, Boscardin JB, Patwardhan AG, Bunch WH, Zindrick MR, Lorenz MA et al. Preliminary
2627 results of orthotic treatment for chronic low back pain. *Journal of Prosthetics and Orthotics*.
2628 1993; 5(1):25-29
- 2629 749 Gaydos SJ. Low back pain: considerations for rotary-wing aircrew. *Aviation, Space, and
2630 Environmental Medicine*. 2012; 83(9):879-889
- 2631 750 Gaynor P, McCarberg B, Zheng W, Shoemaker S, Duenas H. Weight change with long-term
2632 duloxetine use in chronic painful conditions: an analysis of 16 clinical studies. *International
2633 Journal of Clinical Practice*. 2011; 65(3):341-349

- 2634 751 Geba G, Bohidar N, Straus W, Petruschke R. Assessment of functional improvement in chronic
2635 low back pain patients with etoricoxib using the Roland-Morris disability questionnaire. *Journal*
2636 *of Neurosurgery: Spine*. 2004; 86-B(Suppl_III):341-34a
- 2637 752 Geisler FH, Blumenthal SL, Guyer RD, McAfee PC, Regan JJ, Johnson JP et al. Neurological
2638 complications of lumbar artificial disc replacement and comparison of clinical results with
2639 those related to lumbar arthrodesis in the literature: results of a multicenter, prospective,
2640 randomized investigational device exemption study of Charité intervertebral disc. Invited
2641 submission from the Joint Section Meeting on Disorders of the Spine and Peripheral Nerves,
2642 March 2004. *Journal of Neurosurgery: Spine*. 2004; 1(2):143-154
- 2643 753 Geisler FH, Guyer RD, Blumenthal SL, McAfee PC, Cappuccino A, Bitan F et al. Effect of previous
2644 surgery on clinical outcome following 1-level lumbar arthroplasty. *Journal of Neurosurgery:*
2645 *Spine*. 2008; 8(2):108-114
- 2646 754 Geisler FH, Guyer RD, Blumenthal SL, McAfee PC, Cappuccino A, Bitan F et al. Patient selection
2647 for lumbar arthroplasty and arthrodesis: the effect of revision surgery in a controlled,
2648 multicenter, randomized study. *Journal of Neurosurgery: Spine*. 2008; 8(1):13-16
- 2649 755 Geisler FH. Surgical treatment for discogenic low-back pain: lumbar arthroplasty results in
2650 superior pain reduction and disability level improvement compared with lumbar fusion. *SAS*
2651 *Journal*. 2007; 1(1):12-19
- 2652 756 Geisser ME, Wiggert EA, Haig AJ, Colwell MO. A randomized, controlled trial of manual therapy
2653 and specific adjuvant exercise for chronic low back pain. *Spine*. 2005; 21(6):463-470
- 2654 757 Gelalis ID, Arnaoutoglou E, Pakos EE, Politis AN, Rapti M, Xenakis TA et al. Effect of interlaminar
2655 epidural steroid injection in acute and subacute pain due to lumbar disk herniation: a
2656 randomized comparison of 2 different protocols. *Open Orthopaedics Journal*. 2009; 3:121-124
- 2657 758 George SZ, Wittmer VT, Fillingim RB, Robinson ME. Comparison of graded exercise and graded
2658 exposure clinical outcomes for patients with chronic low back pain. *Journal of Orthopaedic and*
2659 *Sports Physical Therapy*. 2010; 40(11):694-704
- 2660 759 George SZ, Beneciuk JM. Psychological predictors of recovery from low back pain: a prospective
2661 study. *BMC Musculoskeletal Disorders*. 2015; 16:49
- 2662 760 George SZ, Beneciuk JM, Bialosky JE, Lentz TA, Zeppieri GJ, Pei Q et al. Development of a
2663 Review-of-Systems Screening Tool for Orthopaedic Physical Therapists: Results From the
2664 Optimal Screening for Prediction of Referral and Outcome (OSPRO) Cohort. *Journal of*
2665 *Orthopaedic and Sports Physical Therapy*. 2015; 45(7):512-526
- 2666 761 George SZ, Delitto A. Clinical examination variables discriminate among treatment-based
2667 classification groups: a study of construct validity in patients with acute low back pain. *Physical*
2668 *Therapy*. 2005; 85(4):306-314
- 2669 762 George SZ, Teyhen DS, Wu SS, Wright AC, Dugan JL, Yang G et al. Psychosocial education
2670 improves low back pain beliefs: results from a cluster randomized clinical trial (NCT00373009)
2671 in a primary prevention setting. *European Spine Journal*. 2009; 18(7):1050-1058
- 2672 763 Gerges FJ, Lipsitz SR, Nedeljkovic SS. A systematic review on the effectiveness of the
2673 nucleoplasty procedure for discogenic pain. *Pain Physician*. 2010; 13(2):117-132

- 2674 764 Gerszten PC, Smuck M, Rathmell JP, Simopoulos TT, Bhagia SM, Mocek CK et al. Plasma disc
2675 decompression compared with fluoroscopy-guided transforaminal epidural steroid injections
2676 for symptomatic contained lumbar disc herniation: a prospective, randomized, controlled trial.
2677 *Journal of Neurosurgery: Spine*. 2010; 12(4):357-371
- 2678 765 Ghahreman A, Bogduk N. Predictors of a favorable response to transforaminal injection of
2679 steroids in patients with lumbar radicular pain due to disc herniation. *Pain Medicine*. 2011;
2680 12(6):871-879
- 2681 766 Ghai B, Bansal D, Kay JP, Vadaje KS, Wig J. Transforaminal versus parasagittal interlaminar
2682 epidural steroid injection in low back pain with radicular pain: a randomized, double-blind,
2683 active-control trial. *Pain Physician*. 2014; 17(4):277-290
- 2684 767 Ghai B, Vadaje KS, Wig J, Dhillon MS. Lateral parasagittal versus midline interlaminar lumbar
2685 epidural steroid injection for management of low back pain with lumbosacral radicular pain: a
2686 double-blind, randomized study. *Anesthesia and Analgesia*. 2013; 117(1):219-227
- 2687 768 Gharibo CG, Varlotta GP, Rhame EE, Liu ECJ, Bendo JA, Perloff MD. Interlaminar versus
2688 transforaminal epidural steroids for the treatment of subacute lumbar radicular pain: a
2689 randomized, blinded, prospective outcome study. *Pain Physician*. 2011; 14(6):499-511
- 2690 769 Ghia JN, Mao W, Toomey TC, Gregg JM. Acupuncture and chronic pain mechanisms. *Pain*.
2691 1976; 2(3):285-299
- 2692 770 Ghoname EA, Craig WF, White PF, Ahmed HE, Hamza MA, Gajraj NM et al. Effectiveness of
2693 PENS for lower back pain. *Integrative Medicine*. 1999; 2(1):19-21
- 2694 771 Ghoname EA, White PF, Ahmed HE, Hamza MA, Craig WF, Noe CE. Percutaneous electrical
2695 nerve stimulation: an alternative to TENS in the management of sciatica. *Pain*. 1999; 83(2):193-
2696 199
- 2697 772 Ghoname ES, Craig WF, White PF, Ahmed HE, Hamza MA, Gajraj NM et al. The effect of
2698 stimulus frequency on the analgesic response to percutaneous electrical nerve stimulation in
2699 patients with chronic low back pain. *Anesthesia and Analgesia*. 1999; 88(4):841-846
- 2700 773 Ghoname E-SA, Craig WF, White PF, Ahmed HE, Hamza MA, Henderson BN et al. Percutaneous
2701 electrical nerve stimulation for low back pain: a randomised crossover study. *Spine*. 1999;
2702 281(9):818-823
- 2703 774 Giannadakis C, Nerland US, Solheim O, Jakola AS, Gulati M, Weber C et al. Does Obesity Affect
2704 Outcomes After Decompressive Surgery for Lumbar Spinal Stenosis? A Multicenter,
2705 Observational, Registry-Based Study. *World Neurosurgery*. 2015; 84(5):1227-1234
- 2706 775 Gibson JN, Grant IC, Waddell G. Surgery for lumbar disc prolapse. *Cochrane Database of*
2707 *Systematic Reviews*. 2000; Issue 3:CD001350. DOI:10.1002/14651858.CD001350
- 2708 776 Gibson JNA, Grant IC, Waddell G. The Cochrane review of surgery for lumbar disc prolapse and
2709 degenerative lumbar spondylosis. *Spine*. 1999; 24(17):1820-1832
- 2710 777 Gibson JNA, Waddell G. Surgical interventions for lumbar disc prolapse. *Cochrane Database of*
2711 *Systematic Reviews*. 2007; Issue 2:CD001350. DOI:10.1002/14651858.CD001350.pub3
- 2712 778 Gibson JNA, Waddell G. Surgical interventions for lumbar disc prolapse: updated Cochrane
2713 Review. *Spine*. 2007; 32(16):1735-1747

- 2714 779 Gibson T, Grahame R, Harkness J, Woo P, Blagrove P, Hills R. Controlled comparison of short-
2715 wave diathermy treatment with osteopathic treatment in non-specific low back pain. *Lancet*.
2716 1985; 1(8440):1258-1261
- 2717 780 Giggey K, Thomas P, Tepe R. Effects of increasing core muscle strength and endurance in
2718 participants with chronic low back pain. *Journal of Chiropractic Education*. 2009; 23(1):68
- 2719 781 Giles LG, Muller R. Chronic spinal pain syndromes: a clinical pilot trial comparing acupuncture,
2720 a nonsteroidal anti-inflammatory drug, and spinal manipulation. *Journal of Manipulative and*
2721 *Physiological Therapeutics*. 1999; 22(6):376-381
- 2722 782 Gillstrom P, Ehrnberg A. Long-term results of autotrraction in the treatment of lumbago and
2723 sciatica. An attempt to correlate clinical results with objective parameters. *Archives of*
2724 *Orthopaedic and Traumatic Surgery*. 1985; 104(5):294-298
- 2725 783 Gillstrom P, Ericson K, Hindmarsh T. Autotrraction in lumbar disc herniation. A myelographic
2726 study before and after treatment. *Archives of Orthopaedic and Traumatic Surgery*. 1985;
2727 104(4):207-210
- 2728 784 Gimbel JS, Kivitz AJ, Bramson C, Nemeth MA, Keller DS, Brown MT et al. Long-term safety and
2729 effectiveness of tanezumab as treatment for chronic low back pain. *Pain*. 2014; 155(9):1793-
2730 1801
- 2731 785 Ginsberg F, Famaey JP. A double-blind study of topical massage with Rado-Salil ointment in
2732 mechanical low-back pain. *Journal of International Medical Research*. 1987; 15(3):148-153
- 2733 786 Gisla DE, Izaguirre MJ, Hopkinson SG. Using Evidence to Increase Compliance with Therapeutic
2734 Stretching for Chronic Low Back Pain. *U S Army Medical Department Journal*. 2015;31-37
- 2735 787 Gladkowski C, Medley C, Nelson H, Price A, Harvey M. Opioids Versus Physical Therapy for
2736 Management of Chronic Back Pain. *Journal for Nurse Practitioners*. 2014; 10(8):552-559
- 2737 788 Glaser JA, Baltz MA, Nietert PJ, Bensen CV. Electrical muscle stimulation as an adjunct to
2738 exercise therapy in the treatment of nonacute low back pain: a randomized trial. *Journal of*
2739 *Pain*. 2001; 2(5):295-300
- 2740 789 GlaxoSmithKline. A double-blind study comparing the efficacy and tolerability of paroxetine
2741 and placebo in hospital out-patients with depressive symptoms associated with chronic back
2742 pain. 1995. Available from: <http://www.gsk-clinicalstudyregister.com/study/29060/298#rs>
2743 [Last accessed: 23 July 2014]
- 2744 790 Glazov G, Schattner P, Lopez D, Shandley K. Laser acupuncture for chronic non-specific low
2745 back pain: a controlled clinical trial. *Acupuncture in Medicine*. 2009; 27(3):94-100
- 2746 791 Glazov G, Yelland M, Emery J. Low-dose laser acupuncture for non-specific chronic low back
2747 pain: a double-blind randomised controlled trial. *Acupuncture in Medicine*. 2014; 32(2):116-
2748 123
- 2749 792 Glombiewski JA, Hartwich-Tersek J, Rief W. Two psychological interventions are effective in
2750 severely disabled, chronic back pain patients: a randomised controlled trial. *International*
2751 *Journal of Behavioral Medicine*. 2010; 17(2):97-107

- 2752 793 Gocer AI, Cetinalp E, Tuna M, Ildan F, Bagdatoglu H, Hacıyakupoglu S. Percutaneous
2753 radiofrequency rhizotomy of lumbar spinal facets: the results of 46 cases. *Neurosurgical*
2754 *Review*. 1997; 20(2):114-116
- 2755 794 Godfrey CM, Morgan PP, Schatzker J. A randomized trial of manipulation for low-back pain in a
2756 medical setting. *Spine*. 1984; 9(3):301-304
- 2757 795 Goertz CM, Pohlman KA, Vining RD, Brantingham JW, Long CR. Patient-centered outcomes of
2758 high-velocity, low-amplitude spinal manipulation for low back pain: a systematic review.
2759 *Journal of Electromyography and Kinesiology*. 2012; 22(5):670-691
- 2760 796 Goertz CM, Long CR, Hondras MA, Petri R, Delgado R, Lawrence DJ et al. Adding chiropractic
2761 manipulative therapy to standard medical care for patients with acute low back pain: results of
2762 a pragmatic randomized comparative effectiveness study. *Spine*. 2013; 38(8):627-634
- 2763 797 Gofeld M. Radiofrequency facet denervation: a randomized control placebo versus sham
2764 procedure. *Clinical Journal of Pain*. 2006; 22(4):410-411
- 2765 798 Goffar SL. Tailored, multimedia versus traditional educational interventions for patients with
2766 low back pain: a randomized clinical trial 2005.
- 2767 799 Goins ML, Wimberley DW, Yuan PS, Fitzhenry LN, Vaccaro AR. Nucleus pulposus replacement:
2768 an emerging technology. *Spine Journal*. 2005; 5(6 Suppl):317S-324S
- 2769 800 Gold RH. Orphenadrine citrate: Sedative or muscle relaxant? *Clinical Therapeutics*. 1978;
2770 1(6):451-453
- 2771 801 Goldby LJ, Moore AP, Doust J, Trew ME. A randomized controlled trial investigating the
2772 efficiency of musculoskeletal physiotherapy on chronic low back disorder. *Spine*. 2006;
2773 31(10):1083-1093
- 2774 802 Goldish GD. Introduction: lumbar spinal orthotics. *Journal of Back and Musculoskeletal*
2775 *Rehabilitation*. 1993; 3(3):1-11
- 2776 803 Goldstein MS, Morgenstern H, Hurwitz EL, Yu F. The impact of treatment confidence on pain
2777 and related disability among patients with low-back pain: results from the University of
2778 California, Los Angeles, low-back pain study. *Spine Journal*. 2002; 2(6):391-401
- 2779 804 Goodman BS, Posecion LWF, Mallempati S, Bayazitoglu M. Complications and pitfalls of lumbar
2780 interlaminar and transforaminal epidural injections. *Current Reviews in Musculoskeletal*
2781 *Medicine*. 2008; 1(3-4):212-222
- 2782 805 Goossens ME, Rutten-van Molken MP, Kole-Snijders AM, Vlaeyen JW, van Breukelen G, Leidl R.
2783 Health economic assessment of behavioural rehabilitation in chronic low back pain: a
2784 randomised clinical trial. *Health Economics*. 1998; 7(1):39-51
- 2785 806 Gotzsche PC. Extracts from 'Clinical evidence'. Non-steroidal anti-inflammatory drugs. *BMJ*.
2786 2000; 320(7241):1058-1061
- 2787 807 Gotzsche PC. NSAIDs. *Clinical Evidence*. 2010; 07:1107
- 2788 808 Gould EM, Jensen MP, Victor TW, Gammaitoni AR, White RE, Galer BS. The pain quality
2789 response profile of oxymorphone extended release in the treatment of low back pain. *Clinical*
2790 *Journal of Pain*. 2009; 25(2):116-122

- 2791 809 Grahame R. Ketoprofen - clinical efficacy. *Rheumatology and Rehabilitation*. 1976; Suppl:22-26
- 2792 810 Gram B, Holtermann A, Bultmann U, Sjogaard G, Sogaard K. Does an exercise intervention
2793 improving aerobic capacity among construction workers also improve musculoskeletal pain,
2794 work ability, productivity, perceived physical exertion, and sick leave?: A randomized
2795 controlled trial. *Journal of Occupational and Environmental Medicine*. 2012; 54(12):1520-1526
- 2796 811 Graves JM, Fulton-Kehoe D, Jarvik JG, Franklin GM. Health care utilization and costs associated
2797 with adherence to clinical practice guidelines for early magnetic resonance imaging among
2798 workers with acute occupational low back pain. *Health Services Research*. 2014; 49(2):645-665
- 2799 812 Graves JM, Fulton-Kehoe D, Martin DP, Jarvik JG, Franklin GM. Factors associated with early
2800 magnetic resonance imaging utilization for acute occupational low back pain: a population-
2801 based study from Washington State workers' compensation. *Spine*. 2012; 37(19):1708-1718
- 2802 813 Graves N, Krepcho M, Mayo HG. Does yoga speed healing for patients with low back pain?
2803 *Journal of Family Practice*. 2004; 53(8):661-662
- 2804 814 Grayson MF. Evidence shows that epidural steroid is effective in sciatica. *BMJ*. 2012; 344:e2486
- 2805 815 Grazio S, Markuincic B, Muraja S, Grubisic F, Nemcic T, Matijevic V et al. Efficacy of low-level
2806 laser therapy and transcutaneous electrical nerve stimulation (TENS) therapy on level of pain,
2807 global assessment of the disease and function in chronic low-back pain. *Clinical and
2808 Experimental Rheumatology*. 2009; 27(5):725-726
- 2809 816 Greenfield K, Nelson RJ, Findlay GD, Egger M, Sanford E. Microdiscectomy and conservative
2810 treatment for lumbar disc herniation with back pain and sciatica: a randomised clinical trial.
2811 *Proceedings of the International Society for the Study of the Lumbar Spine*. 2003;245
- 2812 817 Greenough CG, Taylor LJ, Fraser RD. Anterior lumbar fusion: results, assessment techniques
2813 and prognostic factors. *European Spine Journal*. 1994; 3(4):225-230
- 2814 818 Grevsten S, Johansson H. Phenylbutazone in treatment of acute lumbago-sciatica. *Zeitschrift
2815 Fur Rheumatologie*. 1975; 34(11-12):444-447
- 2816 819 Grewal H, Grewal BS, Patel R. Nonsurgical interventions for low back pain. *Primary Care*. 2012;
2817 39(3):517-523
- 2818 820 Griffin G. How safe and effective are nonsteroidal anti-inflammatory drugs (NSAIDs) in the
2819 treatment of acute or chronic nonspecific low back pain (LBP)? *Journal of Family Practice*.
2820 2000; 49(9):780-781
- 2821 821 Griffith SL, Shelokov AP, Buttner-Janzen K, LeMaire JP, Zeegers WS. A multicenter retrospective
2822 study of the clinical results of the LINK SB Charite intervertebral prosthesis. The initial
2823 European experience. *Spine*. 1994; 19(16):1842-1849
- 2824 822 Grillage M. Neurotic depression accompanied by somatic symptoms: a double-blind
2825 comparison of flupenthixol and diazepam in general practice. *Pharmatherapeutica*. 1986;
2826 4(9):561-570
- 2827 823 Groessl EJ, Weingart KR, Aschbacher K, Pada L, Baxi S. Yoga for veterans with chronic low-back
2828 pain. *Journal of Alternative and Complementary Medicine*. 2008; 14(9):1123-1129

- 2829 824 Gross W, Kriech W. Treatment of back pain with tiaprofenic acid and piroxicam. *Die*
2830 *Therapiewoche*. 1986; 36(12):1200-1212
- 2831 825 Grotle M, Vollestad NK, Brox JI. Screening for yellow flags in first-time acute low back pain:
2832 reliability and validity of a Norwegian version of the Acute Low Back Pain Screening
2833 Questionnaire. *Clinical Journal of Pain*. 2006; 22(5):458-467
- 2834 826 Grover FJ, Pereira SL. Clinical inquiries. Is MRI useful for evaluation of acute low back pain?
2835 *Journal of Family Practice*. 2003; 52(3):231-232
- 2836 827 Grovle L, Haugen AJ, Keller A, Natvig B, Brox JI, Grotle M. Reliability, validity, and
2837 responsiveness of the Norwegian versions of the Maine-Seattle Back Questionnaire and the
2838 Sciatica Bothersomeness and Frequency Indices. *Spine*. 2008; 33(21):2347-2353
- 2839 828 Grunenthal GmbH. A Study to Evaluate the Effectiveness and Safety of Tapentadol (CG5503)
2840 Extended Release (ER) in Patients With Moderate to Severe Chronic Low Back Pain. 2010.
2841 Available from: <http://clinicaltrials.gov/show/NCT00449176> [Last accessed: 23 July 2014]
- 2842 829 Grunnesjo MI, Bogefeldt JP, Blomberg SIE, Strender LE, Svardsudd KF. A randomized controlled
2843 trial of the effects of muscle stretching, manual therapy and steroid injections in addition to
2844 'stay active' care on health-related quality of life in acute or subacute low back pain. *Clinical*
2845 *Rehabilitation*. 2011; 25(11):999-1010
- 2846 830 Grunnesjo MI, Bogefeldt JP, Svardsudd KF, Blomberg SIE. A randomized controlled clinical trial
2847 of stay-active care versus manual therapy in addition to stay-active care: functional variables
2848 and pain. *Journal of Manipulative and Physiological Therapeutics*. 2004; 27(7):431-441
- 2849 831 Guck TP, Burke RV, Rainville C, Hill-Taylor D, Wallace DP. A brief primary care intervention to
2850 reduce fear of movement in chronic low back pain patients. *Translational Behavioral Medicine*.
2851 2015; 5(1):113-121
- 2852 832 Gudavalli MR, Cambron JA, McGregor M, Jedlicka J, Keenum M, Ghanayem AJ et al. A
2853 randomized clinical trial and subgroup analysis to compare flexion-distraction with active
2854 exercise for chronic low back pain. *European Spine Journal*. 2006; 15(7):1070-1082
- 2855 833 Guerreiro da Silva JB, Nakamura MU, Cordeiro JA, Kulay LJ. Acupuncture for low back pain in
2856 pregnancy--a prospective, quasi-randomised, controlled study. *Acupuncture in Medicine*. 2004;
2857 22(2):60-67
- 2858 834 Gundewall B, Liljeqvist M, Hansson T. Primary prevention of back symptoms and absence from
2859 work. A prospective randomized study among hospital employees. *Spine*. 1993; 18(5):587-594
- 2860 835 Guo J, Wang Y, Chen Z-Q, Liu BW, Yang M, Bai ZL. Effect of radiofrequency versus anterior
2861 discectomy and posterior lumbar fixation on discogenic low back pain. *Journal of Clinical*
2862 *Rehabilitative Tissue Engineering Research*. 2007; 11(12):2205-8, 12
- 2863 836 Guo Q-G, Liu Z-G, Wang S-L, Zhang X, Zhao J, Zhao T-F. Effect of different laminoplasties on the
2864 functional recovery of nerve in patients with ossification of posterior longitudinal ligament.
2865 *Chinese Journal of Clinical Rehabilitation*. 2005; 9(10):8-9
- 2866 837 Gupta G, Radhakrishna M, Chankowsky J, Asenjo JF. Methylene blue in the treatment of
2867 discogenic low back pain. *Pain Physician*. 2012; 15(4):333-338

- 2868 838 Gupta RC, Varma B, Singh SP. Role of epidural hydrocortisone and lignocaine in low backache. Indian Journal of Orthopedics. 1987; 21(2):145-149
2869
- 2870 839 Gupta R, Singh S, Kaur S, Singh K, Aujla K. Correlation between Epidurographic Contrast Flow
2871 Patterns and Clinical Effectiveness in Chronic Lumbar Discogenic Radicular Pain Treated with
2872 Epidural Steroid Injections Via Different Approaches. Korean Journal of Pain. 2014; 27(4):353-
2873 359
- 2874 840 Gur A, Karakoc M, Cevik R, Nas K, Sarac AJ, Karakoc M. Efficacy of low power laser therapy and
2875 exercise on pain and functions in chronic low back pain. Lasers in Surgery and Medicine. 2003;
2876 32(3):233-238
- 2877 841 Guyer RD, McAfee PC, Banco RJ, Bitan FD, Cappuccino A, Geisler FH et al. Prospective,
2878 randomized, multicenter Food and Drug Administration investigational device exemption study
2879 of lumbar total disc replacement with the CHARITE artificial disc versus lumbar fusion: five-year
2880 follow-up. Spine Journal. 2009; 9(5):374-386
- 2881 842 Haas M. Commentary on McKenzie therapy and manipulation have similar effects and costs
2882 and provide only marginally better outcomes than an educational booklet. Australian Journal
2883 of Physiotherapy. 1999; 45(1):46
- 2884 843 Haas M, Group E, Kraemer DF. Dose-response for chiropractic care of chronic low back pain.
2885 Spine Journal. 2004; 4(5):574-583
- 2886 844 Haas M, Vavrek D, Peterson D, Aickin M. Dose-response of spinal manipulation for low back
2887 pain: Short-term outcomes from a randomized trial. Clinical Chiropractic. 2011; 14(4):154
- 2888 845 Hacker RJ. Comparison of interbody fusion approaches for disabling low back pain. Spine. 1997;
2889 22(6):660-665
- 2890 846 Hackett GI, Seddon D, Kaminski D. Electroacupuncture compared with paracetamol for acute
2891 low back pain. Practitioner. 1988; 232(1443):163-164
- 2892 847 Hadler NM, Curtis P, Gillings DB, Stinnett S. A benefit of spinal manipulation as adjunctive
2893 therapy for acute low-back pain: a stratified controlled trial. Spine. 1987; 12(7):702-706
- 2894 848 Hadler NM, Curtis P, Gillings DB, Stinnett S. A benefit of spinal manipulation as adjunctive
2895 therapy for acute low-back pain: a stratified controlled trial. Man and Medicine. 1990; 28(1):2-
2896 6
- 2897 849 Hadzic E, Dizdarevic K, Hajdarpasic E, Dzurlic A, Ahmetpahic A. Low back and lumbar radicular
2898 syndrome: comparative study of the operative and non-operative treatment. Medicinski
2899 Glasnik. 2013; 10(2):309-315
- 2900 850 Haefeli M, Elfering A, McIntosh E, Gray A, Sukthankar A, Boos N. A cost-benefit analysis using
2901 contingent valuation techniques: a feasibility study in spinal surgery. Value in Health. 2008;
2902 11(4):575-588
- 2903 851 Hagen EM, Eriksen HR, Ursin H. Does early intervention with a light mobilization program
2904 reduce long-term sick leave for low back pain? Spine. 2000; 25(15):1973-1976
- 2905 852 Hagen KB, Hilde G, Jamtvedt G, Winnem MF. The Cochrane review of bed rest for acute low
2906 back pain and sciatica. Spine. 2000; 25(22):2932-2939

- 2907 853 Hagen KB, Hilde G, Jamtvedt G, Winnem MF. The cochrane review of advice to stay active as a
2908 single treatment for low back pain and sciatica. *Spine*. 2002; 27(16):1736-1741
- 2909 854 Hagen KB, Jamtvedt G, Hilde G, Winnem MF. The updated cochrane review of bed rest for low
2910 back pain and sciatica. *Spine*. 2005; 30(5):542-546
- 2911 855 Hagen KB, Hilde G, Jamtvedt G, Winnem M. WITHDRAWN: Bed rest for acute low-back pain
2912 and sciatica. *Cochrane Database of Systematic Reviews*. 2010; Issue 6:CD001254.
2913 DOI:10.1002/14651858.CD001254.pub3
- 2914 856 Hagg O, Fritzell P, Ekselius L, Nordwall A, Swedish Lumbar SS. Predictors of outcome in fusion
2915 surgery for chronic low back pain. A report from the Swedish Lumbar Spine Study. *European*
2916 *Spine Journal*. 2003; 12(1):22-33
- 2917 857 Hagg O, Fritzell P, Nordwall A, Swedish Lumbar Spine Study Group. Sexual function in men and
2918 women after anterior surgery for chronic low back pain. *European Spine Journal*. 2006;
2919 15(5):677-682
- 2920 858 Hagg O, Fritzell P, Oden A, Nordwall A, Swedish Lumbar Spine Study Group. Simplifying
2921 outcome measurement: evaluation of instruments for measuring outcome after fusion surgery
2922 for chronic low back pain. *Spine*. 2002; 27(11):1213-1222
- 2923 859 Hahne A.J., Ford JJ, Surkitt DD. Multimodal physiotherapy functional restoration versus advise
2924 for lumbar disc herniation with associated radicular therapy: a pilot randomised controlled
2925 trial. *Anaesthesia and Intensive Care*. 2015; 43(3):401-402
- 2926 860 Haid J, Branch J, Alexander JT, Burkus JK. Posterior lumbar interbody fusion using recombinant
2927 human bone morphogenetic protein type 2 with cylindrical interbody cages. *Spine Journal*.
2928 2004; 4(5):527-538
- 2929 861 Haig AJ, Tong HC, Yamakawa KSJ, Parres C, Quint DJ, Chiodo A et al. Predictors of pain and
2930 function in persons with spinal stenosis, low back pain, and no back pain. *Spine*. 2006;
2931 31(25):2950-2957
- 2932 862 Haig AJ, Geisser ME, Nicholson C, Parker E, Yamakawa K, Montgomery D et al. The effect of
2933 order of testing in functional performance in persons with and without chronic back pain.
2934 *Journal of Occupational Rehabilitation*. 2003; 13(2):115-123
- 2935 863 Haimovic IC, Beresford HR. Dexamethasone is not superior to placebo for treating lumbosacral
2936 radicular pain. *Neurology*. 1986; 36(12):1593-1594
- 2937 864 Hakkinen A, Kiviranta I, Neva MH, Kautiainen H, Ylinen J. Reoperations after first lumbar disc
2938 herniation surgery; a special interest on residives during a 5-year follow-up. *BMC*
2939 *Musculoskeletal Disorders*. 2007; 8:2
- 2940 865 Hakkinen A, Ylinen J, Kautiainen H, Airaksinen O, Herno A, Kiviranta I. Does the outcome 2
2941 months after lumbar disc surgery predict the outcome 12 months later? *Disability and*
2942 *Rehabilitation*. 2003; 25(17):968-972
- 2943 866 Haldeman S, Shouka M, Robboy S. Computed tomography, electrodiagnostic and clinical
2944 findings in chronic workers' compensation patients with back and leg pain. *Spine*. 1988;
2945 13:345-350

- 2946 867 Hale ME, Speight KL, Harsanyi Z, Iwan T, Slagle NS, Lacouture PG. Efficacy of 12 hourly
2947 controlled-release codeine compared with as required dosing of acetaminophen plus codeine
2948 in patients with chronic low back pain. *Pain Research and Management*. 1997; 2(1):33-38
- 2949 868 Hale M, Upmalis D, Okamoto A, Lange C, Rauschkolb C. Tolerability of tapentadol immediate
2950 release in patients with lower back pain or osteoarthritis of the hip or knee over 90 days: a
2951 randomized, double-blind study. *Current Medical Research and Opinion*. 2009; 25(5):1095-
2952 1104
- 2953 869 Hale ME, Ahdieh H, Ma T, Rauck R, Oxymorphone ER Study Group. Efficacy and safety of
2954 OPANA ER (oxymorphone extended release) for relief of moderate to severe chronic low back
2955 pain in opioid-experienced patients: a 12-week, randomized, double-blind, placebo-controlled
2956 study. *Journal of Pain*. 2007; 8(2):175-184
- 2957 870 Hale ME, Nalamachu SR, Khan A, Kutch M. Effectiveness and gastrointestinal tolerability during
2958 conversion and titration with once-daily OROS hydromorphone extended release in opioid-
2959 tolerant patients with chronic low back pain. *Journal of Pain Research*. 2013; 6:319-329
- 2960 871 Hall H, McIntosh G. Low back pain (chronic). *Clinical Evidence*. 2008; 10:1116
- 2961 872 Hall KL. The effects of custom-fitted orthotics on structural alignment of the foot,
2962 electromyographic activity and perceived comfort in surgical nurses University of Arkansas;
2963 2004.
- 2964 873 Hall T, Hepburn M, Elvey RL. The effect of lumbosacral posture on a modification of the straight
2965 leg raise test. *Physiotherapy*. 1993; 79(8):566-570
- 2966 874 Hallegraef JM, de Greef M, Winters JC, Lucas C. Manipulative therapy and clinical prediction
2967 criteria in treatment of acute nonspecific low back pain. *Perceptual and Motor Skills*. 2009;
2968 108(1):196-208
- 2969 875 Halvorson K, Halvorson GA, Shidawara C, Adams AT. A program of functional progression for
2970 low back patients. *Journal of Back and Musculoskeletal Rehabilitation*. 1993; 3(4):50-60
- 2971 876 Hameroff SR, Cork RC, Scherer K, Crago BR, Neuman C, Womble JR et al. Doxepin effects on
2972 chronic pain, depression and plasma opioids. *Journal of Clinical Psychiatry*. 1982; 43(8 Pt.2):22-
2973 27
- 2974 877 Hameroff SR, Weiss JL, Lerman JC, Cork RC, Watts KS, Crago BR et al. Doxepin's effects on
2975 chronic pain and depression: a controlled study. *Journal of Clinical Psychiatry*. 1984; 45(3
2976 Pt.2):47-53
- 2977 878 Hampel P, Tlach L. Cognitive-behavioral management training of depressive symptoms among
2978 inpatient orthopedic patients with chronic low back pain and depressive symptoms: A 2-year
2979 longitudinal study. *Journal of Back and Musculoskeletal Rehabilitation*. 2015; 28(1):49-60
- 2980 879 Hancock MJ, Maher CG, Herbert RD. Answer to the letter to the editor of J. Hebert et al.
2981 concerning "Hancock MJ, Maher CG, Latimer J, Herbert RD, McAuley JH (2008) Independent
2982 evaluation of a clinical prediction rule for spinal manipulative therapy: A randomised controlled
2983 trial. Epub ahead of publication DOI:10.1007/s00586-008- 0679-9". *European Spine Journal*.
2984 2008; 17(10):1403-1404

- 2985 880 Hancock MJ, Maher CG, Latimer J, Herbert RD, McAuley JH. Independent evaluation of a clinical
2986 prediction rule for spinal manipulative therapy: a randomised controlled trial. *European Spine*
2987 *Journal*. 2008; 17(7):936-943
- 2988 881 Hancock MJ, Maher CG, Cleland JA, Fritz JM, Kulig K, et al. Comparison of the effectiveness of
2989 three manual physical therapy techniques in a subgroup of patients with low back pain who
2990 satisfy a clinical prediction rule. A randomized clinical trial. *Spine* 2009;34:2720-9. *Spine*. 2010;
2991 35(7):839-840
- 2992 882 Hancock MJ, Maher CG, Latimer J, McLachlan AJ, Cooper CW, Day RO et al. Assessment of
2993 diclofenac or spinal manipulative therapy, or both, in addition to recommended first-line
2994 treatment for acute low back pain: a randomised controlled trial. *Lancet*. 2007;
2995 370(9599):1638-1643
- 2996 883 Hancock MJ, Maher CG, Latimer J, Herbert RD, McAuley JH. Can rate of recovery be predicted
2997 in patients with acute low back pain? Development of a clinical prediction rule. *European*
2998 *Journal of Pain*. 2009; 13(1):51-55
- 2999 884 Hancock MJ, Maher CG, Latimer J, McLachlan AJ, Day RO, Davies RA. Can predictors of
3000 response to NSAIDs be identified in patients with acute low back pain? *Clinical Journal of Pain*.
3001 2009; 25(8):659-665
- 3002 885 Handa N, Yamamoto H, Tani T, Kawakami T, Takemasa R. The effect of trunk muscle exercises
3003 in patients over 40 years of age with chronic low back pain. *Journal of Orthopaedic Science*.
3004 2000; 5(3):210-216
- 3005 886 Hanly JG, Mitchell M, MacMillan L, Mosher D, Sutton E. Efficacy of sacroiliac corticosteroid
3006 injections in patients with inflammatory spondyloarthropathy: results of a 6 month controlled
3007 study. *Journal of Rheumatology*. 2000; 27(3):719-722
- 3008 887 Hansen FR, Bendix T, Skov P, Jensen CV, Kristensen JH, Krohn L et al. Intensive, dynamic back-
3009 muscle exercises, conventional physiotherapy, or placebo-control treatment of low-back pain.
3010 A randomized, observer-blind trial. *Spine*. 1993; 18(1):98-108
- 3011 888 Hansen H, Manchikanti L, Simopoulos TT, Christo PJ, Gupta S, Smith HS et al. A systematic
3012 evaluation of the therapeutic effectiveness of sacroiliac joint interventions. *Pain Physician*.
3013 2012; 15(3):E247-E278
- 3014 889 Hansen HC, McKenzie-Brown AM, Cohen SP, Swicegood JR, Colson JD, Manchikanti L. Sacroiliac
3015 joint interventions: a systematic review. *Pain Physician*. 2007; 10(1):165-184
- 3016 890 Hansen Z, Daykin A, Lamb SE. A cognitive-behavioural programme for the management of low
3017 back pain in primary care: a description and justification of the intervention used in the Back
3018 Skills Training Trial (BeST; ISRCTN 54717854). *Physiotherapy*. 2010; 96(2):87-94
- 3019 891 Hansson E, Hansson T. The cost-utility of lumbar disc herniation surgery. *European Spine*
3020 *Journal*. 2007; 16(3):329-337
- 3021 892 Hansson Y, Carisson C, Olsson E. Intramuscular and periosteal acupuncture in patients suffering
3022 from chronic musculoskeletal pain a controlled trial. *Acupuncture in Medicine*. 2008;
3023 26(4):214-223

- 3024 893 Harman K, Bassett R, Fenety A, Hoens AM. Client Education: Communicative Interaction
3025 between Physiotherapists and Clients with Subacute Low Back Pain in Private Practice.
3026 Physiotherapy Canada. 2011; 63(2):212-223
- 3027 894 Haroutiunian S, Drennan DA, Lipman AG. Topical NSAID therapy for musculoskeletal pain. Pain
3028 Medicine. 2010; 11(4):535-549
- 3029 895 Harte AA, Baxter GD, Gracey JH. The efficacy of traction for back pain: a systematic review of
3030 randomized controlled trials. Archives of Physical Medicine and Rehabilitation. 2003;
3031 84(10):1542-1553
- 3032 896 Hartfiel N, Burton C, Rycroft-Malone J, Clarke G, Havenhand J, Khalsa SB et al. Yoga for
3033 reducing perceived stress and back pain at work. Occupational Medicine. 2012; 62(8):606-612
- 3034 897 Hashemi M, Aryani MR, Momenzadeh S, Razavi SS, Mohseni G, Mohajerani SA et al.
3035 Comparison of Transforaminal and Parasagittal Epidural Steroid Injections in Patients With
3036 Radicular Low Back Pain. Anesthesiology and Pain Medicine. 2015; 5(5):e26652
- 3037 898 Hashemi M, Hashemian M, Mohajerani SA, Sharifi G. Effect of pulsed radiofrequency in
3038 treatment of facet-joint origin back pain in patients with degenerative spondylolisthesis.
3039 European Spine Journal. 2014; 23(9):1927-1932
- 3040 899 Haskins R, Osmotherly PG, Rivett DA. Validation and impact analysis of prognostic clinical
3041 prediction rules for low back pain is needed: a systematic review. Journal of Clinical
3042 Epidemiology. 2015; 68(7):821-832
- 3043 900 Hasue M, Tachibana S, Kunogi J, Hirabayashi S. Clinical evaluation of Eperisone Hydrochloride
3044 Tape (E2000) in lumbago, cervicobrachial syndrome, and peri-arthritis humeroscapularis.
3045 Japanese Pharmacology and Therapeutics. 1997; 25(4):207-225
- 3046 901 Hauggaard A, Persson AL. Specific spinal stabilisation exercises in patients with low back pain: a
3047 systematic review. Physical Therapy Reviews. 2007; 12(3):233-248
- 3048 902 Haughton VM, Fine J. Measuring the effect of novel therapies for back pain. American Journal
3049 of Neuroradiology. 2003; 24(5):784-787
- 3050 903 Havakeshian S, Mannion AF. Negative beliefs and psychological disturbance in spine surgery
3051 patients: a cause or consequence of a poor treatment outcome? European Spine Journal. 2013;
3052 22(12):2827-2835
- 3053 904 Hay EM, Mullis R, Lewis M, Vohora K, Main CJ, Watson P et al. Comparison of physical
3054 treatments versus a brief pain-management programme for back pain in primary care: a
3055 randomised clinical trial in physiotherapy practice. Lancet. 2005; 365(9476):2024-2030
- 3056 905 Hay EM, Dunn KM, Hill JC, Lewis M, Mason EE, Konstantinou K et al. A randomised clinical trial
3057 of subgrouping and targeted treatment for low back pain compared with best current care. The
3058 STarT Back Trial Study Protocol. BMC Musculoskeletal Disorders. 2008; 9:58
- 3059 906 Hayashi K, Arai YC, Ikemoto T, Nishihara M, Suzuki S, Hirakawa T et al. Predictive factors for the
3060 outcome of multidisciplinary treatments in chronic low back pain at the first multidisciplinary
3061 pain center of Japan. Journal of Physical Therapy Science. 2015; 27(9):2901-2905
- 3062 907 HAYES. eXtreme lateral interbody fusion (XLIF; NuVasive Inc.) for treatment of chronic low back
3063 pain. HAYES, Inc, 2012

- 3064 908 Hayes SC, Strosahl KD, Wilson KG. Acceptance and commitment therapy: An experiential
3065 approach to behavior change. Guilford Press; 1999
- 3066 909 Hazard RG, Bendix A, Fenwick JW. Disability exaggeration as a predictor of functional
3067 restoration outcomes for patients with chronic low-back pain. *Spine*. 1991; 16(9):1062-1067
- 3068 910 Hazard RG, Fenwick JW, Kalisch SM, Redmond J, Reeves V, Reid S et al. Functional restoration
3069 with behavioral support. A one-year prospective study of patients with chronic low-back pain.
3070 *Spine*. 1989; 14(2):157-161
- 3071 911 He C, Chen P, Wang X, Ding M, Lan Q, Han M. The clinical effect of herbal magnetic corsets on
3072 lumbar disc herniation. *Clinical Rehabilitation*. 2006; 20(12):1058-1065
- 3073 912 Health Quality Ontario. Artificial discs for lumbar and cervical degenerative disc disease -
3074 update: an evidence-based analysis. Ontario Health Technology Assessment Series. 2006;
3075 6(10):1-98
- 3076 913 Heath KM, Elovic EP. Vitamin D deficiency: implications in the rehabilitation setting. *American
3077 Journal of Physical Medicine and Rehabilitation*. 2006; 85(11):916-923
- 3078 914 Hebert JJ, Fritz JM, Thackeray A, Koppenhaver SL, Teyhen D. Early multimodal rehabilitation
3079 following lumbar disc surgery: a randomised clinical trial comparing the effects of two exercise
3080 programmes on clinical outcome and lumbar multifidus muscle function. *British Journal of
3081 Sports Medicine*. 2015; 49(2):100-106
- 3082 915 Hebert JJ, Perle SM. Letter to the editor concerning "Independent evaluation of a clinical
3083 prediction rule for spinal manipulative therapy: a randomised controlled trial" (M. Hancock et
3084 al.). *European Spine Journal*. 2008; 17(10):1401-1404
- 3085 916 Hee HT, Wong HK. The long-term results of surgical treatment for spinal stenosis in the elderly.
3086 *Singapore Medical Journal*. 2003; 44(4):175-180
- 3087 917 Hee SJ, Joon WL, Sung HK, Jae SM, Joo HK, Heung SK. Effectiveness of transforaminal epidural
3088 steroid injection by using a preganglionic approach: A prospective randomized controlled
3089 study. *Radiology*. 2007; 245(2):584-590
- 3090 918 Heid F, Grimm U, Roth W, Piepho T, Kerz T, Jage J. Intraoperative tramadol reduces shivering
3091 but not pain after remifentanyl-isoflurane general anaesthesia. A placebo-controlled, double-
3092 blind trial. *European Journal of Anaesthesiology*. 2008; 25(6):468-472
- 3093 919 Heinrich RL, Cohen MJ, Naliboff BD, Collins GA, Bonebakker AD. Comparing physical and
3094 behavior therapy for chronic low back pain on physical abilities, psychological distress, and
3095 patients' perceptions. *Journal of Behavioral Medicine*. 1985; 8(1):61-78
- 3096 920 Hellum C, Johnsen LG, Storheim K, Nygaard OP, Brox JI, Rossvoll I et al. Surgery with disc
3097 prosthesis versus rehabilitation in patients with low back pain and degenerative disc: two year
3098 follow-up of randomised study. *BMJ*. 2011; 342:d2786
- 3099 921 Helmhout PH, Harts CC, Staal JB, Candel MJJM, de Bie RA. Comparison of a high-intensity and a
3100 low-intensity lumbar extensor training program as minimal intervention treatment in low back
3101 pain: a randomized trial. *European Spine Journal*. 2004; 13(6):537-547

- 3102 922 Helmhout PH, Harts CC, Viechtbauer W, Staal JB, de Bie RA. Isolated lumbar extensor
3103 strengthening versus regular physical therapy in an army working population with nonacute
3104 low back pain: a randomized controlled trial. *Spine*. 2008; 89(9):1675-1685
- 3105 923 Hemmila HM. Quality of life and cost of care of back pain patients in Finnish general practice.
3106 *Spine*. 2002; 27(6):647-653
- 3107 924 Hemmila HM, Keinanen-Kiukaanniemi SM, Levoska S, Puska P. Does folk medicine work? A
3108 randomized clinical trial on patients with prolonged back pain. *Archives of Physical Medicine
3109 and Rehabilitation*. 1997; 78(6):571-577
- 3110 925 Henchoz Y, Pinget C, Wasserfallen JB, Paillex R, de GP, Norberg M et al. Cost-utility analysis of a
3111 three-month exercise programme vs usual care following multidisciplinary rehabilitation for
3112 chronic low back pain. *Spine*. 2010; 42(9):846-852
- 3113 926 Hendler N, Mollett A, Talo S, Levin S. A comparison between the Minnesota Multiphasic
3114 Personality Inventory and the 'Mensana Clinic Back Pain Test' for validating the complaint of
3115 chronic back pain. *Journal of Occupational Medicine*. 1988; 30(2):98-102
- 3116 927 Hennies OL. A new skeletal muscle relaxant (DS 103-282) compared to diazepam in the
3117 treatment of muscle spasm of local origin. *Journal of International Medical Research*. 1981;
3118 9(1):62-68
- 3119 928 Henrotin YE, Cedraschi C, Duplan B, Bazin T, Duquesnoy B. Information and low back pain
3120 management: a systematic review. *Spine*. 2006; 31(11):E326-E334
- 3121 929 Henry SM, Van Dillen LR, Ouellette-Morton RH, Hitt JR, Lomond KV, DeSarno MJ et al.
3122 Outcomes are not different for patient-matched versus nonmatched treatment in subjects with
3123 chronic recurrent low back pain: a randomized clinical trial. *Spine Journal*. 2014; 14(12):2799-
3124 2810
- 3125 930 Henschke N, Kuijpers T, Rubinstein SM, van Middelkoop M, Ostelo R, Verhagen A et al.
3126 Injection therapy and denervation procedures for chronic low-back pain: a systematic review.
3127 *European Spine Journal*. 2010; 19(9):1425-1449
- 3128 931 Henschke N, Kuijpers T, Rubinstein SM, van Middelkoop M, Ostelo R, Verhagen A et al. Trends
3129 over time in the size and quality of randomised controlled trials of interventions for chronic
3130 low-back pain. *European Spine Journal*. 2012; 21(3):375-381
- 3131 932 Henschke N, Ostelo Raymond WJG, van Tulder MW, Vlaeyen Johan WS, Morley S, Assendelft
3132 Willem JJ et al. Behavioural treatment for chronic low-back pain. *Cochrane Database of
3133 Systematic Reviews*. 2010; Issue 7:CD002014. DOI:10.1002/14651858.CD002014.pub3
- 3134 933 Hentschke C, Hofmann J, Pfeifer K. A bio-psycho-social exercise program (RÜCKGEWINN) for
3135 chronic low back pain in rehabilitation aftercare--study protocol for a randomised controlled
3136 trial. *BMC Musculoskeletal Disorders*. 2010; 11:266
- 3137 934 Herkowitz HN, Kurz LT. Degenerative lumbar spondylolisthesis with spinal stenosis. A
3138 prospective study comparing decompression with decompression and intertransverse process
3139 arthrodesis. *Journal of Bone and Joint Surgery - American Volume*. 1991; 73-A(6):802-808
- 3140 935 Hernandez-Reif M, Field T, Krasnegor J, Theakston H. Lower back pain is reduced and range of
3141 motion increased after massage therapy. *International Journal of Neuroscience*. 2001; 106(3-
3142 4):131-145

- 3143 936 Herno A. Surgical results of lumbar spinal stenosis. *Annales Chirurgiae Et Gynaecologiae*
3144 Supplementum. 1995; 210:1-969
- 3145 937 Herskowitz A. BOTOX (Botulinum Toxin Type A) treatment of patients with sub-acute low back
3146 pain: A randomized, double blind, placebo-controlled study. *Journal of Pain*. 2004; 5(1):S62
- 3147 938 Herskowitz A. Novel therapeutic agents: BOTOX (Botulinum Toxin Type A) treatment of
3148 patients with sub-acute low back pain: A randomized, double blind, placebo-controlled study.
3149 *Journal of Pain*. 2004; 5(3, Supplement 1):S62
- 3150 939 Hertzman-Miller RP, Morgenstern H, Hurwitz EL, Yu F, Adams AH, Harber P et al. Comparing
3151 the satisfaction of low back pain patients randomized to receive medical or chiropractic care:
3152 results from the UCLA low-back pain study. *American Journal of Public Health*. 2002;
3153 92(10):1628-1633
- 3154 940 Hery AK, Srivastava OP. Comparative study of epidural anesthesia and transcutaneous nerve
3155 stimulation for the management of low backache. *Pain*. 1987; 4:S369
- 3156 941 Heymans MW, Anema JR, de Vet HCW, van Mechelen W. Does flexion-distraction help treat
3157 chronic low back pain? *Nature Clinical Practice Rheumatology*. 2006; 2(7):360-361
- 3158 942 Hickey RF. Chronic low back pain: a comparison of diflunisal with paracetamol. *New Zealand*
3159 *Medical Journal*. 1982; 95(707):312-314
- 3160 943 Hickey RF, Tregonning GD. Denervation of spinal facet joints for treatment of chronic low back
3161 pain. *New Zealand Medical Journal*. 1977; 85(581):96-99
- 3162 944 Hicks GE, Fritz JM, Delitto A, McGill SM. Preliminary development of a clinical prediction rule
3163 for determining which patients with low back pain will respond to a stabilization exercise
3164 program. *Archives of Physical Medicine and Rehabilitation*. 2005; 86(9):1753-1762
- 3165 945 Hicks GE, Fritz JM, Delitto A, Mishock J. Interrater reliability of clinical examination measures
3166 for identification of lumbar segmental instability. *Archives of Physical Medicine and*
3167 *Rehabilitation*. 2003; 84(12):1858-1864
- 3168 946 Hides JA, Jull GA, Richardson CA. Long-term effects of specific stabilizing exercises for first-
3169 episode low back pain. *Spine*. 2001; 26(11):E243-E248
- 3170 947 Hides JA, Richardson CA, Jull GA. Multifidus muscle recovery is not automatic after resolution
3171 of acute, first-episode low back pain. *Spine*. 1996; 21(23):2763-2769
- 3172 948 Hilde G, Hagen KB, Jamtvedt G, Winnem M. Advice to stay active as a single treatment for low-
3173 back pain and sciatica [withdrawn]. *Cochrane Database of Systematic Reviews*. 2006; Issue
3174 2:CD003632. DOI:10.1002/14651858.CD003632.pub2
- 3175 949 Hildebrandt VH, Proper KI, Berg v, Douwes M, Heuvel v, Buuren v. Cesar therapy is temporarily
3176 more effective than a standard treatment from the general practitioner in patients with
3177 chronic aspecific lower back pain; randomized, controlled and blinded study with 1 year follow-
3178 up. *Nederlands Tijdschrift Geneeskunde*. 2000; 144(47):2258-2264
- 3179 950 Hill JC, Dunn KM, Lewis M, Mullis R, Main CJ, Foster NE et al. A primary care back pain
3180 screening tool: identifying patient subgroups for initial treatment. *Arthritis and Rheumatism*.
3181 2008; 59(5):632-641

- 3182 951 Hill JC, Dunn KM, Main CJ, Hay EM. Subgrouping low back pain: a comparison of the STarT Back
3183 Tool with the Orebro Musculoskeletal Pain Screening Questionnaire. *European Journal of Pain.*
3184 2010; 14(1):83-89
- 3185 952 Hill JC, Vohora K, Dunn KM, Main CJ, Hay EM. Comparing the STarT back screening tool's
3186 subgroup allocation of individual patients with that of independent clinical experts. *Clinical*
3187 *Journal of Pain.* 2010; 26(9):783-787
- 3188 953 Himanen P. Double-blind study of ibuprofen and dextropropoxyphene in acute back pain.
3189 *Scandinavian Journal of Rheumatology Supplement.* 1982; 45:31
- 3190 954 Hindle TH. Comparison of carisoprodol, butabarbital, and placebo in treatment of the low back
3191 syndrome. *California Medicine.* 1972; 117(2):7-11
- 3192 955 Hingorani K. Diazepam in backache. A double-blind controlled trial. *Annals of Physical*
3193 *Medicine.* 1966; 8(8):303-306
- 3194 956 Hingorani K. Orphenadrin-paracetamol in backache-a double-blind controlled trial. *British*
3195 *Journal of Clinical Practice.* 1971; 25(5):227-231
- 3196 957 Hingorani K. A comparative trial of azapropazone (rheumox) and ketoprofen (orudis) in the
3197 treatment of acute backache. *Scandinavian Journal of Rheumatology Supplement.*
3198 1975;(8):S12-02
- 3199 958 Hingorani K, Biswas AK. Double-blind controlled trial comparing oxyphenbutazone and
3200 indomethacin in the treatment of acute low back pain. *British Journal of Clinical Practice.* 1970;
3201 24(3):120-123
- 3202 959 Hingorani K, Templeton JS. A comparative trial of azapropazone and ketoprofen in the
3203 treatment of acute backache. *Current Medical Research and Opinion.* 1975; 3(6):407-412
- 3204 960 Hipp J, Dibello T, Dice D, Reitman CA, Weinberg J. Is spinal motion limited by contemporary
3205 lumbosacral orthoses? A comparison of three braces. *Spine Journal.* 2010; 10(9 SUPPL. 1):139S
- 3206 961 Hirota S. Trigger point acupuncture treatment for chronic low back pain in elderly patients.
3207 *Bulletin of Meiji University of Oriental Medicine.* 2007; 38:19-26
- 3208 962 Hirota S, Itoh K, Katsumi Y. A controlled clinical trial comparing trigger point acupuncture with
3209 tender point acupuncture treatments for chronic low back pain: A pilot study on 9 elderly
3210 patients. *Journal of the Japan Society of Acupuncture and Moxibustion.* 2006; pp 67,-85(56):67-
3211 85
- 3212 963 Hirsch JA, Singh V, Falco FJE, Benyamin RM, Manchikanti L. Automated percutaneous lumbar
3213 discectomy for the contained herniated lumbar disc: a systematic assessment of evidence. *Pain*
3214 *Physician.* 2009; 12(3):601-620
- 3215 964 Hodges SD, Humphreys SC, Eck JC, Covington LA, Harrom H. Predicting factors of successful
3216 recovery from lumbar spine surgery among workers' compensation patients. *Journal of the*
3217 *American Osteopathic Association.* 2001; 101(2):78-83
- 3218 965 Hodselmans AP, Jaegers SM, Goeken LN. Short-term outcomes of a back school program for
3219 chronic low back pain. *Archives of Physical Medicine and Rehabilitation.* 2001; 82(8):1099-1105

- 3220 966 Hoehler FK, Tobis JS, Buerger AA. Spinal manipulation for low back pain. *JAMA*. 1981;
3221 245(18):1835-1838
- 3222 967 Hoffman BM, Papas RK, Chatkoff DK, Kerns RD. Meta-analysis of psychological interventions for
3223 chronic low back pain. *Health Psychology*. 2007; 26(1):1-9
- 3224 968 Hofstee DJ, Gijtenbeek JJM, Hoogland PH, Van Houwelingen JC, Kloet A, Lotters F et al. Bedrust
3225 en fysiotherapie geen meerwaarde bij acute lumbosacrale radiculare pijn; een
3226 gerandomiseerde, klinische studie. *Nederlands Tijdschrift Voor Geneeskunde*. 2003;
3227 147(6):249-254
- 3228 969 Hofstee DJ, Gijtenbeek JMM, Hoogland PH, van Houwelingen HC, Kloet A, Lotters F et al.
3229 Westeinde sciatica trial: randomized controlled study of bed rest and physiotherapy for acute
3230 sciatica. *Journal of Neurosurgery*. 2002; 96(1 Suppl.):45-49
- 3231 970 Hollinghurst S, Sharp D, Ballard K, Barnett J, Beattie A, Evans M et al. Randomised controlled
3232 trial of Alexander technique lessons, exercise, and massage (ATEAM) for chronic and recurrent
3233 back pain: economic evaluation. *BMJ*. 2008; 337:a2656
- 3234 971 Hollisaz MT. Use of electroacupuncture for treatment of chronic sciatic pain. *Internet Journal
3235 of Pain, Symptom Control & Palliative Care*. 2007; 5(1):-7p
- 3236 972 Homayouni K, Naseri M, Zaravar F, Zaravar L, Karimian H. Comparison of the effect of aquatic
3237 physical therapy and conventional physical therapy in patients with lumbar spinal stenosis (a
3238 randomized controlled trial). *Journal of Musculoskeletal Research*. 2015; 18:1550002
- 3239 973 Hondras MA, Long CR, Cao Y, Rowell RM, Meeker WC. A randomized controlled trial comparing
3240 2 types of spinal manipulation and minimal conservative medical care for adults 55 years and
3241 older with subacute or chronic low back pain. *Journal of Manipulative and Physiological
3242 Therapeutics*. 2009; 32(5):330-343
- 3243 974 Hong J, Reed C, Novick D, Happich M. Costs associated with treatment of chronic low back
3244 pain: an analysis of the UK general practice research database. *Spine*. 2013; 38(1):75-82
- 3245 975 Hong P, Liu Y, Li H. Comparison of the efficacy and safety between interspinous process
3246 distraction device and open decompression surgery in treating lumbar spinal stenosis: a meta
3247 analysis. *Journal of Investigative Surgery*. 2015; 28(1):40-49
- 3248 976 Hopton A, Macpherson H. Acupuncture for chronic pain: is acupuncture more than an effective
3249 placebo? A systematic review of pooled data from meta-analyses. *Pain Practice*. 2010;
3250 10(2):94-102
- 3251 977 Hoy D, Brooks P, Blyth F, Buchbinder R. The Epidemiology of low back pain. *Best Practice and
3252 Research: Clinical Rheumatology*. 2010; 24(6):769-781
- 3253 978 Hoy K, Bunger C, Niederman B, Helmig P, Hansen ES, Li H et al. Transforaminal lumbar
3254 interbody fusion (TLIF) versus posterolateral instrumented fusion (PLF) in degenerative lumbar
3255 disorders: A randomized clinical trial with 2-year follow-up. *European Spine Journal*. 2013;
3256 22(9):2022-2029
- 3257 979 Hsieh LLC, Kuo C-H, Lee LH, Yen AMF, Chien K-L, Chen THH. Treatment of low back pain by
3258 acupressure and physical therapy: Randomised controlled trial. *BMJ*. 2006; 332(7543):696-698

- 3259 980 Hsieh LLC, Kuo C-H, Yen M-F, Chen THH. A randomized controlled clinical trial for low back pain
3260 treated by acupressure and physical therapy. *Preventive Medicine*. 2004; 39(1):168-176
- 3261 981 Huang RC, Sandhu HS. The current status of lumbar total disc replacement. *Orthopedic Clinics*
3262 of North America. 2004; 35(1):33-42
- 3263 982 Huang RC, Girardi FP, Cammisa FPJ, Lim MR, Tropiano P, Marnay T. Correlation between range
3264 of motion and outcome after lumbar total disc replacement: 8.6-year follow-up. *Spine*. 2005;
3265 30(12):1407-1411
- 3266 983 Huang RC, Tropiano P, Marnay T, Girardi FP, Lim MR, Cammisa FPJ. Range of motion and
3267 adjacent level degeneration after lumbar total disc replacement. *Spine Journal*. 2006; 6(3):242-
3268 247
- 3269 984 Huda N, Bansal P, Gupta SM, Ruhela A, Rehman M, Afzal M. The efficacy of epidural depo-
3270 methylprednisolone and triamcinolone acetate in relieving the symptoms of lumbar canal
3271 stenosis: A comparative study. *Journal of Clinical and Diagnostic Research*. 2010; 4(4):2842-
3272 2847
- 3273 985 Hunt RH, Harper S, Watson DJ, Yu C, Quan H, Lee M et al. The gastrointestinal safety of the
3274 COX-2 selective inhibitor etoricoxib assessed by both endoscopy and analysis of upper
3275 gastrointestinal events. *American Journal of Gastroenterology*. 2003; 98(8):1725-1733
- 3276 986 Hurlbert RJ, Alexander D, Bailey S, Mahood J, Abraham E, Mcbroom R et al. rhBMP-2 for
3277 posterolateral instrumented lumbar fusion: A multicenter prospective randomized controlled
3278 trial. *Spine*. 2013; 38(25):2139-2148
- 3279 987 Hurley D. Massage is better than acupuncture (and in the short term better than self-care) in
3280 reducing pain and disability in patients with chronic low back pain. *Australian Journal of*
3281 *Physiotherapy*. 2001; 47(4):299
- 3282 988 Hurley DA, Dusoir TE, McDonough SM, Moore AP, Baxter GD. How effective is the acute low
3283 back pain screening questionnaire for predicting 1-year follow-up in patients with low back
3284 pain? *Clinical Journal of Pain*. 2001; 17(3):256-263
- 3285 989 Hurley DA, Tully MA, Lonsdale C, Boreham CAG, van Mechelen W, Daly L et al. Supervised
3286 walking in comparison with fitness training for chronic back pain in physiotherapy: results of
3287 the SWIFT single-blinded randomized controlled trial (ISRCTN17592092). *Pain*. 2015;
3288 156(1):131-147
- 3289 990 Hurme M, Himanen P. Diflunisal in the treatment of low back pain in a multicentre study.
3290 *International Journal of Clinical Pharmacology Research*. 1986; 6(1):53-58
- 3291 991 Hurwitz E. Long-term effects of chiropractic versus medical care for low-back pain: 18-month
3292 follow-up in the UCLA Low-Back Pain Study. 2002 International Conference On Spinal
3293 Manipulation. 2002;
- 3294 992 Hurwitz EL, Morgenstern H, Harber P, Kominski GF, Belin TR, Yu F et al. Second Prize: The
3295 effectiveness of physical modalities among patients with low back pain randomized to
3296 chiropractic care: findings from the UCLA low back pain study. *Journal of Manipulative and*
3297 *Physiological Therapeutics*. 2002; 25(1):10-20

- 3298 993 Hurwitz EL, Morgenstern H, Harber PI, Kominski GF, Belin TR, Yu F et al. Effectiveness of
3299 physical modalities among low back pain patients randomized to chiropractic care: findings
3300 from the UCLA low-back pain study. *European Journal of Chiropractic*. 2002; 49(1):102-103
- 3301 994 Hurwitz EL, Morgenstern H, Harber P, Kominski GF, Belin TR, Yu F et al. A randomized trial of
3302 medical care with and without physical therapy and chiropractic care with and without physical
3303 modalities for patients with low back pain: 6-month follow-up outcomes from the UCLA low
3304 back pain study. *Spine*. 2002; 27(20):2193-2204
- 3305 995 Hurwitz EL, Morgenstern H, Kominski GF, Yu F, Chiang LM. A randomized trial of chiropractic
3306 and medical care for patients with low back pain: eighteen-month follow-up outcomes from
3307 the UCLA low back pain study. *Spine*. 2006; 31(6):611-622
- 3308 996 Hurwitz EL, Morgenstern H, Yu F. Satisfaction as a predictor of clinical outcomes among
3309 chiropractic and medical patients enrolled in the UCLA low back pain study. *Spine*. 2005;
3310 30(19):2121-2128
- 3311 997 Hutchinson AJP, Ball S, Andrews JCH, Jones GG. The effectiveness of acupuncture in treating
3312 chronic non-specific low back pain: a systematic review of the literature. *Journal of*
3313 *Orthopaedic Surgery and Research*. 2012; 7:36
- 3314 998 Hwang S. Effect of lumbosacral orthosis on the trunk muscle strength in patients with low bak
3315 pain. *Journal of Rehabilitation Medicine (Stiftelsen Rehabiliteringsinformation)*. 2012;85
- 3316 999 Iahin N, Albayrak I, Karahan AY, Uturlu H. Effectiveness of physical therapy in patients with
3317 chronic low back pain, Kronik bel atrili hastalarda fizik tedavinin etkinliti. *Spine*. 2011; 57:251
- 3318 1000 Ibrahim T, Tleyjeh IM, Gabbar O. Surgical versus non-surgical treatment of chronic low back
3319 pain: A meta-analysis of randomised trials. *International Orthopaedics*. 2008; 32(1):107-113
- 3320 1001 Ibrahim T, Tleyjeh IM, Gabbar O. Surgical versus non-surgical treatment of chronic low back
3321 pain: a meta-analysis of randomised trials. *International Orthopaedics*. 2008; 32(1):107-113
- 3322 1002 Ikegami S, Kamimura M, Uchiyama S, Nakagawa H, Hashidate H, Takahara K et al. Anti-
3323 nociceptive effects of elcatonin injection for postmenopausal women with back pain: a
3324 randomized controlled trial. *Open Orthopaedics Journal*. 2010; 4:132-136
- 3325 1003 Ilharreborde B, Olivier E, Rillardon L, Vialle R, Guigui P. Efficiency of total disc replacement
3326 arthroplasty in the treatment of chronic low back pain. *Proceedings of the International Society*
3327 *for the Study of the Lumbar Spine*. 2005;10
- 3328 1004 Ilic KV, Sefik-Bukilica M, Jankovic S, Vujasinovic-Stupar N. Efficacy and safety of two generic
3329 copies of nimesulide in patients with low back pain or knee osteoarthritis. *Reumatismo*. 2009;
3330 61(1):27-33
- 3331 1005 Inamdar DN, Alagappan M, Shyam L, Devadoss S, Devadoss A. Posterior lumbar interbody
3332 fusion versus intertransverse fusion in the treatment of lumbar spondylolisthesis. *Journal of*
3333 *Orthopaedic Surgery*. 2006; 14(1):21-26
- 3334 1006 Inani SB, Selkar SP. Effect of core stabilization exercises versus conventional exercises on pain
3335 and functional status in patients with non-specific low back pain: a randomized clinical trial.
3336 *Spine*. 2013; 26(1):37-43

- 3337 1007 Indahl A, Velund L, Reikeraas O. Good prognosis for low back pain when left untampered. A
3338 randomized clinical trial. *Spine*. 1995; 20(4):473-477
- 3339 1008 Indrakanti SS, Weber MH, Takemoto SK, Hu SS, Polly D, Berven SH. Value-based care in the
3340 management of spinal disorders: a systematic review of cost-utility analysis. *Clinical*
3341 *Orthopaedics and Related Research*. 2012; 470(4):1106-1123
- 3342 1009 Inman SL, Faut-Callahan M, Swanson BA, Fillingim RB. Sex differences in responses to epidural
3343 steroid injection for low back pain. *Journal of Pain*. 2004; 5(8):450-457
- 3344 1010 Inoue M, Nakajima M, Itoi M, Ohashi S, Yano T. Comparison of the effectiveness of
3345 acupuncture treatment and local injection for low back pain -- a randomized controlled clinical
3346 trial. *Journal of the Japanese Association of Physical Medicine, Balneology and Climatology*.
3347 2008; 71(4):211-220
- 3348 1011 Inoue M, Hojo T, Nakajima M, Kitakoji H, Itoi M. Comparison of the effectiveness of
3349 acupuncture treatment and local anaesthetic injection for low back pain: a randomised
3350 controlled clinical trial. *Acupuncture in Medicine*. 2009; 27(4):174-177
- 3351 1012 Islam MS, Ara R, Salam MA, Rahman MW, Alam MJ, Karim MR et al. Evaluation of the results of
3352 operative management of lumbar spinal canal stenosis. *Mymensingh Medical Journal*. 2013;
3353 22(4):676-683
- 3354 1013 Ismail A, Ahmad KA. Sonographic evaluation of cross sectional area of multifidus muscle in
3355 patients with low back pain: Case-control analysis of the effects of stabilization exercises
3356 among chronic low back pain patients in Kano, Nigeria. *Ultrasound in Medicine and Biology*.
3357 2013; 39(5 SUPPL. 1):S56
- 3358 1014 Issack PS, Cunningham ME, Pumberger M, Hughes AP, Cammisa FPJ. Degenerative lumbar
3359 spinal stenosis: evaluation and management. *Journal of the American Academy of Orthopaedic*
3360 *Surgeons*. 2012; 20(8):527-535
- 3361 1015 Itoh K. Usefulness of the trigger point acupuncture treatment for aged patients with low back
3362 pain. *Journal of the Japanese Society for the Study of Chronic Pain*. 2004; 23(4):83-88
- 3363 1016 Itoh K. Effect of acupuncture treatment on chronic low back pain with leg pain in aged patients.
3364 *Journal of the Japan Society of Acupuncture and Moxibustion*. 2005; 55(4):530-537
- 3365 1017 Itoh K, Katsumi Y, Hirota S, Kitakoji H. Effects of trigger point acupuncture on chronic low back
3366 pain in elderly patients--a sham-controlled randomised trial. *Acupuncture in Medicine*. 2006;
3367 24(1):5-12
- 3368 1018 Itoh K, Katsumi Y, Kitakoji H. Trigger point acupuncture treatment of chronic low back pain in
3369 elderly patients--a blinded RCT. *Acupuncture in Medicine*. 2004; 22(4):170-177
- 3370 1019 Itoh S. Effect of trigger point acupuncture treatment in older patients with chronic low back
3371 pain. *Journal of the Japan Society of Acupuncture and Moxibustion*. 2009; 59(1):13-21
- 3372 1020 Iversen MD, Choudhary VR, Patel SC. Therapeutic exercise and manual therapy for persons
3373 with lumbar spinal stenosis. *International Journal of Clinical Rheumatology*. 2010; 5(4):425-437
- 3374 1021 Iversen MD, Fossel AH, Katz JN. Enhancing function in older adults with chronic low back pain:
3375 a pilot study of endurance training. *Spine*. 2003; 84(9):1324-1331

- 3376 1022 Iversen T, Solberg TK, Romner B, Wilsgaard T, Twisk J, Anke A et al. Effect of caudal epidural
3377 steroid or saline injection in chronic lumbar radiculopathy: multicentre, blinded, randomised
3378 controlled trial. *BMJ*. 2011; 343:d5278
- 3379 1023 Jabbari B. Evidence based medicine in the use of botulinum toxin for back pain. *Journal of*
3380 *Neural Transmission*. 2008; 115(4):637-640
- 3381 1024 Jabbari B, Ney J, Sichani A, Monacci W, Foster L, Difazio M. Treatment of refractory, chronic
3382 low back pain with botulinum neurotoxin A: an open-label, pilot study. *Pain Medicine*. 2006;
3383 7(3):260-264
- 3384 1025 Jabbari B. Treatment of chronic low back pain with botulinum neurotoxins. *Current Pain and*
3385 *Headache Reports*. 2007; 11(5):352-358
- 3386 1026 Jabbari B, Machado D. Treatment of refractory pain with botulinum toxins--an evidence-based
3387 review. *Pain Medicine*. 2011; 12(11):1594-1606
- 3388 1027 Jackson JL, O'Malley PG, Kroenke K. Antidepressants and cognitive-behavioral therapy for
3389 symptom syndromes. *CNS Spectrums*. 2006; 11(3):212-222
- 3390 1028 Jackson N. Exercise therapy for the treatment of chronic low back pain. Clayton, Victoria.
3391 Centre for Clinical Effectiveness, 2002
- 3392 1029 Jacobs JH, Grayson MF. Trial of an anti-inflammatory agent (indomethacin) in low back pain
3393 with and without radicular involvement. *BMJ*. 1968; 3(5611):158-160
- 3394 1030 Jacobs K. Functional outcomes of low back pain: comparison of four treatment groups in a
3395 randomized controlled trial. *Journal of Manipulative and Physiological Therapeutics*. 1992;
3396 15(9):609-610
- 3397 1031 Jacobs WCH, Rubinstein SM, Koes B, van Tulder MW, Peul WC. Evidence for surgery in
3398 degenerative lumbar spine disorders. *Best Practice and Research: Clinical Rheumatology*. 2013;
3399 27(5):673-684
- 3400 1032 Jacobs WCH, Van Der Gaag NA, Kruijt MC, Tuschel A, De KM, Peul WC et al. Total disc
3401 replacement for chronic discogenic low back pain: A cochrane review. *Spine*. 2013; 38(1):24-36
- 3402 1033 Jacobs WCH, van TM, Arts M, Rubinstein SM, Van MM, Ostelo R et al. Surgery versus
3403 conservative management of sciatica due to a lumbar herniated disc: A systematic review.
3404 *European Spine Journal*. 2011; 20(4):513-522
- 3405 1034 Jacobs W, Van der Gaag NA, Tuschel A, de KM, Peul W, Verbout AJ et al. Total disc replacement
3406 for chronic back pain in the presence of disc degeneration. *Cochrane Database of Systematic*
3407 *Reviews*. 2012; Issue 9:CD008326. DOI:10.1002/14651858.CD008326.pub2
- 3408 1035 Jacobs WCH, Arts MP, van Tulder MW, Rubinstein SM, van Middelkoop M, Ostelo RW et al.
3409 Surgical techniques for sciatica due to herniated disc, a systematic review. *European Spine*
3410 *Journal*. 2012; 21(11):2232-2251
- 3411 1036 Jacobs WCH, Rubinstein SM, Willems PC, Moojen WA, Pellise F, Oner CF et al. The evidence on
3412 surgical interventions for low back disorders, an overview of systematic reviews. *European*
3413 *Spine Journal*. 2013; 22(9):1936-1949

- 3414 1037 Jaffe G. A double-blind, between-patient comparison of alclufenac ('Prinalgin') and
3415 indomethacin in the treatment of low back pain and sciatica. *Current Medical Research and*
3416 *Opinion*. 1974; 2(7):424-429
- 3417 1038 Jakobsen MD, Sundstrup E, Brandt M, Jay K, Aagaard P, Andersen LL. Effect of workplace-
3418 versus home-based physical exercise on musculoskeletal pain among healthcare workers: a
3419 cluster randomized controlled trial. *Scandinavian Journal of Work, Environment and Health*.
3420 2015; 41(2):153-163
- 3421 1039 Jamison RN, Raymond SA, Slawsby EA, Nedeljkovic SS, Katz NP. Opioid therapy for chronic
3422 noncancer back pain. A randomized prospective study. *Spine*. 1998; 23(23):2591-2600
- 3423 1040 Jamison RN, Edwards RR, Liu X, Ross EL, Michna E, Warnick M et al. Relationship of negative
3424 affect and outcome of an opioid therapy trial among low back pain patients. *Pain Practice*.
3425 2013; 13(3):173-181
- 3426 1041 Jang J, Koh E, Han D. The effectiveness of passive knee extension exercise in the sitting position
3427 on stretching of the hamstring muscles of patients with lower back pain. *Journal of Physical*
3428 *Therapy Science*. 2013; 25(4):501-504
- 3429 1042 Jans MP, Korte d, Heinrich J, Hildebrandt VH. Intermittent follow-up treatment with Cesar
3430 exercise therapy in patients with subacute or chronic aspecific low back pain: results of a
3431 randomized, controlled trial with a 1.5-year follow-up. *Nederlands Tijdschrift Fysiotherapie*.
3432 2006; 116(5):111-116
- 3433 1043 Janwantanakul P, Sihawong R, Sitthipornvorakul E, Paksaichol A. A screening tool for non-
3434 specific low back pain with disability in office workers: a 1-year prospective cohort study. *BMC*
3435 *Musculoskeletal Disorders*. 2015; 16:298
- 3436 1044 Jaromi M, Nemeth A, Kranicz J, Laczko T, Betlehem J. Treatment and ergonomics training of
3437 work-related lower back pain and body posture problems for nurses. *Journal of Clinical*
3438 *Nursing*. 2012; 21(11-12):1776-1784
- 3439 1045 Jarrett MS, Orlando JF, Grimmer-Somers K. The effectiveness of land based exercise compared
3440 to decompressive surgery in the management of lumbar spinal-canal stenosis: a systematic
3441 review. *BMC Musculoskeletal Disorders*. 2012; 13:30
- 3442 1046 Jarvik JG, Deyo RA, Koepsell TD. Screening magnetic resonance images versus plain films for
3443 low back pain: a randomized trial of effects on patient outcomes. *Academic Radiology*. 1996;
3444 3(Suppl.1):S28-S31
- 3445 1047 Jarvik JG, Hollingworth W, Martin B, Emerson SS, Gray DT, Overman S et al. Rapid magnetic
3446 resonance imaging vs radiographs for patients with low back pain: a randomized controlled
3447 trial. *JAMA*. 2003; 289(21):2810-2818
- 3448 1048 Jarvik JG, Maravilla KR, Haynor DR, Levitz M, Deyo RA. Rapid MR imaging versus plain
3449 radiography in patients with low back pain: initial results of a randomized study. *Radiology*.
3450 1997; 204(2):447-454
- 3451 1049 Jarvik JG, Gold LS, Comstock BA, Heagerty PJ, Rundell SD, Turner JA et al. Association of early
3452 imaging for back pain with clinical outcomes in older adults. *JAMA*. 2015; 313(11):1143-1153

- 3453 1050 Javadian Y, Akbari M, Talebi G, Taghipour-Darzi M, Janmohammadi N. Influence of core
3454 stability exercise on lumbar vertebral instability in patients presented with chronic low back
3455 pain: A randomized clinical trial. *Caspian Journal of Internal Medicine*. 2015; 6(2):98-102
- 3456 1051 Javadian Y, Behtash H, Akbari M, Taghipour-Darzi M, Zekavat H. The effects of stabilizing
3457 exercises on pain and disability of patients with lumbar segmental instability. *Spine*. 2012;
3458 25(3):149-155
- 3459 1052 Jee H, Lee JH, Kim J, Park KD, Lee WY, Park Y. Ultrasound-guided selective nerve root block
3460 versus fluoroscopy-guided transforaminal block for the treatment of radicular pain in the lower
3461 cervical spine: a randomized, blinded, controlled study. *Skeletal Radiology*. 2013; 42(1):69-78
- 3462 1053 Jellema P, Bierma-Zeinstra SMA, Van Poppel MNM, Bernsen RMD, Koes BW. Feasibility of
3463 lumbar supports for home care workers with low back pain. *Occupational Medicine*. 2002;
3464 52(6):317-323
- 3465 1054 Jellema P, van Tulder MW, Van Poppel MN, Nachemson AL, Bouter LM. Lumbar supports for
3466 prevention and treatment of low back pain: a systematic review within the framework of the
3467 cochrane back review group. *Spine*. 2001; 26(4):377-386
- 3468 1055 Jellema P, van der Windt DAWM, van der Horst HE, Stalman WAB, Bouter LM. Prediction of an
3469 unfavourable course of low back pain in general practice: comparison of four instruments.
3470 *British Journal of General Practice*. 2007; 57(534):15-22
- 3471 1056 Jenkins HJ, Hancock MJ, French SD, Maher CG, Engel RM, Magnussen JS. Effectiveness of
3472 interventions designed to reduce the use of imaging for low-back pain: A systematic review.
3473 *CMAJ*. 2015; 187(6):401-408
- 3474 1057 Jensen C, Jensen OK, Nielsen CV. Sustainability of return to work in sick-listed employees with
3475 low-back pain. Two-year follow-up in a randomized clinical trial comparing multidisciplinary
3476 and brief intervention. *BMC Musculoskeletal Disorders*. 2012; 13:156
- 3477 1058 Jensen IB, Busch H, Bodin L, Hagberg J, Nygren A, Bergstrom G. Cost effectiveness of two
3478 rehabilitation programmes for neck and back pain patients: a seven year follow-up. *Pain*. 2009;
3479 142(3):202-208
- 3480 1059 Jensen RK, Claus M, Leboeuf-Yde C. Routine versus needs-based MRI in patients with
3481 prolonged low back pain: a comparison of duration of treatment, number of clinical contacts
3482 and referrals to surgery. *Chiropractic and Osteopathy*. Denmark 2010; 18:19
- 3483 1060 Jensen RK, Kent P, Hancock M. Do MRI findings identify patients with chronic low back pain and
3484 Modic changes who respond best to rest or exercise: A subgroup analysis of a randomised
3485 controlled trial. *Chiropractic and Manual Therapies*. 2015; 23:26
- 3486 1061 Jensen RK, Leboeuf-Yde C. Is the presence of modic changes associated with the outcomes of
3487 different treatments? A systematic critical review. *BMC Musculoskeletal Disorders*. 2011;
3488 12:183
- 3489 1062 Jensen RK, Leboeuf-Yde C, Wedderkopp N, Sorensen JS, Manniche C. Rest versus exercise as
3490 treatment for patients with low back pain and Modic changes. A randomized controlled clinical
3491 trial. *BMC Medicine*. 2012; 10:22
- 3492 1063 Jensen TT, Asmussen K, Berg-Hansen EM, Lauritsen B, Manniche C, Vinterberg H et al. First-
3493 time operation for lumbar disc herniation with or without free fat transplantation. Prospective

- 3494 triple-blind randomized study with reference to clinical factors and enhanced computed
3495 tomographic scan 1 year after operation. *Spine*. 1996; 21(9):1072-1076
- 3496 1064 Jewell DV, Riddle DL. Interventions that increase or decrease the likelihood of a meaningful
3497 improvement in physical health in patients with sciatica. *Physical Therapy*. 2005; 85(11):1139-
3498 1150
- 3499 1065 Jeynes LC, Gauci CA. Evidence for the use of botulinum toxin in the chronic pain setting - A
3500 review of the literature. *Pain Practice*. 2008; 8(4):269-276
- 3501 1066 Ji M, Wang X, Chen M, Shen Y, Zhang X, Yang J. The Efficacy of Acupuncture for the Treatment
3502 of Sciatica: A Systematic Review and Meta-Analysis. *Evidence-Based Complementary and
3503 Alternative Medicine*. 2015; 2015:192808
- 3504 1067 Jin D, Qu D, Zhao L, Chen J, Jiang J. Prosthetic disc nucleus (PDN) replacement for lumbar disc
3505 herniation: preliminary report with six months' follow-up. *Journal of Spinal Disorders and
3506 Techniques*. 2003; 16(4):331-337
- 3507 1068 Jirattanaphochai K, Jung S, Thienthong S, Krisanaprakornkit W, Sumananont C. Peridural
3508 methylprednisolone and wound infiltration with bupivacaine for postoperative pain control
3509 after posterior lumbar spine surgery: a randomized double-blinded placebo-controlled trial.
3510 *Spine*. 2007; 32(6):609-617
- 3511 1069 Jirattanaphochai K, Thienthong S, Sriraj W, Jung S, Pulnitiporn A, Lertsinudom S et al. Effect
3512 of parecoxib on postoperative pain after lumbar spine surgery: a bicenter, randomized, double-
3513 blinded, placebo-controlled trial. *Spine*. 2008; 33(2):132-139
- 3514 1070 Jo DH, Kim ED, Oh HJ. The comparison of the result of epiduroscopic laser neural
3515 decompression between FBSS or not. *Korean Journal of Pain*. 2014; 27(1):63-67
- 3516 1071 Johannsen F, Remvig L, Kryger P, Beck P, Warming S, Lybeck K et al. Exercises for chronic low
3517 back pain: a clinical trial. *Journal of Orthopaedic and Sports Physical Therapy*. 1995; 22(2):52-
3518 59
- 3519 1072 Johansson AC, Linton SJ, Bergkvist L, Nilsson O, Cornefjord M. Clinic-based training in
3520 comparison to home-based training after first-time lumbar disc surgery: a randomised
3521 controlled trial. *European Spine Journal*. 2009; 18(3):398-409
- 3522 1073 Johnson OE, Adegoke BOA, Ogunlade SO. Comparison of four physiotherapy regimens in the
3523 treatment of long-term mechanical low back pain. *Journal of the Japanese Physical Therapy
3524 Association*. 2010; 13(1):9-16
- 3525 1074 Johnson RE, Jones GT, Wiles NJ, Chaddock C, Potter RG, Roberts C et al. Active exercise,
3526 education, and cognitive behavioral therapy for persistent disabling low back pain: A
3527 randomized controlled trial. *Spine*. 2007; 32(15):1578-1585
- 3528 1075 Johnston BC, da Costa BR, Devereaux PJ, Akl EA, Busse JW, Expertise-Based RCT Working
3529 Group. The use of expertise-based randomized controlled trials to assess spinal manipulation
3530 and acupuncture for low back pain: a systematic review. *Spine*. 2008; 33(8):914-918
- 3531 1076 Johnstone R, Donaghy M, Martin D. A pilot study of a cognitive-behavioural therapy approach
3532 to physiotherapy, for acute low back pain patients, who show signs of developing chronic pain.
3533 *Advances in Physiotherapy*. 2002; 4(4):182-188

- 3534 1077 Jokhio IA, Siddiqui KA, Waraich T, Abbas M, Ali A. Study of efficacy and tolerance of ketoprofen
3535 and diclofenac sodium in the treatment of acute rheumatic and traumatic conditions. *Journal*
3536 *of the Pakistan Medical Association*. 1998; 48(12):373-376
- 3537 1078 Jonbozorgi M, Golchin N, Alipour A, Heris MA. The effectiveness of group cognitive-behavior
3538 therapy on decreasing severity of pain and psychological distress among women with chronic
3539 back pain. *Iranian Journal of Psychiatry and Clinical Psychology*. 2013; 19(2):108-119
- 3540 1079 Jones MA, Stratton G, Reilly T, Unnithan VB. Recurrent non-specific low-back pain in
3541 adolescents: the role of exercise. *Ergonomics*. 2007; 50(10):1680-1688
- 3542 1080 Jones M, Stratton G, Reilly T, Unnithan V. The efficacy of exercise as an intervention to treat
3543 recurrent nonspecific low back pain in adolescents. *Pediatric Exercise Science*. 2007; 19(3):349-
3544 359
- 3545 1081 Jonsson B, Annertz M, Sjoberg C, Stromqvist B. A prospective and consecutive study of
3546 surgically treated lumbar spinal stenosis. Part II: Five-year follow-up by an independent
3547 observer. *Spine*. 1997; 22(24):2938-2944
- 3548 1082 Joo YC, Park JY, Kim KH. Comparison of alcohol ablation with repeated thermal radiofrequency
3549 ablation in medial branch neurotomy for the treatment of recurrent thoracolumbar facet joint
3550 pain. *Journal of Anesthesia*. 2013; 27(3):390-395
- 3551 1083 Jousset N, Fanello S, Bontoux L, Dubus V, Billabert C, Vielle B et al. Effects of functional
3552 restoration versus 3 hours per week physical therapy: a randomized controlled study. *Spine*.
3553 2004; 29(5):487-493
- 3554 1084 Junge A, Frohlich M, Ahrens S, Hasenbring M, Sandler A, Grob D et al. Predictors of bad and
3555 good outcome of lumbar spine surgery. A prospective clinical study with 2 years' follow up.
3556 *Spine*. 1996; 21(9):1056-5
- 3557 1085 Kaapa EH, Frantsi K, Sarna S, Malmivaara A. Multidisciplinary group rehabilitation versus
3558 individual physiotherapy for chronic nonspecific low back pain: a randomized trial. *Spine*. 2006;
3559 31(4):371-376
- 3560 1086 Kagaya H, Takahashi H, Sugawara K, Kuroda T, Takahama M. Quality of life assessment before
3561 and after lumbar disc surgery. *Journal of Orthopaedic Science*. 2005; 10(5):486-489
- 3562 1087 Kageyama T, Torakichi AOKI, Yamamoto M, Tsukamoto Y, Sugano T, Igarashi M et al. A Double-
3563 Blind Controlled Clinical Study of Benoxaprofen in the Patient with Lumbago, Cervicobrachial
3564 Syndrome, or Periarthritis Scapulohumeralis. *Rinsho Hyoka*. 1982; 10(2):347-375
- 3565 1088 Kai Z, Wei S, Chang-Qing Z, Hua L, Wei D, Xie Y-Z et al. Unilateral versus bilateral instrumented
3566 transforaminal lumbar interbody fusion in two-level degenerative lumbar disorders: A
3567 prospective randomised study. *International Orthopaedics*. 2014; 38(1):111-116
- 3568 1089 Kalauokalani D, Cherkin DC, Sherman KJ, Koepsell TD, Deyo RA. Lessons from a trial of
3569 acupuncture and massage for low back pain: patient expectations and treatment effects. *Spine*.
3570 2001; 26(13):1418-1424
- 3571 1090 Kalso E, Allan L, Dobrogowski J, Johnson M, Krcevski-Skvarc N, Macfarlane GJ et al. Do strong
3572 opioids have a role in the early management of back pain? Recommendations from a European
3573 expert panel. *Current Medical Research and Opinion*. 2005; 21(11):1819-1828

- 3574 1091 Kalso E, Simpson KH, Slappendel R, Dejonckheere J, Richarz U. Predicting long-term response to
3575 strong opioids in patients with low back pain: findings from a randomized, controlled trial of
3576 transdermal fentanyl and morphine. *BMC Medicine*. 2007; 5:39
- 3577 1092 Kaluza G. Behavioural therapy group treatment of patients with chronic back pain. *Zeitschrift
3578 Fur Rheumatologie*. 1986; 45(4):236
- 3579 1093 Kamali F, Panahi F, Ebrahimi S, Abbasi L. Comparison between massage and routine physical
3580 therapy in women with sub acute and chronic nonspecific low back pain. *Journal of Back and
3581 Musculoskeletal Rehabilitation*. 2014; 27(4):475-480
- 3582 1094 Kamper SJ, Apeldoorn AT, Chiarotto A, Smeets RJE, Ostelo RWJG, Guzman J et al.
3583 Multidisciplinary biopsychosocial rehabilitation for chronic low back pain: Cochrane systematic
3584 review and meta-analysis. *BMJ*. 2015; 350:h444
- 3585 1095 Kamper SJ, Maher CG, Hancock MJ, Koes BW, Croft PR, Hay E. Treatment-based subgroups of
3586 low back pain: a guide to appraisal of research studies and a summary of current evidence.
3587 *Best Practice and Research: Clinical Rheumatology*. 2010; 24(2):181-191
- 3588 1096 Kamper SJ, Ostelo RWJG, Rubinstein SM, Nellensteijn JM, Peul WC, Arts MP et al. Minimally
3589 invasive surgery for lumbar disc herniation: a systematic review and meta-analysis. *European
3590 Spine Journal*. 2014; 23(5):1021-1043
- 3591 1097 Kang SS, Hwang BM, Son HJ, Cheong IY, Lee SJ, Lee SH et al. The dosages of corticosteroid in
3592 transforaminal epidural steroid injections for lumbar radicular pain due to a herniated disc.
3593 *Pain Physician*. 2011; 14(4):361-370
- 3594 1098 Kankaanpaa M, Taimela S, Airaksinen O, Hanninen O. The efficacy of active rehabilitation in
3595 chronic low back pain. Effect on pain intensity, self-experienced disability, and lumbar
3596 fatigability. *Spine*. 1999; 24(10):1034-1042
- 3597 1099 Kantor TG. Use of diclofenac in analgesia. *American Journal of Medicine*. 1986; 80(4B):64-69
- 3598 1100 Kapitza KP, Passie T, Bernateck M, Karst M. First non-contingent respiratory biofeedback
3599 placebo versus contingent biofeedback in patients with chronic low back pain: a randomized,
3600 controlled, double-blind trial. *Applied Psychophysiology and Biofeedback*. 2010; 35(3):207-217
- 3601 1101 Kapural L, Mekhail N, Bena J, McLain R, Tetzlaff J, Kapural M et al. Value of the magnetic
3602 resonance imaging in patients with painful lumbar spinal stenosis (LSS) undergoing lumbar
3603 epidural steroid injections. *Clinical Journal of Pain*. 2007; 23(7):571-575
- 3604 1102 Karabekir HS, Atar EK, Yaycioglu S, Yildizhan A. Comparison of unilateral posterior lumbar
3605 interbody fusion and bilateral posterior interbody fusion with simple discectomy at
3606 degenerative disc herniations. *Neurosciences*. 2008; 13(3):248-252
- 3607 1103 Karnezis IA. Minimally invasive therapeutic interventional procedures in the spine: an
3608 evidence-based review. *Surgical Technology International*. 2008; 17:259-268
- 3609 1104 Karstens S, Krug K, Hill JC, Stock C, Steinhäuser J, Szecsenyi J et al. Validation of the German
3610 version of the STarT-Back Tool (STarT-G): a cohort study with patients from primary care
3611 practices. *BMC Musculoskeletal Disorders*. 2015; 16:346

- 3612 1105 Kasis AG, Marshman LAG, Krishna M, Bhatia CK. Significantly improved outcomes with a less
3613 invasive posterior lumbar interbody fusion incorporating total facetectomy. *Spine*. 2009;
3614 34(6):572-577
- 3615 1106 Kasliwal MK, Deutsch H. Effect of total lumbar disc replacement on lumbosacral lordosis.
3616 *Journal of Spinal Disorders and Techniques*. 2012; 25(7):370-373
- 3617 1107 Katsimihis M, Bailey CS, Issa K, Fleming J, Rosas-Arellano P, Bailey SI et al. Prospective clinical
3618 and radiographic results of CHARITE III artificial total disc arthroplasty at 2- to 7-year follow-up:
3619 a Canadian experience. *Canadian Journal of Surgery*. 2010; 53(6):408-4145
- 3620 1108 Katz JN, Lipson SJ, Lew RA, Grobler LJ, Weinstein JN, Brick GW et al. Lumbar laminectomy alone
3621 or with instrumented or noninstrumented arthrodesis in degenerative lumbar spinal stenosis:
3622 Patient selection, costs, and surgical outcomes. *Spine*. 1997; 22(10):1123-1131
- 3623 1109 Katz JN, Stucki G, Lipson SJ, Fossel AH, Grobler LJ, Weinstein JN. Predictors of surgical outcome
3624 in degenerative lumbar spinal stenosis. *Spine*. 1999; 24(21):2229-2233
- 3625 1110 Katz N, Borenstein DG, Birbara C, Bramson C, Nemeth MA, Smith MD et al. Efficacy and safety
3626 of tanezumab in the treatment of chronic low back pain. *Pain*. 2011; 152(10):2248-2258
- 3627 1111 Katz N, Ju WD, Krupa DA, Sperling RS, Bozalis Rodgers D, Gertz BJ et al. Efficacy and safety of
3628 rofecoxib in patients with chronic low back pain: results from two 4-week, randomized,
3629 placebo-controlled, parallel-group, double-blind trials. *Spine*. 2003; 28(9):851-859
- 3630 1112 Katz N, Rauck R, Ahdieh H, Ma T, Gerritsen van der Hoop R, Kerwin R et al. A 12-week,
3631 randomized, placebo-controlled trial assessing the safety and efficacy of oxymorphone
3632 extended release for opioid-naive patients with chronic low back pain. *Current Medical
3633 Research and Opinion*. 2007; 23(1):117-128
- 3634 1113 Katz N, Rodgers DB, Krupa D, Reicin A. Onset of pain relief with rofecoxib in chronic low back
3635 pain: results of two four-week, randomized, placebo-controlled trials. *Current Medical
3636 Research and Opinion*. 2004; 20(5):651-658
- 3637 1114 Kavanagh S, Kwong WJ, Hammond G, Greene A, Upmalis D, Okamoto A et al. Constipation
3638 symptom severity following tapentadol and oxycodone immediate release (IR) treatment in
3639 patients with low back or osteoarthritis. *Pain Practice*. 2009; 9:161
- 3640 1115 Kavanagh S, Kwong WJ, Hammond GC, Nelson W, Upmalis D, Yang M. Pain relief and
3641 tolerability balance of immediate release tapentadol or oxycodone treatment for patients with
3642 moderate to severe osteoarthritis or low back pain. *Pain Medicine*. 2012; 13(9):1110-1120
- 3643 1116 Kawakami M, Nakao Si, Fukui D, Kadosaka Y, Matsuoka T, Yamada H. Modified Marmot
3644 operation versus spinous process transverse cutting laminectomy for lumbar spinal stenosis.
3645 *Spine*. 2013; 38(23):E1461-E1468
- 3646 1117 Kawchuk GN, Edgecombe TL, Wong AYL, Cojocar A, Prasad N. A non-randomized clinical trial
3647 to assess the impact of nonrigid, inelastic corsets on spine function in low back pain
3648 participants and asymptomatic controls. *Spine Journal*. 2015; 15(10):2222-2227
- 3649 1118 Kawu AA. Epidural steroid injection in patients with lumbosacral radiculopathy in Abuja,
3650 Nigeria. *Journal of Neurosciences in Rural Practice*. 2012; 3(2):121-125

- 3651 1119 Kaye AD, Manchikanti L, Abdi S, Atluri S, Bakshi S, Benyamin RM et al. Efficacy of Epidural
3652 Injections in Managing Chronic Spinal Pain: A Best Evidence Synthesis. *Pain Physician*. 2015;
3653 18(6):E939-E1004
- 3654 1120 Keijsers JF, Groenman NH, Gerards FM, van OE, Steenbakkens M. A back school in The
3655 Netherlands: evaluating the results. *Patient Education and Counseling*. 1989; 14(1):31-44
- 3656 1121 Kell RT, Risi AD, Barden JM. The response of persons with chronic nonspecific low back pain to
3657 three different volumes of periodized musculoskeletal rehabilitation. *Journal of Strength and*
3658 *Conditioning Research*. 2011; 25(4):1052-1064
- 3659 1122 Keller A, Hayden J, Bombardier C, van Tulder MW. Effect sizes of non-surgical treatments of
3660 non-specific low-back pain. *European Spine Journal*. 2007; 16(11):1776-1788
- 3661 1123 Kellett KM, Kellett DA, Nordholm LA. Effects of an exercise program on sick leave due to back
3662 pain. *Physical Therapy*. 1991; 71(4):283-291
- 3663 1124 Kendall KD, Emery CA, Wiley JP, Ferber R. The effect of the addition of hip strengthening
3664 exercises to a lumbopelvic exercise programme for the treatment of non-specific low back
3665 pain: A randomized controlled trial. *Journal of Science and Medicine in Sport*. 2015; 18(6):626-
3666 631
- 3667 1125 Kendrick D, Fielding K, Bentley E, Miller P, Kerslake R, Pringle M. The role of radiography in
3668 primary care patients with low back pain of at least 6 weeks duration: a randomised
3669 (unblinded) controlled trial. *Health Technology Assessment*. England 2001; 5(30)
- 3670 1126 Kennedy S. Exercise rehabilitation programs for chronic non-specific low back pain: A
3671 comparison of Pilates exercise and general aerobic exercise. *Spine*. 2012; 15:S80
- 3672 1127 Kent P, Mjosund HL, Petersen DHD. Does targeting manual therapy and/or exercise improve
3673 patient outcomes in nonspecific low back pain? A systematic review. *BMC Medicine*. 2010;
3674 8:22
- 3675 1128 Kent P, Morso L, Kongsted A. Letter to the Editor concerning 'Using the STarT Back Tool: Does
3676 timing of stratification matter?'. *Manual Therapy*. 2015; 20(4):e13
- 3677 1129 Kerns RD, Burns JW, Shulman M, Jensen MP, Nielson WR, Czapinski R et al. Can we improve
3678 cognitive-behavioral therapy for chronic back pain treatment engagement and adherence? A
3679 controlled trial of tailored versus standard therapy. *Health Psychology*. 2014; 33(9):938-947
- 3680 1130 Kerr DP, Walsh DM, Baxter D. Acupuncture in the management of chronic low back pain: a
3681 blinded randomized controlled trial. *Clinical Journal of Pain*. 2003; 19(6):364-370
- 3682 1131 Kerry S, Hilton S, Patel S, Dundas D, Rink E, Lord J. Routine referral for radiography of patients
3683 presenting with low back pain: is patients' outcome influenced by GPs' referral for plain
3684 radiography. *Health Technology Assessment*. 2000; 4(20)
- 3685 1132 Kersten RF, van Gaalen SM, Arts MP, Roes KC, de Gast A, Corbin TP et al. The SNAP trial: a
3686 double blind multi-center randomized controlled trial of a silicon nitride versus a PEEK cage in
3687 transforaminal lumbar interbody fusion in patients with symptomatic degenerative lumbar disc
3688 disorders: study protocol. *BMC Musculoskeletal Disorders*. 2014; 15:57

- 3689 1133 Ketenci A, Ozcan E, Karamursel S. Assessment of efficacy and psychomotor performances of
3690 thiocolchicoside and tizanidine in patients with acute low back pain. *International Journal of*
3691 *Clinical Practice*. 2005; 59(7):764-770
- 3692 1134 Khadilkar A, Milne S, Brosseau L, Wells G, Tugwell P, Robinson V et al. Transcutaneous
3693 electrical nerve stimulation for the treatment of chronic low back pain: a systematic review.
3694 *Spine*. 2005; 30(23):2657-2666
- 3695 1135 Khalil TM, Abdel-Moty E, Diaz EL, Steele-Rosomoff R, Rosomoff HL. Efficacy of physical
3696 restoration in the elderly. *Experimental Aging Research*. 1994; 20(3):189-199
- 3697 1136 Khalil TM, Asfour SS, Martinez LM, Waly SM, Rosomoff RS, Rosomoff HL. Stretching in the
3698 rehabilitation of low-back pain patients. *Spine*. 1992; 17(3):311-317
- 3699 1137 Khan AQ, Kumar KK, Sherwani MKA, Jameel SN. Epidural injections for lumbosciatica
3700 syndrome-medications and routes. *Journal of Clinical Orthopaedics and Trauma*. 2010; 1(2):95-
3701 98
- 3702 1138 Khan KA, Madan J, Petrou S, Lamb SE. Mapping between the Roland Morris Questionnaire and
3703 generic preference-based measures. *Value in Health*. 2014; 17(6):686-695
- 3704 1139 Khan KM. Treating low back pain: Alexander technique and exercise, antibiotics (!) And Paul
3705 Hodges on dynamic stability. *British Journal of Sports Medicine*. 2008; 42(12):939-940
- 3706 1140 Khan M, Akhter S, Soomro RR, Ali SS. The effectiveness of Cognitive Behavioral Therapy (CBT)
3707 with general exercises versus general exercises alone in the management of chronic low back
3708 pain. *Pakistan Journal of Pharmaceutical Sciences*. 2014; 27(4 Suppl):1113-1116
- 3709 1141 Kilpikoski S, Alen M, Paatelma M, Simonen R, Heinonen A, Videman T. Outcome comparison
3710 among working adults with centralizing low back pain: Secondary analysis of a randomized
3711 controlled trial with 1-year follow-up. *Advances in Physiotherapy*. 2009; 11(4):210-217
- 3712 1142 Kim D, Brown J. Efficacy and safety of lumbar epidural dexamethasone versus
3713 methylprednisolone in the treatment of lumbar radiculopathy: a comparison of soluble versus
3714 particulate steroids. *Clinical Journal of Pain*. 2011; 27(6):518-522
- 3715 1143 Kim DY, Oh CH, Yoon SH, Park HC, Park CO. Lumbar disc screening using back pain
3716 questionnaires: Oswestry low back pain score, Aberdeen low back pain scale, and acute low
3717 back pain screening questionnaire. *Korean Journal of Spine*. 2012; 9(3):153-158
- 3718 1144 Kim DH, Ryu KS, Kim MK, Park CK. Factors influencing segmental range of motion after lumbar
3719 total disc replacement using the ProDisc II prosthesis. *Journal of Neurosurgery: Spine*. 2007;
3720 7(2):131-138
- 3721 1145 Kim GY, Kin SH. Effects of push-ups plus sling exercise on muscle activation and cross-sectional
3722 area of the multifidus muscle in patients with low back pain. *Journal of Physical Therapy*
3723 *Science*. 2013; 25(12):1575-1578
- 3724 1146 Kim H-J, Jeong J-H, Cho H-G, Chang B-S, Lee C-K, Yeom JS. Comparative observational study of
3725 surgical outcomes of lumbar foraminal stenosis using minimally invasive microsurgical
3726 extraforaminal decompression alone versus posterior lumbar interbody fusion: a prospective
3727 cohort study. *European Spine Journal*. 2015; 24(2):388-395

- 3728 1147 Kim H-J, Lee J-I, Kang K-T, Chang B-S, Lee C-K, Ruscheweyh R et al. Influence of pain sensitivity
3729 on surgical outcomes after lumbar spine surgery in patients with lumbar spinal stenosis. *Spine*.
3730 2015; 40(3):193-200
- 3731 1148 Kim H-J, Lee K-W, Cho H-G, Kang K-T, Chang B-S, Lee C-K et al. Indirect effects of
3732 decompression surgery on glycemic homeostasis in patients with Type 2 diabetes mellitus and
3733 lumbar spinal stenosis. *Spine Journal*. 2015; 15(1):25-33
- 3734 1149 Kim HJ, Park JY, Kang KT, Chang BS, Lee CK, Yeom JS. Factors influencing the surgical decision
3735 for the treatment of degenerative lumbar stenosis in a preference-based shared decision-
3736 making process. *European Spine Journal*. 2015; 24(2):339-347
- 3737 1150 Kim HJ, Park JH, Kim JW, Kang KT, Chang BS, Lee CK et al. Prediction of postoperative pain
3738 intensity after lumbar spinal surgery using pain sensitivity and preoperative back pain severity.
3739 *Pain Medicine*. 2014; 15(12):2037-2045
- 3740 1151 Kim HJ, Yu SH. Effects of complex manual therapy on PTSD, pain, function, and balance of male
3741 torture survivors with chronic low back pain. *Journal of Physical Therapy Science*. 2015;
3742 27(9):2763-2766
- 3743 1152 Kim JH, Kim YE, Bae SH, Kim KY. The effect of the neurac sling exercise on postural balance
3744 adjustment and muscular response patterns in chronic low back pain patients. *Journal of*
3745 *Physical Therapy Science*. 2013; 25(8):1015-1019
- 3746 1153 Kim K-T, Lee S-H, Lee Y-H, Bae S-C, Suk K-S. Clinical outcomes of 3 fusion methods through the
3747 posterior approach in the lumbar spine. *Spine*. 2006; 31(12):1351-1357
- 3748 1154 Kim KD, Wang JC, Robertson DP, Brodke DS, BenDebba M, Block KM et al. Reduction of leg pain
3749 and lower-extremity weakness for 1 year with Oxiplex/SP gel following laminectomy,
3750 laminotomy, and discectomy. *Neurosurgical Focus*. 2004; 17(1):ECP1
- 3751 1155 Kim KD, Wang JC, Robertson DP, Brodke DS, Olson EM, Duberg AC et al. Reduction of
3752 radiculopathy and pain with Oxiplex/SP gel after laminectomy, laminotomy, and discectomy: a
3753 pilot clinical study. *Spine*. 2003; 28(10):1080-1088
- 3754 1156 Kim KH, Moon SH, Hwang CJ, Cho YE. Prevalence of Neuropathic Pain in Patients Scheduled for
3755 Lumbar Spine Surgery: Nationwide, Multicenter, Prospective Study. *Pain Physician*. 2015;
3756 18(5):E889-E897
- 3757 1157 Kim N, Yang B, Lee T, Kwon S. An economic analysis of usual care and acupuncture
3758 collaborative treatment on chronic low back pain: A Markov model decision analysis. *BMC*
3759 *Complementary and Alternative Medicine*. 2010; 10:74
- 3760 1158 Kim S, Rodrigue SW, Mansfield F. Nonoperative treatment for lumbar disc herniation with
3761 radiculopathy and for lumbar spinal stenosis. *Current Opinion in Orthopaedics*. 1999;
3762 10(2):137-141
- 3763 1159 Kim SB, Lee KW, Lee JH, Kim MA, Kim BH. The additional effect of hyaluronidase in lumbar
3764 interlaminar epidural injection. *Annals of Rehabilitation Medicine*. 2011; 35(3):405-411
- 3765 1160 Kim SH, Choi WJ, Suh JH, Jeon SR, Hwang CJ, Koh WU et al. Effects of transforaminal balloon
3766 treatment in patients with lumbar foraminal stenosis: a randomized, controlled, double-blind
3767 trial. *Pain Physician*. 2013; 16(3):213-224

- 3768 1161 Kim SR, Stitik TP, Foye PM, Greenwald BD, Campagnolo DI. Critical review of prolotherapy for
3769 osteoarthritis, low back pain, and other musculoskeletal conditions: a physiatric perspective.
3770 American Journal of Physical Medicine and Rehabilitation. 2004; 83(5):379-389
- 3771 1162 Kim TH, Kim EH, Cho HY. The effects of the CORE programme on pain at rest, movement-
3772 induced and secondary pain, active range of motion, and proprioception in female office
3773 workers with chronic low back pain: a randomized controlled trial. Clinical Rehabilitation. 2015;
3774 29(7):653-662
- 3775 1163 Kim WH, Sim WS, Shin BS, Lee CJ, Jin HS, Lee JY et al. Effects of two different doses of epidural
3776 steroid on blood glucose levels and pain control in patients with diabetes mellitus. Pain
3777 Physician. 2013; 16(6):557-568
- 3778 1164 Kim WJ, Lee SH, Kim SS, Lee C. Treatment of juxtafusal degeneration with artificial disc
3779 replacement (ADR): preliminary results of an ongoing prospective study. Journal of Spinal
3780 Disorders and Techniques. 2003; 16(4):390-397
- 3781 1165 Kim WM, Lee HG, Jeong CW, Kim CM, Yoon MH. A randomized controlled trial of intra-articular
3782 prolotherapy versus steroid injection for sacroiliac joint pain. Journal of Alternative and
3783 Complementary Medicine. 2010; 16(12):1285-1290
- 3784 1166 Kimbrough E, Lao L, Berman B, Pelletier KR, Talamonti WJ. An integrative medicine intervention
3785 in a Ford Motor Company assembly plant. Journal of Occupational and Environmental
3786 Medicine. 2010; 52(3):256-257
- 3787 1167 Kinalski R, Kuwik W, Pietrzak D. The comparison of the results of manual therapy versus
3788 physiotherapy methods used in treatment of patients with low back pain syndromes. Journal of
3789 Manual Medicine. 1989; 4(2):44-46
- 3790 1168 Kinkade S. Evaluation and treatment of acute low back pain. American Family Physician. 2007;
3791 75(8):1181-1192
- 3792 1169 Kinoshita H, Kinoshita N. Clinical Research in the Use of Paraneural Acupuncture for Sciatica.
3793 Journal of the Japan Society of Acupuncture and Moxibustion. 1981; 30(1):4-13
- 3794 1170 Kishen TJ, Diwan AD. Fusion versus disk replacement for degenerative conditions of the lumbar
3795 and cervical spine: quid est testimonium? Orthopedic Clinics of North America. 2010;
3796 41(2):167-181
- 3797 1171 Kivitz AJ, Gimbel JS, Bramson C, Nemeth MA, Keller DS, Brown MT et al. Efficacy and safety of
3798 tanezumab versus naproxen in the treatment of chronic low back pain. Pain. 2013;
3799 154(7):1009-1021
- 3800 1172 Kizhakkeveetil A, Rose K, Kadar GE. Integrative therapies for low back pain that include
3801 complementary and alternative medicine care: a systematic review. Global Advances in Health
3802 and Medicine. 2014; 3(5):49-64
- 3803 1173 Klaber Moffett JA, Chase SM, Portek I, Ennis JR. A controlled, prospective study to evaluate the
3804 effectiveness of a back school in the relief of chronic low back pain. Spine. 1986; 11(2):120-122
- 3805 1174 Klein RG, Eek BC. Low-energy laser treatment and exercise for chronic low back pain: double-
3806 blind controlled trial. Archives of Physical Medicine and Rehabilitation. 1990; 71(1):34-37

- 3807 1175 Klein RG, Eek BCJ, O'Neill CW, Elin C, Mooney V, Derby RR. Biochemical injection treatment for
3808 discogenic low back pain: a pilot study. *Spine Journal*. 2003; 3(3):220-226
- 3809 1176 Kleinstueck FS, Fekete T, Jeszenszky D, Mannion AF, Grob D, Lattig F et al. The outcome of
3810 decompression surgery for lumbar herniated disc is influenced by the level of concomitant
3811 preoperative low back pain. *European Spine Journal*. 2011; 20(7):1166-1173
- 3812 1177 Klessinger S. Zygapophysial joint pain in post lumbar surgery syndrome. The efficacy of medial
3813 branch blocks and radiofrequency neurotomy. *Pain Medicine*. 2013; 14(3):374-377
- 3814 1178 Kloimstein H, Likar R, Kern M, Neuhold J, Cada M, Loinig N et al. Peripheral nerve field
3815 stimulation (PNFS) in chronic low back pain: a prospective multicenter study.
3816 *Neuromodulation*. 2014; 17(2):180-187
- 3817 1179 Kloth DS, Calodney AK, Derby R, Lagattuta FP, O'Neill C, Yurth E et al. Improving the safety of
3818 transforaminal epidural steroid injections in the treatment of cervical radiculopathy. *Pain
3819 Physician*. 2011; 14(3):285-293
- 3820 1180 Knappe H. Bezitramide, an orally active analgesic. An investigation on pain following operations
3821 for lumbar disc protrusion (preliminary report). *British Journal of Anaesthesia*. 1970; 42(4):325-
3822 328
- 3823 1181 Knight K, Woods DM, Mchaourab A. Nucleoplasty for disc protrusion: A novel percutaneous
3824 decompression technique. *Techniques in Regional Anesthesia and Pain Management*. 2009;
3825 13(2):93-101
- 3826 1182 Knight MT, Ellison DR, Goswami A, Hillier VF. Review of safety in endoscopic laser
3827 foraminoplasty for the management of back pain. *Journal of Clinical Laser Medicine and
3828 Surgery*. 2001; 19(3):147-157
- 3829 1183 Koc Z, Ozcakir S, Sivrioglu K, Gurbet A, Kucukoglu S. Effectiveness of physical therapy and
3830 epidural steroid injections in lumbar spinal stenosis. *Spine*. 2009; 34(10):985-989
- 3831 1184 Koes B. High-force traction did not improve the clinical course of sub-acute and chronic non-
3832 specific low back pain. *Australian Journal of Physiotherapy*. 1998; 44(3):213-214
- 3833 1185 Koes BW. Exercise, advice, or both for subacute low back pain: Commentary. *Clinical Journal of
3834 Sport Medicine*. 2008; 18(3):305-306
- 3835 1186 Koes BW, Assendelft WJ, van der Heijden GJ, Bouter LM. Spinal manipulation for low back pain.
3836 An updated systematic review of randomized clinical trials. *Spine*. 1996; 21(24):2860-2863
- 3837 1187 Koes BW, Bouter LM, Mameren H, Essers AH, Verstegen GJ, Hofhuizen DM et al. A randomized
3838 clinical trial of manual therapy and physiotherapy for persistent back and neck complaints:
3839 subgroup analysis and relationship between outcome measures. *Journal of Manipulative and
3840 Physiological Therapeutics*. 1993; 16(4):211-219
- 3841 1188 Koes BW, Bouter LM, Mameren H, Essers AH, Verstegen GM, Hofhuizen DM et al. Randomised
3842 clinical trial of manipulative therapy and physiotherapy for persistent back and neck
3843 complaints: results of one year follow up. *BMJ*. 1992; 304(6827):601-605
- 3844 1189 Koes BW, Bouter LM, Mameren H, Essers AH, Verstegen GM, Hofhuizen DM et al. The
3845 effectiveness of manual therapy, physiotherapy, and treatment by the general practitioner for
3846 nonspecific back and neck complaints. A randomized clinical trial. *Spine*. 1992; 17(1):28-35

- 3847 1190 Koes BW, Scholten PJ, Mens JMA, Bouter LM. Efficacy of NSAIDs for low back pain: a systematic
3848 review of randomised controlled trials of 11 interventions. *Low Back Pain in Primary Care:
3849 Effectiveness of Diagnostic and Therapeutic Interventions*. 1996;171-190
- 3850 1191 Koes BW, Scholten RJ, Mens JM, Bouter LM. Efficacy of non-steroidal anti-inflammatory drugs
3851 for low back pain: a systematic review of randomised clinical trials. *Annals of the Rheumatic
3852 Diseases*. 1997; 56(4):214-223
- 3853 1192 Koes BW, Van Den Hoogen HMM. Efficacy of bed rest and orthoses of low-back pain. A review
3854 of randomized clinical trials. *European Journal of Physical Medicine and Rehabilitation*. 1994;
3855 4(3):86-93
- 3856 1193 Koes BW, van Tulder MW, Thomas S. Diagnosis and treatment of low back pain. *BMJ*. 2006;
3857 332(7555):1430-1434
- 3858 1194 Kogure A, Kotani K, Katada S, Takagi H, Kamikozuru M, Isaji T et al. A Randomized, Single-Blind,
3859 Placebo-Controlled Study on the Efficacy of the Arthrokinematic Approach-Hakata Method in
3860 Patients with Chronic Nonspecific Low Back Pain. *PloS One*. 2015; 10(12):e0144325
- 3861 1195 Koh WU, Choi SS, Park SY, Joo EY, Kim SH, Lee JD et al. Transforaminal hypertonic saline for the
3862 treatment of lumbar lateral canal stenosis: a double-blinded, randomized, active-control trial.
3863 *Pain Physician*. 2013; 16(3):197-211
- 3864 1196 Kohlbeck FJ, Haldeman S, Hurwitz EL, Dagenais S. Supplemental care with medication-assisted
3865 manipulation versus spinal manipulation therapy alone for patients with chronic low back pain.
3866 *Journal of Manipulative and Physiological Therapeutics*. 2005; 28(4):245-252
- 3867 1197 Kohlboeck G, Greimel KV, Piotrowski WP, Leibetseder M, Krombholz-Reindl M, Neuhofer R et
3868 al. Prognosis of multifactorial outcome in lumbar discectomy: a prospective longitudinal study
3869 investigating patients with disc prolapse. *Clinical Journal of Pain*. 2004; 20(6):455-461
- 3870 1198 Kolsi I, Delecrin J, Berthelot JM, Thomas L, Prost A, Maugars Y. Efficacy of nerve root versus
3871 interspinous injections of glucocorticoids in the treatment of disk-related sciatica. A pilot,
3872 prospective, randomized, double-blind study. *Joint, Bone, Spine*. 2000; 67(2):113-118
- 3873 1199 Kominski GF, Heslin KC, Morgenstern H, Hurwitz EL, Harber PI. Economic evaluation of four
3874 treatments for low-back pain: results from a randomized controlled trial. *Medical Care*. 2005;
3875 43(5):428-435
- 3876 1200 Komori H, Okawa A, Haro H, Shinomiya Ki Ki. Factors predicting the prognosis of lumbar
3877 radiculopathy due to disc herniation. *Journal of Orthopaedic Science*. 2002; 7(1):56-61
- 3878 1201 Komp M, Hahn P, Oezdemir S, Giannakopoulos A, Heikenfeld R, Kasch R et al. Bilateral spinal
3879 decompression of lumbar central stenosis with the full-endoscopic interlaminar versus
3880 microsurgical laminotomy technique: a prospective, randomized, controlled study. *Pain
3881 Physician*. 2015; 18(1):61-70
- 3882 1202 Kondrashov DG, Hannibal M, Hsu KY, Zucherman JF. Interspinous process decompression with
3883 the X-STOP device for lumbar spinal stenosis: a 4-year follow-up study. *Journal of Spinal
3884 Disorders and Techniques*. 2006; 19(5):323-327
- 3885 1203 Kong DS, Kim ES, Eoh W. One-year outcome evaluation after interspinous implantation for
3886 degenerative spinal stenosis with segmental instability. *Journal of Korean Medical Science*.
3887 2007; 22(2):330-335

- 3888 1204 Kongsted A, Johannesen E, Leboeuf-Yde C. Feasibility of the STarT back screening tool in
3889 chiropractic clinics: a cross-sectional study of patients with low back pain. *Chiropractic and*
3890 *Manual Therapies*. 2011; 19:10
- 3891 1205 Konnopka A, Lobner M, Lupp A, Heider D, Heinrich S, Riedel-Heller S et al. Psychiatric
3892 comorbidity as predictor of costs in back pain patients undergoing disc surgery: A longitudinal
3893 observational study. *BMC Musculoskeletal Disorders*. 2012; 13
- 3894 1206 Kool J, Bachmann S, Oesch P, Knuesel O, Ambergen T, de Bie R et al. Function-centered
3895 rehabilitation increases work days in patients with nonacute nonspecific low back pain: 1-year
3896 results from a randomized controlled trial. *Spine*. 2007; 88(9):1089-1094
- 3897 1207 Kool JP, Oesch PR, Bachmann S, Knuesel O, Dierkes JG, Russo M et al. Increasing days at work
3898 using function-centered rehabilitation in nonacute nonspecific low back pain: a randomized
3899 controlled trial. *Spine*. 2005; 86(5):857-864
- 3900 1208 Korkmaz Dilmen O, Tunali Y, Cakmakkaya OS, Yentur E, Tutuncu AC, Tureci E et al. Efficacy of
3901 intravenous paracetamol, metamizol and lornoxicam on postoperative pain and morphine
3902 consumption after lumbar disc surgery. *European Journal of Anaesthesiology*. 2010; 27(5):428-
3903 432
- 3904 1209 Korovessis P, Repantis T, Baikousis A, Iliopoulos P. Posterolateral versus circumferential
3905 instrumented fusion for monosegmental lumbar degenerative disc disease using an
3906 expandable cage. *European Journal of Orthopaedic Surgery and Traumatology*. 2012;
3907 22(8):639-645
- 3908 1210 Korsgaard M, Christensen FB, Thomsen K, Hansen ES, Bunger C. The influence of lumbar
3909 lordosis on spinal fusion and functional outcome after posterolateral spinal fusion with and
3910 without pedicle screw instrumentation. *Journal of Spinal Disorders and Techniques*. 2002;
3911 15(3):187-192
- 3912 1211 Kosteljanetz M, Espersen JO, Halaburt H, Miletic T. Predictive value of clinical and surgical
3913 findings in patients with lumbago-sciatica. A prospective study (Part I). *Acta Neurochirurgica*.
3914 1984; 73(1-2):67-76
- 3915 1212 Kotani T, Ichikawa N. A Double Blind Controlled Study on the Clinical Efficacy of
3916 Antiinflammatory Analgesic, 31252-S on Orthopedics -The comparison of 31252-S,
3917 benzydamine hydrochloride and placebo-. *Rinsho Hyoka*. 1976; 4(2):189-211
- 3918 1213 Kotil K, Koksai NS, Kayaci S. Long term results of lumbar sequestrectomy versus aggressive
3919 microdiscectomy. *Journal of Clinical Neuroscience*. 2014; 21(10):1714-1718
- 3920 1214 Kotoulas M. The use and misuse of the terms "manipulation" and "mobilization" in the
3921 literature establishing their efficacy in the treatment of lumbar spine disorders. *Physiotherapy*
3922 *Canada*. 2002; 54(1):53-61
- 3923 1215 Koumantakis GA, Watson PJ, Oldham JA. Supplementation of general endurance exercise with
3924 stabilisation training versus general exercise only. Physiological and functional outcomes of a
3925 randomised controlled trial of patients with recurrent low back pain. *Clinical Biomechanics*.
3926 2005; 20(5):474-482
- 3927 1216 Koumantakis GA, Watson PJ, Oldham JA. Trunk muscle stabilization training plus general
3928 exercise versus general exercise only: randomized controlled trial of patients with recurrent
3929 low back pain. *Physical Therapy*. 2005; 85(3):209-225

- 3930 1217 Kovacs F, Abraira V, Santos S, Diaz E, Gestoso M, Muriel A et al. A comparison of two short
3931 education programs for improving low back pain-related disability in the elderly: a cluster
3932 randomized controlled trial. *Spine*. 2007; 32(10):1053-1059
- 3933 1218 Kraft K. Acupuncture massage vs. Swedish massage in chronic low back pain. Focus on
3934 Alternative and Complementary Therapies. 2001; 6(2):111-112
- 3935 1219 Krause M, Refshauge KM, Dessen M, Boland R. Lumbar spine traction: evaluation of effects and
3936 recommended application for treatment. *Manual Therapy*. 2000; 5(2):72-81
- 3937 1220 Kreczi T, Klingler D. A comparison of laser acupuncture versus placebo in radicular and
3938 pseudoradicular pain syndromes as recorded by subjective responses of patients. *Acupuncture
3939 and Electro-Therapeutics Research*. 1986; 11(3-4):207-216
- 3940 1221 Krein SL, Kadri R, Hughes M, Kerr EA, Piette JD, Holleman R et al. Pedometer-based internet-
3941 mediated intervention for adults with chronic low back pain: randomized controlled trial.
3942 *Journal of Medical Internet Research*. 2013; 15(8):e181
- 3943 1222 Kreiner DS, Hwang SW, Easa JE, Resnick DK, Baisden JL, Bess S et al. An evidence-based clinical
3944 guideline for the diagnosis and treatment of lumbar disc herniation with radiculopathy. *Spine
3945 Journal*. 2014; 14(1):180-191
- 3946 1223 Kroenke K, Bair MJ, Damush TM, Wu J, Hoke S, Sutherland J et al. Optimized antidepressant
3947 therapy and pain self-management in primary care patients with depression and
3948 musculoskeletal pain: a randomized controlled trial. *JAMA*. 2009; 301(20):2099-2110
- 3949 1224 Kroenke K, Krebs EE, Bair MJ. Pharmacotherapy of chronic pain: a synthesis of
3950 recommendations from systematic reviews. *General Hospital Psychiatry*. 2009; 31(3):206-219
- 3951 1225 Kroll HR, Kim D, Danic MJ, Sankey SS, Gariwala M, Brown M. A randomized, double-blind,
3952 prospective study comparing the efficacy of continuous versus pulsed radiofrequency in the
3953 treatment of lumbar facet syndrome. *Journal of Clinical Anesthesia*. 2008; 20(7):534-537
- 3954 1226 Krugluger J, Knahr K. Chemonucleolysis and automated percutaneous discectomy--a
3955 prospective randomized comparison. *International Orthopaedics*. 2000; 24(3):167-169
- 3956 1227 Kuck JR, Hasson SM, Olson SL. Effects of aquatic spinal stabilization exercise in patients with
3957 symptomatic lumbar spinal stenosis. *Journal of Aquatic Physical Therapy*. 2005; 13(2):11-20
- 3958 1228 Kuczynski JJ, Schwieterman B, Columber K, Knupp D, Shaub L, Cook CE. Effectiveness of physical
3959 therapist administered spinal manipulation for the treatment of low back pain: a systematic
3960 review of the literature. *International Journal of Sports Physical Therapy*. 2012; 7(6):647-662
- 3961 1229 Kuijpers T, van Middelkoop M, Rubinstein SM, Ostelo R, Verhagen A, Koes BW et al. A
3962 systematic review on the effectiveness of pharmacological interventions for chronic non-
3963 specific low-back pain. *European Spine Journal*. 2011; 20(1):40-50
- 3964 1230 Kuitinen P, Sipola P, Leinonen V, Saari T, Sinikallio S, Savolainen S et al. Preoperative MRI
3965 findings predict two-year postoperative clinical outcome in lumbar spinal stenosis. *PloS One*.
3966 2014; 9(9):e106404
- 3967 1231 Kumar A, Telles S, Balkrishna A. A follow up study with back pain patients. *Spine*. 2011; 55(5
3968 SUPPL. 1):70-71

- 3969 1232 Kumar MN, Jacquot F, Hall H. Long-term follow-up of functional outcomes and radiographic
3970 changes at adjacent levels following lumbar spine fusion for degenerative disc disease.
3971 *European Spine Journal*. 2001; 10(4):309-313
- 3972 1233 Kumar S, Beaton K, Hughes T. The effectiveness of massage therapy for the treatment of
3973 nonspecific low back pain: A systematic review of systematic reviews. *International Journal of*
3974 *General Medicine*. 2013; 6:733-741
- 3975 1234 Kumar S, Negi MPS, Sharma VP, Shukla R, Dev R, Mishra UK. Efficacy of two multimodal
3976 treatments on physical strength of occupationally subgrouped male with low back pain. *Spine*.
3977 2009; 22(3):179-188
- 3978 1235 Kumar S, Sharma VP, Aggarwal A, Shukla R, Dev R. Effect of dynamic muscular stabilization
3979 technique on low back pain of different durations. *Spine*. 2012; 25(2):73-79
- 3980 1236 Kumar S, Sharma VP, Shukla R, Dev R. Comparative efficacy of two multimodal treatments on
3981 male and female sub-groups with low back pain (part II). *Spine*. 2010; 23(1):1-9
- 3982 1237 Kuroki Y, Sugimori H, Yasuno K, Ishibashi Y, Hirai T, Okumo H et al. The clinical evaluation of
3983 lanperisone hydrochloride (NK 433), a new centrally acting muscle relaxant, on cervicobrachial
3984 syndrome and lumbago with myotonic pains. *Japanese Pharmacology and Therapeutics*. 1995;
3985 23(10):287-299
- 3986 1238 Kuukkanen T, Malkia E. Effects of a three-month active rehabilitation program on psychomotor
3987 performance of lower limbs in subjects with low back pain: a controlled study with a nine-
3988 month follow-up. *Perceptual and Motor Skills*. 1998; 87(3 Pt 1):739-753
- 3989 1239 Kuukkanen T, Malkia E, Kautiainen H, Pohjolainen T. Effectiveness of a home exercise
3990 programme in low back pain: a randomized five-year follow-up study. *Physiotherapy Research*
3991 *International*. 2007; 12(4):213-224
- 3992 1240 Kvorning N, Holmberg C, Grennert L, Aberg A, Akeson J. Acupuncture relieves pelvic and low-
3993 back pain in late pregnancy. *Acta Obstetrica Et Gynecologica Scandinavica*. 2004; 83(3):246-
3994 250
- 3995 1241 Kwon B, Katz JN, Kim DH, Jenis LG. A review of the 2001 Volvo Award winner in clinical studies:
3996 Lumbar fusion versus nonsurgical treatment for chronic low back pain: A multicenter
3997 randomized controlled trial from the Swedish Lumbar Spine Study Group. *Spine*. 2006;
3998 31(2):245-249
- 3999 1242 Kwong WJ, Hammond G, Upmalis D, Okamoto A, Yang M, Kavanagh S. Bowel function after
4000 tapentadol and oxycodone immediate release (IR) treatment in patients with low back or
4001 osteoarthritis pain. *Clinical Journal of Pain*. 2013; 29(8):664-672
- 4002 1243 La Touche R, Escalante K, Linares MT. Treating non-specific chronic low back pain through the
4003 Pilates Method. *Journal of Bodywork and Movement Therapies*. 2008; 12(4):364-370
- 4004 1244 Lacasse A, Ware MA, Dorais M, Lanctot H, Choiniere M. Is the Quebec provincial administrative
4005 database a valid source for research on chronic non-cancer pain? *Pharmacoepidemiology and*
4006 *Drug Safety*. 2015; 24(9):980-990
- 4007 1245 Lacroix JM, Powell J, Lloyd GJ, Doxey NC, Mitson GL, Aldam CF. Low-back pain. Factors of value
4008 in predicting outcome. *Spine*. 1990; 15(6):495-499

- 4009 1246 Lahad A, Malter AD, Berg AO, Deyo RA. The effectiveness of four interventions for the
4010 prevention of low back pain. *JAMA*. 1994; 272(16):1286-1291
- 4011 1247 Lakemeier S, Lind M, Schultz W, Fuchs-Winkelmann S, Timmesfeld N, Foelsch C et al. A
4012 comparison of intraarticular lumbar facet joint steroid injections and lumbar facet joint
4013 radiofrequency denervation in the treatment of low back pain: a randomized, controlled,
4014 double-blind trial. *Anesthesia and Analgesia*. 2013; 117(1):228-235
- 4015 1248 Lakke SE, Dolder R, Rijn M, Verhagen AP. The effect of adding mobilization and manipulation to
4016 exercise therapy in patients with chronic low back pain: a systematic review. *Nederlands
4017 Tijdschrift Voor Fysiotherapie*. 2009; 119(5):170-176
- 4018 1249 Lalanne K, Lafond D, Descarreaux M. Modulation of the flexion-relaxation response by spinal
4019 manipulative therapy: a control group study. *Journal of Manipulative and Physiological
4020 Therapeutics*. 2009; 32(3):203-209
- 4021 1250 Lam M, Galvin R, Curry P. Effectiveness of acupuncture for nonspecific chronic low back pain: a
4022 systematic review and meta-analysis. *Spine*. 2013; 38(24):2124-2138
- 4023 1251 Lam NCK, Petersen TR, Gerstein NS, Yen T, Starr B, Mariano ER. A randomized clinical trial
4024 comparing the effectiveness of ultrasound guidance versus nerve stimulation for lateral
4025 popliteal-sciatic nerve blocks in obese patients. *Journal of Ultrasound in Medicine*. 2014;
4026 33(6):1057-1063
- 4027 1252 Lamb SE, Lall R, Hansen Z, Withers EJ, Griffiths FE, Szczepura A et al. Design considerations in a
4028 clinical trial of a cognitive behavioural intervention for the management of low back pain in
4029 primary care: Back Skills Training Trial. *BMC Musculoskeletal Disorders*. 2007; 8:14
- 4030 1253 Lambeek LC, van MW, Buijs PC, Loisel P, Anema JR. An integrated care program to prevent
4031 work disability due to chronic low back pain: a process evaluation within a randomized
4032 controlled trial. *BMC Musculoskeletal Disorders*. 2009; 10:147
- 4033 1254 Lange B, Kuperwasser B, Okamoto A, Steup A, Haufel T, Ashworth J et al. Efficacy and safety of
4034 tapentadol prolonged release for chronic osteoarthritis pain and low back pain. *Advances in
4035 Therapy*. 2010; 27(6):381-399
- 4036 1255 Langford J, McCarthy PW. Randomised controlled clinical trial of magnet use in chronic low
4037 back pain; a pilot study. *Clinical Chiropractic*. 2005; 8(1):13-19
- 4038 1256 Larsson U, Choler U, Lidstrom A, Lind G, Nachemson A, Nilsson B et al. Auto-traction for
4039 treatment of lumbago-sciatica. A multicentre controlled investigation. *Acta Orthopaedica
4040 Scandinavica*. 1980; 51(5):791-798
- 4041 1257 Lau PMY, Chow DHK, Pope MH. Early physiotherapy intervention in an Accident and Emergency
4042 Department reduces pain and improves satisfaction for patients with acute low back pain: a
4043 randomised trial. *Australian Journal of Physiotherapy*. 2008; 54(4):243-249
- 4044 1258 Laurysen C, Jackson RJ, Baron JM, Tallarico RA, Lavelle WF, Deutsch H et al. Stand-alone
4045 interspinous spacer versus decompressive laminectomy for treatment of lumbar spinal
4046 stenosis. *Expert Review of Medical Devices*. 2015; 12(6):763-769
- 4047 1259 Law RKY, Lee EWC, Law SW, Chan BKB, Chen PP, Szeto GPY. The predictive validity of OMPQ on
4048 the rehabilitation outcomes for patients with acute and subacute non-specific LBP in a Chinese
4049 population. *Journal of Occupational Rehabilitation*. 2013; 23(3):361-370

- 4050 1260 Lawand PA, Lombardi J, Sardim CC, Ribeiro LHC, Jones A, Natour J. Global postural reeducation
4051 to treat chronic low back pain: Randomized, controlled trial. *Arthritis and Rheumatism*. 2013;
4052 65(Suppl.10):S894
- 4053 1261 Laws D. Double blind parallel group investigation in general practice of the efficacy and
4054 tolerability of acetaminophen, in comparison with diclofenac, in patients suffering with acute low
4055 back pain. *British Journal of Clinical Research*. 1994; 5:55-64
- 4056 1262 Lazennec JY, Even J, Skalli W, Rakover JP, Brusson A, Rousseau MA. Clinical outcomes,
4057 radiologic kinematics, and effects on sagittal balance of the 6 df LP-ESP lumbar disc prosthesis.
4058 *Spine Journal*. 2014; 14(9):1914-1920
- 4059 1263 Le Huec J, Basso Y, Mathews H, Mehdod A, Aunoble S, Friesem T et al. The effect of single-
4060 level, total disc arthroplasty on sagittal balance parameters: a prospective study. *European*
4061 *Spine Journal*. 2005; 14(5):480-486
- 4062 1264 Le Huec JC, Basso Y, Aunoble S, Friesem T, Bruno MB. Influence of facet and posterior muscle
4063 degeneration on clinical results of lumbar total disc replacement: two-year follow-up. *Journal*
4064 *of Spinal Disorders and Techniques*. 2005; 18(3):219-223
- 4065 1265 Learman KE. Treatment effects of spinal manipulation on proprioception in subjects with
4066 chronic low back pain University of Pittsburgh; 2007.
- 4067 1266 Learman KE, Myers JB, Cook CE, Sell TC, Kerns J, Lephart SM. Treatment effects of spinal
4068 manipulation on trunk proprioception in subjects with chronic low back pain during symptom
4069 remission... 2008 Combined Sections Meeting...Nashville, Tennessee, February 6-9, 2008.
4070 *Journal of Orthopaedic and Sports Physical Therapy*. 2008; 38(1):Suppl
- 4071 1267 Learman KE, Myers JB, Lephart SM, Sell TC, Kerns GJ, Cook CE. Effects of spinal manipulation on
4072 trunk proprioception in subjects with chronic low back pain during symptom remission. *Journal*
4073 *of Manipulative and Physiological Therapeutics*. 2009; 32(2):118-126
- 4074 1268 Leas B and Goldmann D. Use of opioids for treating chronic back pain. Philadelphia. Center for
4075 Evidence-based Practice (CEP), 2010
- 4076 1269 Lechmann M, Peterson CK, Pfirrmann CWA, Hodler J. Lumbar nerve root injections: a
4077 prospective cohort outcomes study comparing age- and gender-matched patients who
4078 returned an outcomes-based postal questionnaire with patients who did not return the postal
4079 questionnaire. *Skeletal Radiology*. 2013; 42(10):1429-1435
- 4080 1270 Leckie S, Kang J. Recent advances in nucleus pulposus replacement technology. *Current*
4081 *Orthopaedic Practice*. 2009; 20(3):222-226
- 4082 1271 Leclaire R, Fortin L, Lambert R, Bergeron YM, Rossignol M. Radiofrequency facet joint
4083 denervation in the treatment of low back pain: a placebo-controlled clinical trial to assess
4084 efficacy. *Spine*. 2001; 26(13):1411-1417
- 4085 1272 Lee CW, Hwangbo K, Lee IS. The effects of combination patterns of proprioceptive
4086 neuromuscular facilitation and ball exercise on pain and muscle activity of chronic low back
4087 pain patients. *Journal of Physical Therapy Science*. 2014; 26(1):93-96
- 4088 1273 Lee CH, Hyun SJ, Kim KJ, Jahng TA, Kim HJ. Decompression only versus fusion surgery for
4089 lumbar stenosis in elderly patients over 75 years old: which is reasonable? *Neurologia Medico-*
4090 *Chirurgica*. 2013; 53(12):870-874

- 4091 1274 Lee CS, Lee DH, Hwang CJ, Kim H, Noh H. The effect of a mismatched center of rotation on the
4092 clinical outcomes and flexion-extension range of motion: lumbar total disk replacement using
4093 mobidisc at a 5.5-year follow-up. *Journal of Spinal Disorders and Techniques*. 2014; 27(3):148-
4094 153
- 4095 1275 Lee HKH, Ting SM, Lau FL. A randomised control trial comparing the efficacy of tramadol and
4096 paracetamol against ketorolac and paracetamol in the management of musculoskeletal pain in
4097 the emergency department. *Hong Kong Journal of Emergency Medicine*. 2008; 15(1):5-11
- 4098 1276 Lee H, Moseley GL, Hubscher M, Kamper SJ, Traeger AC, Skinner IW et al. Understanding how
4099 pain education causes changes in pain and disability: protocol for a causal mediation analysis of
4100 the PREVENT trial. *Journal of Physiotherapy*. 2015; 61(3):156
- 4101 1277 Lee JH, An JH, Lee S-H. Comparison of the effectiveness of interlaminar and bilateral
4102 transforaminal epidural steroid injections in treatment of patients with lumbosacral disc
4103 herniation and spinal stenosis. *Clinical Journal of Pain*. 2009; 25(3):206-210
- 4104 1278 Lee JW, Shin HI, Park SY, Lee GY, Kang HS. Therapeutic trial of fluoroscopic interlaminar
4105 epidural steroid injection for axial low back pain: effectiveness and outcome predictors.
4106 *American Journal of Neuroradiology*. 2010; 31(10):1817-1823
- 4107 1279 Lee JW, Park KW, Chung SK, Yeom JS, Kim KJ, Kim HJ et al. Cervical transforaminal epidural
4108 steroid injection for the management of cervical radiculopathy: a comparative study of
4109 particulate versus non-particulate steroids. *Skeletal Radiology*. 2009; 38(11):1077-1082
- 4110 1280 Lee JH, Choi TY, Lee MS, Lee H, Shin BC, Lee H. Acupuncture for acute low back pain: a
4111 systematic review. *Clinical Journal of Pain*. 2013; 29(2):172-185
- 4112 1281 Lee JH, Lee SH, Song SH. Clinical effectiveness of botulinum toxin A compared to a mixture of
4113 steroid and local anesthetics as a treatment for sacroiliac joint pain. *Pain Medicine*. 2010;
4114 11(5):692-700
- 4115 1282 Lee MJ, Shonnard N, Farrokhi F, Martz D, Chapman J, Baker R et al. The Spine Surgical Care and
4116 Outcomes Assessment Program (Spine SCOAP): a surgeon-led approach to quality and safety.
4117 *Spine*. 2015; 40(5):332-341
- 4118 1283 Lee S, Lee D, Park J. Effects of extracorporeal shockwave therapy on patients with chronic low
4119 back pain and their dynamic balance ability. *Journal of Physical Therapy Science*. 2014; 26(1):7-
4120 10
- 4121 1284 Lee S, Nam DW, Kim JH, Lee JD. Acupuncture for treating low back pain: A multicentre,
4122 randomized, single-blind, controlled clinical trial. *Regional Anesthesia and Pain Medicine*. 2013;
4123 38(5 SUPPL. 1):E127
- 4124 1285 Lee SM, Hahn S, Kim J, Jang BH, Jung CL, Sohn HJ et al. Pain relief effects of injection therapy
4125 for patients with chronic back pain. National Evidence-based Healthcare Collaborating Agency
4126 (NECA), 2009
- 4127 1286 Lee S-H, Lee S-J, Park K-H, Lee I-M, Sung K-H, Kim J-S et al. Comparison of percutaneous manual
4128 and endoscopic laser discectomy with chemonucleolysis and automated nucleotomy. *Der*
4129 *Orthopade*. 1996; 25(1):49-55

- 4130 1287 Lee SH, Bae JS. Comparison of clinical and radiological outcomes after automated open lumbar
4131 discectomy and conventional microdiscectomy: a prospective randomized trial. *International*
4132 *Journal of Clinical and Experimental Medicine*. 2015; 8(8):12135-12148
- 4133 1288 Lee SH, Kim JM, Chan V, Kim HJ, Kim HI. Ultrasound-guided cervical periradicular steroid
4134 injection for cervical radicular pain: relevance of spread pattern and degree of penetration of
4135 contrast medium. *Pain Medicine*. 2013; 14(1):5-13
- 4136 1289 Lee W, Lee Y, Gong W. The effect of lumbar strengthening exercise on pain and the cross-
4137 sectional area change of lumbar muscles. *Journal of Physical Therapy Science*. 2011; 23(2):209-
4138 212
- 4139 1290 Lee WT, Liu G, Thambiah J, Wong HK. Clinical outcomes of single-level lumbar artificial disc
4140 replacement compared with transforaminal lumbar interbody fusion in an Asian population.
4141 *Singapore Medical Journal*. 2015; 56(4):208-211
- 4142 1291 Legaspi O, Edmond SL. Does the Evidence Support the Existence of Lumbar Spine Coupled
4143 Motion?, A Critical Review of the Literature. *Journal of Orthopaedic and Sports Physical*
4144 *Therapy*. 2007; 37(4):169-178
- 4145 1292 Leggett LE, Soril LJJ, Lorenzetti DL, Noseworthy T, Steadman R, Tiwana S et al. Radiofrequency
4146 ablation for chronic low back pain: a systematic review of randomized controlled trials. *Pain*
4147 *Research and Management*. 2014; 19(5):e146-e153
- 4148 1293 Leibetseder V, Strauss-Blasche G, Marktl W, Ekmekcioglu C. Does aerobic training enhance
4149 effects of spa therapy in back pain patients? A randomized, controlled clinical trial. *Forschende*
4150 *Komplementarmedizin*. 2007; 14(4):202-206
- 4151 1294 Lemcke J, Al-Zain F, Mutze S, Meier U. Minimally invasive spinal surgery using nucleoplasty and
4152 the Dekompressor tool: a comparison of two methods in a one year follow-up. *Minimally*
4153 *Invasive Neurosurgery*. 2010; 53(5-6):236-242
- 4154 1295 Leonard JH, Paungmali A, Silitertpisan P, Pirunsan U, Uthaikhup S. Changes in Transversus
4155 Abdominis Muscle Thickness after Lumbo-Pelvic Core Stabilization Training among Chronic Low
4156 Back Pain Individuals. *La Clinica Terapeutica*. 2015; 166(5):e312-e316
- 4157 1296 Lepisto P. A comparative trial of DS 103-282 and placebo in the treatment of acute skeletal
4158 muscle spasms due to disorders of the back. *Current Therapeutic Research - Clinical and*
4159 *Experimental*. 1979; 26(4):454-459
- 4160 1297 Levin DA, Bendo JA, Quirno M, Errico T, Goldstein J, Spivak J. Comparative charge analysis of
4161 one- and two-level lumbar total disc arthroplasty versus circumferential lumbar fusion. *Spine*.
4162 2007; 32(25):2905-2909
- 4163 1298 Levin JB, Lofland KR, Cassisi JE, Poreh AM, Blonsky ER. The relationship between self efficacy
4164 and disability in chronic low back pain patients. *International Journal of Rehabilitation &*
4165 *Health*. 1996; 2(1):19-28
- 4166 1299 Levin JH. Prospective, double-blind, randomized placebo-controlled trials in interventional
4167 spine: what the highest quality literature tells us. *Spine Journal*. 2009; 9(8):690-703
- 4168 1300 Levine SA, Perin LA, Hayes D, Hayes WS. An evidence-based evaluation of percutaneous
4169 vertebroplasty. *Managed Care*. 2000; 9(3):56-63

- 4170 1301 Levy RM, Deer TR. Systematic safety review and meta-analysis of procedural experience using
4171 percutaneous access to treat symptomatic lumbar spinal stenosis. *Pain Medicine*. 2012;
4172 13(12):1554-1561
- 4173 1302 Lewis A, Morris ME, Walsh C. Are physiotherapy exercises effective in reducing chronic low
4174 back pain? *Physical Therapy Reviews*. 2008; 13(1):37-44
- 4175 1303 Lewis C, Souvlis T, Sterling M. Strain-Counterstrain therapy combined with exercise is not more
4176 effective than exercise alone on pain and disability in people with acute low back pain: a
4177 randomised trial. *Journal of Physiotherapy*. 2011; 57(2):91-98
- 4178 1304 Lewis JS, Hewitt JS, Billington L, Cole S, Byng J, Karayiannis S. A randomized clinical trial
4179 comparing two physiotherapy interventions for chronic low back pain. *Spine*. 2005; 30(7):711-
4180 721
- 4181 1305 Lewis PJ, Weir BK, Broad RW, Grace MG. Long-term prospective study of lumbosacral
4182 discectomy. *Journal of Neurosurgery*. 1987; 67(1):49-53
- 4183 1306 Lewis R, Williams N, Matar HE, Din N, Fitzsimmons D, Phillips C et al. The clinical effectiveness
4184 and cost-effectiveness of management strategies for sciatica: systematic review and economic
4185 model. *Health Technology Assessment*. 2011; 15(39)
- 4186 1307 Lewis RA, Williams NH, Sutton AJ, Burton K, Din NU, Matar HE et al. Comparative clinical
4187 effectiveness of management strategies for sciatica: Systematic review and network meta-
4188 analyses. *Spine Journal*. 2015; 15(6):1461-1477
- 4189 1308 Lewis RA, Williams NH, Sutton AJ, Burton K, Ud DN, Matar HE et al. Comparative clinical
4190 effectiveness of management strategies for sciatica: systematic review and network meta-
4191 analyses. *Spine Journal*. 2015; 15(6):1461-1477
- 4192 1309 Li C, Ni J, Wang Z, Li M, Gasparic M, Terhaag B et al. Analgesic efficacy and tolerability of
4193 flupirtine vs. tramadol in patients with subacute low back pain: a double-blind multicentre
4194 trial*. *Current Medical Research and Opinion*. 2008; 24(12):3523-3530
- 4195 1310 Li ZZ, Hou SX, Shang WL, Song KR, Wu WW. Evaluation of endoscopic dorsal ramus rhizotomy in
4196 managing facetogenic chronic low back pain. *Clinical Neurology and Neurosurgery*. 2014;
4197 126:11-17
- 4198 1311 Lian N, Liu J-B, Torres F, Yan Q-M, Guerra E. Improvement of dermal needle and body
4199 acupuncture on pain due to lumbar strain and hyperplastic spondylitis. *Chinese Journal of
4200 Clinical Rehabilitation*. 2005; 9(42):161-163
- 4201 1312 Licciardone JC, Aryal S. Prevention of progressive back-specific dysfunction during pregnancy:
4202 an assessment of osteopathic manual treatment based on Cochrane Back Review Group
4203 criteria. *Journal of the American Osteopathic Association*. 2013; 113(10):728-736
- 4204 1313 Licciardone JC, Brimhall AK, King LN. Osteopathic manipulative treatment for low back pain: a
4205 systematic review and meta-analysis of randomized controlled trials. *BMC Musculoskeletal
4206 Disorders*. 2005; 6:43
- 4207 1314 Licciardone JC, Stoll ST, Fulda KG, Russo DP, Siu J, Winn W et al. Osteopathic manipulative
4208 treatment for chronic low back pain: a randomized controlled trial. *Spine*. 2003; 28(13):1355-
4209 1362

- 4210 1315 Liddle SD, Gracey JH, Baxter GD. Advice for the management of low back pain: a systematic
4211 review of randomised controlled trials. *Manual Therapy*. 2007; 12(4):310-327
- 4212 1316 Lierz P, Gustorff B, Markow G, Felleiter P. Comparison between bupivacaine 0.125% and
4213 ropivacaine 0.2% for epidural administration to outpatients with chronic low back pain.
4214 *European Journal of Anaesthesiology*. 2004; 21(1):32-37
- 4215 1317 Lierz P, Markow G, Gustorff B, Felleiter P. Treatment of low back pain with epidural infusion of
4216 ropivacaine and bupivacaine in outpatients. *Acta Anaesthesiologica Scandinavica*. 1997;
4217 41(Suppl.112):266
- 4218 1318 Lilius G, Harilainen A, Laasonen EM, Myllynen P. Chronic unilateral low-back pain. Predictors of
4219 outcome of facet joint injections. *Spine*. 1990; 15(8):780-782
- 4220 1319 Lilius G, Laasonen EM, Myllynen P, Harilainen A, Gronlund G. Lumbar facet joint syndrome. A
4221 randomised clinical trial. *Journal of Neurosurgery: Spine*. 1989; 71(4):681-684
- 4222 1320 Lin W-C, Yeh CH, Chien L-C, Morone NE, Glick RM, Albers KM. The Anti-Inflammatory Actions of
4223 Auricular Point Acupressure for Chronic Low Back Pain. *Evidence-Based Complementary and
4224 Alternative Medicine*. 2015; 2015:103570
- 4225 1321 Lind J, Lennard J, Ghazvini P, Honeywell M, Treadwell P. Oxymorphone HCl (Opana) for the
4226 relief of moderate-to-severe pain. *P and T*. 2007; 32(6):316
- 4227 1322 Lindell O, Johansson SE, Strender LE. Subacute and chronic, non-specific back and neck pain:
4228 cognitive-behavioural rehabilitation versus primary care. A randomized controlled trial. *BMC
4229 Musculoskeletal Disorders*. 2008; 9:172
- 4230 1323 Linden M, Scherbe S, Cicholas B. Randomized controlled trial on the effectiveness of cognitive
4231 behavior group therapy in chronic back pain patients. *Journal of Back and Musculoskeletal
4232 Rehabilitation*. 2014; 27(4):563-568
- 4233 1324 Lindner R, Sluijter ME, Schleizer W. Pulsed radiofrequency treatment of the lumbar medial
4234 branch for facet pain: a retrospective analysis. *Pain Medicine*. 2006; 7(5):435-439
- 4235 1325 Lindstrom I. Manual therapy and exercise therapy in patients with chronic low back pain. A
4236 randomized, controlled trial with 1-year follow-up: Point of view. *Spine*. 2003; 28(6):531-532
- 4237 1326 Lindstrom I, Ohlund C, Eek C, Wallin L, Peterson LE, Fordyce WE et al. The effect of graded
4238 activity on patients with subacute low back pain: a randomized prospective clinical study with
4239 an operant-conditioning behavioral approach. *Physical Therapy*. 1992; 72(4):279-3
- 4240 1327 Lindstrom I, Ohlund C, Eek C, Wallin L, Peterson LE, Nachemson A. Mobility, strength, and
4241 fitness after a graded program for patients with subacute low back pain. A randomized
4242 prospective clinical study with a behavioral therapy approach. *Spine*. 1992; 17(6):641-652
- 4243 1328 Linton SJ, Andersson T. Can chronic disability be prevented? A randomized trial of a cognitive-
4244 behavior intervention and two forms of information for patients with spinal pain. *Spine*. 2000;
4245 25(21):2825-2824
- 4246 1329 Linton SJ, Gotestam KG. A controlled study of the effects of applied relaxation and applied
4247 relaxation plus operant procedures in the regulation of chronic pain. *British Journal of Clinical
4248 Psychology*. 1984; 23(Pt.4):291-299

- 4249 1330 Linton SJ, Hellsing AL, Bergstrom G. Exercise for workers with musculoskeletal pain: does
4250 enhancing compliance decrease pain? *Journal of Occupational Rehabilitation*. 1996; 6(3):177-
4251 190
- 4252 1331 Linton SJ, Hellsing AL, Larsson I. Bridging the gap: support groups do not enhance long-term
4253 outcome in chronic back pain. *Clinical Journal of Pain*. 1997; 13(3):221-228
- 4254 1332 Linton SJ, Nordin E. A 5-year follow-up evaluation of the health and economic consequences of
4255 an early cognitive behavioral intervention for back pain: A randomized, controlled trial. *Spine*.
4256 2006; 31(8):853-858
- 4257 1333 Linton SJ, Ryberg M. A cognitive-behavioral group intervention as prevention for persistent
4258 neck and back pain in a non-patient population: a randomized controlled trial. *Pain*. 2001;
4259 90(1-2):83-90
- 4260 1334 Linton SJ, Boersma K. Early identification of patients at risk of developing a persistent back
4261 problem: the predictive validity of the Orebro Musculoskeletal Pain Questionnaire. *Clinical*
4262 *Journal of Pain*. 2003; 19(2):80-86
- 4263 1335 Linton SJ, Boersma K, Jansson M, Svard L, Botvalde M. The effects of cognitive-behavioral and
4264 physical therapy preventive interventions on pain-related sick leave: a randomized controlled
4265 trial. *Clinical Journal of Pain*. 2005; 21(2):109-119
- 4266 1336 Lionberger DR, Lanzarotti A, Pierchala L, Zhao W, Yanchick J. Analgesic efficacy and safety of
4267 diclofenac epolamine topical patch (flector patch) by location of injury in trials of acute pain: A
4268 pooled analysis of five trials. *Journal of Applied Research*. 2010; 10(3):88-98
- 4269 1337 Listrat V, Dougados M, Chevalier X, Kramer F, Amor B. Comparison of the analgesic effect of
4270 tenoxicam after oral or intramuscular administration. *Drug Investigation*. 1990; 2(Suppl.3):51-
4271 52
- 4272 1338 Little P, Roberts L, Blowers H, Garwood J, Cantrell T, Langridge J et al. Should we give detailed
4273 advice and information booklets to patients with back pain? A randomized controlled factorial
4274 trial of a self-management booklet and doctor advice to take exercise for back pain. *Spine*.
4275 2001; 26(19):2065-2072
- 4276 1339 Liu H, Yao K, Zhang J, Li L, Wu T, Brox J, I et al. Sling exercise therapy for chronic low-back pain.
4277 *Cochrane Database of Systematic Reviews*. 2013; Issue 9:CD010689.
4278 DOI:10.1002/14651858.CD010689
- 4279 1340 Liu J, Li N. Clinical observation of a combination of acupuncture and drug administration for
4280 non-specific acute lumbar sprain. *Journal of Acupuncture and Tuina Science*. 2010; 8(1):47-49
- 4281 1341 Liu YT, Chiu CW, Chang CF, Lee TC, Chen CY, Chang SC et al. Efficacy and Safety of Acupuncture
4282 for Acute Low Back Pain in Emergency Department: A Pilot Cohort Study. *Evidence-Based*
4283 *Complementary and Alternative Medicine*. 2015; 2015:179731
- 4284 1342 Liu Z, Fei Q, Wang B, Lv P, Chi C, Yang Y et al. A meta-analysis of unilateral versus bilateral
4285 Pedicle screw fixation in minimally invasive lumbar Interbody fusion. *PLoS One*. 2014; 9(11)
- 4286 1343 Liu-Ambrose TYL, Khan KM, Eng JJ, Lord SR, Lentle B, McKay HA. Both resistance and agility
4287 training reduce back pain and improve health-related quality of life in older women with low
4288 bone mass. *Osteoporosis International*. 2005; 16(11):1321-1329

- 4289 1344 Livesey JP. Laser discectomy versus lumbar epidural steroid injection: a randomised
4290 comparative study of two treatments for sciatica. British Orthopaedic Association: Annual
4291 General Congress In: Journal of Bone and Joint Surgery British Volume. 2000; 82(Suppl.1):74
- 4292 1345 Ljunggren AE, Walker L, Weber H, Amundsen T. Manual traction versus isometric exercises in
4293 patients with herniated intervertebral lumbar discs. Physiotherapy Theory and Practice. 1992;
4294 8(4):207-213
- 4295 1346 Ljunggren AE, Weber H, Kogstad O, Thom E, Kirkesola G. Effect of exercise on sick leave due to
4296 low back pain. A randomized, comparative, long-term study. Spine. 1997; 22(14):1610-1617
- 4297 1347 Lloyd A, Scott DA, Akehurst RL, Lurie-Luke E, Jessen G. Cost-effectiveness of low-level heat
4298 wrap therapy for low back pain. Value in Health. 2004; 7(4):413-422
- 4299 1348 Loguidice V, Bini W, Shabat S, Miller LE, Block JE. Rationale, design and clinical performance of
4300 the Superion Interspinous Spacer: a minimally invasive implant for treatment of lumbar spinal
4301 stenosis. Expert Review of Medical Devices. 2011; 8(4):419-426
- 4302 1349 Loizides A, Gruber H, Peer S, Galiano K, Bale R, Obernauer J. Ultrasound guided versus CT-
4303 controlled paravertebral injections in the lumbar spine: a prospective randomized clinical trial.
4304 American Journal of Neuroradiology. 2013; 34(2):466-470
- 4305 1350 Loldrup D, Langemark M, Hansen HJ, Olesen J, Bech P. Clomipramine and mianserin in chronic
4306 idiopathic pain syndrome. A placebo controlled study. Psychopharmacology. 1989; 99(1):1-7
- 4307 1351 Lomond KV, Henry SM, Hitt JR, DeSarno MJ, Bunn JY. Altered postural responses persist
4308 following physical therapy of general versus specific trunk exercises in people with low back
4309 pain. Manual Therapy. 2014; 19(5):425-432
- 4310 1352 Long A, Donelson R. Does it matter which exercise? A randomized control trial of exercise for
4311 low back pain. Orthopaedic Division Review. 2006; 2006(5):7-8
- 4312 1353 Long A, Donelson R, Fung T. Does it matter which exercise? A randomized control trial of
4313 exercise for low back pain. Spine. 2004; 29(23):2593-2602
- 4314 1354 Long CJ, Brown DA, Engelberg J. Intervertebral disc surgery: strategies for patient selection to
4315 improve surgical outcome. Journal of Neurosurgery. 1980; 52(6):818-824
- 4316 1355 Lonn JH, Glomsrod B, Soukup MG, Bo K, Larsen S. Active back school: prophylactic
4317 management for low back pain. A randomized, controlled, 1-year follow-up study. Spine. 1999;
4318 24(9):865-871
- 4319 1356 Lonne G, Johnsen LG, Rossvoll I, Andresen H, Storheim K, Zwart JA et al. Minimally invasive
4320 decompression versus x-stop in lumbar spinal stenosis: a randomized controlled multicenter
4321 study. Spine. 2015; 40(2):77-85
- 4322 1357 Lopez A, Pichon RA, Augustovski F, and Garcia MS. Radiofrequency techniques for the
4323 management of lumbar discopathy (discal nucleoplasty, percutaneous thermocoagulation,
4324 electrothermal annuloplasty). Institute for Clinical Effectiveness and Health Policy (IECS), 2005
- 4325 1358 Lorish TR, Tanabe CT, Waller FT, London MR, Lansky DJ. Correlation between health outcome
4326 and length of hospital stay in lumbar microdiscectomy. Spine. 1998; 23(20):2195-2200

- 4327 1359 Loupasis GA, Stamos K, Katonis PG, Sapkas G, Korres DS, Hartofilakidis G. Seven- to 20-year
4328 outcome of lumbar discectomy. *Spine*. 1999; 24(22):2313-2317
- 4329 1360 Louw Q, Morris L, Sklaar J. Evidence of physiotherapeutic interventions for acute LBP patients.
4330 *South African Journal of Physiotherapy*. 2007; 63(3):7-14
- 4331 1361 Lu K, Liliang P-C, Liang C-L, Wang K-W, Tsai Y-D, Chen H-J. Efficacy of conventional and pulsed
4332 radiofrequency for treating chronic lumbar facet joint pain. *Formosan Journal of Surgery*. 2012;
4333 45(4):107-112
- 4334 1362 Lu S, Kong C, Hai Y, Kang N, Zang L, Wang Y et al. Prospective Clinical and Radiographic Results
4335 of Activ L Total Disk Replacement at 1- to 3-Year Follow-up. *Journal of Spinal Disorders and*
4336 *Techniques*. 2015; 28(9):E544-E550
- 4337 1363 Lu S, Kong C, Hai Y, Wang Q, Zang L, Kang N et al. Retrospective study on effectiveness of activ
4338 L total disc replacement: clinical and radiographical results of 1- to 3-year follow-up. *Spine*.
4339 2015; 40(7):E411-E417
- 4340 1364 Lu Y, Guzman JZ, Purmessur D, Iatridis JC, Hecht AC, Qureshi SA et al. Nonoperative
4341 management of discogenic back pain: a systematic review. *Spine*. 2014; 39(16):1314-1324
- 4342 1365 Luedtke K, Rushton A, Wright C, Jurgens T, Polzer A, Mueller G et al. Effectiveness of
4343 transcranial direct current stimulation preceding cognitive behavioural management for
4344 chronic low back pain: sham controlled double blinded randomised controlled trial. *BMJ*. 2015;
4345 350:h1640
- 4346 1366 Luhmann D and Raspe R. Surgical treatment of lumbar spine for leg and back pain caused by
4347 the disc syndrome - a health technology assessment. Hannover Medical School, Medizinische
4348 Hochschule Hannover (MHH), 2003
- 4349 1367 Luhmann D, Burkhardt-Hammer T, Borowski C, Raspe H. Minimally invasive surgical procedures
4350 for the treatment of lumbar disc herniation. *GMS Health Technology Assessment*. 2005;
4351 1:Doc07
- 4352 1368 Luijsterburg PAJ, Verhagen AP, Ostelo RWJG, van den Hoogen HJMM, Peul WC, Avezaat CJJ et
4353 al. Physical therapy plus general practitioners' care versus general practitioners' care alone for
4354 sciatica: a randomised clinical trial with a 12-month follow-up. *European Spine Journal*. 2008;
4355 17(4):509-517
- 4356 1369 Lumpkin KJ. The effect of low level laser therapy and exercise on perceived pain and activities
4357 of daily living in low back pain patients. Middle Tennessee State University. 2007;123
- 4358 1370 Luomajoki H, Kool J, de Bruin ED, Airaksinen O. Improvement in low back movement control,
4359 decreased pain and disability, resulting from specific exercise intervention. *Spine*. 2010; 2:11
- 4360 1371 Luukkainen R. Periarticular corticosteroid treatment of the sacroiliac joint. *Current*
4361 *Rheumatology Reviews*. 2007; 3(2):155-157
- 4362 1372 Luukkainen RK, Wennerstrand PV, Kautiainen HH, Sanila MT, Asikainen EL. Efficacy of
4363 periarticular corticosteroid treatment of the sacroiliac joint in non-spondylarthropathic
4364 patients with chronic low back pain in the region of the sacroiliac joint. *Clinical and*
4365 *Experimental Rheumatology*. 2002; 20(1):52-54

- 4366 1373 MacArio A, Pergolizzi J, V. Systematic literature review of spinal decompression via motorized
4367 traction for chronic discogenic low back pain. *Pain Practice*. 2006; 6(3):171-178
- 4368 1374 Macdonald AJ, Macrae KD, Master BR, Rubin AP. Superficial acupuncture in the relief of chronic
4369 low back pain. *Annals of the Royal College of Surgeons of England*. 1983; 65(1):44-46
- 4370 1375 Macedo LG, Latimer J, Maher CG, Hodges PW, Nicholas M, Tonkin L et al. Motor control or
4371 graded activity exercises for chronic low back pain? A randomised controlled trial. *BMC*
4372 *Musculoskeletal Disorders*. 2008; 9:65
- 4373 1376 Macedo LG, Latimer J, Maher CG, Hodges PW, McAuley JH, Nicholas MK et al. Effect of motor
4374 control exercises versus graded activity in patients with chronic nonspecific low back pain: a
4375 randomized controlled trial. *Physical Therapy*. 2012; 92(3):363-377
- 4376 1377 Machado LAC, Kamper SJ, Herbert RD, Maher CG, McAuley JH. Analgesic effects of treatments
4377 for non-specific low back pain: a meta-analysis of placebo-controlled randomized trials.
4378 *Rheumatology*. 2009; 48(5):520-527
- 4379 1378 Machado L, Christine LC-W, Clare H, van Tulder MW. The McKenzie method for (sub)acute non-
4380 specific low-back pain. *Cochrane Database of Systematic Reviews*. 2012; Issue 3:CD009711.
4381 DOI:10.1002/14651858.CD009711
- 4382 1379 Machado L, van Tulder MW, Christine LC-W, Clare H, Hayden JA. The McKenzie method for
4383 chronic non-specific low-back pain. *Cochrane Database of Systematic Reviews*. 2012; Issue
4384 3:CD009712. DOI:10.1002/14651858.CD009712
- 4385 1380 Machado LAC, Azevedo DC, Capanema MB, Neto TN, Cerceau DM. Client-centered therapy vs
4386 exercise therapy for chronic low back pain: a pilot randomized controlled trial in Brazil. *Pain*
4387 *Medicine*. 2007; 8(3):251-258
- 4388 1381 Maciel AAW, Cunha PR, Laraia IO, Trevisan F. Efficacy of gabapentin in the improvement of
4389 pruritus and quality of life of patients with notalgia paresthetica. *Anais Brasileiros De*
4390 *Dermatologia*. 2014; 89(4):570-575
- 4391 1382 Mackawan S, Eungpinichpong W, Pantumethakul R, Chatchawan U, Hunsawong T,
4392 Arayawichanon P. Effects of traditional Thai massage versus joint mobilization on substance P
4393 and pain perception in patients with non-specific low back pain. *Journal of Bodywork and*
4394 *Movement Therapies*. 2007; 11(1):9-16
- 4395 1383 MacRae CS, Lewis JS, Shortland AP, Morrissey MC, Critchley D. Effectiveness of rocker sole
4396 shoes in the management of chronic low back pain: a randomized clinical trial. *Spine*. 2013;
4397 38(22):1905-1912
- 4398 1384 MacVicar J, King W, Landers MH, Bogduk N. The effectiveness of lumbar transforaminal
4399 injection of steroids: a comprehensive review with systematic analysis of the published data.
4400 *Pain Medicine*. 2013; 14(1):14-28
- 4401 1385 Madan S, Boeree NR. Outcome of the Graf ligamentoplasty procedure compared with anterior
4402 lumbar interbody fusion with the Hartshill horseshoe cage. *European Spine Journal*. 2003;
4403 12(4):361-368
- 4404 1386 Madhusudhan SK. Novel analgesic combination of tramadol, paracetamol, caffeine and taurine
4405 in the management of moderate to moderately severe acute low back pain. *Journal of*
4406 *Orthopaedics*. 2013; 10(3):144-148

- 4407 1387 Madigan L, Vaccaro AR, Spector LR, Milam RA. Management of symptomatic lumbar
4408 degenerative disk disease. *Journal of the American Academy of Orthopaedic Surgeons*. 2009;
4409 17(2):102-111
- 4410 1388 Maestretti G, Reischl N, Jacobi M, Wahl P, Otten P, Bihl T et al. Treatment of discogenic low
4411 back pain by total disc arthroplasty using the Prodisc prosthesis: Analysis of a prospective
4412 cohort study with five-year clinical follow-up. *Open Spine Journal*. 2011; 3(1):16-20
- 4413 1389 Magalhaes MO, Muzi LH, Comachio J, Burke TN, Renovato Franca FJ, Vidal Ramos LA et al. The
4414 short-term effects of graded activity versus physiotherapy in patients with chronic low back
4415 pain: A randomized controlled trial. *Manual Therapy*. 2015; 20(4):603-609
- 4416 1390 Magnussen LH. Surgery with disc prosthesis may produce better outcomes than
4417 multidisciplinary rehabilitation for patients with chronic low back pain. *Journal of*
4418 *Physiotherapy*. 2011; 57(4):257
- 4419 1391 Maher C, Latimer J, Refshauge K. Prescription of activity for low back pain: What works?
4420 *Australian Journal of Physiotherapy*. 1999; 45(2):121-132
- 4421 1392 Maher CG, Latimer J, Hodges PW, Refshauge KM, Moseley GL, Herbert RD et al. The effect of
4422 motor control exercise versus placebo in patients with chronic low back pain
4423 [ACTRN012605000262606]. *BMC Musculoskeletal Disorders*. 2005; 6:54
- 4424 1393 Mahoney CB. Treating low back pain: the effect of the orthotic pneumatic vest on the cost of
4425 treatment and quality of life. *Care Management*. 2001; 7(4):27-31
- 4426 1394 Maity A, Mondal BC, Saha D, Roy DS. A prospective randomized, double-blind, controlled
4427 clinical trial comparing epidural butorphanol plus corticosteroid with corticosteroid alone for
4428 sciatica due to herniated nucleus pulposus. *Perspectives in Clinical Research*. 2012; 3(1):16-21
- 4429 1395 Majchrzycki M, Kocur P, Kotwicki T. Deep tissue massage and nonsteroidal anti-inflammatory
4430 drugs for low back pain: a prospective randomized trial. *TheScientificWorldJournal*. 2014;
4431 2014:287597
- 4432 1396 Majeed SA, Vikraman CS, Mathew V, Anish T. Comparison of outcomes between conventional
4433 lumbar fenestration discectomy and minimally invasive lumbar discectomy: an observational
4434 study with a minimum 2-year follow-up. *Journal of Orthopaedic Surgery and Research*. 2013;
4435 8:34
- 4436 1397 Maksymowych WP. Ankylosing spondylitis. Not just another pain in the back. *Canadian Family*
4437 *Physician*. 2004; 50:257-262
- 4438 1398 MALANGA GA, DUNN KR. Low back pain management: Approaches to treatment. *Journal of*
4439 *Musculoskeletal Medicine*. 2010; 27(8):305-315
- 4440 1399 Malanga G, Reiter RD, Garay E. Update on tizanidine for muscle spasticity and emerging
4441 indications. *Expert Opinion on Pharmacotherapy*. 2008; 9(12):2209-2215
- 4442 1400 Malanga GA, Ruoff GE, Weil AJ, Altman CA, Xie F, Borenstein DG. Cyclobenzaprine ER for
4443 muscle spasm associated with low back and neck pain: two randomized, double-blind, placebo-
4444 controlled studies of identical design. *Current Medical Research and Opinion*. 2009;
4445 25(5):1179-1196

- 4446 1401 Malmivaara A, Hakkinen U, Aro T, Heinrichs ML, Koskenniemi L, Kuosma E et al. The treatment
4447 of acute low back pain--bed rest, exercises, or ordinary activity? *New England Journal of*
4448 *Medicine*. 1995; 332(6):351-355
- 4449 1402 Malmivaara A, Slati P, Heliövaara M, Sainio P, Kinnunen H, Kankare J et al. Surgery reduced
4450 pain and disability in lumbar spinal stenosis better than nonoperative treatment. *Journal of*
4451 *Bone and Joint Surgery - American Volume*. 2007; 89(8):1872
- 4452 1403 Malmivaara A, Slati P, Heliövaara M, Sainio P, Kinnunen H, Kankare J et al. Surgical or
4453 nonoperative treatment for lumbar spinal stenosis? A randomized controlled trial. *Spine*. 2007;
4454 32(1):1-8
- 4455 1404 Malmros B, Mortensen L, Jensen MB, Charles P. Positive effects of physiotherapy on chronic
4456 pain and performance in osteoporosis. *Osteoporosis International*. 1998; 8(3):215-221
- 4457 1405 Malter AD, Larson EB, Urban N, Deyo RA. Cost-effectiveness of lumbar discectomy for the
4458 treatment of herniated intervertebral disc. *Spine*. 1996; 21(9):1048-1055
- 4459 1406 Malter AD, Weinstein J. Cost-effectiveness of lumbar discectomy. *Spine*. 1996; 21(24
4460 SUPPL.):69S-74S
- 4461 1407 Manca A, Dumville JC, Torgerson DJ, Klaber Moffett JA, Mooney MP, Jackson DA et al.
4462 Randomized trial of two physiotherapy interventions for primary care back and neck pain
4463 patients: cost-effectiveness analysis. *Spine*. 2007; 46:1495-1501:1495-1501
- 4464 1408 Manchikanti L, Benyamin RM, Falco FJ, Kaye AD, Hirsch JA. Do epidural injections provide
4465 short- and long-term relief for lumbar disc herniation? A systematic review. *Clinical*
4466 *Orthopaedics and Related Research*. 2015; 473(6):1940-1956
- 4467 1409 Manchikanti L, Falco FJ, Pampati V, Cash KA, Benyamin RM, Hirsch JA. Cost utility analysis of
4468 caudal epidural injections in the treatment of lumbar disc herniation, axial or discogenic low
4469 back pain, central spinal stenosis, and post lumbar surgery syndrome. *Pain Physician*. 2013;
4470 16(3):E129-E143
- 4471 1410 Manchikanti L, Pampati V, Bakhit CE, Pakanati RR. Non-endoscopic and endoscopic adhesiolysis
4472 in post lumbar laminectomy syndrome: a one-year outcome study and cost effectiveness
4473 analysis. *Pain Physician*. 1999; 2(3):52-58
- 4474 1411 Manchikanti L, Pampati V, Bakhit CE, Rivera JJ, Beyer CD, Damron KS et al. Effectiveness of
4475 lumbar facet joint nerve blocks in chronic low back pain: a randomized clinical trial. *Pain*
4476 *Physician*. 2001; 4(1):101-117
- 4477 1412 Manchikanti L, Pampati V, Fellows B, Bakhit CE. The diagnostic validity and therapeutic value of
4478 lumbar facet joint nerve blocks with or without adjuvant agents. *Current Review of Pain*. 2000;
4479 4(5):337-344
- 4480 1413 Manchikanti L, Pampati V, Rivera JJ, Beyer C, Damron KS, Barnhill RC. Caudal epidural injections
4481 with sarapin or steroids in chronic low back pain. *Pain Physician*. 2001; 4(4):322-335
- 4482 1414 Manchikanti L, Abdi S, Atluri S, Benyamin RM, Boswell MV, Buenaventura RM et al. An update
4483 of comprehensive evidence-based guidelines for interventional techniques in chronic spinal
4484 pain. Part II: guidance and recommendations. *Pain Physician*. 2013; 16(2 Suppl):S49-283

- 4485 1415 Manchikanti L, Boswell MV, Datta S, Fellows B, Abdi S, Singh V et al. Comprehensive review of
4486 therapeutic interventions in managing chronic spinal pain. *Pain Physician*. 2009; 12(4):E123-
4487 E198
- 4488 1416 Manchikanti L, Boswell MV, Singh V, Benyamin RM, Fellows B, Abdi S et al. Comprehensive
4489 evidence-based guidelines for interventional techniques in the management of chronic spinal
4490 pain. *Pain Physician*. 2009; 12(4):699-802
- 4491 1417 Manchikanti L, Buenaventura RM, Manchikanti KN, Ruan X, Gupta S, Smith HS et al.
4492 Effectiveness of therapeutic lumbar transforaminal epidural steroid injections in managing
4493 lumbar spinal pain. *Pain Physician*. 2012; 15(3):E199-E245
- 4494 1418 Manchikanti L, Candido KD, Kaye AD, Boswell MV, Benyamin RM, Falco FJE et al. Randomized
4495 trial of epidural injections for spinal stenosis published in the *New England Journal of*
4496 *Medicine*: further confusion without clarification. *Pain Physician*. 2014; 17(4):E475-E488
- 4497 1419 Manchikanti L, Cash KA, McManus CD, Damron KS, Pampati V, Falco FJE. Lumbar interlaminar
4498 epidural injections in central spinal stenosis: preliminary results of a randomized, double-blind,
4499 active control trial. *Pain Physician*. 2012; 15(1):51-63
- 4500 1420 Manchikanti L, Cash KA, McManus CD, Pampati V. Assessment of effectiveness of percutaneous
4501 adhesiolysis in managing chronic low back pain secondary to lumbar central spinal canal
4502 stenosis. *International Journal of Medical Sciences*. 2013; 10(1):50-59
- 4503 1421 Manchikanti L, Cash KA, McManus CD, Pampati V, Abdi S. Preliminary results of a randomized,
4504 equivalence trial of fluoroscopic caudal epidural injections in managing chronic low back pain:
4505 Part 4--Spinal stenosis. *Pain Physician*. 2008; 11(6):833-848
- 4506 1422 Manchikanti L, Cash KA, McManus CD, Pampati V, Benyamin R. Fluoroscopic lumbar
4507 interlaminar epidural injections in managing chronic lumbar axial or discogenic pain. *Journal of*
4508 *Pain Research*. 2012; 5:301-311
- 4509 1423 Manchikanti L, Cash KA, McManus CD, Pampati V, Benyamin RM. A randomized, double-blind,
4510 active-controlled trial of fluoroscopic lumbar interlaminar epidural injections in chronic axial or
4511 discogenic low back pain: results of 2-year follow-up. *Pain Physician*. 2013; 16(5):E491-E504
- 4512 1424 Manchikanti L, Cash KA, Pampati V, Wargo BW, Malla Y. The effectiveness of fluoroscopic
4513 cervical interlaminar epidural injections in managing chronic cervical disc herniation and
4514 radiculitis: preliminary results of a randomized, double-blind, controlled trial. *Pain Physician*.
4515 2010; 13(3):223-236
- 4516 1425 Manchikanti L, Cash KA, Pampati V, Wargo BW, Malla Y. Management of chronic pain of
4517 cervical disc herniation and radiculitis with fluoroscopic cervical interlaminar epidural
4518 injections. *International Journal of Medical Sciences*. 2012; 9(6):424-434
- 4519 1426 Manchikanti L, Cash KA, Pampati V, Wargo BW, Malla Y. A randomized, double-blind, active
4520 control trial of fluoroscopic cervical interlaminar epidural injections in chronic pain of cervical
4521 disc herniation: results of a 2-year follow-up. *Pain Physician*. 2013; 16(5):465-478
- 4522 1427 Manchikanti L, Datta S, Gupta S, Munglani R, Bryce DA, Ward SP et al. A critical review of the
4523 American Pain Society clinical practice guidelines for interventional techniques: part 2.
4524 Therapeutic interventions. *Pain Physician*. 2010; 13(4):E215-E264

- 4525 1428 Manchikanti L, Derby R, Benyamin RM, Helm S, Hirsch JA. A systematic review of mechanical
4526 lumbar disc decompression with nucleoplasty. *Pain Physician*. 2009; 12(3):561-572
- 4527 1429 Manchikanti L, Falco FJE, Benyamin RM, Caraway DL, Deer TR, Singh V et al. An update of the
4528 systematic assessment of mechanical lumbar disc decompression with nucleoplasty. *Pain*
4529 *Physician*. 2013; 16(2 Suppl):SE25-SE54
- 4530 1430 Manchikanti L, Malla Y, Wargo BW, Cash KA, Pampati V, Fellows B. A prospective evaluation of
4531 complications of 10,000 fluoroscopically directed epidural injections. *Pain Physician*. 2012;
4532 15(2):131-140
- 4533 1431 Manchikanti L, Malla Y, Wargo BW, Cash KA, Pampati V, Fellows B. Complications of
4534 fluoroscopically directed facet joint nerve blocks: a prospective evaluation of 7,500 episodes
4535 with 43,000 nerve blocks. *Pain Physician*. 2012; 15(2):E143-E150
- 4536 1432 Manchikanti L, Pampati V, Benyamin RM, Boswell MV. Analysis of efficacy differences between
4537 caudal and lumbar interlaminar epidural injections in chronic lumbar axial discogenic pain:
4538 local anesthetic alone vs. local combined with steroids. *International Journal of Medical*
4539 *Sciences*. 2015; 12(3):214-222
- 4540 1433 Manchikanti L, Rivera JJ, Pampati V, Damron KS, McManus CD, Brandon DE et al. One day
4541 lumbar epidural adhesiolysis and hypertonic saline neurolysis in treatment of chronic low back
4542 pain: a randomized, double-blind trial. *Pain Physician*. 2004; 7(2):177-186
- 4543 1434 Manchikanti L, Singh V, Calodney AK, Helm S, Deer TR, Benyamin RM et al. Percutaneous
4544 lumbar mechanical disc decompression utilizing Dekompressor: an update of current evidence.
4545 *Pain Physician*. 2013; 16(2 Suppl):SE1-24
- 4546 1435 Manchikanti L, Singh V, Cash KA, Pampati V, Damron KS, Boswell MV. Preliminary results of a
4547 randomized, equivalence trial of fluoroscopic caudal epidural injections in managing chronic
4548 low back pain: Part 2--Disc herniation and radiculitis. *Pain Physician*. 2008; 11(6):801-815
- 4549 1436 Manchikanti L, Singh V, Cash KA, Pampati V, Damron KS, Boswell MV. A randomized,
4550 controlled, double-blind trial of fluoroscopic caudal epidural injections in the treatment of
4551 lumbar disc herniation and radiculitis. *Spine*. 2011; 36(23):1897-1905
- 4552 1437 Manchikanti L, Singh V, Cash KA, Pampati V, Falco FJE. The role of fluoroscopic interlaminar
4553 epidural injections in managing chronic pain of lumbar disc herniation or radiculitis: a
4554 randomized, double-blind trial. *Pain Practice*. 2013; 13(7):547-558
- 4555 1438 Manchikanti L, Singh V, Derby R, Schultz DM, Benyamin RM, Prager JP et al. Reassessment of
4556 evidence synthesis of occupational medicine practice guidelines for interventional pain
4557 management. *Pain Physician*. 2008; 11(4):393-482
- 4558 1439 Manchikanti L, Singh V, Falco FJE, Calodney AK, Onyewu O, Helm S et al. An updated review of
4559 automated percutaneous mechanical lumbar discectomy for the contained herniated lumbar
4560 disc. *Pain Physician*. 2013; 16(2 Suppl):SE151-SE184
- 4561 1440 Manchikanti L, Staats PS, Nampiaparampil DE, Hirsch JA. What is the Role of Epidural Injections
4562 in the Treatment of Lumbar Discogenic Pain: A Systematic Review of Comparative Analysis with
4563 Fusion. *Korean Journal of Pain*. 2015; 28(2):75-87

- 4564 1441 Mandara A, Fusaro A, Musicco M, Bado F. A randomised controlled trial on the effectiveness of
4565 osteopathic manipulative treatment of chronic low back pain. *International Journal of*
4566 *Osteopathic Medicine*. 2008; 11(4):156
- 4567 1442 Mandel S, Schilling J, Peterson E, Rao DS, Sanders W. A retrospective analysis of vertebral body
4568 fractures following epidural steroid injections. *Journal of Bone and Joint Surgery - American*
4569 *Volume*. 2013; 95(11):961-964
- 4570 1443 Mangels M, Schwarz S, Worrigen U, Holme M, Rief W. Evaluation of a behavioral-medical
4571 inpatient rehabilitation treatment including booster sessions: a randomized controlled study.
4572 *Clinical Journal of Pain*. 2009; 25(5):356-364
- 4573 1444 Manheimer E, White A, Berman B, Forys K, Ernst E. Erratum: Meta-analysis: Acupuncture for
4574 low back pain (*Annals of Internal Medicine* (2005) 142 (651-663)). *Annals of Internal Medicine*.
4575 2005; 143(9):695
- 4576 1445 Manheimer E, White A, Berman B, Forys K, Ernst E. Meta-analysis: acupuncture for low back
4577 pain. *Annals of Internal Medicine*. 2005; 142(8):651-663
- 4578 1446 Manniche C, Asmussen KH, Vinterberg H, Rose-Hansen EB, Kramhoft J, Jordan A. Analysis of
4579 preoperative prognostic factors in first-time surgery for lumbar disc herniation, including
4580 Finneson's and modified Spengler's score systems. *Danish Medical Bulletin*. 1994; 41(1):110-
4581 115
- 4582 1447 Manniche C, Hesselsoe G, Bentzen L, Christensen I, Lundberg E. Clinical trial of intensive muscle
4583 training for chronic low back pain. *Lancet*. 1988; 2(8626-8627):1473-1476
- 4584 1448 Manniche C, Lundberg E, Christensen I, Bentzen L, Hesselsoe G. Intensive dynamic back
4585 exercises for chronic low back pain: a clinical trial. *Spine*. 1991; 47(1):53-63
- 4586 1449 Mannion AF, Brox JI, Fairbank JC. Long-term (11-year) follow-up of three randomised
4587 controlled trials comparing spinal fusion and nonoperative treatment in patients with chronic
4588 low back pain. *Spine*. 2013; 22(5 Suppl.1):S675
- 4589 1450 Mannion AF, Leivseth G, Brox J-I, Fritzell P, Hagg O, Fairbank JCT. ISSLS prize winner: Long-term
4590 follow-up suggests spinal fusion is associated with increased adjacent segment disc
4591 degeneration but without influence on clinical outcome: Results of a combined follow-up from
4592 4 randomized controlled trials. *Spine*. 2014; 39(17):1373-1383
- 4593 1451 Mannion AF, Muntener M, Taimela S, Dvorak J. A randomized clinical trial of three active
4594 therapies for chronic low back pain. *Spine*. 1999; 24(23):2435-2448
- 4595 1452 Mannion AF, Brox JI, Fairbank JCT. Comparison of spinal fusion and nonoperative treatment in
4596 patients with chronic low back pain: long-term follow-up of three randomized controlled trials.
4597 *Spine*. 2013; 13(11):1438-1448
- 4598 1453 Mannion AF, Denzler R, Dvorak J, Grob D. Five-year outcome of surgical decompression of the
4599 lumbar spine without fusion. *European Spine Journal*. 2010; 19(11):1883-1891
- 4600 1454 Mariconda M, Fava R, Gatto A, Longo C, Milano C. Unilateral laminectomy for bilateral
4601 decompression of lumbar spinal stenosis: a prospective comparative study with conservatively
4602 treated patients. *Journal of Spinal Disorders and Techniques*. 2002; 15(1):39-46

- 4603 1455 Mariconda M, Galasso O, Secondulfo V, Rotonda GD, Milano C. Minimum 25-year outcome and
4604 functional assessment of lumbar discectomy. *Spine*. 2006; 31(22):2593-1
- 4605 1456 Marin FZ. CAM versus nucleoplasty. *Acta Neurochirurgica Supplement*. 2005; 92:111-114
- 4606 1457 Markman JD, Gewandter JS, Frazer ME, Murray NM, Rast SA, McDermott MP et al. A
4607 Randomized, Double-blind, Placebo-Controlled Crossover Trial of Oxymorphone Hydrochloride
4608 and Propoxyphene/Acetaminophen Combination for the Treatment of Neurogenic Claudication
4609 Associated With Lumbar Spinal Stenosis. *Spine*. 2015; 40(10):684-691
- 4610 1458 Markova T, Dhillon BS, Martin SI. Treatment of acute sciatica. *American Family Physician*. 2007;
4611 75(1):99-102
- 4612 1459 Marks RC, Houston T, Thulbourne T. Facet joint injection and facet nerve block: a randomised
4613 comparison in 86 patients with chronic low back pain. *Pain*. 1992; 49(3):325-328
- 4614 1460 Markwalder TM, Wenger M, Marbacher S. A 6.5-year follow-up of 14 patients who underwent
4615 ProDisc total disc arthroplasty for combined long-standing degenerative lumbar disc disease
4616 and recent disc herniation. *Journal of Clinical Neuroscience*. 2011; 18(12):1677-1681
- 4617 1461 Marshall P, Murphy B. Self-report measures best explain changes in disability compared with
4618 physical measures after exercise rehabilitation for chronic low back pain. *Spine*. 2008;
4619 33(3):326-338
- 4620 1462 Marshman LAG, Kasis A, Krishna M, Bhatia CK. Does symptom duration correlate negatively
4621 with outcome after posterior lumbar interbody fusion for chronic low back pain? *Spine*. 2010;
4622 35(6):657-665
- 4623 1463 Martell BA, O'Connor PG, Kerns RD, Becker WC, Morales KH, Kosten TR et al. Systematic
4624 review: opioid treatment for chronic back pain: prevalence, efficacy, and association with
4625 addiction. *Annals of Internal Medicine*. 2007; 146(2):116-127
- 4626 1464 Martina SD, Vesta KS, Ripley TL. Etoricoxib: a highly selective COX-2 inhibitor. *Annals of
4627 Pharmacotherapy*. 2005; 39(5):854-862
- 4628 1465 Matejka J, Zeman J, Matejka T, Nepras P, Belatka J. Lumbar Total Disc Replacement. Short-
4629 Term Results. *Acta Chirurgiae Orthopaedicae Et Traumatologiae Cechoslovaca*. 2012; 79(1):37-
4630 40
- 4631 1466 Mathews JA, Hickling J. Lumbar traction: a double-blind controlled study for sciatica.
4632 *Rheumatology and Rehabilitation*. 1975; 14(4):222-225
- 4633 1467 Mathews JA, Mills SB, Jenkins VM, Grimes SM, Morkel MJ, Mathews W et al. Back pain and
4634 sciatica: controlled trials of manipulation, traction, sclerosant and epidural injections. *British
4635 Journal of Rheumatology*. 1987; 26(6):416-423
- 4636 1468 Mathews W, Morkel M, Mathews J. Manipulation and traction for lumbago and sciatica:
4637 Physiotherapeutic techniques used in two controlled trials. *PHYSIOTHER PRACT*. 1988;
4638 4(4):201-206
- 4639 1469 Matsudaira K, Hiroe M, Kikkawa M, Sawada T, Suzuki M, Isomura T et al. Can standing back
4640 extension exercise improve or prevent low back pain in Japanese care workers? *Journal of
4641 Manual and Manipulative Therapy*. 2015; 23(4):205-209

- 4642 1470 Matsumo S, Kaneda K, Norhara Y. Clinical evaluation of ketoprofen (Orudis) in lumbago - a
4643 double-blind comparison with diclofenac sodium. *British Journal of Clinical Practice*. 1981;
4644 35(7-8):266
- 4645 1471 Mattson RB. Resolution of chronic back, leg and ankle pain following chiropractic intervention
4646 and the use of orthotics. *Journal of Vertebral Subluxation Research (JVSR)*. 2008;1-4
- 4647 1472 May S. Self-management of chronic low back pain and osteoarthritis. *Nature Reviews*
4648 *Rheumatology*. 2010; 6(4):199-209
- 4649 1473 Mayer HM, Wiechert K, Korge A, Qose I. Minimally invasive total disc replacement: surgical
4650 technique and preliminary clinical results. *European Spine Journal*. 2002; 11(Suppl.2):S124-
4651 S130
- 4652 1474 Mayer JM, Udermann BE, Graves JE, Ploutz-Snyder LL. Effect of Roman chair exercise training
4653 on the development of lumbar extension strength. *Journal of Strength and Conditioning*
4654 *Research*. 2003; 17(2):356-361
- 4655 1475 Mayer TG, Gatchel RJ, Brede E, Theodore BR. Lumbar surgery in work-related chronic low back
4656 pain: Can a continuum of care enhance outcomes? *Spine Journal*. 2014; 14(2):263-273
- 4657 1476 Mayer TG, Gatchel RJ, Kishino N, Keeley J, Capra P, Mayer H et al. Objective assessment of
4658 spine function following industrial injury. A prospective study with comparison group and one-
4659 year follow-up. *Spine*. 1985; 10(6):482-493
- 4660 1477 Mayyas F, Fayers P, Kaasa S, Dale O. A systematic review of oxymorphone in the management
4661 of chronic pain. *Journal of Pain and Symptom Management*. 2010; 39(2):296-308
- 4662 1478 Mazanec D, Okereke L. Interpreting the Spine Patient Outcomes Research Trial. Medical vs
4663 surgical treatment of lumbar disk herniation: implications for future trials. *Cleveland Clinic*
4664 *Journal of Medicine*. 2007; 74(8):577-583
- 4665 1479 Mazza M, Mazza O, Pazzaglia C, Padua L, Mazza S. Escitalopram 20 mg versus duloxetine 60 mg
4666 for the treatment of chronic low back pain. *Expert Opinion on Pharmacotherapy*. 2010;
4667 11(7):1049-1052
- 4668 1480 McAfee PC. Total disc replacement. *Operative Techniques in Orthopaedics*. 2003; 13(3):214-
4669 221
- 4670 1481 McAfee P, Khoo LT, Pimenta L, Capuccino A, Sengoz A, Coric D et al. Treatment of lumbar spinal
4671 stenosis with a total posterior arthroplasty prosthesis: implant description, surgical technique,
4672 and a prospective report on 29 patients. *Neurosurgical Focus*. 2007; 22(1):E13
- 4673 1482 McAfee PC. The indications for lumbar and cervical disc replacement. *Spine Journal*. 2004; 4(6
4674 Suppl):177S-181S
- 4675 1483 McAfee PC, Fedder IL, Saiedy S, Shucosky EM, Cunningham BW. Experimental design of total
4676 disk replacement-experience with a prospective randomized study of the SB Charite. *Spine*.
4677 2003; 28(20):S153-S162
- 4678 1484 McAfee PC, Fedder IL, Saiedy S, Shucosky EM, Cunningham BW. SB Charite disc replacement:
4679 report of 60 prospective randomized cases in a US center. *Journal of Spinal Disorders and*
4680 *Techniques*. 2003; 16(4):424-433

- 4681 1485 McCarberg BH. Acute back pain: benefits and risks of current treatments. *Current Medical*
4682 *Research and Opinion*. 2010; 26(1):179-190
- 4683 1486 McCarberg BH. NSAIDs in the older patient: balancing benefits and harms. *Pain Medicine*.
4684 2013; 14 Suppl 1:S43-S44
- 4685 1487 McCarthy C, Keating JL, Kent PM, Lall R, Lamb SE, Strimpakos N. Targeted manual therapy for
4686 non-specific low-back pain. *Cochrane Database of Systematic Reviews*. 2008; Issue 2:CD007135
- 4687 1488 McCauley JD, Thelen MH, Frank RG, Willard RR, Callen KE. Hypnosis compared to relaxation in
4688 the outpatient management of chronic low back pain. *Archives of Physical Medicine and*
4689 *Rehabilitation*. 1983; 64(11):548-552
- 4690 1489 McClean S, Brilleman S, Wye L. What is the perceived impact of Alexander technique lessons
4691 on health status, costs and pain management in the real life setting of an English hospital? The
4692 results of a mixed methods evaluation of an Alexander technique service for those with chronic
4693 back pain. *BMC Health Services Research*. 2015; 15:293
- 4694 1490 McCulloch JA. Chemonucleolysis for relief of sciatica due to a herniated intervertebral disc.
4695 *CMAJ*. 1981; 124(7):879-882
- 4696 1491 McGirt MJ, Parker SL, Coric D, Kim PK, Cahill KS, Devin CJ et al. 110 Arthrodesis vs Revision
4697 Discectomy for Recurrent Lumbar Disc Herniation: Patient-Reported Outcomes in 417 Patients
4698 From the N2QOD Registry. *Neurosurgery*. 2015; 62 Suppl 1:200
- 4699 1492 McGregor AH, Anjarwalla NK, Stambach T. Does the method of injection alter the outcome of
4700 epidural injections? *Journal of Spinal Disorders*. 2001; 14(6):507-510
- 4701 1493 McGregor AH, Hughes SPF. The evaluation of the surgical management of nerve root
4702 compression in patients with low back pain: Part 1: the assessment of outcome. *Spine*. 2002;
4703 27(13):1465-1470
- 4704 1494 McGuinness BW, Lloyd-Jones M, Fowler PD. A double-blind comparative trial of 'parazolidin'
4705 and paracetamol. *British Journal of Clinical Practice*. 1969; 23(11):452-455
- 4706 1495 McIntosh G, Hall H. Low back pain (acute). *Clinical Evidence*. 2011; 05:1101
- 4707 1496 McKenzie R. Re: van Tulder et al, Exercise therapy for low back pain. *Spine* 2000;25:2784--96.
4708 *Spine*. 2001; 26(16):1829-1831
- 4709 1497 McMorland G, Suter E, Casha S, du Plessis SJ, Hurlbert RJ. Manipulation or microdiscectomy for
4710 sciatica? A prospective randomized clinical study. *Journal of Manipulative and Physiological*
4711 *Therapeutics*. 2010; 33(8):576-584
- 4712 1498 McQuay HJ, Moore RA, Eccleston C, Morley S, Williams AC. Systematic review of outpatient
4713 services for chronic pain control. *Health Technology Assessment*. 1997; 1(6)
- 4714 1499 Mehling WE, Avins AL, Acree MC, Carey TS, Hecht FM. Can a back pain screening tool help
4715 classify patients with acute pain into risk levels for chronic pain? *European Journal of Pain*.
4716 2015; 19(3):439-446
- 4717 1500 Mehling WE, Hamel KA, Acree M, Byl N, Hecht FM. Randomized, controlled trial of breath
4718 therapy for patients with chronic low-back pain. *Alternative Therapies in Health and Medicine*.
4719 2005; 11(4):44-52

- 4720 1501 Mehling WE, Ebell MH, Avins AL, Hecht FM. Clinical decision rule for primary care patient with
4721 acute low back pain at risk of developing chronic pain. *Spine Journal*. 2015; 15(7):1577-1586
- 4722 1502 Mehta S, Chopra A, Goregaonkar A, Chandanwale A, Medhi B, Shah V et al. Evaluation of
4723 efficacy and safety of eperisone hydrochloride in treatment of acute musculoskeletal spasm
4724 associated with low back pain: A randomized, doubleblind, placebo-controlled trial. *Pain
4725 Practice*. 2009; 9:123
- 4726 1503 Melgar MA, Tobler WD, Ernst RJ, Raley TJ, Anand N, Miller LE et al. Segmental and global
4727 lordosis changes with two-level axial lumbar interbody fusion and posterior instrumentation.
4728 *International Journal of Spine Surgery*. 2014; 8:10
- 4729 1504 Melzer A, Seibel R. MRI-guided treatment of degenerative spinal diseases. *Minimally Invasive
4730 Therapy and Allied Technologies*. 1999; 8(5):327-335
- 4731 1505 Melzer A, Seibel RMM. Magnetic resonance (MR)-guided percutaneous pain therapy of
4732 degenerative spinal diseases. *Seminars in Interventional Radiology*. 1999; 16(2):143-150
- 4733 1506 Mendelson G, Kidson MA, Loh ST, Scott DF, Selwood TS, Kranz H. Acupuncture analgesia for
4734 chronic low back pain. *Clinical and Experimental Neurology*. 1978; 15:182-185
- 4735 1507 Mendelson G, Kranz H, Kidson MA, Loh ST, Scott DF, Selwood TS. Acupuncture for chronic back
4736 pain: patients and methods. *Clinical and Experimental Neurology*. 1977; 14:154-161
- 4737 1508 Mendelson G, Selwood TS, Kranz H, Loh TS, Kidson MA, Scott DS. Acupuncture treatment of
4738 chronic back pain. A double-blind placebo-controlled trial. *American Journal of Medicine*. 1983;
4739 74(1):49-55
- 4740 1509 Menke JM. Do manual therapies help low back pain? A comparative effectiveness meta-
4741 analysis. *Spine*. 2014; 39(7):E463-E472
- 4742 1510 Miao EY, Miao MY. Effect of electroacupuncture on the third lumbar transverse process
4743 syndrome: A randomized controlled trial. *Medical Acupuncture*. 2010; 22(4):249-255
- 4744 1511 Mibielli MA, Nunes CP, Cohen JC, Scussel ABJ, Higashi R, Bendavit GG et al. Treatment of acute,
4745 non-traumatic pain using a combination of diclofenac-cholestyramine, uridine triphosphate,
4746 cytidine monophosphate, and hydroxycobalamin. *Proceedings of the Western Pharmacology
4747 Society*. 2010; 53:5-12
- 4748 1512 Middleton RS. A comparison of two analgesic muscle relaxant combinations in acute back pain.
4749 *British Journal of Clinical Practice*. 1984; 38(3):107-109
- 4750 1513 Mika J, Zychowska M, Makuch W, Rojewska E, Przewlocka B. Neuronal and immunological basis
4751 of action of antidepressants in chronic pain - clinical and experimental studies. *Pharmacological
4752 Reports*. 2013; 65(6):1611-1621
- 4753 1514 Milgrom C, Finestone A, Lev B, Wiener M, Floman Y. Overexertional lumbar and thoracic back
4754 pain among recruits: a prospective study of risk factors and treatment regimens. *Journal of
4755 Spinal Disorders*. 1993; 6(3):187-193
- 4756 1515 Millard RW. The Functional Assessment Screening Questionnaire: application for evaluating
4757 pain-related disability. *Archives of Physical Medicine and Rehabilitation*. 1989; 70(4):303-307

- 4758 1516 Miller ER, Schenk RJ, Kames JL, Rousselle JG. A comparison of the Mckenzie approach to a
4759 specific spine stabilization program for chronic low back pain. *Journal of Manual and*
4760 *Manipulative Therapy*. 2005; 13(2):103-112
- 4761 1517 Miller JS, Litva A, Gabbay M. Motivating patients with shoulder and back pain to self-care: can
4762 a videotape of exercise support physiotherapy? *Physiotherapy*. 2009; 95(1):29-35
- 4763 1518 Miller K, Yaras A, Wen W, Dain B, Lynch SY, Brennan MJ et al. Buprenorphine transdermal
4764 system and quality of life in opioid-experienced patients with chronic low back pain. *Expert*
4765 *Opinion on Pharmacotherapy*. 2013; 14(3):269-277
- 4766 1519 Miller P, Kendrick D, Bentley E, Fielding K. Cost-effectiveness of lumbar spine radiography in
4767 primary care patients with low back pain. *Spine*. 2002; 27(20):2291-2297
- 4768 1520 Milosavljevic S, Clay L, Bath B, Trask C, Penz E, Stewart S et al. Walking away from back pain:
4769 one step at a time - a community-based randomised controlled trial. *BMC Public Health*. 2015;
4770 15:144
- 4771 1521 Mirovsky Y, Grober A, Blankstein A, Stabholz L. The effect of ambulatory lumbar traction
4772 combined with treadmill on patients with chronic low back pain. *Journal of Back and*
4773 *Musculoskeletal Rehabilitation*. 2006; 19(2/3):73-78
- 4774 1522 Mirovsky Y, Grober A, Stabholz L. Effect of lumbar traction treatment of low back pain by an
4775 ambulatory traction unit combined with a treadmill. *European Journal of Chiropractic*. 2002;
4776 49(2):174-175
- 4777 1523 Mirza SK, Deyo RA. Systematic review of randomized trials comparing lumbar fusion surgery to
4778 nonoperative care for treatment of chronic back pain. *Spine*. 2007; 32(7):816-823
- 4779 1524 Mirza SK, Deyo RA, Heagerty PJ, Turner JA, Martin BI, Comstock BA. One-year outcomes of
4780 surgical versus nonsurgical treatments for discogenic back pain: A community-based
4781 prospective cohort study. *Spine Journal*. 2013; 13(11):1421-1433
- 4782 1525 Mitra F, Chowdhury S, Shelley M, Williams G. A feasibility study of transdermal buprenorphine
4783 versus transdermal fentanyl in the long-term management of persistent non-cancer pain. *Pain*
4784 *Medicine*. 2013; 14(1):75-83
- 4785 1526 Miyakoshi N, Shimada Y, Kasukawa Y, Saito H, Kodama H, Itoi E. Total dorsal ramus block for
4786 the treatment of chronic low back pain: a preliminary study. *Joint, Bone, Spine*. 2007;
4787 74(3):270-274
- 4788 1527 Miyazaki S, Hagihara A, Kanda R, Mukaino Y, Nobutomo K. Applicability of press needles to a
4789 double-blind trial: a randomized, double-blind, placebo-controlled trial. *Clinical Journal of Pain*.
4790 2009; 25(5):438-444
- 4791 1528 Modic MT, Obuchowski NA, Ross JS, Brant-Zawadzki MN, Grooff PN, Mazanec DJ et al. Acute
4792 low back pain and radiculopathy: MR imaging findings and their prognostic role and effect on
4793 outcome. *Radiology*. 2005; 237(2):597-604
- 4794 1529 Moffatt M, Flynn M. Prevention of pregnancy-related lumbopelvic pain, using a single exercise
4795 and advice-based physiotherapy intervention in early pregnancy: A pilot study. *Physiotherapy*
4796 *Practice & Research*. 2014; 35(1):41-48

- 4797 1530 Moffett JK. Back pain: encouraging a self-management approach. *Physiotherapy Theory & Practice*. 2002; 18(4):205-212
4798
- 4799 1531 Moffett JK. The UK Back Pain Exercise and Manipulation (UK BEAM) trial: preliminary results.
4800 2003
- 4801 1532 Moffett JK, Torgerson D, Bell-Syer S, Jackson D, Llewlyn-Phillips H, Farrin A et al. Randomised
4802 controlled trial of exercise for low back pain: clinical outcomes, costs and preferences. *Spine*.
4803 1999; 319:279-83:279-283
- 4804 1533 Moffett JK, Jackson DA, Gardiner ED, Torgerson DJ, Coulton S, Eaton S et al. Randomized trial of
4805 two physiotherapy interventions for primary care neck and back pain patients: 'McKenzie' vs
4806 brief physiotherapy pain management. *Rheumatology*. 2006; 45(12):1514-1521
- 4807 1534 Moffett JK, Frost H. Back to Fitness Programme. *Physiotherapy*. 2000; 86(6):295-305
- 4808 1535 Molsberger AF, Streitberger K, Kraemer J, Brittinger CS, Witte S, Boewing G et al. Designing an
4809 acupuncture study: II. The nationwide, randomized, controlled German acupuncture trials on
4810 low-back pain and gonarthrosis. *Journal of Alternative and Complementary Medicine*. 2006;
4811 12(8):733-742
- 4812 1536 Momsen AMH, Jensen OK, Nielsen CV, Jensen C. Multiple somatic symptoms in employees
4813 participating in a randomized controlled trial associated with sickness absence because of
4814 nonspecific low back pain. *Spine Journal*. 2014; 14(12):2868-2876
- 4815 1537 Montero CJ, Sierra SE, Monteagudo Saiz AM, Lo pez FJ, Lo pez Lo pA, Barco Pe rM. Active
4816 stretching based on pilates against passive analytical hamstring stretching in subacute and
4817 chronic non-specific low back pain. Pilot trial. *Spine*. 2011; 5(1):93
- 4818 1538 Monticone M, Barbarino A, Testi C, Arzano S, Moschi A, Negrini S. Symptomatic efficacy of
4819 stabilizing treatment versus laser therapy for sub-acute low back pain with positive tests for
4820 sacroiliac dysfunction: a randomised clinical controlled trial with 1 year follow-up. *Europa
4821 Medicophysica*. 2004; 40(4):263-268
- 4822 1539 Monticone M, Ambrosini E, Rocca B, Magni S, Brivio F, Ferrante S. A multidisciplinary
4823 rehabilitation programme improves disability, kinesiophobia and walking ability in subjects
4824 with chronic low back pain: results of a randomised controlled pilot study. *European Spine
4825 Journal*. 2014; 23(10):2105-2113
- 4826 1540 Monticone M, Ferrante S, Rocca B, Baiardi P, Farra FD, Foti C. Effect of a long-lasting
4827 multidisciplinary program on disability and fear-avoidance behaviors in patients with chronic
4828 low back pain: results of a randomized controlled trial. *Spine*. 2013; 29(11):929-938
- 4829 1541 Moojen WA, Arts MP, Jacobs WC, van Zwet EW, van den Akker-van Marle ME, Koes BW et al.
4830 Interspinous process device versus standard conventional surgical decompression for lumbar
4831 spinal stenosis: randomized controlled trial. *BMJ*. 2013; 347:f6415
- 4832 1542 Moojen WA, Arts MP, Brand R, Koes BW, Peul WC. The Felix-trial. Double-blind randomization
4833 of interspinous implant or bony decompression for treatment of spinal stenosis related
4834 intermittent neurogenic claudication. *BMC Musculoskeletal Disorders*. 2010; 11:100
- 4835 1543 Moojen WA, Arts MP, Jacobs WCH, van Zwet EW, van den Akker-van Marle, Koes BW et al. IPD
4836 without bony decompression versus conventional surgical decompression for lumbar spinal

- 4837 stenosis: 2-year results of a double-blind randomized controlled trial. *European Spine Journal*.
4838 2015; 24(10):2295-2305
- 4839 1544 Moon HJ, Choi KH, Kim DH, Kim HJ, Cho YK, Lee KH et al. Effect of lumbar stabilization and
4840 dynamic lumbar strengthening exercises in patients with chronic low back pain. *Annals of*
4841 *Rehabilitation Medicine*. 2013; 37(1):110-117
- 4842 1545 Moon JY, Lee PB, Kim YC, Choi SP, Sim WS. An alternative distal approach for the lumbar medial
4843 branch radiofrequency denervation: a prospective randomized comparative study. *Anesthesia*
4844 *and Analgesia*. 2013; 116(5):1133-1140
- 4845 1546 Mooney V. Manual therapy and exercise therapy in patients with chronic low back pain: a
4846 randomized, controlled trial with 1-year follow-up. *Spine*. 2004; 29(1):107-108
- 4847 1547 Moore A. Randomised controlled trial: Up to 4000 mg of paracetamol a day is ineffective for
4848 acute low back pain. *Evidence-Based Medicine*. 2015; 20(3):100
- 4849 1548 Moore AJ, Chilton JD, Uttley D. Long-term results of microlumbar discectomy. *British Journal of*
4850 *Neurosurgery*. 1994; 8(3):319-326
- 4851 1549 Moore JE, Von Korff M, Cherkin D, Saunders K, Lorig K. A randomized trial of a cognitive-
4852 behavioral program for enhancing back pain self care in a primary care setting. *Pain*. 2000;
4853 88(2):145-153
- 4854 1550 Moore N, Van GE, Le PJM, Wall R, Schneid H, Farhan M et al. The PAIN study: Paracetamol,
4855 aspirin and ibuprofen new tolerability study. A large-scale, randomised clinical trial comparing
4856 the tolerability of aspirin, ibuprofen and paracetamol for short-term analgesia. *Clinical Drug*
4857 *Investigation*. 1999; 18(2):89-98
- 4858 1551 Moore N. Forty years of ibuprofen use. *International Journal of Clinical Practice Supplement*.
4859 2003;(135):28-31
- 4860 1552 Moore N. Diclofenac potassium 12.5mg tablets for mild to moderate pain and fever: a review
4861 of its pharmacology, clinical efficacy and safety. *Clinical Drug Investigation*. 2007; 27(3):163-
4862 195
- 4863 1553 Moore RA, Smugar SS, Wang H, Peloso PM, Gammaitoni A. Numbers-needed-to-treat analyses-
4864 -do timing, dropouts, and outcome matter? Pooled analysis of two randomized, placebo-
4865 controlled chronic low back pain trials. *Pain*. 2010; 151(3):592-597
- 4866 1554 Moore SR, Shurman J. Combined neuromuscular electrical stimulation and transcutaneous
4867 electrical nerve stimulation for treatment of chronic back pain: a double-blind, repeated
4868 measures comparison. *Archives of Physical Medicine and Rehabilitation*. 1997; 78(1):55-60
- 4869 1555 Morlion B. Pharmacotherapy of low back pain: targeting nociceptive and neuropathic pain
4870 components. *Current Medical Research and Opinion*. 2011; 27(1):11-33
- 4871 1556 Morone G, Paolucci T, Alcuri MR, Vulpiani MC, Matano A, Bureca I et al. Quality of life
4872 improved by multidisciplinary back school program in patients with chronic non-specific low
4873 back pain: a single blind randomized controlled trial. *European Journal of Physical Medicine*
4874 *and Rehabilitation*. 2011; 47(4):533-541

- 4875 1557 Morone G, Iosa M, Paolucci T, Fusco A, Alcuri R, Spadini E et al. Efficacy of perceptible
4876 rehabilitation in the treatment of chronic nonspecific low back pain through a new tool: a
4877 randomized clinical study. *Clinical Rehabilitation*. 2012; 26(4):339-350
- 4878 1558 Morone NE, Greco CM, Rollman BL, Moore CG, Lane B, Morrow L et al. The design and
4879 methods of the aging successfully with pain study. *Contemporary Clinical Trials*. 2012;
4880 33(2):417-425
- 4881 1559 Morris D, Jones D, Ryan H, Ryan C. The clinical effects of Kinesio® Tex taping: A systematic
4882 review. *Physiotherapy Theory & Practice*. 2013; 29(4):259-270
- 4883 1560 Morrison GE, Chase W, Young V, Roberts WL. Back pain: treatment and prevention in a
4884 community hospital. *Archives of Physical Medicine and Rehabilitation*. 1988; 69(8):605-609
- 4885 1561 Morso L, Albert H, Kent P, Manniche C, Hill J. Translation and discriminative validation of the
4886 STarT Back Screening Tool into Danish. *European Spine Journal*. 2011; 20(12):2166-2173
- 4887 1562 Moseley GL, Nicholas MK, Hodges PW. A randomized controlled trial of intensive
4888 neurophysiology education in chronic low back pain. *Clinical Journal of Pain*. 2004; 20(5):324-
4889 330
- 4890 1563 Moseley L. Combined physiotherapy and education is efficacious for chronic low back pain.
4891 *Australian Journal of Physiotherapy*. 2002; 48(4):297-302
- 4892 1564 Moskovich R. Epidural injection for the treatment of low back pain. *Bulletin: Hospital for Joint*
4893 *Diseases*. 1996; 55(4):178-184
- 4894 1565 Mostagi FQRC, Dias JM, Pereira LM, Obara K, Mazuquin BF, Silva MF et al. Pilates versus
4895 general exercise effectiveness on pain and functionality in non-specific chronic low back pain
4896 subjects. *Journal of Bodywork and Movement Therapies*. 2015; 19(4):636-645
- 4897 1566 Mostofi K. Total disc arthroplasty for treating lumbar degenerative disc disease. *Asian Spine*
4898 *Journal*. 2015; 9(1):59-64
- 4899 1567 Motiei-Langroudi R, Sadeghian H, Seddighi AS. Clinical and magnetic resonance imaging factors
4900 which may predict the need for surgery in lumbar disc herniation. *Asian Spine Journal*. 2014;
4901 8(4):446-452
- 4902 1568 Moulin DE. Systemic drug treatment for chronic musculoskeletal pain. *Clinical Journal of Pain*.
4903 2001; 17(4 Suppl.):S86-S93
- 4904 1569 Moustafa IM, Diab AA. The effect of adding forward head posture corrective exercises in the
4905 management of lumbosacral radiculopathy: a randomized controlled study. *Journal of*
4906 *Manipulative and Physiological Therapeutics*. 2015; 38(3):167-178
- 4907 1570 Mroz TE, Norvell DC, Ecker E, Gruenberg M, Dailey A, Brodke DS. Fusion versus nonoperative
4908 management for chronic low back pain: Do sociodemographic factors affect outcome? *Spine*.
4909 2011; 36(21 SUPPL.):S75-S86
- 4910 1571 Muckle DS. Flurbiprofen for the treatment of soft tissue trauma. *American Journal of Medicine*.
4911 1986; 80(3A):76-80

- 4912 1572 Mueller B, Carreon LY, Glassman SD. Comparison of the EuroQOL-5D with the Oswestry
4913 Disability Index, back and leg pain scores in patients with degenerative lumbar spine pathology.
4914 Spine. 2013; 38(9):757-761
- 4915 1573 Muller R, Giles LG. Long-term follow-up of a randomized clinical trial assessing the efficacy of
4916 medication, acupuncture, and spinal manipulation for chronic mechanical spinal pain
4917 syndromes. Journal of Manipulative and Physiological Therapeutics. 2005; 28(1):3-11
- 4918 1574 Mullican WS, Lacy JR, TRAMAP ANAG. Tramadol/acetaminophen combination tablets and
4919 codeine/acetaminophen combination capsules for the management of chronic pain: a
4920 comparative trial. Clinical Therapeutics. 2001; 23(9):1429-1445
- 4921 1575 Muncie HLJ, King DE, DeForge B. Treatment of mild to moderate pain of acute soft tissue injury:
4922 diflunisal vs acetaminophen with codeine. Journal of Family Practice. 1986; 23(2):125-127
- 4923 1576 Mundy L and Merlin T. Artificial intervertebral disc or the replacement of degenerative lumbar or
4924 cervical discs in patients suffering disabling, chronic pain. Horizon Scanning Prioritising
4925 Summary - Volume 1. Adelaide Health Technology Assessment (AHTA) on behalf of National
4926 Horizon Scanning Unit (HealthPACT and MSAC), 2003. Available from:
4927 <http://www.adelaide.edu.au/ahta/pubs/archive/>
- 4928 1577 Munting E, Roder C, Sobottke R, Dietrich D, Aghayev E. Patient outcomes after laminotomy,
4929 hemilaminectomy, laminectomy and laminectomy with instrumented fusion for spinal canal
4930 stenosis: a propensity score-based study from the Spine Tango registry. European Spine
4931 Journal. 2015; 24(2):358-368
- 4932 1578 Murakami E, Tanaka Y, Aizawa T, Ishizuka M, Kokubun S. Effect of periarticular and
4933 intraarticular lidocaine injections for sacroiliac joint pain: Prospective comparative study.
4934 Journal of Orthopaedic Science. 2007; 12(3):274-280
- 4935 1579 Murakami E, Aizawa T, Noguchi K, Kanno H, Okuno H, Uozumi H. Diagram specific to sacroiliac
4936 joint pain site indicated by one-finger test. Journal of Orthopaedic Science. 2008; 13(6):492-
4937 497
- 4938 1580 Murata Y, Kato Y, Miyamoto K, Takahashi K. Clinical study of low back pain and radicular pain
4939 pathways by using l2 spinal nerve root infiltration: a randomized, controlled, clinical trial.
4940 Spine. 2009; 34(19):2008-2013
- 4941 1581 Murphy JE, Donald JF, Layes Molla A. Analgesic efficacy and acceptability of fenoprofen
4942 combined with paracetamol and compared with dihydrocodeine tartrate in general practice.
4943 Journal of International Medical Research. 1978; 6(5):375-380
- 4944 1582 Murtezani A, Hundozi H, Orovcane N, Sllamniku S, Osmani T. A comparison of high intensity
4945 aerobic exercise and passive modalities for the treatment of workers with chronic low back
4946 pain: a randomized, controlled trial. European Journal of Physical Medicine and Rehabilitation.
4947 2011; 47(3):359-366
- 4948 1583 Murtezani A, Govori V, Meka VS, Ibraimi Z, Rrecaj S, Gashi S. A comparison of mckenzie therapy
4949 with electrophysical agents for the treatment of work related low back pain: A randomized
4950 controlled trial. Journal of Back and Musculoskeletal Rehabilitation. 2015; 28(2):247-253
- 4951 1584 Muthukrishnan R, Shenoy SD, Jaspal SS, Nellikunja S, Fernandes S. The differential effects of
4952 core stabilization exercise regime and conventional physiotherapy regime on postural control
4953 parameters during perturbation in patients with movement and control impairment chronic

- 4954 low back pain. *Sports Medicine, Arthroscopy, Rehabilitation, Therapy and Technology*. 2010;
4955 2:13
- 4956 1585 Nachemson A, Schultz A, Andersson G. Mechanical effectiveness studies of lumbar spine
4957 orthoses. *Scandinavian Journal of Rehabilitation Medicine*. 1983;139-149
- 4958 1586 Nachtnebel A, Felder-Puig R, Geiger-Gritsch S, and Mittermayr T. Injection therapies and
4959 radiofrequency for the treatment of chronic back pain. Systematic Review. Ludwig Boltzmann
4960 Institut fuer Health Technology Assessment (LBIHTA), 2009
- 4961 1587 Nagarajan V, Al-Shubaili A, Ayad YM, Alexander J, Al-Ramezi K. Low back ache treatment with
4962 botulinum neurotoxin type A: Local experience in Kuwait. *Medical Principles and Practice*.
4963 2007; 16(3):181-186
- 4964 1588 Nagrale AV, Patil SP, Gandhi RA, Learman K. Effect of slump stretching versus lumbar
4965 mobilization with exercise in subjects with non-radicular low back pain: a randomized clinical
4966 trial. *Journal of Manual and Manipulative Therapy*. 2012; 20(1):35-42
- 4967 1589 Najafi TF, Hejazi M, Meshkat M, Hajibabakashani S. Quality of life and performing acupuncture
4968 on 150 patients suffering from chronic pains: A randomized and intervention study before and
4969 after performing. *Iranian Red Crescent Medical Journal*. 2013; 15(3):269-271
- 4970 1590 Najm WI. German acupuncture trials (GERAC) for chronic low back pain. *Medical Acupuncture*.
4971 2008; 20(2):131-132
- 4972 1591 Nakao M, Shinozaki Y, Nolido N, Ahern DK, Barsky AJ. Responsiveness of hypochondriacal
4973 patients with chronic low-back pain to cognitive-behavioral therapy. *Psychosomatics*. 2012;
4974 53(2):139-147
- 4975 1592 Nalamachu SR, Narayana A, Janka L. Long-term dosing, safety, and tolerability of fentanyl
4976 buccal tablet in the management of noncancer-related breakthrough pain in opioid-tolerant
4977 patients. *Current Medical Research and Opinion*. 2011; 27(4):751-760
- 4978 1593 Nampiaparampil DE, Nampiaparampil GM, Nampiaparampil RG. Oral opioid analgesics vs.
4979 spinal steroid injections in the treatment of low back pain syndromes. *American Journal of
4980 Physical Medicine and Rehabilitation*. 2012; 91(2):162-176
- 4981 1594 Nath S, Nath CA, Pettersson K. Percutaneous lumbar zygapophysial (Facet) joint neurotomy
4982 using radiofrequency current, in the management of chronic low back pain: a randomized
4983 double-blind trial. *Spine*. 2008; 33(12):1291-1298
- 4984 1595 National Collaborating Centre for Primary Care and Royal College of General Practitioners. Low
4985 Back Pain: Early Management of Persistent Non-specific Low Back Pain; Appendix E Health
4986 Economics Model. London. National Institute of Clinical Excellence, 2009. Available from:
4987 [http://www.nice.org.uk/guidance/cg88/evidence/cg88-low-back-pain-full-guideline-appendix-
4988 e2](http://www.nice.org.uk/guidance/cg88/evidence/cg88-low-back-pain-full-guideline-appendix-e2)
- 4989 1596 National Institute for Health and Clinical Excellence. Social value judgements: principles for the
4990 development of NICE guidance. 2nd edition. London: National Institute for Health and Clinical
4991 Excellence; 2008. Available from:
4992 <http://www.nice.org.uk/media/C18/30/SVJ2PUBLICATION2008.pdf>
- 4993 1597 Natour J, Baptista AS, Cazotti LA, Ribeiro LHC, Jones A. Pilates to treat chronic non-specific low
4994 back pain. *Spine*. 2011; 63(10 SUPPL. 1)

- 4995 1598 Naumann M, So Y, Argoff CE, Childers MK, Dykstra DD, Gronseth GS et al. Assessment:
4996 Botulinum neurotoxin in the treatment of autonomic disorders and pain (an evidence-based
4997 review): report of the Therapeutics and Technology Assessment Subcommittee of the
4998 American Academy of Neurology. *Neurology*. 2008; 70(19):1707-1714
- 4999 1599 Naylor C, Imison C, Addicott R, Buck D, Goodwin N, Harrison T et al. Transforming our health
5000 care system. The King's Fund, 2015. Available from:
5001 http://www.kingsfund.org.uk/sites/files/kf/field/field_publication_file/10PrioritiesFinal2.pdf
- 5002 1600 Nazzal ME, Saadah MA, Saadah LM, Al-Omari MA, Al-Oudat ZA, Nazzal MS et al. Management
5003 options of chronic low back pain. A randomized blinded clinical trial. *Neurosciences*. 2013;
5004 18(2):152-159
- 5005 1601 Neblett R, Mayer TG, Brede E, Gatchel RJ. Correcting abnormal flexion-relaxation in chronic
5006 lumbar pain: Responsiveness to a new biofeedback training protocol. *Clinical Journal of Pain*.
5007 2010; 26(5):403-409. DOI:<http://dx.doi.org/10.1097/AJP.0b013e3181d2bd8c>
- 5008 1602 Neblett R, Mayer TG, Brede E, Gatchel RJ. The effect of prior lumbar surgeries on the flexion
5009 relaxation phenomenon and its responsiveness to rehabilitative treatment. *Spine Journal*.
5010 2014; 14(6):892-902
- 5011 1603 Nedelka T, Nedelka J, Schlenker J, Hankins C, Mazanec R. Mechano-transduction effect of
5012 shockwaves in the treatment of lumbar facet joint pain: comparative effectiveness evaluation
5013 of shockwave therapy, steroid injections and radiofrequency medial branch neurotomy. *Neuro*
5014 *Endocrinology Letters*. 2014; 35(5):393-397
- 5015 1604 Nelson BW, O'Reilly E, Miller M, Hogan M, Wegner JA, Kelly C. The clinical effects of intensive,
5016 specific exercise on chronic low back pain: a controlled study of 895 consecutive patients with
5017 1-year follow up. *Orthopedics*. 1995; 18(10):971-981
- 5018 1605 Nemes D, Amaricai E, Tanase D, Popa D, Catan L, Andrei D. Physical therapy vs. medical
5019 treatment of musculoskeletal disorders in dentistry - A randomised prospective study. *Annals*
5020 *of Agricultural and Environmental Medicine*. 2013; 20(2):301-306
- 5021 1606 Nerland US, Jakola AS, Solheim O, Weber C, Rao V, Lonne G et al. Minimally invasive
5022 decompression versus open laminectomy for central stenosis of the lumbar spine: pragmatic
5023 comparative effectiveness study. *BMJ*. 2015; 350:h1603
- 5024 1607 Netchanok S, Moyle W, Cooke M, O'Dwyer S. The effectiveness of Swedish massage and
5025 traditional Thai massage in treating chronic low back pain: a review of the literature.
5026 *Complementary Therapies in Clinical Practice*. 2012; 18(4):227-234
- 5027 1608 Newcomer KL, Vickers Douglas KS, Shelerud RA, Long KH, Crawford B. Is a videotape to change
5028 beliefs and behaviors superior to a standard videotape in acute low back pain? A randomized
5029 controlled trial. *Spine Journal*. United States 2008; 8(6):940-947
- 5030 1609 Newel DJ. Manipulation in the treatment of low back pain: a multicenter study. *Proc of the Int*
5031 *Conf on Approaches to the Validation of Manipulation Therapy*. 1977;284-298
- 5032 1610 Newell D, Field J. Using the StarT Back Tool: Does timing of stratification matter - In response to
5033 Peter Kent and Alice Kongsted. *Manual Therapy*. 2015; 20(4):e14
- 5034 1611 Newton WP. Bed rest, exercises, or ordinary activity for acute low back pain? *Journal of Family*
5035 *Practice*. 1995; 41(1):96-97

- 5036 1612 Newton-John TR, Spence SH, Schotte D. Cognitive-behavioural therapy versus EMG
5037 biofeedback in the treatment of chronic low back pain. *Behaviour Research and Therapy*. 1995;
5038 33(6):691-697
- 5039 1613 Ney JP. Do exercise and advice help to improve the symptoms of subacute low back pain?
5040 Commentary. *Nature Clinical Practice Rheumatology*. 2008; 4(2):72-73
- 5041 1614 Ney JP, Difazio M, Sichani A, Monacci W, Foster L, Jabbari B. Treatment of chronic low back
5042 pain with successive injections of botulinum toxin a over 6 months: a prospective trial of 60
5043 patients. *Clinical Journal of Pain*. 2006; 22(4):363-369
- 5044 1615 Ng LCL, Sell P. Outcomes of a prospective cohort study on peri-radicular infiltration for
5045 radicular pain in patients with lumbar disc herniation and spinal stenosis. *European Spine*
5046 *Journal*. 2004; 13(4):325-329
- 5047 1616 Ngai KMG. Epidural steroid injections for spinal stenosis back pain simply don't work. *Journal of*
5048 *Clinical Outcomes Management*. 2014; 21(8):348-349
- 5049 1617 Nguyen TH, Randolph DC, Talmage J, Succop P, Travis R. Long-term outcomes of lumbar fusion
5050 among workers' compensation subjects: a historical cohort study. *Spine*. 2011; 36(4):320-331
- 5051 1618 Nicholas MK, Asghari A, Blyth FM, Wood BM, Murray R, McCabe R et al. Self-management
5052 intervention for chronic pain in older adults: A randomised controlled trial. *Pain*. 2013;
5053 154(6):824-835
- 5054 1619 Nicholas MK, Wilson PH, Goyen J. Operant-behavioural and cognitive-behavioural treatment
5055 for chronic low back pain. *Behaviour Research and Therapy*. 1991; 29(3):225-238
- 5056 1620 Nicholas MK, Wilson PH, Goyen J. Comparison of cognitive-behavioral group treatment and an
5057 alternative non-psychological treatment for chronic low back pain. *Pain*. 1992; 48(3):339-347
- 5058 1621 Niemisto L, Kalso E, Malmivaara A, Seitsalo S, Hurri H, Cochrane Collaboration Back Review
5059 Group. Radiofrequency denervation for neck and back pain: a systematic review within the
5060 framework of the cochrane collaboration back review group. *Spine*. 2003; 28(16):1877-1888
- 5061 1622 Niemisto L, Lahtinen-Suopanki T, Rissanen P, Lindgren KA, Sarna S, Hurri H. A randomized trial
5062 of combined manipulation, stabilizing exercises, and physician consultation compared to
5063 physician consultation alone for chronic low back pain. *Spine*. 2003; 28(19):2185-2191
- 5064 1623 Nilsson-Wikmar L, Holm K, Oijerstedt R, Harms-Ringdahl K. Effect of three different physical
5065 therapy treatments on pain and activity in pregnant women with pelvic girdle pain: a
5066 randomized clinical trial with 3, 6, and 12 months follow-up postpartum. *Spine*. 2005;
5067 30(8):850-856
- 5068 1624 Niskanen RO. The Oswestry Low Back Pain Disability Questionnaire. a two-year follow-up of
5069 spine surgery patients. *Scandinavian Journal of Surgery*. 2002; 91(2):208-211
- 5070 1625 Noble M, Treadwell JR, Tregear SJ, Coates VH, Wiffen PJ, Akafomo C et al. Long-term opioid
5071 management for chronic noncancer pain. *Cochrane Database of Systematic Reviews*. 2010;
5072 Issue 1:CD006605. DOI:10.1002/14651858.CD006605.pub2
- 5073 1626 Nochit W, Kaewthummanukul T, Srisuphan W, Senaratana W. Effects of Working Behavior
5074 Modification Program on Low Back Pain Prevention Behaviors and Back Muscle Endurance

- 5075 among Thai Farmers. *Pacific Rim International Journal of Nursing Research*. 2014; 18(4):305-
5076 319
- 5077 1627 Nonclercq O, Berquin A. Predicting chronicity in acute back pain: validation of a French
5078 translation of the Orebro Musculoskeletal Pain Screening Questionnaire. *Annals of Physical and*
5079 *Rehabilitation Medicine*. 2012; 55(4):263-278
- 5080 1628 Noone P. A multi-centred trial (RCT) to determine the effectiveness of chiropractic self-study
5081 patient education literature on revised oswestry low back pain disability scores in Irish
5082 chiropractic patients with low back pain of > or = 5 weeks duration. *International Conference*
5083 *On Spinal Manipulation*. 1996;73-76
- 5084 1629 Noori S, Ghasemi G, Khayambashi K, Karimi A, Minasian V, Alizamani S. Effect of exercise
5085 therapy and physiotherapy on patients with chronic low back pain. *Journal of Isfahan Medical*
5086 *School*. 2011; 29(151)
- 5087 1630 Nordin M, Balague F, Cedraschi C. Nonspecific lower-back pain: Surgical versus nonsurgical
5088 treatment. *Clinical Orthopaedics and Related Research*. 2006; 443:156-167
- 5089 1631 Norris C, Matthews M. The role of an integrated back stability program in patients with chronic
5090 low back pain. *Complementary Therapies in Clinical Practice*. 2008; 14(4):255-263
- 5091 1632 North American Spine Society Board of Directors. Spine Patient Outcome Research Trial
5092 (SPORT): multi-center randomized clinical trial of surgical and non-surgical approaches to the
5093 treatment of low back pain. *Spine Journal*. 2003; 3(6):417-419
- 5094 1633 Norton G, McDonough CM, Cabral H, Shwartz M, Burgess JF. Cost-utility of cognitive behavioral
5095 therapy for low back pain from the commercial payer perspective. *Spine*. 2015; 40(10):725-733
- 5096 1634 Noshchenko A, Hoffecker L, Lindley EM, Burger EL, Cain CMJ, Patel VV. Perioperative and long-
5097 term clinical outcomes for bone morphogenetic protein versus iliac crest bone graft for lumbar
5098 fusion in degenerative disk disease: Systematic review with meta-analysis. *Journal of Spinal*
5099 *Disorders and Techniques*. 2014; 27(3):117-135
- 5100 1635 Nwuga G, Nwuga V. Relative therapeutic efficacy of the Williams and McKenzie protocols in
5101 back pain management. *Physiotherapy Practice*. 1985; 1:99-105
- 5102 1636 Nwuga VC. Relative therapeutic efficacy of vertebral manipulation and conventional treatment
5103 in back pain management. *American Journal of Physical Medicine*. 1982; 61(6):273-278
- 5104 1637 Nygaard OP, Romner B, Trumpy JH. Duration of symptoms as a predictor of outcome after
5105 lumbar disc surgery. *Acta Neurochirurgica*. 1994; 128(1-4):53-56
- 5106 1638 Nyiendo J, Haas M, Goldberg B, Lloyd C. A descriptive study of medical and chiropractic
5107 patients with chronic low back pain and sciatica: management by physicians (practice activities)
5108 and patients (self-management). *Journal of Manipulative and Physiological Therapeutics*. 2001;
5109 24(9):543-551
- 5110 1639 Nykvist F, Hurme M, Alaranta H, Kaitsaari M. Severe sciatica: a 13-year follow-up of 342
5111 patients. *European Spine Journal*. 1995; 4(6):335-338
- 5112 1640 O'Brien N, Hanlon M, Meldrum D. Randomised, controlled trial comparing physiotherapy and
5113 Pilates in the treatment of ordinary low back pain. *Physical Therapy Reviews*. 2006; 11(3):224-
5114 225

- 5115 1641 O'Donnell JB, Ekman EF, Spalding WM, Bhadra P, McCabe D, Berger MF. The effectiveness of a
5116 weak opioid medication versus a cyclo-oxygenase-2 (COX-2) selective non-steroidal anti-
5117 inflammatory drug in treating flare-up of chronic low-back pain: results from two randomized,
5118 double-blind, 6-week studies. *Journal of International Medical Research*. 2009; 37(6):1789-
5119 1802
- 5120 1642 O'Donoghue G, Eadie J, Breen R, Daly O, Hurley DA. The outcomes of a supervised group
5121 exercise programme 'Back to Fitness' for patients with chronic low back pain: a pilot study...
5122 annual conference 'Radharc Eile -- A Different View': Radisson SAS, Galway, Friday 16th and
5123 Saturday 17th November 2007. *Physiotherapy Ireland*. 2008; 29(1):71-72
- 5124 1643 O'Keefe M, Purtill H, Kennedy N, O'Sullivan P, Dankaerts W, Tighe A et al. Individualised
5125 cognitive functional therapy compared with a combined exercise and pain education class for
5126 patients with non-specific chronic low back pain: study protocol for a multicentre randomised
5127 controlled trial. *BMJ Open*. 2015; 5(6):e007156
- 5128 1644 Odeen M, Ihlebaek C, Indahl A, Wormgoor MEA, Lie SA, Eriksen HR. Effect of peer-based low
5129 back pain information and reassurance at the workplace on sick leave: a cluster randomized
5130 trial. *Journal of Occupational Rehabilitation*. 2013; 23(2):209-219
- 5131 1645 Oesch P, Kool J, Hagen KB, Bachmann S. Effectiveness of exercise on work disability in patients
5132 with non-acute non-specific low back pain: Systematic review and meta-analysis of randomised
5133 controlled trials. *Journal of Rehabilitation Medicine*. 2010; 42(3):193-205
- 5134 1646 Ogsbury JS, Simon RH, Lehman RA. Facet "denervation" in the treatment of low back
5135 syndrome. *Pain*. 1977; 3(3):257-263
- 5136 1647 Oh JS. Effects of pelvic belt on hip extensor muscle EMG activity during prone hip extension in
5137 females with chronic low back pain. *Journal of Physical Therapy Science*. 2014; 26(7):1023-
5138 1024
- 5139 1648 Oh WS, Shim JC. A randomized controlled trial of radiofrequency denervation of the ramus
5140 communicans nerve for chronic discogenic low back pain. *Clinical Journal of Pain*. 2004;
5141 20(1):55-60
- 5142 1649 Ohnmeiss DD, Bodemer W, Zigler JE. Effect of adverse events on low back surgery outcome:
5143 twenty-four-month follow-up results from a Food And Drug Administration investigational
5144 device exemption trial. *Spine*. 2010; 35(7):835-838
- 5145 1650 Ohtori S, Miyagi M, Eguchi Y, Inoue G, Orita S, Ochiai N. Efficacy of epidural administration of
5146 anti-interleukin-6 receptor antibody onto spinal nerve for treatment of sciatica. *European
5147 Spine Journal*. 2012; 21(10):2079-2084
- 5148 1651 Ohtori S, Suzuki M, Koshi T, Takaso M, Yamashita M, Yamauchi K et al. Single-level
5149 instrumented posterolateral fusion of the lumbar spine with a local bone graft versus an iliac
5150 crest bone graft: a prospective, randomized study with a 2-year follow-up. *European Spine
5151 Journal*. 2011; 20(4):635-639
- 5152 1652 Ohtori S, Koshi T, Yamashita M, Yamauchi K, Inoue G, Suzuki M et al. Surgical versus
5153 nonsurgical treatment of selected patients with discogenic low back pain: a small-sized
5154 randomized trial. *Spine*. 2011; 36(5):347-354
- 5155 1653 Ohtori S, Miyagi M, Eguchi Y, Inoue G, Orita S, Ochiai N et al. Epidural administration of spinal
5156 nerves with the tumor necrosis factor-alpha inhibitor, etanercept, compared with

- 5157 dexamethasone for treatment of sciatica in patients with lumbar spinal stenosis: a prospective
5158 randomized study. *Spine*. 2012; 37(6):439-444
- 5159 1654 Okada K, Aochi O, Yukio GOTO, Yuzuru KUBA, Minobe T, Yamamoto K. Clinical Evaluation of
5160 Ketoprofen in Pain Clinic Field by a Double Blind Controlled Study. *Rinsho Hyoka*. 1976;
5161 4(3):405-418
- 5162 1655 Okoro T, Tafazal SI, Longworth S, Sell PJ. Tumor necrosis alpha-blocking agent (etanercept): a
5163 triple blind randomized controlled trial of its use in treatment of sciatica. *Journal of Spinal
5164 Disorders and Techniques*. 2010; 23(1):74-77
- 5165 1656 Olah M, Molnar L, Dobai J, Olah C, Feher J, Bender T. The effects of weightbath traction
5166 hydrotherapy as a component of complex physical therapy in disorders of the cervical and
5167 lumbar spine: A controlled pilot study with follow-up. *Rheumatology International*. 2008;
5168 28(8):749-756
- 5169 1657 Olason M. Outcome of an interdisciplinary pain management program in a rehabilitation clinic.
5170 *Work*. 2004; 22(1):9-15
- 5171 1658 Oldervoll LM, Ro M, Zwart JA, Svebak S. Comparison of two physical exercise programs for the
5172 early intervention of pain in the neck, shoulders and lower back in female hospital staff.
5173 *Journal of Rehabilitation Medicine*. 2001; 33(4):156-161
- 5174 1659 Oliveira VC, Ferreira PH, Maher CG, Pinto RZ, Refshauge KM, Ferreira ML. Effectiveness of self-
5175 management of low back pain: systematic review with meta-analysis. *Arthritis Care and
5176 Research*. 2012; 64(11):1739-1748
- 5177 1660 Onac IA, Moldovan AR, Onac I, Igna R, Pop L. Medication, physiotherapy and Cognitive
5178 Behavior Therapy for the treatment of chronic back pain: A clinical trial. *Journal of Cognitive
5179 and Behavioral Psychotherapies*. 2012; 12(1):23-37
- 5180 1661 Onat SS, Tasoglu O, Guneri FD, Ozisler Z, Safer VB, Ozgirgin N. The effectiveness of
5181 balneotherapy in chronic low back pain. *Clinical Rheumatology*. 2014; 33(10):1509-1515
- 5182 1662 Ono K, Ochi T, Yonenobu K, Inoki R. Clinical evaluation of diclofenac sodium suppository in
5183 lumbago. Double blind comparative study with diclofenac sodium tablet. *Journal of Clinical
5184 Therapeutics and Medicines*. 1987; 3(5):561-579
- 5185 1663 Oort L, Mutsaers JH, Lakke SE, Verhagen AP. Physiotherapy or multidisciplinary treatment for
5186 chronic low back pain? A systematic review. *Nederlands Tijdschrift Voor Fysiotherapie*. 2009;
5187 119(5):153-160
- 5188 1664 Oostendorp RA. A preliminary report on the use of the proprioceptive facilitating method
5189 versus the Williams method in the treatment of patients with non-specific low back pain.
5190 *Manual Med*. 1988; 3(3):106-109
- 5191 1665 Orava S. Medical treatment of acute low back pain. Diflunisal compared with indomethacin in
5192 acute lumbago. *International Journal of Clinical Pharmacology Research*. 1986; 6(1):45-51
- 5193 1666 Orozco L, Soler R, Morera C, Alberca M, Sanchez A, Garcia-Sancho J. Intervertebral disc repair
5194 by autologous mesenchymal bone marrow cells: A pilot study. *Transplantation*. 2011;
5195 92(7):822-828

- 5196 1667 Orrock PJ, Myers SP. Osteopathic intervention in chronic non-specific low back pain: a
5197 systematic review. *BMC Musculoskeletal Disorders*. 2013; 14:129
- 5198 1668 Ostelo RWJG. Soft tissue manipulation, exercise and education improve pain and disability in
5199 patients with non-specific low back pain. *Australian Journal of Physiotherapy*. 2000; 46(4):316
- 5200 1669 Otoo SKW, Hendrick P, Ribeiro D. The comparative effectiveness of advice/education
5201 compared to active physiotherapy (manual therapy and exercise) in the management of
5202 chronic non-specific low back pain. *Physical Therapy Reviews*. 2015; 20(1):16-26
- 5203 1670 Overvest GM, Jacobs W, Vleggeert-Lankamp C, Thome C, Gunzburg R, Peul W. Effectiveness
5204 of posterior decompression techniques compared with conventional laminectomy for lumbar
5205 stenosis. *Cochrane Database of Systematic Reviews*. 2015; Issue 3:CD010036.
5206 DOI:10.1002/14651858.CD010036.pub2
- 5207 1671 Overman SS, Larson JW, Dickstein DA, Rockey PH. Physical therapy care for low back pain.
5208 Monitored program of first-contact nonphysician care. *Physical Therapy*. 1988; 68(2):199-207
- 5209 1672 Owlia MB, Salimzadeh A, Alishiri G, Haghghi A. Comparison of two doses of corticosteroid in
5210 epidural steroid injection for lumbar radicular pain. *Singapore Medical Journal*. 2007;
5211 48(3):241-245
- 5212 1673 Oyarzo CA, Villagran CR, Silvestre RE, Carpintero P, Berral FJ. Postural control and low back pain
5213 in elite athletes comparison of static balance in elite athletes with and without low back pain.
5214 *Journal of Back and Musculoskeletal Rehabilitation*. 2014; 27(2):141-146
- 5215 1674 Oyemade GA, Onadeko BO. A controlled clinical study comparing sulindac with ibuprofen and
5216 aspirin in the treatment of musculo-skeletal diseases. *Journal of International Medical
5217 Research*. 1979; 7(6):556-559
- 5218 1675 Ozdemir S, Bebis H, Ortabag T, Acikel C. Evaluation of the efficacy of an exercise program for
5219 pregnant women with low back and pelvic pain: a prospective randomized controlled trial.
5220 *Journal of Advanced Nursing*. 2015; 71(8):1926-1939
- 5221 1676 Paanalahti K, Holm LW, Nordin M, Asker M, Lyander J, Skillgate E. Adverse events after manual
5222 therapy among patients seeking care for neck and/or back pain: a randomized controlled trial.
5223 *BMC Musculoskeletal Disorders*. 2014; 15:77
- 5224 1677 Paatelma M, Kilpikoski S, Simonen R, Heinonen A, Alen M, Videman T. Orthopaedic manual
5225 therapy, McKenzie method or advice only for low back pain in working adults: a randomized
5226 controlled trial with one year follow-up. *Journal of Rehabilitation Medicine*. 2008; 40(10):858-
5227 863
- 5228 1678 Pach D, Brinkhaus B, Roll S, Wegscheider K, Icke K, Willich SN et al. Efficacy of injections with
5229 *Disci/Rhus toxicodendron compositum* for chronic low back pain--a randomized placebo-
5230 controlled trial. *PLoS One*. 2011; 6(11):e26166
- 5231 1679 Pach D, Yang-Strobel X, Ludtke R, Roll S, Icke K, Brinkhaus B et al. Standardized versus
5232 Individualized Acupuncture for Chronic Low Back Pain: A Randomized Controlled Trial.
5233 *Evidence-Based Complementary and Alternative Medicine*. 2013; 2013:125937
- 5234 1680 Palacin-Marin F, Esteban-Moreno B, Olea N, Herrera-Viedma E, Arroyo-Morales M. Agreement
5235 between telerehabilitation and face-to-face clinical outcome assessments for low back pain in
5236 primary care. *Spine*. 2013; 38(11):947-952

- 5237 1681 Palangio M, Damask MJ, Morris E, Doyle RTJ, Jiang JG, Landau CJ et al. Combination
5238 hydrocodone and ibuprofen versus combination codeine and acetaminophen for the treatment
5239 of chronic pain. *Clinical Therapeutics*. 2000; 22(7):879-892
- 5240 1682 Palangio M, Morris E, Doyle RTJ, Dornseif BE, Valente TJ. Combination hydrocodone and
5241 ibuprofen versus combination oxycodone and acetaminophen in the treatment of moderate or
5242 severe acute low back pain. *Clinical Therapeutics*. 2002; 24(1):87-99
- 5243 1683 Pallett EJ, Rentowl P, Johnson MI, Watson PJ. Implementation fidelity of self-administered
5244 transcutaneous electrical nerve stimulation (TENS) in patients with chronic back pain: an
5245 observational study. *Clinical Journal of Pain*. 2014; 30(3):224-231
- 5246 1684 Panagopoulos J, Hancock MJ, Ferreira P, Hush J, Petocz P. Does the addition of visceral
5247 manipulation alter outcomes for patients with low back pain? A randomized placebo controlled
5248 trial. *European Journal of Pain*. 2015; 19(7):899-907
- 5249 1685 Paoloni M, Di Sante L, Cacchio A, Apuzzo D, Marotta S, Razzano M et al. Intramuscular oxygen-
5250 ozone therapy in the treatment of acute back pain with lumbar disc herniation: a multicenter,
5251 randomized, double-blind, clinical trial of active and simulated lumbar paravertebral injection.
5252 *Spine*. 2009; 34(13):1337-1344
- 5253 1686 Paolucci T, Morone G, Iosa M, Fusco A, Alcuri R, Matano A et al. Psychological features and
5254 outcomes of the Back School treatment in patients with chronic non-specific low back pain. A
5255 randomized controlled study. *European Journal of Physical Medicine and Rehabilitation*. 2012;
5256 48(2):245-253
- 5257 1687 Paolucci T, Fusco A, Iosa M, Grasso MR, Spadini E, Paolucci S et al. The efficacy of a perceptive
5258 rehabilitation on postural control in patients with chronic nonspecific low back pain.
5259 *International Journal of Rehabilitation Research*. 2012; 35(4):360-366
- 5260 1688 Pappas CT, Harrington T, Sonntag VK. Outcome analysis in 654 surgically treated lumbar disc
5261 herniations. *Neurosurgery*. 1992; 30(6):862-866
- 5262 1689 Paradiso R, Alexandre A. The different outcomes of patients with disc herniation treated either
5263 by microdiscectomy, or by intradiscal ozone injection. *Acta Neurochirurgica Supplement*. 2005;
5264 92:139-142
- 5265 1690 Park CH. Comparison of Effectiveness of CT vs C-arm Guided Percutaneous Radiofrequency
5266 Lumbar Facet Rhizotomy. *Korean Journal of Pain*. 2010; 23(2):137-141
- 5267 1691 Park CH. Comparison of morphine and tramadol in transforaminal epidural injections for
5268 lumbar radicular pain. *Korean Journal of Pain*. 2013; 26(3):265-269
- 5269 1692 Park CH, Lee SH, Kim BI. Comparison of the effectiveness of lumbar transforaminal epidural
5270 injection with particulate and nonparticulate corticosteroids in lumbar radiating pain. *Pain
5271 Medicine*. 2010; 11(11):1654-1658
- 5272 1693 Park CK, Ryu KS, Lee KY, Lee HJ. Clinical outcome of lumbar total disc replacement using
5273 ProDisc-L in degenerative disc disease: minimum 5-year follow-up results at a single institute.
5274 *Spine*. 2012; 37(8):672-677
- 5275 1694 Park DK, An HS, Lurie JD, Zhao W, Tosteson A, Tosteson TD et al. Does multilevel lumbar
5276 stenosis lead to poorer outcomes? A subanalysis of the Spine Patient Outcomes Research Trial
5277 (SPORT) lumbar stenosis study. *Spine*. 2010; 35(4):439-446

- 5278 1695 Park J, Park JY, Kim SH, Lim DJ, Kim SD, Chung HS. Long term results from percutaneous
5279 radiofrequency neurotomy on posterior primary ramus in patients with chronic low back pain.
5280 *Acta Neurochirurgica Supplement*. 2006; 99:81-83
- 5281 1696 Park Y, Lee JH, Park KD, Ahn JK, Park J, Jee H. Ultrasound-guided vs. fluoroscopy-guided caudal
5282 epidural steroid injection for the treatment of unilateral lower lumbar radicular pain: a
5283 prospective, randomized, single-blind clinical study. *American Journal of Physical Medicine and
5284 Rehabilitation*. 2013; 92(7):575-586
- 5285 1697 Parker SL, Adogwa O, Bydon A, Cheng J, McGirt MJ. Cost-effectiveness of minimally invasive
5286 versus open transforaminal lumbar interbody fusion for degenerative spondylolisthesis
5287 associated low-back and leg pain over two years. *World Neurosurgery*. 2012; 78(1-2):178-184
- 5288 1698 Parker SL, Adogwa O, Davis BJ, Fulchiero E, Aaronson O, Cheng J et al. Cost-utility analysis of
5289 minimally invasive versus open multilevel hemilaminectomy for lumbar stenosis. *Journal of
5290 Spinal Disorders and Techniques*. 2013; 26(1):42-47
- 5291 1699 Parker SL, Anderson LH, Nelson T, Patel VV. Cost-effectiveness of three treatment strategies for
5292 lumbar spinal stenosis: Conservative care, laminectomy, and the Superion interspinous spacer.
5293 *International Journal of Spine Surgery*. 2015; 9:28
- 5294 1700 Parker SL, Grahovac G, Vukas D, Ledic D, Vilendecic M, McGirt MJ. Cost savings associated with
5295 prevention of recurrent lumbar disc herniation with a novel annular closure device: a
5296 multicenter prospective cohort study. *Journal of Neurological Surgery Part A, Central European
5297 Neurosurgery*. 2013; 74(5):285-289
- 5298 1701 Parker SL, Xu R, McGirt MJ, Witham TF, Long DM, Bydon A. Long-term back pain after a single-
5299 level discectomy for radiculopathy: incidence and health care cost analysis. *Journal of
5300 Neurosurgery: Spine*. 2010; 12(2):178-182
- 5301 1702 Parkinson B, Goodall S, and Thavaneswaran P. Cost-effectiveness of lumbar artificial
5302 intervertebral disc replacement: driven by the choice of comparator (Provisional abstract),
5303 2013
- 5304 1703 Parkinson B, Goodall S, Thavaneswaran P. Cost-effectiveness of lumbar artificial intervertebral
5305 disc replacement: driven by the choice of comparator. *ANZ Journal of Surgery*. 2013; 83(9):669-
5306 675
- 5307 1704 Parkinson L, Sibbritt D, Bolton P, Van RJ, Villadsen I. Well-being outcomes of chiropractic
5308 intervention for lower back pain: A systematic review. *Clinical Rheumatology*. 2013; 32(2):167-
5309 180
- 5310 1705 Parr AT, Diwan S, Abdi S. Lumbar interlaminar epidural injections in managing chronic low back
5311 and lower extremity pain: a systematic review. *Pain Physician*. 2009; 12(1):163-188
- 5312 1706 Parr AT, Manchikanti L, Hameed H, Conn A, Manchikanti KN, Benyamin RM et al. Caudal
5313 epidural injections in the management of chronic low back pain: a systematic appraisal of the
5314 literature. *Pain Physician*. 2012; 15(3):E159-E198
- 5315 1707 Pasqualucci A, Varrassi G, Braschi A, Peduto VA, Brunelli A, Marinangeli F et al. Epidural local
5316 anesthetic plus corticosteroid for the treatment of cervical brachial radicular pain: single
5317 injection versus continuous infusion. *Clinical Journal of Pain*. 2007; 23(7):551-557

- 5318 1708 Patel BR. A comparative study of subysyde-CR versus meloxicam in rheumatic disorders. *Journal of the Indian Medical Association*. 2000; 98(5):250-252
5319
- 5320 1709 Patel S, Friede T, Froud R, Evans DW, Underwood M. Systematic review of randomized
5321 controlled trials of clinical prediction rules for physical therapy in low back pain. *Spine*. 2013;
5322 38(9):762-769
- 5323 1710 Patel VV, Whang PG, Haley TR, Bradley WD, Nunley PD, Davis RP et al. Superior interspinous
5324 process spacer for intermittent neurogenic claudication secondary to moderate lumbar spinal
5325 stenosis: two-year results from a randomized controlled FDA-IDE pivotal trial. *Spine*. 2015;
5326 40(5):275-282
- 5327 1711 Patel VV, Whang PG, Haley TR, Bradley WD, Nunley PD, Miller LE et al. Two-year clinical
5328 outcomes of a multicenter randomized controlled trial comparing two interspinous spacers for
5329 treatment of moderate lumbar spinal stenosis. *BMC Musculoskeletal Disorders*. 2014; 15:221
- 5330 1712 Patil SG. Effectiveness of mindfulness meditation (Vipassana) in the management of chronic
5331 low back pain. *Indian Journal of Anaesthesia*. 2009; 53(2):158-163
- 5332 1713 Pattanasin A, Rungthip P, Kittti J, Sawitri W, Jaturat K, Uraiwan C et al. Core Stabilization
5333 Exercise Improves Pain Intensity, Functional Disability and Trunk Muscle Activity of Patients
5334 with Clinical Lumbar Instability: a Pilot Randomized Controlled Study. *Journal of Physical
5335 Therapy Science*. 2012; 24(10):1007-1012
- 5336 1714 Pauza K, Howell S, Dreyfuss P, Peloza J, Dawson K, Park K et al. Randomised, placebo-controlled
5337 trial of intradiscal electrothermal therapy for chronic low back pain. *Journal of Neurosurgery:
5338 Spine*. 2004; 86-B(Suppl_1):85-8b
- 5339 1715 Pauza K, Howell S, Dreyfuss P, Peloza J, Park K. A randomized, double-blind, placebo controlled
5340 trial evaluating the efficacy of intradiscal electrothermal anuloplasty (IDET) for the treatment
5341 of chronic discogenic low back pain: 6-month outcomes. *Proceedings of the International
5342 Spinal Injections Society*. 2002;
- 5343 1716 Pauza K, Howell S, Dreyfuss P, Peloza J, Park K. Randomised, placebo-controlled trial of
5344 intradiscal electrothermal therapy for chronic low back pain. *Journal of Neurosurgery: Spine*.
5345 2003; 85-B:280
- 5346 1717 Pauza KJ, Howell S, Dreyfuss P, Peloza JH, Dawson K, Bogduk N. A randomized, placebo-
5347 controlled trial of intradiscal electrothermal therapy for the treatment of discogenic low back
5348 pain. *Spine Journal*. 2004; 4(1):27-35
- 5349 1718 Pedersen L, Borchgrevink PC, Breivik HP, Fredheim OMS. A randomized, double-blind, double-
5350 dummy comparison of short- and long-acting dihydrocodeine in chronic non-malignant pain.
5351 *Pain*. 2014; 155(5):881-888
- 5352 1719 Pedersen LM, Schistad E, Jacobsen LM, Roe C, Gjerstad J. Serum levels of the pro-inflammatory
5353 interleukins 6 (IL-6) and -8 (IL-8) in patients with lumbar radicular pain due to disc herniation: A
5354 12-month prospective study. *Brain, Behavior, and Immunity*. 2015; 46:132-136
- 5355 1720 Peng B, Pang X, Wu Y, Zhao C, Song X. A randomized placebo-controlled trial of intradiscal
5356 methylene blue injection for the treatment of chronic discogenic low back pain. *Pain*. 2010;
5357 149(1):124-129

- 5358 1721 Pengel HM, Maher CG, Refshauge KM. Systematic review of conservative interventions for
5359 subacute low back pain. *Pain Reviews*. 2002; 9(3/4):153-163
- 5360 1722 Pengel LHM, Refshauge KM, Maher CG, Nicholas MK, Herbert RD, McNair P. Physiotherapist-
5361 directed exercise, advice, or both for subacute low back pain: a randomized trial. *Annals of*
5362 *Internal Medicine*. 2007; 146(11):787-796
- 5363 1723 Peniston JH, Gould E. Oxymorphone extended release for the treatment of chronic low back
5364 pain: a retrospective pooled analysis of enriched-enrollment clinical trial data stratified
5365 according to age, sex, and prior opioid use. *Clinical Therapeutics*. 2009; 31(2):347-359
- 5366 1724 Penrose KW, Chook K, Stump JL. Acute and chronic effects of pneumatic lumbar support on
5367 muscular strength, flexibility, and functional impairment index. *Sports Medicine, Training and*
5368 *Rehabilitation*. 1991; 2(2):121-129
- 5369 1725 Penson A, Swait G, Cunliffe C. Use of soft tissue manual techniques by UK Chiropractors for
5370 patients with low back pain. *Clinical Chiropractic*. 2011; 14(2):78
- 5371 1726 Pensri P, Janwantanakul P. Effectiveness of Brief Education Combined with a Home-Based
5372 Exercise Program on Pain and Disability of Office Workers with Chronic Low Back Pain: a Pilot
5373 Study. *Journal of Physical Therapy Science*. 2012; 24(2):217-222
- 5374 1727 Penttinen E, Airaksinen O, Pohjolainen O, Toivanen M. Subjective relief of back pain at work
5375 and patient compliance in corset treatment for degenerative lumbar instability. *Journal of*
5376 *Manual Medicine*. 1990; 5(4):166-168
- 5377 1728 Pérez L, Ferrer D, Boquet D, Lafont A, Maymó J, Rotes D et al. Double-blind, prospective
5378 randomized trial of epidural corticosteroids versus placebo in the treatment of sciatica. *Annals*
5379 *De Medicina*. 1992; 78(10):264
- 5380 1729 Perez-Palomares S, Olivan-Blazquez B, Magallon-Botaya R, De-La-Torre-Beldarrain MML,
5381 Gaspar-Calvo E, Romo-Calvo L et al. Percutaneous electrical nerve stimulation versus dry
5382 needling: effectiveness in the treatment of chronic low back pain. *Journal of Musculoskeletal*
5383 *Pain*. 2010; 18(1):23-30
- 5384 1730 Pergolizzi JVJ, Raffa RB, Taylor RJ, Rodriguez G, Nalamachu S, Langley P. A review of duloxetine
5385 60 mg once-daily dosing for the management of diabetic peripheral neuropathic pain,
5386 fibromyalgia, and chronic musculoskeletal pain due to chronic osteoarthritis pain and low back
5387 pain. *Pain Practice*. 2013; 13(3):239-252
- 5388 1731 Perrot S, Javier RM, Marty M, Le Jeune C, Laroche F, CEDR (Cercle d'Etude de la Douleur en
5389 Rhumatologie France). Is there any evidence to support the use of anti-depressants in painful
5390 rheumatological conditions? Systematic review of pharmacological and clinical studies.
5391 *Rheumatology*. 2008; 47(8):1117-1123
- 5392 1732 Perrot S, Maheu E, Javier RM, Eschalier A, Coutaux A, LeBars M et al. Guidelines for the use of
5393 antidepressants in painful rheumatic conditions. *European Journal of Pain*. 2006; 10(3):185-192
- 5394 1733 Perry J. What is the efficacy of lumbar epidural steroid injections in the treatment of low back
5395 pain? If they are given, should they be given under radiographic guidance? *Journal of*
5396 *Occupational Medicine*. 1994; 36(2):118-119
- 5397 1734 Persson LC, Lilja A. Pain, coping, emotional state and physical function in patients with chronic
5398 radicular neck pain. A comparison between patients treated with surgery, physiotherapy or

- 5399 neck collar--a blinded, prospective randomized study. *Disability and Rehabilitation*. 2001;
5400 23(8):325-335
- 5401 1735 Pesco MS, Chosa E, Tajima N. Comparative study of hands-on therapy with active exercises vs
5402 education with active exercises for the management of upper back pain. *Journal of*
5403 *Manipulative and Physiological Therapeutics*. 2006; 29(3):228-235
- 5404 1736 Petering RC, Webb C. Treatment options for low back pain in athletes. *Sports Health*. 2011;
5405 3(6):550-555
- 5406 1737 Petersen T, Christensen R, Juhl C. Predicting a clinically important outcome in patients with low
5407 back pain following McKenzie therapy or spinal manipulation: a stratified analysis in a
5408 randomized controlled trial. *BMC Musculoskeletal Disorders*. 2015; 16:74
- 5409 1738 Petersen T, Kryger P, Ekdahl C, Olsen S, Jacobsen S. The effect of McKenzie therapy as
5410 compared with that of intensive strengthening training for the treatment of patients with
5411 subacute or chronic low back pain: A randomized controlled trial. *Spine*. 2002; 27(16):1702-
5412 1709
- 5413 1739 Petersen T, Larsen K, Jacobsen S. One-year follow-up comparison of the effectiveness of
5414 McKenzie treatment and strengthening training for patients with chronic low back pain:
5415 outcome and prognostic factors. *Spine*. 2007; 32(26):2948-2956
- 5416 1740 Peterson CK, Leemann S, Lechmann M, Pfirrmann CWA, Hodler J, Humphreys BK. Symptomatic
5417 magnetic resonance imaging-confirmed lumbar disk herniation patients: A comparative
5418 effectiveness prospective observational study of 2 age- and sex-matched cohorts treated with
5419 either high-velocity, low-amplitude spinal manipulative therapy or imaging-guided lumbar
5420 nerve root injections. *Journal of Manipulative and Physiological Therapeutics*. 2013; 36(4):218-
5421 225
- 5422 1741 Peterson C, Hodler J. Evidence-based radiology (part 1): Is there sufficient research to support
5423 the use of therapeutic injections for the spine and sacroiliac joints? *Skeletal Radiology*. 2010;
5424 39(1):5-9
- 5425 1742 Peterson T, Larsen K, Nordsteen J, Olsen S, Fournier G, Jacobsen S. The McKenzie method
5426 compared with manipulation when used adjunctive to information and advice in low back pain
5427 patients presenting with centralization or peripheralization. *Spine*. 2011; 36(24):1999-2010
- 5428 1743 Petrofsky JS, Batt J, Brown J, Stacey L, Bartelink T, Moine M et al. Improving the outcomes after
5429 back injury by a core muscle strengthening program. *Journal of Applied Research*. 2008;
5430 8(1):62-75
- 5431 1744 Pfefer MT, Cooper SR, Menke JM. Comparison of Mechanical Force, Manually Assisted
5432 Activator Manipulation Versus Manual Side-Posture, High-Velocity, Low-Amplitude
5433 Manipulation in Patients With Low Back Pain: A Randomized Pilot Study. *Journal of Chiropractic*
5434 *Education*. 2006; 20(1):90
- 5435 1745 Phillips FM, Slosar PJ, Youssef JA, Andersson G, Papatheofanis F. Lumbar spine fusion for
5436 chronic low back pain due to degenerative disc disease: A systematic review. *Spine*. 2013;
5437 38(7):E409-E422
- 5438 1746 Pichon RA, Augustovski F, Garcia MS, Glujovsky D, Lopez A, Rey-Ares L et al. Nucleoplasty for
5439 patients with discogenic back pain. *Institute for Clinical Effectiveness and Health Policy (IECS)*,
5440 2011

- 5441 1747 Pimenta L, Marchi L, Coutinho E, Oliveira L. Lessons Learned After 9 Years' Clinical Experience
5442 with 3 Different Nucleus Replacement Devices. *Seminars in Spine Surgery*. 2012; 24(1):43-47
- 5443 1748 Pimenta L, Springmuller R, Lee CK, Oliveira L, Roth SE, Ogilvie WF. Clinical performance of an
5444 elastomeric lumbar disc replacement: Minimum 12 months follow-up. *SAS Journal*. 2010;
5445 4(1):16-25
- 5446 1749 Pimentel DC, El Abd O, Benyamin RM, Buehler AM, Leite VF, Mazloomdoost D et al. Anti-tumor
5447 necrosis factor antagonists in the treatment of low back pain and radiculopathy: a systematic
5448 review and meta-analysis. *Pain Physician*. 2014; 17(1):E27-E44
- 5449 1750 Pincus T, McCracken L, McGregor A, McBeth J, Morley S, Watson P et al. Testing the credibility,
5450 feasibility and acceptability of an optimised behavioural intervention (obi) for avoidant chronic
5451 low back pain patients. *European Journal of Pain Supplements*. 2011; 5(1):71
- 5452 1751 Pincus T, Anwar S, McCracken L, McGregor A, Graham L, Collinson M et al. Testing the
5453 credibility, feasibility and acceptability of an optimised behavioural intervention (OBI) for
5454 avoidant chronic low back pain patients: protocol for a randomised feasibility study. *Trials*.
5455 2013; 14:172
- 5456 1752 Pincus T, Anwar S, McCracken LM, McGregor A, Graham L, Collinson M et al. Delivering an
5457 Optimised Behavioural Intervention (OBI) to people with low back pain with high psychological
5458 risk; results and lessons learnt from a feasibility randomised controlled trial of Contextual
5459 Cognitive Behavioural Therapy (CCBT) vs. Physiotherapy. *BMC Musculoskeletal Disorders*.
5460 2015; 16:147
- 5461 1753 Pinto RZ, Maher CG, Ferreira ML, Hancock M, Oliveira VC, McLachlan AJ et al. Epidural
5462 corticosteroid injections in the management of sciatica: a systematic review and meta-analysis.
5463 *Annals of Internal Medicine*. 2012; 157(12):865-877
- 5464 1754 Pirbudak L, Karakurum G, Oner U, Gulec A, Karadasli H. Epidural corticosteroid injection and
5465 amitriptyline for the treatment of chronic low back pain associated with radiculopathy. *Pain
5466 Clinic*. 2003; 15(3):247-253
- 5467 1755 Pivec R, Stokes M, Chitnis AS, Paulino CB, Harwin SF, Mont MA. Clinical and economic impact of
5468 TENS in patients with chronic low back pain: analysis of a nationwide database. *Orthopedics*.
5469 2013; 36(12):922-928
- 5470 1756 Pneumaticos SG, Chatziioannou AN, Hipp J, Chatziioannou SN. Prediction of successful
5471 discectomy using MRI quantitation of dural sac and herniated disc dimensions. *International
5472 Journal of Clinical Practice*. 2010; 64(1):13-18
- 5473 1757 Pneumaticos SG, Chatziioannou SN, Hipp JA, Moore WH, Esses S, I. Low pain: Prediction of
5474 short-term outcome of facet joint injection with bone scintigraphy. *Radiology*. United States
5475 2006; 238(2):693-698
- 5476 1758 Poetscher AW, Gentil AF, Lenza M, Ferretti M. Radiofrequency denervation for facet joint low
5477 back pain: a systematic review. *Spine*. 2014; 39(14):E842-E849
- 5478 1759 Pohjolainen T, Jekunen A, Autio L, Vuorela H. Treatment of acute low back pain with the COX-2-
5479 selective anti-inflammatory drug nimesulide: results of a randomized, double-blind
5480 comparative trial versus ibuprofen. *Spine*. 2000; 25(12):1579-1585

- 5481 1760 Polatin PB, Cox B, Gatchel RJ, Mayer TG. A prospective study of Waddell signs in patients with
5482 chronic low back pain. When they may not be predictive. *Spine*. 1997; 22(14):1618-1621
- 5483 1761 Pollock R, Lakkol S, Budithi C, Bhatia C, Krishna M. Effect of psychological status on outcome of
5484 posterior lumbar interbody fusion surgery. *Asian Spine Journal*. 2012; 6(3):178-182
- 5485 1762 Ponte DJ, Jensen GJ, Kent BE. A preliminary report on the use of the McKenzie protocol versus
5486 Williams protocol in the treatment of low back pain. *Journal of Orthopaedic and Sports
5487 Physical Therapy*. 1984; 6(2):130-139
- 5488 1763 Pope MH, Phillips RB, Haugh LD, Hsieh CY, MacDonald L, Haldeman S. A prospective
5489 randomized three-week trial of spinal manipulation, transcutaneous muscle stimulation,
5490 massage and corset in the treatment of subacute low back pain. *Spine*. 1994; 19(22):2571-2577
- 5491 1764 Posadzki P, Ernst E. Yoga for low back pain: a systematic review of randomized clinical trials.
5492 *Clinical Rheumatology*. 2011; 30(9):1257-1262
- 5493 1765 Posadzki P, Lizis P, Hagner-Derengowska M. Pilates for low back pain: a systematic reviewRH.
5494 *Complementary Therapies in Clinical Practice*. 2011; 17(2):85-89
- 5495 1766 Postacchini F, Cinotti G, Perugia D, Gumina S. The surgical treatment of central lumbar
5496 stenosis. Multiple laminotomy compared with total laminectomy. *Journal of Neurosurgery:
5497 Spine*. 1993; 75(3):386-392
- 5498 1767 Postacchini F, Facchini M, Palieri P. Efficacy of various forms of conservative treatment in low
5499 back pain. A comparative study. *NEURO-ORTHOPEDECS*. 1988; 6(1):28-35
- 5500 1768 Postacchini F, Lami R, Massobrio M. Chemonucleolysis versus surgery in lumbar disc
5501 herniations: correlation of the results to preoperative clinical pattern and size of the
5502 herniation. *Spine*. 1987; 12(2):87-96
- 5503 1769 Pouladeireishehri AK. Investigation of the effectiveness of cognitive, relaxation, and behavioral
5504 therapies in improving chronic low back pain among iran male high school teachers. *European
5505 Journal of Pain Supplements*. 2011; 5(1):73
- 5506 1770 Pownall R, Pickvance NJ. Circadian rhythmicity in back pain: its relationship to short and long
5507 interval ibuprofen therapy. *British Journal of Clinical Practice*. 1986; 40(10):429-433
- 5508 1771 Preston E, Miller C, Herbertson R. A double-blind, multicenter trial of methocarbamol
5509 (Robaxin(TM)) and cyclobenzaprine (Flexeril(TM)) in acute musculoskeletal conditions. *Today's
5510 Therapeutic Trends*. 2014; 1(4):1-11
- 5511 1772 Preyde M. Effectiveness of massage therapy for subacute low-back pain: a randomized
5512 controlled trial. *CMAJ*. 2000; 162(13):1815-1820
- 5513 1773 Prommanon B, Puntumetakul R, Puengsuwan P, Chatchawan U, Kamolrat T, Rittitod T et al.
5514 Effectiveness of a back care pillow as an adjuvant physical therapy for chronic non-specific low
5515 back pain treatment: a randomized controlled trial. *Journal of Physical Therapy Science*. 2015;
5516 27(7):2035-2038
- 5517 1774 Proschek D, Kafchitsas K, Rauschmann M, Kurth A, Vogl T, Geiger F. Reduction of radiation dose
5518 during radiofrequency denervation of the lumbar facet joints using the new targeting system
5519 SabreSource: a prospective study in 20 patients. *Archives of Orthopaedic and Traumatic
5520 Surgery*. 2010; 130(9):1103-1110

- 5521 1775 Pulliam CB, Gatchel RJ, Gardea MA. Psychosocial differences in high risk versus low risk acute
5522 low-back pain patients. *Journal of Occupational Rehabilitation*. 2001; 11(1):43-52
- 5523 1776 Punnoose AR. A Randomized Trial Comparing Yoga, Stretching, and a Self-care Book for Chronic
5524 Low Back Pain. *JAMA*. 2012; 307(7):648
- 5525 1777 Puolakka K, Ylinen J, Neva MH, Kautiainen H, Hakkinen A. Risk factors for back pain-related loss
5526 of working time after surgery for lumbar disc herniation: a 5-year follow-up study. *European
5527 Spine Journal*. 2008; 17(3):386-392
- 5528 1778 Putzier M, Strube P, Funk JF, Gross C, Monig H-J, Perka C et al. Allogenic versus autologous
5529 cancellous bone in lumbar segmental spondylodesis: A randomized prospective study.
5530 *European Spine Journal*. 2009; 18(5):687-695
- 5531 1779 Quinet RJ, Hadler NM. Diagnosis and treatment of backache. *Seminars in Arthritis and
5532 Rheumatism*. 1979; 8(4):261-287
- 5533 1780 Quraishi NA. Transforaminal injection of corticosteroids for lumbar radiculopathy: systematic
5534 review and meta-analysis. *European Spine Journal*. 2012; 21(2):214-219
- 5535 1781 Qureshi FA, Irfan BM, Rehman R, Ullah Q, Arif M. Evaluation of complications with blind
5536 interlaminar epidural steroid injections. *Journal of Medical Sciences*. 2013; 21(1):31-34
- 5537 1782 Qureshi SA, McAnany S, Goz V, Koehler SM, Hecht AC. Cost-effectiveness analysis: comparing
5538 single-level cervical disc replacement and single-level anterior cervical discectomy and fusion:
5539 clinical article. *Journal of Neurosurgery: Spine*. 2013; 19:546-554
- 5540 1783 Raastad J, Reiman M, Coeytaux R, Ledbetter L, Goode AP. The association between lumbar
5541 spine radiographic features and low back pain: A systematic review and meta-analysis.
5542 *Seminars in Arthritis and Rheumatism*. 2015; 44(5):571-585
- 5543 1784 Rabago D, Best TM, Beamsley M, Patterson J. A systematic review of prolotherapy for chronic
5544 musculoskeletal pain. *Clinical Journal of Sport Medicine*. 2005; 15(5):376-380
- 5545 1785 Raber M, Hofmann S, Junge K, Momberger H, Kuhn D. Analgesic efficacy and tolerability of
5546 tramadol 100 mg sustained-release capsules in patients with moderate to severe chronic low
5547 back pain. *Clinical Drug Investigation*. 1999; 17(6):415-423
- 5548 1786 Rabey M, Slater H, O'Sullivan P, Beales D, Smith A. Somatosensory nociceptive characteristics
5549 differentiate subgroups in people with chronic low back pain: a cluster analysis. *Pain*. 2015;
5550 156(10):1874-1884
- 5551 1787 Rabin AG. Efficacy of TENS compared with TENS dead battery (placebo) in chronically disabled
5552 low back pain patients. *Pain*. 1987; 29(3):399-402
- 5553 1788 Radcliff K, Hilibrand A, Lurie JD, Tosteson TD, Delasotta L, Rihn J et al. The impact of epidural
5554 steroid injections on the outcomes of patients treated for lumbar disc herniation: a subgroup
5555 analysis of the SPORT trial. *Journal of Bone and Joint Surgery - American Volume*. 2012;
5556 94(15):1353-1358
- 5557 1789 Rados I, Sakic Zdravcevic K, Hrgovic Z. painDETECT questionnaire and lumbar epidural steroid
5558 injection for chronic radiculopathy. *European Neurology*. 2013; 69(1):27-32

- 5559 1790 Rados I, Sakic K, Fingler M, Kapural L. Efficacy of interlaminar vs transforaminal epidural steroid
5560 injection for the treatment of chronic unilateral radicular pain: prospective, randomized study.
5561 Pain Medicine. 2011; 12(9):1316-1321
- 5562 1791 Raffaelli W, Marconi G, Fanelli G, Taddei S, Borghi GB, Casati A. Opioid-related side-effects after
5563 intrathecal morphine: a prospective, randomized, double-blind dose-response study. European
5564 Journal of Anaesthesiology. 2006; 23(7):605-610
- 5565 1792 Raftery MN, Murphy AW, O'Shea E, Newell J, McGuire BE. Effectiveness of a cognitive
5566 behavioural therapy-based rehabilitation programme (Progressive Goal Attainment Program)
5567 for patients who are work-disabled due to back pain: study protocol for a multicentre
5568 randomised controlled trial. Trials. 2013; 14:290
- 5569 1793 Raine R, Sanderson C, Hutchings A, Carter S, Larkin K, Black N. An experimental study of
5570 determinants of group judgments in clinical guideline development. Lancet. 2004;
5571 364(9432):429-437
- 5572 1794 Rainey S, Blumenthal SL, Zigler JE, Guyer RD, Ohnmeiss DD. Analysis of adjacent segment
5573 reoperation after lumbar total disc replacement. International Journal of Spine Surgery. 2012;
5574 6:140-144
- 5575 1795 Rajadurai V, Murugan K. Spinal manipulative therapy for low back pain: a systematic review.
5576 Physical Therapy Reviews. 2009; 14(4):260-271
- 5577 1796 Rajasekaran S, Thomas A, Kanna RM, Prasad Shetty A. Lumbar spinous process splitting
5578 decompression provides equivalent outcomes to conventional midline decompression in
5579 degenerative lumbar canal stenosis: a prospective, randomized controlled study of 51 patients.
5580 Spine. 2013; 38(20):1737-1743
- 5581 1797 Ralph L, Look M, Wheeler W, Sacks H. Double-blind, placebo-controlled trial of carisoprodol
5582 250-mg tablets in the treatment of acute lower-back spasm. Current Medical Research and
5583 Opinion. 2008; 24(2):551-558
- 5584 1798 Ran J, Hu Y, Zheng Z, Zhu T, Zheng H, Jing Y et al. Comparison of discectomy versus
5585 sequestrectomy in lumbar disc herniation: a meta-analysis of comparative studies. PloS One.
5586 2015; 10(3):e0121816
- 5587 1799 Rankine JJ, Gill KP, Hutchinson CE, Ross ER, Williamson JB. The therapeutic impact of lumbar
5588 spine MRI on patients with low back and leg pain. Clinical Radiology. 1998; 53(9):688-693
- 5589 1800 Rannou F. Two types of spinal manipulations and minimal conservative medical care for older
5590 adults with subacute or chronic low back pain of a very low level intensity. Focus on Alternative
5591 and Complementary Therapies. 2009; 14(4):316-317
- 5592 1801 Rantonen J, Luoto S, Vehtari A, Hupli M, Karppinen J, Malmivaara A et al. The effectiveness of
5593 two active interventions compared to self-care advice in employees with non-acute low back
5594 symptoms: a randomised, controlled trial with a 4-year follow-up in the occupational health
5595 setting. Occupational and Environmental Medicine. 2012; 69(1):12-20
- 5596 1802 Rantonen J, Vehtari A, Karppinen J, Luoto S, Viikari-Juntura E, Hupli M et al. Face-to-face
5597 information combined with a booklet versus a booklet alone for treatment of mild low-back
5598 pain: a randomized controlled trial. Scandinavian Journal of Work, Environment and Health.
5599 2014; 40(2):156-166

- 5600 1803 Rashbaum RF. Radiofrequency facet denervation. A treatment alternative in refractory low
5601 back pain with or without leg pain. *Orthopedic Clinics of North America*. 1983; 14(3):569-575
- 5602 1804 Rasmussen CDN, Holtermann A, Mortensen OS, Sogaard K, Jorgensen MB. Prevention of low
5603 back pain and its consequences among nurses' aides in elderly care: a stepped-wedge multi-
5604 faceted cluster-randomized controlled trial. *BMC Public Health*. 2013; 13:1088
- 5605 1805 Rasmussen GG. Manipulation in treatment of low back pain (a randomized clinical trial). *Man
5606 and Medicine*. 1979; 17(1):8-10
- 5607 1806 Rasmussen-Barr E, Nilsson-Wikmar L, Arvidsson I. Stabilizing training compared with manual
5608 treatment in sub-acute and chronic low-back pain. *Manual Therapy*. 2003; 8(4):233-241
- 5609 1807 Rastogi V, Krishna M, Saraf SK, Goel SC, Singh SB. Factors influencing the pain relief obtained
5610 with epidural methylprednisolone in low-back pain and sciatica. *Pain Clinic*. 1994; 7(4):291-295
- 5611 1808 Rauck RL. What is the case for prescribing long-acting opioids over short-acting opioids for
5612 patients with chronic pain? A critical review. *Pain Practice*. 2009; 9(6):468-479
- 5613 1809 Rauck RL, Bookbinder S, Bunker T, Alftine C, Negro-Vilar A, Jong E et al. Oral once-a-day AVINZA
5614 (morphine sulfate extended release capsules) vs. twice daily OxyContin (oxycodone
5615 hydrochloride controlled-release) for the treatment of chronic moderate-to severe low back
5616 pain; final (part I and part II) study results 84 3102. *Journal of Pain*. 2006; 7(4 Suppl):S57
- 5617 1810 Rauck RL, Hale M, Galer B, Ma T, Kerwin R, Ahdieh H. Oxymorphone extended-release:
5618 Randomized, double-blind, placebo-controlled study assessing efficacy in opioid-experienced
5619 patients with chronic low back pain 81 3099. *Journal of Pain*. 2006; 7(4 Suppl 1):S56
- 5620 1811 Rauck RL, Podolsky G, Galer B, Ma T, Kerwin R, Ahdieh H. Randomized, double-blind, placebo-
5621 controlled 12-week study assessing the efficacy of oxymorphone extended release in opioid-
5622 naive patients with chronic low back pain 83 3101. *Journal of Pain*. 2006; 7(4 Suppl):S55
- 5623 1812 Rauck RL, Bookbinder SA, Bunker TR, Alftine CD, Gershon S, de Jong E et al. A randomized,
5624 open-label, multicenter trial comparing once-a-day AVINZA (morphine sulfate extended-
5625 release capsules) versus twice-a-day OxyContin (oxycodone hydrochloride controlled-release
5626 tablets) for the treatment of chronic, moderate to severe low back pain: improved physical
5627 functioning in the ACTION trial. *Journal of Opioid Management*. 2007; 3(1):35-43
- 5628 1813 Rauck RL, Bookbinder SA, Bunker TR, Alftine CD, Ghalie R, Negro-Vilar A et al. A randomized,
5629 open-label study of once-a-day AVINZA (morphine sulfate extended-release capsules) versus
5630 twice-a-day OxyContin (oxycodone hydrochloride controlled-release tablets) for chronic low
5631 back pain: the extension phase of the ACTION trial. *Journal of Opioid Management*. 2006;
5632 2(6):325-3
- 5633 1814 Rauck RL, Bookbinder SA, Bunker TR, Alftine CD, Ghalie R, Negro-Vilar A et al. The ACTION
5634 study: a randomized, open-label, multicenter trial comparing once-a-day extended-release
5635 morphine sulfate capsules (AVINZA) to twice-a-day controlled-release oxycodone
5636 hydrochloride tablets (OxyContin) for the treatment of chronic, moderate to severe low back
5637 pain. *Journal of Opioid Management*. 2006; 2(3):155-166
- 5638 1815 Rauck RL, Nalamachu S, Wild JE, Walker GS, Robinson CY, Davis CS et al. Single-Entity
5639 Hydrocodone Extended-Release Capsules in Opioid-Tolerant Subjects with Moderate-to-Severe
5640 Chronic Low Back Pain: A Randomized Double-Blind, Placebo-Controlled Study. *Pain Medicine*.
5641 2014; 15(6):975-985

- 5642 1816 Rebain R, Baxter GD, McDonough S. A systematic review of the passive straight leg raising test
5643 as a diagnostic aid for low back pain (1989 to 2000). *Spine*. 2002; 27(17):E388-E395
- 5644 1817 Reeser JC, Fischer V, Liu K. Acute low back pain treated with physical therapy versus a self-care
5645 program: results of a prospective randomized outcomes study. (Poster Session). *Archives of*
5646 *Physical Medicine and Rehabilitation*. 2002; 83(11):1665
- 5647 1818 Reid MC, Otis J, Barry LC, Kerns RD. Cognitive-behavioral therapy for chronic low back pain in
5648 older persons: A preliminary study. *Pain Medicine*. 2003; 4(3):223-230
- 5649 1819 Relja M. The role of tramadol in the treatment of acute low back pain. *Journal of the*
5650 *Neurological Sciences*. 1990; 98(Suppl):334
- 5651 1820 Reme SE, Hagen EM, Eriksen HR. Expectations, perceptions, and physiotherapy predict
5652 prolonged sick leave in subacute low back pain. *BMC Musculoskeletal Disorders*. 2009; 10:139
- 5653 1821 Reme SE, Tveito TH, Chalder T, Bjorkkjaer T, Indahl A, Brox JI et al. Protocol for the Cognitive
5654 Interventions and Nutritional Supplements (CINS) trial: a randomized controlled multicenter
5655 trial of a brief intervention (BI) versus a BI plus cognitive behavioral treatment (CBT) versus
5656 nutritional supplements for patients with long-lasting muscle and back pain. *BMC*
5657 *Musculoskeletal Disorders*. 2011; 12:152
- 5658 1822 Resnick DK, Watters WC. Lumbar disc arthroplasty: a critical review. *Clinical Neurosurgery*.
5659 2007; 54:83-87
- 5660 1823 Revel M, Auleley GR, Alaoui S, Nguyen M, Duruoz T, Eck-Michaud S et al. Forceful epidural
5661 injections for the treatment of lumbosciatic pain with post-operative lumbar spinal fibrosis.
5662 *Revue Du Rhumatisme*. 1996; 63(4):270-277
- 5663 1824 Revel M, Payan C, Vallee C, Laredo JD, Lassale B, Roux C et al. Automated percutaneous lumbar
5664 discectomy versus chemonucleolysis in the treatment of sciatica. A randomized multicenter
5665 trial. *Spine*. 1993; 18(1):1-7
- 5666 1825 Revel M, Poiraudreau S, Auleley GR, Payan C, Denke A, Nguyen M et al. Capacity of the clinical
5667 picture to characterize low back pain relieved by facet joint anesthesia. Proposed criteria to
5668 identify patients with painful facet joints. *Spine*. 1998; 23(18):1972-1977
- 5669 1826 Reverberi C, Bottoli MG, Pennini M, Gabba E. Disc coablation and epidural injection of steroids:
5670 a comparison of strategies in the treatment of mechanical spinal discogenic pain. *Acta*
5671 *Neurochirurgica Supplement*. 2005; 92:127-128
- 5672 1827 Rezende R, Jacob Junior C, da Silva CK, de Barcellos Zanon I, Cardoso IM, Batista Junior JL.
5673 Comparison of the efficacy of transforaminal and interlaminar radicular block techniques for
5674 treating lumbar disk hernia. *Revista Brasileira De Ortopedia*. 2015; 50(2):220-225
- 5675 1828 Ribeiro LH, Furtado RNV, Konai MS, Andreo AB, Rosenfeld A, Natour J. Effect of facet joint
5676 injection versus systemic steroids in low back pain: a randomized controlled trial. *Spine*. 2013;
5677 38(23):1995-2002
- 5678 1829 Richards MC, Ford JJ, Slater SL, Hahne AJ, Surkitt LD, Davidson M et al. The effectiveness of
5679 physiotherapy functional restoration for post-acute low back pain: a systematic review. *Manual*
5680 *Therapy*. 2013; 18(1):4-25

- 5681 1830 Richards P, Zhang P, Friedman M, Dhanda R. Controlled-release oxycodone relieves moderate
5682 to severe pain in a 3-month study of persistent moderate to severe back pain. *Pain Medicine*.
5683 2002; 3(2):176
- 5684 1831 Ridley MG, Kingsley GH, Gibson T, Grahame R. Outpatient lumbar epidural corticosteroid
5685 injection in the management of sciatica. *British Journal of Rheumatology*. 1988; 27(4):295-299
- 5686 1832 Riecke J, Holzapfel S, Rief W, Glombiewski JA. Evaluation and implementation of graded in vivo
5687 exposure for chronic low back pain in a German outpatient setting: a study protocol of a
5688 randomized controlled trial. *Trials*. 2013; 14:203
- 5689 1833 Riipinen M, Niemisto L, Lindgren KA, Hurri H. Psychosocial differences as predictors for
5690 recovery from chronic low back pain following manipulation, stabilizing exercises and physician
5691 consultation or physician consultation alone. *Journal of Rehabilitation Medicine*. 2005;
5692 37(3):152-158
- 5693 1834 Riley JL, Robinson ME. Validity of MMPI-2 profiles in chronic back pain patients: differences in
5694 path models of coping and somatization. *Clinical Journal of Pain*. 1998; 14(4):324-335
- 5695 1835 Riou B, Plaisance P, Lecomte F, Soulat L, Orcel P, Mazoit J-X. Comparison of two doses of
5696 ketoprofen to treat pain: A double-blind, randomized, noninferiority trial. *Fundamental and
5697 Clinical Pharmacology*. 2014; 28(1):20-28
- 5698 1836 Rischke B, Zimmers KB, Smith E. Viscoelastic Disc Arthroplasty Provides Superior Back and Leg
5699 Pain Relief in Patients with Lumbar Disc Degeneration Compared to Anterior Lumbar Interbody
5700 Fusion. *International Journal of Spine Surgery*. 2015; 9:26
- 5701 1837 Rittweger J, Just K, Kautzsch K, Reeg P, Felsenberg D. Treatment of chronic lower back pain
5702 with lumbar extension and whole-body vibration exercise: a randomized controlled trial. *Spine*.
5703 2002; 27(17):1829-1834
- 5704 1838 Rivero-Arias O, Gray A, Frost H, Lamb SE, Stewart-Brown S. Cost-utility analysis of
5705 physiotherapy treatment compared with physiotherapy advice in low back pain. *Spine*. 2006;
5706 31:1381-1387:1381-1387
- 5707 1839 Rivest C, Katz JN, Ferrante FM, Jamison RN. Effects of epidural steroid injection on pain due to
5708 lumbar spinal stenosis or herniated disks: a prospective study. *Arthritis Care and Research*.
5709 1998; 11(4):291-297
- 5710 1840 Roberts L, Little P, Chapman J, Cantrell T, Pickering R, Langridge J. The back home trial: general
5711 practitioner-supported leaflets may change back pain behavior. *Spine*. 2002; 27(17):1821-1828
- 5712 1841 Rocha IDd, Cristante AF, Marcon RM, Oliveira RP, Letaif OB, Barros Filho TEPd. Controlled
5713 medial branch anesthetic block in the diagnosis of chronic lumbar facet joint pain: the value of
5714 a three-month follow-up. *Clinics*. 2014; 69(8):529-534
- 5715 1842 Roche G, Ponthieux A, Parot-Shinkel E, Jousset N, Bontoux L, Dubus V et al. Comparison of a
5716 functional restoration program with active individual physical therapy for patients with chronic
5717 low back pain: a randomized controlled trial. *Archives of Physical Medicine and Rehabilitation*.
5718 2007; 88(10):1229-1235
- 5719 1843 Rockey PH, Tompkins RK, Wood RW, Wolcott BW. The usefulness of x-ray examinations in the
5720 evaluation of patients with back pain. *Journal of Family Practice*. 1978; 7(3):455-465

- 5721 1844 Roelofs PDDM, Deyo RA, Koes BW, Scholten Rob JPM, van Tulder MW. Non-steroidal anti-inflammatory drugs for low back pain. *Cochrane Database of Systematic Reviews*. 2008; Issue 5722 1:CD000396. DOI:10.1002/14651858.CD000396.pub3 5723
- 5724 1845 Roelofs PDDM, Deyo RA, Koes BW, Scholten RJPM, van Tulder MW. Nonsteroidal anti-inflammatory drugs for low back pain: an updated Cochrane review. *Spine*. 2008; 33(16):1766-5725 1774 5726
- 5727 1846 Rogerson MD, Gatchel RJ, Bierner SM. A cost utility analysis of interdisciplinary early 5728 intervention versus treatment as usual for high-risk acute low back pain patients. *Pain Practice*. 5729 2010; 10(5):382-395
- 5730 1847 Romano CL, Romano D, Lacerenza M. Antineuropathic and antinociceptive drugs combination 5731 in patients with chronic low back pain: a systematic review. *Pain Research and Treatment*. 5732 2012; 2012:154781
- 5733 1848 Romanowski M, Romanowska J, Grzeskowiak M. A comparison of the effects of deep tissue 5734 massage and therapeutic massage on chronic low back pain. *Studies in Health Technology and 5735 Informatics*. 2012; 176:411-414
- 5736 1849 Romera I, Perez V, Menchon JM, Schacht A, Papen R, Neuhauser D et al. Early vs. conventional 5737 switching of antidepressants in patients with MDD and moderate to severe pain: a double- 5738 blind randomized study. *Journal of Affective Disorders*. 2012; 143(1-3):47-55
- 5739 1850 Rompe JD, Eysel P, Zollner J, Nafe B, Heine J. Degenerative lumbar spinal stenosis. Long-term 5740 results after undercutting decompression compared with decompressive laminectomy alone or 5741 with instrumented fusion. *Neurosurgical Review*. 1999; 22(2-3):102-106
- 5742 1851 Rondoni A, Bertozzi L. Effectiveness of the Feldenkrais Method in the improvement of health 5743 status in adult patients with low back pain or at risk of developing it. *Scienza Riabilitativa*. 2009; 5744 11(3):5-14
- 5745 1852 Ronnberg K, Lind B, Zoega B, Halldin K, Gellerstedt M, Brisby H. Patients' satisfaction with 5746 provided care/information and expectations on clinical outcome after lumbar disc herniation 5747 surgery. *Spine*. 2007; 32(2):256-261
- 5748 1853 Roodbro P, Christiansen C, Lund M. Subjective symptoms in epileptic patients on 5749 anticonvulsant drugs. A controlled therapeutic trial on the effect of vitamin d. *Acta Neurologica 5750 Scandinavica*. 1975; 52(2):87-93
- 5751 1854 Rose MJ, Reilly JP, Pennie B, Bowen-Jones K, Stanley IM, Slade PD. Chronic low back pain 5752 rehabilitation programs: a study of the optimum duration of treatment and a comparison of 5753 group and individual therapy. *Spine*. 1997; 22(19):2246-3
- 5754 1855 Ross R, Mirza AH, Norris HE, Khatri M. Survival and clinical outcome of SB Charite III disc 5755 replacement for back pain. *Journal of Neurosurgery: Spine*. 2007; 89(6):785-789
- 5756 1856 Rossi D, Munari L, Ubbiali A, Palumbo D, Fornari M, Lucarelli G et al. Comparison between 5757 percutaneous discectomy according to Onik, microdiscectomy and conservative treatment. 5758 <ORIGINAL> CONFRONTO TRA DISCECTOMIA PERCUTANEA LOMBARE SECONDO ONIK, 5759 MICRODISCECTOMIA E TRATTAMENTO CONSERVATIVO. RISULTATI PRELIMINARI DI UNO 5760 STUDIO PROSPETTICO CONTROLLATO (PERDIRAT). *RIV NEURORADIOL*. 1993; 6(4):445-452

- 5761 1857 Rossi M, Ianigro G, Liberatoscioli G, Di Castelnuovo A, Grimani V, Garofano A et al. Eperisone
5762 versus tizanidine for treatment of chronic low back pain. *Minerva Medica*. 2012; 103(3):143-
5763 149
- 5764 1858 Roussel NA, Kos D, Demeure I, Heyrman A, Clerck MD, Zinzen E et al. Effect of a
5765 multidisciplinary program for the prevention of low back pain in hospital employees: A
5766 randomized controlled trial. *Journal of Back and Musculoskeletal Rehabilitation*. 2015;
5767 28(3):539-549
- 5768 1859 Rovinski A, Cavalheiro NAR, Gattas C. The treatment of acute back pain. Single blind randomic
5769 and comparative trial among nimesulide and diclofenac potassium. *Revista Brasileira De*
5770 *Medicina*. 1995; 52(7):784-789
- 5771 1860 Rozenberg S, Delval C, Rezvani Y, Olivieri-Apicella N, Kuntz JL, Legrand E et al. Bed rest or
5772 normal activity for patients with acute low back pain: a randomized controlled trial. *Spine*.
5773 2002; 27(14):1487-1493
- 5774 1861 Rubinstein SM, Terwee CB, Assendelft Willem JJ, de Boer MR, van Tulder MW. Spinal
5775 manipulative therapy for acute low-back pain. *Cochrane Database of Systematic Reviews*.
5776 2012; Issue 9:CD008880. DOI:10.1002/14651858.CD008880.pub2
- 5777 1862 Rubinstein SM, Terwee CB, Assendelft WJJ, de Boer MR, van Tulder MW. Spinal manipulative
5778 therapy for acute low back pain: an update of the cochrane review. *Spine*. 2013; 38(3):E158-
5779 E177
- 5780 1863 Rubinstein SM, van Middelkoop M, Assendelft WJJ, de Boer MR, van Tulder MW. Spinal
5781 manipulative therapy for chronic low-back pain: an update of a Cochrane review. *Spine*. 2011;
5782 36(13):E825-E846
- 5783 1864 Rubinstein SM, van Middelkoop M, Kuijpers T, Ostelo R, Verhagen AP, de Boer MR et al. A
5784 systematic review on the effectiveness of complementary and alternative medicine for chronic
5785 non-specific low-back pain. *European Spine Journal*. 2010; 19(8):1213-1228
- 5786 1865 Rubinstein SM, van MM, Assendelft Willem JJ, de Boer MR, van Tulder MW. Spinal
5787 manipulative therapy for chronic low-back pain. *Cochrane Database of Systematic Reviews*.
5788 2011; Issue 2:CD008112. DOI:10.1002/14651858.CD008112.pub2
- 5789 1866 Rupert MP, Lee M, Manchikanti L, Datta S, Cohen SP. Evaluation of sacroiliac joint
5790 interventions: a systematic appraisal of the literature. *Pain Physician*. 2009; 12(2):399-418
- 5791 1867 Rupert R. Chiropractic adjustments in the treatment of low back pain: preliminary results of a
5792 controlled clinical trial in Egypt. *Biomechanics Conference on the Spine*. 1983; 14(NOV):315-
5793 328
- 5794 1868 Rupert R, Hurwitz EL. The effectiveness of physical modalities among patients with low back
5795 pain randomized to chiropractic care: Findings from the UCLA low back pain study [2] (multiple
5796 letters). *Journal of Manipulative and Physiological Therapeutics*. 2002; 25(8):538-540
- 5797 1869 Rushton A, Heneghan NR, Calvert M, Heap A, White L, Goodwin PC. Physiotherapy Post Lumbar
5798 Discectomy: Prospective Feasibility and Pilot Randomised Controlled Trial. *PloS One*. 2015;
5799 10(11):e0142013
- 5800 1870 Rusinyol FC, Perice RV, Boronat ER, Bosch FF. Effects of two different doses of eperisone in the
5801 treatment of acute low back pain. *Journal of Applied Research*. 2009; 9(1-2):23-29

- 5802 1871 Ryan CG, Gray HG, Newton M, Granat MH. Pain biology education and exercise classes
5803 compared to pain biology education alone for individuals with chronic low back pain: a pilot
5804 randomised controlled trial. *Manual Therapy*. 2010; 15(4):382-387
- 5805 1872 Ryan D. Science of chiropractic. Restricting chiropractic care results in higher medical costs.
5806 *Dynamic Chiropractic*. 2004; 22(25):42-43
- 5807 1873 Saarijärvi S, Alanen E, Rytökoski U, Hyyppä MT. Couple therapy improves mental well-being in
5808 chronic low back pain patients. A controlled, five year follow-up study. *Journal of*
5809 *Psychosomatic Research*. 1992; 36(7):651-656
- 5810 1874 Saberski LR. A retrospective analysis of spinal canal endoscopy and laminectomy outcomes
5811 data. *Pain Physician*. 2000; 3(2):193-196
- 5812 1875 Saggini R, Cancelli F, Di B, V, Bellomo RG, Pezzatini A, Carniel R. Efficacy of two micro-
5813 gravitational protocols to treat chronic low back pain associated with discal lesions: a
5814 randomized controlled trial. *Europa Medicophysica*. 2004; 40(4):311-316
- 5815 1876 Sahar T, Cohen MJ, Ne'eman V, Kandel L, Odebiyi DO, Lev I et al. Insoles for prevention and
5816 treatment of back pain. *Cochrane Database of Systematic Reviews*. 2007; Issue 4:CD005275.
5817 DOI:10.1002/14651858.CD005275.pub2
- 5818 1877 Sahin F, Yilmaz F, Kotevoglou N, Kuran B. The efficacy of physical therapy and physical therapy
5819 plus calcitonin in the treatment of lumbar spinal stenosis. *Yonsei Medical Journal*. 2009;
5820 50(5):683-688
- 5821 1878 Saito H, Sekiguchi M, Yamada H, Kubota T, Shigihara T, Iwasaki T et al. Comparison of postural
5822 changes and muscle fatigue between two types of lumbar support: a prospective longitudinal
5823 study. *Fukushima Journal of Medical Science*. 2014; 60(2):141-148
- 5824 1879 Sakai T, Tsukayama H, Nakamura T, Ikeuchi T, Kawamoto M, Kasuya D. Are the Effects of
5825 Electro-Acupuncture on Low Back Pain Equal to those of TENS? *Focus on Alternative and*
5826 *Complementary Therapies*. 2001; 6(4):254-255
- 5827 1880 Sakai Y, Matsuyama Y, Nakamura H, Katayama Y, Imagama S, Ito Z et al. The effect of muscle
5828 relaxant on the paraspinal muscle blood flow: a randomized controlled trial in patients with
5829 chronic low back pain. *Spine*. 2008; 33(6):581-587
- 5830 1881 Salerno SM, Browning R, Jackson JL. The effect of antidepressant treatment on chronic back
5831 pain: a meta-analysis. *Archives of Internal Medicine*. 2002; 162(1):19-24
- 5832 1882 Salim M. Transcutaneous electrical nerve stimulation (TENS) in chronic pain. *Alternative*
5833 *Therapies in Clinical Practice*. 1996; 3(4):33-35
- 5834 1883 Saltychev M, Eskola M, Laimi K. Lumbar fusion compared with conservative treatment in
5835 patients with chronic low back pain: a meta-analysis. *International Journal of Rehabilitation*
5836 *Research*. 2014; 37(1):2-8
- 5837 1884 Salvini S, Antonelli S, De MG, Marchetti M. Dantrolene sodium in low back pain and cervico
5838 brachialgia treatment: A controlled study. *Current Therapeutic Research - Clinical and*
5839 *Experimental*. 1986; 39(2):172-177
- 5840 1885 Salzman RT, Roberts MS, Wild J, Fabian C, Reder RF, Goldenheim PD. Can a controlled-release
5841 oral dose form of oxycodone be used as readily as an immediate-release form for the purpose

- 5842 of titrating to stable pain control? *Journal of Pain and Symptom Management*. 1999; 18(4):271-
5843 279
- 5844 1886 Salzmann E, Pforringer W, Paal G, Gierend M. Treatment of chronic low-back syndrome with
5845 tetrazepam in a placebo controlled double-blind trial. *Journal of Drug Development*. 1992;
5846 4(4):219-228
- 5847 1887 Sanders G, Tepe R, Maloney P, Reinert O. The effect of spinal adjustive manipulation on
5848 subjects with acute low back pain: A comparison of visual analog pain scores and serum beta
5849 endorphin levels. Symposium of the Pacific Consortium for Chiropractic Research, Monterey,
5850 California; July 2, 1989. *Journal of Manipulative and Physiological Therapeutics*. 1990; 1(13):58
- 5851 1888 Sanders GE, Reinert O, Tepe R, Maloney P. Chiropractic adjustive manipulation on subjects with
5852 acute low back pain: visual analog pain scores and plasma beta-endorphin levels. *Journal of*
5853 *Manipulative and Physiological Therapeutics*. 1990; 13(7):391-395
- 5854 1889 Sanders M, Zuurmond WWA. Percutaneous intra-articular lumbar facet joint denervation in the
5855 treatment of low back pain: A comparison with percutaneous extra-articular lumbar facet
5856 denervation. *Pain Clinic*. 1999; 11(4):329-335
- 5857 1890 Saner J, Kool J, Sieben JM, Luomajoki H, Bastiaenen CHG, de Bie RA. A tailored exercise
5858 program versus general exercise for a subgroup of patients with low back pain and movement
5859 control impairment: A randomised controlled trial with one-year follow-up. *Manual Therapy*.
5860 2015; 20(5):672-679
- 5861 1891 Sansonnens N, Kunzler F, Bron C, Vassant M, Allet L. The McKenzie method: Is this method
5862 efficient in short and long term for chronic non-specific low back pain? A systematic review.
5863 *Kinésithérapie, La Revue*. 2013; 13(137):30-37
- 5864 1892 Santavirta N, Bjorvell H, Konttinen YT, Solovieva S, Poussa M. Sense of coherence and outcome
5865 of low-back surgery: 5-year follow-up of 80 patients. *European Spine Journal*. 1996; 5(4):229-
5866 235
- 5867 1893 Santos J, Alarcão J, Fareleira F, Vaz-Carneiro A, Costa J. Tapentadol for chronic musculoskeletal
5868 pain in adults. *Cochrane Database of Systematic Reviews*. 2015; Issue 5:CD009923.
5869 DOI:10.1002/14651858.CD009923.pub2
- 5870 1894 Saper RB, Boah AR, Keosaian J, Cerrada C, Weinberg J, Sherman KJ. Comparing Once- versus
5871 Twice-Weekly Yoga Classes for Chronic Low Back Pain in Predominantly Low Income Minorities:
5872 A Randomized Dosing Trial. *Evidence-Based Complementary and Alternative Medicine*. 2013;
5873 2013:658030
- 5874 1895 Saper RB, Sherman KJ, Delitto A, Herman PM, Stevans J, Paris R et al. Yoga vs. physical therapy
5875 vs. education for chronic low back pain in predominantly minority populations: study protocol
5876 for a randomized controlled trial. *Trials*. 2014; 15:67
- 5877 1896 Sarbu A, Radulescu F, Robertson S, Bouchard S. Onset of analgesic effect and plasma levels of
5878 controlled-release tramadol (Tramadol Contramid once-a-day) 200-mg tablets in patients with
5879 acute low back pain. *Journal of Opioid Management*. 2008; 4(1551-7489 Print, 5):285-292
- 5880 1897 Sasani M, Oktenoglu T, Tuncay K, Canbulat N, Carilli S, Ozer FA. Total disc replacement in the
5881 treatment of lumbar discogenic pain with disc herniation: a prospective clinical study. *Turkish*
5882 *Neurosurgery*. 2009; 19(2):127-134

- 5883 1898 Sasso RC, Best NM, Metcalf NH, Anderson PA. Motion analysis of bryan cervical disc
5884 arthroplasty versus anterior discectomy and fusion: results from a prospective, randomized,
5885 multicenter, clinical trial. *Journal of Spinal Disorders and Techniques*. 2008; 21(6):393-399
- 5886 1899 Sasso RC, Kitchel SH, Dawson EG. A Prospective, Randomized Controlled Clinical Trial of
5887 Anterior Lumbar Interbody Fusion Using a Titanium Cylindrical Threaded Fusion Device. *Spine*.
5888 2004; 29(2):113-121
- 5889 1900 Sasso RC, Smucker JD, Hacker RJ, Heller JG. Artificial disc versus fusion: A prospective,
5890 randomized study with 2-year follow-up on 99 patients. *Spine*. 2007; 32(26):2933-2940
- 5891 1901 Sasso RC, Anderson PA, Riew KD, Heller JG. Results of cervical arthroplasty compared with
5892 anterior discectomy and fusion: four-year clinical outcomes in a prospective, randomized
5893 controlled trial. *Journal of Bone and Joint Surgery - American Volume*. 2011; 93(18):1684-1692
- 5894 1902 Satoh I, Yonenobu K, Hosono N, Ohwada T, Fuji T, Yoshikawa H. Indication of posterior lumbar
5895 interbody fusion for lumbar disc herniation. *Journal of Spinal Disorders and Techniques*. 2006;
5896 19(2):104-108
- 5897 1903 Sator-Katzenschlager SM, Scharbert G, Kozek-Langenecker SA, Szeles JC, Finster G, Schiesser
5898 AW et al. The short- and long-term benefit in chronic low back pain through adjuvant electrical
5899 versus manual auricular acupuncture. *Anesthesia and Analgesia*. 2004; 98(5):1359-contents
- 5900 1904 Sattelmayer M, Lorenz T, Roder C, Hilfiker R. Predictive value of the Acute Low Back Pain
5901 Screening Questionnaire and the Orebro Musculoskeletal Pain Screening Questionnaire for
5902 persisting problems. *European Spine Journal*. 2012; 21(Suppl.6):S773-S784
- 5903 1905 Saunders HD. Regarding the controversy of lumbosacral supports and braces - an update.
5904 *Journal of Back and Musculoskeletal Rehabilitation*. 1993; 3(3):21-30
- 5905 1906 Saunders KW, Von Korff MV, Grothaus LC. Predictors of participation in primary care group-
5906 format back pain self-care interventions. *Clinical Journal of Pain*. 2000; 16(3):236-243
- 5907 1907 Sayegh FE, Kenanidis EI, Papavasiliou KA, Potoupnis ME, Kirkos JM, Kapetanos GA. Efficacy of
5908 steroid and nonsteroid caudal epidural injections for low back pain and sciatica: a prospective,
5909 randomized, double-blind clinical trial. *Spine*. 2009; 34(14):1441-1447
- 5910 1908 Sayle-Creer W, Swerdlow M. Epidural injections for the relief of lumbo-sciatic pain. *Acta*
5911 *Orthopaedica Belgica*. 1969; 35(3):728-734
- 5912 1909 Schaafsma FG, Whelan K, van der Beek AJ, van der Es-Lambeek Ludeke, Ojajärvi A, Verbeek JH.
5913 Physical conditioning as part of a return to work strategy to reduce sickness absence for
5914 workers with back pain. *Cochrane Database of Systematic Reviews*. 2013; Issue 8:CD001822.
5915 DOI:10.1002/14651858.CD001822.pub3
- 5916 1910 Schafer A, Hall T, Muller G, Briffa K. Outcomes differ between subgroups of patients with low
5917 back and leg pain following neural manual therapy: a prospective cohort study. *European Spine*
5918 *Journal*. 2011; 20(3):482-490
- 5919 1911 Schattenkirchner M, Milachowski KA. A double-blind, multicentre, randomised clinical trial
5920 comparing the efficacy and tolerability of aceclofenac with diclofenac resinate in patients with
5921 acute low back pain. *Clinical Rheumatology*. 2003; 22(2):127-135

- 5922 1912 Schectman JM, Schroth WS, Verme D, Voss JD. Randomized controlled trial of education and
5923 feedback for implementation of guidelines for acute low back pain. *Journal of General Internal*
5924 *Medicine*. 2003; 18(10):773-780
- 5925 1913 Scheer SJ, Radack KL, O'Brien DRJ. Randomized controlled trials in industrial low back pain
5926 relating to return to work. Part 2. Discogenic low back pain. *Archives of Physical Medicine and*
5927 *Rehabilitation*. 1996; 77(11):1189-1197
- 5928 1914 Schenk RJ, Doran RL, Stachura JJ. Learning effects of a back education program. *Spine*. 1996;
5929 21(19):2183-2188
- 5930 1915 Schenk RJ, Jozefczyk C, Kopf A. A randomized trial comparing interventions in patients with
5931 lumbar posterior derangement. *Journal of Manual and Manipulative Therapy*. 2003; 11(2):95-
5932 102
- 5933 1916 Schenk R, Dionne C, Simon C, Johnson R. Effectiveness of mechanical diagnosis and therapy in
5934 patients with back pain who meet a clinical prediction rule for spinal manipulation. *Journal of*
5935 *Manual and Manipulative Therapy*. 2012; 20(1):43-49
- 5936 1917 Schenkman ML, Jordan S, Akuthota V, Roman M, Kohrt WM, Hearty T et al. Functional
5937 movement training for recurrent low back pain: lessons from a pilot randomized controlled
5938 trial. *PM and R*. 2009; 1(2):137-146
- 5939 1918 Schick U, Elhabony R. Prospective comparative study of lumbar sequestrectomy and
5940 microdiscectomy. *Minimally Invasive Neurosurgery*. 2009; 52(4):180-185
- 5941 1919 Schiltenswolf M, Buchner M, Heindl B, Reumont J, Müller A, Eich W. Comparison of a
5942 biopsychosocial therapy (BT) with a conventional biomedical therapy (MT) of subacute low
5943 back pain in the first episode of sick leave: a randomized controlled trial. *European Spine*
5944 *Journal*. 2006; 15(7):1083-1092
- 5945 1920 Schluessmann E, Diel P, Aghayev E, Zweig T, Moulin P, Roder C et al. SWISSspine: a nationwide
5946 registry for health technology assessment of lumbar disc prostheses. *European Spine Journal*.
5947 2009; 18(6):851-861
- 5948 1921 Schmid G, Vetter S, Gottmann D, Strecker EP. CT-guided epidural/perineural injections in
5949 painful disorders of the lumbar spine: short- and extended-term results. *Cardiovascular and*
5950 *Interventional Radiology*. 1999; 22(6):493-498
- 5951 1922 Schneider M. Mechanical versus manual manipulation for low back pain: an observational
5952 cohort study. *Journal of Manipulative and Physiological Therapeutics*. 2010; 33(3):193-200
- 5953 1923 Schneider M, Haas M, Stevans J, Glick R, Landsittel D. A comparison of chiropractic
5954 manipulation methods and usual medical care for low back pain: a randomized controlled
5955 clinical trial. *Journal of Alternative and Complementary Medicine*. 2014; 20(5):A22-A23
- 5956 1924 Schnitzer T. The new analgesic combination tramadol/acetaminophen. *European Journal of*
5957 *Anaesthesiology Supplement*. 2003; 28:13-17
- 5958 1925 Schnitzer TJ, Ferraro A, Hunsche E, Kong SX. A comprehensive review of clinical trials on the
5959 efficacy and safety of drugs for the treatment of low back pain. *Journal of Pain and Symptom*
5960 *Management*. 2004; 28(1):72-95

- 5961 1926 Schoenfeld AJ. Commentary on an article by Rick Delamarter, MD, et al.: "Prospective,
5962 randomized, multicenter Food and Drug Administration investigational device exemption study
5963 of the ProDisc-L total disc replacement compared with circumferential arthrodesis for the
5964 treatment of two-level degenerative lumbar disc disease. Results at twenty-four months".
5965 Journal of Bone and Joint Surgery - American Volume. 2011; 93(8):e41
- 5966 1927 Schoo A, Morris ME. The Effects of Mode of Exercise Instruction on Correctness of Home
5967 Exercise Performance and Adherence. Physiotherapy Singapore. 2003; 6(2):36-43
- 5968 1928 Schreiber S, Vinokur S, Shavelzon V, Pick CG, Zahavi E, Shir Y. A randomized trial of fluoxetine
5969 versus amitriptyline in musculo-skeletal pain. Israel Journal of Psychiatry and Related Sciences.
5970 2001; 38(2):88-94
- 5971 1929 Schrepfer RW, Fritz J. A comparison of change in visual analogue pain rating of acute low back
5972 pain patients following deep water walking or deep water hanging. Journal of Aquatic Physical
5973 Therapy. 2000; 8(2):25-28
- 5974 1930 Schroven I, Dorofey D. Intervertebral prosthesis versus anterior lumbar interbody fusion: one-
5975 year results of a prospective non-randomised study. Acta Orthopaedica Belgica. 2006; 72(1):83-
5976 86
- 5977 1931 Schuermans Y, Raus A. Comparative clinical trial of two injectable NSAIDs, tiaprofenic acid and
5978 alclofenac, in acute sciatica. Drugs. 1988; 35(Suppl.1):83-85
- 5979 1932 Schulz C, Fink H, Bronfort G. Chiropractic institutional collaboration with Veterans
5980 Administration to implement a randomized clinical trial: a pilot study. Journal of Chiropractic
5981 Education. 2009; 23(1):93
- 5982 1933 Schulz CA, Hondras MA, Evans RL, Gudavalli MR, Long CR, Owens EF et al. Chiropractic and self-
5983 care for back-related leg pain: design of a randomized clinical trial. Chiropractic and Manual
5984 Therapies. 2011; 19:8
- 5985 1934 Schulz PJ, Rubinell S, Hartung U. An internet-based approach to enhance self-management of
5986 chronic low back pain in the Italian-speaking population of Switzerland: results from a pilot
5987 study. International Journal of Public Health. 2007; 52(5):286-294
- 5988 1935 Schweikert B, Jacobi E, Seitz R, Cziske R, Ehlert A, Knab J et al. Effectiveness and cost-
5989 effectiveness of adding a cognitive behavioral treatment to the rehabilitation of chronic low
5990 back pain. Journal of Rheumatology. 2006; 33(12):2519-2526
- 5991 1936 Scott NA, Guo B, Barton PM, Gerwin RD. Trigger point injections for chronic non-malignant
5992 musculoskeletal pain: a systematic review. Pain Medicine. 2009; 10(1):54-69
- 5993 1937 Sculco AD, Paup DC, Fernhall B, Sculco MJ. Effects of aerobic exercise on low back pain patients
5994 in treatment. Spine. 2001; 1(2):95-101
- 5995 1938 Searle A, Spink M, Ho A, Chuter V. Exercise interventions for the treatment of chronic low back
5996 pain: a systematic review and meta-analysis of randomised controlled trials. Clinical
5997 Rehabilitation. 2015; 29(12):1155-1167
- 5998 1939 Seco J, Kovacs FM, Urrutia G. The efficacy, safety, effectiveness, and cost-effectiveness of
5999 ultrasound and shock wave therapies for low back pain: a systematic review. Spine Journal.
6000 2011; 11(10):966-977

- 6001 1940 Sedighi M, Haghnegahdar A. Lumbar disk herniation surgery: outcome and predictors. *Global Spine Journal*. 2014; 4(4):233-244
6002
- 6003 1941 Sedighi M, Haghnegahdar A. Role of vitamin D3 in treatment of lumbar disc herniation--pain and sensory aspects: study protocol for a randomized controlled trial. *Trials*. 2014; 15:373
6004
- 6005 1942 Seferlis T, Lindholm L, Nemeth G. Cost-minimisation analysis of three conservative treatment programmes in 180 patients sick-listed for acute low-back pain. *Scandinavian Journal of Primary Health Care*. 2000; 18(1):53-57
6006
6007
- 6008 1943 Seferlis T, Nemeth G, Carlsson AM, Gillstrom P. Conservative treatment in patients sick-listed for acute low-back pain: a prospective randomised study with 12 months' follow-up. *European Spine Journal*. 1998; 7(6):461-470
6009
6010
- 6011 1944 Selhorst M, Selhorst B. Lumbar manipulation and exercise for the treatment of acute low back pain in adolescents: A randomized controlled trial. *Journal of Manual and Manipulative Therapy*. 2015; 23(4):226-233
6012
6013
- 6014 1945 Selkowitz DM, Kulig K, Poppert EM, Flanagan SP, Matthews ND, Beneck GJ et al. The immediate and long-term effects of exercise and patient education on physical, functional, and quality-of-life outcome measures after single-level lumbar microdiscectomy: a randomized controlled trial protocol. *BMC Musculoskeletal Disorders*. 2006; 7:70
6015
6016
6017
- 6018 1946 Selviaridis P, Foroglou N, Tsitlakidis A, Hatzisotiriou A, Magras I, Patsalas I. Long-term outcome after implantation of prosthetic disc nucleus device (PDN) in lumbar disc disease. *Hippokratia*. 2010; 14(3):176-184
6019
6020
- 6021 1947 Semrau J, Hentschke C, Buchmann J, Meng K, Vogel H, Faller H et al. Long-term effects of interprofessional biopsychosocial rehabilitation for adults with chronic non-specific low Back pain: A multicentre, quasi-experimental study. *PloS One*. 2015; 10(3)
6022
6023
- 6024 1948 Seo BK, Lee JH, Sung WS, Song EM, Jo DJ. Bee venom acupuncture for the treatment of chronic low back pain: study protocol for a randomized, double-blinded, sham-controlled trial. *Trials*. 2013; 14:16
6025
6026
- 6027 1949 Serfer GT, Wheeler WJ, Sacks HJ. Randomized, double-blind trial of carisoprodol 250 mg compared with placebo and carisoprodol 350 mg for the treatment of low back spasm. *Current Medical Research and Opinion*. 2010; 26(1):91-99
6028
6029
- 6030 1950 Sertpoyraz F, Eyigor S, Karapolat H, Capaci K, Kirazli Y. Comparison of isokinetic exercise versus standard exercise training in patients with chronic low back pain: a randomized controlled study. *Clinical Rehabilitation*. 2009; 23(3):238-247
6031
6032
- 6033 1951 Shabat S, Gefen T, Nyska M, Folman Y, Gepstein R. The effect of insoles on the incidence and severity of low back pain among workers whose job involves long-distance walking. *European Spine Journal*. 2005; 14(6):546-550
6034
6035
- 6036 1952 Shamji MF, Bains I, Yong E, Sutherland G, Hurlbert RJ. Treatment of herniated lumbar disk by sequestrectomy or conventional discectomy. *World Neurosurgery*. 2014; 82(5):879-883
6037
- 6038 1953 Shamliyan TA, Staal JB, Goldmann D, Sands-Lincoln M. Epidural steroid injections for radicular lumbosacral pain: a systematic review. *Physical Medicine and Rehabilitation Clinics of North America*. 2014; 25(2):471-50
6039
6040

- 6041 1954 Shamsi MB, Sarrafzadeh J, Jamshidi A. Comparing core stability and traditional trunk exercise
6042 on chronic low back pain patients using three functional lumbopelvic stability tests.
6043 Physiotherapy Theory and Practice. 2015; 31(2):89-98
- 6044 1955 Shareef AH, Mohan Kumar EG, Manohar PV. Comparison between microlumbar discectomy
6045 versus open laminectomy and discectomy in lumbar intervertebral disc prolapse. International
6046 Journal of Pharma and Bio Sciences. 2014; 5(2):492-529
- 6047 1956 Sheerar KA, Colloca CJ, White HL. A randomized clinical trial of manual versus mechanical force
6048 manipulation in the treatment of sacroiliac joint syndrome. Journal of Manipulative and
6049 Physiological Therapeutics. 2005; 28(7):493-501
- 6050 1957 Sheeran L, van DR, Catterson B, Sparkes V. Classification-guided versus generalized postural
6051 intervention in subgroups of nonspecific chronic low back pain: a pragmatic randomized
6052 controlled study. Spine. 2013; 38(19):1613-1625
- 6053 1958 Shekelle PG. The use and costs of chiropractic care in a community-based sample of the united
6054 states (Back pain) 1994.
- 6055 1959 Shekelle PG, Adams AH, Chassin MR, Hurwitz EL, Brook RH. Spinal manipulation for low-back
6056 pain. Annals of Internal Medicine. 1992; 117(7):590-598
- 6057 1960 Sheldon KS, Savitz MH. Percutaneous radiofrequency rhizotomy of the lumbar facets. Mount
6058 Sinai Journal of Medicine. 1986; 53(7):523-525
- 6059 1961 Shen X, Zhang H, Gu X, Gu G, Zhou X, He S. Unilateral versus bilateral pedicle screw
6060 instrumentation for single-level minimally invasive transforaminal lumbar interbody fusion.
6061 Journal of Clinical Neuroscience. 2014; 21(9):1612-1616
- 6062 1962 Sherman KJ, Cherkin DC. Developing methods for acupuncture research: rationale for and
6063 design of a pilot study evaluating the efficacy of acupuncture for chronic low back pain.
6064 Alternative Therapies in Health and Medicine. 2003; 9(5):54-60
- 6065 1963 Sherman KJ, Cherkin DC, Wellman RD, Cook AJ, Hawkes RJ, Delaney K et al. A randomized trial
6066 comparing yoga, stretching, and a self-care book for chronic low back pain. Archives of Internal
6067 Medicine. 2011; 171(22):2019-2026
- 6068 1964 Shi J, Wang Y, Zhou F, Zhang H, Yang H. Long-term clinical outcomes in patients undergoing
6069 lumbar discectomy by fenestration. Journal of International Medical Research. 2012;
6070 40(6):2355-2361
- 6071 1965 Shimia M, Parish M, Abedini N. The effect of intravenous paracetamol on postoperative pain
6072 after lumbar discectomy. Asian Spine Journal. 2014; 8(4):400-404
- 6073 1966 Shin B-C, Kong JC, Park T-Y, Yang C-Y, Kang K-W, Choi S-M. Bee venom acupuncture for chronic
6074 low back pain: A randomised, sham-controlled, triple-blind clinical trial. European Journal of
6075 Integrative Medicine. 2012; 4(3):e271-e280
- 6076 1967 Shin DA, Yi S, Yoon DH, Kim KN, Shin HC. Artificial disc replacement combined with fusion
6077 versus two-level fusion in cervical two-level disc disease. Spine. 2009; 34(11):1153-1159
- 6078 1968 Shin J, Kim YC, Lee SC, Kim JH. A comparison of Quincke and Whitacre needles with respect to
6079 risk of intravascular uptake in s1 transforaminal epidural steroid injections: a randomized trial
6080 of 1376 cases. Anesthesia and Analgesia. 2013; 117(5):1241-1247

- 6081 1969 Shin SH, Hwang BW, Keum HJ, Lee SJ, Park SJ, Lee SH. Epidural Steroids After a Percutaneous
6082 Endoscopic Lumbar Discectomy. *Spine*. 2015; 40(15):E859-E865
- 6083 1970 Shirado O, Doi T, Akai M, Hoshino Y, Fujino K, Hayashi K et al. Multicenter randomized
6084 controlled trial to evaluate the effect of home-based exercise on patients with chronic low
6085 back pain: the Japan low back pain exercise therapy study. *Spine*. 2010; 35(17):E811-E819
- 6086 1971 Shum GL, Tsung BY, Lee RY. The immediate effect of posteroanterior mobilization on reducing
6087 back pain and the stiffness of the lumbar spine. *Archives of Physical Medicine and
6088 Rehabilitation*. 2013; 94(4):673-679
- 6089 1972 Shunwu F, Xing Z, Fengdong Z, Xiangqian F. Minimally invasive transforaminal lumbar interbody
6090 fusion for the treatment of degenerative lumbar diseases. *Spine*. 2010; 35(17):1615-1620
- 6091 1973 Siepe CJ, Heider F, Wiechert K, Hitzl W, Ishak B, Mayer MH. Mid- to long-term results of total
6092 lumbar disc replacement: a prospective analysis with 5- to 10-year follow-up. *Spine Journal*.
6093 2014; 14(8):1417-1431
- 6094 1974 Siepe CJ, Korge A, Grochulla F, Mehren C, Mayer HM. Analysis of post-operative pain patterns
6095 following total lumbar disc replacement: results from fluoroscopically guided spine
6096 infiltrations. *European Spine Journal*. 2008; 17(1):44-56
- 6097 1975 Siepe CJ, Tepass A, Hitzl W, Meschede P, Beisse R, Korge A et al. Dynamics of improvement
6098 following total lumbar disc replacement: is the outcome predictable? *Spine*. 2009; 34(23):2579-
6099 2586
- 6100 1976 Sigmundsson FG, Jonsson B, Stromqvist B. Preoperative pain pattern predicts surgical outcome
6101 more than type of surgery in patients with central spinal stenosis without concomitant
6102 spondylolisthesis: a register study of 9051 patients. *Spine*. 2014; 39(3):E199-E210
- 6103 1977 Silber JS, Anderson DG, Hayes VM, Vaccaro AR. Advances in surgical management of lumbar
6104 degenerative disease. *Orthopedics*. 2002; 25(7):767-771
- 6105 1978 Silber JS, Brandoff JF, Vaccaro AR. Advances in the surgical management of cervical
6106 degenerative disease. *Current Opinion in Orthopaedics*. 2006; 17(3):264-267
- 6107 1979 Silva Parreira PdC, Menezes Costa LdC, Takahashi R, Hespanhol Junior LC, Motta Silva T, da Luz
6108 Junior MA et al. Do convolutions in Kinesio Taping matter? Comparison of two Kinesio Taping
6109 approaches in patients with chronic non-specific low back pain: protocol of a randomised trial.
6110 *Journal of Physiotherapy*. 2013; 59(1):52
- 6111 1980 Silva H. Worldwide clinical experience with piroxicam FDDF. *European Journal of Rheumatology
6112 and Inflammation*. 1995; 15(2):3-10
- 6113 1981 Sims-Williams H, Jayson MI, Young SM, Baddeley H, Collins E. Controlled trial of mobilisation
6114 and manipulation for patients with low back pain in general practice. *BMJ*. 1978; 2(6148):1338-
6115 1340
- 6116 1982 Sims-Williams H, Jayson MI, Young SM, Baddeley H, Collins E. Controlled trial of mobilisation
6117 and manipulation for low back pain: hospital patients. *BMJ*. 1979; 2(6201):1318-1320
- 6118 1983 Singh JA. Use of botulinum toxin in musculoskeletal pain. *F1000Research*. 2013; 2:52

- 6119 1984 Singh K, Phillips FM, Kuo E, Campbell M. A prospective, randomized, double-blind study of the
6120 efficacy of postoperative continuous local anesthetic infusion at the iliac crest bone graft site
6121 after posterior spinal arthrodesis: a minimum of 4-year follow-up. *Spine*. 2007; 32(25):2790-
6122 2796
- 6123 1985 Singh V, Benyamin RM, Datta S, Falco FJ, Helm S, Manchikanti L. Systematic review of
6124 percutaneous lumbar mechanical disc decompression utilizing Dekompressor. *Pain Physician*.
6125 2009; 12(3):589-599
- 6126 1986 Singh V, Manchikanti L, Calodney AK, Staats PS, Falco FJE, Caraway DL et al. Percutaneous
6127 lumbar laser disc decompression: an update of current evidence. *Pain Physician*. 2013; 16(2
6128 Suppl):SE229-SE260
- 6129 1987 Sinigaglia R, Bundy A, Costantini S, Nena U, Finocchiaro F, Monterumici DAF. Comparison of
6130 single-level L4-L5 versus L5-S1 lumbar disc replacement: results and prognostic factors.
6131 *European Spine Journal*. 2009; 18(Suppl.1):52-63
- 6132 1988 Sinikallio S, Aalto T, Airaksinen O, Herno A, Kroger H, Viinamaki H. Depressive burden in the
6133 preoperative and early recovery phase predicts poorer surgery outcome among lumbar spinal
6134 stenosis patients: a one-year prospective follow-up study. *Spine*. 2009; 34(23):2573-2578
- 6135 1989 Sjogren T, Long N, Storay I, Smith J. Group hydrotherapy versus group land-based treatment for
6136 chronic low back pain. *Physiotherapy Research International*. 1997; 2(4):212-222
- 6137 1990 Sjogren T, Nissinen KJ, Jarvenpaa SK, Ojanen MT, Vanharanta H, Malkia EA. Effects of a
6138 workplace physical exercise intervention on the intensity of low back symptoms in office
6139 workers: A cluster randomized controlled cross-over design. *Spine*. 2006; 19(1):13-24
- 6140 1991 Skargren EI, Carlsson PG, Oberg BE. One-year follow-up comparison of the cost and
6141 effectiveness of chiropractic and physiotherapy as primary management for back pain.
6142 Subgroup analysis, recurrence, and additional health care utilization. *Spine*. 1998; 23(17):1875-
6143 1884
- 6144 1992 Skargren EI, Oberg BE. Predictive factors for 1-year outcome of low-back and neck pain in
6145 patients treated in primary care: comparison between the treatment strategies chiropractic
6146 and physiotherapy. *Pain*. 1998; 77(2):201-207
- 6147 1993 Skargren EI, Oberg BE, Carlsson PG, Gade M. Cost and effectiveness analysis of chiropractic and
6148 physiotherapy treatment for low back and neck pain. Six-month follow-up. *Spine*. 1997;
6149 22(18):2167-2177
- 6150 1994 Skillgate E, Bohman T, Holm LW, Vingard E, Alfredsson L. The long-term effects of naprapathic
6151 manual therapy on back and neck pain - results from a pragmatic randomized controlled trial.
6152 *BMC Musculoskeletal Disorders*. 2010; 11:26
- 6153 1995 Skillgate E, Vingard E, Alfredsson L. Naprapathic manual therapy or evidence-based care for
6154 back and neck pain: a randomized, controlled trial. *Clinical Journal of Pain*. 2007; 23(5):431-439
- 6155 1996 Skljarevski V, Zhang S, Iyengar S, D'Souza D, Alaka K, Chappell A et al. Efficacy of duloxetine in
6156 patients with chronic pain conditions. *Current Drug Therapy*. 2011; 6(4):296-303
- 6157 1997 Skonnord T, Skjeie H, Brekke M, Grotle M, Lund I, Fetveit A. Acupuncture for acute non-specific
6158 low back pain: a protocol for a randomised, controlled multicentre intervention study in
6159 general practice--the Acuback Study. *BMJ Open*. 2012; 2(3):e001164

- 6160 1998 Skouen JS, Grasdahl AL, Haldorsen EMH, Ursin H. Relative cost-effectiveness of extensive and
6161 light multidisciplinary treatment programs versus treatment as usual for patients with chronic
6162 low back pain on long-term sick leave: randomized controlled study. *Spine*. 2002; 27(9):901-
6163 910
- 6164 1999 Slappendel R, Simpson K, Dubois D, Keininger DL. Validation of the PAC-SYM questionnaire for
6165 opioid-induced constipation in patients with chronic low back pain. *European Journal of Pain*.
6166 2006; 10(3):209-217
- 6167 2000 Slater SL, Ford JJ, Richards MC, Taylor NF, Surkitt LD, Hahne AJ. The effectiveness of sub-group
6168 specific manual therapy for low back pain: a systematic review. *Manual Therapy*. 2012;
6169 17(3):201-212
- 6170 2001 Slatis P, Malmivaara A, Heliövaara M, Sainio P, Hernö A, Kankare J et al. Long-term results of
6171 surgery for lumbar spinal stenosis: A randomised controlled trial. *European Spine Journal*.
6172 2011; 20(7):1174-1181
- 6173 2002 Sleptsova M, Woessmer B, Grossman P, Langewitz W. Culturally sensitive group therapy for
6174 Turkish patients suffering from chronic pain: a randomised controlled intervention trial. *Swiss
6175 Medical Weekly*. 2013; 143:w13875
- 6176 2003 Slipman CW, Bhat AL, Gilchrist RV, Issac Z, Chou L, Lenrow DA. A critical review of the evidence
6177 for the use of zygapophysial injections and radiofrequency denervation in the treatment of low
6178 back pain. *Spine Journal*. 2003; 3(4):310-316
- 6179 2004 Sloan P. Review of oral oxycodone in the management of pain. *Therapeutics and Clinical
6180 Risk Management*. 2008; 4(4):777-787
- 6181 2005 Slotman GJ, Stein SC. Laparoscopic L5-S1 discectomy: a cost-effective, minimally invasive
6182 general surgery--neurosurgery team alternative to laminectomy. *American Surgeon*. 1996;
6183 62(1):64-68
- 6184 2006 Smith AL, Kolt GS, McConville JC. The effect of the Feldenkrais method on pain and anxiety in
6185 people experiencing chronic low back pain. *New Zealand Journal Physiotherapy*. 2001; 29(1):6-
6186 14
- 6187 2007 Smith D, Bissell G, Bruce-Low S, Wakefield C. The effect of lumbar extension training with and
6188 without pelvic stabilization on lumbar strength and low back pain. *Journal of Back and
6189 Musculoskeletal Rehabilitation*. 2011; 24(4):241-249
- 6190 2008 Smith D, McMurray N, Disler P. Early intervention for acute back injury: can we finally develop
6191 an evidence-based approach? *Clinical Rehabilitation*. 2002; 16(1):1-11
- 6192 2009 Smith DL, Dainoff MJ, Smith JP. The effect of chiropractic adjustments on movement time: a
6193 pilot study using Fitts Law. *Journal of Manipulative and Physiological Therapeutics*. 2006;
6194 29(4):257-266
- 6195 2010 Smith H, Bruckenthal P. Implications of opioid analgesia for medically complicated patients.
6196 *Drugs and Aging*. 2010; 27(5):417-433
- 6197 2011 Smith N, Masters J, Jensen C, Khan A, Sprowson A. Systematic review of microendoscopic
6198 discectomy for lumbar disc herniation. *European Spine Journal*. 2013; 22(11):2458-2465

- 6199 2012 Smorgick Y, Park DK, Baker KC, Lurie JD, Tosteson TD, Zhao W et al. Single- versus multilevel
6200 fusion for single-level degenerative spondylolisthesis and multilevel lumbar stenosis: four-year
6201 results of the spine patient outcomes research trial. *Spine*. 2013; 38(10):797-805
- 6202 2013 Snow GJ. Chiropractic management of a patient with lumbar spinal stenosis. *Journal of*
6203 *Manipulative and Physiological Therapeutics*. 2001; 24(4):300-304
- 6204 2014 Snyder BJ, Zhang J. Toftness system of chiropractic adjusting on pain syndromes: a pilot study
6205 in a multicenter setting. *Journal of Chiropractic Medicine*. 2007; 6(1):15-19
- 6206 2015 Sodipo JOA. Transcutaneous electrical nerve stimulation (TENS) and acupuncture: comparison
6207 of therapy for low-back pain. *Pain*. 1981; Supp.1: Abstract of Poster:S277
- 6208 2016 Soegaard R, Bunger CE, Christiansen T, Hoy K, Eiskjaer SP, Christensen FB. Circumferential
6209 fusion is dominant over posterolateral fusion in a long-term perspective: cost-utility evaluation
6210 of a randomized controlled trial in severe, chronic low back pain. *Spine*. 2007; 32(22):2405-
6211 2414
- 6212 2017 Soegaard R, Christensen FB. Health economic evaluation in lumbar spinal fusion: a systematic
6213 literature review anno 2005. *European Spine Journal*. 2006; 15(8):1165-1173
- 6214 2018 Soegaard R, Christensen FB, Christiansen T, Bunger C. Costs and effects in lumbar spinal fusion.
6215 A follow-up study in 136 consecutive patients with chronic low back pain. *European Spine*
6216 *Journal*. 2007; 16(5):657-668
- 6217 2019 Sofi F, Molino Lova R, Nucida V, Taviani A, Benvenuti F, Stuart M et al. Adaptive physical
6218 activity and back pain: a non-randomised community-based intervention trial. *European*
6219 *Journal of Physical Medicine and Rehabilitation*. 2011; 47(4):543-549
- 6220 2020 Sogaard R, Bunger CE, Laurberg I, Christensen FB. Cost-effectiveness evaluation of an RCT in
6221 rehabilitation after lumbar spinal fusion: a low-cost, behavioural approach is cost-effective
6222 over individual exercise therapy. *European Spine Journal*. Denmark 2008; 17(2):262-271
- 6223 2021 Sokunbi OG, Muhwhati L, Robinson P. A pilot study on using acupuncture and core stability
6224 exercises to treat non-specific acute low back pain among industrial workers. *South African*
6225 *Journal of Physiotherapy*. 2014; 70(2):4-10
- 6226 2022 Song Y. Injection of dexamethasone into huantiao in treating 55 cases of sciatica. *International*
6227 *Journal of Clinical Acupuncture*. 1995; 6(4):463-465
- 6228 2023 Soni P, Shell B, Cawkwell G, Li C, Ma H. The hepatic safety and tolerability of the
6229 cyclooxygenase-2 selective NSAID celecoxib: pooled analysis of 41 randomized controlled trials.
6230 *Current Medical Research and Opinion*. 2009; 25(8):1841-1851
- 6231 2024 Soonawalla DF, Joshi N. Efficacy of thicolchicoside in Indian patients suffering from low back
6232 pain associated with muscle spasm. *Journal of the Indian Medical Association*. 2008;
6233 106(5):331-335
- 6234 2025 Sorensen PH, Bendix T, Manniche C, Korsholm L, Lemvig D, Indahl A. An educational approach
6235 based on a non-injury model compared with individual symptom-based physical training in
6236 chronic LBP. A pragmatic, randomised trial with a one-year follow-up. *BMC Musculoskeletal*
6237 *Disorders*. 2010; 11:212

- 6238 2026 Sorge J, Stadler T. Comparison of the analgesic efficacy and tolerability of tramadol 100 mg
6239 sustained-release tablets and tramadol 50 mg capsules for the treatment of chronic low back
6240 pain. *Clinical Drug Investigation*. 1997; 14(3):157-164
- 6241 2027 Soroceanu A, Ching A, Abdu W, McGuire K. Relationship between preoperative expectations,
6242 satisfaction, and functional outcomes in patients undergoing lumbar and cervical spine surgery:
6243 a multicenter study. *Spine*. 2012; 37(2):E103-E108
- 6244 2028 Soukup MG, Glomsrod B, Lonn JH, Bo K, Larsen S. The effect of a Mensendieck exercise
6245 program as secondary prophylaxis for recurrent low back pain. A randomized, controlled trial
6246 with 12-month follow-up. *Spine*. 1999; 24(15):1585-1592
- 6247 2029 Spanos GP. Sciatic scoliosis, its natural history and the ability of the Mckenzie management to
6248 influence it. *Spine*. 2002; 91:332-335
- 6249 2030 Spiker WR, Lawrence BD, Raich AL, Skelly AC, Brodke DS. Surgical versus injection treatment for
6250 injection-confirmed chronic sacroiliac joint pain. *Evidence-Based Spine-Care Journal*. 2012;
6251 3(4):41-53
- 6252 2031 Spinhoven P, Linssen AC. Education and self-hypnosis in the management of low back pain: a
6253 component analysis. *British Journal of Clinical Psychology*. 1989; 28(2):145-153
- 6254 2032 Spinhoven P, Ter Kuile M, Kole-Snijders AMJ, Hutten Mansfeld M, Den Ouden DJ, Vlaeyen JWS.
6255 Catastrophizing and internal pain control as mediators of outcome in the multidisciplinary
6256 treatment of chronic low back pain. *European Journal of Pain*. 2004; 8(3):211-219
- 6257 2033 Sprott H, Gay RE, Michel BA, Gay S. Influence of ibuprofen-arginine on serum levels of nitric
6258 oxide metabolites in patients with chronic low back pain--a single-blind, placebo controlled
6259 pilot trial (ISRCTN18723747). *Journal of Rheumatology*. 2006; 33(12):2515-2518
- 6260 2034 Sran MM. Manual therapy and the osteoporotic spine University of British Columbia (Canada);
6261 2005.
- 6262 2035 Sritoomma N, Moyle W, Cooke M, O'Dwyer S. The effectiveness of Swedish massage with
6263 aromatic ginger oil in treating chronic low back pain in older adults: a randomized controlled
6264 trial. *Complementary Therapies in Medicine*. 2014; 22(1):26-33
- 6265 2036 Staal JB, de Bie RA, de Vet HCW, Hildebrandt J, Nelemans P. Injection therapy for subacute and
6266 chronic low back pain: an updated Cochrane review. *Spine*. 2009; 34(1):49-59
- 6267 2037 Staal JB, de BR, de Vet Henrica CW, Hildebrandt J, Nelemans P. Injection therapy for subacute
6268 and chronic low-back pain. *Cochrane Database of Systematic Reviews*. 2008; Issue 3:CD001824.
6269 DOI:10.1002/14651858.CD001824.pub3
- 6270 2038 Staal JB, Hlobil H, Twisk JWR, Smid T, Koke AJA, van Mechelen W. Graded activity for low back
6271 pain in occupational health care: a randomized, controlled trial. *Annals of Internal Medicine*.
6272 2004; 140(2):77-84
- 6273 2039 Staal JB, Nelemans PJ, de Bie RA. Spinal injection therapy for low back pain. *JAMA*. 2013;
6274 309(23):2439-2440
- 6275 2040 Stager WH. Osteopathic manipulative medicine and acupuncture combined: a retrospective
6276 case study to determine if order of treatment makes a difference in outcome for acute
6277 mechanical low back pain. *AAO Journal*. 2007; 17(4):11

- 6278 2041 Staiger TO, Gaster B, Sullivan MD, Deyo RA. Systematic review of antidepressants in the
6279 treatment of chronic low back pain. *Spine*. 2003; 28(22):2540-2545
- 6280 2042 Standaert CJ. Is yoga an effective therapy for chronic low back pain? *Clinical Journal of Sport*
6281 *Medicine*. 2007; 17(1):83-84
- 6282 2043 Standaert CJ, Friedly J, Erwin MW, Lee MJ, Rehtine G, Henrikson NB et al. Comparative
6283 effectiveness of exercise, acupuncture, and spinal manipulation for low back pain. *Spine*. 2011;
6284 36(21 Suppl):S120-S130
- 6285 2044 Stankovic R, Johnell O. Conservative treatment of acute low-back pain. A prospective
6286 randomized trial: McKenzie method of treatment versus patient education in "mini back
6287 school". *Spine*. 1990; 15(2):120-123
- 6288 2045 Stankovic R, Johnell O. Conservative treatment of acute low back pain. A 5-year follow-up
6289 study of two methods of treatment. *Spine*. 1995; 20(4):469-472
- 6290 2046 Stano M, Haas M, Goldberg B, Traub PM, Nyiendo. Chiropractic and medical care costs of low
6291 back care: results from a practice-based observational study. *American Journal of Managed*
6292 *Care*. 2002; 8(9):802-809
- 6293 2047 Stapelfeldt CM, Christiansen DH, Jensen OK, Nielsen CV, Petersen KD, Jensen C. Subgroup
6294 analyses on return to work in sick-listed employees with low back pain in a randomised trial
6295 comparing brief and multidisciplinary intervention. *BMC Musculoskeletal Disorders*. 2011;
6296 12:112
- 6297 2048 Steefel, L, Jadotte, YT. Exercise therapy for the treatment of non-specific low back pain.
6298 *International Journal of Evidence-Based Healthcare*. 2012; 10(2):164-165
- 6299 2049 Steenstra IA, Anema JR, Bongers PM, de Vet HCW, Knol DL, van Mechelen W. The effectiveness
6300 of graded activity for low back pain in occupational healthcare. *Occupational and*
6301 *Environmental Medicine*. 2006; 63(11):718-725
- 6302 2050 Steenstra IA, Anema JR, Bongers PM, de Vet HCW, van Mechelen W. Cost effectiveness of a
6303 multi-stage return to work program for workers on sick leave due to low back pain, design of a
6304 population based controlled trial [ISRCTN60233560]. *BMC Musculoskeletal Disorders*. 2003;
6305 4:26
- 6306 2051 Steiner D, Munera C, Hale M, Ripa S, Landau C. Efficacy and safety of buprenorphine
6307 transdermal system (BTDS) for chronic moderate to severe low back pain: a randomized,
6308 double-blind study. *Journal of Pain*. 2011; 12(11):1163-1173
- 6309 2052 Stevenson K, Lewis M, Hay E. Does physiotherapy management of low back pain change as a
6310 result of an evidence-based educational programme? *Journal of Evaluation in Clinical Practice*.
6311 2006; 12(3):365-375
- 6312 2053 Stevermer JJ, Ewigman B. Bed rest for sciatica? *Journal of Family Practice*. 1999; 48(5):337-338
- 6313 2054 Stimmel GL, Escobar JL. Antidepressants in chronic pain: a review of efficacy. *Pharmacotherapy*.
6314 1986; 6(5):262-267
- 6315 2055 Storch H, Steck P. Antidepressive medication in the treatment of low back pain: a controlled
6316 trial. *Der Nervenarzt*. 1982; 53:445-450

- 6317 2056 Storro S, Moen J, Svebak S. Effects on sick-leave of a multidisciplinary rehabilitation
6318 programme for chronic low back, neck or shoulder pain: comparison with usual treatment.
6319 Journal of Rehabilitation Medicine. 2004; 36(1):12-16
- 6320 2057 Stratz T. A comparison of etofenam(e) and diclofenac sodium in the treatment of acute
6321 lumbago. Fortschritte Der Medizin. 1990; 108(13):66+69-66+70
- 6322 2058 Straube S, Derry S, Moore RA, Cole P. Cervico-thoracic or lumbar sympathectomy for
6323 neuropathic pain and complex regional pain syndrome. Cochrane Database of Systematic
6324 Reviews. 2013; Issue 9:CD002918. DOI:10.1002/14651858.CD002918.pub3
- 6325 2059 Straube S, Derry S, Moore RA, McQuay HJ. Vitamin D for the treatment of chronic painful
6326 conditions in adults. Cochrane Database of Systematic Reviews. 2010; Issue 1:CD007771.
6327 DOI:10.1002/14651858.CD007771.pub2
- 6328 2060 Streicher H, Matzold F, Hamilton C, Wagner P. Comparison of group motor control training
6329 versus individual training for people suffering from back pain. Journal of Bodywork and
6330 Movement Therapies. 2014; 18(3):489-496
- 6331 2061 Strong LL, Von KM, Saunders K, Moore JE. Cost-effectiveness of two self-care interventions to
6332 reduce disability associated with back pain. Spine. 2006; 31(15):1639-1645
- 6333 2062 Subin B, Saleemi S, Morgan GA, Zavisca F, Randall C. Treatment of Chronic Low Back Pain by
6334 Local Injection of Botulinum Toxin-A. Internet Journal of Anesthesiology. 2003; 6(2):1-8
- 6335 2063 Sugiyama N, Ito F, Takagi T. The effect of acupuncture and mobilization on lumbago. Journal of
6336 the Japan Society of Acupuncture and Moxibustion. 1984; 33(4):402-409
- 6337 2064 Sung PS. Disability and back muscle fatigability changes following two therapeutic exercise
6338 interventions in participants with recurrent low back pain. Medical Science Monitor. 2013;
6339 19:40-48
- 6340 2065 Surkitt LD, Ford JJ, Hahne AJ, Pizzari T, McMeeken JM. Efficacy of directional preference
6341 management for low back pain: a systematic review. Physical Therapy. 2012; 92(5):652-665
- 6342 2066 Sutlive TG, Mabry LM, Easterling EJ, Durbin JD, Hanson SL, Wainner RS et al. Comparison of
6343 short-term response to two spinal manipulation techniques for patients with low back pain in a
6344 military beneficiary population. Military Medicine. 2009; 174(7):750-756
- 6345 2067 Sveinsdottir V, Eriksen HR, Reme SE. Assessing the role of cognitive behavioral therapy in the
6346 management of chronic nonspecific back pain. Journal of Pain Research. 2012; 5:371-380
- 6347 2068 Sweet CA, Jayson MIVJ. The development of an exercise programme for the restoration of
6348 function in patients with chronic low back pain: a comparison of static and dynamic exercise.
6349 12th Intern Congress World Confed Physical Therapy. 1995; 30:938
- 6350 2069 Sweetman BJ, Baig A, Parsons DL. Mefenamic acid, chlormezanone-paracetamol,
6351 ethoheptazine-aspirin-meprobamate: a comparative study in acute low back pain. British
6352 Journal of Clinical Practice. 1987; 41(2):619-624
- 6353 2070 Sweetman BJ, Heinrich I, Anderson JAD. A randomized controlled trial of exercises, short wave
6354 diathermy, and traction for low back pain, with evidence of diagnosis-related response to
6355 treatment. Journal of Orthopaedic Rheumatology. 1993; 6(4):159-166

- 6356 2071 Swenson R, Haldeman S. Spinal manipulative therapy for low back pain. *Journal of the*
6357 *American Academy of Orthopaedic Surgeons*. 2003; 11(4):228-237
- 6358 2072 Swezey RL. Outcomes for lumbar stenosis: A 5-year follow-up study. *Journal of Clinical*
6359 *Rheumatology*. 1996; 2(3):129-134
- 6360 2073 Szczerko O, Cooley K, Busse JW, Seely D, Bernhardt B, Guyatt GH et al. Naturopathic care for
6361 chronic low back pain: a randomized trial. *PLoS One*. 2007; 2(9):e919
- 6362 2074 Szpalski MHJ. Interest of NSAID's in the treatment of acute low back pain. A double blind study
6363 with objective assessment of function. *Journal of Neurosurgery: Spine*. 1993; 75-B(Suppl.3):272
- 6364 2075 Szulc P, Wendt M, Waszak M, Tomczak M, Cieslik K, Trzaska T. Impact of McKenzie Method
6365 Therapy Enriched by Muscular Energy Techniques on Subjective and Objective Parameters
6366 Related to Spine Function in Patients with Chronic Low Back Pain. *Medical Science Monitor*.
6367 2015; 21:2918-2932
- 6368 2076 Taber D, James G, Jacon A. Manipulation Under Anesthesia for Lumbopelvic Pain: A
6369 Retrospective Review of 18 Cases. *Journal of Chiropractic Medicine*. 2014; 13(1):28-34
- 6370 2077 Taguchi T, Igarashi A, Watt S, Parsons B, Sadosky A, Nozawa K et al. Effectiveness of pregabalin
6371 for the treatment of chronic low back pain with accompanying lower limb pain (neuropathic
6372 component): a non-interventional study in Japan. *Journal of Pain Research*. 2015; 8:487-497
- 6373 2078 Takamoto K, Bito I, Urakawa S, Sakai S, Kigawa M, Ono T et al. Effects of compression at
6374 myofascial trigger points in patients with acute low back pain: A randomized controlled trial.
6375 *European Journal of Pain*. 2015; 19(8):1186-1196
- 6376 2079 Takekawa KS, Goncalves JS, Moriguchi CS, Coury HJCG, Sato TdO. Can a self-administered
6377 questionnaire identify workers with chronic or recurring low back pain? *Industrial Health*.
6378 2015; 53(4):340-345
- 6379 2080 Takeshima T, Kambara K, Miyata S, Ueda Y, Tamai S. Clinical and radiographic evaluation of disc
6380 excision for lumbar disc herniation with and without posterolateral fusion. *Spine. Japan* 2000;
6381 25(4):450-456
- 6382 2081 Talo S, Puukka P, Rytokoski U, Ronnema T, Kallio V. Can treatment outcome of chronic low
6383 back pain be predicted? Psychological disease consequences clarifying the issue. *Clinical*
6384 *Journal of Pain*. 1994; 10(2):107-121
- 6385 2082 Taloyan M, Alinaghizadeh H, Lofvander M. Short-term cognitive-behavioral treatment in
6386 multicultural primary care of patients with longstanding backache. *Scandinavian Journal of*
6387 *Psychology*. 2013; 54(5):371-375. DOI:<http://dx.doi.org/10.1111/sjop.12061>
- 6388 2083 Tanen DA, Shimada M, Danish DC, Dos Santos F, Makela M, Riffenburgh RH. Intravenous
6389 lidocaine for the emergency department treatment of acute radicular low back pain, a
6390 randomized controlled trial. *Journal of Emergency Medicine*. 2014; 47(1):119-124
- 6391 2084 Tao XG, Bernacki EJ. A randomized clinical trial of continuous low-level heat therapy for acute
6392 muscular low back pain in the workplace. *Journal of Occupational and Environmental*
6393 *Medicine*. 2005; 47(12):1298-1306

- 6394 2085 Tasleem RA, Buth BA, Koul PA, Kadri SM. Chronic low back pain - Comparative analysis of
6395 treatment response to drugs and different physical modalities. *JK Practitioner*. 2003; 10(3):201-
6396 204
- 6397 2086 Tauheed N, Usmani H, Siddiqui AH. A comparison of the analgesic efficacy of transforaminal
6398 methylprednisolone alone and with low doses of clonidine in lumbo-sacral radiculopathy. *Saudi*
6399 *Journal of Anaesthesia*. 2014; 8(1):51-58
- 6400 2087 Tavafian SS, Jamshidi AR, Mohammad K. Treatment of low back pain: Randomized clinical trial
6401 comparing a multidisciplinary group-based rehabilitation program with oral drug treatment up
6402 to 12 months. *International Journal of Rheumatic Diseases*. 2014; 17(2):159-164
- 6403 2088 Taylor LA, Hay-Smith EJ, Dean S. Can clinical pilates decrease pain and improve function in
6404 people complaining of non-specific chronic low back pain? A pilot study. *New Zealand Journal*
6405 *of Physiotherapy*. 2011; 39(1):30-38
- 6406 2089 Taylor P, Pezzullo L, Grant SJ, Bensoussan A. Cost-effectiveness of acupuncture for chronic
6407 nonspecific low back pain. *Pain Practice*. Australia 2013; 14(7):599-606
- 6408 2090 Taylor R, Pergolizzi JV, Raffa RB. Tapentadol extended release for chronic pain patients.
6409 *Advances in Therapy*. 2013; 30(1):14-27
- 6410 2091 Taylor VM, Deyo RA, Ciol M, Farrar EL, Lawrence MS, Shonnard NH et al. Patient-oriented
6411 outcomes from low back surgery: a community-based study. *Spine*. 2000; 25(19):2445-2452
- 6412 2092 Taylor VM, Goldberg HI, Deyo RA, Cooper S, Leek M, Nordgulen LL et al. Modifying community
6413 practice styles: the Back Pain Outcome Assessment Team information dissemination effort.
6414 *Journal of Continuing Education in the Health Professions*. 1996; 16(4):203-214
- 6415 2093 Tekur P, Nagarathna R, Chametcha S, Hankey A, Nagendra HR. A comprehensive yoga programs
6416 improves pain, anxiety and depression in chronic low back pain patients more than exercise: an
6417 RCT. *Spine*. 2012; 20(3):107-118
- 6418 2094 Tekur P, Chametcha S, Hongasandra RN, Raghuram N. Effect of yoga on quality of life of CLBP
6419 patients: A randomized control study. *International Journal of Yoga*. 2010; 3(1):10-17
- 6420 2095 Tekur P, Singphow C, Nagendra HR, Raghuram N. Effect of short-term intensive yoga program
6421 on pain, functional disability and spinal flexibility in chronic low back pain: a randomized
6422 control study. *Journal of Alternative and Complementary Medicine*. 2008; 14(6):637-644
- 6423 2096 Tepper G, Wolf SB, Feldman L, Spector M. Artificial lumbar disc replacement vs circumferential
6424 fusion for the treatment of discogenic pain: A prospective randomized study eurospine 2006.
6425 8Th annual meeting of the european spine society, 25-28 october 2006, istanbul, turkey-
6426 abstracts sp# 35. *European Spine Journal*. 2006; 15(Suppl.4):S502
- 6427 2097 ter Riet G. Long-term effects of traditional Finnish bone-setting for back pain. *Focus on*
6428 *Alternative and Complementary Therapies*. 2002; 7(4):364-366
- 6429 2098 Ternelin S. Efficacy and gastroprotective effects of tizanidine plus diclofenac versus placebo
6430 plus diclofenac in patients with painful muscle spasms. *Current Therapeutic Research - Clinical*
6431 *and Experimental*. 1998; 59(1):13-22
- 6432 2099 Tesio L, Merlo A. Autotractor versus passive traction: an open controlled study in lumbar disc
6433 herniation. *Archives of Physical Medicine and Rehabilitation*. 1993; 74(8):871-876

- 6434 2100 Tharin S, Mayer E, Krishnaney A. Lumbar microdiscectomy and lumbar decompression improve
6435 functional outcomes and depression scores. *Evidence-Based Spine-Care Journal*. 2012; 3(4):65-
6436 66
- 6437 2101 Thavaneswaran P, Vandeppeer M. Lumbar artificial intervertebral disc replacement: A
6438 systematic review. *ANZ Journal of Surgery*. 2014; 84(3):121-127
- 6439 2102 Thiese MS, Hughes M, Biggs J. Electrical stimulation for chronic non-specific low back pain in a
6440 working-age population: a 12-week double blinded randomized controlled trial. *BMC*
6441 *Musculoskeletal Disorders*. 2013; 14:117
- 6442 2103 Thomas C. Psychoeducational dvd intervention for acute low back pain [70] 2010.
- 6443 2104 Thomas E, Cyteval C, Abiad L, Picot MC, Taourel P, Blotman F. Efficacy of transforaminal versus
6444 interspinous corticosteroid injection in discal radiculalgia - a prospective, randomised, double-
6445 blind study. *Clinical Rheumatology*. 2003; 22(4-5):299-304
- 6446 2105 Thomas KC, Fisher CG, Boyd M, Bishop P, Wing P, Dvorak MF. Outcome evaluation of surgical
6447 and nonsurgical management of lumbar disc protrusion causing radiculopathy. *Spine*. 2007;
6448 32(13):1414-1422
- 6449 2106 Thomas KJ, MacPherson H, Ratcliffe J, Thorpe L, Brazier J, Campbell Mea. Longer term clinical
6450 and economic benefits of offering acupuncture care to patients with chronic low back pain.
6451 *Health Technology Assessment*. 2005; 9(32)
- 6452 2107 Thomas KJ, MacPherson H, Thorpe L, Brazier J, Fitter M, Campbell MJ et al. Randomised
6453 controlled trial of a short course of traditional acupuncture compared with usual care for
6454 persistent non-specific low back pain. *BMJ*. 2006; 333(7569):623
- 6455 2108 Thomas M, Lundberg T. Importance of modes of acupuncture in the treatment of chronic
6456 nociceptive low back pain. *Acta Anaesthesiologica Scandinavica*. 1994; 38(1):63-69
- 6457 2109 Thome C, Barth MB, Diepers M, Schmiedek P. A prospective randomized comparison of clinical
6458 and radiological outcome after lumbar resectomy versus microdiscectomy eurospine
6459 2006. 8Th annual meeting of the european spine society, 25-28 october 2006, istanbul, turkey-
6460 abstracts #53. *European Spine Journal*. 2006; 15(Suppl.4):S477-S478
- 6461 2110 Thomé C, Zevgaridis D, Leheta O, Bänzner H, Pöckler-Schöniger C, Wöhrle J et al. Outcome after
6462 less-invasive decompression of lumbar spinal stenosis: a randomized comparison of unilateral
6463 laminotomy, bilateral laminotomy, and laminectomy. *Journal of Neurosurgery: Spine*. 2005;
6464 3(2):129-141
- 6465 2111 Thome C, Barth M, Scharf J, Schmiedek P. Outcome after lumbar resectomy compared
6466 with microdiscectomy: a prospective randomized study. *Journal of Neurosurgery: Spine*. 2005;
6467 2(3):271-278
- 6468 2112 Thompson M, Kennedy G. Treatment of acute low back pain: comparative trial of two muscle
6469 relaxants, tizanidine and chlormezanone, with placebo. *Scandinavian Journal of Rheumatology*.
6470 1983;(Suppl 49):20
- 6471 2113 Thomsen K, Christensen FB, Eiskjaer SP, Hansen ES, Fruensgaard S, Bunger CE. 1997 Volvo
6472 Award winner in clinical studies. The effect of pedicle screw instrumentation on functional
6473 outcome and fusion rates in posterolateral lumbar spinal fusion: a prospective, randomized
6474 clinical study. *Spine*. 1997; 22:2813-2822

- 6475 2114 Thomson O, Haig L, Mansfield H. The effects of high-velocity low-amplitude thrust
6476 manipulation and mobilisation techniques on pressure pain threshold in the lumbar spine.
6477 International Journal of Osteopathic Medicine. 2009; 12(2):56-62
- 6478 2115 Thorsteinsson G, Stonnington HH, Stillwell GK, Elveback LR. Transcutaneous electrical
6479 stimulation: a double-blind trial of its efficacy for pain. Archives of Physical Medicine and
6480 Rehabilitation. 1977; 58(1):8-13
- 6481 2116 Thurel C, Bardin T, Boccard E. Analgesic efficacy of an association of 500-mg paracetamol plus
6482 30-mg codeine versus 400-mg paracetamol plus 30-mg dextropropoxyphene in repeated doses
6483 for chronic lower back pain. Current Therapeutic Research - Clinical and Experimental. 1991;
6484 50(4):463-473
- 6485 2117 Tian NF, Wu YS, Zhang XL, Xu HZ, Chi YL, Mao FM. Minimally invasive versus open
6486 transforaminal lumbar interbody fusion: a meta-analysis based on the current evidence.
6487 European Spine Journal. 2013; 22(8):1741-1749
- 6488 2118 Tlach L, Hampel P. Long-term effects of a cognitive-behavioral training program for the
6489 management of depressive symptoms among patients in orthopedic inpatient rehabilitation of
6490 chronic low back pain: A 2-year follow-up. European Spine Journal. 2011; 20(12):2143-2151
- 6491 2119 Tobinick E, Davoodifar S. Efficacy of etanercept delivered by perispinal administration for
6492 chronic back and/or neck disc-related pain: A study of clinical observations in 143 patients.
6493 Current Medical Research and Opinion. 2004; 20(7):1075-1085
- 6494 2120 Tobis JS, Hoehler FK. Musculoskeletal manipulation in the treatment of low back pain. Bulletin
6495 of the New York Academy of Medicine. 1983; 59(7):660-668
- 6496 2121 Tofighi A, Kashef MM, Aghazade Shotlou Z, Assemi A. Survey of physical modality impact
6497 accompanied by selected exercise training on treatment of chronic mechanical low back pain in
6498 women. Journal of Urmia Nursing & Midwifery Faculty. 2011; 9(4):1-8
- 6499 2122 Torri G, Vignati C, Solimeno PL, Lovato M, Russo A, Curti ME. Comparative evaluation of the
6500 effects of Ketorolac suppository 30 mg in comparison with Ketoprofen suppository 100 mg in
6501 patients with acute low back pain. ORTOP TRAUMATOL OGGI. 1994; 14(2):82-88
- 6502 2123 Toth PP, Urtis J. Commonly used muscle relaxant therapies for acute low back pain: a review of
6503 carisoprodol, cyclobenzaprine hydrochloride, and metaxalone. Clinical Therapeutics. 2004;
6504 26(9):1355-1367
- 6505 2124 Tozzi P, Bongiorno D, Vitturini C. Low back pain and kidney mobility: local osteopathic fascial
6506 manipulation decreases pain perception and improves renal mobility. Journal of Bodywork and
6507 Movement Therapies. 2012; 16(3):381-391
- 6508 2125 Traeger A, Henschke N, Hubscher M, Williams CM, Kamper SJ, Maher CG et al. Development
6509 and validation of a screening tool to predict the risk of chronic low back pain in patients
6510 presenting with acute low back pain: a study protocol. BMJ Open. 2015; 5(7):e007916
- 6511 2126 Trampas A, Mpeneka A, Malliou V, Godolias G, Vlachakis P. Immediate Effects of Core-Stability
6512 Exercises and Clinical Massage on Dynamic-Balance Performance of Patients With Chronic
6513 Specific Low Back Pain. Journal of Sport Rehabilitation. 2015; 24(4):373-383

- 6514 2127 Tran KM, Frank SM, Raja SN, El-Rahmany HK, Kim LJ, Vu B. Lumbar sympathetic block for
6515 sympathetically maintained pain: changes in cutaneous temperatures and pain perception.
6516 *Anesthesia and Analgesia*. 2000; 90(6):1396-1401
- 6517 2128 Trapp K, Glombiewski JA, Hartwich-Tersek J, Rief W. Chronic back pain: What does biofeedback
6518 add to cognitive-behavioral treatment? A randomized controlled trial. *Pain Practice*. 2009;
6519 9:114
- 6520 2129 Trincat S, Edgard-Rosa G, Geneste G, Marnay T. Two-level lumbar total disc replacement:
6521 functional outcomes and segmental motion after 4 years. *Orthopaedics and Traumatology,
6522 Surgery and Research*. 2015; 101(1):17-21
- 6523 2130 Tritilanunt T, Wajanavisit W. The efficacy of an aerobic exercise and health education program
6524 for treatment of chronic low back pain. *Journal of the Medical Association of Thailand*. 2001;
6525 84 Suppl 2:S528-S533
- 6526 2131 Tropiano P, Huang RC, Girardi FP, Cammisa FPJ, Marnay T. Lumbar total disc replacement.
6527 Seven to eleven-year follow-up. *Journal of Bone and Joint Surgery - American Volume*. 2005;
6528 87(3):490-496
- 6529 2132 Tropiano P, Huang RC, Girardi FP, Cammisa FPJ, Marnay T. Lumbar total disc replacement.
6530 Surgical technique. *Journal of Bone and Joint Surgery - American Volume*. 2006; 88(Suppl.1
6531 Pt.1):50-64
- 6532 2133 Tropiano P, Huang RC, Girardi FP, Marnay T. Lumbar disc replacement: preliminary results with
6533 ProDisc II after a minimum follow-up period of 1 year. *Journal of Spinal Disorders and
6534 Techniques*. 2003; 16(4):362-368
- 6535 2134 Trouillier H, Kern P, Refior HJ, Muller-Gerbl M. A prospective morphological study of facet joint
6536 integrity following intervertebral disc replacement with the CHARITE Artificial Disc. *European
6537 Spine Journal*. 2006; 15(2):174-182
- 6538 2135 Tsai C-H, Hsu H-C, Chen Y-J, Lin C-J, Chen H-T. Recurrent lumbar disc herniation after
6539 discectomy: Clinical result of repeated discectomy and analysis of factors affecting surgical
6540 outcome. *Mid-Taiwan Journal of Medicine*. 2007; 12(3):125-132
- 6541 2136 Tsao H, Hodges PW. Persistence of improvements in postural strategies following motor
6542 control training in people with recurrent low back pain. *Journal of Electromyography and
6543 Kinesiology*. 2008; 18(4):559-567
- 6544 2137 Tsao H, Druitt TR, Schollum TM, Hodges PW. Motor training of the lumbar paraspinal muscles
6545 induces immediate changes in motor coordination in patients with recurrent low back pain.
6546 *Journal of Pain*. 2010; 11(11):1120-1128
- 6547 2138 Tsou PM, Alan Yeung C, Yeung AT. Posterolateral transforaminal selective endoscopic
6548 discectomy and thermal annuloplasty for chronic lumbar discogenic pain: a minimal access
6549 visualized intradiscal surgical procedure. *Spine Journal*. 2004; 4(5):564-573
- 6550 2139 Tsuyama N, Fukubayashi T, Taniguchi K, Akai M, Hatsuyama Y, Nihei R et al. A Double-Blind
6551 Controlled Study on the Clinical Effects of CH-800 (Fentiazac) for Low Back Pain -Comparison
6552 with Diclofenac Na-. *Rinsho Hyoka*. 1981; 9:117-134

- 6553 2140 Tsuyama N, Hasue M, Tetsuya HARA, Nihei R. A Double-Blind Controlled Clinical Study of
6554 Oxaprozin in the Patient with Lumbago, Cervicobrachial Syndrome and Periarthritis
6555 Scapulohumeralis. *Rinsho Hyoka*. 1984; 12(3):729-764
- 6556 2141 Tsuyama N, Miyanaga Y. A Double Blind Controlled Study on the Clinical Effects of Pranoprofen
6557 in Low Back Pain and Cervical Pain -comparison with flufenamate Aluminium-. *Rinsho Hyoka*.
6558 1977; 5(3):493-533
- 6559 2142 Tucker JH. Ambulatory traction technique for low back pain. *Digest of Chiropractic Economics*.
6560 1993; 36(3):70-71
- 6561 2143 Tumialan LM, Ponton RP, Garvin A, Gluf WM. Arthroplasty in the military: a preliminary
6562 experience with ProDisc-C and ProDisc-L. *Neurosurgical Focus*. 2010; 28(5):E18
- 6563 2144 Turk DCMD, Genest M. Pain and behavioural medicine: a cognitive-behavioural perspective.
6564 Cambridge University Press; 1983
- 6565 2145 Turk DC, Dworkin RH, Trudeau JJ, Benson C, Biondi DM, Katz NP et al. Validation of the Hospital
6566 Anxiety and Depression Scale in Patients With Acute Low Back Pain. *Journal of Pain*. 2015;
6567 16(10):1012-1021
- 6568 2146 Turner G. Views and observations. The relationship between low back pain and tight fitting
6569 belts in obese people. *Journal of the Australian Traditional-Medicine Society*. 2008; 14(1):39
- 6570 2147 Turner JA, Clancy S. Comparison of operant behavioral and cognitive-behavioral group
6571 treatment for chronic low back pain. *Journal of Consulting and Clinical Psychology*. 1988;
6572 56(2):261-266
- 6573 2148 Turner JA. Comparison of group progressive-relaxation training and cognitive-behavioral group
6574 therapy for chronic low back pain. *Journal of Consulting and Clinical Psychology*. 1982;
6575 50(5):757-765
- 6576 2149 Turner JA, Denny MC. Do antidepressant medications relieve chronic low back pain? *Journal of*
6577 *Family Practice*. 1993; 37(6):545-553
- 6578 2150 Tuzun F, Unalan H, Oner N, Ozguzel H, Kirazli Y, Icagasioglu A et al. Multicenter, randomized,
6579 double-blinded, placebo-controlled trial of thicolchicoside in acute low back pain. *Joint, Bone,*
6580 *Spine*. 2003; 70(5):356-361
- 6581 2151 Tygiel PP, Anaya S, Porter A. A randomized trial of exercise therapy in patients with acute low
6582 back pain--efficacy on sickness absence. *Spine*. 1996; 21(4):529-530
- 6583 2152 Uberall MA, Mueller-Schwefe GHH, Terhaag B. Efficacy and safety of flupirtine modified release
6584 for the management of moderate to severe chronic low back pain: results of SUPREME, a
6585 prospective randomized, double-blind, placebo- and active-controlled parallel-group phase IV
6586 study. *Current Medical Research and Opinion*. 2012; 28(10):1617-1634
- 6587 2153 Udermann BE, Spratt KF, Donelson RG, Mayer J, Graves JE, Tillotson J. Can a patient
6588 educational book change behavior and reduce pain in chronic low back pain patients? *Spine*
6589 *Journal*. 2004; 4(4):425-435
- 6590 2154 Ueberall MA, Mueller-Schwefe GHH. Safety and efficacy of oxycodone/naloxone vs. oxycodone
6591 vs. morphine for the treatment of chronic low back pain: results of a 12 week prospective,

- 6592 randomized, open-label blinded endpoint streamlined study with prolonged-release
6593 preparations. *Current Medical Research and Opinion*. 2015; 31(7):1413-1429
- 6594 2155 Ugur M, Senel K, Deniz O, Yildirim K, Aygul R. The clinic and electromyographic evaluation of
6595 ultrasound, phonophoresis and oral corticosteroid treatment in patients with lumbosacral
6596 radiculopathy. *Journal of Rheumatology and Medical Rehabilitation*. 2001; 12(3):153-158
- 6597 2156 Ukhalkar VP. Effect of mashadi tailam anuvasan basti in management of kativata with special
6598 reference to lumbar spondylosis. *International Journal of Research in Ayurveda and Pharmacy*.
6599 2013; 4(3):410-413
- 6600 2157 Urquhart DM, Hoving JL, Assendelft Willem JJ, Roland M, van Tulder MW. Antidepressants for
6601 non-specific low back pain. *Cochrane Database of Systematic Reviews*. 2008; Issue
6602 1:CD001703. DOI:10.1002/14651858.CD001703.pub3
- 6603 2158 Uyttendaele D, Verhamme J, Vercauteren M, Verschraegen R. Local block of lumbar facet joints
6604 and percutaneous radiofrequency denervation. Preliminary results. *Acta Orthopaedica Belgica*.
6605 1981; 47(1):135-139
- 6606 2159 Vad VB, Bhat AL, Lutz GE, Cammisa F. Transforaminal epidural steroid injections in lumbosacral
6607 radiculopathy: a prospective randomized study. *Spine*. 2002; 27(1):11-16
- 6608 2160 Vaiani G, Grossi E. Meta-analysis of Italian clinical trials of nabumetone. *Drugs*. 1990;
6609 40(Suppl.5):48-49
- 6610 2161 Valat J-P. Epidural corticosteroid injections for sciatica: Placebo effect, injection effect or anti-
6611 inflammatory effect? *Nature Clinical Practice Rheumatology*. 2006; 2(10):518-519
- 6612 2162 Vallone F, Benedicenti S, Sorrenti E, Schiavetti I, Angiero F. Effect of diode laser in the
6613 treatment of patients with nonspecific chronic low back pain: a randomized controlled trial.
6614 *Photomedicine and Laser Surgery*. 2014; 32(9):490-494
- 6615 2163 Van de Kelft E, Verguts L. Clinical outcome of monosegmental total disc replacement for
6616 lumbar disc disease with ball-and-socket prosthesis (Maverick): prospective study with four-
6617 year follow-up. *World Neurosurgery*. 2012; 78(3-4):355-363
- 6618 2164 Van Den Eerenbeemt KD, Ostelo RW, van Royen BJ, Peul WC, van Tulder MW. Total disc
6619 replacement surgery for symptomatic degenerative lumbar disc disease: A systematic review of
6620 the literature. *European Spine Journal*. 2010; 19(8):1262-1280
- 6621 2165 van den Hout JHC, Vlaeyen JWS, Heuts PHTG, Zijlema JHL, Wijnen JAG. Secondary prevention of
6622 work-related disability in nonspecific low back pain: does problem-solving therapy help? A
6623 randomized clinical trial. *Clinical Journal of Pain*. 2003; 19(2):87-96
- 6624 2166 van der Heijden GJ, Beurskens AJ, Koes BW, Assendelft WJ, de Vet HC, Bouter LM. The efficacy
6625 of traction for back and neck pain: a systematic, blinded review of randomized clinical trial
6626 methods. *Physical Therapy*. 1995; 75(2):93-104
- 6627 2167 van der Roer N, van TM, van MW, de VH. Economic evaluation of an intensive group training
6628 protocol compared with usual care physiotherapy in patients with chronic low back pain. *Spine*.
6629 2008; 33(4):445-451
- 6630 2168 van der Valk RWA, Dekker J, van Baar ME. Physical therapy for patients with back pain.
6631 *Physiotherapy*. 1995; 81(6):345-351

- 6632 2169 van der Weide WE, Verbeek JH, van Tulder MW. Vocational outcome of intervention for low-
6633 back pain. *Scandinavian Journal of Work, Environment and Health*. 1997; 23(3):165-178
- 6634 2170 Van Der Windt DAWM, Simons E, Riphagen I, Ammendolia C, Verhagen AP, Laslett M et al.
6635 Physical examination for lumbar radiculopathy due to disc herniation in patients with low-back
6636 pain. *Cochrane Database of Systematic Reviews*. 2008; Issue 4:CD007431.
6637 DOI:1002/14651858.CD007431
- 6638 2171 van der Windt DA, Simons E, Riphagen II, Ammendolia C, Verhagen AP, Laslett M et al. Physical
6639 examination for lumbar radiculopathy due to disc herniation in patients with low-back pain.
6640 *Cochrane Database of Systematic Reviews*. 2010; Issue 2:CD007431.
6641 DOI:10.1002/14651858.CD007431.pub2
- 6642 2172 van Duijvenbode I, Jellema P, van Poppel Mireille, van Tulder MW. Lumbar supports for
6643 prevention and treatment of low back pain. *Cochrane Database of Systematic Reviews*. 2008;
6644 Issue 2:CD001823. DOI:10.1002/14651858.CD001823.pub3
- 6645 2173 Van Dyke M. A randomized, placebo-controlled trial of exercise therapy in patients with acute
6646 low back pain. *Spine*. 1994; 19(9):1101-1104
- 6647 2174 van Rijn RM, Wassenaar M, Verhagen AP, Ostelo RWJG, Ginai AZ, de Boer MR et al. Computed
6648 tomography for the diagnosis of lumbar spinal pathology in adult patients with low back pain
6649 or sciatica: a diagnostic systematic review. *European Spine Journal*. 2012; 21(2):228-239
- 6650 2175 van Tulder MW. Pilot study shows promising results for chiropractic spinal manipulation in
6651 chronic back and neck pain. *Focus on Alternative and Complementary Therapies*. 2000; 5(1):30-
6652 31
- 6653 2176 van Tulder MW. Treatment of low back pain: myths and facts. *Schmerz*. 2001; 15(6):499-503
- 6654 2177 van Tulder MW, Cherkin DC, Berman B, Lao L, Koes BW. The effectiveness of acupuncture in
6655 the management of acute and chronic low back pain. A systematic review within the
6656 framework of the Cochrane Collaboration Back Review Group. *Spine*. 1999; 24(11):1113-1123
- 6657 2178 van Tulder MW, Jellema P, Van Poppel MN, Nachemson AL, Bouter LM. Lumbar supports for
6658 prevention and treatment of low back pain. *Cochrane Database of Systematic Reviews*. 2000;
6659 Issue 3:CD001823. DOI:10.1002/14651858.CD00182
- 6660 2179 van Tulder MW, Koes BW, Bouter LM. Conservative treatment of acute and chronic nonspecific
6661 low back pain: A systematic review of randomized controlled trials of the most common
6662 interventions. *Spine*. 1997; 22(18):2128-2156
- 6663 2180 van Tulder MW, Koes B, Malmivaara A. Outcome of non-invasive treatment modalities on back
6664 pain: an evidence-based review. *European Spine Journal*. 2006; 15(Suppl.1):S64-S81
- 6665 2181 van Tulder MW, Ostelo R, Vlaeyen JW, Linton SJ, Morley SJ, Assendelft WJ. Behavioral
6666 treatment for chronic low back pain: a systematic review within the framework of the
6667 Cochrane Back Review Group. *Spine*. 2000; 25(20):2688-2699
- 6668 2182 van Tulder MW, Ostelo R, Vlaeyen JW, Linton SJ, Morley SJ, Assendelft WJ. Behavioral
6669 treatment for chronic low back pain: a systematic review within the framework of the
6670 Cochrane Back Review Group. *Spine*. 2001; 26(3):270-281

- 6671 2183 van Tulder MW, Scholten RJ, Koes BW, Deyo RA. Nonsteroidal anti-inflammatory drugs for low
6672 back pain: a systematic review within the framework of the Cochrane Collaboration Back
6673 Review Group. *Spine*. 2000; 25(19):2501-2513
- 6674 2184 van Tulder MW, Touray T, Furlan AD, Solway S, Bouter LM. Muscle relaxants for non-specific
6675 low-back pain. *Cochrane Database of Systematic Reviews*. 2003; Issue 4:CD004252.
6676 DOI:10.1002/14651858.CD004252
- 6677 2185 van Tulder MW, Touray T, Furlan AD, Solway S, Bouter LM, Cochrane Back Review Group.
6678 Muscle relaxants for nonspecific low back pain: a systematic review within the framework of
6679 the cochrane collaboration. *Spine*. 2003; 28(17):1978-1992
- 6680 2186 van Wijk RMAW, Geurts JWM, Lousberg R, Wynne HJ, Hammink E, Knape JTA et al.
6681 Psychological predictors of substantial pain reduction after minimally invasive radiofrequency
6682 and injection treatments for chronic low back pain. *Pain Medicine*. 2008; 9(2):212-221
- 6683 2187 van Wijk RMAW, Geurts JWM, Wynne HJ, Hammink E, Buskens E, Lousberg R et al.
6684 Radiofrequency denervation of lumbar facet joints in the treatment of chronic low back pain: a
6685 randomized, double-blind, sham lesion-controlled trial. *Clinical Journal of Pain*. 2005;
6686 21(4):335-344
- 6687 2188 Van Zundert J, Huntoon MA, Van KM. Complications of transforaminal cervical epidural steroid
6688 injections. *Spine*. 2009; 34(22):2477-2478
- 6689 2189 Van W. Erratum: Radiofrequency denervation of lumbar facet joints in the treatment of chronic
6690 low back pain: A randomized, double-blind, sham lesion-controlled trial (*Clinical Journal of Pain*
6691 (July/August, 2005) 21 (335-344)). *Clinical Journal of Pain*. 2005; 21(5):462
- 6692 2190 Vas J, Modesto M, Aguilar I, Goncalo CS, Rivas-Ruiz F. Efficacy and safety of auriculopressure
6693 for primary care patients with chronic non-specific spinal pain: a multicentre randomised
6694 controlled trial. *Acupuncture in Medicine*. 2014; 32(3):227-235
- 6695 2191 Vaucher P. Benefits of osteopathic manual treatment on chronic low back pain – At last, a
6696 large high quality clinical trial! *International Journal of Osteopathic Medicine*. 2013; 16(3):163-
6697 164
- 6698 2192 Vavrek D, Haas M, Peterson D, Aickin M. Dose-response of spinal manipulation for low back
6699 pain: Quality and compliance outcomes from a randomized trial. *Clinical Chiropractic*. 2011;
6700 14(4):176-177
- 6701 2193 Vavrek D, Haas M, Peterson D, Neradilek M, Polissar N. Determinants of responders in a dose-
6702 response trial of spinal manipulation for the care of chronic low back pain. *Journal of*
6703 *Alternative and Complementary Medicine*. 2014; 20(5):A14
- 6704 2194 Veenema KR, Leahey N, Schneider S. Ketorolac versus meperidine: ED treatment of severe
6705 musculoskeletal low back pain. *American Journal of Emergency Medicine*. 2000; 18(4):404-407
- 6706 2195 Veihelmann A, Devens C, Trouillier H, Birkenmaier C, Gerdesmeyer L, Refior HJ. Epidural
6707 neuroplasty versus physiotherapy to relieve pain in patients with sciatica: a prospective
6708 randomized blinded clinical trial. *Journal of Orthopaedic Science*. 2006; 11(4):365-369
- 6709 2196 Vendrig AA. Prognostic factors and treatment-related changes associated with return to work
6710 in the multimodal treatment of chronic back pain. *Journal of Behavioral Medicine*. 1999;
6711 22(3):217-232

- 6712 2197 Verbeek JH, Martimo KP, Karppinen J, Kuijer PPF, Viikari-Juntura E, Takala EP. Manual material
6713 handling advice and assistive devices for preventing and treating back pain in workers.
6714 Cochrane Database of Systematic Reviews. 2011; Issue 6:CD005958.
6715 DOI:10.1002/14651858.CD005958.pub3
- 6716 2198 Verdu B, Decosterd I, Buclin T, Stiefel F, Berney A. Antidepressants for the treatment of chronic
6717 pain. *Drugs*. 2008; 68(18):2611-2632
- 6718 2199 Verhoef MJ, Page SA, Waddell SC. The chiropractic outcome study: Pain, functional ability and
6719 satisfaction with care. *Journal of Manipulative and Physiological Therapeutics*. 1997; 20(4):235-
6720 240
- 6721 2200 Vernon H. Spinal manipulation for chronic low back pain: a review of the evidence. *Topics in
6722 Clinical Chiropractic*. 1999; 6(2):8-12
- 6723 2201 Verwoerd AJH, Luijsterburg PAJ, Koes BW, El Barzouhi A, Verhagen AP. Does Kinesiophobia
6724 Modify the Effects of Physical Therapy on Outcomes in Patients With Sciatica in Primary Care?
6725 Subgroup Analysis From a Randomized Controlled Trial. *Physical Therapy*. 2015; 95(9):1217-
6726 1223
- 6727 2202 Vialle E, de Oliveira Pinto BM, Vialle LR, Gomez JDC. Evaluation of psychosomatic distress and
6728 its influence in the outcomes of lumbar fusion procedures for degenerative disorders of the
6729 spine. *European Journal of Orthopaedic Surgery and Traumatology*. 2015; 25(Suppl.1):25-28
- 6730 2203 Vibe Fersum K., O'Sullivan P, Skouen JS, Smith A, Kvale A. Efficacy of classification-based
6731 cognitive functional therapy in patients with non-specific chronic low back pain: a randomized
6732 controlled trial. *European Journal of Pain*. 2013; 17(6):916-928
- 6733 2204 Vibe Fersum K, O'Sullivan PB, Kvale A, Skouen JS. Inter-examiner reliability of a classification
6734 system for patients with non-specific low back pain. *Manual Therapy*. 2009; 14(5):555-561
- 6735 2205 Vickers A, Cronin A, Maschino A, Lewith G, MacPherson H, Victor N et al. Acupuncture for
6736 chronic pain: An individual patient data meta-analysis of randomized trials. *BMC
6737 Complementary and Alternative Medicine*. 2012; 12(Suppl.1):09
- 6738 2206 Vickers AJ. Statistical reanalysis of four recent randomized trials of acupuncture for pain using
6739 analysis of covariance. *Clinical Journal of Pain*. 2004; 20(5):319-323
- 6740 2207 Vickers AJ, Cronin AM, Maschino AC, Lewith G, Macpherson H, Foster NE et al. Acupuncture for
6741 chronic pain: individual patient data meta-analysis. *Archives of Internal Medicine*. 2012;
6742 172(19):1444-1453
- 6743 2208 Vickers AJ, Cronin AM, Maschino AC, Lewith G, Macpherson H, Victor N et al. Individual patient
6744 data meta-analysis of acupuncture for chronic pain: protocol of the Acupuncture Trialists'
6745 Collaboration. *Trials*. 2010; 11:90
- 6746 2209 Vickers AJ, Maschino AC. The Acupuncture Trialists' Collaboration: individual patient data
6747 meta-analysis of chronic pain trials. *Acupuncture in Medicine*. 2009; 27(3):126-127
- 6748 2210 Vidal J, Borràs PA, Ponseti FJ, Cantallops J, Ortega FB, Palou P. Effects of a postural education
6749 program on school backpack habits related to low back pain in children. *European Spine
6750 Journal*. 2014; 22(4):782-787

- 6751 2211 Videbaek TS, Christensen FB, Soegaard R, Hansen ES, Hoy K, Helmig P, Niedermann BE, Eiskjaer SP.
6752 Circumferential fusion improves long-term outcome in comparison to instrumented
6753 posterolateral fusion. A randomized clinical study with 5-9 years follow-up. Eurospine 2006. 8Th
6754 annual meeting of the European Spine Society, 25-28 October 2006, Istanbul, Turkey. Abstracts
6755 #14. European Spine Journal. 2006; 15(S4):S463-S464
- 6756 2212 Videbaek TS, Christensen FB, Soegaard R, Hansen ES, Hoy K, Helmig P et al. Circumferential
6757 fusion improves outcome in comparison with instrumented posterolateral fusion: Long-term
6758 results of a randomized clinical trial. Spine. 2006; 31(25):2875-2880
- 6759 2213 Videman T, Heikkila J, Partanen T. Double-blind parallel study of meptazinol versus diflunisal in
6760 the treatment of lumbago. Current Medical Research and Opinion. 1984; 9(4):246-252
- 6761 2214 Videman T, Osterman K. Double-blind parallel study of piroxicam versus indomethacin in the
6762 treatment of low back pain. Annals of Clinical Research. 1984; 16(3):156-160
- 6763 2215 Vincent HK, Conrad B, George SZ, Hurley RW, Montero C, Seay A et al. Resistance exercise in
6764 obese older adults with chronic back pain: Preliminary results. Spine. 2012; 4(10 SUPPL.
6765 1):S251
- 6766 2216 Vincent HK, Conrad B, Seay A, Montero C, Vincent KR, Hurley RW et al. Low back strength gain
6767 contributes to walking improvement in obese older adults with chronic low back pain. Spine.
6768 2013; 5(9 SUPPL. 1):S142
- 6769 2217 Vincent K, Maigne JY, Fischhoff C, Lanlo O, Dagenais S. Systematic review of manual therapies
6770 for nonspecific neck pain. Joint, Bone, Spine. 2013; 80(5):508-515
- 6771 2218 Virk S, Sandhu HS, Khan SN. Cost effectiveness analysis of graft options in spinal fusion surgery
6772 using a Markov model. Journal of Spinal Disorders and Techniques. 2012; 25(7):E204-E210
- 6773 2219 Vismara L, Cimolin V, Menegoni F, Zaina F, Galli M, Negrini S et al. Osteopathic manipulative
6774 treatment in obese patients with chronic low back pain: a pilot study. Manual Therapy. 2012;
6775 17(5):451-455
- 6776 2220 Visser LH, Woudenberg NP, de Bont J, van Eijs F, Verwer K, Jenniskens H et al. Treatment of the
6777 sacroiliac joint in patients with leg pain: a randomized-controlled trial. European Spine Journal.
6778 2013; 22(10):2310-2317
- 6779 2221 Vital JM, Boissiere L. Total disc replacement. Orthopaedics and Traumatology, Surgery and
6780 Research. 2014; 100(1 Suppl):S1-14
- 6781 2222 Vlaeyen JW, Haazen IW, Schuerman JA, Kole-Snijders AM, van Eek H. Behavioural rehabilitation
6782 of chronic low back pain: comparison of an operant treatment, an operant-cognitive treatment
6783 and an operant-responder treatment. British Journal of Clinical Psychology. 1995; 34(Pt.1):95-
6784 118
- 6785 2223 Vlayen J, Camberlin C, Paulus D, and Ramaekers D. Rapid assessment of emerging spine
6786 technologies: intervertebral disc replacement and vertebro/balloon kyphoplasty. Belgium.
6787 Brussels: Belgian Health Care Knowledge Centre (KCE), 2006. Available from:
6788 https://kce.fgov.be/sites/default/files/page_documents/d20061027338.pdf
- 6789 2224 Volklein VR, Callies R. Schmerzänderung durch unterschiedliche Stromformen diadynamischer
6790 strome bei Gonarthrose und Lumbalsyndrom. Z Physiother Jg. 1990; 42:113-118

- 6791 2225 von Heymann WJ, Schloemer P, Timm J, Muehlbauer B. Spinal high-velocity low amplitude
6792 manipulation in acute nonspecific low back pain: a double-blinded randomized controlled trial
6793 in comparison with diclofenac and placebo. *Spine*. 2013; 38(7):540-548
- 6794 2226 Von Korff M, Glasgow RE, Sharpe M. ABC of psychological medicine: Organising care for chronic
6795 illness. *BMJ*. 2002; 325(7355):92-94
- 6796 2227 Von Korff M, Moore JE, Lorig K, Cherkin DC, Saunders K, Gonzalez VM et al. A randomized trial
6797 of a lay person-led self-management group intervention for back pain patients in primary care.
6798 *Spine*. 1998; 23(23):2608-2615
- 6799 2228 Von Korff M, Shortreed SM, Saunders KW, LeResche L, Berlin JA, Stang P et al. Comparison of
6800 back pain prognostic risk stratification item sets. *Journal of Pain*. 2014; 15(1):81-89
- 6801 2229 Voorhies RM, Jiang X, Thomas N. Predicting outcome in the surgical treatment of lumbar
6802 radiculopathy using the Pain Drawing Score, McGill Short Form Pain Questionnaire, and risk
6803 factors including psychosocial issues and axial joint pain. *Spine Journal*. 2007; 7(5):516-524
- 6804 2230 Vorsanger G, Xiang J, Okamoto A, Upmalis D, Lange C, Haufel T et al. Tapentadol IR, a new
6805 analgesic, versus oxycodone ir for low back or osteoarthritis pain: Influence of opioid
6806 experience on discontinuation due to nausea and/or vomiting. *Pain Practice*. 2009; 9:164
- 6807 2231 Vorsanger G, Xiang J, Okamoto A, Upmalis D, Stegmann J-U, Haufel T et al. Tapentadol IR, a
6808 new centrally acting analgesic, versus oxycodone IR for low back or osteoarthritis pain:
6809 Analyses of treatment discontinuations due to nausea and vomiting. *Pain Practice*. 2009; 9:165
- 6810 2232 Vorsanger G, Xiang J, Biondi D, Upmalis D, Delfgaauw J, Allard R et al. Post hoc analyses of data
6811 from a 90-day clinical trial evaluating the tolerability and efficacy of tapentadol immediate
6812 release and oxycodone immediate release for the relief of moderate to severe pain in elderly
6813 and nonelderly patients. *Pain Research and Management*. 2011; 16(4):245-251
- 6814 2233 Vorsanger G, Xiang J, Okamoto A, Upmalis D, Moskovitz B. Evaluation of study discontinuations
6815 with tapentadol immediate release and oxycodone immediate release in patients with low
6816 back or osteoarthritis pain. *Journal of Opioid Management*. 2010; 6(3):169-179
- 6817 2234 Vroomen PC, de Krom MC, Knottnerus JA. Diagnostic value of history and physical examination
6818 in patients suspected of sciatica due to disc herniation: a systematic review. *Journal of*
6819 *Neurology*. 1999; 246(10):899-906
- 6820 2235 Vroomen PC, de Krom MC, Wilmlink JT, Kester AD, Knottnerus JA. Lack of effectiveness of bed
6821 rest for sciatica. *New England Journal of Medicine*. 1999; 340(6):418-423
- 6822 2236 Vroomen PC, Krom MC, Wilmlink JT, Kester AD, Knottnerus JA. Diagnostic value of history and
6823 physical examination in patients suspected of lumbosacral nerve root compression. *Journal of*
6824 *Neurology, Neurosurgery, and Psychiatry*. 2002; 72:630-634
- 6825 2237 Waddell G, Feder G, Lewis M. Systematic reviews of bed rest and advice to stay active for acute
6826 low back pain. *British Journal of General Practice*. 1997; 47(423):647-652
- 6827 2238 Waddell G, Feder G, Lewis M. Review: Advice to stay active is effective for acute low-back pain
6828 but bed rest is not. *Evidence-Based Medicine*. 1998; 3(4):109
- 6829 2239 Wade WE, Spruill WJ. Tapentadol hydrochloride: a centrally acting oral analgesic. *Clinical*
6830 *Therapeutics*. 2009; 31(12):2804-2818

- 6831 2240 Waikakul S, Danputipong P, Soparat K. Topical analgesics, indomethacin plaster and diclofenac
6832 emulgel for low back pain: a parallel study. *Journal of the Medical Association of Thailand*.
6833 1996; 79(8):486-490
- 6834 2241 Waikakul S, Soparat K. Effectiveness and safety of loxoprofen compared with naproxen in
6835 nonsurgical low back pain: A parallel study. *Clinical Drug Investigation*. 1995; 10(1):59-63
- 6836 2242 Wajswelner H, Metcalf B, Bennell K. Clinical pilates versus general exercise for chronic low back
6837 pain: randomized trial. *Medicine and Science in Sports and Exercise*. 2012; 44(7):1197-1205
- 6838 2243 Walach H, Guthlin C, Konig M. Efficacy of massage therapy in chronic pain: a pragmatic
6839 randomized trial. *Journal of Alternative and Complementary Medicine*. 2003; 9(6):837-846
- 6840 2244 Wald JT, Geske JR, Diehn FE, Murthy NS, Kaufmann TJ, Thielen KR et al. A practice audit of CT-
6841 guided injections of pars interarticularis defects in patients with axial low back pain: a primer
6842 for further investigation. *Pain Medicine*. 2014; 15(5):745-750
- 6843 2245 Walker AP, Moore C, Sundaram S, Foster L, Livesey J. A randomised prospective study
6844 comparing laser decompression and epidural steroid injection in alleviating radicular pain
6845 secondary to prolapsed lumbar discs. *Proceedings of the International Society for Study of the*
6846 *Lumbar Spine*. 1998;
- 6847 2246 Walker BF, French SD, Grant W, Green S. Combined chiropractic interventions for low-back
6848 pain. *Cochrane Database of Systematic Reviews*. 2010; Issue 4:CD005427.
6849 DOI:10.1002/14651858.CD005427.pub2
- 6850 2247 Walker BF, French SD, Grant W, Green S. A Cochrane review of combined chiropractic
6851 interventions for low-back pain. *Spine*. 2011; 36(3):230-242
- 6852 2248 Walsh N, Cramp F, Palmer S, Pollock J, Hampson L, Gooberman-Hill R et al. Exercise and self-
6853 management for people with chronic knee, hip or lower back pain: a cluster randomised
6854 controlled trial of clinical and cost-effectiveness. *Study protocol. Physiotherapy*. 2013;
6855 99(4):352-357
- 6856 2249 Walter D. Re: Yelland M, Glasziou P, Bogduk N, et al. Prolotherapy injections, saline injections
6857 and exercises for chronic low-back pain: a randomized trial. *Spine* 2004;29:9-16. *Spine*. 2004;
6858 29(19):2195-2196
- 6859 2250 Walti P, Kool J, Luomajoki H. Short-term effect on pain and function of neurophysiological
6860 education and sensorimotor retraining compared to usual physiotherapy in patients with
6861 chronic or recurrent non-specific low back pain, a pilot randomized controlled trial. *BMC*
6862 *Musculoskeletal Disorders*. 2015; 16:83
- 6863 2251 Wand BM, Bird C, McAuley JH, Dore CJ, MacDowell M, De Souza LH. Early intervention for the
6864 management of acute low back pain: a single-blind randomized controlled trial of
6865 biopsychosocial education, manual therapy, and exercise. *Spine*. 2004; 29(21):2350-2356
- 6866 2252 Wang B, Wu J-X, Wang J. Active exercise and massage for nonspecific low back pain: A clinical
6867 randomized controlled trial. *Chinese Journal of Clinical Rehabilitation*. 2005; 9(10):1-3
- 6868 2253 Wang H, Huang B, Zheng W, Li C, Zhang Z, Wang J et al. Comparison of early and late
6869 percutaneous endoscopic lumbar discectomy for lumbar disc herniation. *Acta Neurochirurgica*.
6870 2013; 155(10):1931-1936

- 6871 2254 Wang JX. Acupuncture in treating Low Back Pain in 492 cases. *Shanghai Journal of Acupuncture and Moxibustion [Shang Hai Zhen Jiu Za Zhi]*. 1996; 15(5):28
6872
- 6873 2255 Wang SM, Kain ZN, White PF. Acupuncture analgesia: II. Clinical considerations. *Anesthesia and Analgesia*. 2008; 106(2):611-contents
6874
- 6875 2256 Wang X, Wanyan P, Tian JH, Hu L. Meta-analysis of randomized trials comparing fusion surgery to non-surgical treatment for discogenic chronic low back pain. *Journal of Back and Musculoskeletal Rehabilitation*. 2014; 28(4):621-627
6876
6877
- 6878 2257 Ward N, Bokan JA, Phillips M, Benedetti C, Butler S, Spengler D. Antidepressants in concomitant chronic back pain and depression: doxepin and desipramine compared. *Journal of Clinical Psychiatry*. 1984; 45(3 Pt.2):54-59
6879
6880
- 6881 2258 Ward NG. Tricyclic antidepressants for chronic low-back pain. Mechanisms of action and predictors of response. *Spine*. 1986; 11(7):661-665
6882
- 6883 2259 Ward PJ. Double-blind comparison of meptazinol versus pentazocine in patients with chronic backache. *Current Therapeutic Research - Clinical and Experimental*. 1981; 30(4):507-514
6884
- 6885 2260 Waseem Z, Boulias C, Gordon A, Ismail F, Sheean G, Furlan AD. Botulinum toxin injections for low-back pain and sciatica. *Cochrane Database of Systematic Reviews*. 2011; Issue 1:CD008257. DOI:10.1002/14651858.CD008257.pub2
6886
6887
- 6888 2261 Wassell JT, Gardner LI, Landsittel DP, Johnston JJ, Johnston JM. A prospective study of back belts for prevention of back pain and injury. *JAMA*. 2000; 284(21):2727-2732
6889
- 6890 2262 Wassenaar M, van Rijn RM, van Tulder MW, Verhagen AP, van der Windt DAWM, Koes BW et al. Magnetic resonance imaging for diagnosing lumbar spinal pathology in adult patients with low back pain or sciatica: a diagnostic systematic review. *European Spine Journal*. 2012; 21(2):220-227
6891
6892
6893
- 6894 2263 Waterschoot FPC, Dijkstra PU, Hollak N, de Vries HJ, Geertzen JHB, Reneman MF. Dose or content? Effectiveness of pain rehabilitation programs for patients with chronic low back pain: a systematic review. *Pain*. 2014; 155(1):179-189
6895
6896
- 6897 2264 Waterworth RF, Hunter IA. An open study of diflunisal, conservative and manipulative therapy in the management of acute mechanical low back pain. *New Zealand Medical Journal*. 1985; 98(779):372-375
6898
6899
- 6900 2265 Watkins RG, O'Brien JP, Draugelis R, Jones D. Comparisons of preoperative and postoperative MMPI data in chronic back patients. *Spine*. 1986; 11(4):385-390
6901
- 6902 2266 Watson DJ, Bolognese JA, Yu C, Krupa D, Curtis S. Use of gastroprotective agents and discontinuations due to dyspepsia with the selective cyclooxygenase-2 inhibitor etoricoxib compared with non-selective NSAIDs. *Current Medical Research and Opinion*. 2004; 20(12):1899-1908
6903
6904
6905
- 6906 2267 Webb P. Back to self care... project involving self help and back pain. *Physiotherapy*. 1982; 68(9):295-297
6907
- 6908 2268 Weber H. Comparison of the effect of diazepam and levomepromazine on pain in patients with acute lumbago-sciatica. *Journal of the Oslo City Hospitals*. 1980; 30(5):65-68
6909

- 6910 2269 Weber H. Lumbar disc herniation. A controlled, prospective study with ten years of
6911 observation. *Spine*. 1983; 8(2):131-140
- 6912 2270 Weber H, Aasand G. The effect of phenylbutazone on patients with acute lumbago-sciatica. A
6913 double blind trial. *Journal of the Oslo City Hospitals*. 1980; 30(5):69-72
- 6914 2271 Webster BS, Choi Y, Bauer AZ, Cifuentes M, Pransky G. The cascade of medical services and
6915 associated longitudinal costs due to nonadherent magnetic resonance imaging for low back
6916 pain. *Spine*. 2014; 39(17):1433-1440
- 6917 2272 Wedenberg K, Moen B, Norling A. A prospective randomized study comparing acupuncture
6918 with physiotherapy for low-back and pelvic pain in pregnancy. *Acta Obstetrica Et Gynecologica
6919 Scandinavica*. 2000; 79(5):331-335
- 6920 2273 Wegner I, Widyahening IS, van Tulder MW, Blomberg Stefan EI, de Vet Henrica CW, Brønfort G
6921 et al. Traction for low-back pain with or without sciatica. *Cochrane Database of Systematic
6922 Reviews*. 2013; Issue 8:CD003010. DOI:10.1002/14651858.CD003010.pub5
- 6923 2274 Weifen W, Muheremu A, Chaohui C, Md LW, Lei S. Effectiveness of tai chi practice for non-
6924 specific chronic low back pain on retired athletes: A randomized controlled study. *Journal of
6925 Musculoskeletal Pain*. 2013; 21(1):37-45
- 6926 2275 Weil AJ, Ruoff GE, Nalamachu S, Altman CA, Xie F, Taylor DR. Efficacy and tolerability of
6927 cyclobenzaprine extended release for acute muscle spasm: a pooled analysis. *Postgraduate
6928 Medicine*. 2010; 122(4):158-169
- 6929 2276 Weiner AL, MacKenzie RS. Utilization of lumbosacral spine radiographs for the evaluation of
6930 low back pain in the emergency department. *Journal of Emergency Medicine*. 1999; 17(2):229-
6931 233
- 6932 2277 Weiner BK, Fernandez-Moure J. Caudal epidural steroid injections no better than saline,
6933 epidurals or sham injections for the treatment of chronic lumbar radiculopathy. *Evidence-
6934 Based Medicine*. 2012; 17(4):110-111
- 6935 2278 Weinstein JN, Lurie JD, Tosteson TD, Skinner JS, Hanscom B, Tosteson AN et al. Surgical vs
6936 nonoperative treatment for lumbar disk herniation: the Spine Patient Outcomes Research Trial
6937 (SPORT) observational cohort. *JAMA*. 2006; 296(20):2451-2459
- 6938 2279 Weinstein JN, Tosteson TD, Lurie JD, Tosteson AN, Blood E, Hanscom B et al. Surgical versus
6939 nonsurgical therapy for lumbar spinal stenosis. *New England Journal of Medicine*. 2008;
6940 358(8):794-810
- 6941 2280 Wen W, Sitar S, Lynch SY, He E, Ripa SR. A multicenter, randomized, double-blind, placebo-
6942 controlled trial to assess the efficacy and safety of single-entity, once-daily hydrocodone
6943 tablets in patients with uncontrolled moderate to severe chronic low back pain. *Expert Opinion
6944 on Pharmacotherapy*. 2015; 16(11):1593-1606
- 6945 2281 Weng C-S, Tsai Y-S, Shu S-H, Chen C-C, Sun M-F. The treatment of upper back pain by two
6946 modulated frequency modes of acupuncture-like TENS. *Journal of Medical and Biological
6947 Engineering*. 2005; 25(1):21-25
- 6948 2282 Werner EL, Storheim K, Lochting I, Grotle M. The COPE LBP trial: cognitive patient education for
6949 low back pain--a cluster randomized controlled trial in primary care. *BMC Musculoskeletal
6950 Disorders*. 2010; 11:33

- 6951 2283 Westrom KK, Maiers MJ, Evans RL, Bronfort G. Individualized chiropractic and integrative care
6952 for low back pain: the design of a randomized clinical trial using a mixed-methods approach.
6953 *Trials*. 2010; 11:24
- 6954 2284 Wetzel L, Zadrazil M, Paternostro-Sluga T, Authried G, Kozek-Langenecker S, Scharbert G.
6955 Intravenous nonopioid analgesic drugs in chronic low back pain patients on chronic opioid
6956 treatment: Retracted. *European Journal of Anaesthesiology*. 2014; 31(1):35-40
- 6957 2285 Wewalka M, Abdelrahimsai A, Wiesinger GF, Uher EM. CT-guided transforaminal epidural
6958 injections with local anesthetic, steroid, and tramadol for the treatment of persistent lumbar
6959 radicular pain. *Pain Physician*. 2012; 15(2):153-159
- 6960 2286 White AR. Acupuncture as an adjunct is better for back pain than physiotherapy alone. Focus
6961 on Alternative and Complementary Therapies. 2002; 7(4):362-363
- 6962 2287 White AP, Arnold PM, Norvell DC, Ecker E, Fehlings MG. Pharmacologic management of chronic
6963 low back pain: synthesis of the evidence. *Spine*. 2011; 36(21 Suppl):S131-S143
- 6964 2288 White RL, Cohen SP. Return-to-duty rates among coalition forces treated in a forward-deployed
6965 pain treatment center: A prospective observational study. *Anesthesiology*. 2007; 107(6):1003-
6966 1008
- 6967 2289 Whitfill T, Haggard R, Bierner SM, Pransky G, Hassett RG, Gatchel RJ. Early intervention options
6968 for acute low back pain patients: a randomized clinical trial with one-year follow-up outcomes.
6969 *Journal of Occupational Rehabilitation*. 2010; 20(2):256-263
- 6970 2290 Whyne DK, McCahon RA, Ravenscroft A, Hardman J. Cost effectiveness of epidural steroid
6971 injections to manage chronic lower back pain. *BMC Anesthesiology*. 2012; 12:26
- 6972 2291 Wideman TH, Hill JC, Main CJ, Lewis M, Sullivan MJL, Hay EM. Comparing the responsiveness of
6973 a brief, multidimensional risk screening tool for back pain to its unidimensional reference
6974 standards: the whole is greater than the sum of its parts. *Pain*. 2012; 153(11):2182-2191
- 6975 2292 Wielage R, Bansal M, Wilson K, Klein R, Happich M. Cost-effectiveness of duloxetine in chronic
6976 low back pain: a Quebec societal perspective. *Spine*. 2013; 38(11):936-946
- 6977 2293 Wielage RC, Bansal M, Andrews JS, Wohlreich MM, Klein RW, Happich M. The cost-
6978 effectiveness of duloxetine in chronic low back pain: a US private payer perspective. *Value in
6979 Health*. 2013; 16(2):334-344
- 6980 2294 Wiesinger GF, Quittan M, Edenbichler G, Kaider A, Fialka V. Benefit and costs of passive
6981 modalities in back pain outpatients: a descriptive study. *European Journal of Physical Medicine
6982 and Rehabilitation*. 1997; 7(6):182-186
- 6983 2295 Wild JE, Grond S, Kuperwasser B, Gilbert J, McCann B, Lange B et al. Long-term safety and
6984 tolerability of tapentadol extended release for the management of chronic low back pain or
6985 osteoarthritis pain. *Pain Practice*. 2010; 10(5):416-427
- 6986 2296 Wilder DG, Vining RD, Pohlman KA, Meeker WC, Xia T, Devocht JW et al. Effect of spinal
6987 manipulation on sensorimotor functions in back pain patients: study protocol for a randomised
6988 controlled trial. *Trials*. 2011; 12:161

- 6989 2297 Wilkey A, Gregory M, Byfield D, McCarthy PW. A comparison between chiropractic
6990 management and pain clinic management for chronic low-back pain in a national health service
6991 outpatient clinic. *Journal of Alternative and Complementary Medicine*. 2008; 14(5):465-473
- 6992 2298 Wilkey AS, McCarthy PW, Byfield D, Gregory M. A National Health Service hospital-based study
6993 of the relative effectiveness of chiropractic manipulative treatment compared to normal
6994 outpatient pain clinic protocols in the management of chronic mechanical low back pain: a
6995 pilot study for a randomized clinical trial. *European Journal of Chiropractic*. 2003; 51(2):125-
6996 126
- 6997 2299 Willems PC, Staal JB, Walenkamp GHIM, de Bie RA. Spinal fusion for chronic low back pain:
6998 Systematic review on the accuracy of tests for patient selection. *Spine Journal*. 2013; 13(2):99-
6999 109
- 7000 2300 Willems P. Decision making in surgical treatment of chronic low back pain: the performance of
7001 prognostic tests to select patients for lumbar spinal fusion. *Acta Orthopaedica Supplementum*.
7002 2013; 84(349):1-35
- 7003 2301 Willems PC, Elmans L, Anderson PG, van der Schaaf DB, de Kleuver M. Provocative discography
7004 and lumbar fusion: is preoperative assessment of adjacent discs useful? *Spine*. 2007;
7005 32(10):1094-1100
- 7006 2302 Williams CM, Maher CG, Latimer J, McLachlan AJ, Hancock MJ, Day RO et al. Efficacy of
7007 paracetamol for acute low-back pain: a double-blind, randomised controlled trial. *Lancet*. 2014;
7008 384(9954):1586-1596
- 7009 2303 Williams CM, Henschke N, Maher CG, van Tulder MW, Koes BW, Macaskill P et al. Red flags to
7010 screen for vertebral fracture in patients presenting with low-back pain. *Cochrane Database of*
7011 *Systematic Reviews*. 2013; Issue 1:CD008643. DOI:10.1002/14651858.CD008643.pub2
- 7012 2304 Williams DA, Park KM, Ambrose KR, Clauw DJ. Assessor status influences pain recall. *Journal of*
7013 *Pain*. 2007; 8(4):343-348
- 7014 2305 Williams K, Abildso C, Steinberg L, Doyle E, Epstein B, Smith D et al. Evaluation of the
7015 effectiveness and efficacy of Iyengar yoga therapy on chronic low back pain. *Spine*. 2009;
7016 34(19):2066-2076
- 7017 2306 Williams MM, Hawley JA, McKenzie RA, van Wijmen PM. A comparison of the effects of two
7018 sitting postures on back and referred pain. *Spine*. 1991; 16(10):1185-1191
- 7019 2307 Williams N. Managing back pain in general practice--is osteopathy the new paradigm? *British*
7020 *Journal of General Practice*. 1997; 47(423):653-655
- 7021 2308 Williams NE, Hardy PA, Evans AF. Spread of local anaesthetic solutions following sacral
7022 extradural (caudal) block: influence of posture. *Journal of Spinal Disorders*. 1989; 2(4):249-253
- 7023 2309 Williams NH, Edwards RT, Linck P, Muntz R, Hibbs R, Wilkinson C et al. Cost-utility analysis of
7024 osteopathy in primary care: results from a pragmatic randomized controlled trial. *Family*
7025 *Practice*. 2004; 21(6):643
- 7026 2310 Williams NH, Wilkinson C, Russell I, Edwards RT, Hibbs R, Linck P et al. Randomized osteopathic
7027 manipulation study (ROMANS): pragmatic trial for spinal pain in primary care. *Family Practice*.
7028 2003; 20(6):662-669

- 7029 2311 Williams NH, Hendry M, Lewis R, Russell I, Westmoreland A, Wilkinson C. Psychological
7030 response in spinal manipulation (PRISM): a systematic review of psychological outcomes in
7031 randomised controlled trials. *Complementary Therapies in Medicine*. 2007; 15(4):271-283
- 7032 2312 Williams SE, Penn PF, Owens EF, Hosek RS, Burneskis RD, Bloomingdale SA et al. A progress
7033 report of chiropractic efficacy in the treatment of chronic low back pain, neck pain, headaches
7034 and related peripheral conditions: a double blinded time-series study. *Chiropractic Research
7035 Journal*. 1989; 1(3):11-21
- 7036 2313 Williamson OD, Schroer M, Ruff DD, Ahl J, Margherita A, Sagman D et al. Onset of response
7037 with duloxetine treatment in patients with osteoarthritis knee pain and chronic low back pain:
7038 A post hoc analysis of placebo-controlled trials. *Clinical Therapeutics*. 2014; 36(4):544-551
- 7039 2314 Wilson E, Payton O, Donegan-Shoaf L, Dec K. Muscle energy technique in patients with acute
7040 low back pain: a pilot clinical trial. *Journal of Orthopaedic and Sports Physical Therapy*. 2003;
7041 33(9):502-512
- 7042 2315 Wilson IB, Dukes K, Greenfield S, Kaplan S, Hillman B. Patients' role in the use of radiology
7043 testing for common office practice complaints. *Archives of Internal Medicine*. 2001;
7044 161(2):256-263
- 7045 2316 Wilson L, Hall H, McIntosh G, Melles T. Intertester reliability of a low back pain classification
7046 system. *Spine*. 1999; 24(3):248-254
- 7047 2317 Wilson-MacDonald J, Burt G, Griffin D, Glynn C. Epidural steroid injection for nerve root
7048 compression. A randomised, controlled trial. *Journal of Neurosurgery: Spine*. 2005; 87(3):352-
7049 355
- 7050 2318 Winters MV, Blake CG, Trost JS, Marcello-Brinker TB, Lowe LM, Garber MB et al. Passive versus
7051 active stretching of hip flexor muscles in subjects with limited hip extension: a randomized
7052 clinical trial. *Physical Therapy*. 2004; 84(9):800-807
- 7053 2319 Witt CM, Jena S, Selim D, Brinkhaus B, Reinhold T, Wruck K et al. Pragmatic randomized trial
7054 evaluating the clinical and economic effectiveness of acupuncture for chronic low back pain.
7055 *American Journal of Epidemiology*. 2006; 164(5):487-496
- 7056 2320 Wittenberg RH, Opper S, Rubenthaler FA, Steffen R. Five-year results from chemonucleolysis
7057 with chymopapain or collagenase: a prospective randomized study. *Spine*. 2001; 26(17):1835-
7058 1841
- 7059 2321 Wojtysiak M, Huber J, Wiertel-Krawczuk A, Szymankiewicz-Szukala A, Moskal J, Janicki J. Pre-
7060 and postoperative evaluation of patients with lumbosacral disc herniation by
7061 neurophysiological and clinical assessment. *Spine*. 2014; 39(21):1792-1800
- 7062 2322 Wong SHS, Wong CSM, Li TTL. Steroids in regional analgesia. *Expert Opinion on
7063 Pharmacotherapy*. 2010; 11(17):2839-2848
- 7064 2323 Wontae G, Younghwa L, Eunyoung K. The Effects of Gong's Mobilization on Lumbar Extension
7065 ROM of Patients with Low Back Pain. *Journal of Physical Therapy Science*. 2013; 25(4):437-440
- 7066 2324 Wood K, Buttermann G, Mehbod A, Garvey T, Jhanjee R, Sechriest V. Operative compared with
7067 nonoperative treatment of a thoracolumbar burst fracture without neurological deficit. A
7068 prospective, randomized study. *Journal of Bone and Joint Surgery - American Volume*. 2003;
7069 85-A(5):773-781

- 7070 2325 Woodman JP, Moore NR. Evidence for the effectiveness of Alexander Technique lessons in
7071 medical and health-related conditions: a systematic review. *International Journal of Clinical*
7072 *Practice*. 2012; 66(1):98-112
- 7073 2326 Worz R, Bolten W, Heller B, Krainick JU, Pergande G. Flupirtine in comparison with
7074 chlormezanone and placebo in chronic myofascial low back pain. Results of a multicenter,
7075 randomized double-blind study. *Fortschritte Der Medizin*. 1996; 114(35-36):46-50
- 7076 2327 Wu S, Li X, Lin C, Zeng W, Ma C. CT-guided nucleoplasty with radiofrequency energy for the
7077 treatment of lumbar disk herniation. *Journal of Spinal Disorders and Techniques*. 2015;
7078 28(1):E9-16
- 7079 2328 Wu Z, Wei LX, Li J, Wang Y, Ni D, Yang P et al. Percutaneous treatment of non-contained
7080 lumbar disc herniation by injection of oxygen-ozone combined with collagenase. *European*
7081 *Journal of Radiology*. 2009; 72(3):499-504
- 7082 2329 Xie JC, Hurlbert RJ. Discectomy versus discectomy with fusion versus discectomy with fusion
7083 and instrumentation: a prospective randomized study. *Neurosurgery*. 2007; 61:107-116
- 7084 2330 Ximenes A, Robles M, Sands G, Vinueza R. Valdecoxib is as efficacious as diclofenac in the
7085 treatment of acute low back pain. *Clinical Journal of Pain*. 2007; 23(3):244-250
- 7086 2331 Xinyu L, Yanping Z, Jianmin L, Liangtai G. Hemilaminoplasty for the treatment of lumbar disc
7087 herniation. *International Orthopaedics*. 2009; 33(5):1323-1327
- 7088 2332 Xu J, Lin R, Wu Y, Wang Y, Liu J, Zhang Y et al. Effect of stimulating acupoint Guanyuan (CV 4)
7089 on lower back pain by burning moxa heat for different time lengths: a randomized controlled
7090 clinical trial. *Journal of Traditional Chinese Medicine*. 2015; 35(1):36-40
- 7091 2333 Xu M, Yan S, Yin X, Li X, Gao S, Han R et al. Acupuncture for chronic low back pain in long-term
7092 follow-up: a meta-analysis of 13 randomized controlled trials. *American Journal of Chinese*
7093 *Medicine*. 2013; 41(1):1-19
- 7094 2334 Xue CCL, Zhang AL, Lin V, Myers R, Polus B, Story DF. Acupuncture, chiropractic and osteopathy
7095 use in Australia: A national population survey. *BMC Public Health*. 2008; 8:105
- 7096 2335 Xueqiang W, Jiejiao Z, Xia B, Jing L. Effect of core stability training on patients with chronic low
7097 back pain. *HealthMED*. 2012; 6(3):754-759
- 7098 2336 Yaghoubi Z, Kahrizi S, Parnian PM, Faghihzadeh S. Short effects of two common stabilization
7099 exercise on back and abdominal muscle recruitment and lumbar curvature in non-specific
7100 chronic low back pain patients: A crossover clinical trial study. *Koomesh*. 2014; 15(4):511-521
- 7101 2337 Yakhno N, Guekht A, Skoromets A, Spirin N, Strachunskaya E, Ternavsky A et al. Analgesic
7102 efficacy and safety of lornoxicam quick-release formulation compared with diclofenac
7103 potassium: randomised, double-blind trial in acute low back pain. *Clinical Drug Investigation*.
7104 2006; 26(5):267-277
- 7105 2338 Yaksi A, Ozgönenel L, Ozgönenel B. The efficiency of gabapentin therapy in patients with
7106 lumbar spinal stenosis. *Spine*. 2007; 32(9):939-942
- 7107 2339 Yamada H, Oka H, Iwasaki H, Endo T, Kioka M, Ishimoto Y et al. Development of a support tool
7108 for the clinical diagnosis of symptomatic lumbar intra- and/or extra-foraminal stenosis. *Journal*
7109 *of Orthopaedic Science*. 2015; 20(5):811-817

- 7110 2340 Yaman O, Ozdemir N, Dagli AT, Acar E, Dalbayrak S, Temiz C. A Comparison of Bilateral
7111 Decompression via Unilateral Approach and Classic Laminectomy in Patients with Lumbar
7112 Spinal Stenosis: A retrospective Clinical Study. *Turkish Neurosurgery*. 2015; 25(2):239-245
- 7113 2341 Yamashita H. Are the Effects of Electro-Acupuncture on Low Back Pain Equal to those of TENS?
7114 Focus on Alternative and Complementary Therapies. 2001; 6(4):254-255
- 7115 2342 Yamato T, Maher CG, Saragiotto BT, Hancock MJ, Ostelo Raymond WJG, Cabral Cristina MN et
7116 al. Pilates for low back pain. *Cochrane Database of Systematic Reviews*. 2015; Issue
7117 7:CD010265. DOI:10.1002/14651858.CD010265.pub2
- 7118 2343 Yang J. Intrathecal administration of oxytocin induces analgesia in low back pain involving the
7119 endogenous opiate peptide system. *Spine*. 1994; 19(8):867-871
- 7120 2344 Yang Y, Hong Y, Liu H, Song Y, Li T, Liu L et al. Comparison of clinical and radiographic results
7121 between isobar posterior dynamic stabilization and posterior lumbar inter-body fusion for
7122 lumbar degenerative disease: A four-year retrospective study. *Clinical Neurology and
7123 Neurosurgery*. 2015; 136:100-106
- 7124 2345 Yaras A, Miller K, Wen W, Dain B, Lynch SY, Pergolizzi JV et al. A randomized, placebo-
7125 controlled study of the impact of the 7-day buprenorphine transdermal system on health-
7126 related quality of life in opioid-naive patients with moderate-to-severe chronic low back pain.
7127 *Journal of Pain*. 2013; 14(1):14-23
- 7128 2346 Yaszay B, Bendo JA, Goldstein JA, Quirno M, Spivak JM, Errico TJ. Effect of intervertebral disc
7129 height on postoperative motion and outcomes after ProDisc-L lumbar disc replacement. *Spine*.
7130 2008; 33(5):508-513
- 7131 2347 Yates DW. A comparison of the types of epidural injection commonly used in the treatment of
7132 low back pain and sciatica. *Rheumatology and Rehabilitation*. 1978; 17(3):181-186
- 7133 2348 Ye C, Ren J, Zhang J, Wang C, Liu Z, Li F et al. Comparison of lumbar spine stabilization exercise
7134 versus general exercise in young male patients with lumbar disc herniation after 1 year of
7135 follow-up. *International Journal of Clinical and Experimental Medicine*. 2015; 8(6):9869-9875
- 7136 2349 Yeh CH, Chien LC, Balaban D, Sponberg R, Primavera J, Morone NE et al. A randomized clinical
7137 trial of auricular point acupressure for chronic low back pain: A feasibility study. *Evidence-
7138 Based Complementary and Alternative Medicine*. 2013; 2013:196978
- 7139 2350 Yeh CH, Morone NE, Chien L-C, Cao Y, Lu H, Shen J et al. Auricular point acupressure to manage
7140 chronic low back pain in older adults: A randomized controlled pilot study. *Evidence-Based
7141 Complementary and Alternative Medicine*. 2014; 2014:375173
- 7142 2351 Yelland M, Yeo M, Schluter P. Prolotherapy injections for chronic low back pain: results of a
7143 pilot comparative study. *Australasian Musculoskeletal Medicine Journal*. 2000; 5(2):20-23
- 7144 2352 Yelland MJ, Del Mar C, Pirozzo S, Schoene ML. Prolotherapy injections for chronic low back
7145 pain: a systematic review. *Spine*. 2004; 29(19):2126-2133
- 7146 2353 Yelland MJ, Glasziou PP, Bogduk N, Schluter PJ, McKernon M. Prolotherapy injections, saline
7147 injections, and exercises for chronic low-back pain: a randomized trial. *Spine*. 2004; 29(1):9-16

- 7148 2354 Yeung CKN, Leung MCP, Chow DHK. The use of electro-acupuncture in conjunction with
7149 exercise for the treatment of chronic low-back pain. *Journal of Alternative and Complementary*
7150 *Medicine*. 2003; 9(4):479-490
- 7151 2355 Yildirim Y, Merde G, Toprak S, Yalcyn E, Irmak A. How prescription methods are used in home
7152 exercise programmes. *Pain Clinic*. 2007; 19(5):230-234
- 7153 2356 Yildirim Y, Soyunov S. Relationship between learning strategies of patients and proper
7154 perception of the home exercise program with non-specific low back pain. *Journal of Back and*
7155 *Musculoskeletal Rehabilitation*. 2010; 23(3):137-142
- 7156 2357 Yip YB, Tse HMS, Wu KK. An experimental study comparing the effects of combined
7157 transcutaneous acupoint electrical stimulation and electromagnetic millimeter waves for spinal
7158 pain in Hong Kong. *Complementary Therapies in Clinical Practice*. 2007; 13(1):4-14
- 7159 2358 Yokoyama M, Sun X, Oku S, Taga N, Sato K, Mizobuchi S et al. Comparison of percutaneous
7160 electrical nerve stimulation with transcutaneous electrical nerve stimulation for long-term pain
7161 relief in patients with chronic low back pain. *Anesthesia and Analgesia*. 2004; 98(6):1552-
7162 contents
- 7163 2359 Yoon YS, Yu KP, Lee KJ, Kwak SH, Kim JY. Development and application of a newly designed
7164 massage instrument for deep cross-friction massage in chronic non-specific low back pain.
7165 *Annals of Rehabilitation Medicine*. 2012; 36(1):55-65
- 7166 2360 Yosry M, Melegry YE, Zayed RA. Fluoroscopy guided selective nerve root injection for unilateral
7167 lumbar radicular pain, is it more effective than blind paramedian translaminar epidural
7168 injection after one year? *Egyptian Journal of Anaesthesia*. 2008; 24(3):209-219
- 7169 2361 Yozbatiran N, Yildirim Y. Comparison of fitness and water exercise programs in lumbar disc
7170 herniated patients with chronic low back pain. *Fizyoterapi Rehabilitasyon*. 2002; 13(2):77-82
- 7171 2362 Yozbatiran N, Yildirim Y, Parlak B. Effects of fitness and aquafitness exercises on physical fitness
7172 in patients with chronic low back pain. *Pain Clinic*. 2004; 16(1):35-42
- 7173 2363 Yu Y, Liu W, Song D, Guo Q, Jia L. Diagnosis of discogenic low back pain in patients with
7174 probable symptoms but negative discography. *Archives of Orthopaedic and Traumatic Surgery*.
7175 2012; 132(5):627-632
- 7176 2364 Yuan J, Purepong N, Hunter RF, Kerr DP, Park J, Bradbury I et al. Different frequencies of
7177 acupuncture treatment for chronic low back pain: an assessor-blinded pilot randomised
7178 controlled trial. *Complementary Therapies in Medicine*. 2009; 17(3):131-140
- 7179 2365 Yue YS, Wang XD, Xie B, Li ZH, Chen BL, Wang XQ et al. Sling exercise for chronic low back pain:
7180 a systematic review and meta-analysis. *PloS One*. 2014; 9(6):e99307
- 7181 2366 Yurtkuran M, Kahraman Z, Sivrioglu K, Afsin Y, Dogan M. Balneotherapy in Low Back Pain.
7182 *European Journal of Physical Medicine and Rehabilitation*. 1997; 7(4):120-123
- 7183 2367 Zahari Z, Kamaruddin K, Othman IR, Justine M. Effect of patient education combined with
7184 physiotherapy treatment on fear-avoidance belief in low back pain sufferers. *International*
7185 *Journal of Pharma and Bio Sciences*. 2014; 5(2):B640-B648
- 7186 2368 Zakaria D and Skidmore B. Facet joint injection as a diagnostic and therapeutic tool for spinal
7187 pain: a review of clinical and cost effectiveness. *Canadian Agency for Drugs and Technologies in*

- 7188 Health (CADTH), 2007. Available from:
7189 http://www.cadth.ca/media/pdf/l3003_tr_Facet_Joint_Injections_e.pdf
- 7190 2369 Zaproudina N, Hietikko T, Hanninen OOP, Airaksinen O. Effectiveness of traditional bone
7191 setting in treating chronic low back pain: a randomised pilot trial. *Complementary Therapies in*
7192 *Medicine*. 2009; 17(1):23-28
- 7193 2370 Zdeblick TA. A prospective, randomized study of lumbar fusion: Preliminary results. *Spine*.
7194 1993; 18(8):983-991
- 7195 2371 Zelle BA, Gruen GS, Brown S, George S. Sacroiliac joint dysfunction: evaluation and
7196 management. *Clinical Journal of Pain*. 2005; 21(5):446-455
- 7197 2372 Zerbini C, Ozturk ZE, Grifka J, Maini M, Nilganuwong S, Morales R et al. Efficacy of etoricoxib 60
7198 mg/day and diclofenac 150 mg/day in reduction of pain and disability in patients with chronic
7199 low back pain: results of a 4-week, multinational, randomized, double-blind study. *Current*
7200 *Medical Research and Opinion*. 2005; 21(12):2037-2049
- 7201 2373 Zhang J. Chiropractic adjustments and orthotics reduced symptoms for standing workers.
7202 *Journal of Chiropractic Medicine*. 2005; 4(4):177-181
- 7203 2374 Zhang J, Enix D, Snyder B, Giggey K, Tepe R. Effects of Biofreeze and chiropractic adjustments
7204 on acute low back pain: a pilot study. *Journal of Chiropractic Medicine*. 2008; 7(2):59-65
- 7205 2375 Zhang L, Li J-K, Chen Z-H, Sun X-J, Liu J-P. CT-guided intradiscal ozone injection combined with
7206 intervertebral facet joint steroid injection for lumbar disk herniation accompanied with
7207 intervertebral arthritis. *Journal of Interventional Radiology*. 2009; 18(11):853-855
- 7208 2376 Zhang T, Adatia A, Zarin W, Moitri M, Vijenthira A, Chu R et al. The efficacy of botulinum toxin
7209 type A in managing chronic musculoskeletal pain: a systematic review and meta analysis.
7210 *Inflammopharmacology*. 2011; 19(1):21-34
- 7211 2377 Zhang W. Long needle acupuncture plus cupping in treating primary sciatica. *International*
7212 *Journal of Acupuncture*. 1997; 8(3):318-321
- 7213 2378 Zhang Y, Tang S, Chen G, Liu Y. Chinese massage combined with core stability exercises for
7214 nonspecific low back pain: a randomized controlled trial. *Complementary Therapies in*
7215 *Medicine*. 2015; 23(1):1-6
- 7216 2379 Zhang Zm, Zhao L, Qu Db, Jin Dd. Artificial nucleus replacement: surgical and clinical
7217 experience. *Orthopaedic Surgery*. 2009; 1(1):52-57
- 7218 2380 Zhi L, Jing S. Clinical comparison between scalp acupuncture combined with a single body
7219 acupoint and body acupuncture alone for the treatment of sciatica. *American Journal of*
7220 *Acupuncture*. 1995; 23(4):305-307
- 7221 2381 Zhuang Z, Jiang G. Thirty cases of the blood-stasis type prolapse of lumbar intervertebral disc
7222 treated by acupuncture at the xi (cleft) point plus herbal intervention injection. *Journal of*
7223 *Traditional Chinese Medicine*. 2008; 28(3):178-182
- 7224 2382 Zigler J, Delamarter R, Spivak JM, Linovitz RJ, Danielson III GO, Haider TT et al. Results of the
7225 prospective, randomized, multicenter food and drug administration investigational device
7226 exemption study of the ProDisc-L total disc replacement versus circumferential fusion for the
7227 treatment of 1-level degenerative disc disease. *Spine*. 2007; 32(11):1155-1162

- 7228 2383 Zigler JE, Burd TA, Vialle EN, Sachs BL, Rashbaum RF, Ohnmeiss DD. Lumbar spine arthroplasty -
7229 Early results using the ProDisc II: A prospective randomized trial of arthroplasty versus fusion.
7230 Journal of Spinal Disorders. 2003; 16(4):352-361
- 7231 2384 Zigler JE, Delamarter R, Balderston R, Cammisa FP, Goldstein J, Spivak JM. Prospective,
7232 randomized, multicenter Food and Drug Administration investigational device exemption study
7233 of the ProDisc-L total disc replacement compared with circumferential arthrodesis for the
7234 treatment of two-level lumbar degenerative disc disease: results at twenty-four months.
7235 Journal of Bone and Joint Surgery - American Volume. 2011; 93(8):705-715
- 7236 2385 Zigler JE, Delamarter RB. Five-year results of the prospective, randomized, multicenter, Food
7237 and Drug Administration investigational device exemption study of the ProDisc-L total disc
7238 replacement versus circumferential arthrodesis for the treatment of single-level degenerative
7239 disc disease. Journal of Neurosurgery: Spine. 2012; 17(6):493-501
- 7240 2386 Zigler JE. Lumbar spine arthroplasty using the ProDisc II. Spine Journal. 2004; 4(6 Suppl):260S-
7241 267S
- 7242 2387 Zippel H, Wagenitz A. A multicentre, randomised, double-blind study comparing the efficacy
7243 and tolerability of intramuscular dexketoprofen versus diclofenac in the symptomatic
7244 treatment of acute low back pain. Clinical Drug Investigation. 2007; 27(8):533-543
- 7245
- 7246