UNIVERSITY OF CAMBRIDGE
Institute of Public Health

# DISABILITY, DEMENTIA AND FRAILTY IN LATER LIFE – MID-LIFE APPROACHES TO PREVENT OR DELAY THE ONSET OF THESE CONDITIONS

**REVIEW 3** – Effectiveness and cost-effectiveness of midlife interventions for increasing the uptake and maintenance of healthy lifestyle behaviours and the prevention or delay of dementia, disability, frailty and non-communicable chronic diseases related to modifiable lifestyle risk factors.

**APPENDICES B-I**


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## Table of Contents

APPENDIX B. Summary of quality of included studies ..... 3
APPENDIX B1. Quality assessment for primary studies ..... 3
APPENDIX B2. Quality assessment of systematic reviews (AMSTAR) ..... 6
APPENDIX B3. Quality assessment for economic and cost-effectiveness studies ..... 8
APPENDIX C. Review Team ..... 9
C1. Expertise ..... 9
C2. Role in the review process ..... 11
C3. Conflicts of interest ..... 12
APPENDIX D. Search strategies ..... 13
D1. Sample search strategy used to identify systematic reviews ..... 13
D2. Sample search strategy used to identify primary studies ..... 19
D3. Sample targeted search for primary studies (where no systematic reviews) ..... 22
APPENDIX E – Search results ..... 24
Table E1. Databases searches – Systematic reviews ..... 24
Table E2. Databases searches – Primary studies ..... 24
Table E3. Websites searched ..... 25
APPENDIX F – Breakdown of search results ..... 26
F1. NICE Appendix Cs for systematic reviews ..... 26
F2. NICE Appendix Cs for primary studies ..... 30
APPENDIX G. Excluded studies and reason for exclusion ..... 35
G1. Systematic reviews ..... 35
G2. Primary Studies ..... 52
APPENDIX H - Methodology checklists ..... 76
H.1 Inclusion/Exclusion form (Search stage 1 – systematic reviews) ..... 76
H.2 Quality assessment for quantitative studies ..... 77
H.3 Quality assessment for randomly controlled trials ..... 82
H.4 Quality assessment for systematic reviews ..... 86
H.5 Quality assessment for economic evaluations ..... 90

## APPENDIX B. Summary of quality of included studies

### APPENDIX B1. Quality assessment for primary studies

Key to headings – Section A: Selection Bias - 1. Appropriate randomisation. 2. Concealment of allocaton. 3. Groups comparable at baseline. 3b. Selection bias and its effect. Section B: Performance Bias - 1. Groups received same care. 2. Participants' 'blind' to allocation. 3. Care-givers' 'blind' to allocation. B3 Performance bias and its effect. Section C: Attrition Bias – 1. Equal length of follow-up. 2. Comparable treatment completion. 3. Comparable outcome data. 3b. Attrition bias and its effect. Section D: Detection Bias – 1. Appropriate length of follow-up. 2. Precise definition of outcome. 3. Valid and reliable method. 4. Investigators 'blind' to participants' exposure to intervention. 5. Investigators 'blind' to confounding / prognostic factors. 5b. Detection bias and its effect. NA: Not applicable. See tool in Appendix H.2

| Author (Year) | A1 | A2 | A3 | A3b | B1 | B2 | B3 | B3b | C1 | C2 | C3 | C3b | D1 | D2 | D3 | D4 | D5 | D5b | Overall | Rating |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Anderssen (2007) | Yes | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | Yes | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Arbour (2004) | N/A | Unclear | Yes | Unclear | Yes | No | No | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | No | No | Unclear | Unclear | + |
| Begh (2011) | Yes | Unclear | Unclear | Unclear | Unclear | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Blankers (2011) | Yes | Yes | Yes | Low | Yes | Yes | Yes | Low | Yes | Yes | Yes | Low | No | Yes | Yes | Yes | Yes | Low | Low | ++ |
| Boon (2011) | Yes | No | Yes | Low | Yes | No | Unclear | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | Unclear | No | Unclear | Low | ++ |
| Bowen (2006) | Unclear | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Unclear | Yes | Unclear | Yes | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Brown (2012) | N/A | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Cussler (2008) | Yes | Yes | Yes | Low | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | Yes | Yes | Yes | Unclear | Unclear | Unclear | Low | ++ |
| Elavsky (2009) | Yes | Unclear | Yes | Low | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | Yes | Yes | Yes | Unclear | Unclear | Unclear | Low | ++ |
| Ferney (2009) | Yes | Yes | No | Unclear | Yes | Unclear | Yes | Low | Yes | Yes | Yes | Low | No | Yes | Yes | Yes | Unclear | Low | Low | ++ |
| Gaston (2007) | N/A | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Hageman (2005) | N/A | Unclear | Yes | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Hall (2003) | Yes | Unclear | Yes | Low | Yes | Unclear | Unclear | Unclear | Unclear | Yes | Yes | Low | Unclear | No | No | Unclear | Unclear | Unclear | Low | ++ |
| Hall (2007) | Yes | No | Yes | Low | Yes | Uncle | Uncle | Uncle | Yes | Yes | Yes | Low | No | Yes | Yes | Uncle | Uncle | Uncle | Low | ++ |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | ar | ar | ar | | | | | | | | ar | ar | ar | | |
| Hall (2009) | Yes | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | Yes | Yes | Yes | Unclear | Unclear | Low | Low | ++ |
| Halpin (2006) | Unclear | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | Yes | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Hardcastle (2013) | Yes | Yes | Yes | Low | Yes | Unclear | Yes | Low | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Unclear | Unclear | Unclear | Low | ++ |
| Hjerkinn (2004) | Unclear | Unclear | No | Unclear | No | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Hollis (2007) | Unclear | Yes | Yes | Low | Yes | Unclear | Yes | Low | Yes | Yes | Yes | Low | Yes | Yes | Yes | Yes | Yes | Low | Low | ++ |
| Hotting (2012) | Unclear | Unclear | Yes | Unclear | Yes | Unclear | Unclear | Unclear | Unclear | Unclear | Unclear | Unclear | Unclear | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Kamada (2013) | Yes | Yes | Yes | Low | Yes | Yes | Yes | Low | Yes | Yes | Yes | Low | Unclear | Yes | Yes | Unclear | Unclear | Unclear | Low | ++ |
| King (2008) | Unclear | Unclear | Yes | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| King (2013) | Yes | Unclear | Yes | Low | Yes | Unclear | Unclear | Unclear | Unclear | Yes | Yes | Low | Unclear | Yes | Yes | Unclear | Unclear | Unclear | Low | ++ |
| Lakerveld (2013) | Yes | Yes | Yes | Low | Yes | Unclear | Yes | Low | Yes | Yes | Yes | Low | Yes | Yes | Yes | Yes | Yes | Low | Low | ++ |
| Lee (2010) | Yes | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Unclear | Unclear | Yes | Unclear | No | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Lee (2012) | N/A | Unclear | Unclear | Unclear | Unclear | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | No | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Lock (2006) | Yes | Unclear | Yes | Low | Yes | Yes | Unclear | Low | Yes | Yes | Yes | Low | Yes | Yes | Yes | Unclear | Unclear | Unclear | Low | ++ |
| McDermott (2011) | Yes | Unclear | Yes | Low | Yes | Unclear | Unclear | Unclear | Unclear | Yes | Yes | Low | No | Yes | Yes | Unclear | Unclear | Unclear | Low | ++ |
| Maiorana (2001) | Unclear | Yes | Unclear | Unclear | Yes | Unclear | Yes | Low | Yes | Yes | Yes | Low | No | Yes | Yes | Yes | Unclear | Low | Low | ++ |
| Marteau (2012) | Yes | No | Yes | Low | Yes | No | No | High | Yes | Yes | Yes | Low | Unclear | Yes | Yes | No | No | Unclear | Unclear | + |
| Moustaka (2012) | N/A | Unclear | Unclear | Unclear | Yes | No | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Unclear | Unclear | Unclear | | + |
| Palumbo (2012) | Unclear | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | No | No | High | Unclear | + |
| Pratley (2000) | N/A | Unclear | Unclear | Unclear | Unclear | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | Yes | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Ramos-Jiminez (2009) | No | No | N/A | High | N/A | No | No | High | Yes | N/A | N/A | Unclear | No | Yes | Yes | Unclear | Unclear | Unclear | Unclear | - |

| | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Sheeran (2013) | Yes | Yes | Unclear | Low | Yes | Yes | Unclear | Low | Yes | Yes | Yes | Low | Unclear | Yes | Yes | Unclear | Yes | Low | Low | ++ |
| Stadler (2009) | Yes | Unclear | Yes | Low | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | Unclear | Unclear | Unclear | Low | ++ |
| Turner (2003) | N/A | N/A | N/A | High | N/A | N/A | N/A | High | N/A | N/A | N/A | High | Unclear | No | Yes | N/A | N/A | High | High | - |
| Ueda (2004) | Unclear | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Vogt (2012) | Unclear | Unclear | Yes | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | Yes | Yes | Yes | Unclear | Unclear | Low | Low | ++ |
| Williams (2010) | Unclear | Unclear | Unclear | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | Yes | Yes | Yes | Unclear | Unclear | Low | Low | ++ |
| Wright (2011) | Yes | Yes | No | Unclear | Yes | No | No | Unclear | Yes | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | No | No | Unclear | + |
| Yoshikawa (2009) | No | Unclear | Yes | Unclear | Yes | Unclear | Unclear | Unclear | Yes | Yes | Yes | Low | No | Yes | Yes | Unclear | Unclear | Unclear | Unclear | + |
| Zautra (2012) | Unclear | Unclear | Unclear | Unclear | Yes | No | Yes | Low | Yes | Yes | Yes | Low | No | Yes | Yes | Unclear | Unclear | Unclear | Low | ++ |

## APPENDIX B2. Quality assessment of systematic reviews (AMSTAR)

Key: 1. 'a priori design; 2. Duplicate study selection and data extraction?; 3. Comprehensive literature search; 4. Status of publication as an inclusion criterion?; 5. List of studies (included and excluded provided)?; 6. Characteristics of the included studies provided? 7. Scientific quality of the included studies assessed and documented?; 8. Scientific quality of the included studies considered in formulating conclusions?; 9. Appropriate method to combine findings; 10. Publication bias; 11. Conflict of interest. **See tool on Appendix H.4**

**Ranking**: key questions are 2, 3, 6, 7, 8. If yes to all 5, then review ranked ++; if scores 3-4 then +; if scores 1-2 then -

| AMSTAR | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Items | | | | | | | | | | | |
| Author (Year) | Code | Study design | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | Ranking |
| Armstrong (2011) | R3 WL | Systematic review | C/A | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Esposito (2011) | R3 WL | Systematic review | No | Yes | Yes | Yes | No | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Zbikowski (2012) | R3 SMO | Systematic review | No | C/A | No | Yes | No | No | C/A | C/A | No | No | No | - |
| Lindson (2010) | R3 SMO | Systematic review | Yes | No | Yes | C/A | Yes | Yes | Yes | Yes | Yes | Yes | No | + |
| Rees (2013A) | R3 DIET | Systematic review | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Rees (2013B) | R3 DIET | Systematic review | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Hooper (2012) | R3 DIET | Systematic review | Yes | Yes | Yes | C/A | Yes | Yes | C/A | C/A | Yes | Yes | No | + |
| Rioux (2013) | R3 PA mm | Systematic review | No | C/A | No | No | No | Yes | Yes | Yes | No | No | No | + |
| Leavey (2011) | R3 PA mm | Systematic review | No | C/A | Yes | Yes | No | No | No | No | No | No | No | - |
| Foster (2013 Coch) | R3 PA mm | Systematic review | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Foster (2013 Coch B) | R3 PA mm | Systematic review | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Foster (2013 Coch C) | R3 PA mm | Systematic review | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Davies (2012) | R3 PA mm | Systematic review | No | C/A | Yes | No | No | Yes | Yes | Yes | No | Yes | No | + |
| Conn (2011) | R3 PA mm | Systematic review | C/A | Yes | Yes | Yes | No | Yes | C/A | C/A | Yes | No | No | + |
| Abioye (2013) | R3 PA mm | Systematic review | No | Yes | Yes | No | No | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Aalbers (20110 | R3 LC | Systematic review | No | Yes | No | No | No | Yes | Yes | Yes | Yes | Yes | No | + |
| Bolam (2013) | R3 PA | Systematic review | No | Yes | Yes | No | No | Yes | Yes | Yes | No | No | No | ++ |
| Cavill (2012) | R3 PA | Systematic review | No | C/A | Yes | No | No | Yes | No | C/A | No | No | No | - |
| Ferreira (2012) | R3 PA | Systematic review | Yes | Yes | Yes | Yes | Yes | No | C/A | No | Yes | No | C/A | - |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Hobbs (2013) | R3 PA | Systematic review | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Cleland (2013) | R3 DG | Systematic review | No | Yes | Yes | C/A | No | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Chapman (2013) | R3 DG | Systematic review | No | Yes | Yes | C/A | No | Yes | C/A | Yes | Yes | C/A | No | + |
| Ali (2012) | R3 LC mm | Systematic review | No | Yes | Yes | C/A | No | No | Yes | C/A | Yes | Yes | No | + |
| Ebrahim (2011) | R3 LC mm | Systematic review | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | No | ++ |
| Hopper (2011) | R3 LC mm | Systematic review | No | Yes | No | No | No | Yes | C/A | C/A | Yes | Yes | No | - |
| Wu (2011) | R3 CE | Systematic review | No | Yes | Yes | Yes | No | C/A | Yes | Yes | No | C/A | Yes | + |
| Webb (2010) | R3 DG | Systematic review | No | C/A | Yes | Yes | No | C/A | C/A | Yes | Yes | No | No | - |
| Coles (2012) | R3 DG | Systematic review | No | Yes | Yes | Yes | No | Yes | Yes | Yes | No | No | No | ++ |
| Conn (2012) | R3 DG | Systematic review | No | C/A | Yes | Yes | No | No | C/A | Yes | Yes | Yes | No | - |
| Cleland (2012) | R3 DG | Systematic review | No | C/A | Yes | Yes | No | Yes | Yes | Yes | Yes | No | No | + |
| Ickes (2012) | R3 DG | Systematic review | No | Yes | Yes | Yes | No | Yes | No | No | No | No | No | + |
| Ossei-Assibey (2010) | R3 DG | Systematic review | No | C/A | Yes | Yes | No | Yes | Yes | Yes | Yes | No | No | + |

**CODES**

R3 CE = Review 3 Cost-effectiveness
R3 DG = Review 3 Disadvantaged Groups
R3 DIET = Review 3 Diet
R3 LC = Review 3 Lifestyle Combined
R3 LC mm = Review 3 Lifestyle Combined Mainly Midlife
R3 PA = Review 3 Physically Active
R3 PA mm = Review 3 Physically Active Mainly Midlife
R3 SMO = Review 3 Smoking
R3 WL = Review 3 Weight Loss

## APPENDIX B3. Quality assessment for economic and cost-effectiveness studies

Key to headings – Section 1: Applicability 1.1 Is the study population appropriate? 1.2 Are the interventions and services appropriate? 1.3 Is the healthcare system sufficiently similar to the current UK NHS context? 1.4 Are costs measured from the NHS and personal social services perspective? 1.5 Are non-direct health effects on individuals excluded? 1.6 Are both costs and health effects discounted at an annual rate of 3.5%? 1.7 Is the value of health effects expressed in terms of quality-adjusted life years? 1.8 Are changes in health-related quality of life reported directly? 1.9 Is the valuation of changes in HRQoL representative of the general public? Section 2: Study limitations 2.1 Does the model structure adequately reflect health condition? 2.2 Is the time horizon sufficiently long? 2.3 Are all important and relevant health outcomes included? 2.4 Are the estimates of baseline health outcomes from the best available source? 2.5 Are the estimates of relative treatment effects from the best available source? 2.6 Are all important and relevant costs included? 2.7 Are the estimates of resource use from the best available source? 2.8 Are the unit costs of resources from the best available source? 2.9 Is an appropriate incremental analysis presented? 2.10 Are all important parameters subjected to appropriate sensitivity analysis? 2.11 Is there no potential conflict of interest? **See tool in Appendix H.5**

| **Economic Quality Assessment** | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Reference** | **1.1** | **1.2** | **1.3** | **1.4** | **1.5** | **1.6** | **1.7** | **1.8** | **1.9** | **2.1** | **2.2** | **2.3** | **2.4** | **2.5** | **2.6** | **2.7** | **2.8** | **2.9** | **2.10** | **2.11** | **Total** |
| Annemans (2007) | yes | No | yes | yes | no | yes | yes | yes | no | yes | yes | yes | yes | no | no | yes | yes | yes | yes | no | + |
| Anokye (2011) | yes | yes | yes | yes | no | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | ++ |
| Begh (2011) | yes | yes | yes | no | yes | yes | yes | no | no | yes | yes | yes | yes | yes | ?? | ?? | ?? | yes | no | yes | + |
| Blankers (2011b) | yes | yes | yes | yes | no | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | ++ |
| Bós (2011) | yes | yes | yes | yes | no | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | ++ |
| Dalziel (2006) | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | yes | ?? | yes | ++ |
| Smith (2011) | yes | yes | no | no | no | na | no | yes | na | yes | *yes* | yes | yes | yes | yes | yes | yes | yes | ok | yes | + |

**Note:** *All studies in obese participants. Included for information only.

## APPENDIX C. Review Team

### C1. Expertise

Professor Carol Brayne – Professor Carol Brayne is Professor of Public Health Medicine in Department of Public Health and Primary Care in the University of Cambridge, Director of the Cambridge Institute of Public Health, and Lead of the Dementia, Frailty and End of Life theme in CLAHRC East of England[1] and the NIHR School of Public Health Research (SPHR) Ageing Well Programme. Professor Brayne is a medically qualified epidemiologist and public health academic. Since the mid-1980s her main research area has been longitudinal studies of older people following changes over time in cognition, dementia natural history and associated features with a public health perspective. She is lead principal investigator in the group of MRC Cognitive function and Ageing Study (CFAS), which has informed and will continue to inform national policy and scientific understanding of dementia in whole populations. Her group's relevant achievements include the definitive systematic reviews of: the diagnosis of mild cognitive impairment; the effect of stroke on incident dementia; and the effect of statins on the prevention of vascular dementia. Ongoing work includes Alzheimer's Society-funded systematic reviews of early non-pharmacological intervention for dementia and population screening for dementia; NIHR Cochrane programme of reviews of diagnostic test accuracy for dementia, and work on diabetes and dementia with the Alzheimer's Society Vascular Dementia Systematic Review group.

Dr Louise Lafortune – Dr Lafortune is a Senior Research Associate for the Public Health and the Dementia, Frailty and End of Life theme in CLAHRC East of England, and the scientific coordinator of the NIHR SPHR Ageing Well Programme, which aims are to strengthen the evidence base for cost-effective and equitable public health interventions for older populations. Louise is specialised in Public Health and Ageing, and has nine years of industry experience in clinical trial, health economics and outcomes research. She has been involved in several projects aimed at improving care for frail older people (e.g. helped developed the joint strategic needs assessment (JSNA) for older people; support the ongoing development of integrated care for older people). In particular, she leads a programme of systematic reviews on population screening for dementia; co-lead the NIHR Cochrane programme of diagnostic test accuracy reviews for dementia; a review of systematic reviews looking at non-pharmacological interventions for behavioural problems, and a wide scope review of the literature looking at outcomes and quality of non-pharmacological interventions in early dementia. Her research interests encompass the development, evaluation and implementation of interventions and service delivery models aimed at improving care for individuals with complex health and social care needs, namely frail older people. Concerned

[1] CLAHRC CP: Collaboratives for Leadership in Applied Heatlh Research and Care for East of England (

with the practical application of research findings for patient benefits, her responsibilities include knowledge synthesis, public health analysis and evaluation of changes in services configuration and delivery resulting from the use of research.

Dr Sarah Kelly – Dr Kelly is an experienced systematic reviewer. Sarah was lead reviewer on a systematic review for the World Health Organisation Nutrition Guideline development group on the evidence for a relationship between sugar consumption and dental caries that was used to develop World Health Organisation (WHO) guideline recommendations. Dr Kelly was project coordinator and information specialist for a systematic review of the diet, nutrition and physical activity determinants of obesity for the World Cancer Research Fund (WCRF) that contributed to the major WCRF publication 'Diet, Nutrition and Physical Activity determinants of Cancer (2007)'. She is lead reviewer on two Cochrane systematic reviews relating to nutrition and coronary heart disease and has contributed to a number of other Cochrane reviews about childhood obesity. She was also a reviewer on 2 systematic reviews on tracking of lifestyle behaviours from childhood to adulthood. Sarah has recently completed working on the Dementia Priority Setting Partnership with the James Lind Alliance and the Alzheimer's Society. The project aimed to identify research priorities for dementia from a stakeholder survey including healthcare professionals, patients, carers, relatives of people with dementia that involved data management, formatting and checking of research questions against the existing evidence base for dementia and development of an evidence based research framework for dementia. Sarah has extensive experience in designing and drafting protocols, database searching and systematic search strategies, study selection and data-extraction, quality assessment, analyses and drafting of reviews.

Steven Martin – Mr Martin is an experienced Research Associate at the Cambridge Institute of Public Health (CIPH). During his time at the CIPH Steven has contributed to a number of research programmes around dementia and old age. In particular he has worked as the main systematic reviewer on a wide scoping systematic review looking at non-pharmacological interventions in early dementia and a qualitative review looking at attitudes and preferences with regards to screening for dementia. He is experienced at writing search strategies, undertaking data extraction, quality assessment and synthesis of qualitative, quantitative and mixed-methods research. Steven's interests include the design, interpretation and synthesis of epidemiological evidence, with a particular focus on methodology and translational research aimed at improving health outcomes for vulnerable communities in society.

Isla Kuhn – Ms Khun is Reader Services Librarian at the University of Cambridge Clinical School supporting the review team. Isla is an experienced librarian and has work with the

team on all their evidence synthesis projects across a range of topics, specially ageing well and dementia.

Dr Nadja Smailagic – Dr Smailagic is a full time systematic reviewer on a NIHR funded Cochrane Collaboration programme of fifteen diagnostic test accuracy reviews for dementia. Nadja has extensive experience in designing and drafting protocols, study selection and data-extraction, quality assessment, analyses and drafting of reviews. Nadja is a GP with a background in mental health. In her previous role, she was responsible for developing the research agenda for a Mental Health Services for Older People (MHSOP) at the Nottinghamshire Healthcare NHS Trust. That involved negotiation with the Clinical Effectiveness and Clinical Governance for MHSOP, which led to the development of the 'MHSOP Evidence into Practice Group'. Nadja also co-lead the Dementia 'Managed Innovation Network.

**C2. Role in the review process**

| Core Staff | Roles & responsibilities |
|---|---|
| Principal investigators<br>• Louise Lafortune (LL)<br>• Carol Brayne (CB) | • Scientific & clinical oversight of the project<br>• Approval of reports before sending to NICE |
| Scientific coordinator / project management / Third reviewer<br>Louise Lafortune (LL) | • Direct contact for NICE<br>• Project management<br>• Technical support for development of protocols, searches, quality assessment tools, data extraction forms<br>• Third reviewer for selection of studies<br>• Quality assessment and analysis<br>• Writing of draft report, final editing and approval<br>• Main presenter at PHAC meetings (supported by SK) |
| First Systematic Reviewer<br>• Sarah Kelly (SK) | • Drafting of protocols, search strategies, running searches (with support from Clinical School librarian), scanning titles, selecting full text, quality assessment, analysis and writing of draft reports<br>• Main presenter at PHAC meetings (supported by LL) |
| Second Systematic Reviewer<br>• Steven Martin (SM) | • Support first & third reviewers with listed tasks |
| Admin/Technical Support<br>• Andy Cowan (AC) | • Ordering, printing, scanning, listing, sorting articles; preparing reference lists & bibliographies (using word, excel and Endnote mainly)<br>• Keeping all project files in order (according to structure agreed with NICE & official processes etc.) |

| | |
|---|---|
| | • Chasing authors for information<br>• Helping with formatting reports, tables, presentations, etc. (according to NICE manuals) |
| **Extended team** | |
| Nadja Smailagic | • Third reviewer (where/when necessary as arbitrator will resolve disagreements) (e.g. inclusion of studies, quality assessment, analysis)<br>• Technical support (e.g. on quality assessment, data extraction, analysis) |

**C3. Conflicts of interest**

Dr Louise Lafortune, who co-led the project with Professor Brayne, is a topic expert on the new PHAC in relation to the topic of Disability, Dementia and Frailty.

The potential conflict of interest (CoI) is with drafting of new recommendations based on evidence that originates from the reviews her team has produced. She has no conflict regarding evidence from other sources, nor in commenting / advising on recommendations based on evidence from any source once they have been drafted. This potential CoI was handled as follows:

- For meetings - and parts of meetings - where evidence that has not come from her team was considered, she worked as a full PHAC member.
- In meetings (or the parts of meetings) where evidence reviews from her team was presented and discussed, she stepped back from the PHAC role and became a presenter / advisor to the committee. She discussed her team's reviews and advise the committee on how to interpret / use the evidence they contain, however she did not then take an active part in drafting new recommendations based on those reviews.

The other members of the team have no conflict of interest to declare.

## APPENDIX D. Search strategies

### D1. Sample search strategy used to identify systematic reviews

Sample search: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) <1946 to Present>

Note: Searches terms were modified were necessary when searching other databases.

---

1 (prevent* or barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance* or uptake or "take up" or increas* or decreas* or reduc* or impact* or effect* or improve* or enhance* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisfaction or compliance or comply or complie* or refus* or availabl* or provision* or provid* or offer or incentive* or utiliz* or utilis*).ti,ab. (11817672)

2 ((health* adj3 (behavior* or behaviour*))

or ((ageing or aging) adj3 (well or success* or positive* or active* or healthy))
or (food* adj3 choice*) or dieting or (diet* adj3 (health* or balance* or fat* or salt* or sugar* or mediterranean or choice* or improv* or unhealthy))
or ((fruit* or vegetable* or salt* or fat* or sugar*) adj3 (intake* or consum* or eat* or ate))
or (undernutrition or undernourish* or under-nutrition* or under-nourish*)
or (multimicronutrient* or multi-micronutrient* or micronutrient* or micro-nutrient* or multinutrient* or multi-nutrient*)
or ("five a day" or "5 a day")
or ("health check" or "check-up")
or "health MOT*"
or ((eye* or sight* or vision* or visual* or hearing) adj3 (test* or check* or screen*))
or (smok* or tobacco or cigar* or nicotine)
or ((alcohol* or drunk* or drink*) adj3 (consum* or misuse* or abuse* or intoxicat* or harmful or excess* or binge* or hazardous* or heavy or temperance or abstinence))
or temperan*
or teetotal*
or (lonely or lonli*)
or (socialis* or socializ*)
or (social* adj3 (isolat* or network* or contac* or alien*))
or (cognitive adj2 stimulat*)
or (sedentary or exercis* or sport*)
or "physical condition*"
or (balance* and (exercis* or retrain* or re-train* or reeducat* or re-educat*))
or inactiv*
or (walk* or run* or jog* or swim* or danc* or garden* or cycl* or bicycl* or bike* or recreation*)
or ("resistance training" or "acquatic exercis*" or "wellness centre*" or "wellness center*")
or ("weight gain*" or "weight los*" or "overweight" or "over weight") or (obesity and "related behavio*")
or (overeat* or "over eat")
or (waist* adj3 (circumference* or measur*))
or ((bmi or "body mass index") adj3 (gain* or loss* or lose* or lost or change*))
or (weight adj2 (cycling or reduc* or los* or maint* or decreas* or increas* or watch* or control*))
or "weight change*"
or ((behavio?r* or lifestyle or "life style") adj3 (change* or changing or modification or

modify or modifying or therapy or therapies or program* or intervention* or counsel*)) or ((physical* or keep* or cardio* or aerobic or fitness) adj3 (fit* or activ* or train*)) or ((physical* or game* or leisure* or fitness) adj5 (event* or setting* or sector* or program* or venue* or site* or center* or centre*))
adj3
(prevent* or barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance* or uptake or "take up" or increas* or decreas* or reduc* or impact* or effect* or improve* or enhance* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisfaction or compliance or comply or complie* or refus* or availabl* or provision* or provid* or offer or incentive* or utiliz* or utilis*)).ti,ab. (11815615)

3 exp health behavior/ (99406)

4 exp risk reduction behavior/ (7429)

5 exp health promotion/ (54839)

6 exp primary prevention/ (114054)

7 exp preventive medicine/ (32336)

8 exp life style/ (64645)

9 exp food habits/ (21115)

10 exp food preferences/ (10035)

11 exp nutrition therapy/ (80294)

12 exp vision tests/ (80635)

13 exp hearing tests/ (37970)

14 exp smoking/ (124015)

15 exp smoking cessation/ (20976)

16 exp "tobacco use disorder"/ (8399)

17 exp "tobacco use cessation"/ (21675)

18 exp tobacco smoke pollution/ (10679)

19 exp alcohol drinking/ (52735)

20 exp alcohol deterrents/ (4190)

21 exp drinking behavior/ (58207)

22 exp temperance/ (2609)

23 exp loneliness/ (2167)

24 exp exercise/ (111288)

25 exp sports/ (110890)

26 exp exercise therapy/ (29819)

27 exp physical exertion/ (52630)

28 exp physical fitness/ (21873)

29 exp "physical education and training"/ (13326)

30 exp exercise test/ (50193)

31 exp walking/ (19952)

32 exp running/ (13374)

33 exp jogging/ (690)

34 exp bicycling/ (7564)

35 exp swimming/ (18600)

36 exp dancing/ (1824)

37 exp gardening/ (462)

38 exp fitness centers/ (336)

39 exp sedentary lifestyle/ (2461)

40 or/3-39 (982650)

41 1 and 40 (624194)

42 2 or 41 (927623)

43 meta-analysis as topic/ (14016)

44 meta-analys*.tw. (61279)

45 metaanaly*.tw. (1363)

46 Meta-Analysis/ (50578)

47 (systematic adj (review*1 or overview*1)).tw. (52517)

48 exp Review Literature as Topic/ (7590)

49 or/43-48 (123666)

50 Comment/ (570485)

51 Letter/ (823596)

52 Editorial/ (347012)

53 animal/ (5460677)

54 human/ (13571801)

55 53 not (53 and 54) (3939518)

56 50 or 51 or 52 or 55 (5192193)

57 49 not 56 (115029)

58 exp middle age/ (3327213)

59 (middle adj age*).ti,ab. (33553)

60 (baby adj2 boomer*).ti,ab. (755)

61 (midlife or "mid life" or midlives or "mid lives").ti,ab. (3816)

62 or/58-61 (3339411)

63 adult*.ti,ab. (820544)

64 exp Young Adult/ (345598)

65 exp Adult/ (5579820)

66 or/63-65 (5994172)

67 "single parent*".ti,ab. (1849)

68 minorit*.ti,ab. (44436)

69 "free school meal*".ti,ab. (51)

70 ((low* or work*) adj4 class*).ti,ab. (18291)

71 unemployed*.ti,ab. (5351)

72 (low* adj3 (income* or wage* or pay*)).ti,ab. (28835)

73 ("income support*" or "housing benefit*" or "child support*" or "unemployment benefit*").ti,ab. (537)

74 poverty.ti,ab. (15360)

75 (deprive* or deprivation*).ti,ab. (63372)

76 ethnic*.ti,ab. (88627)

77 ((vulnerable or disadvantaged or "at risk" or "high risk" or "low socioeconomic status" or neglect* or affected or marginal* or forgotten or non-associative or nonassociative or unengaged or hidden or excluded or transient or inaccessible or underserved or stigma* or inequitable) and (people or population* or communit* or neighbourhood*1 or neighborhood*1 or group* or area*1 or demograph* or patient* or social*)).ti,ab. (740630)

78 (immigrant* or migrant* or asylum or refugee* or undocumented).ti,ab. (33474)

79 (born adj2 overseas).ti,ab. (217)

80 (displaced and (people or person*1)).ti,ab. (904)

81 (homeless or vagrant*).ti,ab. (5618)

82 (((language* or communicat*) and (barrier* or understand* or strateg* or proficien*)) or translat* or interpret* or (cultur* and competen*)).ti,ab. (527336)

83 (illiteracy or illiterate*).ti,ab. (3622)

84 (traveller*1 or Gypsies or Gypsy or Gipsy or Gipsies or Romany or Romanies or Romani or Romanis or Romani or Romanis or Roma).ti,ab. (6115)

85 exp Poverty/ (31438)

86 exp Ethnic Groups/ or exp Minority Groups/ (121433)

87 exp Unemployment/ (5168)

88 exp Single Parent/ (1044)

89 exp Homeless Persons/ (6489)

90 (homeless* or vagrant* or tramp or tramps or "street person" or "street people" or (sleep* adj3 rough)).ti,ab. (7739)

91 exp "Emigration and Immigration"/ (23559)

92 exp "Emigrants and Immigrants"/ (5643)

93 exp refugees/ (6697)

94 exp Communication Barriers/ (4818)

95 Language/ (27562)

96 exp gypsies/ (617)

97 exp bisexuality/ or exp homosexuality/ or exp homosexuality, female/ or exp homosexuality, male/ (22600)

98 exp Transgendered Persons/ (103)

99 (lesbian* or gay* or homosexual* or bisexual* or transgender* or trans-gender* or trans-sexual* or transsexual* or transexual* or "men who have sex with men" or "same-sex" or queer*).ti,ab. (29659)

100 exp Transsexualism/ (2855)

101 exp Poverty Areas/ (4608)

102 exp Vulnerable populations/ (5723)

103 exp Social Stigma/ (1349)

104 exp shame/ (1506)

105 exp Prejudice/ (23558)

106 exp Socioeconomic Factors/ (341937)

107 or/67-106 (1865530)

108 107 and 66 (766030)

109 62 or 108 (3646065)

110 42 and 57 and 109 (2800)

111 42 and 57 and 109 (2800)

**112 limit 111 to yr="2000 -Current" (2582) SRs Midlife or disadvantaged adults healthy behavior barriers**

113 42 and 57 and 62 (1950)

**114 limit 113 to yr="2000 -Current" (1757) SRs of midlife healthy behavior barriers**

115 42 and 57 and 108 (1363)

116 42 and 57 and 108 (1363)

**117 limit 116 to yr="2000 -Current" (1299) SRs of disadvantaged adults' healthy behavior barriers**

**118 42 and 109 (269040) Midlife or disadvantaged adults healthy behavior barriers**

119 118 not 110 (266240)

**120 limit 119 to yr="2000 -Current" (178577) non-SRs of Midlife or disadvantaged adults healthy behavior barriers**

**********

**D2. Sample search strategy used to identify primary studies**

Sample search: Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) <1946 to Present>

Note: Searches terms were modified were necessary when searching other databases.

---

1 (((health* adj3 (behavior* or behaviour*)) or ((ageing or aging) adj3 (well or success* or positive* or active* or healthy)) or (food* adj3 choice*) or dieting or (diet* adj3 (health* or balance* or fat* or salt* or sugar* or mediterranean or choice* or improv* or unhealthy)) or ((fruit* or vegetable* or salt* or fat* or sugar*) adj3 (intake* or consum* or eat* or ate)) or (undernutrition or undernourish* or under-nutrition* or under-nourish*) or (multimicronutrient* or multi-micronutrient* or micronutrient* or micro-nutrient* or multinutrient* or multi-nutrient*) or ("five a day" or "5 a day") or ("health check" or "check-up") or "health MOT*" or ((eye* or sight* or vision* or visual* or hearing) adj3 (test* or check* or screen*)) or (smok* or tobacco or cigar* or nicotine) or ((alcohol* or drunk* or drink*) adj3 (consum* or misuse* or abuse* or intoxicat* or harmful or excess* or binge* or hazardous* or heavy or temperance or abstinence)) or temperan* or teetotal* or (lonely or lonli*) or (socialis* or socializ*) or (social* adj3 (isolat* or network* or contac* or alien*)) or ((cognitive or mental*) adj2 stimulat*) or (sedentary or exercis* or sport*) or "physical condition*" or (balance* and (exercis* or retrain* or re-train* or reeducat* or re-educat*)) or inactiv* or (walk* or run* or jog* or swim* or danc* or garden* or cycl* or bicycl* or bike* or recreation*) or ("resistance training" or "acquatic exercis*" or "wellness centre*" or "wellness center*") or ("weight gain*" or "weight los*" or "overweight" or "over weight") or (obesity and "related behavio*") or (overeat* or "over eat") or (waist* adj3 (circumference* or measur*)) or ((bmi or "body mass index") adj3 (gain* or loss* or lose* or lost or change*)) or (weight adj2 (cycling or reduc* or los* or maint* or decreas* or increas* or watch* or control*)) or "weight change*" or ((behavio?r* or lifestyle or "life style") adj3 (change* or changing or modification or modify or modifying or therapy or therapies or program* or intervention* or counsel*)) or ((physical* or keep* or cardio* or aerobic or fitness) adj3 (fit* or activ* or train*)) or ((physical* or game* or leisure* or fitness) adj5 (event* or setting* or sector* or program* or venue* or site* or center* or centre*))) adj3 (prevent* or barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance* or uptake or "take up" or increas* or decreas* or reduc* or impact* or effect* or improve* or enhance* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisfaction or compliance or comply or complie* or refus* or availabl* or provision* or provid* or offer or incentive* or utiliz* or utilis*)).ti,ab. (446597)

2 (prevent* or barrier* or facilitat* or hinder* or block* or obstacle* or restrict* or restrain* or obstruct* or inhibit* or impede* or delay* or constrain* or hindrance* or uptake or "take up" or increas* or decreas* or reduc* or impact* or effect* or improve* or enhance* or encourag* or support* or promot* or optimiz* or optimis* or adher* or access* or motivat* or accept* or satisfaction or compliance or comply or complie* or refus* or availabl* or provision* or provid* or offer or incentive* or utiliz* or utilis*).ti,ab. (11910955)

3 exp health behavior/ (100016)

4 exp risk reduction behavior/ (7539)

5 exp health promotion/ (55103)

6 exp primary prevention/ (114407)

7 exp preventive medicine/ (32402)

8 exp life style/ (65061)

9 exp food habits/ (21286)

10 exp food preferences/ (10111)

11 exp nutrition therapy/ (80646)

12 exp vision tests/ (80919)

13 exp hearing tests/ (38091)

14 exp smoking/ (124725)

15 exp smoking cessation/ (21110)

16 exp "tobacco use disorder"/ (8455)

17 exp "tobacco use cessation"/ (21814)

18 exp tobacco smoke pollution/ (10742)

19 exp alcohol drinking/ (53034)

20 exp alcohol deterrents/ (4205)

21 exp drinking behavior/ (58520)

22 exp temperance/ (2625)

23 exp loneliness/ (2175)

24 exp exercise/ (114811)

25 exp sports/ (113459)

26 exp exercise therapy/ (30184)

27 exp physical exertion/ (54932)

28 exp physical fitness/ (22421)

29 exp "physical education and training"/ (13706)

30 exp exercise test/ (51046)

31 exp walking/ (20209)

32 exp running/ (13881)

33 exp jogging/ (697)

34 exp bicycling/ (7886)

35 exp swimming/ (18935)

36 exp dancing/ (1843)

37 exp gardening/ (466)

38 exp fitness centers/ (338)

39 exp sedentary lifestyle/ (2551)

40 or/3-39 (992780)

41 2 and 40 (632416)

42 1 or 41 (939031)

43 meta-analysis as topic/ (14071)

44 meta-analys*.tw. (62370)

45 metaanaly*.tw. (1373)

46 Meta-Analysis/ (51199)

47 (systematic adj (review*1 or overview*1)).tw. (53469)

48 exp Review Literature as Topic/ (7628)

49 or/43-48 (125460)

50 Comment/ (577154)

51 Letter/ (829297)

52 Editorial/ (350296)

53 animal/ (5488706)

54 human/ (13639147)

55 53 not (53 and 54) (3959628)

56 ((middle adj age*) or (midlife* or "mid life*" or midlives or "mid lives") or (baby adj2 boomer*)).ti. (11512)

57 exp *Middle age/ (844)

58 49 or 50 or 51 or 52 or 55 (5339612)

59 56 or 57 (12088)

60 42 and 59 (2659)

61 60 not 58 (2560)

62 limit 61 to yr="2000 -Current" (1772)

63 exp Middle age/ (3344360)

64 56 or 63 (3346787)

65 42 and 64 (234019)

66 65 not 58 (230787)

67 limit 66 to yr="2000 -Current" (152412)

**********

**D3. Sample targeted search for primary studies (where no systematic reviews)**

Sample search: targeted vision and disadvantage populations or adults IN TITLES using Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations and Ovid MEDLINE(R) <1946 to Present>

Note: Searches terms were modified were necessary when searching other databases.

---

1 adult*.ti,ab. (827307)

2 exp Young Adult/ (351950)

3 exp Adult/ (5611750)

4 or/1-3 (6029894)

5 "single parent*".ti. (219)

6 minorit*.ti. (5689)

7 "free school meal*".ti. (5)

8 ((low* or work*) adj4 class*).ti. (1279)

9 unemployed*.ti. (423)

10 (low* adj3 (income* or wage* or pay*)).ti. (5984)

11 ("income support*" or "housing benefit*" or "child support*" or "unemployment benefit*").ti. (138)

12 poverty.ti. (3044)

13 (deprive* or deprivation*).ti. (17067)

14 ethnic*.ti. (18691)

15 ((vulnerable or disadvantaged or "at risk" or "high risk" or "low socioeconomic status" or neglect* or affected or marginal* or forgotten or non-associative or nonassociative or unengaged or hidden or excluded or transient or inaccessible or underserved or stigma* or inequitable) and (people or population* or communit* or neighbourhood*1 or neighborhood*1 or group* or area*1 or demograph* or patient* or social*)).ti. (25665)

16 (immigrant* or migrant* or asylum or refugee* or undocumented).ti. (15142)

17 (born adj2 overseas).ti. (10)

18 (displaced and (people or person*1)).ti. (163)

19 (homeless or vagrant*).ti. (3367)

20 (((language* or communicat*) and (barrier* or understand* or strateg* or proficien*)) or translat* or interpret* or (cultur* and competen*)).ti. (62987)

21 (illiteracy or illiterate*).ti. (279)

22 (traveller*1 or Gypsies or Gypsy or Gipsy or Gipsies or Romany or Romanies or Romani or Romanis or Romani or Romanis or Roma).ti. (2929)

23 (homeless* or vagrant* or tramp or tramps or "street person" or "street people" or (sleep* adj3 rough)).ti. (4271)

24 (lesbian* or gay* or homosexual* or bisexual* or transgender* or trans-gender* or trans-sexual* or transsexual* or transexual* or "men who have sex with men" or "same-sex" or queer*).ti. (13886)

25 (shame* or stigma* or socioeconomic or socio-economic or prejudic*).ti. (18591)

26 or/5-25 (190725)

27 4 and 26 (70318)

28 ((middle adj age*) or (baby adj2 boomer*) or (midlife or "mid life" or midlives or "mid lives")).ti. (11505)

29 exp *Middle Aged/ (844)

30 28 or 29 (12081)

31 27 or 30 (82144)

32 ((eye or eyes or eyesight or sight* or vision* or visual* or hearing) adj3 (test* or check* or screen*)).ti,ab. (21305)

33 exp vision tests/ or exp hearing tests/ (118748)

34 32 or 33 (131886)

35 31 and 34 (458)

36 meta-analysis as topic/ (14071)

37 meta-analys*.tw. (62302)

38 metaanaly*.tw. (1372)

39 Meta-Analysis/ (51199)

40 (systematic adj (review*1 or overview*1)).tw. (53390)

41 exp Review Literature as Topic/ (7628)

42 or/36-41 (125334)

43 Comment/ (576830)

44 Letter/ (828887)

45 Editorial/ (350125)

46 animal/ (5488705)

47 human/ (13639146)

48 46 not (46 and 47) (3959628)

49 43 or 44 or 45 or 48 (5222217)

50 35 not 49 (427)

51 50 and 42 (2)

52 35 not 51 (456)

53 limit 52 to yr="2000 -Current" (274)

## APPENDIX E – Search results

**Table E1. Databases searches – Systematic reviews**

| Database name | Search date | # records retrieved | After de duplication |
|---|---|---|---|
| MEDLINE/in-process MEDLINE | 24.09.13<br>04.03.14 | 2564<br>264 | 2021<br>253 |
| EMBASE | 24.09.13<br>04.03.14 | 1386<br>245 | 1365<br>244 |
| PsychINFO | 25.09.13<br>04.03.14 | 509<br>64 | 507<br>64 |
| CINAHL | 27.09.13<br>04.03.14 | 1273<br>229 | 1267<br>229 |
| Health Management Information Consortium (HMIC) | 27.09.13<br>04.03.14 | 40<br>6 | 39<br>6 |
| Cochrane | 02.10.13<br>04.03.14 | 1608<br>432 | 1601<br>432 |
| Web of Knowledge | 03.10.13<br>04.03.14 | 2254<br>922 | 2252<br>916 |
| ASSIA | 04.03.14 | 51 | 51 |
| | **Total** | 11847 | 11247 |

**Table E2. Databases searches – Primary studies**

| Database name | Search date | # records retrieved | After de duplication |
|---|---|---|---|
| MEDLINE/in-process MEDLINE | 30.10.13<br>05.03.14 | 1533<br>176 | 1533<br>170 |
| EMBASE | 30.10.13<br>05.03.14 | 2499<br>5691 | 2496<br>5669 |
| PsychINFO | 30.10.13<br>05.03.14 | 472<br>50 | 472<br>50 |
| CINAHL | 30.10.13<br>05.03.14 | 873<br>77 | 873<br>77 |
| Health Management Information Consortium (HMIC) | 30.10.13<br>05.03.14 | 304<br>23 | 304<br>23 |
| HTA | 30.10.13 | 1 | 1 |
| Trials | 30.10.13 | 345 | 345 |
| ASSIA | 05.03.14 | 52 | 46 |

| | | | |
|---|---|---|---|
| Cochrane | 05.03.14 | 50 | 50 |
| Web of Knowledge | 05.03.14 | 320 | 320 |
| | **Total** | 12466 | 12429 |

**Table E3. Websites searched**

| Database name | Search date | # records retrieved |
|---|---|---|
| Action on Hearing Loss | 22.10.13 | 10 |
| Alzheimer's Society | 22.10.13 | 56 |
| Beth Johnson Foundation | 22.10.13 | 33 |
| British Library | 12.09.13 | 4 |
| Campbell Collaboration | 12.09.13 | 18 |
| Cochrane Collaboration | 28.01.14 | 35 |
| Department of Health | 12.09.13<br>03.02.14 | 1<br>8 |
| E-Print Network | 12.09.13 | 11 |
| Fight for Sight | 22.10.13 | 5 |
| Google Scholar | 12.09.13<br>27.01.14 | 6<br>89 |
| Grey Literature Report | 12.09.13 | 10 |
| Health Evidence Canada | 15.10.13<br>28.01.14 | 80<br>56 |
| Lenus | 12.09.13 | 1 |
| NHS Evidence Search | 14.10.13<br>29.01.14 | 167<br>101 |
| OAIster | 12.09.13 | 85 |
| Open Grey | 15.10.13<br>03.02.14 | 20<br>3 |
| Public Health Europe | 12.09.13 | 2 |
| Public Health Observatories | 15.10.13 | 50 |
| RAND Health | 12.09.13 | 7 |
| RNIB | 22.10.13 | 31 |
| Scirus | 12.09.13 | 1 |
| World Health Organisation | 12.09.13<br>28.01.14 | 6<br>5 |
| | **Total** | 901 |

## APPENDIX F – Breakdown of search results

### F1. NICE Appendix Cs for systematic reviews

**Table F1.1. Medline**

| | |
|---|---|
| Database name | Medline and In-Process Medline |
| Database host | OVID |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 24.09.13 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 2582 |
| Name of Endnote library | Rev1v2update_Medline_SR24092013 |
| Number of records located in Endnote library | 2582 |
| Ref numbers of records in Endnote library | 1-2582 |
| Number of records after de-duplication | 2021 |

| | |
|---|---|
| Database name | Medline and In-Process Medline |
| Database host | OVID |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 04.03.14 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 264 |
| Name of Endnote library | Rev3update_Medline_SR04032014 |
| Number of records located in Endnote library | 264 |
| Ref numbers of records in Endnote library | 1-264 |
| Number of records after de-duplication | 253 |

**Table F1.2. Embase**

| | |
|---|---|
| Database name | Embase |
| Database host | OVIDsp |
| Database coverage dates | 1974-2013 |
| Searcher | Isla Kuhn |
| Search date | 24.09.13 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 1386 |
| Name of Endnote library | Rev1v2_EmbaseSR24092013 |
| Number of records located in Endnote library | 1386 |
| Ref numbers of records in Endnote library | 2583 - 3969 |
| Number of records after de-duplication | 1365 |

| | |
|---|---|
| Database name | Embase |
| Database host | OVIDsp |
| Database coverage dates | 1974-2014 |
| Searcher | Isla Kuhn |
| Search date | 04.03.14 |
| Search strategy checked by | Sarah Kelly |

| | |
|---|---|
| Number of records retrieved | 245 |
| Name of Endnote library | Rev3update_Embase_SR04032014 |
| Number of records located in Endnote library | 245 |
| Ref numbers of records in Endnote library | 265-509 |
| Number of records after de-duplication | 244 |

**Table F1.3. PsychInfo**

| | |
|---|---|
| Database name | HMIC |
| Database host | OVIDsp |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 25.09.13 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 509 |
| Name of Endnote library | Rev1v2_PsycInfo_SR25092013 |
| Number of records located in Endnote library | 509 |
| Ref numbers of records in Endnote library | 3970 - 4479 |
| Number of records after de-duplication | 507 |

| | |
|---|---|
| Database name | HMIC |
| Database host | OVIDsp |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 04.03.14 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 64 |
| Name of Endnote library | Rev3update_PsychInfo_SR04032014 |
| Number of records located in Endnote library | 64 |
| Ref numbers of records in Endnote library | 510-573 |
| Number of records after de-duplication | 64 |

**Table F1.4. CINAHL**

| | |
|---|---|
| Database name | Cinahl |
| Database host | Ebsco |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 27.09.13 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 1273 |
| Name of Endnote library | Rev1v2_Cinahl_SR27092013 |
| Number of records located in Endnote library | 1273 |
| Ref numbers of records in Endnote library | 4480 - 5753 |
| Number of records after de-duplication | 1267 |

| | |
|---|---|
| Database name | Cinahl |
| Database host | Ebsco |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |

| | |
|---|---|
| Search date | 04.03.14 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 1273 |
| Name of Endnote library | Rev3update_Cinahl_SR04032014 |
| Number of records located in Endnote library | 229 |
| Ref numbers of records in Endnote library | 574-802 |
| Number of records after de-duplication | 229 |

**Table F1.5. Health Management Inormation Consortium (HMIC)**

| | |
|---|---|
| Database name | HMIC |
| Database host | OVIDsp |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 27.09.13 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 40 |
| Name of Endnote library | Rev1v2_HMICSR27092013 |
| Number of records located in Endnote library | 40 |
| Ref numbers of records in Endnote library | 5754 - 5794 |
| Number of records after de-duplication | 39 |

| | |
|---|---|
| Database name | HMIC |
| Database host | OVIDsp |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 04.03.14 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 6 |
| Name of Endnote library | Rev3update_HMIC_SR04032014 |
| Number of records located in Endnote library | 6 |
| Ref numbers of records in Endnote library | 803-808 |
| Number of records after de-duplication | 6 |

**Table F1.6. Cochrane**

| | |
|---|---|
| Database name | Cochrane |
| Database host | www.thecochranelibrary.com |
| Database coverage dates | 1986-2013 |
| Searcher | Isla Kuhn |
| Search date | 02.10.13 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 1608 |
| Name of Endnote library | Rev1v2Cochranehalf_SR02102013 |
| Number of records located in Endnote library | 1608 |
| Ref numbers of records in Endnote library | 5795 - 7403 |
| Number of records after de-duplication | 1601 |

| | |
|---|---|
| Database name | Cochrane |
| Database host | www.thecochranelibrary.com |
| Database coverage dates | 1986-2014 |
| Searcher | Isla Kuhn |
| Search date | 04.03.14 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 432 |
| Name of Endnote library | Rev3update_Cochrane_SR04032014 |
| Number of records located in Endnote library | 432 |
| Ref numbers of records in Endnote library | 809-1240 |
| Number of records after de-duplication | 432 |

**Table F1.7. Web of Knowledge**

| | |
|---|---|
| Database name | WOK |
| Database host | SSCI |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 03.10.13 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 2254 |
| Name of Endnote library | Rev1v2_WOK_SR03102013 |
| Number of records located in Endnote library | 2254 |
| Ref numbers of records in Endnote library | 7404 - 9658 |
| Number of records after de-duplication | 2252 |

| | |
|---|---|
| Database name | WOK |
| Database host | SSCI |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 04.03.14 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 922 |
| Name of Endnote library | Rev3update_WOK_SR04032014 |
| Number of records located in Endnote library | 922 |
| Ref numbers of records in Endnote library | 1241-2162 |
| Number of records after de-duplication | 916 |

**Table F1.8. ASSIA**

| | |
|---|---|
| Database name | ASSIA |
| Database host | ProQuest |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 04.03.14 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 51 |
| Name of Endnote library | Rev3update_ASSIA_SR04032014 |
| Number of records located in Endnote library | 51 |
| Ref numbers of records in Endnote library | 2163-2213 |
| Number of records after de-duplication | 51 |

## F2. NICE Appendix Cs for primary studies

### Table F2.1 Medline

| | |
|---|---|
| Database name | Medline |
| Database host | OVID |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 30.10.2013 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 1533 |
| Name of Endnote library | Rev1v2_MedlineI_30102013 |
| Number of records located in Endnote library | 1533 |
| Ref numbers of records in Endnote library | 3678-5210 |
| Number of records after de-duplication | 1533 |

| | |
|---|---|
| Database name | Medline |
| Database host | OVID |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 05.03.2014 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 176 |
| Name of Endnote library | Rev3update_Medline_05032014 |
| Number of records located in Endnote library | 176 |
| Ref numbers of records in Endnote library | 2214-2389 |
| Number of records after de-duplication | 170 |

### Table F2.2. Embase

| | |
|---|---|
| Database name | Embase |
| Database host | OVID |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 30.10.2013 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 2499 |
| Name of Endnote library | Rev1v2_Embase_30102013 |
| Number of records located in Endnote library | 2499 |
| Ref numbers of records in Endnote library | 0874-3372 |
| Number of records after de-duplication | 2496 |

| | |
|---|---|
| Database name | Embase |
| Database host | OVID |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 05.03.2014 |

| | |
|---|---|
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 5691 |
| Name of Endnote library | Rev3update_Embase_05032014 |
| Number of records located in Endnote library | 5691 |
| Ref numbers of records in Endnote library | 2390-8080 |
| Number of records after de-duplication | 5669 |

**Table F2.3. PsychInfo**

| | |
|---|---|
| Database name | PsychInfo |
| Database host | OVID |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 30.10.2013 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 472 |
| Name of Endnote library | Rev1v2_PsychInfo_30102013 |
| Number of records located in Endnote library | 472 |
| Ref numbers of records in Endnote library | 5211-5682 |
| Number of records after de-duplication | 472 |

| | |
|---|---|
| Database name | PsychInfo |
| Database host | OVID |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 05.03.2014 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 50 |
| Name of Endnote library | Rev3update_PsychInfo_05032014 |
| Number of records located in Endnote library | 50 |
| Ref numbers of records in Endnote library | 8081-8130 |
| Number of records after de-duplication | 50 |

**Table F2.4. CINAHL**

| | |
|---|---|
| Database name | Cinahl |
| Database host | Ebsco |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 30.10.2013 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 873 |
| Name of Endnote library | Rev1v2_Cinahl_30102013 |
| Number of records located in Endnote library | 873 |
| Ref numbers of records in Endnote library | 0001-0873 |
| Number of records after de-duplication | 873 |

| | |
|---|---|
| Database name | Cinahl |
| Database host | Ebsco |

| | |
|---|---|
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 05.03.2014 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 77 |
| Name of Endnote library | Rev3update_CINAHL_05032014 |
| Number of records located in Endnote library | 77 |
| Ref numbers of records in Endnote library | 8131-8207 |
| Number of records after de-duplication | 77 |

**Table F2.5. Health Management Inormation Consortium (HMIC)**

| | |
|---|---|
| Database name | HMIC |
| Database host | OVID |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 30.10.2013 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 304 |
| Name of Endnote library | Rev1v2_HMIC_30102013 |
| Number of records located in Endnote library | 304 |
| Ref numbers of records in Endnote library | 3373-3676 |
| Number of records after de-duplication | 304 |

| | |
|---|---|
| Database name | HMIC |
| Database host | OVID |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 05.03.2014 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 23 |
| Name of Endnote library | Rev3update_HMIC_05032014 |
| Number of records located in Endnote library | 23 |
| Ref numbers of records in Endnote library | 8208-8230 |
| Number of records after de-duplication | 23 |

**Table F2.6. Trials**

| | |
|---|---|
| Database name | Trials |
| Database host | www.thecochranelibrary.com |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 30.10.2013 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 345 |
| Name of Endnote library | Rev1v2_Trials_30102013 |
| Number of records located in Endnote library | 345 |
| Ref numbers of records in Endnote library | 5683-6027 |
| Number of records after de-duplication | 345 |

**Table F2.7. HTA**

| | |
|---|---|
| Database name | HTA |
| Database host | www.thecochranelibrary.com |
| Database coverage dates | 2000-2013 |
| Searcher | Isla Kuhn |
| Search date | 30.10.2013 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 1 |
| Name of Endnote library | Rev1v2_HTA_30102013 |
| Number of records located in Endnote library | 1 |
| Ref numbers of records in Endnote library | 3677-3677 |
| Number of records after de-duplication | 1 |

**Table F2.8. ASSIA**

| | |
|---|---|
| Database name | ASSIA |
| Database host | ProQuest |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 05.03.2014 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 52 |
| Name of Endnote library | Rev3update_ASSIA_05032014 |
| Number of records located in Endnote library | 52 |
| Ref numbers of records in Endnote library | 8231-8282 |
| Number of records after de-duplication | 46 |

**Table F2.9. Cochrane**

| | |
|---|---|
| Database name | Cochrane |
| Database host | www.thecochranelibrary.com |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 05.03.2014 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 50 |
| Name of Endnote library | Rev3update_Cochrane_05032014 |
| Number of records located in Endnote library | 50 |
| Ref numbers of records in Endnote library | 8283-8332 |
| Number of records after de-duplication | 50 |

**Table F2.10. Web of Knowledge**

| | |
|---|---|
| Database name | Web of Knowledge |
| Database host | SSCI |
| Database coverage dates | 2000-2014 |
| Searcher | Isla Kuhn |
| Search date | 05.03.2014 |
| Search strategy checked by | Sarah Kelly |
| Number of records retrieved | 320 |
| Name of Endnote library | Rev3update_WOK_05032014 |

| | |
|---|---|
| Number of records located in Endnote library | 320 |
| Ref numbers of records in Endnote library | 8333-8652 |
| Number of records after de-duplication | 320 |

## APPENDIX G. Excluded studies and reason for exclusion

### G1. Systematic reviews

| Reference | Reason excluded |
|---|---|
| Adeniyi FB, Young T. (2012) Weight loss interventions for chronic asthma. Cochrane Database of Systematic Reviews: CD009339. | Weight loss for asthma |
| Aggarwal B, Liao M, Mosca L. (2010) Predictors of Physical Activity at 1 Year in a Randomized Controlled Trial of Family Members of Patients With Cardiovascular Disease. Journal of Cardiovascular Nursing 25(6): 444-449. | RCT, in people with existing CVD |
| Ahlskog JE. (2011) Does vigorous exercise have a neuroprotective effect in Parkinson disease? Neurology 77(3): 288-294. | Review not SR |
| Akers JD, Estabrooks PA, Davy BM. (2010) Translational research: bridging the gap between long-term weight loss maintenance research and practice. Journal of the American Dietetic Association 110(10): 1511-1522. | Assessment of suff info for external implementation |
| Allen JC, Lewis JB, Tagliaferro AR. (2012) Cost-effectiveness of health risk reduction after lifestyle education in the small workplace. Preventing Chronic Disease 9:E96. | Cost study, lifestyle intervention, mean age 48 |
| Amireault S, Godin G, Vézina-Im LA. (2013) Determinants of physical activity maintenance: a systematic review and meta-analyses. Health Psychology Review 7(1): 55-91. | Review 1 include |
| An R. (2013) Effectiveness of subsidies in promoting healthy food purchases and consumption: a review of field experiments. Public Health Nutrition 16(7): 1215-1228. | SR, No info on mean age, relevant - food subsidies |
| Anokye NK, Trueman P, Green C et al. (2011) The cost-effectiveness of exercise referral schemes. BMC Public Health 11:954. | Cost study, exercise referral, 40-60 years analysis |
| Ara R, Blake L, Gray L et al. (2012) What is the clinical effectiveness and cost-effectiveness of using drugs in treating obese patients in primary care? A systematic review. Health Technology Assessment 16(5): iii-xiv, 1-195. | Drugs for obesity |
| Archer E, Groessl EJ, Sui X et al. (2012) An economic analysis of traditional and technology-based approaches to weight loss (Provisional abstract). American Journal of Preventive Medicine 43(2): 176-182. | Cost study, midlife mean age, weight loss |
| Asher RC, Burrows TL, Collins CE. (2013) Very low-energy diets for weight loss in adults: A review. Nutrition & Dietetics 70(2): 101-112. | SR, in people with BMI >30 |
| Ashford S, Edmunds J, French DP. (2010) What is the best way to change self-efficacy to promote lifestyle and recreational physical activity? A systematic review with meta-analysis. British Journal of Health Psychology 15 (Pt 2): 265-288. | SR, mean age 43, age range 31 - 55 years, Outcome is self-efficacy (knowledge and attitudes, barrier from rev 1) |

| | |
|---|---|
| Avery KN, Donovan JL, Horwood J et al. (2013) Behavior theory for dietary interventions for cancer prevention: A systematic review of utilization and effectiveness in creating behavior change. Cancer Causes and Control 24(3): 409-420. | SR, 29 of 40 studies in people <50, behaviour theory for cancer prevention |
| Ayala GX, Vaz L, Earp JA et al. (2010) Outcome effectiveness of the lay health advisor model among Latinos in the United States: an examination by role. Health Education Research 25(5): 815-840. | SR?, Wide age range, Includes broad range of outcomes e.g. antenatal, HIV |
| Bacigalupo R, Cudd P, Littlewood C et al. (2013) Interventions employing mobile technology for overweight and obesity: an early systematic review of randomized controlled trials. Obesity Reviews 14(4): 279-291. | SR, most studies in obese people, 3/7 include midlife. Mobile technology for overweight/obesity |
| Bader P, Boisclair D, Ferrence R. (2011) Effects of tobacco taxation and pricing on smoking behavior in high risk populations: a knowledge synthesis. International Journal of Environmental Research & Public Health 8(11): 4118-4139. | Review 1 include SR |
| Baker MK, Simpson K, Lloyd B et al. (2011) Behavioral strategies in diabetes prevention programs: A systematic review of randomized controlled trials. Diabetes Research & Clinical Practice 91(1): 1-12. | HC - already included in diabetes guidance |
| Baker PR, Francis DP, Soares J et al. (2011) Community wide interventions for increasing physical activity. Cochrane Database of Systematic Reviews (4): CD008366. | SR, most studies in adults in general, not midlife, community int for PA |
| Bala MM, Strzeszynski L, Topor-Madry R et al. (2013) Mass media interventions for smoking cessation in adults. Cochrane Database of Systematic Reviews (6): CD004704. | SR, most studies in adults >18, not spec midlife, mass media for smoking cessation |
| Barber SE, Clegg AP, Young JB. (2012) Is there a role for physical activity in preventing cognitive decline in people with mild cognitive impairment? Age and Ageing 41(1): 5-8. | Review but not SR |
| Barella LA, Etnier JL, Chang YK. (2010) The immediate and delayed effects of an acute bout of exercise on cognitive performance of healthy older adults. Journal of Aging and Physical Activity 18(1): 87-98. | Acute bout of exercise effects |
| Barker F, Mackenzie E, Elliott L et al. (2013) Interventions to improve hearing aid use in adult auditory rehabilitation. Cochrane Database of Systematic Reviews: CD010342. | Protocol only |
| Barnes J, Dong CY, McRobbie H et al. (2010) Hypnotherapy for smoking cessation. Cochrane Database of Systematic Reviews: CD001008. | SR, most studies in adults in general, not midlife, hypnotherapy for smoking cessation |
| Barnes D, Yaffe K. (2011) The projected impact of risk factor reduction on Alzheimer's disease prevalence. Alzheimer's and Dementia 7(4): S511. | Projected dementia risk - considered for rev 2 |
| Barnes D. (2012) Risk factor reduction and Alzheimer's disease prevalence: Projected effect and practical implications. Alzheimer's and Dementia 8 (4): 605. | Abstract |

| | |
|---|---|
| Barte JC, ter Bogt NC, Bogers RP et al. (2010) Maintenance of weight loss after lifestyle interventions for overweight and obesity, a systematic review. Obesity Reviews 11(12): 899-906. | SR, No info about age, weight loss/maintenance |
| Barton P, Andronis L, Briggs A et al. (2011) Effectiveness and cost effectiveness of cardiovascular disease prevention in whole populations: modelling study. BMJ 343: d4044. | Not SR, but KEEP as a primary study, modelling of CVD, reports midlife separately |
| Barton GR, Goodall M, Bower P et al. (2012) Increasing heart-health lifestyles in deprived communities: economic evaluation of lay health trainers. Journal of Evaluation in Clinical Practice 18(4): 835-840. | Not SR, RCT but KEEP for primary studies, not midlife but disadvantaged communities |
| Begh RA, Aveyard P, Upton P, et al. (2011) Promoting smoking cessation in Pakistani and Bangladeshi men in the UK: pilot cluster randomised controlled trial of trained community outreach workers. Trials 19(12):197. | Not SR, RCT but KEEP for primary studies, not midlife but disadvantaged communities |
| Bertram MY, Lim SS, Barendregt JJ et al. (2010) Assessing the cost-effectiveness of drug and lifestyle intervention following opportunistic screening for pre-diabetes in primary care. Diabetologia 53(5): 875-881. | Not SR, RCT but KEEP for primary studies? |
| Beswick AD, Gooberman-Hill R, Smith A et al. (2010) Maintaining independence in older people. Reviews in Clinical Gerontology 20(2): 128-153. | In older people |
| Black AP, Brimblecombe J, Eyles H et al. (2012) Food subsidy programs and the health and nutritional status of disadvantaged families in high income countries: a systematic review. BMC Public Health 12: 1099. | SR of food subsidy programs but most participants pregnant or postnatal |
| Blankers M, Nabitz U, Smit F et al. (2012) Economic evaluation of internet-based interventions for harmful alcohol use alongside a pragmatic randomized controlled trial. Journal of Medical Internet Research 14(5): 71-83. | Cost study, internet int for alcohol |
| Blankevoort CG, van Heuvelen MJ, Boersma F et al. (2010) Review of effects of physical activity on strength, balance, mobility and ADL performance in elderly subjects with dementia. Dementia and Geriatric Cognitive Disorders 30(5): 392-402. | >70 years |
| Boon B, Risselada A, Huiberts A et al. (2011) Curbing alcohol use in male adults through computer generated personalized advice: randomized controlled trial. Journal of Medical Internet Research 13(2): e43. | Not SR, cost study, computer feedback, alcohol |
| Bós AM, Howard BV, Beresford SA et al. (2011) Cost-effectiveness analysis of a low-fat diet in the prevention of breast and ovarian cancer. Journal of the American Dietetic Association 111(1):56-66. | Not SR, cost study, low fat diet and cancer |

| | |
|---|---|
| Boylan S, Louie JC, Gill TP. (2012) Consumer response to healthy eating, physical activity and weight-related recommendations: a systematic review. Obesity Reviews 13(7): 606-617. | Rev 1 ? |
| Boyle RG, Solberg LI, Fiore MC. (2010) Electronic medical records to increase the clinical treatment of tobacco dependence: a systematic review. American Journal of Preventive Medicine 39(6 Suppl 1): S77-82. | SR, not specifically midlife |
| Brambila-Macias J, Shankar B, Capacci S et al. (2011) Policy interventions to promote healthy eating: a review of what works, what does not, and what is promising. Food & Nutrition Bulletin 32(4): 365-375. | Review but not SR, relevant |
| Brindal E, Hendrie G, Freyne J et al. (2013) Design and pilot results of a mobile phone weight-loss application for women starting a meal replacement programme. Journal of Telemedicine and Telecare 19(3): 166-174. | Not SR, RCT but not spec midlife age 18-65, mean age 42 |
| Brown J, Michie S, Geraghty AW et al. (2012) A pilot study of StopAdvisor: A theory-based interactive internet-based smoking cessation intervention aimed across the social spectrum. Addictive Behaviors 37(12): 1365-1370. | Not SR, RCT but not spec midlife |
| Bryden A, Roberts B, McKee M et al. (2012) A systematic review of the influence on alcohol use of community level availability and marketing of alcohol. Health & Place 18(2): 349-357. | Review 1 include |
| Bryden A, Roberts B, Petticrew M et al. (2013) A systematic review of the influence of community level social factors on alcohol use. Health & Place 21: 70-85. | Review 1 include |
| Cahill K, Lancaster T, Green N. (2010) Stage-based interventions for smoking cessation. Cochrane Database of Systematic Reviews (11): CD004492. | SR, not specifically midlife |
| Campos S, Doxey J, Hammond D. (2011) Nutrition labels on pre-packaged foods: a systematic review. Public Health Nutrition 14(8): 1496-1506. | SR, v broad age range and study types. Not spec midlife |
| Car J, Lang B, Colledge A, Ung C et al. (2011) Interventions for enhancing consumers' online health literacy. Cochrane Database of Systematic Reviews (6): CD007092. | SR, outcome is online skills |
| Carbone ET, Zoellner JM. (2012) Nutrition and Health Literacy: A Systematic Review to Inform Nutrition Research and Practice. Journal of the Academy of Nutrition and Dietetics 112(2): 254-265. | SR, not spec midlife, outcome is health literacy |
| Cardona-Morrell M, Rychetnik L, Morrell SL et al. (2010) Reduction of diabetes risk in routine clinical practice: are physical activity and nutrition interventions feasible and are the outcomes from reference trials replicable? A systematic review and meta-analysis. BMC Public Health 29(10): 653. | Main outcomes are IGT |

| | |
|---|---|
| Carr SM, Lhussier M, Forster N et al. (2011) An evidence synthesis of qualitative and quantitative research on component intervention techniques, effectiveness, cost-effectiveness, equity and acceptability of different versions of health-related lifestyle advisor role in improving health. Health Technology Assessment 15(9): 1 iii-iv, 1-284. | SR, not spec midlife, effect/cost-effect lifestyle advisor |
| Cecchini M, Sassi F, Lauer JA et al. (2010) Tackling of unhealthy diets, physical inactivity, and obesity: health effects and cost-effectiveness). Lancet 20;376(9754): 1775-84. | Cost study, not spec midlife |
| Chan CW, Perry L. (2012) Lifestyle health promotion interventions for the nursing workforce: A systematic review. Journal of Clinical Nursing 21(15-16): 2247-2261. | SR, 3 incl studies, 2 not midlife, nurses, range of HB |
| Chen PC, Lee YC, Tsai ST et al. (2012) A cost-benefit analysis of the outpatient smoking cessation services in Taiwan from a societal viewpoint. Nicotine and Tobacco Research 14(5):522-30. | SR, not spec midlife, computer and aids for smoking cessation |
| Civljak M, Sheikh A, Stead LF et al. (2010) Internet-based interventions for smoking cessation. Cochrane Database of Systematic Reviews (9): CD007078. | SR, not spec midlife, internet for smoking cess |
| Clark F, Jackson J, Carlson M et al. (2012) Effectiveness of a lifestyle intervention in promoting the well-being of independently living older people: results of the Well Elderly 2 Randomised Controlled Trial. Journal of Epidemiology and Commmunity Health 66(9): 782-790. | Not SR, RCT in older people |
| Clark IN, Taylor NF, Baker F. (2012) Music interventions and physical activity in older adults: a systematic literature review and meta-analysis. Journal of Rehabilitation Medicine 44(9): 710-719. | SR, in >60 yrs |
| Cobiac L, Vos T, Veerman L. (2010) Cost-effectiveness of Weight Watchers and the Lighten Up to a Healthy Lifestyle program. Australian and New Zealand Journal of Public Health 34(3) 240-247. | Cost study, not midlife, weight watchers etc |
| Colquitt JL, Jones J, Harris P et al. (2011). Bone-anchored hearing aids (BAHAs) for people who are bilaterally deaf: a systematic review and economic evaluation. Health Technology Assessment 15(26): 1-200. | SR, effect and cost effect of hearing aids |
| Cook PJ, Ostermann J, Sloan FA. (2005) The net effect of an alcohol tax increase on death rates in middle age. American Economic Review 95(2): 278-281. | Not SR or primary, Policy paper, alcohol tax |
| Crouch R, Wilson A, Newbury J. (2011) A systematic review of the effectiveness of primary health education or intervention programs in improving rural women's knowledge of heart disease risk factors and changing lifestyle behaviours. International Journal of Evidence-Based Healthcare 9(3): 236-245. | SR, not spec midlife and mean age not reported |

| | |
|---|---|
| Cugelman B, Thelwall M, Dawes P. (2011) Online interventions for social marketing health behavior change campaigns: a meta-analysis of psychological architectures and adherence factors. Journal of Medical Internet Research 13(1): e17. | SR, not spec midlife |
| Cussler EC, Teixeira PJ, Going SB et al. (2008) Maintenance of weight loss in overweight middle aged women through the internet. Obesity 16(5): 1052-1060. | At baseline mean BMI was 30 or > in all groups so would be an exclude on that basis |
| Damschroder LJ, Lutes LD, Goodrich DE et al. (2010) A small-change approach delivered via telephone promotes weight loss in veterans: Results from the ASPIRE-VA pilot study. Patient Education and Counseling 79(2): 262-266. | MIDLIFE Primary weight loss int - phone |
| Danaei G, Pan A, Hu FB et al. (2013) Hypothetical midlife interventions in women and risk of type 2 diabetes. Epidemiology 24(1): 122-128. | Hypothetical interventions, data based on cohort study |
| Dauchet L, Amouyel P, Dallongeville J. (2005) Fruit and vegetable consumption and risk of stroke: a meta-analysis of cohort studies. Neurology 65(8): 1193-1197. | SR of observational studies, not spec midlife - review 2? |
| Dawel A, Anstey KJ. (2011) Interventions for midlife smoking cessation: a literature review. Australian Psychologist 46(3): 190-195. | Review but not SR? Relevant, included ints are midlife. Have screened for relevant midlife primary studies. |
| De Smedt D, De Cocker K, Annemans L et al. (2012) A cost-effectiveness study of the community-based intervention '10 000 Steps Ghent'. Public Health Nutrition, 15(03): 442-451. | Mean age 48 |
| de Viron S, Van der Heyden J, Ambrosino E et al. (2012) Impact of genetic notification on smoking cessation: Systematic review and pooled-analysis. PLoS One 7(7):e40230. | SR, not spec midlife, genetic not - smoking cessation |
| Dennis S, Williams A, Taggart J et al. (2012) Which providers can bridge the health literacy gap in lifestyle risk factor modification education: a systematic review and narrative synthesis. BMC Family Practice 28 (13): 44. | SR, health literacy so knowledge and attitudes |
| Dickens AP, Richards SH, Greaves CJ et al. (2011) Interventions targeting social isolation in older people: a systematic review. BMC Public Health 15 (11): 647. | SR, aged >60 years |
| Diep L, Kwagyan J, Kurantsin-Mills J et al. (2010) Association of physical activity level and stroke outcomes in men and women: a meta-analysis. Journal of Women's Health 19(10): 1815-1822. | Observational studies, consider for review 2 |
| Dombrowski SU, Avenell A, Sniehott FF. (2010) Behavioural interventions for obese adults with additional risk factors for morbidity: systematic review of effects on behaviour, weight and disease risk factors. Obesity Facts 3(6): 377-396 | SR but in obese adults |

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| Durkin S, Brennan E, Wakefield M. (2012) Mass media campaigns to promote smoking cessation among adults: an integrative review. Tobacco Control 21(3): 127-138. | SR, Not specifically midlife |
| Eakin E. (2001) Promoting physical activity among middle-aged and older adults in health care settings. Journal of Aging and Physical Activity 9: S29-S37. | MIDLIFE PA Not a SR but relevant primary studies. Check primary studies |
| Elder JP, Ayala GX, Arredondo EM et al. (2013) Community health partnerships for chronic disease prevention among Latinos: the San Diego Prevention Research Center. Journal of Primary Prevention 34(1-2): 17-29. | Not SR or primary prevention study |
| Elfeddali I, Bolman C, Candel MJ et al. (2012) The role of self-efficacy, recovery self-efficacy, and preparatory planning in predicting short-term smoking relapse. British Journal of Health Psychology 17: 185-201. | Primary study, mean age 37 |
| Elley CR, Garrett S, Rose SB et al. (2011) Cost-effectiveness of exercise on prescription with telephone support among women in general practice over 2 years). British Journal of Sports Medicine 45(15): 1223-1229. | Cost study, age 40-74 MIDLIFE, exercise on prescription |
| Eriksson MK, Hagberg L, Lindholm L et al. (2010) Quality of life and cost-effectiveness of a 3-year trial of lifestyle intervention in primary health care. Archives of Internal Medicine 13;170(16):1470-9. | Cost study, mean age 54, |
| Estabrooks PA, Gyurcsik NC. (2003) Evaluating the impact of behavioral interventions that target physical activity: issues of generalizability and public health. Psychology of Sport and Exercise 4(1): 41-55. | Translation, external transferability |
| Faucounau V, Wu YH, Boulay M et al. (2010) Cognitive Intervention Programmes on Patients Affected by Mild Cognitive Impairment: A Promising Intervention Tool for Mci? Journal of Nutrition Health & Aging 14(1): 31-35. | In elderly with MCI |
| Faulkner GE, Grootendorst P, Nguyen VH et al. (2011) Economic instruments for obesity prevention: Results of a scoping review and modified delphi survey. The International Journal of Behavioral Nutrition and Physical Activity 6 (8): 109. | Economic policies for weight loss |
| Felix HC, West DS. (2013) Effectiveness of weight loss interventions for obese older adults. American Journal of Health Promotion 27(3): 191-199. | In obese adults , age > 60 |
| Fitzgibbon ML, Tussing-Humphreys LM, Porter JS et al. (2012) Weight loss and African-American women: a systematic review of the behavioural weight loss intervention literature. Obesity Reviews 13(3): 193-213. | All studies in obese participants, |
| Fjeldsoe B, Neuhaus M, Winkler E et al. (2011) Systematic review of maintenance of behavior change following physical activity and dietary interventions. Health Psychology 30(1): 99-109. | Mainly in people with existing chronic disease, age not reported |

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| Flodgren G, Deane K, Dickinson HO et al. (2010) Interventions to change the behaviour of health professionals and the organisation of care to promote weight reduction in overweight and obese adults. Cochrane Database of Systematic Reviews (3): CD000984. | SR, not spec midlife, behaviour of HC profs for weight loss |
| Foley L, Maddison R, Jones Z et al. (2011) Comparison of two modes of delivery of an exercise prescription scheme. New Zealand Medical Journal 8;124(1338):44-54. | Cost study, mode of delivery of exercise prescription scheme |
| Forster M, Veerman JL, Barendregt JJ et al. (2011) Cost-effectiveness of diet and exercise interventions to reduce overweight and obesity. International Journal of Obesity 35(8): 1071-8. | Cost study, diet and ex for O/W |
| Foster CE, Brennan G, Matthews A et al. (2011) Recruiting participants to walking intervention studies: a systematic review. International Journal of Behavioral Nutrition & Physical Activity 15;8: 137. | SR, broad age range of participants, recruitment |
| Freak-Poli RL, Cumpston M, Peeters A et al. (2013) Workplace pedometer interventions for increasing physical activity. Cochrane Database of Systematic Reviews (4): CD009209. | SR, age in individual studies not reported |
| Frost SS, Goins RT, Hunter RH et al. (2010) Effects of the built environment on physical activity of adults living in rural settings. American Journal of Health Promotion 24(4): 267-283 | Not an intervention study; looking at association |
| George ES, Kolt GS, Duncan MJ et al. (2012) A review of the effectiveness of physical activity interventions for adult males. Sports Medicine 42(4): 281-300. | SR, not spec midlife, PA in males |
| Goldsby TU. (2013) The immediate and long lasting effects of aerobic exercise: A meta-analysis among ethnically diverse adults.Dissertation Abstracts International: Section B: The Sciences and Engineering 74(1-B E). | PhD thesis |
| Goode AD, Reeves MM, Eakin EG. (2012) Telephone-delivered interventions for physical activity and dietary behavior change: an updated systematic review. American Journal of Preventive Medicine 42(1): 81-88. | SR, not spec midlife, telephone int for PA |
| Gourlan MJ, Trouilloud DO, Sarrazin PG. (2011) Interventions promoting physical activity among obese populations: a meta-analysis considering global effect, long-term maintenance, physical activity indicators and dose characteristics. Obesity Reviews 12(7): E633-E645. | Obese populations |
| Graudal N, Galloe A. (2000) Should dietary salt restriction be a basic component of antihypertensive therapy? Cardiovascular Drugs & Therapy 14(4): 381-386. | Cost-study, not spec midlife, lifestyle for construction workers |
| Graves N, Barnett AG, Halton KA et al. (2009) Cost-effectiveness of a telephone-delivered intervention for physical activity and diet. PLoS One 25;4(9):e7135. | SR, 3 of 9 studies in midlife |

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| Greaves CJ, Sheppard KE, Abraham C et al. (2011) Systematic review of reviews of intervention components associated with increased effectiveness in dietary and physical activity interventions. BMC Public Health 18;11: 119. | REVIEW OF REVIEWS of diet/PA interventions, not spec midlife, |
| Hammond D, Wakefield M, Durkin S et al. (2013) Tobacco packaging and mass media campaigns: research needs for articles 11 and 12 of the WHO Framework Convention on Tobacco Control. Nicotine & Tobacco Research 15(4): 817-831. | SR?, Policy? |
| Hardcastle SJ, Taylor AH, Bailey MP et al. (2013) Effectiveness of a motivational interviewing intervention on weight loss, physical activity and cardiovascular disease risk factors: a randomised controlled trial with a 12-month post-intervention follow-up. International Journal of Behavioral Nutrition and Physical Activity 28;10:40. | Not SR, RCT not spec midlife |
| Harris R, Gamboa A, Dailey Y et al. (2012) One-to-one dietary interventions undertaken in a dental setting to change dietary behaviour. Cochrane Database of Systematic Reviews (3): CD006540. | SR, 4 of 5 studies NOT in midlife, diet-dental settings |
| Harris J, Felix L, Miners A et al. (2011) Adaptive e-learning to improve dietary behaviour: a systematic review and cost-effectiveness analysis. Health Technology Assessment 15(37): 1-160. | SR, not spec midlife, e-learning for diet |
| Harris T, Kerry S, Victor C et al. (2012) Randomised controlled trial of a complex intervention by primary care nurses to increase walking in patients aged 60–74 years: protocol of the PACE-Lift (Pedometer Accelerometer Consultation Evaluation-Lift) trial. BMC Public Health 13(1): 5. | Not SR, but assess as PRIMARY STUDY |
| Hartley L, Igbinedion E, Holmes J et al. (2013) Increased consumption of fruit and vegetables for the primary prevention of cardiovascular diseases. Cochrane Database of Systematic Reviews 4;6:CD009874. | SR, not spec midlife |
| Haynes SM, Lyons GF, McCombie EL et al. (2010) Long-term cost-effectiveness of weight management in primary care. International Journal of Clinical Practice 64(6): 775-783. | Cost study, mean age 49, weight management in primary care |
| Hersey JC, Khavjou O, Strange LB et al. (2012) The efficacy and cost-effectiveness of a community weight management intervention: a randomized controlled trial of the health weight management demonstration. Preventive Medicine 54(1):42-9. | Cost-effectiveness, mean age 49 |
| Hettema JE, Hendricks PS. (2010) Motivational interviewing for smoking cessation: a meta-analytic review. Journal of Consulting and Clinical Psychology 78(6): 868–884. | SR, age of studies not reported, MI for smoking cessation |

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| Hind D, Scott EJ, Copeland R et al. (2010) A randomised controlled trial and cost-effectiveness evaluation of "booster" interventions to sustain increases in physical activity in middle-aged adults in deprived urban neighbourhoods. BMC Public Health 4;10:3. | Protocol for primary study |
| Hollands GJ, Hankins M, Marteau TM. (2010) Visual feedback of individuals' medical imaging results for changing health behaviour. Cochrane Database of Systematic Reviews (1): CD007434. | SR, not spec midlife, feedback for HB |
| Hollis JL, Williams LT, Collins CE et al. (2013) Effectiveness of interventions using Motivational interviewing for dietary and physical activity modification in adults: A systematic review. JBI Database of Systematic Reviews and Implementation Reports 11(5): 1-27. | SR, not spec midlife |
| Hooper L, Abdelhamid A, Moore HJ et al. (2012) Effect of reducing total fat intake on body weight: systematic review and meta-analysis of randomised controlled trials and cohort studies. BMJ 6;345:e7666. | SR, not spec midlife, age of studies not reported, fat, body weight |
| Jacobs N, Evers S, Ament A et al. (2010) Cost-utility of a cardiovascular prevention program in highly educated adults: Intermediate results of a randomized controlled trial. International Journal of Technology Assessment in Health Care 26(1): 11-9. | CE study, mean age 40, CVD prevention |
| Joo NS, Park YW, Park KH et al. (2010) Cost-effectiveness of a community-based obesity control programme. Journal of Telemedicine and Telecare 16(2): 63-67. | CE study OW in Korea, mean age <40 |
| Khadjesari Z, Murray E, Hewitt C et al. (2011) Can stand-alone computer-based interventions reduce alcohol consumption? A systematic review. Addiction 106(2): 267-282. | SR, broad age range includes young adults, computer based interventions for alcohol. |
| King AC, Ahn DK, Oliveira BM et al. (2008). Promoting physical activity through hand-held computer technology. American Journal of Preventive Medicine 34(2): 138-142. | MIDLIFE Primary study - PA computer technology |
| King AC, Hekler EB, Grieco LA et al. (2013) Harnessing different motivational frames via mobile phones to promote daily physical activity and reduce sedentary behavior in aging adults. PloS One 8(4): e62613. | MIDLIFE Primary study - PA mobile phones |
| Kremers S, Reubsaet A, Martens M et al. (2010) Systematic prevention of overweight and obesity in adults: a qualitative and quantitative literature analysis. Obesity Reviews 11(5): 371-379. | 18/46 Spec midlife |
| Krogsbøll LT, Jørgensen KJ, Grønhøj Larsen C et al. (2012) General health checks in adults for reducing morbidity and mortality from disease. Cochrane Database of Systematic Reviews: CD009009. | Exclude – screening interventions |

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| Krukowski RA, Tilford JM, Harvey-Berino J et al. (2011) Comparing behavioral weight loss modalities: incremental cost-effectiveness of an internet-based versus an in-person condition (Provisional abstract). Obesity 19(8):1629-35. | Obese at baseline |
| Lakerveld J, Bot SD, Chinapaw MJ, et al. (2013) Motivational interviewing and problem solving treatment to reduce type 2 diabetes and cardiovascular disease risk in real life: a randomized controlled trial. International Journal of Behavioral Nutrition and Physical Activity 19;10:47. | 1 year study already in |
| Lara J, Errington L, White M et al. (2012) Effectiveness of dietary interventions using the Mediterranean diet, or any combination of its component food groups in older adults: a systematic of review. Proceedings of the Nutrition Society 71(OCE2): E104. | Abstract - check if full paper published |
| Latimer AE, Brawley LR, Bassett RL. (2010) A systematic review of three approaches for constructing physical activity messages: What messages work and what improvements are needed? The International Journal of Behavioral Nutrition and Physical Activity 11;7:36. | K+A |
| Linden K, Jormanainen V, Linna M et al. (2010) Cost effectiveness of varenicline versus bupropion and unaided cessation for smoking cessation in a cohort of Finnish adult smokers. Current Medical Research & Opinion, 26(3): 549-560.. | |
| Liu CF, Collins MP, Souza PE et al. (2011) Long-term cost-effectiveness of screening strategies for hearing loss. Journal of Rehabilitation Research and Development 48(3): 235-43. | Screening for hearing loss, mean age 60 |
| Loveman E, Frampton GK, Shepherd J et al. (2011) The clinical effectiveness and cost-effectiveness of long-term weight management schemes for adults: a systematic review. Health Technology Assessment 15(2): 1-182. | Cost and effectiveness long-term |
| Luckner H, Moss JR, Gericke CA. (2012) Effectiveness of interventions to promote healthy weight in general populations of children and adults: a meta-analysis (Structured abstract). European Journal of Public Health 22(4):491-7. | Mainly children and adults |
| Maes L, Van Cauwenberghe E, Van Lippevelde W et al. (2012) Effectiveness of workplace interventions in Europe promoting healthy eating: a systematic review. European Journal of Public Health 22(5): 677-683. | Broad age range |
| Marteau TM, French DP, Griffin SJ et al. (2010) Effects of communicating DNA-based disease risk estimates on risk-reducing behaviours. Cochrane Database of Systematic Reviews (10): CD007275. | Out of scope |
| Marteau TM, Aveyard P, Munafò MR et al. (2012) Effect on adherence to nicotine replacement therapy of informing smokers their dose is determined by their genotype: A randomised controlled trial. PLoS One 7(4): e35249. | Not specific to midlife population /out of scope |

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| Martin M, Clare L, Altgassen AM et al. (2011) Cognition-based interventions for healthy older people and people with mild cognitive impairment. Cochrane Database of Systematic Reviews (1): CD006220. | >60 years |
| Maruyama C, Kimura M, Okumura H et al. (2010) Effect of a worksite-based intervention program on metabolic parameters in middle-aged male white-collar workers: a randomized controlled trial. Preventive Medicine 51(1): 11-17. | MIDLIFE Primary study - PA and nutrition - age of control group 36 but int gp >40 |
| Masi CM, Chen HY, Hawkley LC et al. (2011) A meta-analysis of interventions to reduce loneliness. Personality & Social Psychology Review 15(3): 219-266. | Broad age range including children |
| McEachan RR, Lawton RJ, Jackson C et al. (2011) Testing a workplace physical activity intervention: a cluster randomized controlled trial. International Journal of Behavioral Nutrition and Physical Activity 11;8:29. | Mean age 43, PA intervention |
| Mehta S, Dimsdale J, Nagle B et al. (2013). Worksite Interventions Improving Lifestyle Habits Among Latin American Adults. American Journal of Preventive Medicine 44(5): 538-542. | Non SR |
| Mills M, Loney P, Jamieson E et al. (2010) A primary care cardiovascular risk reduction clinic in Canada was more effective and no more expensive than usual on-demand primary care: a randomised controlled trial. Health and Social Care in the Community 18(1): 30-40. | Mean age 65 |
| Mills SD, Tanner LM, Adams J. (2013) Systematic literature review of the effects of food and drink advertising on food and drink-related behaviour, attitudes and beliefs in adult populations. Obesity Reviews 14(4): 303-314. | General |
| Mozaffarian D, Hao T, Rimm EB et al. (2011) Changes in diet and lifestyle and long-term weight gain in women and men. New England Journal of Medicine, 364(25), 2392-2404. | Review 2 include |
| Mulholland Y, Nicokavoura E, Broom J et al. (2012) Very-low-energy diets and morbidity: a systematic review of longer-term evidence. British Journal of Nutrition 108(5): 832-851. | Broad, includes children |
| Murphy SM, Edwards RT, Williams N et al. (2012) An evaluation of the effectiveness and cost effectiveness of the National Exercise Referral Scheme in Wales, UK: a randomised controlled trial of a public health policy initiative. Journal of Epidemiology and Commmunity Health 66(8):745-53. | UK, stratifies PA by age in results |
| Murray J, Craigs CL, Hill KM et al. (2012) A systematic review of patient reported factors associated with uptake and completion of cardiovascular lifestyle behaviour change. BMC Cardiovascular Disorders 8;12: 120. | Review 1? |
| Norberg M, Wall S, Boman K et al. (2010) The Västerbotten Intervention Programme: background, design and implications. Global Health Action 3. | Process paper - no results |

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| Ogedegbe G, Tobin JN, Fernandez S et al. (2009) Counseling African Americans to Control Hypertension (CAATCH) Trial: A multi-level intervention to improve blood pressure control in hypertensive blacks. Circulation: Cardiovascular Quality and Outcomes, 2(3): 249-256. | Not just lifestyle |
| Oh EG, Bang SY, Hyun SS et al. (2010). Effects of a 6-month lifestyle modification intervention on the cardiometabolic risk factors and health-related qualities of life in women with metabolic syndrome. Metabolism 59(7): 1035-1043. | In people with existing METS |
| Ortegón M, Lim S, Chisholm D et al. (2012) Cost effectiveness of strategies to combat cardiovascular disease, diabetes, and tobacco use in sub-Saharan Africa and South East Asia: mathematical modelling study. BMJ 2;344: e607. | Not OECD country |
| Osei-Assibey G, Adi Y, Kyrou I et al. (2011) Pharmacotherapy for overweight/obesity in ethnic minorities and White Caucasians: a systematic review and meta-analysis. Diabetes, Obesity & Metabolism 13(5): 385-393. | Drugs |
| Pavey TG, Anokye N, Taylor AH et al. (2011) The clinical effectiveness and cost-effectiveness of exercise referral schemes: a systematic review and economic evaluation. Health Technology Assessment 15(44): 1-254. | Tai-chi in nurses |
| Pavey T, Taylor A, Hillsdon M et al. (2012) Levels and predictors of exercise referral scheme uptake and adherence: a systematic review. Journal of Epidemiology & Community Health 66(8): 737-744. | Not spec midlife |
| Peels DA, van Stralen MM, Bolman C et al. (2012) Development of web-based computer-tailored advice to promote physical activity among people older than 50 years. Journal of Medical Internet Research 2;14(2):e39. | Implementation |
| Perez A, Fleury J, Keller C. (2010) Review of intervention studies promoting physical activity in Hispanic women. Western Journal of Nursing Research 32(3): 341-362. | Review, not SR |
| Perez E, Edmonds BA. (2012) A systematic review of studies measuring and reporting hearing aid usage in older adults since 1999: a descriptive summary of measurement tools. PLoS One 7(3): e31831. | Reporting |
| Perry KJ, Hickson M, Thomas J. (2011) Factors enabling success in weight management programmes: systematic review and phenomenological approach. Journal of Human Nutrition & Dietetics 24(3): 301-302. | Review 1/3 |
| Primack BA, Carroll MV, McNamara M et al. (2012) Role of video games in improving health-related outcomes: a systematic review. American Journal of Preventive Medicine 42(6): 630-638. | Therapy not prevention |

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| Promberger M, Dolan P, Marteau TM. (2012) "Pay them if it works": Discrete choice experiments on the acceptability of financial incentives to change health related behaviour. Social Science & Medicine 75(12): 2509-2514. | Exclude, not specifically mid-life |
| Rabin BA, Glasgow RE, Kerner JF et al. (2010) Dissemination and implementation research on community-based cancer prevention: A systematic review. American Journal of Preventive Medicine 38(4): 443-456. | Implementation |
| Radcliff TA, Bobroff LB, Lutes LD et al. (2012) Comparing costs of telephone vs face-to-face extended-care programs for the management of obesity in rural settings. Journal of the Academy of Nutrition and Dietetics 112(9): 1363-73. | Obesity |
| Rasmussen SR, Thomsen JL, Kilsmark J et al. (2013) The cost effectiveness of telephone counselling to aid smoking cessation in Denmark: a modelling study. Scandinavian Journal of Public Health 35(4):365-72. | Midlife |
| Rasu RS, Hunter CM, Peterson AL et al. (2010) Economic evaluation of an internet-based weight management program (Provisional abstract). American Journal of Managed Care 16(4):e98-104. | Mean age 34. |
| Rhodes RE, Pfaeffli LA. (2010) Mediators of physical activity behaviour change among adult non-clinical populations: a review update. International Journal of Behavioral Nutrition and Physical Activity 11;7:37. | Review 1 include |
| Rhodes RE, Dickau L. (2013) Moderators of the intention-behaviour relationship in the physical activity domain: a systematic review. British Journal of Sports Medicine 47(4): 215-225. | Review 1 include |
| Rice VH, Hartmann-Boyce J, Stead LF. (2013) Nursing interventions for smoking cessation. Cochrane Database of Systematic Reviews (8). | Age of most individual studies not reported |
| Richards J, Thorogood M, Hillsdon M et al. (2013) Face-to-face interventions for promoting physical activity. Cochrane Database of Systematic Reviews: CD010392. | Most ages not reported |
| Rigotti NA, Bitton A, Kelley JK et al. (2011) Offering population-based tobacco treatment in a healthcare setting: a randomized controlled trial. American Journal of Preventive Medicine 41(5):498-503. | Not specifically midlife |
| Riper H, Spek V, Boon B et al. (2011) Effectiveness of E-self-help interventions for curbing adult problem drinking: a meta-analysis. Journal of Medical Internet Research 13(2): e42. | Age of included studies ??? |
| Robroek SJ, Polinder S, Bredt FJ et al. (2012) Cost-effectiveness of a long-term Internet-delivered worksite health promotion programme on physical activity and nutrition: a cluster randomized controlled trial. Health Education Research 27(3): 399-410. | Mean age 42 years |
| Saleh SS, Alameddine MS, Hill D et al. (2010)The effectiveness and cost-effectiveness of a rural employer-based wellness program. Journal of Rural Health 26(3): 259-65. | Mean age midlife |

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| Salehi-Abargouei A, Maghsoudi Z, Shirani F et al. (2013) Effects of Dietary Approaches to Stop Hypertension (DASH)-style diet on fatal or nonfatal cardiovascular diseases-Incidence: A systematic review and meta-analysis on observational prospective studies. Nutrition 29(4): 611-618. | Review 2 include |
| Sargent GM, Forrest LE et al. (2012) Nurse delivered lifestyle interventions in primary health care to treat chronic disease risk factors associated with obesity: a systematic review. Obesity Reviews 13(12): 1148-1171. | SR, not spec midlife |
| Schröer-Günther MA, Zhou M, Gerber A et al. (2011) Primary tobacco prevention in China: a systematic review. Asian Pacific Version of Cancer Prevention 12(11): 2973-80. | Non OECD? |
| Shaw R, Fenwick E, Baker G et al. (2011) Pedometers cost buttons': the feasibility of implementing a pedometer based walking programme within the community. BMC Public Health 31;11:200. | Mean age 49 |
| Shaw R, Bosworth H. (2012) Short message service (SMS) text messaging as an intervention medium for weight loss: A literature review. Health Informatics Journal 18(4): 235-250. | Broad |
| Sheeran P, Harris P, Vaughan J et al. (2013) Gone exercising: Mental contrasting promotes physical activity among overweight, middle-aged, low-SES fishermen. Health Psychology 32(7): 802. | MIDLIFE PA - mental contrasting? |
| Skelton DA, Howe TE, Ballinger C et al. (2013) Environmental and behavioural interventions for reducing physical activity limitation in community-dwelling visually impaired older people. Cochrane Database of Systematic Reviews (6): CD009233. | Older people |
| Shen CZ. (2009) The effect of Chinese food therapy on community dwelling middle-aged hypertensive patients with Yin deficiency in Hangzhou, China. Hong Kong Polytechnic University (Hong Kong) PhD | Exclude – micro outcomes |
| Smerecnik C, Grispen JE, Quaak M. (2012) Effectiveness of testing for genetic susceptibility to smoking-related diseases on smoking cessation outcomes: a systematic review and meta-analysis. Tobacco Control 21(3): 347-354 | Out of scope |
| Smith MW, An LC, Fu SS et al. (2011) Cost-effectiveness of an intensive telephone-based intervention for smoking cessation. Journal of Telemedicine and Telecare 17(8): 437-440. | Mean age 57 |
| Taggart J, Williams A, Dennis S et al. (2012) A systematic review of interventions in primary care to improve health literacy for chronic disease behavioral risk factors. BMC Family Practice 1;13:49. | Knowledge and attitudes |
| Taylor RS, Ashton KE, Moxham T et al. (2011) Reduced dietary salt for the prevention of cardiovascular disease: a meta-analysis of randomized controlled trials. Cochrane Database of Systematic Reviews (7): CD009217. | Older and midlife |

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| Taylor CA, Shaw RL, Dale J et al. (2011) Enhancing delivery of health behaviour change interventions in primary care: A meta-synthesis of views and experiences of primary care nurses. Patient Education and Counseling 85(2): 315-322. | Review 1? |
| Te Morenga L, Mallard S, Mann J. (2013) Dietary sugars and body weight: Systematic review and meta-analyses of randomised controlled trials. BMJ 15;346: e7492. | Adults in genera/. Not post 2000 and midlife |
| Thomson CA, Ravia J. (2011) A systematic review of behavioral interventions to promote intake of fruit and vegetables. Journal of the American Dietetic Association 1 111(10): 1523-35. | Broad |
| Toto PE. (2010) Impact of a multi-component exercise and physical activity program for sedentary, community-dwelling, older adults. Doctoral dissertation, University of Pittsburgh. | Thesis |
| Tzelepis F, Paul CL, Walsh RA et al. (2011) Proactive telephone counseling for smoking cessation: meta-analyses by recruitment channel and methodological quality. Journal of the National Cancer Institute 103(12): 922-941. | Recruitment issues |
| Tzelepis F, Paul CL, Duncan SL et al. (2012) Increasing the reach of quitlines through active telephone recruitment: do cold-called smokers differ from quitline callers? Nicotine & Tobacco Research 14(12): 1488-1493. | Recruitment issues |
| van Genugten L, van Empelen P, Flink I et al. (2010) Systematic development of a self-regulation weight-management intervention for overweight adults. BMC Public Health 27;10:649. | Development |
| Wagner LD, Rein DB. (2013) Attributes associated with eye care use in the United States: A meta-analysis. Ophthalmology 120(7): 1497-1501. | Include Review 1 |
| Webel AR, Okonsky J, Trompeta J et al. (2010) A systematic review of the effectiveness of peer-based interventions on health-related behaviors in adults. American Journal of Public Health 100(2): 247-253. | Broad population and age |
| White A, Kavanagh D, Stallman H et al. (2010) Online alcohol interventions: a systematic review. Journal of Medical Internet Research 12(5): e62. | 1/2 studies with students |
| Whittaker R, Borland R, Bullen C et al. (2009) Mobile phone-based interventions for smoking cessation. Cochrane Database of Systematic Reviews 4. | Broad |
| Wieland LS, Falzon L, Sciamanna CN et al. (2012) Interactive computer-based interventions for weight loss or weight maintenance in overweight or obese people. Cochrane Database of Systematic Reviews 8. | Broad |
| Williams EC, Achtmeyer CE, Kivlahan DR et al. (2010) Evaluation of an electronic clinical reminder to facilitate brief alcohol-counseling interventions in primary care. Journal of Studies on Alcohol and Drugs 71(5): 720-725. | Broad |

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| Williams AD. (2012) Use of a text messaging program to promote adherence to daily physical activity guidelines: a review of the literature. Bariatric Nursing and Surgical Patient Care 7(1): 13-16. | Review not SR |
| Williams AL, Grogan S, Clark-Carter D et al. (2013) Appearance-based interventions to reduce ultraviolet exposure and/or increase sun protection intentions and behaviours: A systematic review and meta-analyses. British Journal of Health Psychology 18(1): 182-217. | Broad |
| Wilson LM, Avila Tang E, Chander G et al. (2012) Impact of tobacco control interventions on smoking initiation, cessation, and prevalence: a systematic review. Journal Of Environmental & Public Health 2012: 961724. | Policy |
| Wong JY, Gilson ND, van Uffelen JG et al. (2012) The effects of workplace physical activity interventions in men: a systematic review. American journal of Men's Health 6(4):303-13. | Age of individual studies not reported |
| Wycherley TP, Moran LJ, Clifton PM et al. (2012) Effects of energy-restricted high-protein, low-fat compared with standard-protein, low-fat diets: a meta-analysis of randomized controlled trials. American Journal of Clinical Nutrition 96(6): 1281-1298. | SR, broad age range of participants |
| Young MD, Morgan PJ, Plotnikoff RC et al. (2012) Effectiveness of male-only weight loss and weight loss maintenance interventions: a systematic review with meta-analysis. Obesity Reviews 13(5): 393-408. | SR, broad age range |
| Zautra AJ, Davis MC, Reich JW et al. (2012) Phone-based interventions with automated mindfulness and mastery messages improve the daily functioning for depressed middle-aged community residents. Journal of Psychotherapy Integration 22(3): 206. | Patient depressive at baseline |

**G2. Primary Studies**

| Reference | Reason excluded |
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| Paoli A, Pacelli QF, Moro T et al. (2013) Effects of high-intensity circuit training, low-intensity circuit training and endurance training on blood pressure and lipoproteins in middle-aged overweight men. Lipids in Health and Disease 12(1): 131. | >60 - just! Mean age man 61. Overweight. Micro outcomes |

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| Sawashita J, Onitsuka S, Gen-no H et al. (2009) Effects of mild calorie restriction and high-intensity interval walking in middle-aged and older overweight Japanese. Experimental Gerontology 44(10): 666-675. | >60 - just! |
| Schlatter RR. (2007) The impact of aerobic exercise on locus of control and self-efficacy in middle-aged women: Implications for mental health counselors. Dissertation. University of Arkansas. | Dissertation |
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| Shahab L, Hall S, Marteau T. (2007) Showing smokers with vascular disease images of their arteries to motivate cessation: a pilot study. British Journal of Health Psychology 12(2): 275-283. | Too old - Just! |
| Sharpe PA, Burroughs EL, Granner ML et al. (2010) Impact of a community-based prevention marketing intervention to promote physical activity among middle-aged women. Health Education & Behavior 37(3): 403-423. | Obese |
| Siasos G, Chrysohoou C, Oikonomou E et al. (2012) Beneficial effect of physical activity on endothelial function in middle-aged and elderly habitants in an area with increased rates of longevity: Ikaria study. Journal of the American College of Cardiology 1: E1750. | Conference abstract |
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| Tamosiunas A, Reklaitiene R, Radisauskas R et al. (2005) Prognosis of risk factors and trends in mortality from external causes among middle-aged men in Lithuania. Scandinavian Journal of Public Health 33(3): 190-196. | Not an intervention |
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| Van Raaij JM, Katan MB, West CE et al. (1982) Influence of diets containing casein, soy isolate, and soy concentrate on serum cholesterol and lipoproteins in middle-aged volunteers. The American Journal of Clinical Nutrition 35(5): 925-934. | <2000 |
| Vance D, Fazeli P. (2012) Speed of processing training improves neurocognition and IADLs in middle-aged and older adults with HIV. European Journal of Neurology 19: 646. | Confirmed HIV. Out of scope |
| Venojärvi M, Wasenius N, Manderoos S et al. (2013) Nordic walking decreased circulating chemerin and leptin concentrations in middle-aged men with impaired glucose regulation. Annals of Medicine 45(2): 162-170. | Micro outcomes |
| Wagner S. (2008) Does a cognitive-training programme improve the performance of middle-aged employees undergoing in-patient psychosomatic treatment? Disability and Rehabilitation 30(23): 1786-1793. | Micro outcomes |
| Wang Y, Chen Q, Chen W et al. (2011) The effect of shadowboxing exercise on lipid metabolism of middle-aged and elderly women. International Journal of Obesity 35: S44-S45. | Abstract, not full paper |
| Watkinson C, van Sluijs EM, Sutton S et al. (2010) Randomised controlled trial of the effects of physical activity feedback on awareness and behaviour in UK adults: the FAB study protocol [ISRCTN92551397]. BMC Public Health 10(1): 144. | Not an intervention - protocol |
| Weinheimer EM. (2011) Effects of whey protein supplementation and exercise training on body composition and indices of metabolic syndrome in middle-aged overweight and obese adults. FASEB Journal 25. | Abstract only |
| Weinheimer EM, Conley TB, Kobza VM et al. (2012) Whey protein supplementation does not affect exercise training-induced changes in body composition and indices of metabolic syndrome in middle-aged overweight and obese adults. The Journal of Nutrition 142(8): 1532-1539. | Cannot separate overweight from obese |
| Whitwell SC, Mathew CG, Lewis CM et al. (2011) Trial Protocol: Communicating DNA-based risk assessments for Crohn's disease: a randomised controlled trial assessing impact upon stopping smoking. BMC Public Health 11(1) 44. | Not an intervention - protocol |
| Will JC, Farris RP, Sanders CG et al. (2004) Health promotion interventions for disadvantaged women: overview of the WISEWOMAN projects. Journal of Women's Health 13(5): 484-502. | Not an intervention - methodological paper |
| Wilson D, Peters R, Ritchie K et al. (2011) Latest advances on interventions that may prevent, delay or ameliorate dementia. Therapeutic Advances in Chronic Diseases 2(3): 161-173. | Systematic Review |
| Wood PD, Haskell WL, Blair SN et al. (1983) Increased exercise level and plasma lipoprotein concentrations: a one-year, randomized, controlled study in sedentary, middle-aged men. Metabolism 32(1): 31-39. | <2000 |

| | |
|---|---|
| Wright AJ, French DP, Weinman J et al. (2006) Can genetic risk information enhance motivation for smoking cessation? An analogue study. Health Psychology 25(6): 740-752. | Too young |
| Wright AJ, Takeichi C, Whitwell SCL et al. (2008) The impact of genetic testing for Crohn's disease, risk magnitude and graphical format on motivation to stop smoking: An experimental analogue study. Clinical Genetics 73(4): 306-314. | Age not reported |
| Wright AJ, Sutton SR, Hankins M et al. (2012) Why does genetic causal information alter perceived treatment effectiveness? An analogue study. British Journal of Health Psychology 17(2): 294-313. | Too young - just! |
| Wu HY, Tsao TH, Hsu CH et al. (2011) The effects of low-impact dance on knee torque and lower extremity mobility in middle-aged and older women. Journal of Nursing Research 19(4): 267-274. | Not focussed on efficacy of particular intervention type |
| Wu T, Yeh H, Chan P et al. (2007) The effects of simple eight-week regular exercise on cardiovascular disease risk factors in middle-aged women at risk in Taiwan. Acta Cardiologica Sinica 23(3): 169. | Non OECD |
| Wu YT, Hwang CL, Chen CN et al. (2011) Home-based exercise for middle-aged Chinese at diabetic risk: A randomized controlled trial. Preventive Medicine 52(5): 337-343. | Non OECD |
| Yang S, Long Y. (2004) The influence of Taijiquan exercise on psychological state and the function of the autonomic nervous system of the middle-aged and elderly people. Homeostasis in Health and Disease 43(1): 7-11. | Micro outcomes |
| Yokoyama S, Gamada K, Sugino S et al. (2012) The effect of “the core conditioning exercises” using the stretch pole on thoracic expansion difference in healthy middle-aged and elderly persons. Journal of Bodywork and Movement Therapies 16(3): 326-329. | Experimental group >60 |
| Yoshitake Y, Takai Y, Kitamura T et al. (2011) Body mass-based exercise in middle-aged and older women. International journal of sports medicine 32(12): 924-928. | Combined outcomes |
| Zehnacker CH, Bemis-Dougherty A. (2007) Effect of weighted exercises on bone mineral density in post-menopausal women: a systematic review. Journal of Geriatric Physical Therapy 30(2): 79-88. | Superseded by Bolam 2013 so exclude |
| Zhang G, Pan A, Zong G et al. (2011) Substituting white rice with brown rice for 16 weeks does not substantially affect metabolic risk factors in middle-aged Chinese men and women with diabetes or a high risk for diabetes. The Journal of Nutrition 141(9): 1685-1690. | Cannot separate those with diabetes from those at risk |

| | |
|---|---|
| Zhang J, Wang C, Li L et al. (2012) Dietary inclusion of salmon, herring and pompano as oily fish reduces CVD risk markers in dyslipidaemic middle-aged and elderly Chinese women. British Journal of Nutrition 108(08): 1455-1465. | Abstract, not full paper |
| Ziegelmann JP, Lippke S, Schwarzer R. (2006) Adoption and maintenance of physical activity: Planning interventions in young, middle-aged, and older adults. Psychology & Health 21(2): 145-163. | Management of existing condition |
| Zwolinsky S, McKenna J, Pringle A. (2013) The public health value of doctors encouraging patients to exercise. BMJ 347. | Not an intervention - letter |

## APPENDIX H - Methodology checklists

### H.1 Inclusion/Exclusion form (Search stage 1 – systematic reviews)

Paper author/year/journal/Endnote identifier: ……

Reviewer and date: ……..…….

| Inclusion criteria | Yes | No | Unclear |
|---|---|---|---|
| **Is it a systematic review that meets the 5 screening criteria below? (Further information about each of these screening criteria is given in Appendix J of the CPH methods manual)** | | | |
| Does the review address an appropriate and clearly focused question that is relevant to the key research questions as defined in the protocol?<br><br>Note: Reviews will be included if they are relevant to all or part of a key research question but the data relevant to the research question must be sufficiently separate from other data to answer the further 4 screening questions below. | | | |
| Does the review include the types of study/ies relevant to the key research questions as defined in the protocol? i.e.<br><br>• Intervention studies<br>• Observational studies (including longitudinal cohort studies, but cross-sectional studies are excluded)<br>• Qualitative studies (including surveys and process evaluations)<br><br>Note: Reviews will be included if they include the study types included above. Where additional data is presented e.g. cross-sectional data as well as longitudinal cohort data, the data and conclusions relevant to the research question must be sufficiently separate from other data to be reported separately. | | | |
| Is the literature search sufficiently rigorous to identify all the relevant studies? | | | |

| | | | |
|---|---|---|---|
| Is the study quality of included studies appropriately assessed and reported? | | | |
| Is an adequate description of the analytical methodology used included, and are the methods used appropriate to the question? | | | |
| Is the paper some other study type (not a systematic review) that may be relevant as a primary study? | | | |
| **INCLUDE** | **EXCLUDE** | **UNSURE** | |

**H.2 Quality assessment for quantitative studies**

| | | |
|---|---|---|
| **Study identification: Include full citation details** | | |
| Study design:<br>• Refer to the glossary of study designs (appendix D) and the algorithm for classifying experimental and observational study designs (appendix E) to best describe the paper's underpinning study design | | |
| Guidance topic: | | |
| Assessed by: | | |
| **Section 1: Population** | | |
| 1.1 Is the source population or source area well described?<br>• Was the country (e.g. developed or non-developed, type of health care system), setting (primary schools, community centres etc), location (urban, rural), population demographics etc adequately described? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 1.2 Is the eligible population or area representative of the source population or area?<br>• Was the recruitment of individuals, clusters or areas well defined (e.g. advertisement, birth register)?<br>• Was the eligible population representative of the source? Were important groups underrepresented? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 1.3 Do the selected participants or areas represent the | **++** | **Comments:** |

| | | |
|---|---|---|
| eligible population or area?<br>• Was the method of selection of participants from the eligible population well described?<br>• What % of selected individuals or clusters agreed to participate? Were there any sources of bias?<br>• Were the inclusion or exclusion criteria explicit and appropriate? | **+**<br>**–**<br>**NR**<br>**NA** | |
| **Section 2: Method of selection of exposure (or comparison) group** | | |
| 2.1 Selection of exposure (and comparison) group. How was selection bias minimised?<br>• How was selection bias minimised? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 2.2 Was the selection of explanatory variables based on a sound theoretical basis?<br>• How sound was the theoretical basis for selecting the explanatory variables? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 2.3 Was the contamination acceptably low?<br>• Did any in the comparison group receive the exposure?<br>• If so, was it sufficient to cause important bias? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 2.4 How well were likely confounding factors identified and controlled?<br>• Were there likely to be other confounding factors not considered or appropriately adjusted for?<br>• Was this sufficient to cause important bias? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |

| | | |
|---|---|---|
| 2.5 Is the setting applicable to the UK?<br>• Did the setting differ significantly from the UK? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| **Section 3: Outcomes** | | |
| 3.1 Were the outcome measures and procedures reliable?<br>• Were outcome measures subjective or objective (e.g. biochemically validated nicotine levels ++ vs self-reported smoking −)?<br>• How reliable were outcome measures (e.g. inter- or intra-rater reliability scores)?<br>• Was there any indication that measures had been validated (e.g. validated against a gold standard measure or assessed for content validity)? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 3.2 Were the outcome measurements complete?<br>• Were all or most of the study participants who met the defined study outcome definitions likely to have been identified? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 3.3 Were all the important outcomes assessed?<br>• Were all the important benefits and harms assessed?<br>• Was it possible to determine the overall balance of benefits and harms of the intervention versus comparison? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 3.4 Was there a similar follow-up time in exposure and comparison groups?<br>• If groups are followed for different lengths of time, then more events are likely to occur in the group followed-up for longer distorting the comparison. | **++**<br>**+**<br>**–**<br>**NR** | **Comments:** |

| | | |
|---|---|---|
| • Analyses can be adjusted to allow for differences in length of follow-up (e.g. using person-years). | **NA** | |
| 3.5 Was follow-up time meaningful?<br>• Was follow-up long enough to assess long-term benefits and harms?<br>• Was it too long, e.g. participants lost to follow-up? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| **Section 4: Analyses** | | |
| 4.1 Was the study sufficiently powered to detect an intervention effect (if one exists)?<br>• A power of 0.8 (i.e. it is likely to see an effect of a given size if one exists, 80% of the time) is the conventionally accepted standard.<br>• Is a power calculation presented? If not, what is the expected effect size? Is the sample size adequate? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 4.2 Were multiple explanatory variables considered in the analyses?<br>• Were there sufficient explanatory variables considered in the analysis? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 4.3 Were the analytical methods appropriate?<br>• Were important differences in follow-up time and likely confounders adjusted for? | **++**<br>**+**<br>**–**<br>**NR**<br>**NA** | **Comments:** |
| 4.6 Was the precision of association given or calculable? Is association meaningful?<br>• Were confidence intervals or p values for effect estimates given or possible to calculate?<br>• Were CIs wide or were they sufficiently precise to aid decision-making? If precision is lacking, is | **++**<br>**+**<br>**–**<br>**NR** | **Comments:** |

| | | |
|---|---|---|
| this because the study is under-powered? | **NA** | |
| **Section 5: Summary** | | |
| 5.1 Are the study results internally valid (i.e. unbiased)?<br>• How well did the study minimise sources of bias (i.e. adjusting for potential confounders)?<br>• Were there significant flaws in the study design? | **++**<br>**+**<br>**–** | **Comments:** |
| 5.2 Are the findings generalisable to the source population (i.e. externally valid)?<br>• Are there sufficient details given about the study to determine if the findings are generalisable to the source population?<br>• Consider: participants, interventions and comparisons, outcomes, resource and policy implications. | **++**<br>**+**<br>**–** | **Comments:** |

### H.3 Quality assessment for randomly controlled trials

| | | | | | |
|---|---|---|---|---|---|
| Author, title, reference, year of publication | | | | | |
| **Guideline topic:** | **Review question no:** | | | | |
| Checklist completed by: | | | | | |
| | | Circle or highlight one option for each question | | | |
| **A. Selection bias (systematic differences between the comparison groups)** | | | | | |
| A1 | An appropriate method of randomisation was used to allocate participants to treatment groups (which would have balanced any confounding factors equally across groups) | Yes | No | Unclear | N/A |
| A2 | There was adequate concealment of allocation (such that investigators, clinicians and participants cannot influence enrolment or treatment allocation) | Yes | No | Unclear | N/A |
| A3 | The groups were comparable at baseline, including all major confounding and prognostic factors | Yes | No | Unclear | N/A |
| A3b Based on your answers to the above, in your opinion was selection bias present? If so, what is the likely direction of its effect? | | | | | |
| Low risk of bias | Unclear/unknown risk | High risk of bias | | | |
| A3c Likely direction of effect:<br>.<br>. | | | | | |
| **B. Performance bias (systematic differences between groups in the care provided, apart from the intervention under investigation)** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| B1 | The comparison groups received the same care apart from the intervention(s) studied | Yes | No | Unclear | N/A |
| B2 | Participants receiving care were kept 'blind' to treatment allocation | Yes | No | Unclear | N/A |
| B3 | Individuals administering care were kept 'blind' to treatment allocation | Yes | No | Unclear | N/A |

B3b Based on your answers to the above, in your opinion was performance bias present? If so, what is the likely direction of its effect?

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| | | |
|---|---|---|
| Low risk of bias | Unclear/unknown risk | High risk of bias |

B3c Likely direction of effect:

.

.

**C. Attrition bias (systematic differences between the comparison groups with respect to loss of participants)**

| | | | | | |
|---|---|---|---|---|---|
| C1 | All groups were followed up for an equal length of time (or analysis was adjusted to allow for differences in length of follow-up) | Yes | No | Unclear | N/A |
| C2 | a. How many participants did not complete treatment in each group? | | | | |
| | b. The groups were comparable for treatment completion (that is, there were no important or systematic differences between | Yes | No | Unclear | N/A |

| | | | | | |
|---|---|---|---|---|---|
| | groups in terms of those who did not complete treatment) | | | | |
| C3 | a. For how many participants in each group were no outcome data available?<br>. | | | | |
| | b. The groups were comparable with respect to the availability of outcome data (that is, there were no important or systematic differences between groups in terms of those for whom outcome data were not available). | Yes | No | Unclear | N/A |
| C3b Based on your answers to the above, in your opinion was attrition bias present? If so, what is the likely direction of its effect?<br>.<br>. | | | | | |
| Low risk of bias | Unclear/unknown risk | High risk of bias | | | |
| C3c Likely direction of effect:<br>.<br>. | | | | | |
| **D. Detection bias (bias in how outcomes are ascertained, diagnosed or verified)** | | | | | |
| D1 | The study had an appropriate length of follow-up | Yes | No | Unclear | N/A |
| D2 | The study used a precise definition of outcome | Yes | No | Unclear | N/A |

| | | | | | |
|---|---|---|---|---|---|
| D3 | A valid and reliable method was used to determine the outcome | Yes | No | Unclear | N/A |
| D4 | Investigators were kept 'blind' to participants' exposure to the intervention | Yes | No | Unclear | N/A |
| D5 | Investigators were kept 'blind' to other important confounding and prognostic factors | Yes | No | Unclear | N/A |

| | | |
|---|---|---|
| D5b Based on your answers to the above, in your opinion was detection bias present? If so, what is the likely direction of its effect?<br>.<br>. | | |
| Low risk of bias | Unclear/unknown risk | High risk of bias |
| D5c Likely direction of effect:<br>.<br>. | | |

### H.4 Quality assessment for systematic reviews

**AMSTAR: A measurement instrument tool to assess the methodological quality of systematic reviews**

Shea B *et al*. AMSTAR is a reliable and valid measurement tool to assess the methodological quality f systematic reviews. Journal of Clinical Epidemiology 2009;62:1013-1020.

| | | | Comments |
|---|---|---|---|
| 1 | Was an "a priori" design provided?<br>The research question and inclusion criteria should be established before the conduct of the review.<br><br>Note: Need to refer to a protocol, ethics approval, or pre-determined/a priori published research objectives to score a "yes." | ☐ Yes<br>☐ No<br>☐ Can't answer<br>☐ Not applicable | |
| 2 | Was there duplicate study selection and data extraction?<br>There should be at least two independent data extractors and a consensus procedure for dis- agreements should be in place.<br><br>Note: 2 people do study selection, 2 people do data extraction, consensus process or one person checks the other's work. | ☐ Yes<br>☐ No<br>☐ Can't answer<br>☐ Not applicable | |
| 3 | Was a comprehensive literature search performed?<br>At least two electronic sources should be searched. The report must include years and databases used (e.g., Central, EMBASE, and MEDLINE). Key words and/or MESH terms must be stated, and where feasible, the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.<br><br>Note: If at least 2 sources + one supplementary strategy used, select "yes" (Cochrane register/Central counts as 2 sources; a grey literature search counts as supplementary). | ☐ Yes<br>☐ No<br>☐ Can't answer<br>☐ Not applicable | |
| 4 | Was the status of publication (i.e., grey literature) used as an inclusion criterion? | ☐ Yes | |

| | | | |
|---|---|---|---|
| | The authors should state that they searched for reports regardless of their publication type. The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language etc.<br><br>Note: If review indicates that there was a search for “grey literature” or “unpublished literature,” indicate “yes.” SIGLE database, dissertations, conference proceedings, and trial registries are all considered grey for this purpose. If searching a source that contains both grey and non-grey, must specify that they were searching for grey/unpublished lit. | ☐ No<br>☐ Can’t answer<br>☐ Not applicable | |
| 5 | Was a list of studies (included and excluded) provided?<br>A list of included and excluded studies should be provided.<br><br>Note: Acceptable if the excluded studies are referenced. If there is an electronic link to the list but the link is dead, select “no.” | ☐ Yes<br>☐ No<br>☐ Can’t answer<br>☐ Not applicable | |
| 6 | Were the characteristics of the included studies provided?<br>In an aggregated form, such as a table, data from the original studies should be provided on the participants, interventions, and out- comes. The ranges of characteristics in all the studies analyzed, e.g., age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.<br><br>Note: Acceptable if not in table format as long as they are described as above. | ☐ Yes<br>☐ No<br>☐ Can’t answer<br>☐ Not applicable | |

| | | | Comments |
|---|---|---|---|
| 7 | Was the scientific quality of the included studies assessed and documented?<br>''A priori'' methods of assessment should be provided (e.g., for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo-controlled studies, or allocation concealment as inclusion criteria); for other types of studies, alternative items will be relevant.<br><br>Note: Can include use of a quality scoring tool or checklist, e.g., Jadad scale, risk of bias, sensitivity analysis, etc., or a description of quality items, with some kind of result for EACH study ("low" or "high" is fine, as long as it is clear which studies scored "low" and which scored "high"; a summary score/range for all studies is not acceptable). | ☐ Yes<br>☐ No<br>☐ Can't answer<br>☐ Not applicable | |
| 8 | Was the scientific quality of the included studies used appropriately in formulating conclusions?<br>The results of the methodological rigor and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations.<br><br>Note: Might say something such as "the results should be interpreted with caution due to poor quality of included studies." Cannot score "yes" for this question if scored "no" for question 7. | ☐ Yes<br>☐ No<br>☐ Can't answer<br>☐ Not applicable | |
| 9 | Were the methods used to combine the findings of studies appropriate?<br>For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e., Chi-squared test for homogeneity, I2). If heterogeneity exists, a random effects model should be used and/or the clinical appropriateness of combining should be 0taken into consideration (i.e., is it sensible to combine?).<br><br>Note: Indicate "yes" if they mention or describe heterogeneity, i.e., if they explain that they cannot pool because of heterogeneity/variability between interventions. | ☐ Yes<br>☐ No<br>☐ Can't answer<br>☐ Not applicable | |

| | | | |
|---|---|---|---|
| 10 | Was the likelihood of publication bias assessed?<br>An assessment of publication bias should include a combination of graphical aids (e.g., funnel plot, other available tests) and/or statistical tests (e.g., Egger regression test).<br><br>Note: If no test values or funnel plot included, score “no”. Score “yes” if mentions that publication bias could not be assessed because there were fewer than 10 included studies. | ☐ Yes<br>☐ No<br>☐ Can’t answer<br>☐ Not applicable | |
| 11 | Was the conflict of interest included?<br>Potential sources of support should be clearly acknowledged in both the systematic review and the included studies.<br><br>Note: To get a “yes,” must indicate source of funding or support for the systematic review AND for each of the included studies. | ☐ Yes<br>☐ No<br>☐ Can’t answer<br>☐ Not applicable | |
| ‘‘Can’t answer’’ is chosen when the item is relevant but not described by the authors; ‘‘not applicable’’ is used when the item is not relevant, such as when a meta-analysis has not been possible or was not attempted by the authors. | | | |

### H.5 Quality assessment for economic evaluations

**NICE Methodology checklist: economic evaluations. A measurement instrument tool to assess the methodological quality of economic evaluations**

Evers, S, Goossens M, de Vet H et al. (2005) Criteria list for assessment of methodological quality of economic evaluations: consensus on health economic criteria. International Journal of Technology Assessment in Health Care 21: 240–5

| **Study identification**<br>*Include author, title, reference, year of publication* | | |
|---|---|---|
| Guideline topic: | | Question no: |
| Checklist completed by: | | |
| **Section 1: Applicability (relevance to specific guideline review question(s) and the NICE reference case)**<br>***This checklist should be used first to filter out irrelevant studies.*** | **Yes/ Partly/ No /Unclear /NA** | **Comments** |
| 1.1 Is the study population appropriate for the guideline? | | |
| 1.2 Are the interventions and services appropriate for the guideline? | | |
| 1.3 Is the healthcare system in which the study was conducted sufficiently similar to the current UK NHS context? | | |
| 1.4 Are costs measured from the NHS and personal social services | | |

| | | |
|---|---|---|
| (PSS) perspective? | | |
| 1.5 Are non-direct health effects on individuals excluded? | | |
| 1.6 Are both costs and health effects discounted at an annual rate of 3.5%? | | |
| 1.7 Is the value of health effects expressed in terms of quality-adjusted life years (QALYs)? | | |
| 1.8 Are changes in health-related quality of life (HRQoL) reported directly from patients and/or carers? | | |
| 1.9 Is the valuation of changes in HRQoL (utilities) obtained from a representative sample of the general public? | | |
| 1.10 Overall judgement: Directly applicable/Partially applicable/Not applicable<br><br>There is no need to use section 2 of the checklist if the study is considered 'not applicable'. | | |
| Other comments:<br><br>.<br><br>.<br><br>.<br><br>. | | |
| **Section 2: Study limitations (the level of methodological quality)** | **Yes/ Partly /No/ Unclear/ NA** | **Comments** |

| | | |
|---|---|---|
| ***This checklist should be used once it has been decided that the study is sufficiently applicable to the context of the clinical guideline[2].*** | | |
| 2.1 Does the model structure adequately reflect the nature of the health condition under evaluation? | | |
| 2.2 Is the time horizon sufficiently long to reflect all important differences in costs and outcomes? | | |
| 2.3 Are all important and relevant health outcomes included? | | |
| 2.4 Are the estimates of baseline health outcomes from the best available source? | | |
| 2.5 Are the estimates of relative treatment effects from the best available source? | | |
| 2.6 Are all important and relevant costs included? | | |
| 2.7 Are the estimates of resource use from the best available source? | | |
| 2.8 Are the unit costs of resources from the best available source? | | |
| 2.9 Is an appropriate incremental analysis presented or can it be | | |

| | | |
|---|---|---|
| calculated from the data? | | |
| 2.10 Are all important parameters whose values are uncertain subjected to appropriate sensitivity analysis? | | |
| 2.11 Is there no potential conflict of interest? | | |
| 2.12 Overall assessment: Minor limitations/Potentially serious limitations/Very serious limitations | | |
| Other comments: | | |