National Clinical Guideline Centre

Obesity

Identification, assessment and management of overweight and obesity in children, young people and adults

Update of CG43

Appendix I

November 2014

Commissioned by the National Institute for Health and Care Excellence











Disclaimer

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

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Funding

National Institute for Health and Care Excellence

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Appendices

Appendix I: Forest plots

I.1 Very-low-calorie diets (VLCD)

I.1.1 Effectiveness

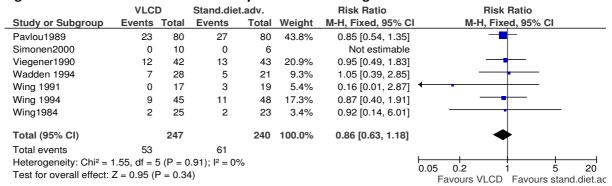
I.1.1.1 Percentage 'ideal' weight loss

Figure 1: VLCD versus standard dietary advice in overweight and obese adults

	1	/LCD		Stand	d.diet.a	adv.		Mean Difference		Mea	ın Differe	nce	
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% C	i	IV,	Fixed, 95°	% CI	
Pavlou1989	67.5	15.5	57	65.4	13.9	53	100.0%	2.10 [-3.40, 7.60]		_	_	-	-
Total (95% CI)			57			53	100.0%	2.10 [-3.40, 7.60]		_			-
Heterogeneity: Not ap Test for overall effect:	•	(P = 0).45)					Fa	-10 avours s	-5 tand.diet.	0 adv Fav	5 ours VLCD	10

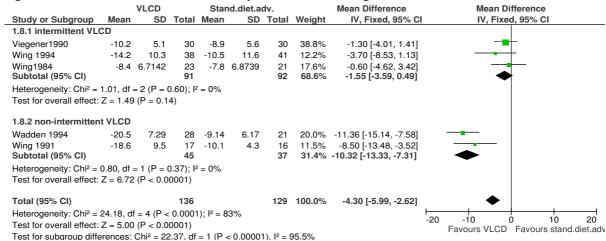
I.1.1.2 Withdrawals (start of study to end of weight maintenance period)

Figure 2: VLCD versus standard dietary advice in overweight and obese adults



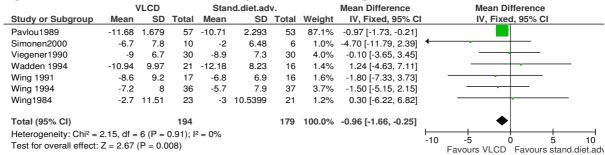
I.1.1.3 Weight in kg, change (start of study to end of VLCD period) subgroup analysis: intermittent VLCD versus non-intermittent VLCD

Figure 3: VLCD versus standard dietary advice in overweight and obese adults



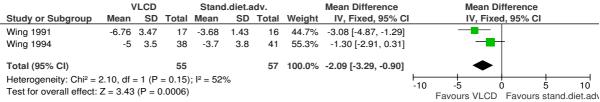
I.1.1.4 Weight in kg, change (start of study to end of weight maintenance period)

Figure 4: VLCD versus standard dietary advice in overweight and obese



I.1.1.5 Weight in BMI, change (start of study to end of VLCD period)

Figure 5: VLCD versus standard dietary advice in overweight and obese



I.1.1.6 Weight in BMI, final (start of study to end of weight maintenance period)

Figure 6: VLCD versus standard dietary advice in overweight and obese

	1	/LCD		Stand	d.diet.a	idv.		Mean Difference		Mean I	Diffe	rence		
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI		IV, Fix	ed, 9	5% CI		
Wing 1991	34.14	3.62	17	35.4	4.78	16	100.0%	-1.26 [-4.17, 1.65]			+	-		
Total (95% CI)			17			16	100.0%	-1.26 [-4.17, 1.65]			\rightarrow			
Heterogeneity: Not ap Test for overall effect:		(P = 0	0.40)						-10	-5 Favours VLCI	0 D Fa	5 avours st	-	 10 t.ad√

I.1.2 Safety

I.1.2.1 Binge eating scale

Figure 7: VLCD versus LCD (both with behavioural therapy and exercise) in obese adults

	1	/LCD			LCD			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI	IV, Fixed, 95% CI
Wadden 1994	18.32	8.18	23	12	6.78	17	100.0%	6.32 [1.68, 10.96]	-
Total (95% CI)			23			17	100.0%	6.32 [1.68, 10.96]	•
Heterogeneity: Not app Test for overall effect:		(P = 0	(800.0					-	-20 -10 0 10 20 Favours VLCD Favours LCD

I.1.2.2 Depression score (Beck's Depression Inventory) – figures 8 and 9

Figure 8: VLCD versus LCD (both with behavioural therapy, with or without exercise) in obese adults at 4 to 5 months

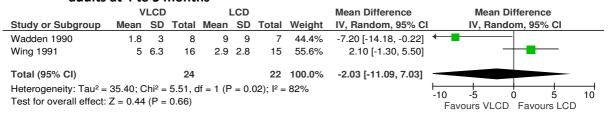
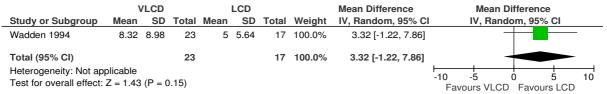
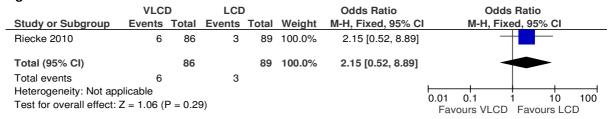


Figure 9: VLCD versus LCD (both with behavioural therapy, with or without exercise) in obese adults at 52 weeks



I.1.2.3 Depressive tendencies (dichotomous)

Figure 10: VLCD versus LCD in obese adults with knee osteoarthritis



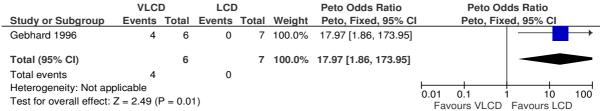
I.1.2.4 Constipation

Figure 11: VLCD versus LCD in obese adults with knee osteoarthritis

	VLC	D	LCE)		Risk Ratio			Ris	k Rat	io		
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% C		M-	H, Fi	xed, 9	95%	CI	
Riecke 2010	28	86	25	89	100.0%	1.16 [0.74, 1.82]			-		_		
Total (95% CI)		86		89	100.0%	1.16 [0.74, 1.82]					-		
Total events	28		25										
Heterogeneity: Not app	olicable						0.1 (1).5	+	+	 5	
Test for overall effect:	Z = 0.64 (P = 0.53	2)					vours ') D Fa	_	rs LCI	

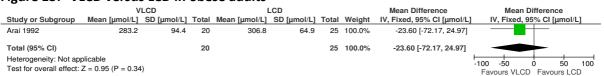
I.1.2.5 Gall stones

Figure 12: VLCD versus LCD in obese adults



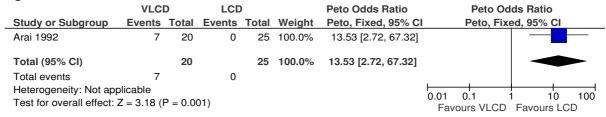
I.1.2.6 Serum uric acid levels

Figure 13: VLCD versus LCD in obese adults



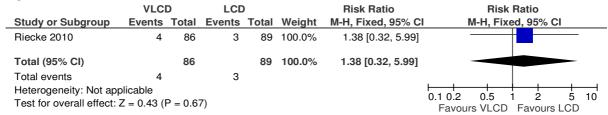
I.1.2.7 'Marked' serum uric acid levels

Figure 14: VLCD versus LCD in obese adults



I.1.2.8 Diarrhoea

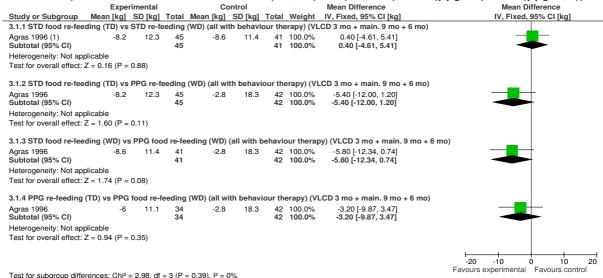
Figure 15: VLCD versus LCD in obese adults with knee osteoarthritis



I.1.3 Maintenance

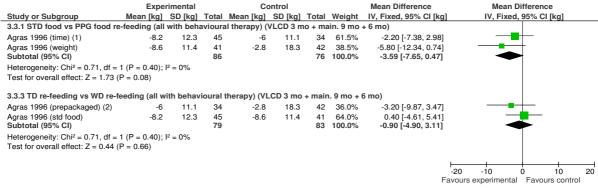
I.1.3.1 Weight in kg (mean change) – behaviour therapy and re-feeding

Figure 16: Behaviour therapy and different re-feeding techniques in obese patients after a VLCD (baseline at randomisation: 15.2 (std, td), 15 (std, wd), 14.9 (ppg, td), 14.2 (ppg, wd))



⁽¹⁾ TD = time dependent, WD = weight dependent, STD = standard, PPG = pre-packaged, main. = maintenance period

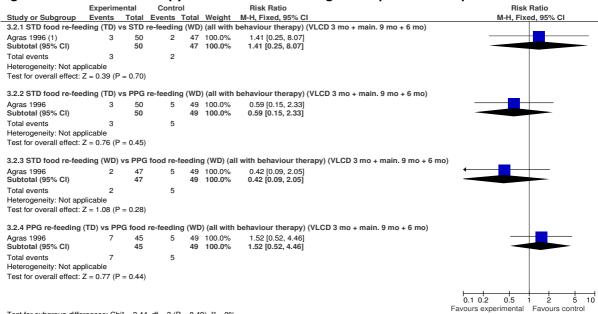
Behaviour therapy and different re-feeding techniques in obese patients after a Figure 17: VLCD (baseline at randomisation: 15.2 (std, td), 15 (std, wd), 14.9 (ppg, td), 14.2 (ppg, wd))



⁽¹⁾ STD = standard, PPG = pre-packaged, main. = maintenance period

Withdrawals – behaviour therapy and re-feeding 1.1.3.3

Figure 18: Behaviour therapy and different re-feeding techniques in obese patients after a VLCD



Test for subgroup differences: $Chi^2 = 2.44$, df = 3 (P = 0.49), $I^2 = 0\%$

⁽²⁾ TD = time-dependent, WD = weight dependent

⁽¹⁾ TD = time dependent, WD = weight dependent, STD = standard, PPG = pre-packaged, main. = maintenance period

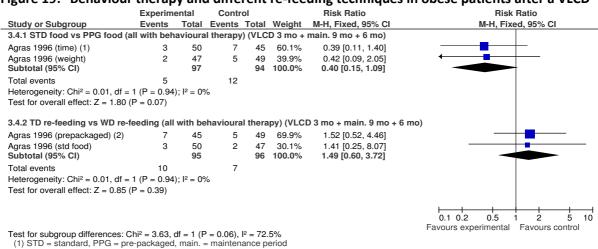
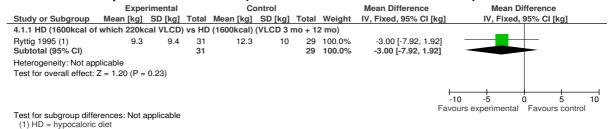


Figure 19: Behaviour therapy and different re-feeding techniques in obese patients after a VLCD

(2) TD = time dependent, WD = weight dependent

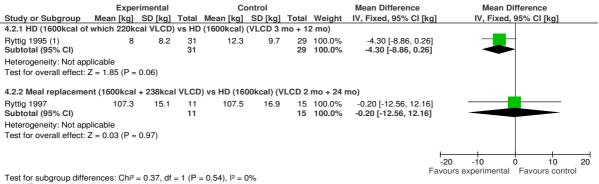
I.1.3.4 Weight in kg (% weight change) – hypocaloric diet with and without VLCD

Figure 20: Hypocaloric diet with VLCD (1600 kcal) versus hypocaloric diet only (1600 kcal) in obese patients after a VLCD (baseline randomisation: 88.7 vs 97.6)



1.1.3.5 Weight in kg (change or final score) – hypocaloric diet

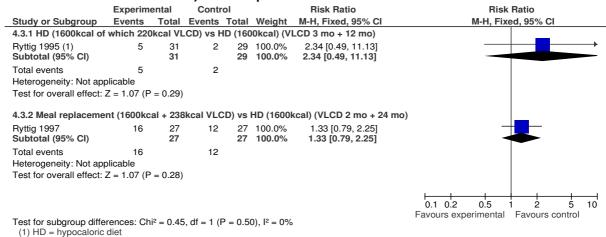
Figure 21: Hypocaloric diet only (1600 kcal) versus meal replacement diet (hypocaloric diet 1600 kcal + VLCD 238 kcal) in obese patients after a VLCD (Ryttig 1995: baseline at randomisation 85.7 vs 97.6; no ANCOVA. Ryttig 1997: no ANCOVA; baseline at randomisation not stated)



HD = hypocaloric diet

I.1.3.6 Withdrawals – hypocaloric diet

Figure 22: Hypocaloric diet only (1600 kcal) versus meal replacement diet (hypocaloric diet 1600 kcal + VLCD 238 kcal) in obese patients after a VLCD



1.1.3.7 Weight in kg – dietary counselling with or without exercise

Figure 23: Dietary counselling with exercise versus dietary counselling only in obese patients after a VLCD (Fogelholm: baseline at randomisation: control 80.0; walk 1: 78.0; walk 2: 78.2; ANCOVA – Walk 1 vs control: -2.7 (95% CI -5.2 to -0.2); walk 2 vs control: -2.6 (95% CI -5.1 to 0). Borg: baseline at randomisation: control 92.3; walk 91.9; resistance 90.8; ANCOVA to complete)

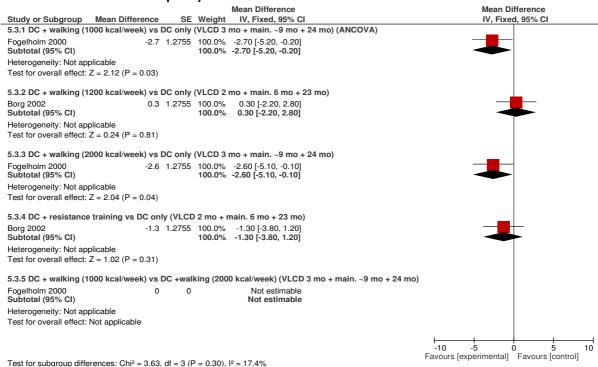
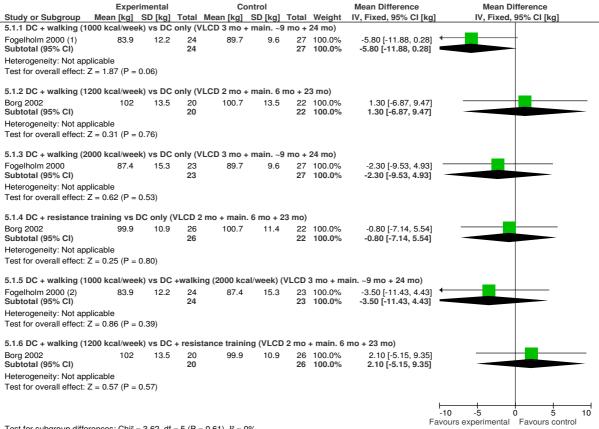


Figure 24: Dietary counselling with exercise versus dietary counselling only in obese patients after a VLCD

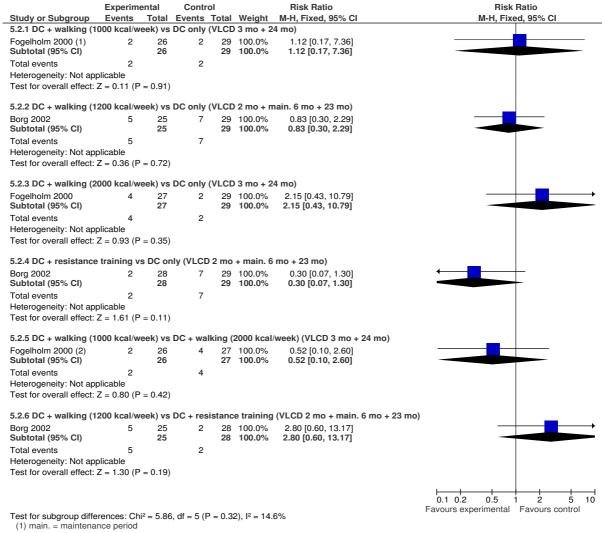


Test for subgroup differences: Chi² = 3.62, df = 5 (P = 0.61), I² = 0% (1) DC = dietary counselling, main. = maintenance period

⁽²⁾ DC = dietary counselling, main. = maintenance period

Withdrawals - dietary counselling with or without exercise 1.1.3.8

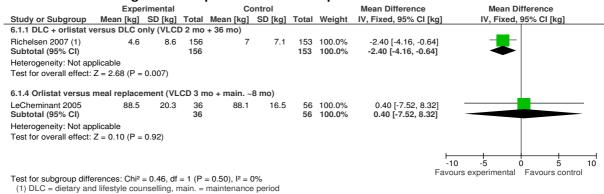
Figure 25: Dietary counselling with exercise versus dietary counselling only in obese patients after a VLCD



⁽²⁾ main. = maintenance period

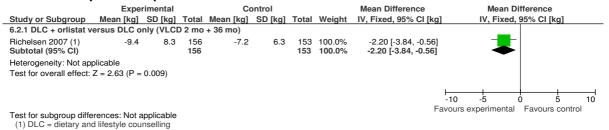
I.1.3.9 Weight in kg (change or final scores) - orlistat

Figure 26: Orlistat (with or without dietary and lifestyle counselling) versus dietary and lifestyle counselling or meal replacement in obese patients after a VLCD



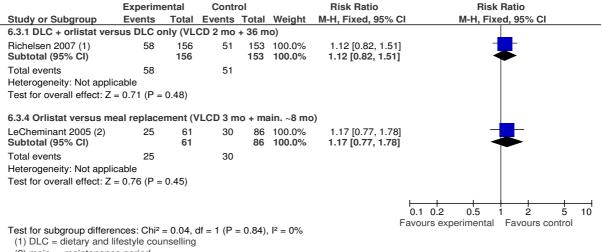
I.1.3.10 Weight in kg from before the VLCD lead in - orlistat

Figure 27: Orlistat with dietary and lifestyle counselling versus dietary and lifestyle counselling only in obese patients after a VLCD



I.1.3.11 Withdrawals - orlistat

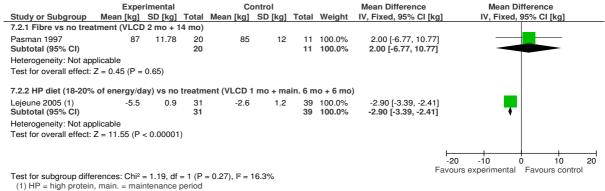
Figure 28: Orlistat (with or without dietary and lifestyle counselling) versus dietary and lifestyle counselling or meal replacement in obese patients after a VLCD



(2) main. = maintenance period

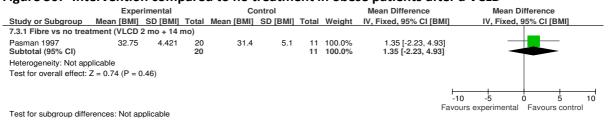
1.1.3.12 Weight in kg (change or final score) – comparison with no treatment

Figure 29: Intervention compared to no treatment in obese patients after a VLCD



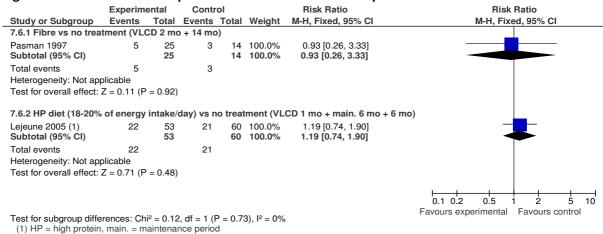
I.1.3.13 BMI from before VLCD period to end of weight maintenance period – comparison with no treatment

Figure 30: Intervention compared to no treatment in obese patients after a VCLD



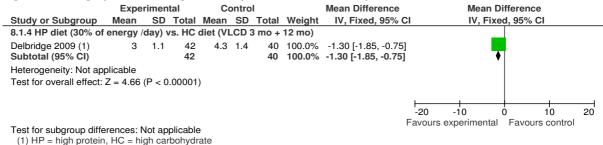
I.1.3.14 Withdrawals – comparison with no treatment

Figure 31: Intervention compared to no treatment in obese patients after a VLCD



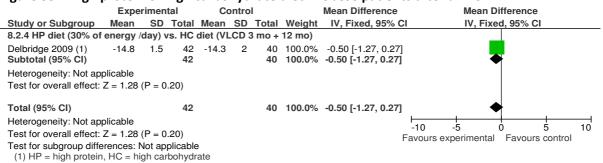
I.1.3.15 Weight in kg - high protein

Figure 32: High protein or high carbohydrate diet in obese patients after a VLCD



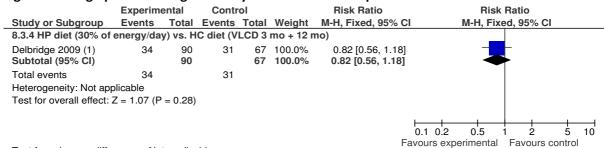
1.1.3.16 Weight in kg (including VLCD lead in period) - high protein

Figure 33: High protein or high carbohydrate diet in obese patients after a VLCD



I.1.3.17 Withdrawals – high protein

Figure 34: High protein or high carbohydrate diet in obese patients after a VLCD



Test for subgroup differences: Not applicable (1) HP = high protein, HC = high carbohydrate

I.1.3.18 Weight in kg – all head-to-head trials

Figure 35: All head-to-head trials of maintenance intervention in obese patients after a VLCD

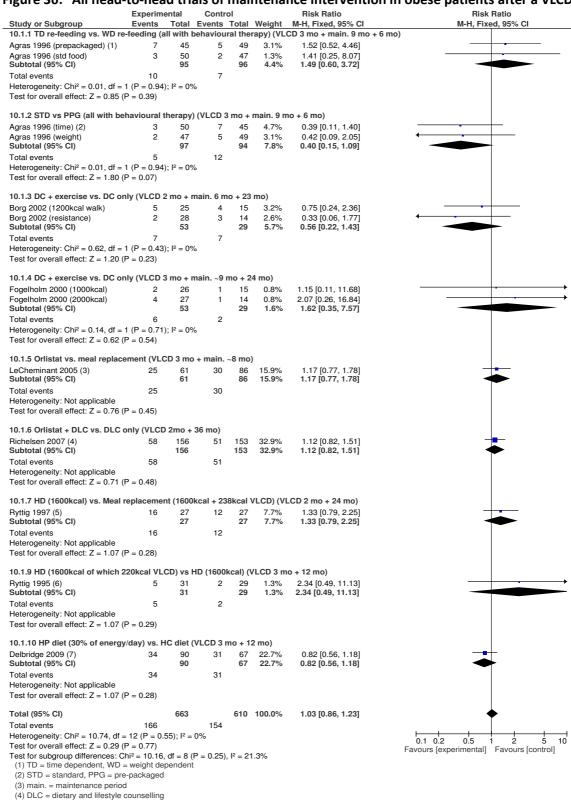
		mental			trol			Mean Difference	Mean Difference
								IV, Fixed, 95% CI [kg]	IV, Fixed, 95% CI [kg]
2.1 TD re-feeding vs. WD re-fee								-	
gras 1996 (prepackaged) (1)	-6	11.1	34	-2.8	18.3	42	36.0%	-3.20 [-9.87, 3.47]	
gras 1996 (std food)	-8.2	12.3	45	-8.6	11.4	41	64.0%	0.40 [-4.61, 5.41]	
ubtotal (95% CI)			79			83	100.0%	-0.90 [-4.90, 3.11]	—
leterogeneity: Chi ² = 0.71, df = 1	$(P = 0.40); I^2 =$	= 0%							
est for overall effect: Z = 0.44 (P	= 0.66)								
.2.2 STD vs. PPG food (all with	behavioural	therapy)	(VLCD	3 mo + mair	n. 9 mo 4	- 6 mo)		
gras 1996 (time) (2)	-8.2	12.3	45	-6	11.1	34	61.5%	-2.20 [-7.38, 2.98]	
gras 1996 (weight)	-8.6	11.4	41	-2.8	18.3	42	38.5%	-5.80 [-12.34, 0.74]	
ubtotal (95% CI)			86			76	100.0%	-3.59 [-7.65, 0.47]	
leterogeneity: $Chi^2 = 0.71$, $df = 1$ est for overall effect: $Z = 1.73$ (P		= 0%							
.2.3 DC + exercise vs. DC only	(VLCD 2 mo	+ main. 6	i mo + 2	23 mo)					
org 2002 (1200kcal walk)	102	13.5	20	100.7	13.5	11	38.9%	1.30 [-8.63, 11.23]	
org 2002 (resistance)	99.9	10.9	26	100.7	11.4	11	61.1%	-0.80 [-8.73, 7.13]	
ubtotal (95% CI)	33.3	10.5	46	100.7	11.4	22	100.0%	0.02 [-6.18, 6.22]	
leterogeneity: Chi ² = 0.10, df = 1	(P = 0.75)· 12	- n%	- •						
est for overall effect: Z = 0.01 (P		- 0 /0							
•	•								
.2.4 DC + exercise vs. DC only	-			-					
ogelholm 2000 (1000kcal) (3)	83.9	12.2	24	89.7	9.6	13	55.8%	-5.80 [-12.95, 1.35]	
ogelholm 2000 (2000kcal)	87.4	15.3	23	89.7	9.6	14	44.2%	-2.30 [-10.32, 5.72]	
ubtotal (95% CI)			47			27	100.0%	-4.25 [-9.59, 1.08]	
leterogeneity: $Chi^2 = 0.41$, $df = 1$		= 0%							
est for overall effect: Z = 1.56 (P	= 0.12)								
.2.5 Orlistat vs. meal replaceme	ent (VLCD 3 i	mo + mai	n. ~8 m	o)					
eCheminant 2005 (4)	88.1	16.5	56	88.5	20.3	36	100.0%	-0.40 [-8.32, 7.52]	
ubtotal (95% CI)	00.1	10.0	56	55.5	20.0		100.0%	-0.40 [-8.32, 7.52]	
leterogeneity: Not applicable								,,	
est for overall effect: Z = 0.10 (P	- 0 92)								
031 101 OVEI all Ellett. Z = 0.10 (F	- 0.02)								
.2.6 Orlistat+DLC vs. DLC only	-								
tichelsen 2007 (5)	4.6	8.6	156	7	7.1		100.0%	-2.40 [-4.16, -0.64]	
ubtotal (95% CI)			156			153	100.0%	-2.40 [-4.16, -0.64]	◆
leterogeneity: Not applicable									
est for overall effect: Z = 2.68 (P	= 0.007)								
.2.7 HD (1600kcal) vs. Meal rep	lacement (16	00kcal +	238kca	I VLCD) (VL	CD 2 mc	+ 24 1	no)		
lyttig 1997 (6)	107.3	15.1	16	107.5	16.9		100.0%	-0.20 [-11.51, 11.11]	
ubtotal (95% CI)			16			15	100.0%	-0.20 [-11.51, 11.11]	
leterogeneity: Not applicable									
est for overall effect: Z = 0.03 (P	= 0.97)								
.2.8 HD (1600kcal of which 220l	kcal VLCD) v	s HD (16	00kcal)	(VLCD 3 mc	+ 12 m	0)			
lyttig 1995 (7)	8	8.2	31	12.3	9.7	,	100.0%	-4.30 [-8.86, 0.26]	———
ubtotal (95% CI)	0	0.2	31	12.0	5.7		100.0%	-4.30 [-8.86, 0.26]	-
leterogeneity: Not applicable								,	_
est for overall effect: Z = 1.85 (P	= 0.06)								
2.0 UD diet (200/ -f / 1	W. 110 -2"	• /// OF) m.c -	10 ma'					
.2.9 HP diet (30% of energy /day		-				40	100.00/	1 20 [1 25	<u> </u>
elbridge 2009 (8)	3	1.1	42	4.3	1.4		100.0%	-1.30 [-1.85, -0.75]	T
ubtotal (95% CI)			42			40	100.0%	-1.30 [-1.85, -0.75]	▼
leterogeneity: Not applicable									
est for overall effect: $Z = 4.66$ (P	< 0.00001)								
									-20 -10 0 10

⁽¹⁾ TD = time dependent, WD = weight dependent

⁽¹⁾ TD = time dependent, WD = weight depend (2) STD = standard, PPG = pre-packaged (3) DC = dietary counselling (4) main. = maintenance period (5) DLC = dietary and lifestyle counselling (6) HD = hypocaloric diet (7) HD = hypocaloric diet (8) HP = high protein, HC = high carbohydrate

Withdrawals - all head-to-head trials 1.1.3.19

Figure 36: All head-to-head trials of maintenance intervention in obese patients after a VLCD



(5) HD = hypocaloric diet (6) HD = hypocaloric diet

(7) HP = high protein, HC = high carbohydrate

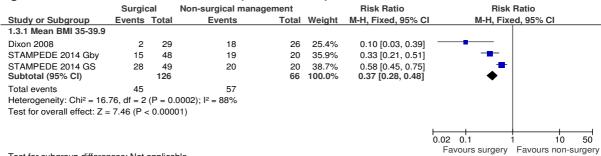
Bariatric surgery in people with type 2 diabetes 1.2

1.2.1 Surgical versus non-surgical management

Figure 37: % weight change (in BMI or kg)

	Sı	ırgical		С	ontrol			Mean Difference	Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% C	IV, Fixed, 95% CI
1.2.1 Mean BMI 30-34.9									
Ikramuddin 2013 Subtotal (95% CI)	-26.1	8.7	56 56	-7.9	7.8	59 59		-18.20 [-21.23, -15.17] -18.20 [-21.23, -15.17]	•
Heterogeneity: Not applica	able								
Test for overall effect: Z =	11.79 (F	o.00	0001)						
1.2.2 Mean BMI 35-39.9									
Dixon 2008	-20	9.4	30	-1.4	4.9	30	17.4%	-18.60 [-22.39, -14.81]	
Palikhe 2013	-27.9	6.9	14	-9.4	7.7	17	9.5%	-18.50 [-23.64, -13.36]	
STAMPEDE 2014 Gby	-24.5	9.1	48	-4.2	8.3	20	12.6%	-20.30 [-24.76, -15.84]	
STAMPEDE 2014 GS Subtotal (95% CI)	-21.1	8.9	49 141	-4.2	8.3	20 87		-16.90 [-21.31, -12.49] -18.57 [-20.76, -16.39]	<u>→</u>
Heterogeneity: $Chi^2 = 1.13$ Test for overall effect: $Z =$,	`	, ,	0%					
1.2.3 Mean BMI 40+									
Mingrone 2012 BPD	-33.82	10.17	19	-4.73	6.37	18	8.5%	-29.09 [-34.53, -23.65]	
Mingrone 2012 GBy Subtotal (95% CI)	-33.31	7.88	19 38	-4.73	6.37	18 36		-28.58 [-33.19, -23.97] -28.79 [-32.31, -25.28]	→
Heterogeneity: $Chi^2 = 0.02$ Test for overall effect: $Z =$,	,	,,	0%					
Total (95% CI)			235			182	100.0%	-20.54 [-22.13, -18.96]	•
Heterogeneity: Chi ² = 27.7 Test for overall effect: Z = Test for subgroup differen	25.44 (F	o.00	0001)			1\ 12	02 59/		-50 -25 0 25 5 Favours surgery Favours non-surge

Figure 38: Use of diabetes medication (dichotomous)



Test for subgroup differences: Not applicable

Figure 39: Use of diabetes medication (continuous)

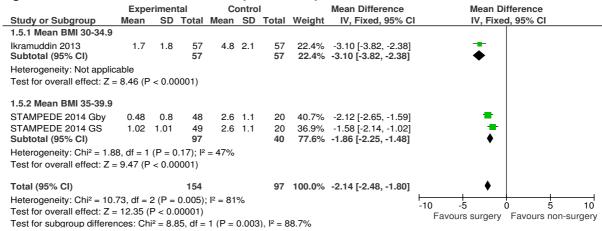


Figure 40: Remission of diabetes

Study or Subgroup	Surgic Events		Non-surgical managem Events		Weight	Risk Ratio M-H, Fixed, 95% C		Ratio ed, 95% CI
1.7.1 Mean BMI 30-34.9	Events	TOtal	Events	TOtal	weigiit	W-H, Fixed, 95% C	, IVI-II, FIXE	eu, 95 % Ci
Ikramuddin 2013	28	57	11	57	58.5%	2.55 [1.41, 4.61]		
Liang 2013 - UC	14	15	0	36	1.6%	67.06 [4.26, 1056.96]		
Liang 2013 - UC + E	14	16	0	34	1.7%	59.71 [3.78, 942.41]		
Subtotal (95% CI)		88		127	61.9%	5.83 [3.51, 9.68]		•
Total events	56		11					
Heterogeneity: Chi ² = 13.2								
Test for overall effect: Z =	6.80 (P <	0.000	01)					
1.7.2 Mean BMI 35-39.9								
Dixon 2008	22	30	4	30	21.3%	5.50 [2.15, 14.04]		
Palikhe 2013	5	14	0	17	2.4%	13.20 [0.79, 219.87]	-	· · · ·
STAMPEDE 2014 Gby	17	48	0	20	3.7%	15.00 [0.95, 238.01]		•
STAMPEDE 2014 GS	10	49	0	20	3.7%	8.82 [0.54, 143.73]		
Subtotal (95% CI)		141		87	31.2%	7.63 [3.26, 17.85]		
Total events	54		4					
Heterogeneity: Chi ² = 0.8								
Test for overall effect: Z =	4.69 (P <	0.000	01)					
1.7.3 Mean BMI 40+								
Mingrone 2012 BPD	19	20	0	10	3.5%	20.43 [1.36, 307.23]		
Mingrone 2012 GBy	15	20	0	10	3.5%	16.24 [1.07, 246.51]		<u> </u>
Subtotal (95% CI)		40		20	7.0%	18.33 [2.69, 125.01]		
Total events	34		0					
Heterogeneity: Chi ² = 0.0	,		,,					
Test for overall effect: Z =	2.97 (P =	0.003						
Total (95% CI)		269		234	100.0%	7.26 [4.65, 11.34]		•
Total events	144		15					
Heterogeneity: Chi ² = 18.4	43, df = 8	(P = 0.	02); I ² = 57%				0.01 0.1	1 10 100
Test for overall effect: Z =	8.73 (P <	0.000	01)				Favours non-surgery	Favours surgery
Test for subgroup differen	ices: Chi²	= 1.43	$df = 2 (P = 0.49), I^2 = 0\%$. a. caro non oargory	. a. sais saigery

Figure 41: Improvement in glycaemic control (HbA1C ≤ 6% or 6.2%)

	Surgio	al	Contr	ol		Risk Ratio	Risk	Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95%	CI M-H, Fix	ed, 95% CI
1.9.1 Mean BMI 30-34.9								
Ikramuddin 2013 Subtotal (95% CI)	25	57 57	5	57 57	35.3% 35.3 %	5.00 [2.06, 12.14 5.00 [2.06, 12.14]	•	
Total events	25		5					
Heterogeneity: Not applica	able							
Test for overall effect: Z =	3.56 (P =	0.0004	4)					
1.9.2 Mean BMI 35-39.9								
Dixon 2008	24	29	6	26	44.7%	3.59 [1.74, 7.38]	
STAMPEDE 2014 Gby	18	48	1	20	10.0%	7.50 [1.07, 52.45]	
STAMPEDE 2014 GS Subtotal (95% CI)	12	49 126	1	20 66	10.0% 64.7 %	4.90 [0.68, 35.21 4.39 [2.23, 8.66		
Total events	54	120	8	00	04.170	4.00 [2.20, 0.00	ı	
Heterogeneity: Chi ² = 0.6		P = 0.7	_	6				
Test for overall effect: Z =			, .					
100110101010111011121	1.20 (1	0.000	• /					
Total (95% CI)		183		123	100.0%	4.61 [2.69, 7.90]]	
Total events Heterogeneity: Chi ² = 0.7 ⁴ Test for overall effect: Z = Test for subgroup differen	5.56 (P <	< 0.0000	01)		n) 12 0 0/		0.1 0.2 0.5 Favours non-surgery	1 2 5 10 Favours surgery
rest for subgroup differen	ces. On-	- 0.05,	ui – i (r	- 0.02	.,, 1 = 0 /6			

Figure 42: Improvement in glycaemic control (HbA1C < 7%)

	Surgic		Contr	ol	•	Risk Ratio	Risk Ratio
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% (CI M-H, Fixed, 95% CI
1.11.1 Mean BMI 30-34.9)						
Ikramuddin 2013 Subtotal (95% CI)	43	57 57	18	57 57	33.8% 33.8 %	2.39 [1.59, 3.60] 2.39 [1.59, 3.60]	
Total events	43		18				
Heterogeneity: Not applic	able						
Test for overall effect: Z =	4.16 (P <	0.000	1)				
1.11.2 Mean BMI 35-39.9)						
Dixon 2008	24	29	6	26	11.9%	3.59 [1.74, 7.38]	n
Palikhe 2013	8	14	7	17	11.9%	1.39 [0.67, 2.87]	-
STAMPEDE 2014 Gby	31	48	8	20	21.2%	1.61 [0.91, 2.87]	j • •
STAMPEDE 2014 GS	32	49	8	20	21.3%	1.63 [0.92, 2.90]] •
Subtotal (95% CI)		140		83	66.2%	1.93 [1.41, 2.65]] ◆
Total events	95		29				
Heterogeneity: Chi ² = 4.33	3, df = 3 (F)	P = 0.23	3); $I^2 = 31$	%			
Test for overall effect: Z =	4.08 (P <	0.000	1)				
Total (95% CI)		197		140	100.0%	2.09 [1.62, 2.68]	1 ◆
Total events	138		47				
Heterogeneity: Chi ² = 5.2	6, df = 4 (F)	P = 0.20	6); I ² = 24	%			0.1 0.2 0.5 1 2 5 10
Test for overall effect: Z =	5.76 (P <	0.0000	01)				Favours non-surgery Favours surgery
Test for subgroup differer	ices: Chi²	= 0.64,	df = 1 (P	= 0.42), $I^2 = 0\%$		ravours non surgery i avours surgery

Figure 43: Glycaemic control (continuous)

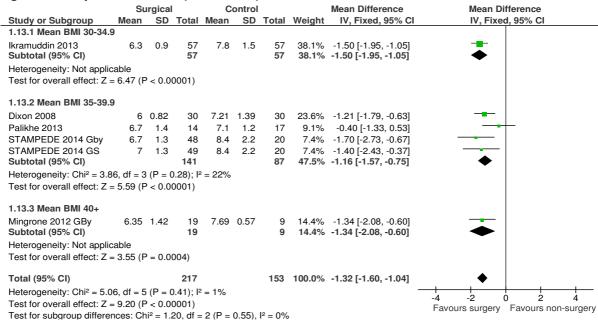


Figure 44: Mortality

	Surgio	al	Non-surgical manag	ement		Risk Difference	Risk Difference
Study or Subgroup	Events	Total	Events	Total	Weight	M-H, Fixed, 95% Cl	M-H, Fixed, 95% CI
Dixon 2008	0	30	0	30	13.1%	0.00 [-0.06, 0.06]	+
Ikramuddin 2013	0	57	0	57	24.9%	0.00 [-0.03, 0.03]	†
Liang 2013 - UC	0	15	0	36	9.3%	0.00 [-0.09, 0.09]	+
Liang 2013 - UC + E	0	16	0	34	9.5%	0.00 [-0.09, 0.09]	+
Mingrone 2012 BPD	0	20	0	10	5.8%	0.00 [-0.14, 0.14]	-
Mingrone 2012 GBy	0	20	0	10	5.8%	0.00 [-0.14, 0.14]	
Palikhe 2013	0	14	0	17	6.7%	0.00 [-0.12, 0.12]	-
STAMPEDE 2014 Gby	0	48	0	20	12.4%	0.00 [-0.07, 0.07]	+
STAMPEDE 2014 GS	0	49	0	20	12.4%	0.00 [-0.07, 0.07]	+
Total (95% CI)		269		234	100.0%	0.00 [-0.03, 0.03]	↓
Total events	0		0				
Heterogeneity: Chi ² = 0.0	0, df = 8 (P = 1.0	0); I ² = 0%				-1 -0.5 0 0.5 1
Test for overall effect: Z =	= 0.00 (P =	1.00)					-1 -0.5 0 0.5 1 Favours surgery Favours non-surgery

Figure 45: Weight in BMI (final score)

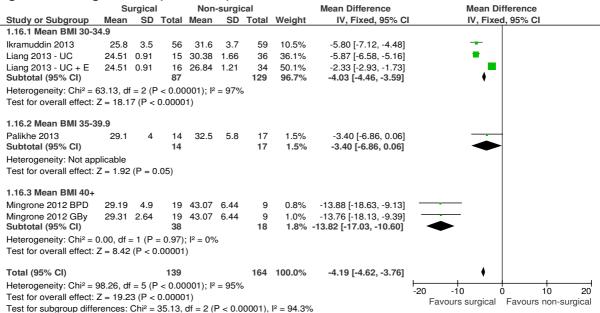


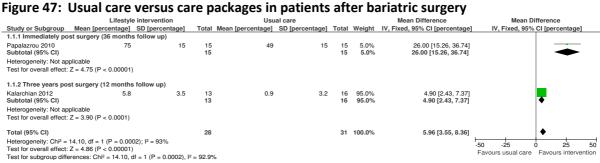
Figure 46: Weight in kg (final score)

		urgical						Mean Difference	Mean Difference		
Study or Subgroup	Mean	•	Total	Mean	SD		Weight	IV, Fixed, 95% C	IV, Fixed, 95% CI		
1.18.1 Mean BMI 30-34.9	9							,			
Ikramuddin 2013 Subtotal (95% CI)	73	13.6	57 57	90.1	17	57 57		-17.10 [-22.75, -11.45] -17.10 [-22.75, -11.45]	•		
Heterogeneity: Not applic	able										
Test for overall effect: Z =	= 5.93 (P	< 0.00	001)								
1.18.2 Mean BMI 35-39.9	9										
Dixon 2008	84.6	15.8	30	104.8	15.3	30	15.8%	-20.20 [-28.07, -12.33]			
Palikhe 2013	71.5	10.8	14	81.9	10.4	17	17.3%	-10.40 [-17.91, -2.89]			
STAMPEDE 2014 Gby	80.6	15.5	48	100.2	16.6	20	13.5%	-19.60 [-28.09, -11.11]			
STAMPEDE 2014 GS	79.3	15.1	49	100.2	16.6	20	13.8%	-20.90 [-29.31, -12.49]			
Subtotal (95% CI)			141			87	60.4%	-17.42 [-21.44, -13.40]	◆		
Heterogeneity: Chi ² = 4.7	4, df = 3	(P = 0.	19); I ² =	37%							
Test for overall effect: Z =	= 8.49 (P	< 0.00	001)								
1.18.3 Mean BMI 40+											
Mingrone 2012 BPD	89.53	17.84	19	128.06	19.77	9	4.2%	-38.53 [-53.73, -23.33]			
Mingrone 2012 GBy	84.29	13.35	19	128.06	19.77	9	4.8%	-43.77 [-58.01, -29.53]			
Subtotal (95% CI)			38			18	9.0%	-41.32 [-51.72, -30.93]			
Heterogeneity: Chi ² = 0.2	4, df = 1	(P = 0.	62); I ² =	0%							
Test for overall effect: Z =	= 7.79 (P	< 0.00	001)								
Total (95% CI)			236			162	100.0%	-19.48 [-22.61, -16.36]	•		
Heterogeneity: Chi ² = 23.	64, df =	6 (P = 0	0.0006);	$I^2 = 75\%$							
Test for overall effect: Z =	= 12.22 (P < 0.0	0001)						-50 -25 0 25 50 Favours surgery Favours non-surgery		
Test for subgroup differen	nces: Ch	i² = 18.	65, df =	2 (P < 0.000	1), I ² = 89.3%				i avours surgery i avours non-surgery		

Follow-up care packages after bariatric surgery

I.3.1 Percentage excess weight loss (kg)

Figure 47: Usual care versus care packages in patients after bariatric surgery



1.3.2 Weight (in kg)

Figure 48: Usual care versus care packages in patients after bariatric surgery

	Lifoetyle	e interven	tion	Usual care				Std. Mean Difference	Std. Mean Difference		
	•										
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Fixed, 95% CI	IV, Fixed, 95% CI		
1.3.1 Immediately post	surgery	(36 month	s follo	w up)							
Papalazrou 2010	84.2	12.78	15	102.5	13.55	15	45.7%	-1.35 [-2.16, -0.55]			
Subtotal (95% CI)			15			15	45.7%	-1.35 [-2.16, -0.55]	◆		
Heterogeneity: Not appli	icable										
Test for overall effect: Z		= 0.0010)									
1.3.2 Three years post	surgery (12 month	s follov	w up)							
Kalarchian 2012	-3.6	9.6	13	-0.6	6.7	16	54.3%	-0.36 [-1.10, 0.38]	=		
Subtotal (95% CI)			13			16	54.3%	-0.36 [-1.10, 0.38]	•		
Heterogeneity: Not appli	icable										
Test for overall effect: Z	= 0.95 (P	= 0.34)									
Total (95% CI)			28			31	100.0%	-0.81 [-1.36, -0.27]	♦		
Heterogeneity: Chi ² = 3.17, df = 1 (P = 0.07); I^2 = 69%									 		
Test for overall effect: Z	= 2.93 (P	= 0.003)							-10 -5 0 5	10	
Test for subgroup differe	`	,	lf = 1 (P	0.07), $I^2 = 68$	1.5%			Favours intervention Favours usua	aı care	