National Clinical Guideline Centre

Draft for consultation

Obesity

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

Update of CG43

Appendix I

July 2014

Draft for Consultation

Commissioned by the National Institute for Health and Care Excellence

Royal College of Physicians

The Royal College of Surgeons of England

RCGP Royal College of General Practitioners

Royal College of Nursing

NICE accredited

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Funding
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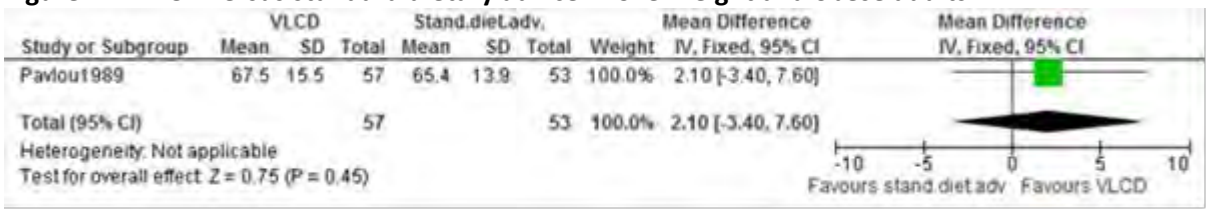
Appendix I: Forest plots

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

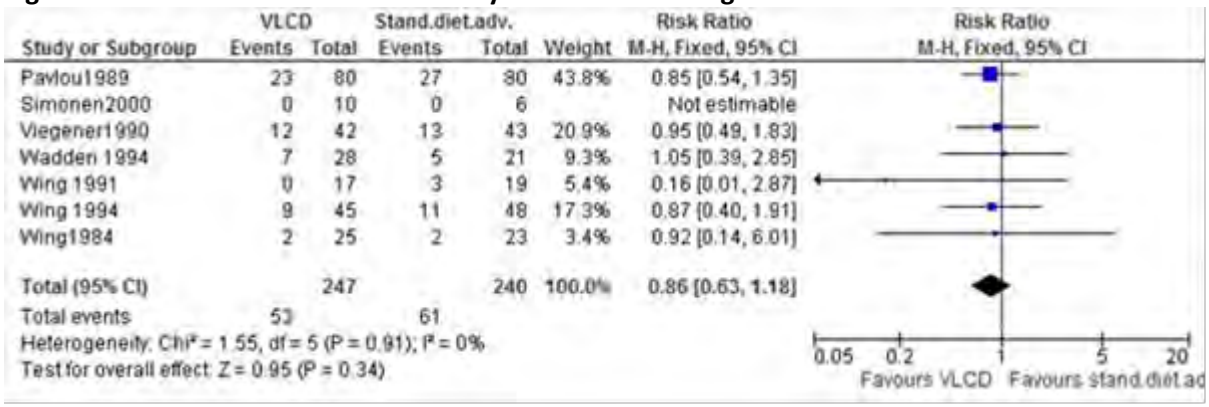


Study or Subgroup	VLCD Mean	VLCD SD	VLCD Total	Stand.diet.adv. Mean	Stand.diet.adv. SD	Stand.diet.adv. Total	Weight	Mean Difference IV, Fixed, 95% CI
Pavlou1989	67.5	15.5	57	65.4	13.9	53	100.0%	2.10 [-3.40, 7.60]
Total (95% CI)			57			53	100.0%	2.10 [-3.40, 7.60]

Heterogeneity: Not applicable
Test for overall effect: Z = 0.75 (P = 0.45)

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



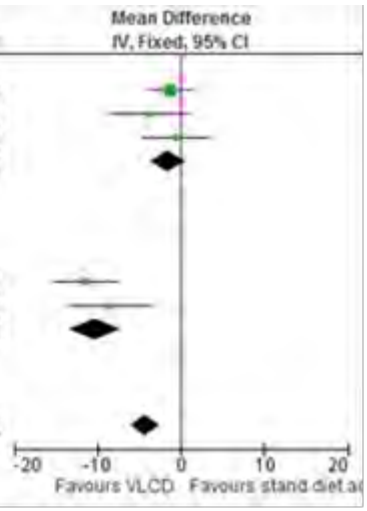
Study or Subgroup	VLCD Events	VLCD Total	Stand.diet.adv. Events	Stand.diet.adv. Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Pavlou1989	23	80	27	80	43.8%	0.85 [0.54, 1.35]
Simonen2000	0	10	0	6		Not estimable
Viegener1990	12	42	13	43	20.9%	0.95 [0.49, 1.83]
Wadden 1994	7	28	5	21	9.3%	1.05 [0.39, 2.85]
Wing 1991	0	17	3	19	5.4%	0.16 [0.01, 2.87]
Wing 1994	9	45	11	48	17.3%	0.87 [0.40, 1.91]
Wing1984	2	25	2	23	3.4%	0.92 [0.14, 6.01]
Total (95% CI)		247		240	100.0%	0.86 [0.63, 1.18]
Total events	53		61			

Heterogeneity: Chi² = 1.55, df = 5 (P = 0.91); I² = 0%
Test for overall effect: Z = 0.95 (P = 0.34)

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

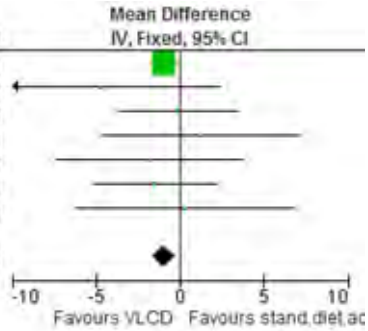
Study or Subgroup	VLCD Mean	VLCD SD	VLCD Total	Stand.diet.adv. Mean	Stand.diet.adv. SD	Stand.diet.adv. Total	Weight	Mean Difference IV, Fixed, 95% CI
1.8.1 intermittent VLCD								
Viegener1990	-10.2	5.1	30	-8.9	5.6	30	39.8%	-1.30 [-4.01, 1.41]
Wing 1994	-14.2	10.3	38	-10.5	11.6	41	12.2%	-3.70 [-8.53, 1.13]
Wing1984	-9.4	6.7142	23	-7.8	6.8739	21	17.6%	-0.60 [-4.62, 3.42]
Subtotal (95% CI)			91			92	68.6%	-1.55 [-3.59, 0.49]
Heterogeneity: Chi² = 1.01, df = 2 (P = 0.60); I² = 0%								
Test for overall effect: Z = 1.49 (P = 0.14)								
1.8.2 non-intermittent VLCD								
Wadden 1994	-20.5	7.29	28	-9.14	6.17	21	20.0%	-11.36 [-15.14, -7.59]
Wing 1991	-19.6	9.5	17	-10.1	4.3	16	11.5%	-8.50 [-13.48, -3.52]
Subtotal (95% CI)			45			37	31.4%	-10.32 [-13.33, -7.31]
Heterogeneity: Chi² = 0.80, df = 1 (P = 0.37); I² = 0%								
Test for overall effect: Z = 6.72 (P < 0.00001)								
Total (95% CI)			136			129	100.0%	-4.30 [-5.99, -2.62]
Heterogeneity: Chi² = 24.18, df = 4 (P < 0.0001); I² = 83%								
Test for overall effect: Z = 5.00 (P < 0.00001)								
Test for subgroup differences: Chi² = 22.37, df = 1 (P < 0.00001), I² = 95.5%								



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

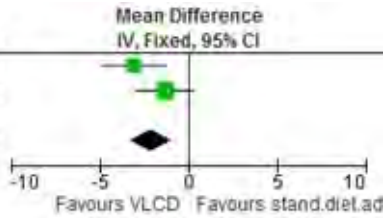
Study or Subgroup	VLCD Mean	VLCD SD	VLCD Total	Stand.diet.adv. Mean	Stand.diet.adv. SD	Stand.diet.adv. Total	Weight	Mean Difference IV, Fixed, 95% CI
Pavlou1989	-11.68	1.679	57	-10.71	2.293	53	87.1%	-0.97 [-1.73, -0.21]
Simonen2000	-6.7	7.8	10	-2	6.48	6	1.0%	-4.70 [-11.79, 2.39]
Viegener1990	-9	6.7	30	-8.9	7.3	30	4.0%	-0.10 [-3.65, 3.45]
Wadden 1994	-10.94	9.97	21	-12.18	8.23	16	1.4%	1.24 [-4.63, 7.11]
Wing 1991	-8.6	9.2	17	-6.8	6.9	16	1.6%	-1.80 [-7.33, 3.73]
Wing 1994	-7.2	8	36	-5.7	7.9	37	3.7%	-1.50 [-5.15, 2.15]
Wing1984	-2.7	11.51	23	-3	10.5399	21	1.2%	0.30 [-6.22, 6.82]
Total (95% CI)			194			179	100.0%	-0.96 [-1.66, -0.25]
Heterogeneity: Chi² = 2.15, df = 6 (P = 0.91), I² = 0%								
Test for overall effect: Z = 2.67 (P = 0.008)								



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

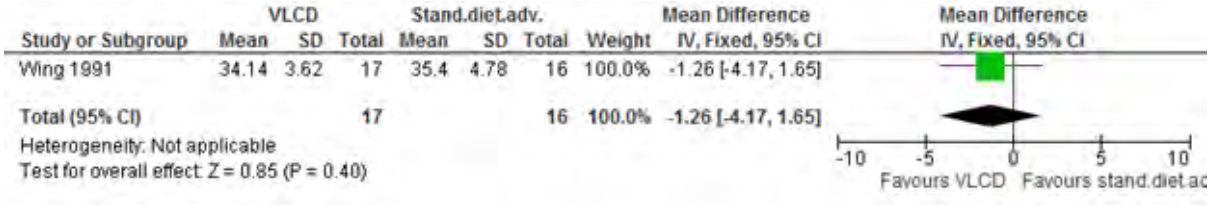
Figure 5: VLCD versus standard dietary advice in overweight and obese

Study or Subgroup	VLCD Mean	VLCD SD	VLCD Total	Stand.diet.adv. Mean	Stand.diet.adv. SD	Stand.diet.adv. Total	Weight	Mean Difference IV, Fixed, 95% CI
Wing 1991	-6.76	3.47	17	-3.68	1.43	16	44.7%	-3.08 [-4.87, -1.29]
Wing 1994	-5	3.5	38	-3.7	3.8	41	55.3%	-1.30 [-2.91, 0.31]
Total (95% CI)			55			57	100.0%	-2.09 [-3.29, -0.90]
Heterogeneity: Chi² = 2.10, df = 1 (P = 0.15); I² = 52%								
Test for overall effect: Z = 3.43 (P = 0.0006)								



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

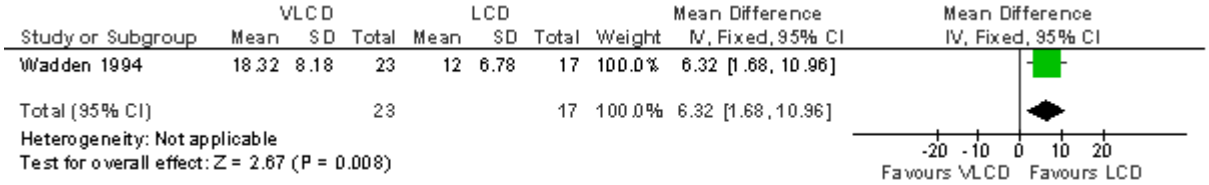
Figure 6: VLCD versus standard dietary advice in overweight and obese



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



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

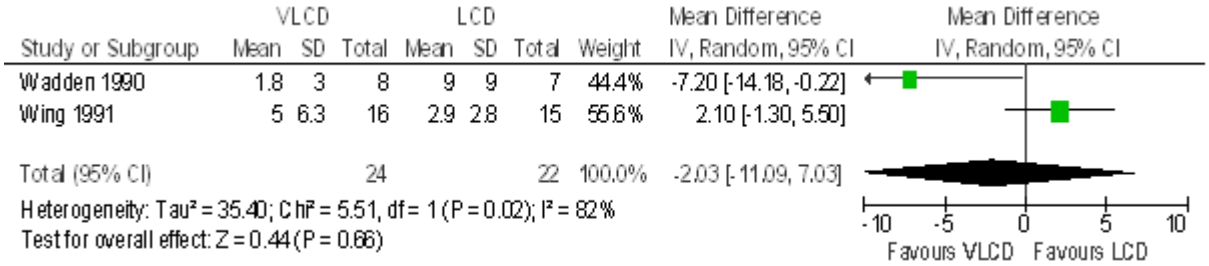
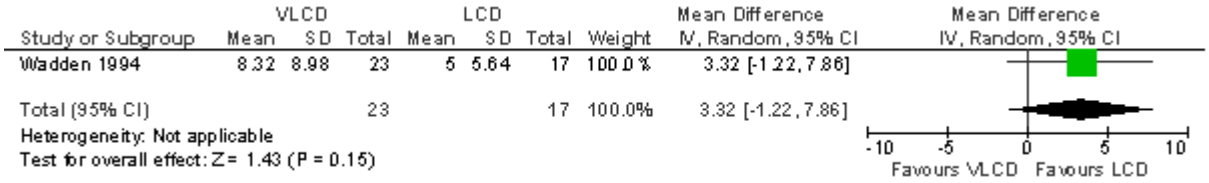
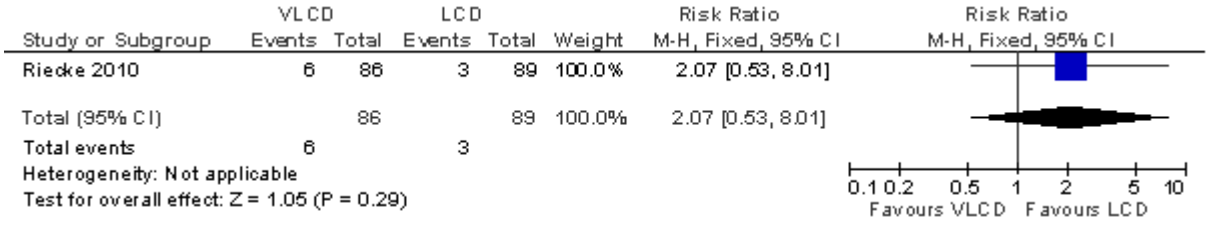


Figure 9: VLCD versus LCD (both with behavioural therapy, with or without exercise) in obese adults at 52 weeks



I.1.2.3 Depressive tendencies (dichotomous)

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

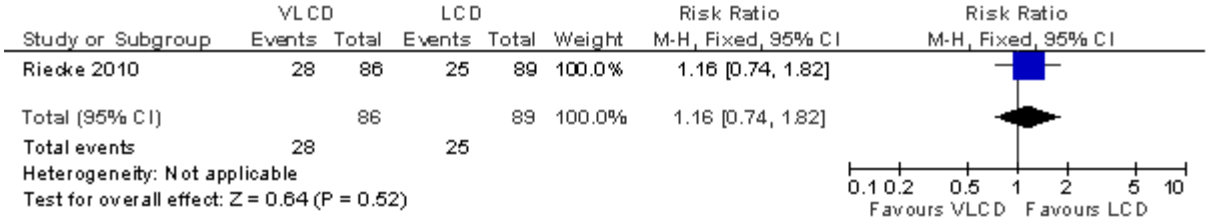


Study or Subgroup	VLCD Events	VLCD Total	LCD Events	LCD Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Riecke 2010	6	86	3	89	100.0%	2.07 [0.53, 8.01]
Total (95% CI)		86		89	100.0%	2.07 [0.53, 8.01]
Total events	6		3			

Heterogeneity: Not applicable
Test for overall effect: Z = 1.05 (P = 0.29)

I.1.2.4 Constipation

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

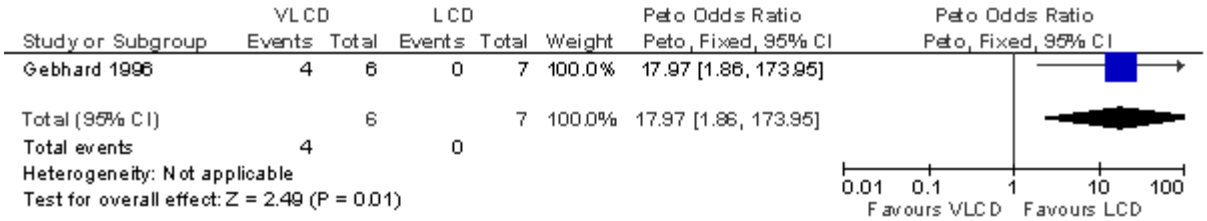


Study or Subgroup	VLCD Events	VLCD Total	LCD Events	LCD Total	Weight	Risk Ratio M-H, Fixed, 95% CI
Riecke 2010	28	86	25	89	100.0%	1.16 [0.74, 1.82]
Total (95% CI)		86		89	100.0%	1.16 [0.74, 1.82]
Total events	28		25			

Heterogeneity: Not applicable
Test for overall effect: Z = 0.64 (P = 0.52)

I.1.2.5 Gall stones

Figure 12: VLCD versus LCD in obese adults

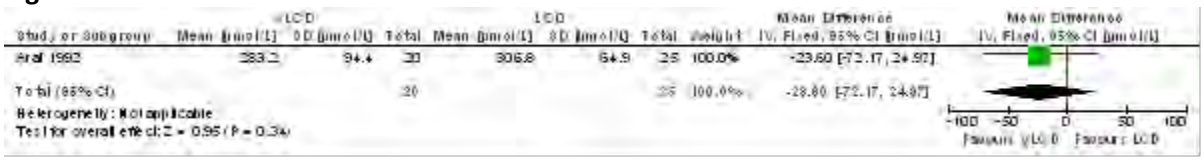


Study or Subgroup	VLCD Events	VLCD Total	LCD Events	LCD Total	Weight	Peto Odds Ratio Peto, Fixed, 95% CI
Gebhard 1996	4	6	0	7	100.0%	17.97 [1.86, 173.95]
Total (95% CI)		6		7	100.0%	17.97 [1.86, 173.95]
Total events	4		0			

Heterogeneity: Not applicable
Test for overall effect: Z = 2.49 (P = 0.01)

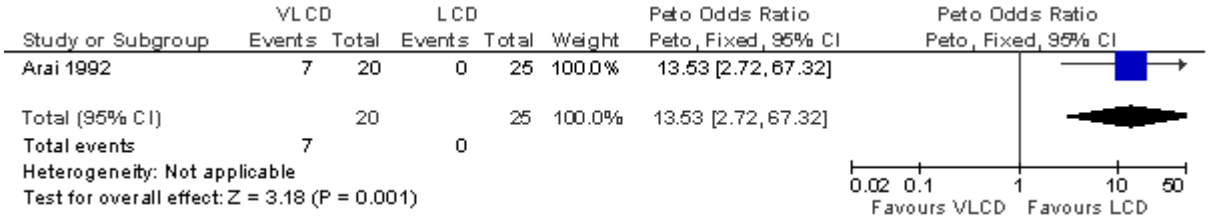
I.1.2.6 Serum uric acid levels

Figure 13: VLCD versus LCD in obese adults



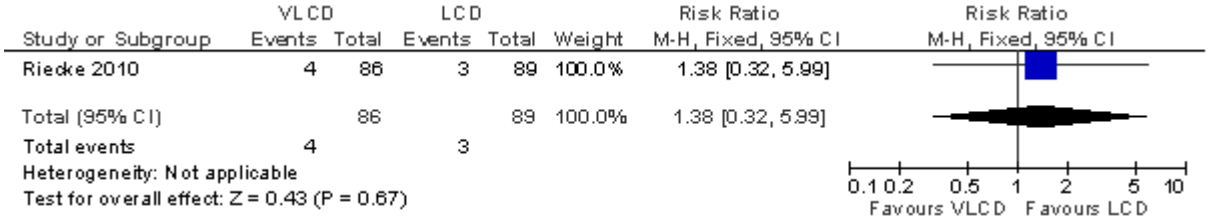
I.1.2.7 'Marked' serum uric acid levels

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))

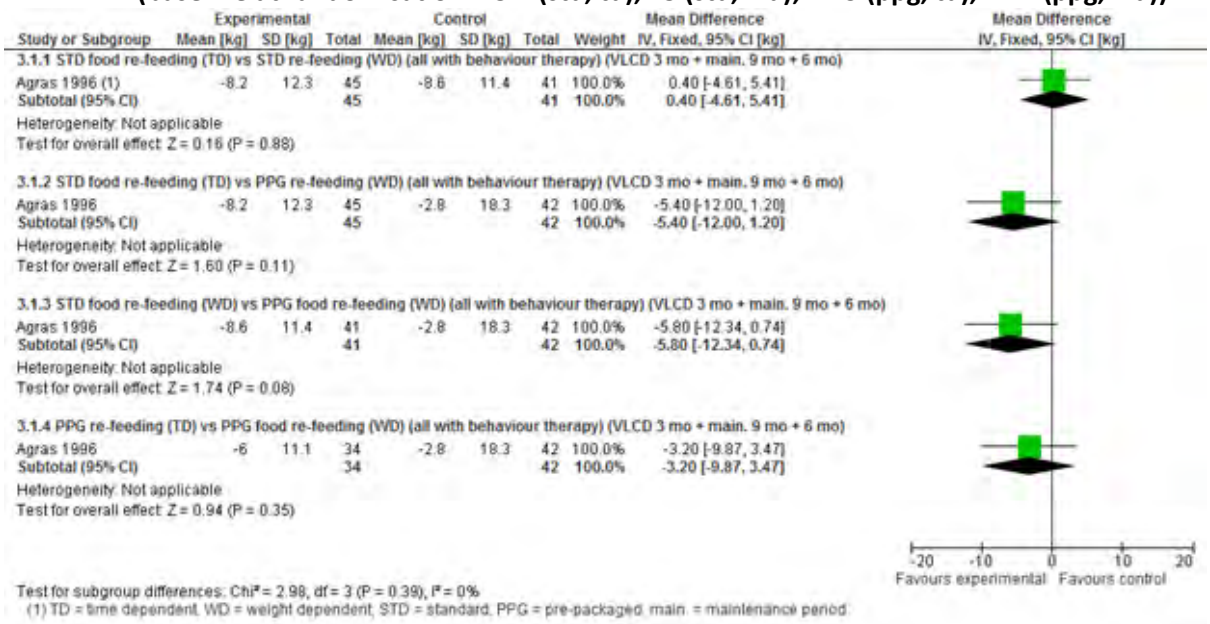
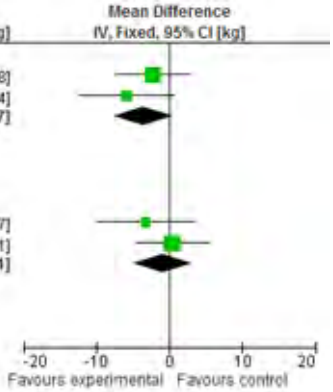


Figure 17: Behaviour therapy and different re-feeding techniques in obese patients after a VLCD (baseline at randomisation: 15.2 (std, td), 15 (std, wd), 14.9 (ppg, td), 14.2 (ppg, wd))

Study or Subgroup	Experimental Mean [kg]	Experimental SD [kg]	Experimental Total	Control Mean [kg]	Control SD [kg]	Control Total	Weight	Mean Difference IV, Fixed, 95% CI [kg]
3.3.1 STD food vs PPG food re-feeding (all with behavioural therapy) (VLCD 3 mo + main. 9 mo + 6 mo)								
Agras 1996 (time) (1)	-8.2	12.3	45	-6	11.1	34	61.5%	-2.20 [-7.38, 2.98]
Agras 1996 (weight)	-8.6	11.4	41	-2.8	18.3	42	38.5%	-5.80 [-12.34, 0.74]
Subtotal (95% CI)			86			76	100.0%	-3.59 [-7.65, 0.47]
Heterogeneity: Chi² = 0.71, df = 1 (P = 0.40); I² = 0%								
Test for overall effect: Z = 1.73 (P = 0.08)								
3.3.3 TD re-feeding vs WD re-feeding (all with behavioural therapy) (VLCD 3 mo + main. 9 mo + 6 mo)								
Agras 1996 (prepackaged) (2)	-6	11.1	34	-2.8	18.3	42	36.0%	-3.20 [-9.87, 3.47]
Agras 1996 (std food)	-8.2	12.3	45	-8.6	11.4	41	64.0%	0.40 [-4.61, 5.41]
Subtotal (95% CI)			79			83	100.0%	-0.90 [-4.90, 3.11]
Heterogeneity: Chi² = 0.71, df = 1 (P = 0.40); I² = 0%								
Test for overall effect: Z = 0.44 (P = 0.66)								

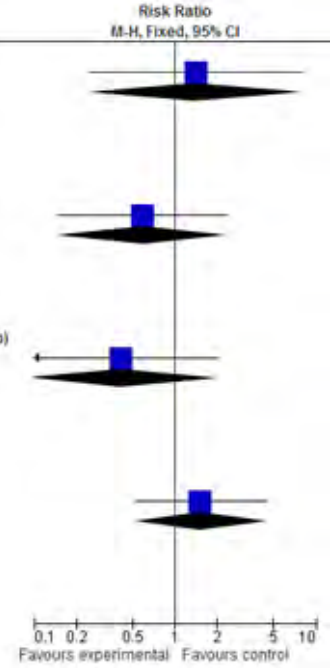


(1) STD = standard, PPG = pre-packaged, main. = maintenance period
(2) TD = time-dependent, WD = weight dependent

I.1.3.3 Withdrawals – behaviour therapy and re-feeding

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

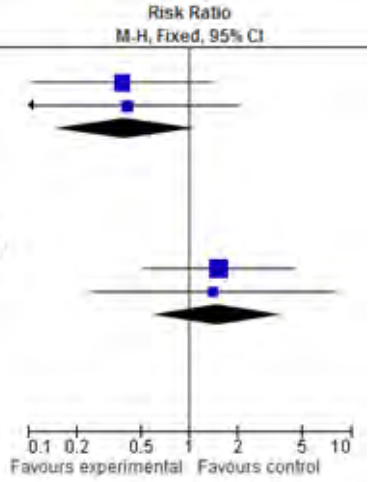
Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Risk Ratio M-H, Fixed, 95% CI
3.2.1 STD food re-feeding (TD) vs STD re-feeding (WD) (all with behaviour therapy) (VLCD 3 mo + main. 9 mo + 6 mo)						
Agras 1996 (1)	3	50	2	47	100.0%	1.41 [0.25, 8.07]
Subtotal (95% CI)		50		47	100.0%	1.41 [0.25, 8.07]
Total events	3		2			
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.39 (P = 0.70)						
3.2.2 STD food re-feeding (TD) vs PPG re-feeding (WD) (all with behaviour therapy) (VLCD 3 mo + main. 9 mo + 6 mo)						
Agras 1996	3	50	5	49	100.0%	0.59 [0.15, 2.33]
Subtotal (95% CI)		50		49	100.0%	0.59 [0.15, 2.33]
Total events	3		5			
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.76 (P = 0.45)						
3.2.3 STD food re-feeding (WD) vs PPG food re-feeding (WD) (all with behaviour therapy) (VLCD 3 mo + main. 9 mo + 6 mo)						
Agras 1996	2	47	5	49	100.0%	0.42 [0.09, 2.05]
Subtotal (95% CI)		47		49	100.0%	0.42 [0.09, 2.05]
Total events	2		5			
Heterogeneity: Not applicable						
Test for overall effect: Z = 1.08 (P = 0.28)						
3.2.4 PPG re-feeding (TD) vs PPG food re-feeding (WD) (all with behaviour therapy) (VLCD 3 mo + main. 9 mo + 6 mo)						
Agras 1996	7	45	5	49	100.0%	1.52 [0.52, 4.46]
Subtotal (95% CI)		45		49	100.0%	1.52 [0.52, 4.46]
Total events	7		5			
Heterogeneity: Not applicable						
Test for overall effect: Z = 0.77 (P = 0.44)						



Test for subgroup differences: Chi² = 2.44, df = 3 (P = 0.49), I² = 0%
(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

Study or Subgroup	Experimental Events	Experimental Total	Control Events	Control Total	Weight	Risk Ratio M-H, Fixed, 95% CI
3.4.1 STD food vs PPG food (all with behavioural therapy) (VLCD 3 mo + main. 9 mo + 6 mo)						
Agras 1996 (time) (1)	3	50	7	45	60.1%	0.39 [0.11, 1.40]
Agras 1996 (weight)	2	47	5	49	39.9%	0.42 [0.09, 2.05]
Subtotal (95% CI)		97		94	100.0%	**0.40 [0.15, 1.09]**
Total events	5		12			
Heterogeneity: Chi² = 0.01, df = 1 (P = 0.94); I² = 0%						
Test for overall effect: Z = 1.80 (P = 0.07)						
3.4.2 TD re-feeding vs WD re-feeding (all with behavioural therapy) (VLCD 3 mo + main. 9 mo + 6 mo)						
Agras 1996 (prepackaged) (2)	7	45	5	49	69.9%	1.52 [0.52, 4.46]
Agras 1996 (std food)	3	50	2	47	30.1%	1.41 [0.25, 8.07]
Subtotal (95% CI)		95		96	100.0%	**1.49 [0.60, 3.72]**
Total events	10		7			
Heterogeneity: Chi² = 0.01, df = 1 (P = 0.94); I² = 0%						
Test for overall effect: Z = 0.85 (P = 0.39)						

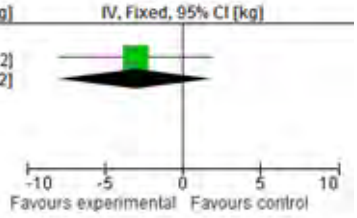


Test for subgroup differences: Chi² = 3.63, df = 1 (P = 0.06), I² = 72.5%
(1) STD = standard, PPG = pre-packaged, main. = maintenance period
(2) TD = time dependent, WD = weight dependent

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)

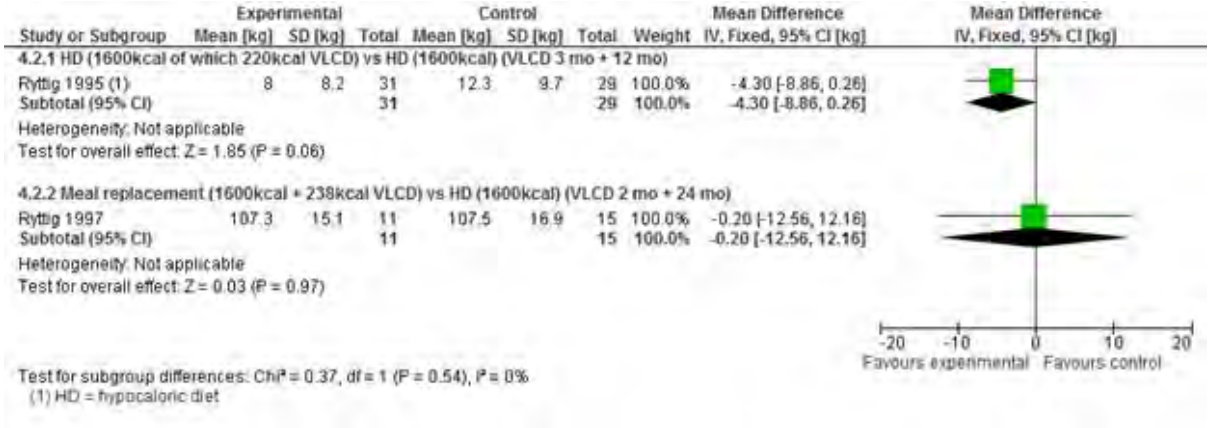
Study or Subgroup	Experimental Mean [kg]	Experimental SD [kg]	Experimental Total	Control Mean [kg]	Control SD [kg]	Control Total	Weight	Mean Difference IV, Fixed, 95% CI [kg]
4.1.1 HD (1600kcal of which 220kcal VLCD) vs HD (1600kcal) (VLCD 3 mo + 12 mo)								
Ryttig 1995 (1)	9.3	9.4	31	12.3	10	29	100.0%	-3.00 [-7.92, 1.92]
Subtotal (95% CI)			31			29	100.0%	**-3.00 [-7.92, 1.92]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 1.20 (P = 0.23)								



Test for subgroup differences: Not applicable
(1) HD = hypocaloric diet

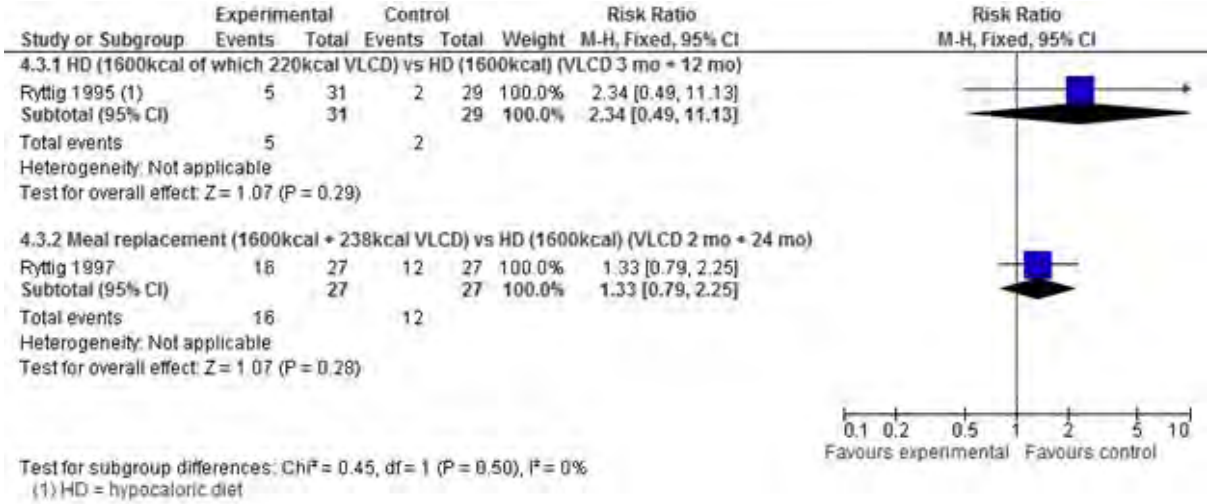
I.1.3.5 Weight in kg (change or final score) – hypocaloric diet

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)



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



I.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)

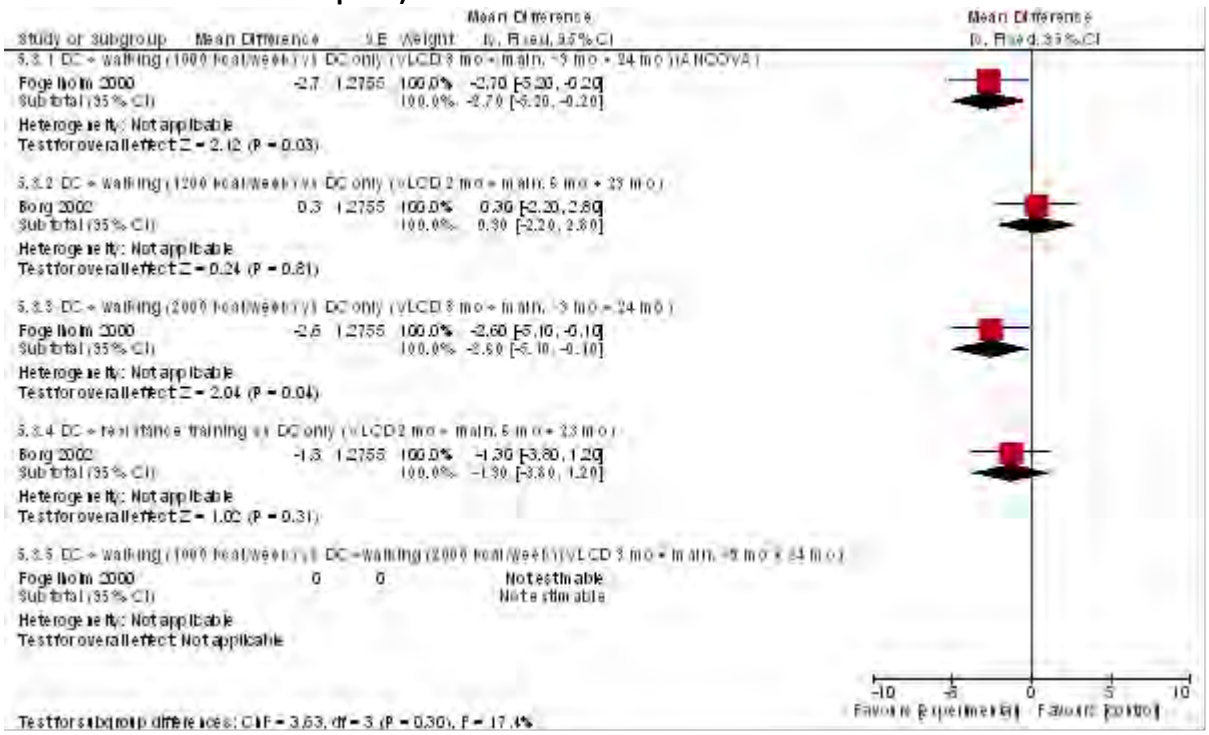
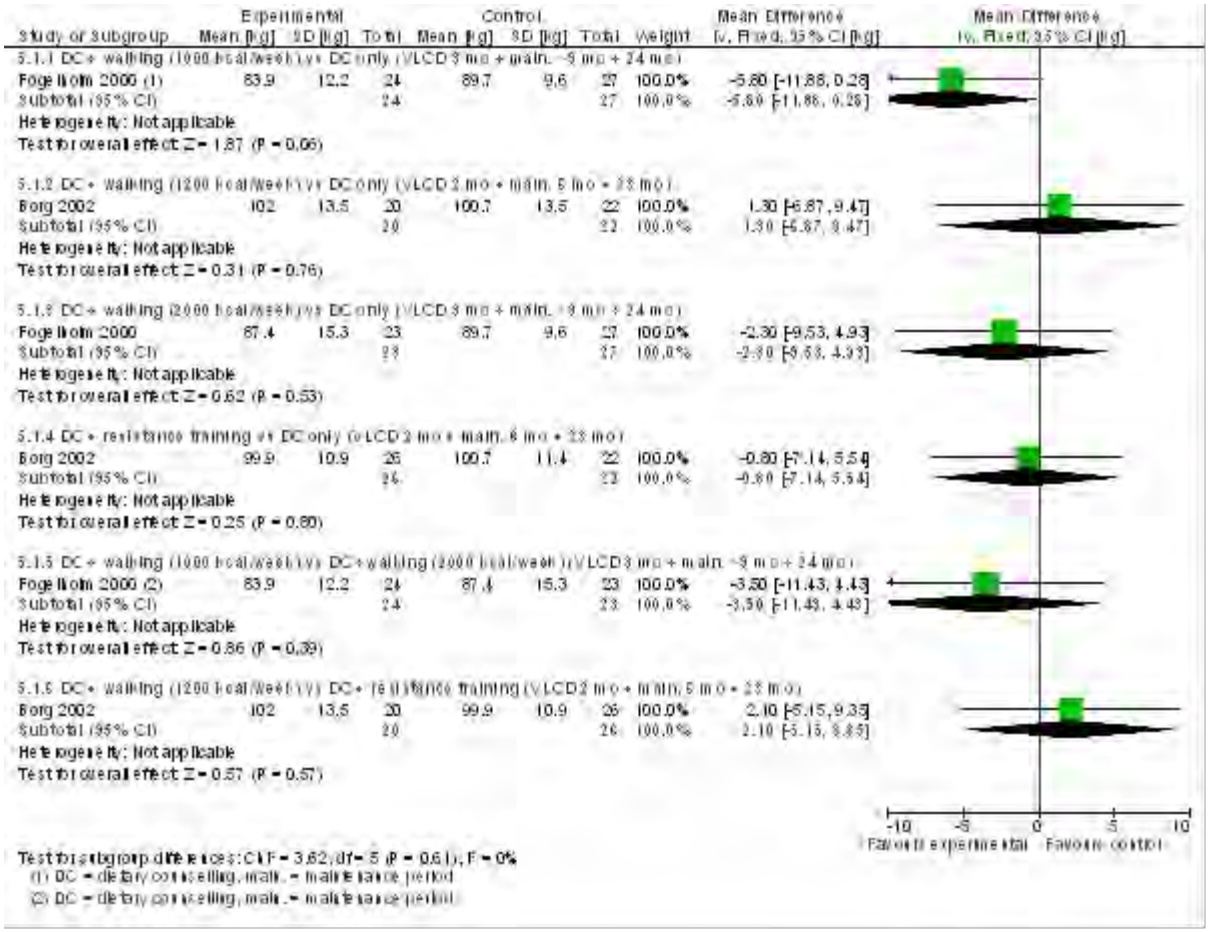
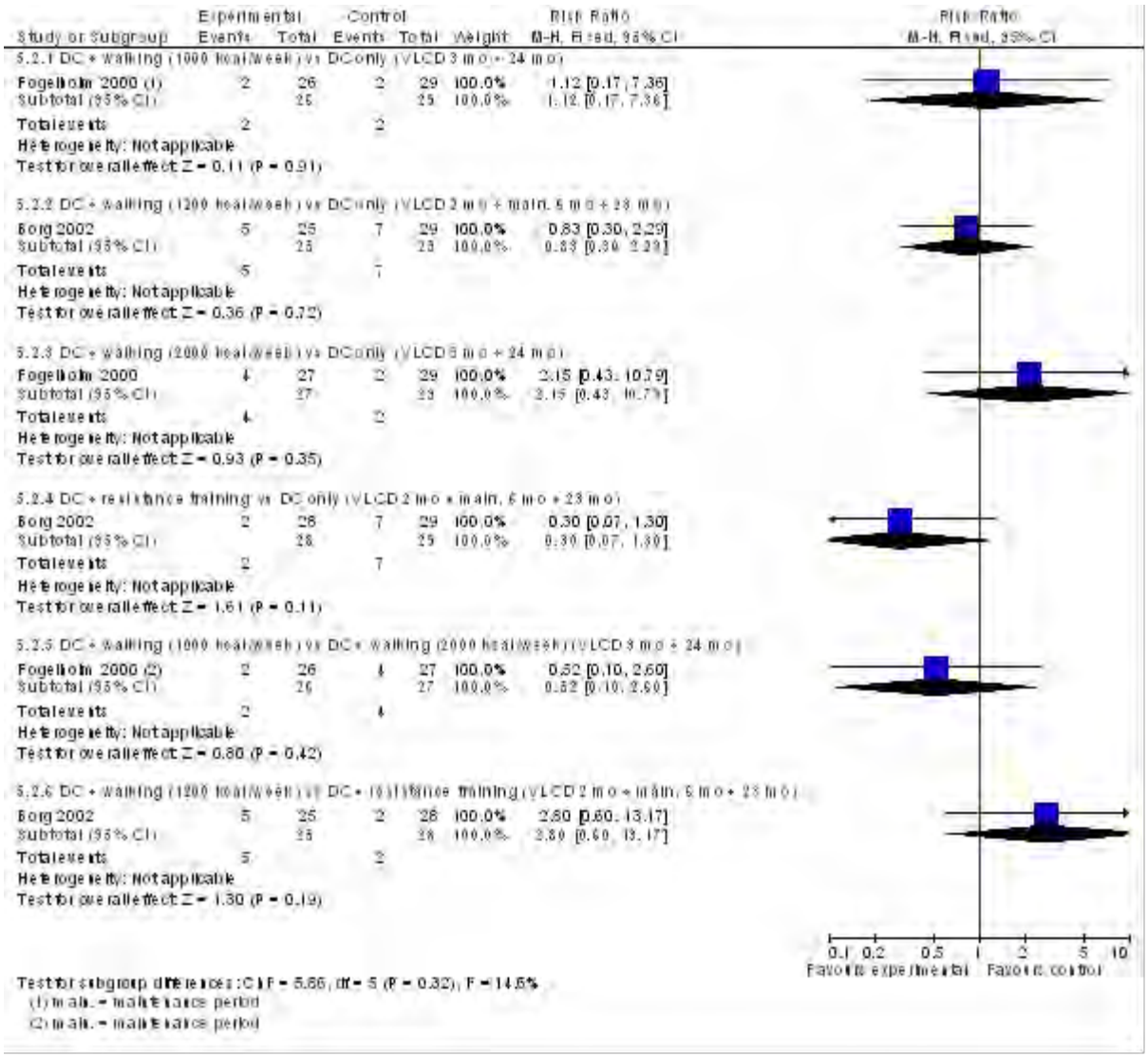


Figure 24: Dietary counselling with exercise versus dietary counselling only in obese patients after a VLCD



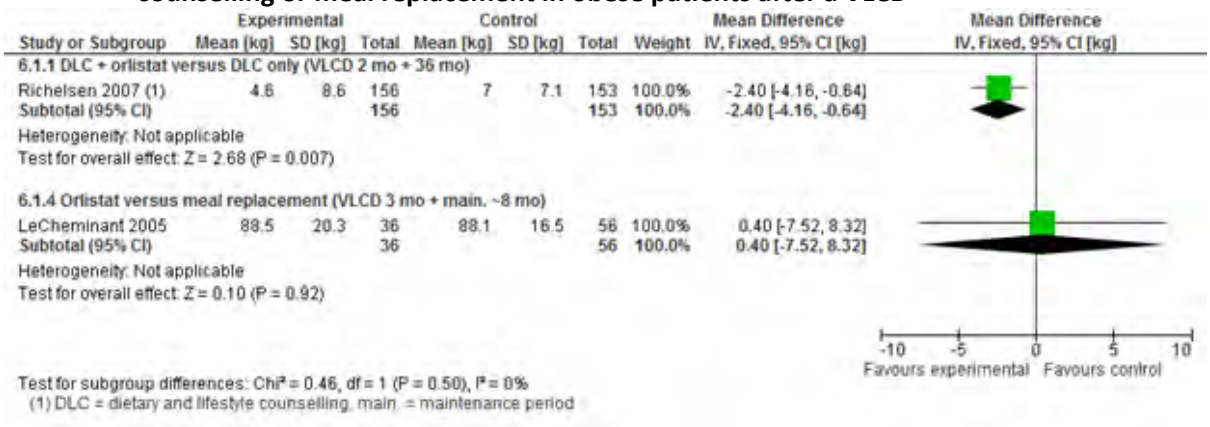
I.1.3.8 Withdrawals – dietary counselling with or without exercise

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



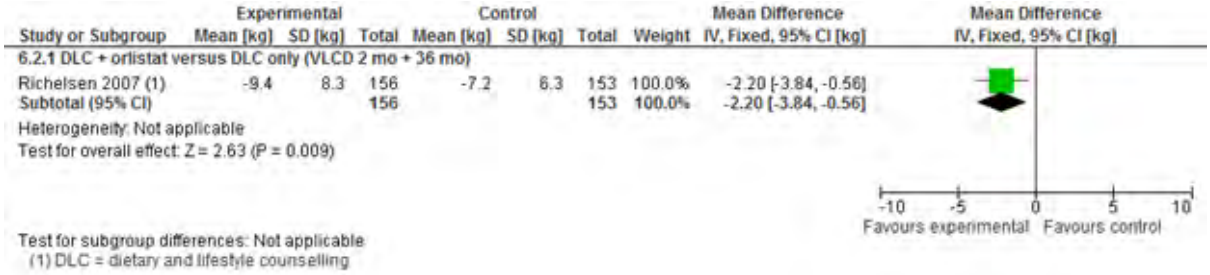
I.1.3.9 Weight in kg (change or final scores) - orlistat

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



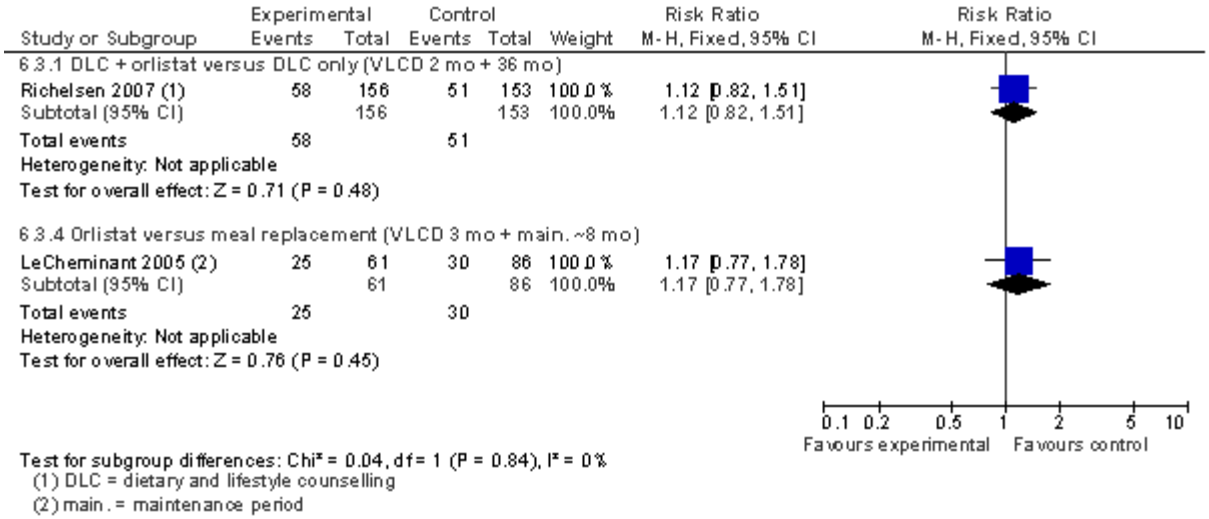
I.1.3.10 Weight in kg from before the VLCD lead in - orlistat

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



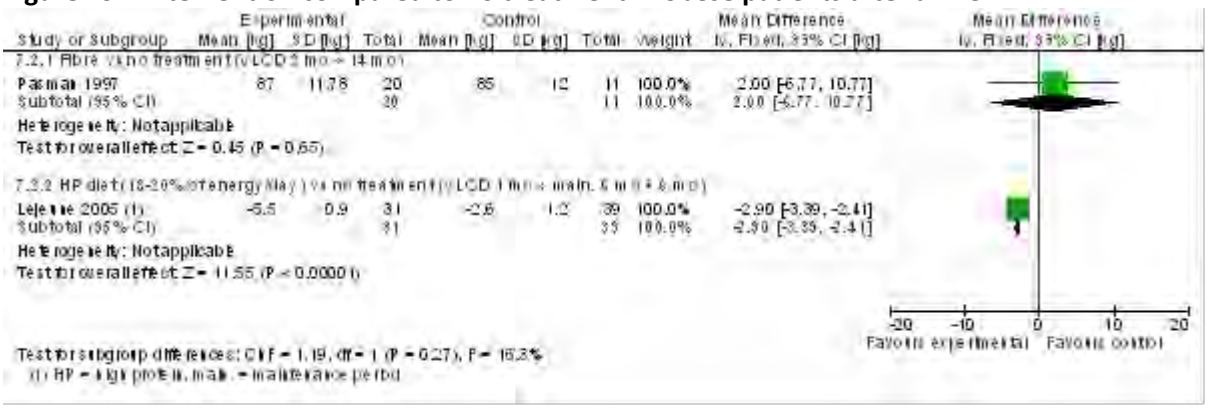
I.1.3.11 Withdrawals - orlistat

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



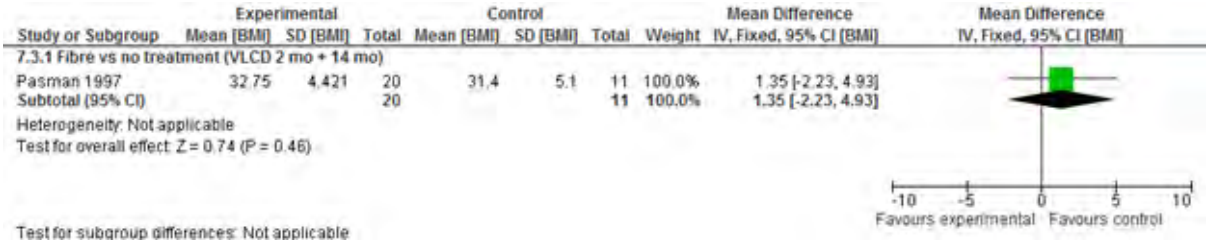
I.1.3.12 Weight in kg (change or final score) – comparison with no treatment

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



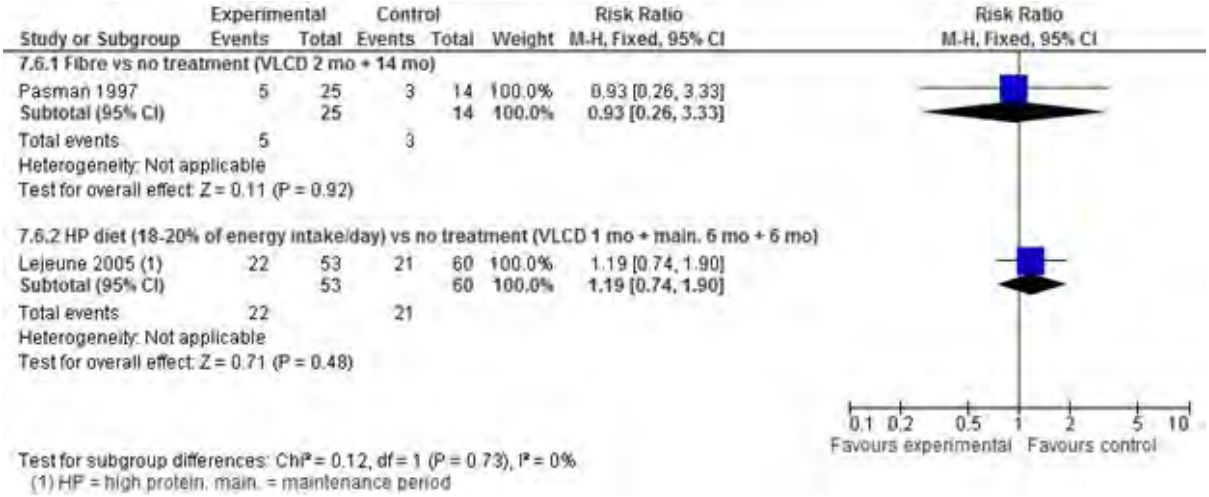
I.1.3.13 BMI from before VLCD period to end of weight maintenance period – comparison with no treatment

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



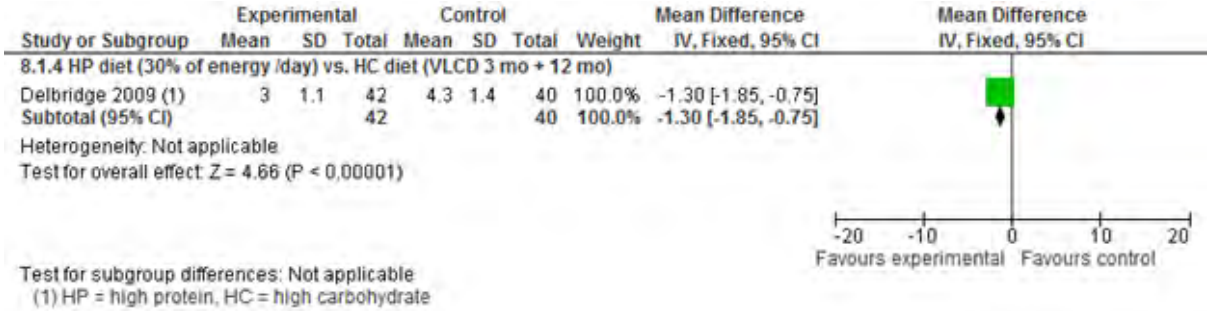
I.1.3.14 Withdrawals – comparison with no treatment

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



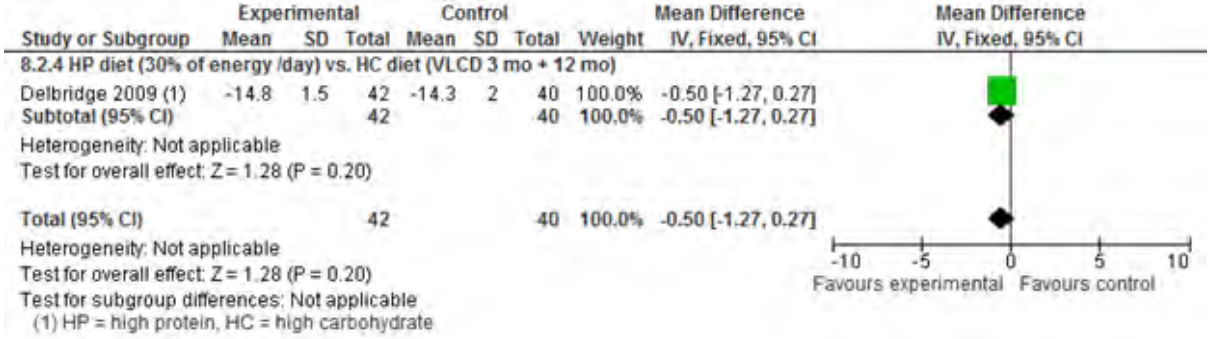
I.1.3.15 Weight in kg – high protein

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



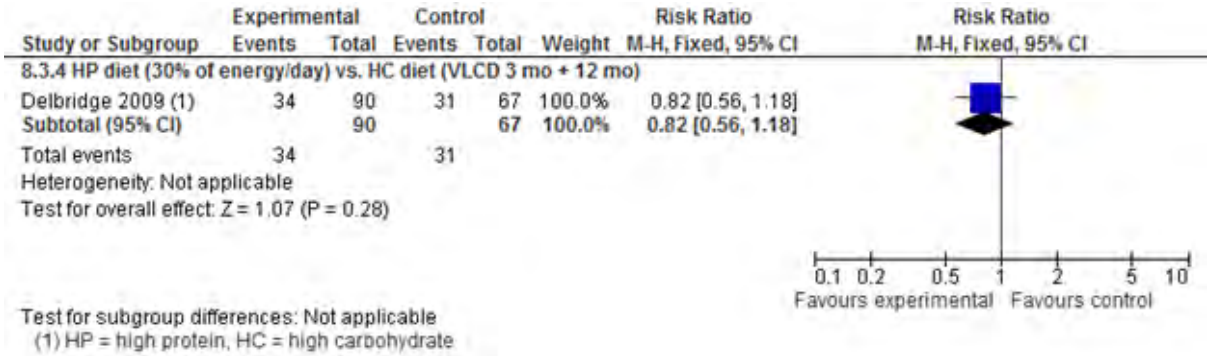
I.1.3.16 Weight in kg (including VLCD lead in period) – high protein

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



I.1.3.17 Withdrawals – high protein

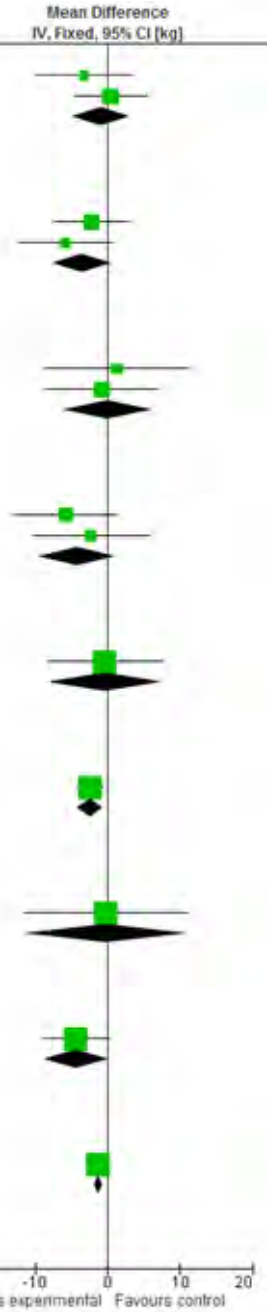
Figure 34: High protein or high carbohydrate diet in obese patients after a VLCD



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

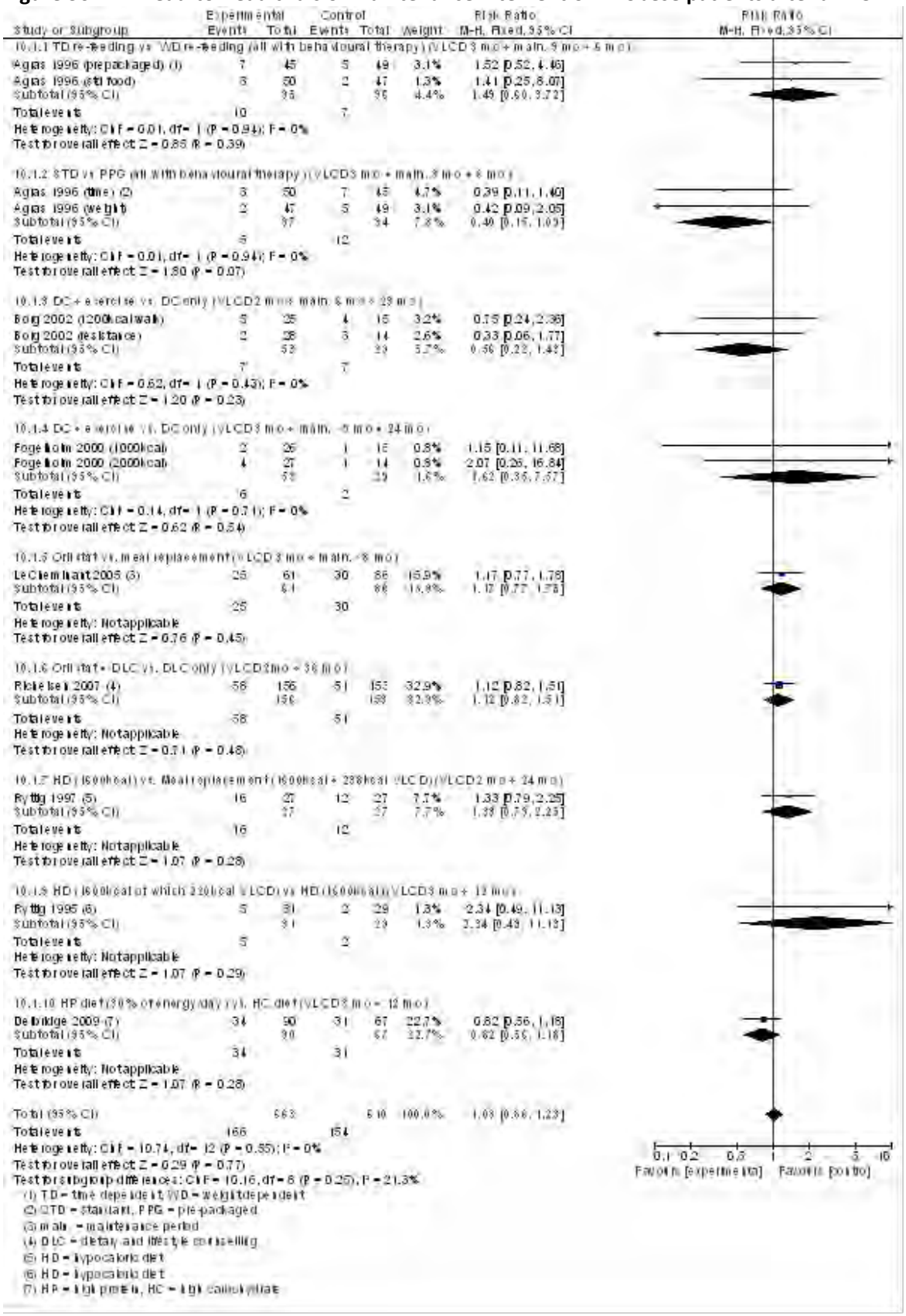
Study or Subgroup	Experimental Mean [kg]	Experimental SD [kg]	Experimental Total	Control Mean [kg]	Control SD [kg]	Control Total	Weight	Mean Difference IV, Fixed, 95% CI [kg]
9.2.1 TD re-feeding vs. WD re-feeding (all with behavioural therapy) (VLCD 3 mo + main. 9 mo + 6 mo)								
Agras 1996 (prepackaged) (1)	-6	11.1	34	-2.8	18.3	42	36.0%	-3.20 [-9.87, 3.47]
Agras 1996 (std food)	-8.2	12.3	45	-8.6	11.4	41	64.0%	0.40 [-4.61, 5.41]
Subtotal (95% CI)			79			83	100.0%	-0.90 [-4.90, 3.11]
Heterogeneity: Chi² = 0.71, df = 1 (P = 0.40); I² = 0%								
Test for overall effect: Z = 0.44 (P = 0.66)								
9.2.2 STD vs. PPG food (all with behavioural therapy) (VLCD 3 mo + main. 9 mo + 6 mo)								
Agras 1996 (time) (2)	-8.2	12.3	45	-6	11.1	34	61.5%	-2.20 [-7.38, 2.98]
Agras 1996 (weight)	-8.6	11.4	41	-2.8	18.3	42	38.5%	-5.80 [-12.34, 0.74]
Subtotal (95% CI)			86			76	100.0%	-3.59 [-7.65, 0.47]
Heterogeneity: Chi² = 0.71, df = 1 (P = 0.40); I² = 0%								
Test for overall effect: Z = 1.73 (P = 0.08)								
9.2.3 DC + exercise vs. DC only (VLCD 2 mo + main. 6 mo + 23 mo)								
Borg 2002 (1200kcal walk)	102	13.5	20	100.7	13.5	11	38.9%	1.30 [-8.63, 11.23]
Borg 2002 (resistance)	99.9	10.9	26	100.7	11.4	11	61.1%	-0.80 [-8.73, 7.13]
Subtotal (95% CI)			46			22	100.0%	0.02 [-6.18, 6.22]
Heterogeneity: Chi² = 0.10, df = 1 (P = 0.75); I² = 0%								
Test for overall effect: Z = 0.01 (P = 1.00)								
9.2.4 DC + exercise vs. DC only (VLCD 3 mo + main. ~9 mo + 24 mo)								
Fogelholm 2000 (1000kcal) (3)	83.9	12.2	24	89.7	9.6	13	55.8%	-5.80 [-12.95, 1.35]
Fogelholm 2000 (2000kcal)	87.4	15.3	23	89.7	9.6	14	44.2%	-2.30 [-10.32, 5.72]
Subtotal (95% CI)			47			27	100.0%	-4.25 [-9.59, 1.08]
Heterogeneity: Chi² = 0.41, df = 1 (P = 0.52); I² = 0%								
Test for overall effect: Z = 1.56 (P = 0.12)								
9.2.5 Orlistat vs. meal replacement (VLCD 3 mo + main. ~8 mo)								
LeCheminant 2005 (4)	88.1	18.5	56	88.5	20.3	36	100.0%	-0.40 [-8.32, 7.52]
Subtotal (95% CI)			56			36	100.0%	-0.40 [-8.32, 7.52]
Heterogeneity: Not applicable								
Test for overall effect: Z = 0.10 (P = 0.92)								
9.2.6 Orlistat+DLC vs. DLC only (VLCD 2 mo + 36 mo)								
Richelsen 2007 (5)	4.6	8.6	156	7	7.1	153	100.0%	-2.40 [-4.16, -0.64]
Subtotal (95% CI)			156			153	100.0%	-2.40 [-4.16, -0.64]
Heterogeneity: Not applicable								
Test for overall effect: Z = 2.68 (P = 0.007)								
9.2.7 HD (1600kcal) vs. Meal replacement (1600kcal + 238kcal VLCD) (VLCD 2 mo + 24 mo)								
Ryttig 1997 (6)	107.3	15.1	16	107.5	16.9	15	100.0%	-0.20 [-11.51, 11.11]
Subtotal (95% CI)			16			15	100.0%	-0.20 [-11.51, 11.11]
Heterogeneity: Not applicable								
Test for overall effect: Z = 0.03 (P = 0.97)								
9.2.8 HD (1600kcal of which 220kcal VLCD) vs HD (1600kcal) (VLCD 3 mo + 12 mo)								
Ryttig 1995 (7)	8	8.2	31	12.3	9.7	29	100.0%	-4.30 [-8.86, 0.26]
Subtotal (95% CI)			31			29	100.0%	-4.30 [-8.86, 0.26]
Heterogeneity: Not applicable								
Test for overall effect: Z = 1.85 (P = 0.06)								
9.2.9 HP diet (30% of energy /day) vs. HC diet (VLCD 3 mo + 12 mo)								
Delbridge 2009 (8)	3	1.1	42	4.3	1.4	40	100.0%	-1.30 [-1.85, -0.75]
Subtotal (95% CI)			42			40	100.0%	-1.30 [-1.85, -0.75]
Heterogeneity: Not applicable								
Test for overall effect: Z = 4.66 (P < 0.00001)								



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

I.1.3.19 Withdrawals – all head-to-head trials

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



I.2 Bariatric surgery in people with type 2 diabetes

I.2.1 Surgical versus non-surgical management

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

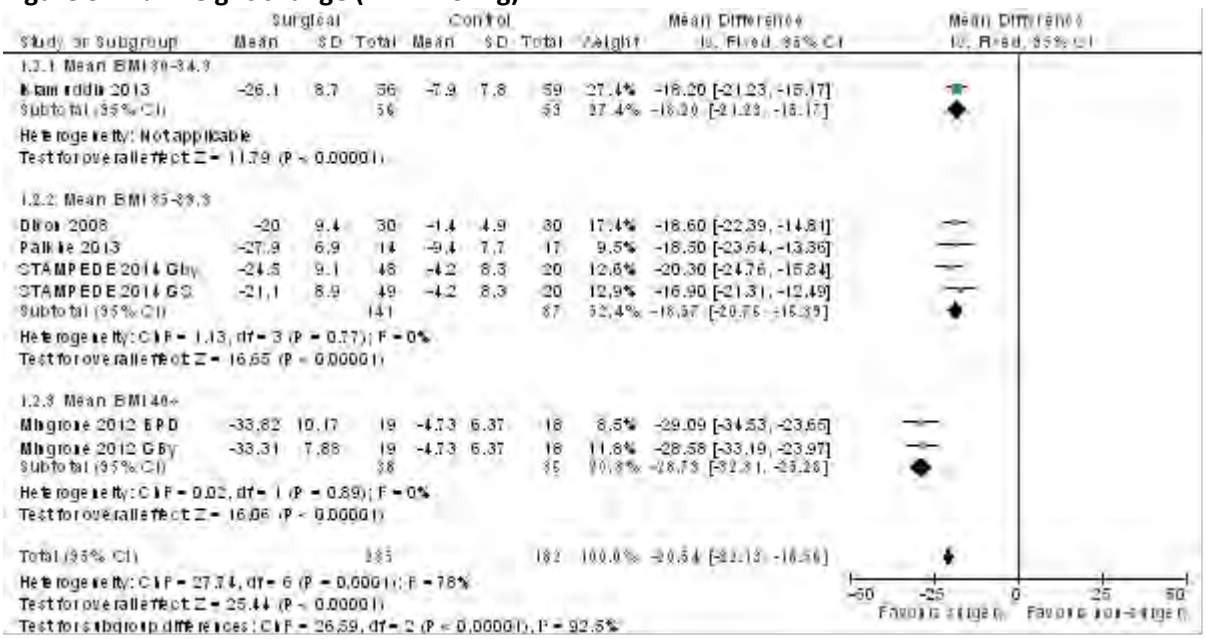


Figure 38: Use of diabetes medication (dichotomous)

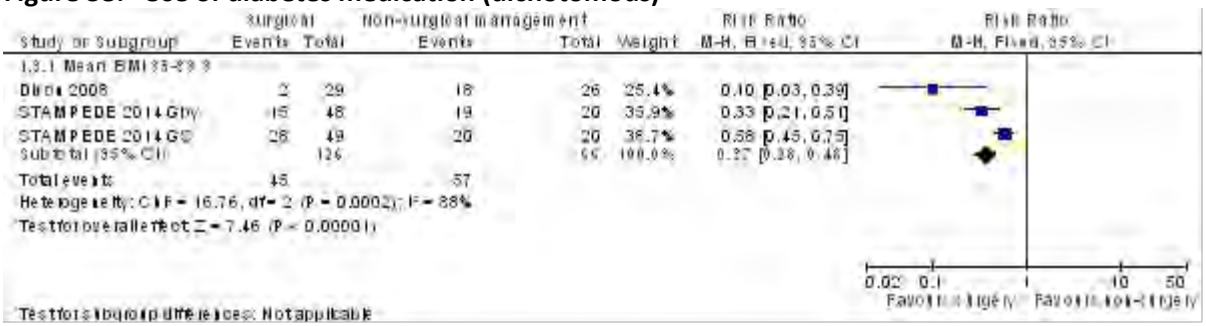


Figure 39: Use of diabetes medication (continuous)

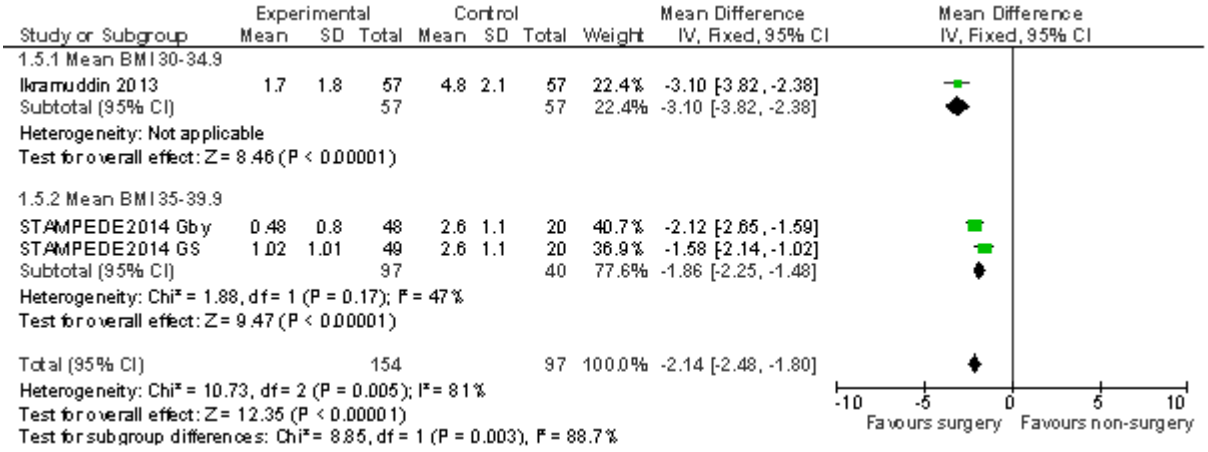


Figure 40: Remission of diabetes

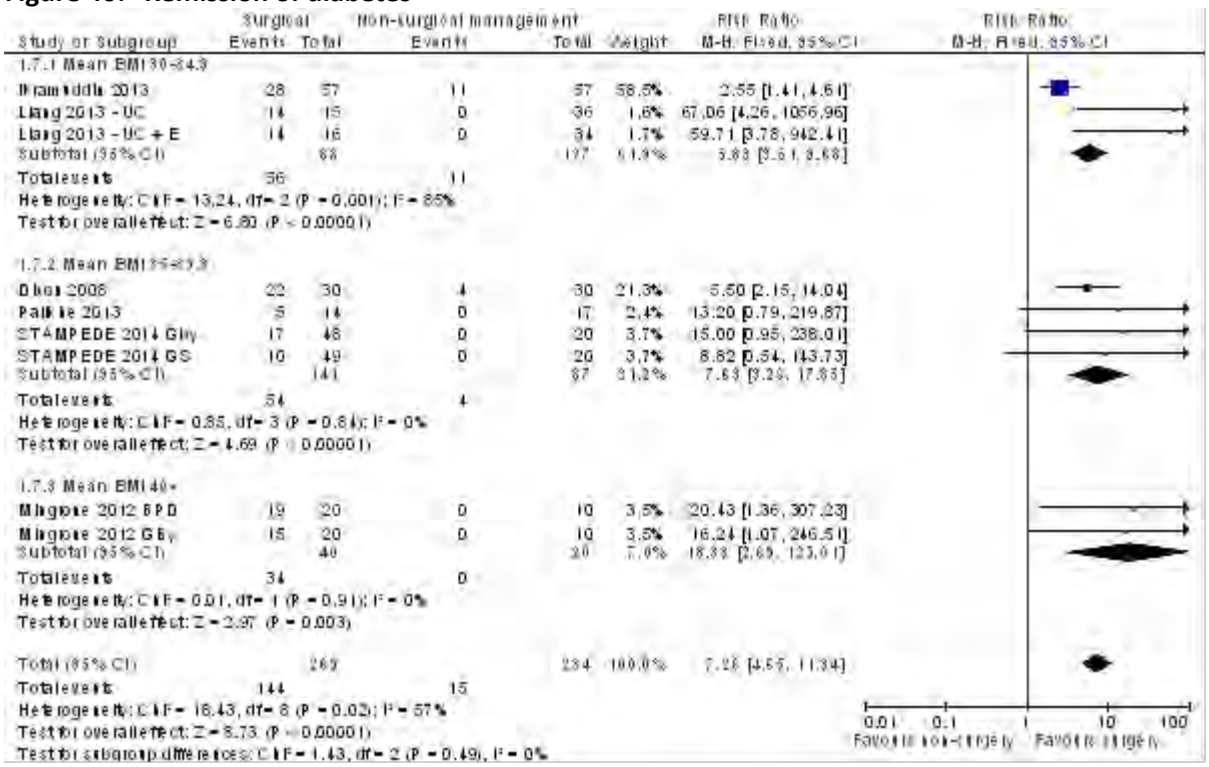


Figure 41: Improvement in glycaemic control (HbA1C ≤ 6% or 6.2%)

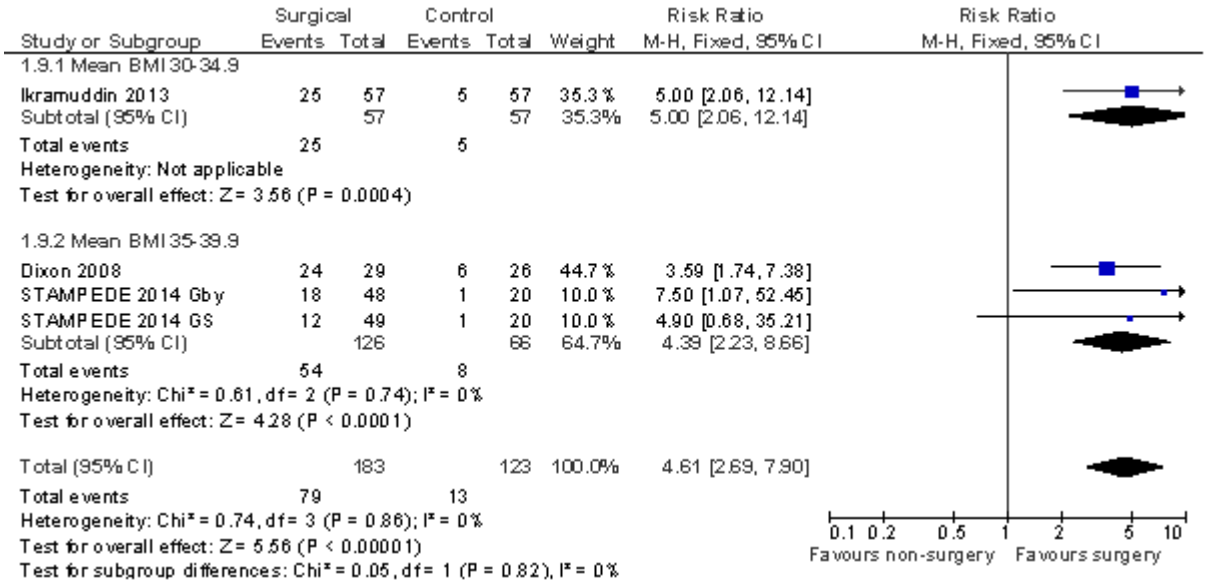


Figure 42: Improvement in glycaemic control (HbA1C < 7%)

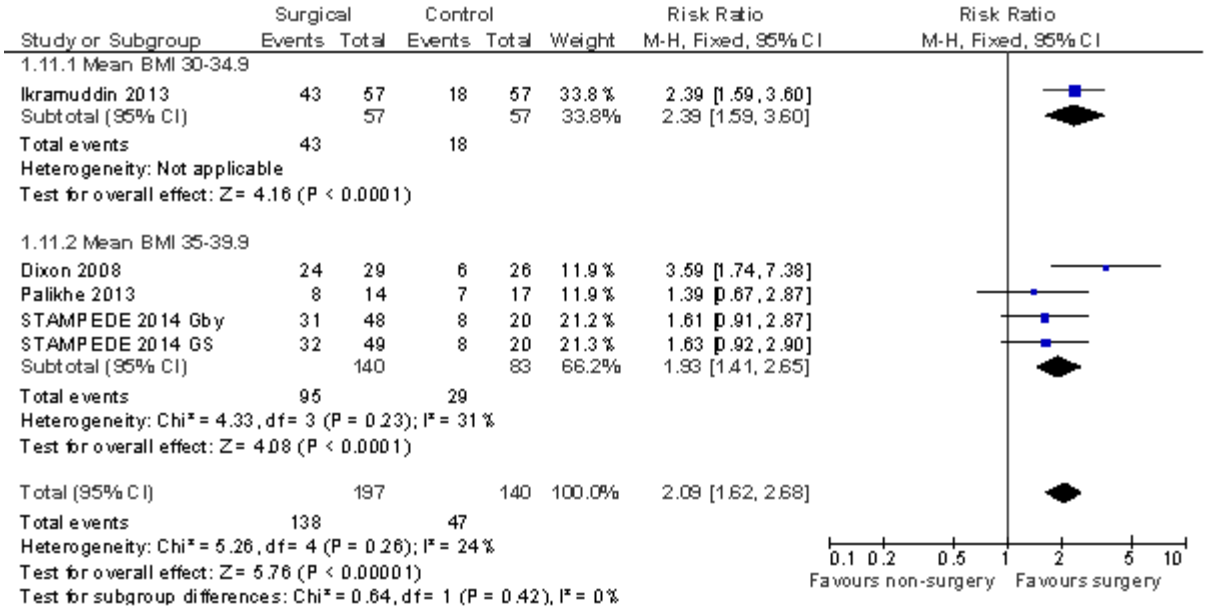


Figure 43: Glycaemic control (continuous)

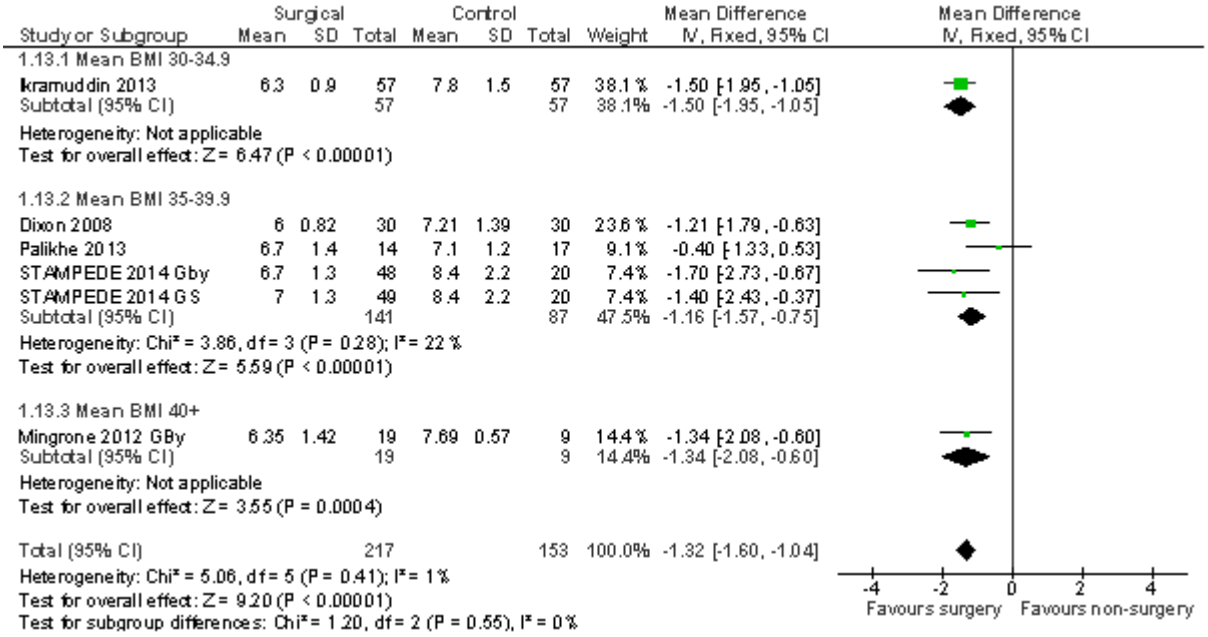


Figure 44: Mortality

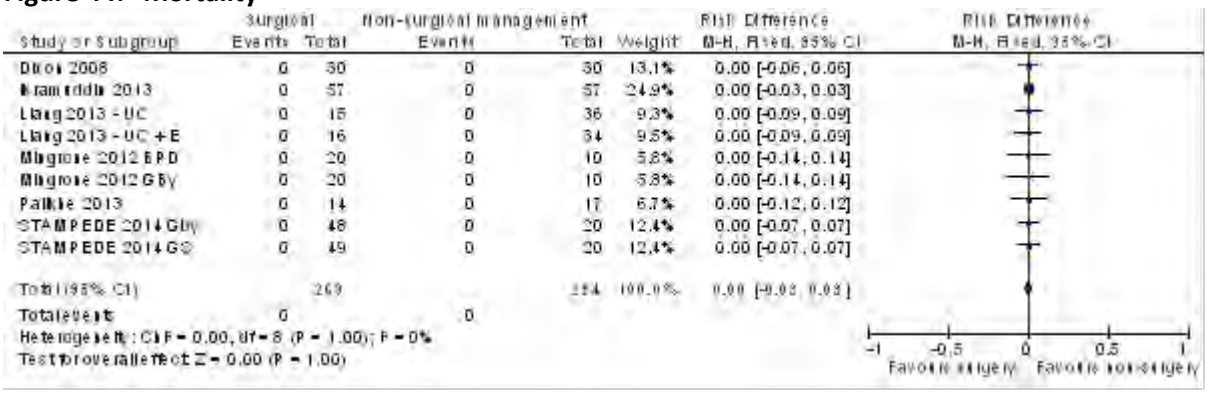


Figure 45: Weight in BMI (final score)

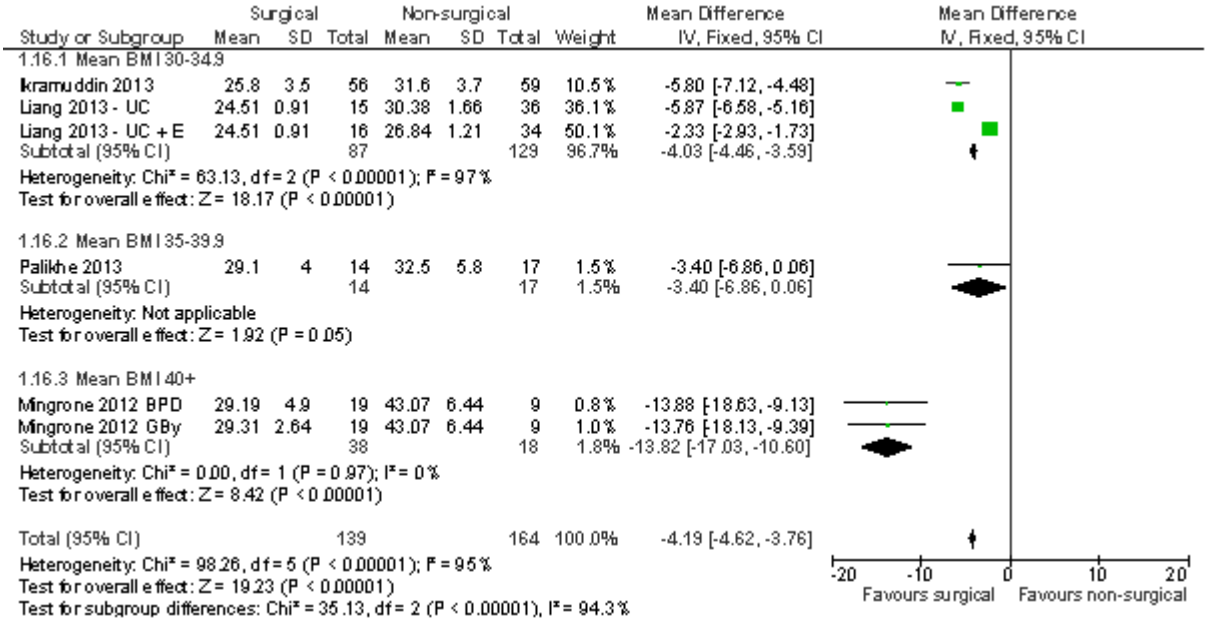
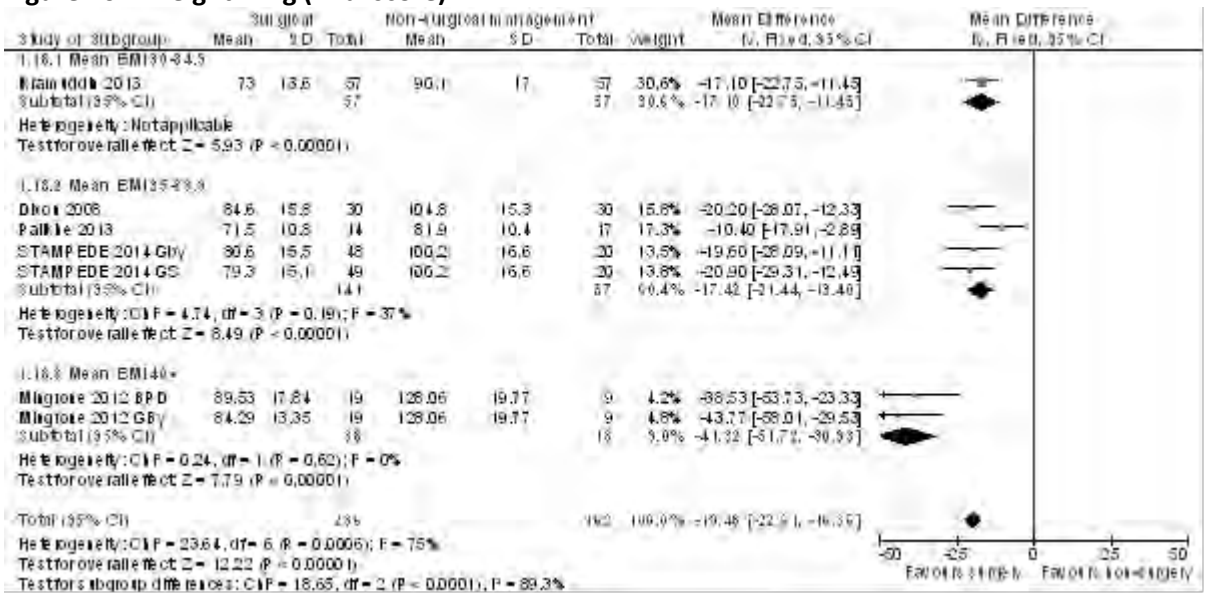


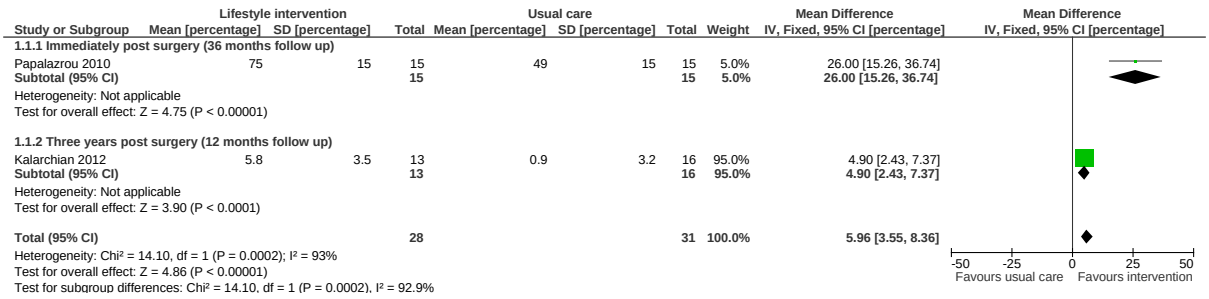
Figure 46: Weight in kg (final score)



I.3 Follow-up care packages after bariatric surgery

I.3.1 Percentage excess weight loss (kg)

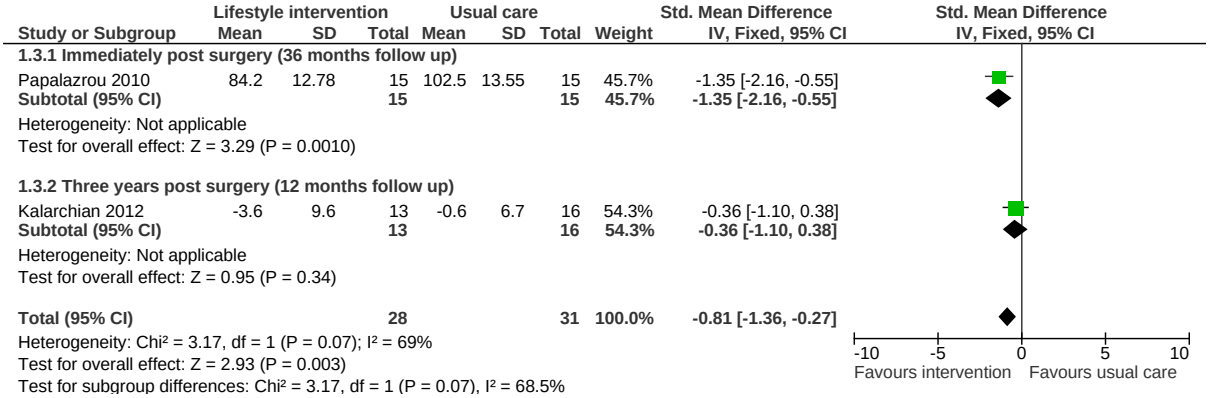
Figure 47: Usual care versus care packages in patients after bariatric surgery



Study or Subgroup	Lifestyle intervention Mean [percentage]	SD [percentage]	Total	Usual care Mean [percentage]	SD [percentage]	Total	Weight	Mean Difference IV, Fixed, 95% CI [percentage]
1.1.1 Immediately post surgery (36 months follow up)								
Papalazrou 2010	75	15	15	49	15	15	5.0%	26.00 [15.26, 36.74]
Subtotal (95% CI)			**15**			**15**	**5.0%**	**26.00 [15.26, 36.74]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 4.75 (P < 0.00001)								
1.1.2 Three years post surgery (12 months follow up)								
Kalarchian 2012	5.8	3.5	13	0.9	3.2	16	95.0%	4.90 [2.43, 7.37]
Subtotal (95% CI)			**13**			**16**	**95.0%**	**4.90 [2.43, 7.37]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 3.90 (P < 0.0001)								
Total (95% CI)			**28**			**31**	**100.0%**	**5.96 [3.55, 8.36]**
Heterogeneity: Chi² = 14.10, df = 1 (P = 0.0002); I² = 93%								
Test for overall effect: Z = 4.86 (P < 0.00001)								
Test for subgroup differences: Chi² = 14.10, df = 1 (P = 0.0002), I² = 92.9%								

I.3.2 Weight (in kg)

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



Study or Subgroup	Lifestyle intervention Mean	SD	Total	Usual care Mean	SD	Total	Weight	Std. Mean Difference IV, Fixed, 95% CI
1.3.1 Immediately post surgery (36 months follow 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 applicable								
Test for overall effect: Z = 3.29 (P = 0.0010)								
1.3.2 Three years post surgery (12 months follow 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 applicable								
Test for overall effect: Z = 0.95 (P = 0.34)								
Total (95% CI)			**28**			**31**	**100.0%**	**-0.81 [-1.36, -0.27]**
Heterogeneity: Chi² = 3.17, df = 1 (P = 0.07); I² = 69%								
Test for overall effect: Z = 2.93 (P = 0.003)								
Test for subgroup differences: Chi² = 3.17, df = 1 (P = 0.07), I² = 68.5%								