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Behavioural weight management interventions for postnatal women

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DOI: 10.1111/obr.12834

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Document Version Peer reviewed version

Citation for published version (Harvard):

Ferguson, J, Daley, A & Parretti, H 2019, 'Behavioural weight management interventions for postnatal women: a systematic review of systematic reviews of randomized controlled trials', *Obesity Reviews*, vol. 20, no. 6, pp. 829-841. https://doi.org/10.1111/obr.12834

Link to publication on Research at Birmingham portal

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Figure 1: PRISMA flow chart

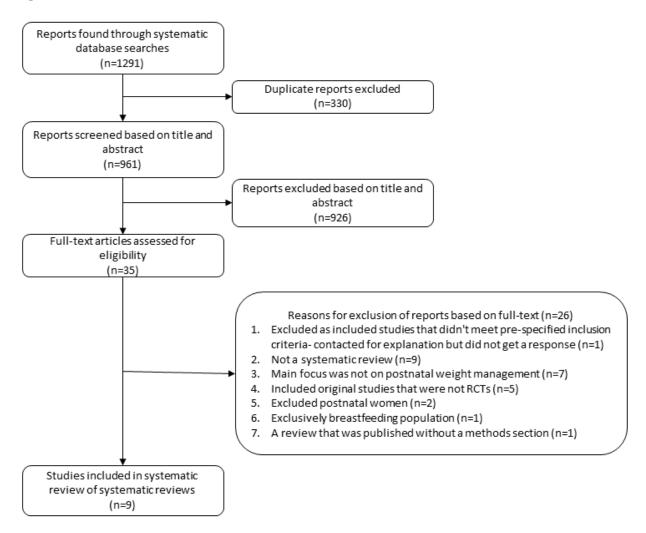


Figure 2: Mean difference in	weight change	(kg), intervention	type subgroup analysis

		venti			ontrol			Mean Difference		Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	Year	IV, Random, 95% Cl
1.1.1 Diet and physical activity										
Leermakers 1998	-7.8	4.5	36	-4.9	5.4	26	3.8%	-2.90 [-5.44, -0.36]	1998	
Lovelady 2000	-4.8	1.7	21	-0.8	2.3	19	7.5%	-4.00 [-5.26, -2.74]	2000	
O'Toole 2003	-7.3	4	13	-1.3	6.5	10	1.5%	-6.00 [-10.58, -1.42]	2003	
Østbye 2009	-0.9	5.1	214	-0.36	4.9	207	8.7%	-0.54 [-1.50, 0.42]	2009	
Krummel 2010	-1.3	5.4	24	-1.3	4.9	33	3.4%	0.00 [-2.73, 2.73]	2010	
Craigie 2011	-1.6	2	22	0.2	2.2	14	6.9%	-1.80 [-3.22, -0.38]	2011	
Walker Hispanic 2012	-1	1.9	5	-0.1	2.2	9	4.5%	-0.90 [-3.10, 1.30]	2012	
Bertz diet and physical activity 2012	-7.3	6.3	16	-0.9	6.6	4	0.7%	-6.40 [-13.57, 0.77]	2012	
Reinhardt 2012	-1.2	8.4	15	3.3	6.6	16	1.2%	-4.50 [-9.84, 0.84]	2012	+
Colleran 2012	-5.8	5	14	-1.6	7.5	13	1.4%	-4.20 [-9.05, 0.65]	2012	
Walker African American 2012	1.5	2.9	9	-0.1	2.8	11	3.8%	1.60 [-0.92, 4.12]	2012	+
Walker White 2012	-2.6	6.2	8	-1.2	1.8	8	1.6%	-1.40 [-5.87, 3.07]		
Wiltheiss 2013	-2.3	5.4	121	-1.5	4.7	137	7.6%	-0.80 [-2.04, 0.44]		-+
Shayam 2013	-1.3	5.7	39	-0.1	6.3	38	3.5%	-1.20 [-3.89, 1.49]		+ <u>+</u> -
Herring 2014	-2.9	3.6	9	0.5	2.3	9	3.3%	-3.40 [-6.19, -0.61]		
Nicklas 2014	-2.8	6.3	36		6.1	39	3.3%	-3.30 [-6.11, -0.49]		
Subtotal (95% CI)			602			593	62.6%	-1.93 [-2.87, -0.98]		•
1.1.2 Physical activity only Dewey 1994	-1.6	5.1	18	-1.6	4	15	2.8%	0.00 [-3.11, 3.11]	1994	
Lovelady 2009	-1.0	5.3	10	-1.0		10	2.0%	-0.10 [-5.16, 4.96]		
Maturi 2011	-2.1	3.9	32		2.9	34	6.1%	-2.10 [-3.77, -0.43]		
McIntyre 2012	0.97	3.7	14	0.22		11	2.8%	0.75 [-2.40, 3.90]		
Bertz physical activity only 2012	-2.7	5.9	15	-0.9		5	0.8%	-1.80 [-8.31, 4.71]		
Youngwanichsetha 2013	-1.2	4.1	32	0.8	5	32	4.4%	-2.00 [-4.24, 0.24]		
Kim 2012	-1.5	3.4	19			23	5.7%	-1.36 [-3.13, 0.41]		_ - +
Tripette 2014	-2.2	0.9	17	-0.5		17	10.3%	-1.70 [-2.24, -1.16]		+
Zourladani 2015	-3.3	4.8	20	-1.3		17	2.6%	-2.00 [-5.28, 1.28]		
Subtotal (95% CI)	0.0	4.0	177		0.0	164	36.7%	-1.62 [-2.09, -1.16]	20.0	•
Heterogeneity: Tau ² = 0.00; Chi ² = 4. Test for overall effect: Z = 6.85 (P < 0		(P = ().84); I²	°= 0%						
1.1.3 Diet only										
Bertz diet only 2012 Subtotal (95% CI)	-10.2	5.7	13 13	-0.9	6.6	4 4	0.7% 0.7 %	-9.30 [-16.47, -2.13] - 9.30 [-16.47, -2.13]	2012	
Heterogeneity: Not applicable Test for overall effect: Z = 2.54 (P = 0	.01)									
Total (95% CI)			792			761	100.0%	-1.73 [-2.33, -1.12]		•
Heterogeneity: Tau ² = 0.85; Chi ² = 48 Test for overall effect: Z = 5.59 (P < 0 Test for subgroup differences: Chi ² =	.00001)									-10 -5 0 5 10 Favours [intervention] Favours [control]

Please note that this analysis was based on last follow up weights recorded in the trials.

Figure 3: Mean difference in	weight change	(kg), intervention	duration subgroup a	analysis

	Inter	venti			ontrol			Mean Difference		Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	Year	IV, Random, 95% Cl
1.2.1 Intervention 3-12 weeks										
Dewey 1994	-1.6	5.1	18	-1.6	4	15	3.4%	0.00 [-3.11, 3.11]	1994	
Lovelady 2000	-4.8	1.7	21	-0.8	2.3	19	7.5%	-4.00 [-5.26, -2.74]	2000	- - -
O'Toole 2003	-5.6	4	13	-0.6	6.3	10	2.0%	-5.00 [-9.47, -0.53]	2003	
Maturi 2011	-2.1	3.9	32	0	2.9	34	6.4%	-2.10 [-3.77, -0.43]	2011	
Craigie 2011	-1.6	2	22	0.2	2.2	14	7.1%	-1.80 [-3.22, -0.38]	2011	
Bertz diet and physical activity 2012	-6.9	3	16	-0.8	3	5	3.5%	-6.10 [-9.11, -3.09]	2012	<u> </u>
Bertz diet only 2012	-8.3	4.2	15	-0.8	3	5	3.0%	-7.50 [-10.88, -4.12]	2012	
Bertz physical activity only 2012	-2.4	3.2	16	-0.8	3	5	3.5%	-1.60 [-4.66, 1.46]	2012	
AcIntyre 2012	0.97	3.7	14	0.22	4.2	11	3.3%	0.75 [-2.40, 3.90]	2012	
/oungwanichsetha 2013	-1.2	4.1	32	0.8	5	32	5.0%	-2.00 [-4.24, 0.24]	2013	_ -
Fripette 2014	-2.2	0.9	17	-0.5	0.7	17	9.4%	-1.70 [-2.24, -1.16]	2014	+
Zourladani 2015	-3.3	4.8	20	-1.3	5.3	17	3.2%	-2.00 [-5.28, 1.28]		++
Subtotal (95% CI)			236			184	57.4%			◆
Heterogeneity: Tau² = 1.69; Chi² = 34 Test for overall effect: Z = 4.99 (P < 0		11 (P	= 0.000	03); I² =	68%					
	,									
1.2.2 Intervention > 12 weeks										
Leermakers 1998	-7.8	4.5	36	-4.9		26	4.3%	-2.90 [-5.44, -0.36]		
_ovelady 2009	-3.6	5.3	10	-3.5		10	1.6%	-0.10 [-5.16, 4.96]		
(rummel 2010	-1.3	5.4	24	-1.3		33	4.0%	0.00 [-2.73, 2.73]		
Valker White 2012	-2.6	6.2	8	-1.2		8	2.0%	-1.40 [-5.87, 3.07]	2012	
Valker Hispanic 2012	-1	1.9	5	-0.1		9	5.1%	-0.90 [-3.10, 1.30]		
<im 2012<="" td=""><td>-1.5</td><td>3.4</td><td>19</td><td>-0.14</td><td></td><td>23</td><td>6.1%</td><td>-1.36 [-3.13, 0.41]</td><td>2012</td><td></td></im>	-1.5	3.4	19	-0.14		23	6.1%	-1.36 [-3.13, 0.41]	2012	
Reinhardt 2012	-1.2	8.4	15		6.6	16	1.5%	-4.50 [-9.84, 0.84]	2012	
Colleran 2012	-5.8	5	14	-1.6	7.5	13	1.8%	-4.20 [-9.05, 0.65]	2012	
Valker African American 2012	1.5	2.9	9	-0.1	2.8	11	4.4%	1.60 [-0.92, 4.12]	2012	+
Shyam 2013	-1.3	5.7	39	-0.1	6.3	38	4.1%	-1.20 [-3.89, 1.49]	2013	
Vicklas 2014	-2.8	6.3	36	0.5	6.1	39	3.9%	-3.30 [-6.11, -0.49]	2014	_
Herring 2014	-2.9	3.6	9	0.5	2.3	9	3.9%	-3.40 [-6.19, -0.61]	2014	
Subtotal (95% CI)			224			235	42.6%	-1.52 [-2.49, -0.55]		•
Heterogeneity: Tau ² = 0.68; Chi ² = 14	•	11 (P	= 0.20)	; I ² = 24	%					
Test for overall effect: Z = 3.09 (P = 0	1.002)									
Fotal (95% CI)			460			419	100.0%	-2.12 [-2.83, -1.42]		♦
Heterogeneity: Tau ² = 1.31; Chi ² = 50		23 (P	= 0.000	07); l² =	55%					
°est for overall effect: Z = 5.89 (P ≤ 0	.00001)									Favours [experimental] Favours [control]
est for subgroup differences: Chi ² =	= 2.15, df =	= 1 (P	= 0.14), I ² = 53	.5%					ravears (experimental) in avours (control)

Please note that this analysis was based on end of intervention weights recorded in the trials and two trials (25, 65) were excluded (as no end of intervention data were reported). Therefore the figures in this forest plot differ to those shown in Figures 2, 4 and 5.

Figure 4: Mean difference i	n weight change	e (kg), GDM subgroup a	nalysis

	Experimental			ontrol			Mean Difference	Mean Difference		
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	Year	IV, Random, 95% Cl
1.3.1 History of GDM										
McIntyre 2012	0.97	3.7	14	0.22	4.2	11	2.8%	0.75 [-2.40, 3.90]	2012	
Reinhardt 2012	-1.2	8.4	15	3.3	6.6	16	1.2%	-4.50 [-9.84, 0.84]	2012	
Shayam 2013	-1.3	5.7	39	-0.1	6.3	38	3.5%	-1.20 [-3.89, 1.49]	2013	
Kim 2012	-1.5	3.4	19	-0.14	2.2	23	5.7%	-1.36 [-3.13, 0.41]	2014	
Nicklas 2014	-2.8	6.3	36	0.5	6.1	39	3.3%	-3.30 [-6.11, -0.49]	2014	
Subtotal (95% CI)			123			127	16.4 %	-1.55 [-2.90, -0.21]		◆
Heterogeneity: Tau ² = 0.41; Chi ² = 4.8 Test for overall effect: Z = 2.26 (P = 0.	•	(P = 0	.31); I ² ∘	= 17%						
1.3.2 No history of GDM										
Dewey 1994	-1.6	5.1	18	-1.6	4	15	2.8%	0.00 [-3.11, 3.11]	1994	
Leermakers 1998	-7.8	4.5	36	-4.9	5.4	26	3.8%	-2.90 [-5.44, -0.36]	1998	_ _
Lovelady 2000	-4.8	1.7	21	-0.8	2.3	19	7.5%	-4.00 [-5.26, -2.74]	2000	
O'Toole 2003	-7.3	4	13	-1.3	6.5	10	1.5%	-6.00 [-10.58, -1.42]	2003	
Lovelady 2009	-3.6	5.3	10	-3.5	6.2	10	1.3%	-0.10 [-5.16, 4.96]	2009	
Østbye 2009	-0.9	5.1	214	-0.36	4.9	207	8.7%	-0.54 [-1.50, 0.42]	2009	-
Krummel 2010	-1.3	5.4	24	-1.3	4.9	33	3.4%	0.00 [-2.73, 2.73]	2010	
Craigie 2011	-1.6	2	22	0.2	2.2	14	6.9%	-1.80 [-3.22, -0.38]	2011	
Maturi 2011	-2.1	3.9	32	0	2.9	34	6.1%	-2.10 [-3.77, -0.43]	2011	
Walker African American 2012	1.5	2.9	9	-0.1	2.8	11	3.8%	1.60 [-0.92, 4.12]	2012	+
Walker White 2012	-2.6	6.2	8	-1.2	1.8	8	1.6%	-1.40 [-5.87, 3.07]	2012	
Walker Hispanic 2012	-1	1.9	5	-0.1	2.2	9	4.5%	-0.90 [-3.10, 1.30]	2012	
Bertz diet and physical activity 2012	-7.3	6.3	16	-0.9	6.6	4	0.7%	-6.40 [-13.57, 0.77]	2012	
Bertz diet only 2012	-10.2	5.7	13	-0.9	6.6	4	0.7%	-9.30 [-16.47, -2.13]	2012	
Bertz physical activity only 2012	-2.7	5.9	15	-0.9	6.6	5	0.8%	-1.80 [-8.31, 4.71]	2012	
Colleran 2012	-5.8	5	14	-1.6	7.5	13	1.4%	-4.20 [-9.05, 0.65]	2012	
Youngwanichsetha 2013	-1.2	4.1	32	0.8	5	32	4.4%	-2.00 [-4.24, 0.24]	2013	
Wiltheiss 2013	-2.3	5.4	121	-1.5	4.7	137	7.6%	-0.80 [-2.04, 0.44]	2013	
Herring 2014	-2.9	3.6	9	0.5	2.3	9	3.3%	-3.40 [-6.19, -0.61]	2014	
Tripette 2014	-2.2	0.9	17	-0.5	0.7	17	10.3%	-1.70 [-2.24, -1.16]	2014	+
Zourladani 2015	-3.3	4.8	20	-1.3	5.3	17	2.6%	-2.00 [-5.28, 1.28]	2015	
Subtotal (95% CI)			669			634	83.6%	-1.76 [-2.45, -1.08]		◆
Heterogeneity: Tau ² = 0.97; Chi ² = 43 Test for overall effect: Z = 5.04 (P < 0.	•	20 (P =	= 0.002); I² = 54	1%					
Total (95% CI)			792			761	100.0%	-1.73 [-2.33, -1.12]		•
Heterogeneity: Tau ² = 0.85; Chi ² = 48	.36, df = 2	25 (P =	: 0.003); I ² = 48	3%					-10 -5 0 5 10
Test for overall effect: Z = 5.59 (P < 0.	00001)									-10 -5 0 5 10 Favours [experimental] Favours [control]
Test for subgroup differences: Chi² =	0.07. df=	= 1 (P =	= 0.79)	. I ^z = 0%	5					r avours (experimental) - ravours (control)

Please note that this analysis was based on last follow up weights recorded in the trials.

Figure 5: Mean difference in weight change (kg), length of follow up subgroup analysis

		venti			ontrol			Mean Difference		Mean Difference
Study or Subgroup	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% Cl	Year	IV, Random, 95% Cl
1.2.1 Follow-up ≤12 weeks										
Dewey 1994	-1.6	5.1	18	-1.6	4	15	2.8%	0.00 [-3.11, 3.11]		
Lovelady 2000	-4.8	1.7	21	-0.8		19	7.5%	-4.00 [-5.26, -2.74]	2000	
Maturi 2011	-2.1	3.9	32	0	2.9	34	6.1%	-2.10 [-3.77, -0.43]	2011	
Craigie 2011	-1.6	2	22		2.2	14	6.9%	-1.80 [-3.22, -0.38]		
McIntyre 2012	0.97	3.7	14	0.22		11	2.8%	0.75 [-2.40, 3.90]	2012	
Youngwanichsetha 2013	-1.2	4.1	32	0.8	5	32	4.4%	-2.00 [-4.24, 0.24]	2013	
Tripette 2014	-2.2	0.9	17	-0.5		17	10.3%	-1.70 [-2.24, -1.16]		*
Zourladani 2015 Subtotal (95% CI)	-3.3	4.8	20 176	-1.3	5.3	17 159	2.6% 43.4 %	-2.00 [-5.28, 1.28] - 1.97 [-2.84, -1.10]	2015	•
Heterogeneity: Tau ² = 0.71; Chi ² = 15 Test for overall effect: Z = 4.44 (P < 0.	•	7 (P =	0.03);	I ² = 54%	, ,					
1.2.2 Follow up 13 weeks - 6 months	6									
Leermakers 1998	-7.8	4.5	36	-4.9	5.4	26	3.8%	-2.90 [-5.44, -0.36]	1998	-
Lovelady 2009	-3.6	5.3	10	-3.5	6.2	10	1.3%	-0.10 [-5.16, 4.96]	2009	
Colleran 2012	-5.8	5	14	-1.6	7.5	13	1.4%	-4.20 [-9.05, 0.65]	2012	
Reinhardt 2012	-1.2	8.4	15	3.3	6.6	16	1.2%	-4.50 [-9.84, 0.84]	2012	
Walker Hispanic 2012	-1	1.9	5	-0.1	2.2	9	4.5%	-0.90 [-3.10, 1.30]	2012	
Walker African American 2012	1.5	2.9	9	-0.1	2.8	11	3.8%	1.60 [-0.92, 4.12]	2012	
Walker White 2012	-2.6	6.2	8	-1.2	1.8	8	1.6%	-1.40 [-5.87, 3.07]	2012	
Shyam 2013	-1.3	5.7	39	-0.1	6.3	38	3.5%	-1.20 [-3.89, 1.49]	2013	
Kim 2012	-1.5	3.4	19	-0.14	2.2	23	5.7%	-1.36 [-3.13, 0.41]	2014	
Herring 2014 Subtotal (95% CI)	-2.9	3.6	9 164	0.5	2.3	9 163	3.3% 30.0 %	-3.40 [-6.19, -0.61] - 1.50 [-2.57, -0.43]	2014	
Heterogeneity: Tau ² = 0.68; Chi ² = 11 Test for overall effect: Z = 2.76 (P = 0.		9 (P =	0.22);	I²= 24%	ò					
1.2.3 Follow up > 6 months										
OToole 2003	-7.3	4	13	-1.3		10		-6.00 [-10.58, -1.42]		
Østbye 2009	-0.9	5.1	214			207	8.7%	-0.54 [-1.50, 0.42]		
Krummel 2010	-1.3	5.4	24	-1.3		33	3.4%	0.00 [-2.73, 2.73]		
Bertz diet and physical activity 2012	-7.3	6.3	16	-0.9		4	0.7%	-6.40 [-13.57, 0.77]		
Bertz diet only 2012	-10.2	5.7	13	-0.9		4		-9.30 [-16.47, -2.13]		
Bertz physical activity only 2012	-2.7	5.9	15	-0.9		5	0.8%	-1.80 [-8.31, 4.71]		
Wiltheiss 2013	-2.3	5.4	121	-1.5		137	7.6%	-0.80 [-2.04, 0.44]		+
Nicklas 2014 Subtotal (95% CI)	-2.8	6.3	36 452	0.5	6.1	39 439	3.3% 26.7 %	-3.30 [-6.11, -0.49] - 1.91 [-3.35, -0.46]	2014	•
Heterogeneity: Tau ² = 1.77; Chi ² = 16 Test for overall effect: Z = 2.59 (P = 0.		7 (P =	0.02);	I² = 56%	ò					
Total (95% CI)			792			761	100.0%	-1.73 [-2.33, -1.12]		•
Heterogeneity: Tau ² = 0.85; Chi ² = 48 Test for overall effect: Z = 5.59 (P < 0. Test for subgroup differences: Chi ² =	00001)									-10 -5 0 5 10 Favours (experimental) Favours (control)

Please note that this analysis was based on last follow up weights recorded in the trials.