

Behavioural weight management interventions for postnatal women

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Table 1: Inclusion and exclusion criteria for selection of systematic reviews

Selection Criteria	Inclusion Criteria	Exclusion Criteria
Study type	<ul style="list-style-type: none">• Systematic reviews that included a summary of evidence from RCTs and/or quasi-RCTs	<ul style="list-style-type: none">• Systematic reviews comprised of non-RCT studies (other study designs)• Not published in English• Animal studies• Economic studies
Population	<ul style="list-style-type: none">• Adult postnatal women• Including breastfeeding or formula feeding women or both• Included those with or without comorbidities (i.e. gestational diabetes)• No restriction on BMI	
Intervention	<ul style="list-style-type: none">• Lifestyle (dietary, physical activity, or behavioural) intervention compared to usual care or another intervention to help manage weight after childbirth• Any setting• Group based or individual intervention	<ul style="list-style-type: none">• Surgery• Medications
Main outcome	<ul style="list-style-type: none">• Weight related data at baseline and follow up• Postnatal weight loss	

Table 2: Characteristics of included systematic reviews

Review author & search dates	Study design & inclusion criteria	Participant inclusion criteria	Intervention/ exposure inclusion criteria	Comparator inclusion criteria	AMSTAR score	Studies included in review	Meta-analysis of PN weight data	Conclusions and comments
Kuhlmann 2008 (31) 1985-2007	RCTs	Pregnant or PN women No further details reported	Weight management interventions	None specified	Low	3 studies (all RCTs) 2 PN studies 1 Pregnancy study	No	Weight management interventions appear to help PN women manage their weight
Amorim 2013 (36) 1983-2013	RCTs and quasi-randomised RCTs	Women up to 24 months PN With obesity or overweight or excessive weight gain during pregnancy or both Aged ≥ 18 years and delivered a singleton healthy term infant No restrictions on BF status	Interventions involving diet, PA or both Diet included – advice on weight reduction delivered through groups, telephone or mail, individualised diet counselling prescribed calorie restricted diet PA included any PA counselling to engage in regular PA, structured/ individualised programmes or supervised sessions No restrictions on who delivered the intervention, type, frequency, duration or timing	Comparisons were: Diet vs UC PA vs UC Diet & PA vs UC Diet vs PA Diet & PA vs PA Diet & PA vs Diet	High	14 studies (all RCTs and PN studies) Note: 2 studies recruited during pregnancy	Yes 9 RCTs Results only reported by sub-groups: <u>Diet vs UC</u> 1 RCT MD= -1.7kg (95% CI -2.1, -1.3) <u>PA vs UC</u> 2 RCTs MD= -0.1kg (95% CI -1.9, 1.7) <u>Diet & PA vs UC</u> 7 RCTs MD= -1.9kg (95% CI -3.0, -0.9) <u>Diet & PA vs Diet</u> 1 RCT MD= 0.3kg (95% CI -0.06, 0.7)	Diet alone or Diet & PA interventions appear effective for PN weight loss PA alone interventions appear not to be effective Also included percentage reaching a healthy weight, percentage returning to pre-pregnancy weight as primary outcomes
Choi 2013 (33) 2000-2011	RCTs	Pregnant or PN women with obesity or overweight	Interventions that target increasing PA- both PA alone and PA & diet	None reported	Medium	11 studies (all RCTs) 4 PN studies 7 Pregnancy studies	Yes 4 RCTs WMD= -1.2kg (95% CI -1.9, -0.6) Supervision and type of intervention subgroup analyses conducted	PA and diet interventions appear effective for PN weight loss

Review author & search dates	Study design & inclusion criteria	Participant inclusion criteria	Intervention/ exposure inclusion criteria	Comparator inclusion criteria	AMSTAR score	Studies included in review	Meta-analysis of PN weight data	Conclusions and comments
Elliott-Sale 2014 (32) 1990-2013	RCTs and quasi-randomised RCTs	Healthy pregnant and PN women (up to 12 months PN) No restrictions on parity Included women with normal weights, overweight or obesity	PA only weight management interventions introduced during or following pregnancy No restrictions on type, frequency, duration, mode, setting or intensity	Usual care or another type of intervention	Medium	5 studies (all RCTs and quasi-RCTs) 2 PN studies 3 Pregnancy studies	Yes 2 RCTs WMD= -1.7kg (95% CI - 3.6, 0.1) No subgroup analyses conducted	PA does not appear effective for PN weight loss Limited evidence to suggest that PA can be used to limit gestational weight gain
Nascimento 2014 (35) Inception-2012	RCTs and pilot RCTs	Women up to 18 months PN No restrictions on BMI, BF status, parity or comorbidities	Interventions that provided a supervised PA or PA guidance with a minimum 10-week follow-up No restriction on whether there was a dietary component to the intervention	No intervention, minimal intervention or usual care	Medium	11 studies (all RCTs and PN studies)	Yes 11 RCTs MD= -2.6kg (95% CI -3.7, -1.5) Duration, study quality, supervision, PA goals, type of diet intervention subgroups analyses conducted	Lifestyle interventions appear effective for PN weight loss Combined Diet & PA and objective targets are the most effective intervention strategies
Lim 2015 (34) Inception-2014	RCTs, single-arm interventions, controlled trials and pre-test-post-test studies	Women up to 12 months PN No restrictions on BMI, age or parity	Intervention involving modification of diet, PA or diet & PA	None reported	Medium	46 studies: 33 RCTs 6 Single-arm interventions 7 non-RCTs All PN studies	Yes 17 RCTs MD= -2.6kg (95% CI -3.5, -1.6) Note: A sensitivity analysis led to 4 RCTs with PA or Diet interventions as comparator being excluded Supervision, type duration, individual/ group, technology and setting of interventions subgroup analyses	Diet, PA or Diet & PA interventions appear effective for PN weight loss Self-monitoring significantly more effective than no self-monitoring Diet & PA significantly more effective than PA alone
Guo 2016 (39) 1996-2014	RCTs	PN women previously diagnosed with GDM	Interventions with only behavioural changes and without pharmacological therapy	None reported	Medium	12 studies (all RCTs and PN studies)	No	Lifestyle interventions appear effective in the short-term for weight loss in women with a history of

Review author & search dates	Study design & inclusion criteria	Participant inclusion criteria	Intervention/ exposure inclusion criteria	Comparator inclusion criteria	AMSTAR score	Studies included in review	Meta-analysis of PN weight data	Conclusions and comments
			Interventions delivered during the PN period					GDM
Lau 2017 (38) Inception-2016	RCTs	Women with obesity and overweight and in the perinatal period (pregnancy to 12 months PN) The RCTs could include antenatal or PN interventions	Electronic-based lifestyle intervention comprising of at least one component of diet, PA and weight management Delivered through at least one of the following: website, internet, apps, text message, email, computer or video player	Minimal intervention or usual care	High	14 studies (all RCTs) 5 PN studies 7 Pregnancy studies 2 from pregnancy to PN studies	Yes 5 RCTs Results only reported by sub-groups: <u>1-2 months PN</u> MD= -3.6kg (95% CI -6.6, -0.6) <u>6 months PN</u> MD= -0.9kg (95% CI -3.8, -1.3) <u>12 months PN</u> MD= -3.3kg (95% CI -8.4, 1.8)	E-based lifestyle interventions appear effective for PN women with obesity or overweight to lose weight at 1-2 months, but not at 6 or 12 months PN
Sherifali 2017 (37) 1990-2016	RCTs, non-RCTs (CCTs), pre-post studies, historically controlled and pilot studies	Pregnant or PN women ≥ 18 years	eHealth weight management interventions targeting either GWG or PN weight loss Must have a behavioural component (PA or diet) in the technology Minimum duration of 3 months & no restriction on setting	In-person interventions, other health technology interventions or no intervention (including UC)	Medium	10 studies: 7 RCTs 1 Pilot RCT 2 CCTs 4 PN studies 6 Pregnancy studies	Yes 4 RCTs MD= -2.6kg (95% CI -3.8, -1.3) Pregnancy/PN, energy intake, glycaemic parameters subgroup analyses conducted	Weight management in PN period can be significantly enhanced by use of e-health technologies

Abbreviations: PA= physical activity, PN= postnatal, BMI= Body Mass Index, UC= usual care, BF= breast feeding, WMD= weighted mean difference, MD= mean difference, GDM= gestational diabetes mellitus, RCT= randomised controlled trial, CCT=clinical controlled trial.