

Table S2: Description of diet interventions aimed at preventing excessive gestational weight gain.

First author	Setting and date	Population	Intervention	GWG ^a and GWG measure	Quality ^b
Abdel-Aziz ⁴⁶	Cairo, Egypt Jul 2015 – Jan 2017	Primigravidae, 20-30 years <12 weeks gestation. Excluded: <18 years, history of stillbirth, abortion, chronic disease, medications that interfere with weight. Sample: 147 Final analyses: 75 int, 72 con	Tailored nutritional counselling sessions with counsellor every 2 weeks plus 3 brief phone calls. Duration: 12 weeks (intervention phase)	Int: 42.7% ^c Con: 13.9% ^c $p < 0.01$ GWG: First – last antenatal visit	Random: Low Allocation: Low Blinding: Unclear Data: Unclear SR: Unclear Other: Unclear
Bonomo ⁶⁶	Milan, Italy 1997 – 2002	Singleton pregnancy, elevated GCT (>7.8mmol/L), Caucasian. Sample: 450 (150 int, 150 SM, 150 con) Final analyses: 150 int, 150 SM, 150 con	Int: Dietary advice based on pre-pregnancy weight (24-30kcal/kg/day). Outpatient clinic every 2 weeks. SM: No special care, diet or pharmacological treatment. Duration: Unclear	Int: 13.1±4.3 SM: 12.6±3.9 Con: 13.6±4.4 <i>Not significant</i> GWG: Unclear	Random: Low AC: Unclear Blinding: Unclear Data: Unclear SR: Unclear Other: Low
Bosaeus ⁵¹	Gothenburg, Sweden Apr 2009 – Dec 2012	Singleton pregnancy, 20-45 years, healthy weight. Excluded: Non-European, diabetes, use of neuroleptic drugs, vegetarian, vegan. Sample: 101 (49 int, 52 con) Final analyses: 18 int, 17 con	One counselling session per trimester and 5 phone calls. Women advised to: consume 3 meals of fish each week, decrease sugar intake <10% energy, consume >500g vegetables and fruit each day, increase energy by 350kcal/day in 2 nd trimester and 500kcal/day in 3 rd trimester. Duration: 28-32 weeks	Int: 11.6 (8.9-13.9) ^d Con: 11.6 (9.5-11.6) ^d $p = 0.96$ GWG: 1 st - 3 rd trimester	Random: Low AC: Unclear Blinding: Unclear Data: High SR: Unclear Other: Unclear
Deveer ⁶⁴	Turkey	Singleton pregnancy, positive 50g GCT and negative 100g OGTT between 24-28 weeks gestation. Excluded: diabetes, history of still birth, active chronic systemic disease. Sample: 100 (50 int, 50 con) Final analyses: 50 int, 50 con	Individualized dietary advice (1800-2500kcal/day). Follow up weekly in the first month and then every 2 weeks until delivery. Duration: 12-16 weeks	Int: 12.6±3.9 Con: 16.1±4.1 $p < 0.01$ GWG: Pre-pregnancy - delivery	Random: High AC: Unclear Blinding: Unclear Data: Low SR: Unclear Other: Unclear

Di Carlo ⁶⁵	Naples, Italy Jun 2010 – Jun 2011	Singleton pregnancy, < 12 weeks gestation. Excluded: HTN, thyroid disorder, BMI <20 or >40. Sample: 154 (77 int, 77 con) Final analyses: 61 int, 59 con	A personalised meal plan (average intake 1916kcal/day) and monthly reviews with a dietitian. Duration: 32 weeks	Int: 8.2±4.0 Con: 13.4±4.2 $p < 0.01$ GWG: Pre-pregnancy - delivery	Random: Low AC: Low Blinding: Unclear Data: Low SR: Unclear Other: Low
Ilmonen ⁶⁸	Finland Apr 2002- Nov 2005	Singleton pregnancy, <17 weeks gestation, no metabolic diseases. Sample: 256 (85 diet/probiotic, 86 diet/placebo, 85 con/placebo) Final analyses: 64 diet/probiotic, 64 diet/placebo, 57 con/placebo	Diet: Recommended energy 55- 60% CHO, 10-15% protein, 30% fat. Probiotic: 1 capsule per day of <i>L.rhamnosus</i> GG and <i>B.lactus</i> Duration: 30 weeks	Diet/probiotic: 14.8±4.4 Diet/placebo: 14.7±5.0 Diet/Con: 18.8±5.2 $p = 0.98$ GWG: Pre-pregnancy - delivery	Random: Low AC: Low Blind: Low Data: Unclear SR: Unclear Other: Unclear
Korpi-Hyovalti ⁶⁰	Finland	Singleton pregnancy, 8-12 weeks gestation, risk of GDM. Excluded: GDM. Sample: 60 (30 int, 30 con) Final analyses: 27 int, 27 con	10 individual dietary counselling sessions throughout pregnancy. Recommended energy 50-55% CHO, 15-20% protein, 30% fat Duration: 28-32 weeks	Int: 11.4±6.0 Con: 13.9±5.1 $p = 0.06$ GWG: Pre-pregnancy - delivery	Random: Low AC: Unclear Blinding: Unclear Data: Low SR: Unclear Other: Low
Markovic ³⁶	Camperdown, Australia Jan 2011 - Oct 2012	Singleton pregnancy, 12-20 weeks gestation, high risk of GDM Excluded: Pre-existing diabetes, special dietary requirements. Sample: 147 (76 low-GI, 71 HF) Final analyses: 65 low-GI, 60 HF	5 individual dietary consultations with a dietitian. Recommended energy 40-45% CHO, 15-25% protein, 25-30% fat. Low-GI: Target GI ≤50 HF: Target GI 60 Duration: 20-26 weeks	Completers data Low-GI: 11.0±5.3 HF: 10.7±5.7 $p = 0.79$ GWG: Unclear	Random: Low AC: Low Blinding: Low Data: Low SR: Unclear Other: Low
McCarthy ⁶¹	Melbourne, Australia Apr 2011 – Dec 2011	Singleton pregnancy, <20 weeks gestation, >18 years old, overweight or obese. Excluded: Diabetes. Sample: 382 (190 int, 192 con) Final analyses: 159 int, 154 con	A counselling session with simple dietary advice based on the Australian Guide to Healthy Eating. Self-weighing encouraged. Duration: 25 weeks	Overweight Int: 9.9±4.4 Overweight Con: 10.5±4.2 $p = 0.37$ Obese Int: 7.4±6.1 Obese Con: 8.8±6.6 $p = 0.17$ GWG: Pre-pregnancy – 36 weeks	Random: Low AC: Low Blinding: Unclear Data: Low SR: Unclear Other: Low
Moses ⁴⁴	Australia Feb 2010 – Sep 2012	Singleton pregnancy, ≥18 years old, < 20 weeks gestation. Excluded: Diabetes, special dietary requirements, medical conditions that may compromise metabolic status, medications known to affect body weight. Sample: 691 (337 healthy eating, 354 low-GI)	Healthy eating: Advice based on the Australian Guide to Healthy Eating Low-GI: Advice based on low-GI diet. 4 counselling sessions for both groups (3 face-to-face and a phone call) Duration: 18 weeks	Low-GI: 10.2±3.3 Healthy eating: 10.3±5.1 $p = 0.73$ GWG: Randomization - 34 weeks	Random: Unclear AC: Unclear Blinding: Unclear Data: Low SR: Unclear Other: Low

Final analyses: 296 healthy eating, 280 low-GI					
Peccei ³⁷	United States Dec 2009 – Aug 2014	Singleton pregnancy, <16 weeks, 18-49 years, BMI >25, <40. Excluded: History of eating disorder Sample: 300 (200 int, 100 con) Final analysis: 168 int, 87 con	Both groups received face-to-face counselling, brochure, booklet at initial visit. Intervention group also received bi-weekly individualised sessions, meal plans and weight gain tracker. Duration: 24 weeks	Int: 11.0±0.41 Con: 12.2±0.7 <i>Significant</i> GWG: Weight at first visit – weight at last visit	Random: Low AC: Unclear Blinding: Unclear Data: Low SR: Unclear Other: Low
Rhodes ³⁸	Boston, United States Jan 2007 – Jun 2009	Singleton pregnancy, > 25 years, 13-28 weeks gestation, overweight or obese. Excluded: Smoking, alcohol consumption, major illness, medications or supplements that affect body weight, high levels of physical activity, lactation in last 3 months. Sample: 46 (25 low-GI, 21 low-fat) Final analyses: 22 low-GI, 16 low-fat	Low-GI: Recommended energy 45% CHO, 20% protein, 35% fat. Low-fat: Recommended energy 55% CHO, 20% protein, 25% fat (low saturated fat). 2 x 1 hour counselling sessions and maintenance visits every 2-4 weeks. Duration: 12-27 weeks	Low- GI: 6.4±4.5 Low-fat: 6.9±4.2 $p = 0.74$ GWG: Randomization - 36 weeks	Random: Unclear AC: Low Blinding: Unclear Data: Unclear SR: Unclear Other: Low
Thornton ⁶³	New York, United States Jun 1998- May 2005	Singleton pregnancy, 12-28 weeks gestation, obese. Excluded: diabetes, HTN, chronic renal disease. Sample: 257 (133 int, 124 con) Final analyses: 116 int, 116 con	Energy restricted diets to 24kcal/kg/day. Recommended energy 40% CHO, 30% protein, 30% fat. Duration: 12-28 weeks	Int: 5.0±6.8 Con: 14.1±7.4 $p < 0.01$ GWG: Randomization - delivery	Random: Low AC: Low Blinding: Unclear Data: Low SR: Unclear Other: Low
Vitolo ⁴⁷	Porto Alegre, Brazil Jan 2007 – May 2008	Singleton pregnancy, 10-29 weeks gestation, prenatal care group of health unit. Excluded: HIV+, diabetes, HTN, anemia, >35 years old, condition requiring a special diet. Sample: 315 (159 int, 162 con) Final analyses: 152 int, 155 con	A counselling session based on dietary guidelines in first interview. Advice based on BMI. Women received booster advice one month after baseline. Duration: 4 weeks	Healthy weight Int: 461±135 ^e Con: 492±222 ^e $p = 0.2$ Overweight/obese Int: 342±144 ^e Con: 420±185 ^e $p = 0.01$ GWG: Baseline – 36 weeks	Random: Low AC: Unclear Blinding: Unclear Data: Low SR: Unclear Other: Unclear
Walsh ⁶²	Dublin, Ireland Jan 2007- Jan 2011	Singleton pregnancy, > 18 years, <18 weeks gestation, previously delivered an infant >4kg. Excluded: Previous GDM, drug use. Sample: 800 (394 int, 406 con) Final analyses: 372 int, 387 con	A group education session regarding general healthy eating and low-GI foods. Duration: 24 weeks	Int: 12.2±4.4 Con: 13.7±4.9 $p = 0.017$	Random: Low AC: Low Blinding: Unclear Data: Low SR: Unclear Other: Low

Wolff ⁶⁷	Copenhagen, Denmark	Singleton pregnancy, > 18 years, <15 weeks gestation, obese. Excluded: >45 years old, medical complications that affect foetal growth. Sample: 66 (28 int, 38 con) Final analyses: 23 int, 27 con	10 x 1 hour consultations with a dietitian based on Danish dietary recommendations. Recommended energy 55% CHO, 15-20% protein, 30% fat. Duration: 25 weeks	Int: 6.6 ±5.5 Con: 13.3±7.5 <i>p</i> = 0.002 GWG: Randomization - delivery	Random: Low AC: Unclear Blinding: Unclear Data: Low SR: Unclear Other: Low
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^aGestational weight gain (kg): mean (standard deviation) unless otherwise stated.

^bBased on Cochrane Collaboration Risk of Bias. Random = Randomization; AC = Allocation concealment; Blinding = Blinding of participants, personal and outcome; Data = Incomplete data; SR = Selective reporting; Other = Other bias.

^cGWG within Institute of medicine recommendations.

^dGWG (kg) median and interquartile range

^eWeekly rate of weight gain (grams/week)

Other acronyms and abbreviations in alphabetical order:

BMI = body mass index, Con = control group, GCT = glucose challenge test, GDM = gestational diabetes mellitus, GI = glycemic index, GWG = gestational weight gain, HTN = hypertension, Int = intervention group, OGTT = oral glucose tolerance test, SM = standard management