

The quality of dietary intake in obese pregnant women

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An energy dense diet that is low in essential micronutrients can result in increased pre-gravid BMI and gestational weight gain, both of which are predictors for adverse pregnancy outcomes^(1,2). Epidemiological, observational and animal studies also provide evidence that pre-gravid BMI and gestational weight gain are implicated in the later development of metabolic diseases such as obesity, T2DM, CVD and hypertension in the offspring^(3,4). The aim of this study was to investigate the dietary intakes of obese pregnant women to determine the overall quality of diet relative to pregnancy outcomes. Participants were asked to complete three-day food diaries during each trimester of pregnancy. Data regarding food portion size was verified using a food atlas⁽⁵⁾ and the diaries were then analysed using Microdiet.

	Energy intake 8·1/8-13*	Total Fat g/d	SFA g/d	NSP g/d	Calcium 700 mg/d	Vitamin D 10 µg/d**	Iron 14·8 mg/d	Folate 300 µg/d**	Iodine 140 µg/d
Visit 1	7·8MJ	8·8	3·2	1·64	123 mg	0·37 µg	1·5 mg	38 µg	17·8 µg
Visit 2	8·3MJ	9·2	3·4	1·53	106 mg	0·27 µg	1·17 mg	29 µg	15·9 µg
Visit 3	8·7MJ	9·6	3·6	1·48	102 mg	0·27 µg	1·34 mg	28 µg	16·6 µg
% change	+11·5	+9·1	+12·5	-9·8	-17·1	-27·0	-10·7	-26·3	-6·7

*EAR for energy in 3rd trimester only** RNI for pregnant women⁽⁶⁾

Data were collected for 140 women with a BMI ≥ 35 kg/m² and a mean booking in weight of 110·2 kg (SD15·7). Nutrients were measured as a proportion of MJ/d and data shows an increase in mean total energy and fat intakes but a decrease in NSP and micronutrient intakes between visits 1 and 3. This suggests that the quality of dietary intake deteriorated during gestation. Negative correlations between total energy intake at visit 3 and birth weight ($r = -0.285$, $p = 0.014$), total fat intakes at visit 3 ($r = -0.272$, $p = 0.020$) were also demonstrated. Pregnancy is viewed as an ideal window of opportunity to improve eating behaviours and it may be a pertinent time to remind women that during pregnancy they are 'eating for two' when it comes to the quality of dietary intakes, as an energy dense 'empty calorie' diet with inadequate nutrient intakes may be an important determinant of future offspring obesity and disease risk.

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