

An observation of gestational weight gain in obese pregnancies

J.C. Abayomi¹, M.S. Charnley¹, A. Weeks² and J.P.H Wilding³

¹Faculty of Education, Health & Community, Liverpool John Moores University, Liverpool, United Kingdom L17 6BD,

²Liverpool Women's Hospital, Crown Street, Liverpool L8 7SS and ³University Hospital Aintree, Longmoor Lane, Liverpool L9 7AL

Currently there are no UK guidelines regarding safe weight gain in pregnancy. Obesity (BMI ≥ 30 kg/m²) and excessive weight gain in pregnancy are associated with serious health risks to both mother and baby including gestational diabetes, macrosomia, pre-eclampsia, caesarean section and post operative complications¹. In the absence of UK guidance, USA recommendations are often referred to which suggest that women with a pre-pregnancy BMI >29.9 kg/m² should limit gestational weight gain (GWG) to 5–9 kg². The aim of this study was to explore patterns of GWG in obese pregnancies in comparison to USA IOM recommendations. Women with BMI >29.9 kg/m² were recruited from antenatal clinic at booking-in appointments and agreed to being weighed at each trimester of pregnancy. Weight change was calculated and then compared with categorised pregnancy weight gain (<0 kg, 0–5 kg, 5–9 kg and >9 kg). Between June 2009 and June 2010, 824 women consented to participate and weight data were collected for 756 women (table 1).

Table 1: Gestational weight gain compared to USA IOM BMI categories

Initial BMI (number of women with 1st & 3rd trimester weights)	Gestational weight gain (GWG)	N (% of BMI group)
30–34.9 (226)	>9 kg	102 (45.1)
	5.1–9 kg	51 (22.5)
	0–5 kg	62 (27.4)
	Weight loss	11 (4.9)
35–39.9 (132)	>9 kg	53 (40.1)
	5.1–9 kg	33 (25.0)
	0–5 kg	37(28.0)
	Weight loss	9 (6.8)
≥ 40 (69)	>9 kg	18 (26.0)
	5.1–9 kg	14 (20.3)
	0–5 kg	21 (30.4)
	Weight loss	16 (23.2)
All (427)	>9 kg	173 (40.5)
	5.1–9 kg	98 (22.9)
	0–5 kg	120 (28.1)
	Weight loss	36 (8.4)

Missing weight data made statistical analysis difficult but results suggest that increasing booking-in BMI was associated with decreased risk of excessive weight gain (>9 kg). In a model to assess predictors of GWG a higher booking BMI was negatively associated with GWG ($\beta -0.25$, 95 % CI -0.32 to -0.19 , $p < 0.001$). Due to finite resources, only women with a booking-in BMI ≥ 40 kg/m² are currently offered specialist obesity care at the study hospital, despite NICE³ recommending specialist care for BMI ≥ 30 kg/m². These results suggest that pregnant women with BMI 30–39.9 kg/m² may be at greater risk of excessive GWG and yet are only offered routine antenatal care. A review of ante natal care provision for overweight pregnancies is urgently needed.

- Galtier-Dereure F, Boegner C & Bringer J. (2000) Obesity and pregnancy: complications and cost. *American Journal of Clinical Nutrition* **71**(5), 1242–1248.
- Institute of Medicine (2009) *Weight gain during pregnancy: Re-examining the Guidelines*. Available at <http://www.iom.edu/~media/Files/Report%20Files/2009/Weight-Gain-During-Pregnancy-Reexamining-the-Guidelines/Report%20Brief%20-%20Weight%20Gain%20During%20Pregnancy.pdf>
- NICE (2010) *Weight management before, during and after pregnancy*. Available at: <http://guidance.nice.org.uk/PH27>