

PATTERNS AND TRAJECTORIES OF GESTATIONAL WEIGHT GAIN:

A prospective cohort study



BACKGROUND

Inadequate or excessive weight gain during pregnancy increases the risk of adverse outcomes for the woman and her baby. Gaining too little weight has been associated with higher risk of being small for gestational age and infant death. Whereas gaining too much weight increases the risk of pregnancy conditions such as gestational hypertension, cesarean delivery and retaining weight after delivery in women and her infant being large for gestational age and subsequent childhood obesity.



The Alberta Pregnancy Outcomes and Nutrition (APrON) study is a prospective cohort study of women during pregnancy and postpartum, and their infants. Participants were recruited through advertisements in the media and in physicians' offices in Calgary and Edmonton between May 2009 and November 2012. Eligibility criteria were: aged 16 years or more, literacy in English and duration of gestation less than 27 weeks. Participants who provided written informed consent were invited to attend a study centre in Calgary or Edmonton once during each trimester following enrolment and once at about 3 months postpartum. Women's height and weight was measured at each study visit.

IOM AND HEALTH CANADA GESTATIONAL WEIGHT GAIN GUIDELINES

Pre-pregnancy BMI	Weekly Weight Gain During 2nd and 3rd Trimester (kg/wk)	Total Weight Gain (kg)
Underweight	0.44 - 0.58	12.5 - 18
Normal	0.35 - 0.50	11.5 - 16
Overweight	0.23 - 0.33	7 - 11.5
Obese	0.17 - 0.27	5 - 9

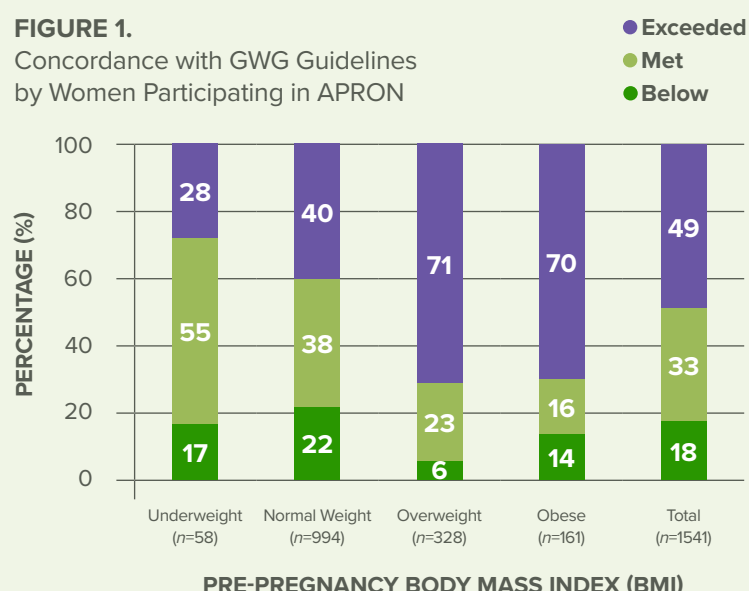
FINDINGS

Pre-pregnancy BMI	Total % Exceeding Guidelines	Gestational age at which >50% of women exceeded upper limit of GWG recommendations*
Normal	40%	Week 30
Overweight	71%	Week 20
Obese	71%	Week 18

*gestational-age appropriate GWG recommendation

FIGURE 1.

Concordance with GWG Guidelines by Women Participating in APRON



49.4% of women exceeded guidelines and 17.6% of women gained below guidelines

Of women who were overweight or obese over a third (37%) gained >5kg over the upper GWG limit

Women who are overweight or obese tend to exceed gestational weight gain guidelines early in pregnancy.

CONCLUSION

Our observations reinforce Health Canada's recommendations that gestational weight gain be discussed with all pregnant patients, irrespective of pre pregnancy BMI category, and that messages may need to be tailored for those in different pre pregnancy BMI categories. Our observations also suggest that these conversations need to be held early in pregnancy, when it is more feasible to provide support that may mitigate the risk of excessive or inadequate weight gain. Consideration of the average weekly rate of weight gain may be particularly important for health care providers. The rate of gestational weight gain reflects the likely trajectory of total weight gain during the pregnancy and may provide a tool to identify and provide additional support for women at risk of not meeting weight gain guidelines.

Jarman, M., Yuan, Y., Pakseresht, M., Shi, Q., Robson, P. J., & Bell, R. C. (2016). Patterns and trajectories of gestational weight gain: A prospective cohort study. *CMAJ Open*, 4(2), E338.



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