

Healthy Pregnancy Weight Gain

Background

Women of child bearing age are heavier, less likely to achieve adequate levels of physical activity, and consume more foods with low nutrient density than at any time in the past (1). According to measured height and weight data, 49% of Albertan women aged 25-34 and 63% of Albertan women aged 35-44 are overweight or obese (2). The proportion of women gaining excessive weight during pregnancy is also increasing. A recent study shows that 46% of women in Alberta with healthy pre-pregnancy body mass index (BMI) exceed the recommended levels of pregnancy weight gain and 80% of women with overweight and obese pre-pregnancy BMI exceed recommended levels of pregnancy weight gain (3).

Guidelines for gestational weight gain

The current Health Canada pregnancy weight gain recommendations, adapted from the 2009 Institute of Medicine (IOM) guidelines, are based on a woman's pre-pregnancy BMI. These ranges are associated with the best outcomes for both mother and child. The Health Canada guidelines are intended to be used together with good clinical judgment as well as a discussion between the woman and her healthcare provider about nutrition and physical activity.

Weight Category	Pre-Pregnant BMI	Total Weight Gain for Pregnancy	Mean Weight Gain in 2nd & 3rd Trimesters
Underweight	<18.5	28-40 lbs • 12.5-18 kg	1 lb/week • 0.5 kg/week
Healthy Weight	18.5-24.9	25-35 lbs • 11.5-16 kg	1 lb/week • 0.4 kg/week
Overweight	25.0-29.9	15-25 lbs • 7-11.5 kg	0.6 lb/week • 0.3 kg/week
*Obese	≥30	11-20 lbs • 5-9 kg	0.5 lb/week • 0.2 kg/week

*Consider Nutrition Referral. A narrower range of weight gain may be advised for women with pre-pregnancy BMI >35

Where does the weight go during pregnancy?

The fetus, placenta and amniotic fluid comprise approximately 35% of total pregnancy weight gain (4). The remainder comes from increased blood and fluids, breast and uterus tissue and fat storage.

Average Total Weight Gain of 25-35 pounds (11.5 - 16 kg)

blood: **4 lbs (1.8 kg)**

protein & fat storage: **5-8 lbs (2.27 - 3.6 kg)**

body fluids: **2-3 lbs (0.9 - 1.36 kg)**

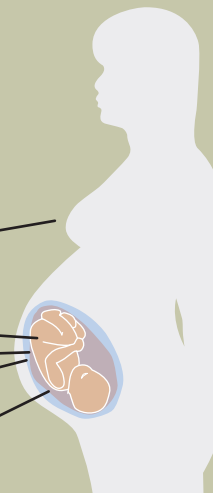
breasts: **2-3 lbs (0.9 - 1.36 kg)**

baby: **6-8 lbs (2.7 - 3.6 kg)**

placenta: **2-3 lbs (0.9 - 1.36 kg)**

uterus: **2-3 lbs (0.9 - 1.36 kg)**

amniotic fluid: **2-3 lbs (0.9 - 1.36 kg)**



What happens when women gain more weight than recommended?

Women who gain too much weight when they are pregnant tend to have infants that are large for their gestational age or have a high birth weight (4000-4500 g/8.8-9.9 lbs.) (1) (5). Studies show that women who have babies that weigh more than 4500 g have a higher risk of a longer labour and delivery, birth trauma, birth asphyxia, and an increased risk of the baby dying before, during, or right after birth (1) (5) (6). Research also suggests that gaining too much weight during pregnancy is linked to obesity issues for the child later in childhood (1) (5) (7).

Women who gain too much weight while they are pregnant also tend to have more difficulty losing the weight after pregnancy (1) (5) (8). If a woman is heavier the next time she becomes pregnant, there will be greater risk of complications and poor birth outcomes for the next baby.

What happens when women gain less weight than recommended?

Women who don't gain enough weight during pregnancy tend to have babies that are born early, have low birth weight or are small for their gestational age (1) (5) (9). These babies have more risk of disease in the first few weeks of life, physical and cognitive disabilities, and chronic health problems later in life (1) (10). Women who do not gain enough weight are also less likely to breastfeed (1) (5).

What does this mean for your practice?

The IOM recommends that health care providers become familiar with the guidelines for healthy pregnancy weight gain (1). The guidelines adopted provincially include:

- Health Canada and IOM gestational weight gain recommendations
- Health Canada's Prenatal Nutrition Guidelines for Health Professionals
- Society of Obstetricians and Gynecologists of Canada (SOGC) and Canadian Society of Exercise Physiology (CSEP) guidelines for exercise during pregnancy

The IOM also notes that individualized care appears to be an important component of successful interventions. Examples of individualized care for pregnant women include:

- Developing a weight gain goal with women early in pregnancy (1);
- Charting weight gain throughout pregnancy and sharing the results with women (1);
- Providing pregnant women and postpartum women with advice related to both diet and physical activity (1);
- Using clinical judgement around pregnancy weight gain to decide when a referral to another health care provider or support system is necessary (1). Referrals may be made to dietitians, mental health professionals or community programs.

Resources for your practice

Provincial resources and services are available to help you provide individualized attention to healthy pregnancy weight gain and ultimately improve outcomes for mothers and babies.

Resource	Audience	How to order or access
Healthy Eating and Active Living for Pregnancy booklet	<ul style="list-style-type: none">• Pregnant women• Women thinking of becoming pregnant	Access at: www.healthyalberta.com and click on "Free healthy eating and active living resources". Hard copies may be ordered from this website as well. Physicians working for AHS may order hard copies from www.servicealberta.ca
Singleton Weight Gain Graphs based on pre-pregnancy BMI	<ul style="list-style-type: none">• Healthcare providers• Pregnant women	Order from: Data Group of Companies at www.datagroup.ca Follow the link to Online Ordering and then register with Data Document Manager. A credit card number is required; however, this resource is pre-paid so the card will not be charged.
Key Actions & Messages for Healthcare Providers	<ul style="list-style-type: none">• Healthcare providers	Access at: www.albertahealthservices.ca/6073.asp
Nutrition Counselling for Healthy Pregnancy Weight Gain	<ul style="list-style-type: none">• Healthcare providers• Pregnant women	Access at: www.albertahealthservices.ca/nutritioninpregnancy.asp

Contact information

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References

1. Institute of Medicine (IOM) and National Research Council (NRC). Weight Gain During Pregnancy: Reexamining the Guidelines. Washington, DC : The National Academies Press, 2009.

2. Statistics Canada. 2004 Canadian Community Health Survey Cycle 2.2. *Measured adult body mass index (BMI) by age group and sex, household population aged 18 and over excluding pregnant females, Canada and provinces, CANSIM Table 105--2001 (Alberta).* 2008.

3. Begum, F., et al. Gestational Weight Gain and Early Postpartum Weight Retention in a Prospective Cohort of Albertan Women. *Journal of Obstetrics and Gynaecology Canada.* 2012. Vol. 34, 7.

4. Pitkin, R. M. Nutritional Support in obstetrics and gynecology. *Clinical Obstetrics and Gynecology.* 1976. Vol. 19, 3, pp. 489-513.

References *(continued)*

- 5. Viswanathan, M., et al.** Outcomes of Maternal Weight Gain, Evidence Report/Technology Assessment No. 168. *Agency for Healthcare Research and Quality*. Rockville, MD : s.n., 2008. Publication No. 08-E009.
- 6. Zhang, X., et al.** How big is too big? The perinatal consequences of fetal macrosomia. *American Journal of Obstetrics and Gynecology*. 2008. Vol. 198, 5.
- 7. Brisbois, T. D., Famer, A. P. and McCargan, L. J.** Early markers of adult obesity: A review. *Obesity Reviews*. 2011. Vol. 13, 4.
- 8. Nehring, I., et al.** Gestational weight gain and long-term postpartum weight retention: A meta-analysis. *American Journal of Clinical Nutrition*. 2011. Vol. 94, pp. 1225-1231.
- 9. Han, Z., et al.** Low gestational weight gain and the risk of preterm birth and low birthweight: A systematic review and meta-analyses. *ACTA*. 2011. Vol. 90, pp. 935-954.
- 10. Goldenberg, R. L. and Culhane, J. F.** Low birth weight in the United States. *The American Journal of Clinical Nutrition*. 2007. Vol. 85, 2.