

Pregnancy: Multiples

Applicable to: Health Professionals and Other Care Providers

The following recommendations address gestational weight gain, protein and energy requirements, and vitamin and mineral requirements for people pregnant with multiple fetuses. The current evidence is strongest for twins. The evidence specific to triplets and higher-order multiples is limited but can be extrapolated from evidence for twins using professional judgment.

Recommendations

- People pregnant with multiples can be guided to follow general nutrition guidelines for those pregnant with singletons, including:
 - Eating a variety of foods and following Canada's food guide recommendations for singleton pregnancies.
 - Choosing a daily multivitamin and mineral supplement that contains folic acid, iron, vitamin D, and vitamin B₁₂.
 - Eating every 2–4 hours while awake.
 - Following safe food handling practices and avoiding foods that increase the chances of getting a foodborne illness during pregnancy.
 - Limiting caffeine intake to 300 mg/day or less.
 - Drinking 10 cups (2.5 L) fluid daily.

Detailed information for care providers about these general nutrition guidelines for pregnancy can be found in the [Nutrition Guideline: Pregnancy](#).

General nutrition information for pregnancy for the public can be found in [Healthy Parents](#), [Healthy Children](#).

- Refer people pregnant with multiples (twins, triplets, and higher-order multiples) to a registered dietitian (RD) in the first trimester of pregnancy or as early as possible. Frequent follow-ups with an RD are important to monitor gestational weight gain, energy (calorie), macronutrient (protein, carbohydrate, fat), and micronutrient (vitamin, mineral) intake. Referral processes will vary based on Alberta Health Service (AHS) Zone and site policy.
- Weight gain recommendations for individuals pregnant with multiples include:
 - Advise gaining weight at the appropriate rate according to their pre-pregnancy body mass index (BMI). Provisional total weight gain recommendations are available for both twin and triplet pregnancies.
 - Advise that early weight gain is important. Weight gain ideally starts in the first trimester of pregnancy, instead of the second trimester for individuals pregnant with singletons.



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- Advise that increased caloric intake is recommended starting in the first trimester to achieve the desired weight gain. Adequate weight gain is the best guideline of sufficient energy intake. A range of approximately 3000–4000 calories/day is likely required.
- Track weight gain throughout pregnancy to identify problematic patterns of weight gain as early as possible. A single measure is not enough to determine whether weight gain and caloric intake is on track.
 - Individuals with lower pre-pregnancy BMI can be advised to consume calories at the upper end of the range.
 - Individuals with higher pre-pregnancy BMIs can be advised to consume calories at the lower end of the range.
- Nutrition guidelines specific to people pregnant with multiples include:
 - Emphasize high calorie and high protein food group choices within Canada’s food guide to meet the greater energy requirements for individuals pregnant with multiples.
 - Recommend choosing foods that are rich in calcium and vitamin D. Cow’s milk and fortified soy beverages will assist in achieving recommended calcium and vitamin D intakes.
 - A pattern of eating that includes three meals and three snacks daily to help achieve an adequate intake of calories and nutrients.
 - Recommend a protein-rich food with every meal and snack and higher calorie food choices (e.g. 3.25% milk versus skim milk).
 - Recommend individuals to take **only one multivitamin supplement dose daily** in addition to a healthy diet.
 - Assist individuals in choosing a multivitamin supplement that has:
 - Folic Acid – 1 mg (1000 mcg)
 - Iron – at least 27 mg iron
 - Vitamin D – at least 400 International Units (IU) (10 mcg)
 - Vitamin B₁₂ – about 2.6 mcg
 - A need for additional calcium, vitamin D, and/or omega-3 fatty acid docosahexaenoic acid (DHA)/eicosapentaenoic acid (EPA) supplementation to be established through RD assessment.

Introduction

The purpose of the Pregnancy: Multiples Nutrition Guideline is to give care providers an overview of the evidence-based nutrition recommendations for people who are pregnant with multiples and to provide answers to commonly asked questions (see [Key Questions List](#)).

In North America, it is estimated that approximately half of pregnancies are unplanned.¹ It is recommended that all people who could become pregnant maintain good nutrition. Pregnancy is a critical period in a person’s life that can influence the short and long-term health of both the parent and infant. Healthy pre-pregnancy weight and appropriate weight gain during pregnancy are linked with optimal gestational and infant outcomes.

The health benefits of good nutrition during pregnancy include reducing the risk of:

- neural tube defects²
- low-birth-weight infants, small for gestational age infants, and preterm births²

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- chronic health problems in both the parent and child³

Specific health outcomes associated with optimal nutrition and weight gain during pregnancy with multiples include:

- a lower proportion of low birth weight infants and a reduction in preeclampsia⁴
- excessive weight gain during pregnancy may be associated with an increased risk of gestational hypertension and cesarean delivery, although not well evaluated in people pregnant with multiples⁵

The Nutrition Guideline was developed by the Nutrition Services Public Health Provincial Target Population Reproductive Health Working Group and is based on scientific evidence and best practice. It was reviewed by health professionals across the province. If you have questions about this Nutrition Guideline, please contact publichealth.nutrition@ahs.ca.

This information is intended as a general resource only and is not meant to replace the medical counsel of a physician or individual consultation with an RD. It is the responsibility of care providers to evaluate the situation of each client in their care, and apply the Nutrition Guideline appropriately. Individuals who are at high risk of malnutrition or who have a medical condition that is impacted by nutrition should be referred to an RD.

Referral to a Registered Dietitian

For more information on referral to an RD and RD services available in Alberta Health Services (AHS):

- See [Nutrition Guideline: Referral to a Registered Dietitian](#)
- Visit [Referring Patients for Nutrition Services](#)

Note: For purposes of this Nutrition Guideline, the single term client will be used to refer to clients, patients, and residents.

Inclusive Language

Some expectant parents may not identify as women or as female, but as male, non-binary, or gender diverse. In all circumstances, care providers shall utilize client-and family-centred care to be responsive to the individual context, self-identified gender, pronouns, and preferred terminology of the families they support.

The language used within this Nutrition Guideline is based on the Academy of Breastfeeding Medicine Position Statement⁶ and AHS Best Practices.⁷ A variety of terms are used for accuracy and clarity.

- non-gendered terms (e.g., person, individual) are used, when possible, to be inclusive.
- gendered terms (e.g., female, woman) used in the original source being cited, are noted throughout by “^a”, and replaced with inclusive language, where appropriate, and aligns with the greater body of scientific evidence.

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Definitions

Preterm birth: Birth of an infant at less than 37 weeks' 0 days' gestation.

Low birth weight: Birth weight less than 2500 g, regardless of gestational age.

Very-low birth weight: Birth weight less than 1500 g, regardless of gestational age.

Intrauterine growth restriction: A fetus with an estimated fetal weight less than 10th percentile on ultrasound, that, because of a pathological process, has not attained its biologically determined growth potential; also called small for gestational age.

Multivitamin supplement: Terminology used to describe a supplement containing multiple vitamins and minerals. The terminology 'prenatal multivitamin supplement' is not used due to the wide variation in supplements available.

Nutrient-dense: Relatively rich in nutrients for the number of calories the food contains.

Key Questions List

Key nutrition questions related to pregnancy that are addressed in this Nutrition Guideline are listed below.

Weight Gain in Pregnancy (Multiples)

- What is the recommended total weight gain for individuals pregnant with multiples?
- What is the recommended pattern of weight gain for individuals pregnant with multiples?
- What are common barriers to achieving adequate weight gain when pregnant with multiples?
- What is the best way to support people pregnant with multiples to optimize weight gain and nutrition?

Energy and Nutrients in Pregnancy (Multiples)

- Do individuals pregnant with multiples have higher calorie and macronutrient requirements than people pregnant with singletons?
- Are oral commercial nutrition supplements safe to consume during pregnancy with multiples?
- Do people pregnant with multiples need to take more than 1 multivitamin supplement per day?
- Are there any specific micronutrient recommendations for individuals pregnant with multiples?

Cultural and Other Special Considerations

- Are there special considerations when working with individuals with culturally diverse backgrounds (e.g. Indigenous peoples, immigrants, and refugees)?
- What are other important considerations when working with any individual?

Resources

- What additional resources are available?

Answers to Key Questions

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What is the recommended total weight gain for individuals pregnant with multiples?

People pregnant with multiples are at increased risk of preterm delivery, having low birth weight infants, and intrauterine growth restriction.^{5,8} Appropriate weight gain based on pre-pregnant BMI is associated with a reduction in spontaneous preterm delivery.⁹ The U.S. Institute of Medicine (IOM) has developed provisional guidelines for cumulative weight gain for individuals^a pregnant with twins based on pre-pregnancy BMI (Table 1).

Table 1. Provisional Guidelines for Cumulative Weight Gain for Individuals^a Pregnant with Twins

Pre-pregnancy BMI	Recommended Total Weight Gain	
	kg	lbs
BMI less than 18.5 kg/m² Underweight	Insufficient information to determine	
BMI 18.5–24.9 kg/m² Normal weight	17–25	37–54
BMI 25.0–29.9 kg/m² Overweight	14–23	31–50
BMI greater than or equal to 30 kg/m² Obese	11–19	25–42

Source: Adapted from: Institute of Medicine (IOM). Weight gain during pregnancy: reexamining the guidelines. Washington, DC: The National Academies Press; 2009. Available from: nap.edu/catalog.php?record_id=12584¹⁰

What is the recommended pattern of weight gain for individuals pregnant with multiples?

The pattern of weight gain, including both rate and timing of weight gain, is important for optimal fetal growth when pregnant with multiples.^{5,11} It is recommended to maximize weight gain early on in pregnancy and for gestational weight gain to proceed at a faster rate than for individuals^a pregnant with singletons.^{12,13} Specifically, weight gain from conception to 20 weeks and from 20–28 weeks (mid-gestation) have the strongest association with optimal twin birth weights and the lowest risk of preterm birth.^{5,14–17}

Table 2 outlines the average rates of weight gain per week that support the best gestational and infant outcomes for individuals^a pregnant with twins.

Although there was insufficient data for the IOM to develop provisional recommendations for individuals^a pregnant with triplets, observational data suggests that a minimum weight gain of

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16.3 kg/ 36 lbs by approximately 26 weeks gestation and a cumulative total weight gain of at least 23 kg/50 lbs is recommended.¹⁴ The limited literature available also suggests the importance of early weight gain (minimum of 16.3 kg/36 lbs by 26 weeks) and at least 22 kg/48 lbs by 33 weeks.^{16–18}

Few people pregnant with triplets (and higher-order multiples) will reach term gestation. The average gestational age at the time of delivery for triplets is 32 weeks.¹⁹ Higher early weight gain for individuals pregnant with multiples is thought to be beneficial for supporting placental structure and function and subsequent fetal growth as the placenta ages more quickly when pregnant with multiples, shortening the gestational period for transferring nutrients to the developing fetuses.¹⁷ Attention to an appropriate weight gain pattern through frequent assessment is therefore recommended.

Table 2. Rates of average weight gain/week and average cumulative weight gain for individuals^a pregnant with twins*

Pre-Pregnancy BMI	Rates of weight gain/wk			Cumulative weight gain		
	2–13 wks	14–26 wks	27 wks–delivery	By 13 wks	By 26 wks	37–42 wks
BMI 18.5–24.9 kg/m² Normal weight	Less than or equal to 0.5 kg	0.6–0.9 kg	0.5–0.8 kg	1.4–5.4 kg	10.0–16.4 kg	16.8–24.5 kg
BMI 25–29.9 kg/m² Overweight	Less than or equal to 0.4 kg	0.6–0.9 kg	0.4–0.8 kg	0.3–4.3 kg	7.7–14.1 kg	14.1–22.7 kg
BMI greater than or equal to 30 kg/m² Obese	Less than 0.3 kg	0.2–0.6 kg	0.3–0.7 kg	0.9–3.8 kg	4.9–11.4 kg	11.4–19.1 kg

*Insufficient evidence related to the rate of weight gain for pre-pregnant BMI less than 18.5 kg/m²

Source: 1. TABLE C-3D Interquartile Ranges of Cumulative Gain by Trimesters, by Pregravid BMI Status for Mothers^a of Twins at Gestational Ages 37–42 Weeks, and with Average Twin Birth weight >2500 g.²⁰

2. TABLE C-3C Interquartile Ranges of Rates of Maternal Weight Gain by Trimesters, by Pregravid BMI Status for Mothers^a of Twins at Gestational Ages 37–42 Weeks, and with Average Twin Birth weight >2500 g.²⁰

What are common barriers to achieving adequate weight gain when pregnant with multiples?

People pregnant with multiples may be more likely to experience nausea, vomiting, and/or heartburn compared to those pregnant with singletons.^{21,22} These symptoms can make it challenging to eat enough to support a healthy rate and total weight gain. Early satiety may also reduce the amount that individuals can eat, which may negatively affect adequate gestational weight gain.²³ Individuals experiencing nausea, vomiting, heartburn, and/or early satiety during pregnancy can be offered basic nutrition advice to manage these conditions (refer to healthyparentshealthychildren.ca) and can be referred to an RD.

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What is the best way to support people pregnant with multiples to optimize weight gain and nutrition?

Care providers are recommended to determine pre-pregnancy BMI-specific gestational weight gain goals. It is recommended to regularly assess weight gain progress.^{5,16} An increased frequency of client education and fetal growth monitoring, above that normally provided for individuals pregnant with singletons, may be recommended.^{5,15,24}

All people pregnant with multiples are recommended to see an RD for individualized care as early as possible in pregnancy, ideally in the first trimester or beginning of the second trimester.²⁵ Individuals^a pregnant with multiples who received nutrition counselling from an RD had improvements in personal health and fetal outcomes compared to those who did not receive this intervention. Specific outcomes impacted included a lower proportion of very low birth weight infants, higher gestational weight gains, and a reduction in preeclampsia.^{4,14–16,26}

A nutrition assessment by an RD will help determine if an individual pregnant with multiples has adequate calorie and nutrient intakes. In addition to calorie and macronutrient intake, specific micronutrients to be assessed include calcium, vitamin D, omega-3 fatty acids, folic acid, and iron.

Referrals for individual nutrition assessment and counselling by an RD are especially important for people who:

- consume plant-based beverages, such as almond milk, in place of cow's milk or fortified soy beverage
- have food allergies or intolerances
- are vegetarian or vegan
- are not achieving a recommended rate of weight gain for multiples
- are having extreme nausea and vomiting during pregnancy

Referral processes will vary based on AHS Zone and site policy.

Energy and Nutrients in Pregnancy (Multiples)

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Do individuals pregnant with multiples have higher calorie and macronutrient requirements than people pregnant with singletons?

People pregnant with multiples require additional calories above that of those pregnant with singletons to promote adequate weight gain and prevent pregnancy complications.^{5,12–17,27}

Recommendations for specific additional energy requirements will vary with pre-pregnancy BMI, the number of fetuses, trimester of pregnancy, and other unique individual factors. Table 3 provides recommended total caloric intakes for people^a pregnant with multiples and ranges from approximately 3000–4000 calories/day or 30–50 calories/kg.^{5,14} The best guideline for assessing the adequacy of energy intake is by monitoring the rate of gestational weight gain relative to pre-pregnancy BMI-specific weight gain goals and cumulative weight gain.

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Table 3. Recommended Daily Calories Based on Pre-pregnancy BMI

Pre-pregnancy BMI	Estimated Caloric Requirements	
	Calories/kg/day	Total calories/day
BMI less than 18.5 kg/m² Underweight	~42–50	~4000
BMI 18.5 – 24.9 kg/m² Normal weight	~40–45	~3500
BMI 25.0 – 29.9 kg/m² Overweight	~30–35	~3250
BMI greater than or equal to 30 kg/m² Obese	Insufficient information	~3000

Source: PEN Pregnancy Multi-fetal key practice point #1 2016-04-26. Estimated caloric requirements have been derived from an extrapolation of the singleton pregnancy recommended dietary allowances (RDA) and BMI-specific weight gain tables.¹⁴

Those with lower pre-pregnancy BMIs are advised to consume the upper range of calories, and those with higher pre-pregnancy BMIs are advised to consume the lower range.^{5,14,28} As people pregnant with multiples often deliver early at 30–35 weeks, there is a shortened gestational period for transferring nutrients to the developing fetuses.¹⁹ An appropriate strategy is to increase caloric intake starting in the first trimester and continuing throughout the entire pregnancy.¹⁹

People pregnant with triplets or higher-order multiples may require a caloric intake greater than 4000 calories/day, starting in the first trimester, to achieve the desired weight gain.

People pregnant with multiples may have difficulty eating large volumes of food. Evidence supports choosing small, frequent meals and snacks that include food choices high in calories and protein rather than specifying servings. A high-quality balanced diet of 20% calories from protein, 40% calories from carbohydrate, and 40% calories from fat, with three meals and three snacks, is recommended.^{5,14,15} As a practical approach to meet the recommended macronutrient distribution, individuals are advised to include protein-rich food with every meal and snack and to consume higher calorie food choices. An RD may develop individualized meal plans and provide client-centred nutrition counselling to meet these recommendations.

Examples of high protein, high-calorie snacks include:

- full-fat cheese (greater than or equal to 28% M.F.) and crackers
- full-fat Greek yogurt (greater than 2% M.F.) with fruit
- hard-boiled egg
- hummus with carrot sticks
- peanut butter and apple slices

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Are oral commercial nutrition supplements safe to consume during pregnancy with multiples?

For some people pregnant with multiples, a commercial oral nutrition supplement can be recommended when intake from food sources does not meet energy needs. An individualized nutrition assessment is needed to avoid excessive vitamin A intake. It is important to read labels and compare products to ensure that total daily vitamin A intake does not exceed the upper limit (UL) from the following sources combined:

- multivitamin
- nutrition supplement drink
- foods high in vitamin A (e.g. liver)

See also: Putting Evidence Into Practice: Nutrition Supplement Drinks for Pregnant/Breastfeeding Women (request via publichealth.nutrition@ahs.ca)

Do people pregnant with multiples need to take more than 1 multivitamin supplement per day?

Taking more than one multivitamin supplement dose per day is not recommended during pregnancy with single or multiple fetuses.¹ To meet additional micronutrient requirements of people pregnant with multiples, it is recommended to choose a daily multivitamin supplement dose that contains 1 mg (1000 mcg) folic acid, at least 27 mg iron, at least 400 IU vitamin D, and 2.6 mcg vitamin B₁₂. Common multivitamin supplements marketed for pregnancy, often referred to as prenatal multivitamin supplements, contain these higher doses of folic acid and iron.

Are there any specific micronutrient recommendations for individuals pregnant with multiples?

Most vitamin and mineral requirements can be met through a balanced diet and daily intake of one multivitamin supplement dose, except for calcium and vitamin D. Additional supplementation may be required to achieve a combined daily food and supplement intake of 1200 IU vitamin D and 2000–2500 mg calcium. Supplementation with 300–500 mg DHA/EPA is recommended for consideration.²⁸

Table 4 describes the total amount of calcium, vitamin D, iron, folic acid, omega-3 fatty acids, and vitamin A recommended for people^a pregnant with both singletons and twins. There is little evidence concerning specific recommendations for individuals pregnant with triplets and higher-order multiples.

Care providers may need to assist with label reading of food and supplements to ensure the client takes the recommended dosage of vitamins/minerals, especially considering additional needs for vitamin D and calcium.

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Table 4. Recommended Amounts of Vitamins and Minerals for Individuals^a Pregnant with Singletons and Twins from All Sources (i.e. Food, multivitamin supplement, single-source supplements)

Vitamins/Minerals	Singleton Pregnancy	Twin Pregnancy	Upper Limit (UL)
Calcium	1000 mg ^a (less than 19 yrs: 1300 mg)	2000–2500 mg ^b	Total daily intake not to exceed 2500 mg ^c
Vitamin D	600 IU ^a	1200 IU ^b	Total daily intake not to exceed 4000 IU ^a
Iron	27 mg ^a	30 mg ^b	Total daily intake not to exceed 45 mg ^c unless advised by a physician. Monitor iron status closely.
Folate/Folic Acid	0.6 mg (600 mcg) ^a	1 mg (1000 mcg) ^b	Supplementation not to exceed 1 mg (1000 mcg) unless advised by a physician. (less than 19 years: 0.8 mg (800 mcg) ^c
Omega- 3 Fatty Acids (DHA and EPA)	Include fish rich in omega-3 fatty acids (low in mercury) at least 150 g (5 oz) per week ^d	Include fish rich in omega-3 fatty acids (low in mercury) at least 150 g (5 oz) per week. ^d Consider supplementation with 300–500 mg ^b DHA/EPA	Safe UL not defined ^c
Vitamin A	A diet rich in vitamin A (including fortified foods and beverages) that meets the RDA (770 mcg) ^c	A diet rich in vitamin A (including fortified foods and beverages) that meets the RDA (770 mcg) ^c	Pregnancy 3000 mcg/day (less than 19yrs: 2800 mcg/day) ^c UL is for preformed vitamin A only.

Source:

^a Health Canada, 2010. Dietary Reference Intakes Tables (Pregnancy)²⁹

^b Dietitians of Canada²⁸

^c IOM, 2006³⁰

^d Health Canada, 2017. Mercury in Fish³¹

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Calcium

People^a pregnant with multiples have greater calcium requirements than those pregnant with singletons.^{5,26} Recommended daily intakes of calcium from food and supplement combined are 2000–2500 mg/day.²⁸ It is recommended that people pregnant with multiples include cow's milk, dairy products, or fortified milk alternatives, such as fortified soy beverages, as part of a healthy diet to meet calcium requirements every day. One glass of cow's milk provides approximately 300 mg calcium, and most multivitamin supplements contain 250 mg calcium. An additional calcium supplement may be required to meet the above recommendations.¹⁶ An individual consuming 2–3 glasses (500–750 mL) cow's milk or fortified milk alternatives may need an additional 500–1000 mg calcium per day to meet these additional requirements. To maximize absorption and minimize any potential gastrointestinal discomforts, such as bloating and constipation, the maximum amount of supplemental calcium to be consumed at once is 500 mg.³⁰ Single source calcium supplements are to be taken separately from multivitamin supplements containing iron (at least 2 hours between) due to the potential of calcium binding to iron.³⁰ The UL of calcium is 2500 mg.³⁰

Vitamin D

People^a pregnant with multiples have greater vitamin D requirements than those pregnant with singletons.^{13,26} Recommended daily intakes of vitamin D from food and supplement sources combined are 1200 IU/day.²⁸ A practical way to meet most vitamin D needs is for people pregnant with multiples to consume a minimum of 2 cups (500 mL) cow's milk or a fortified plant-based beverage such soy beverage daily. Health Canada is currently undertaking a number of actions to increase vitamin D fortification amounts in cow's milk and margarine (mandatory) and goat's milk (voluntary) as well as some fortified plant-based beverages. Once this transition is complete (December 2025), 1 cup (250 mL) cow's milk will provide 200 IU (5 ug) vitamin D.³² Multivitamin supplements contain at least 400 IU vitamin D. An assessment of individual food and multivitamin supplement choices will be necessary to determine if an additional vitamin D supplement may be required to meet the 1200 IU/day vitamin D for individuals pregnant with multiples.²⁸ The UL for vitamin D is 4000 IU per day.^{29,33}

Iron

People^a pregnant with multiples have four times the risk of developing iron-deficiency anemia, compared to those pregnant with singletons.^{5,16,26,34} Recommended daily intake of iron for people^a pregnant with twins is 30 mg iron.²⁸ Recommended iron intake can be achieved through a multivitamin supplement containing 27 mg iron and a diet high in iron. Most multivitamin supplements marketed for pregnancy contain around 27 mg iron. These are often referred to as prenatal multivitamin supplements.

Early screening of iron status during pregnancy is recommended to identify if additional iron supplements are required.³⁴ If additional single-source iron supplements are needed, they should be prescribed by a physician.

The UL for iron is 45 mg per day.³⁰ Individuals^a who are being treated for iron deficiency anemia may be treated with higher doses of iron above the UL.²⁴

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Folate/Folic Acid

People^a pregnant with multiples have 8 times the risk of developing anemia due to folate (folic acid) deficiency, compared to those pregnant with singletons.^{5,16} Recommended daily intakes of folate from food and folic acid from supplement sources combined are 1 mg (1000 mcg) per day.²⁸ Recommended folate/folic acid intake can be achieved through a multivitamin supplement containing folic acid and a diet high in folate. Fortified foods such as enriched, ready-to-eat cereal, pasta, and bread products made with enriched flour, will contribute to total daily folic acid recommendations.³⁵ Most multivitamin supplements marketed for pregnancy contain 1 mg (1000 mcg) folate (folic acid). These are often referred to as prenatal multivitamin supplements.

People pregnant with multiples are not at a higher risk for neural tube defects or other folic acid-sensitive congenital anomalies compared to individuals^a pregnant with singletons.³⁶ People who have an increased risk of neural tube defects are advised to contact their physician regarding folic acid supplementation, as requirements may be higher.³⁶ The UL for folate (folic acid) from supplements and/or fortified food is 1000 mcg/day during pregnancy for people greater than or equal to 19 years; 800 mcg for less than 19 years; there is no UL established from food alone.³⁰ Supplementation with greater than 1 mg (1000 mcg) of supplemental folate (folic acid) per day should be done in consultation with a physician.

Omega-3 Fatty Acids

People^a pregnant with multiples have an increased utilization of fatty acids.¹⁴ Recommended daily intake of omega-3 fatty acids in pregnancy is not well established. All pregnant people are recommended to include at least 150 g (5 oz) low-mercury, fatty fish each week.³¹ Daily supplementation of 300–500 mg DHA/ EPA is recommended for consideration.²⁸ The safe UL for DHA/EPA supplementation is not currently known.³³

Vitamin A

People pregnant with multiples do not have an increased vitamin A requirement. A diet rich in vitamin A (including fortified foods and beverages) that meets the RDA of 770 mcg/day is recommended. The UL for preformed vitamin A during pregnancy is 3000 mcg RAE/day for individuals greater than or equal to 19 years and 2800 mcg RAE/day for those^a less than 19 years.^{1,30} Preformed vitamin A is found primarily in meat, poultry, fish, milk products and supplements. An excess intake of preformed vitamin A during pregnancy has been associated with birth defects.³⁰ Consuming more than 1 multivitamin supplement dose per day may put people at risk of exceeding the UL for preformed vitamin A.

Other

People pregnant with multiples may have additional needs for vitamin C, vitamin E, zinc, copper, and vitamin B₆. However, evidence remains scarce relative to these nutrient needs for individuals pregnant with multiples. No specific recommendations beyond those pregnant with singletons are available.²⁶

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Cultural and Other Special Considerations

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Are there special considerations when working with individuals with culturally diverse backgrounds (e.g. Indigenous peoples, immigrants, and refugees)?

Pregnancy may be a time for many people that provokes culturally-based responses and reactions from themselves, their families, and others. Care providers are encouraged to approach each client interaction as unique, avoiding stereotyping possible cultural influences in pregnancy based on past experiences or knowledge of cultural food practices.

Care providers are advised to continually assess and improve their own cultural competence. While no care provider can be an expert in all aspects of diversity, cultural competence involves continual learning that arises from experiences, encounters, and ongoing reflection.³⁷

What are other important considerations when working with any individual?

Household Food Insecurity

Household food insecurity (HFI) is defined as “an inadequate or insecure access to food because of financial constraints”;³⁸ it impacts physical, mental, and social well-being. Care providers will encounter clients living in food-insecure households, due to the high prevalence of HFI among those accessing healthcare.³⁹

HFI is best addressed through income-based interventions.^{38,40,41} Those experiencing HFI have food preparation, budgeting, and cooking skills similar to the general population.⁴² Interventions focused on food skills do not protect people from, nor improve HFI.⁴² Emergency food programs (e.g. food banks) may provide temporary relief.⁴³ However, these programs do not solve HFI and are inappropriate and/or inaccessible for many clients.⁴³

Care providers can offer better support if they are aware when clients are worried about having enough money for food and are experiencing other challenges because of financial strain.^{44,45} Care providers are encouraged to work with clients to develop interventions that are sensitive to financial strain.

Key steps for care providers:

- Learn about financial strain, how to screen clients for poverty, and the link between poverty and poorer health through the **Identifying Financial Strain and Addressing Financial Barriers to Health Care Modules**; available on MyLearningLink for AHS staff and on CLiC for Covenant Health staff.
- Review the [Nutrition Guideline: Household Food Insecurity](#) for additional information on how to support clients experiencing HFI.
- Assist clients in accessing available income supports. 211 Alberta (ab.211.ca) is a provincial directory that can be used to identify financial benefits, programs, and services.

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Cost can be an obstacle to timely and appropriate folic acid supplementation and a significant barrier to healthy eating during pregnancy.⁴⁶ Support clients in accessing all eligible pregnancy specific special diet funding and vitamin and mineral supplementation funding.

Additional income or nutrition supplement support may exist for individuals during their pregnancy:

- People who receive Assured Income for the Severely Handicapped (AISH) or Income Support (Alberta Works) may be eligible for funding to help cover the cost of a healthy diet during pregnancy.
- Multivitamin supplements may be available through the Alberta Adult Health Benefit (AAHB), Alberta Child Health Benefit (ACHB), Interim Federal Health Program (IFHP) or the Non-Insured Health Benefits (NIHB) for First Nations and Inuit, Assured Income for the Severely Handicapped (AISH), and Income Support (Alberta Works).

Refer to the Point of Care Reference: Funding Options for Special Diets and Nutrition Products (via ahs.ca/FoodInsecurity) for details on all programs, eligibility, and required steps to access coverage.

[Canada Prenatal Nutrition Program \(CPNP\)](#) projects in your community may provide vitamins, food, food coupons, and/or nutrition counselling.

Resources

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What additional resources are available?

For Health Professionals

General nutrition guidelines for health professionals on pregnancy can be found in the [Nutrition Guideline \(NG\): Pregnancy](#).

An accredited continuing medical education learning program on healthy pregnancy weight gain. Registration is free. All care providers are welcome to register. ecme.ucalgary.ca/programs/hpwq/

For the Public

General pregnancy nutrition information for the public can be found in Healthy Parents, Healthy Children. healthyparentshealthychildren.ca.

For nutrition resources specific to pregnancy visit Nutrition Handouts at ahs.ca/NutritionHandouts and click on Healthy Pregnancies and Breastfeeding.

- Nutrition when Pregnant with Twins, Triplets or More

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References

1. O'Connor DL, Blake J, Bell R, Bowen A, Callum J, Fenton S, et al. Canadian Consensus on Female Nutrition: Adolescence, Reproduction, Menopause, and Beyond. *J Obstet Gynaecol Canada JOGC = J d'obstetrique Gynecol du Canada JOGC*. 2016;38(6):508-554. e18.
2. Ramakrishnan U, Grant F, Goldenberg T, Zongrone A, Martorell R. Effect of women's nutrition before and during early pregnancy on maternal and infant Outcomes: A systematic review. *Paediatr Perinat Epidemiol*. 2012 Jul;26:285-301.
3. Academy of Nutrition and Dietetics. Practice Paper of the Academy of Nutrition and Dietetics: Nutrition and lifestyle for a healthy pregnancy outcome. *J Acad Nutr Diet*. 2014;114(9):1447.
4. Thangaratinam S, Rogozinska E, Jolly K, Glinkowski S, Roseboom T, Tomlinson JW, et al. Effects of interventions in pregnancy on maternal weight and obstetric outcomes: meta-analysis of randomised evidence. *BMJ*. 2012 Oct 1;67(10):e2088.
5. Goodnight W, Newman R. Optimal nutrition for improved twin pregnancy outcome. *Obstet Gynecol*. 2009 Nov;114(5):1121-34.
6. Bartick M, Stehel EK, Calhoun SL, Feldman-Winter L, Zimmerman D, Noble L, et al. Academy of breastfeeding medicine position statement and guideline: Infant feeding and lactation-related language and gender. *Breastfeed Med*. 2021;16(8):587-90.
7. Alberta Health Services. Guide to creating safer and more welcoming places for sexual and gender minority (LGBTQ2S+) people. 2018; Available from: <https://insite.albertahealthservices.ca/Main/assets/tms/dvi/tms-dvi-diversity-inclusion-gender-sexual-diversity-guide.pdf>
8. Chu SY, D'Angelo D V. Gestational weight gain among US women who deliver twins, 2001-2006. *Am J Obstet Gynecol*. 2009 Apr;200(4):390.e1-6.
9. Algeri P, Pelizzoni F, Bernasconi DP, Russo F, Incerti M, Cozzolino S, et al. Influence of weight gain, according to Institute of Medicine 2009 recommendation, on spontaneous preterm delivery in twin pregnancies. *BMC Pregnancy Childbirth*. 2018;18(1):6.
10. Institute of Medicine. Weight Gain During Pregnancy: Reexamining the Guidelines [Internet]. Rasmussen KM, Yaktine AL, editors. Washington (DC): National Academies Press (US); 2009. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK32813/>
11. Lal AK, Kominiarek MA. Weight gain in twin gestations: are the Institute of Medicine guidelines optimal for neonatal outcomes? *J Perinatol* [Internet]. 2015;35(6):405-10. Available from: <https://www.ncbi.nlm.nih.gov/pubmed/25634520>
12. Marcason W. What Are the Calorie Requirements for Women Having Twins? *J Am Diet Assoc* [Internet]. 2006;106(8):1292. Available from: <https://www.sciencedirect.com/science/article/pii/S0002822306014684>
13. Roselló-Soberón ME, Fuentes-Chaparro L, Casanueva E. Twin pregnancies: eating for three? Maternal nutrition update. *Nutr Rev*. 2005 Sep;63(9):295-302.
14. Luke B. Nutrition and multiple gestation. *Semin Perinatol*. 2005 Oct;29(5):349-54.
15. Luke B. Nutrition for Multiples. *Clin Obstet Gynecol*. 2015 Sep;58(3):585-610.
16. Roem K. Nutritional management of multiple pregnancies. *Twin Res Off J Int Soc Twin Stud*. 2003 Dec;6(6):514-9.
17. Dietitians of Canada. What is the recommended weight gain for women carrying multiple fetuses? In: Practice-based Evidence in Nutrition [PEN] [Internet]. 2016 [cited 2018 Oct 11]. Available from: Access only by subscription
18. Fidel-Rimon O, Rhea DJ, Keith LG, Shinwell ES, Blickstein I. Early adequate maternal weight gain is associated with fewer small for gestational age triplets. *J Perinat Med*. 2005 Oct 1;33(5):379-82.
19. American Society for Reproductive Medicine. Multiple Pregnancy and Birth: Twins, Triplets, and High-order Multiples. [Internet]. 2012 [cited 2018 Oct 11]. Available from: https://www.asrm.org/globalassets/rf/news-and-publications/bookletsfact-sheets/english-fact-sheets-and-info-booklets/booklet_multiple_pregnancy_and_birth_twins_triplets_and_high-order_multiples.pdf

Nutrition Guideline

Pregnancy: Multiples

20. Rasmussen KM, Yaktine AL. Weight Gain During Pregnancy: Reexamining the Guidelines [Internet]. Guidelines C to RIOMPW, Medicine I of, Council NR, editors. Washington (DC): National Academies Press (US); 2009. Available from: <http://www.ncbi.nlm.nih.gov/books/NBK32813/>
21. The American College of Obstetricians and Gynecologists. What are some symptoms of multiple pregnancy? [Internet]. 2015 [cited 2018 Oct 15]. Available from: <https://www.acog.org/Patients/FAQs/Multiple-Pregnancy#some>
22. Louik C, Hernandez-Diaz S, Werler MM, Mitchell AA. Nausea and vomiting in pregnancy: maternal characteristics and risk factors. *Paediatr Perinat Epidemiol*. 2006 Jul;20(4):270–8.
23. Brigham and Women's Hospital. Twin Pregnancy Obstetric Care Guidelines. [Internet]. 2018 [cited 2018 Oct 11]. Available from: <https://www.brighamandwomens.org/obgyn/maternal-fetal-medicine/for-medical-professionals/twin-pregnancy-obstetric-care-guidelines>
24. Pettit KE, Lacoursiere DY, Schrimmer DB, Alblewi H, Moore TR, Ramos GA. Maternal and neonatal outcomes in women with twin pregnancies with excessive gestational weight gain. *J Matern Neonatal Med Off J Eur Assoc Perinat Med Fed Asia Ocean Perinat Soc Int Soc Perinat Obstet*. 2016;29(13):2182–5.
25. Gandhi M, Salmanian B, Hosseinzadeh P, Moaddab A, Golabbakhsh H, Shamshirsaz A. Weight gain adequacy in twin gestations with a dietician consult based on BMI. *Am J Obstet Gynecol*. 2015;212(1):S255–6.
26. Klein L. Nutritional recommendations for multiple pregnancy. *J Am Diet Assoc*. 2005 Jul;105(7):1050–2.
27. Shinagawa S, Suzuki S, Chihara H, Otsubo Y, Takeshita T, Araki T. Maternal basal metabolic rate in twin pregnancy. *Gynecol Obstet Invest*. 2005;60(3):145–8.
28. Dietitians of Canada. What are the nutritional requirements for women carrying multiple fetuses and do they differ from the recommendations for singleton pregnancies? In: *Practice-based Evidence in Nutrition [PEN]* [Internet]. 2016 [cited 2018 Oct 11]. Available from: Access only by subscription
29. Health Canada. Dietary Reference Intakes Tables [Internet]. 2010. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/dietary-reference-intakes/tables.html>
30. Institute of Medicine. Dietary Reference Intakes: The Essential Guide to Nutrient Requirements [Internet]. Washington (DC): The National Academies Press; 2006. Available from: <https://www.nap.edu/read/11537/chapter/1>
31. Health Canada. Mercury in Fish [Internet]. 2007 [cited 2018 Oct 9]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/chemical-contaminants/environmental-contaminants/mercury/mercury-fish.html>
32. Government of Canada. Marketing Authorization for Vitamin D in Milk, Goat's Milk and Margarine. *Canada Gazette, Part II* [Internet]. 2021 [cited 2022 Nov 28];156(2). Available from: <https://www.gazette.gc.ca/rp-pr/p2/2022/2022-01-19/html/sor-dors278-eng.html>
33. U S Department of Health and Human Services, National Institutes of Health, Office of Dietary Supplements. Office of Dietary Supplements - Vitamin D [Internet]. Available from: <https://ods.od.nih.gov/factsheets/VitaminD-HealthProfessional/>
34. Ru Y, Pressman EK, Cooper EM, Guillet R, Katzman PJ, Kent TR, et al. Iron deficiency and anemia are prevalent in women with multiple gestations. *Am J Clin Nutr*. 2016;104(4):1052–60.
35. Health Canada. Prenatal Nutrition Guidelines for Health Professionals - Folate Contributes to a Healthy Pregnancy [Internet]. 2009 [cited 2022 Jun 16]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/reports-publications/nutrition-healthy-eating/prenatal-nutrition-guidelines-health-professionals-folate-contributes-healthy-pregnancy-2009.html>
36. Wilson RD, Wilson RD, Audibert F, Brock J-A, Carroll J, Cartier L, et al. Pre-conception Folic Acid and Multivitamin Supplementation for the Primary and Secondary Prevention of Neural Tube Defects and Other Folic Acid-Sensitive Congenital Anomalies. *J Obstet Gynaecol Canada JOGC = J d'obstetrique Gynecol du Canada JOGC*. 2015 Jun;37(6):534–52.
37. Betancourt JR, Green AR, Carrillo JE. Cultural Competence in Health Care: Emerging Frameworks and Practical Approaches. Policy File. 2002 Oct 1;
38. Tarasuk V, Mitchell A. Household food insecurity in Canada, 2017-18 [Internet]. Toronto: Research to identify

Nutrition Guideline

Pregnancy: Multiples

- policy options to reduce food insecurity (PROOF); 2020. Available from: <https://proof.utoronto.ca/>
39. Men F, Gundersen C, Urquia ML, Tarasuk V. Food insecurity is associated with higher health care use and costs among canadian adults. *Health Aff.* 2020;39(8):1377–85.
 40. Alberta Health Services. Household food insecurity evidence review: Lived experience and strategy effectiveness. Calgary; 2020.
 41. Ontario Dietitians in Public Health. Position statement and recommendations on responses to food insecurity [Internet]. 2020. Available from: odph.ca.
 42. Huisken A, Orr SK, Tarasuk V. Adults' food skills and use of gardens are not associated with household food insecurity in Canada. *Can J Public Heal.* 2016;107(6):e526–32.
 43. Loopstra R, Tarasuk V. The relationship between food banks and household food insecurity among low-income Toronto Families. *Can Public Policy.* 2012;38(4):497–514.
 44. Andermann A. Taking action on the social determinants of health in clinical practice: A framework for health professionals. *Cmaj.* 2016;188(17–18):E474–83.
 45. Sivakumar G, Chau B. Poverty: A clinical instrument for family physicians. *Univ West Ont Med J.* 2017 Dec 3;86(2):62–4.
 46. Wilson RD, O'Connor D. Guideline No. 427: Folic Acid and Multivitamin Supplementation for Prevention of Folic Acid–Sensitive Congenital Anomalies. *J Obstet Gynaecol Canada.* 2022 Jun;44(6):707–19.