

GUIDE

Obstetrical Health Promotion

Nutritional Guidelines for a Multiple Pregnancy



**The Ottawa | L'Hôpital
Hospital | d'Ottawa**

This booklet contains general information that is not specific to you. If you have any questions after reading this, ask your own physician or health care worker. They know you and can best answer your questions.

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Nutritional Care

The purpose of the following guidelines is to help you achieve optimal nutrition during your multiple pregnancy in order to promote maternal-fetal well-being.

General Guidelines

1. Follow *Canada's Food Guide to Healthy Eating* and enjoy a variety of foods from all four food groups.
2. Use the "other" foods (fats, oils and sweets) to obtain adequate amounts of essential fatty acids (EFA).
3. Increase your energy intake: + 200 Kcal/day or more in the first trimester, + 400 Kcal/day or more in the second trimester, + 600 Kcal/day or more in the last trimester.
4. Include more protein sources in your diet from the first to the second trimester, and more again in the last trimester.
5. Maximize your calcium intake, especially in the last trimester, where at least 1600 mg/day is suggested.
6. Maintain your iron intake at a minimum of 30 mg/day.
7. Meet your folic acid requirement set at 800 µg/day.
8. Use salt according to taste.
9. Drink adequate fluid. Six to eight glasses of fluids including water each day is important.
10. Ensure optimal weight gain at all times as multiple gestations have a higher incidence of premature delivery.

Special Considerations

1. *Hyperemesis Gravidarum:*

If you are experiencing nausea and/or vomiting, ask for more specific nutritional guidelines.

2. *Bedrest:*

With a restriction in your activity level, you may find that eating can be a problem because of poor appetite, constipation, heartburns, etc. If you require help with these very real problems, ask for our booklet.

3. *Specific Nutritional Concerns:*

If you suffer from lactose intolerance, food allergies or aversions, eating disorders, gastrointestinal disorders, anemia, diabetes, etc., ask for a nutritional assessment.

4. *Non-Nutritive Substances:*

Caffeine, alcohol, artificial sweeteners and smoking may have an impact on your nutritional status. Ask for more information if you use one or more substance.

5. *Supplementation:*

Vitamins and minerals can help you meet your extra needs, but be cautious. Ask for advice regarding supplementation.

6. *Lactation:*

If you are considering breastfeeding, your energy and nutrient needs will continue to be higher than those for single pregnancies.

Consult your dietitian for further information.

Your Food Guide for a Multiple Pregnancy

<i>Food group</i>	<i>Number of servings daily</i>
Milk products (MP)	4–6
Grain products (GP)	8–12
Vegetables and fruit (VF)	6–10
Meat and alternatives (MA)	2–3
Fats, oils and sweets (FOS)	adequate amounts of EFA

Refer to *Canada’s Food Guide to Healthy Eating* for information on the size of servings.

This food guide will provide you with about 2200–2600 calories. It meets the nutrient needs for the second and third trimesters of the average, healthy woman expecting twins or triplets. The foods listed here are to guide you only, as the needs of each individual varies. If this is not enough food for you, more servings can be selected from the food groups. Small frequent meals with snacks will help you eat larger volumes of food.

Taste and enjoyment can also come from other foods and beverages that are not part of the 4 food groups: fats, oils and sweets. Use these foods in moderation and select those with high quality nutritional value. In fact, this group can provide you with adequate amounts of essential fatty acids.

Emphasis should be on balance and variety, not numbers and quantity.

Here is a sample day's menu for a twin pregnancy incorporating foods from the Food Guide for a Multiple Pregnancy:

Breakfast

1/2 grapefruit (VF)
Shreddies (GP) and milk (MP)
Whole wheat toasts (2GP)
with margarine (FOS)

Supper

Pasta (GP)
Tomato (VF) meat sauce (MA)
Grated cheese (MP)
Sautéed zucchini or broccoli (VF)
in canola oil (FOS)
Milk pudding (MP)

Lunch

Baked beans or chicken leg
(MA) and bread (GP),
margarine (FOS)
Spinach and tomato salad (VF)
with salad dressing (FOS)
Banana (VF)
Milk (MP)

Snacks

Yogurt (MP)
Bran muffin (GP)
Cheese (MP) and crackers (GP)
Hard boiled egg (MA)
Fresh fruit (VF)
Carrot and turnip sticks (VF)

This menu, for example, includes a minimum of 6 servings of milk products (MP), 7 vegetables and fruits (VF), 8 grain products (GP) and 3 meat and alternatives (MA).

Protein

Protein requirements during pregnancy are based on the needs of the nonpregnant woman (44 g/d) plus the extra amounts needed to support the synthesis of new tissue.

Your need for protein is estimated as follows:

1st trimester:	+ 10 g/day
2nd trimester:	+ 40 g/day
3rd trimester:	+ 48 g/day

If you are eating enough food from all four food groups as outlined in the Food Guide for a Multiple Pregnancy, you should get enough protein.

Meat, fish, eggs and poultry are good sources of complete proteins. Meat alternates such as legumes (beans, peas and lentils), nuts and seeds are also good sources of protein.*

****Vegetarians and vegans must ensure excellent complementarity of proteins and take adequate vitamin mineral supplementation.***

Here is the protein content of one average serving in each food group:

Milk products (250 ml)	8 g
Grain products (1 slice, 125 ml)	2 g
Vegetables and Fruit (125 ml, 1 medium)	1–2 g
Meat (50–100 g)	15–30 g
Meat alternatives	
– legumes, nuts, seeds (125–250 ml)	6–18 g
– egg (1)	6 g
– peanut butter (15 ml)	4 g

Calcium

Calcium requirements during pregnancy are based on the needs of the nonpregnant woman (1000 mg/d) plus the rate of accretion by the fetus from the maternal blood supply. The fetus acquires most of its calcium in the last trimester when skeletal growth is maximum and teeth are being formed.

Your need for calcium is estimated as follows:

1st trimester:	+ 200 mg/day
2nd trimester:	+ 200 mg/day
3rd trimester:	+ 600 mg/day

Four cups of milk contain enough calcium to meet your minimum daily requirements of 1200 mg. In the last trimester, it is suggested to increase your intake to a minimum of 1600 mg/d. The upper limit recommended is 2500 mg/day.

Milk products are well established as being the most concentrated source of calcium and being better absorbed (an average value of 30%).

Non-dairy food sources of calcium are acceptable choices, but it may be difficult to meet your requirements without the inclusion of milk products since the absorption* and utilization of calcium is not equivalent.

****Dietary factors enhancing calcium absorption include dairy foods eaten with meals and moderate amounts of fiber and caffeine.***

Equivalent bioavailable calcium

<i>Food</i>	<i>Serving</i>	<i>Calcium (mg)</i>	<i>% amount absorbed</i>	<i>Servings to replace milk</i>
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Dairy

Milk	250 ml	315	32	1
Cheese (hard)	50 g	350	30	1
Cheese (cottage)	250 ml	174	30	2
Yogurt (fruit)	175 g	259	30	1 1/3
Ice milk	125 ml	109	30	3
Ice cream	125 ml	100	30	3 1/2
Frozen yogurt	125 ml	147	30	2 1/3
Milk dessert	125 ml	140	30	2 1/2

Non-dairy

Red kidney beans	250 ml	52	17	11 1/2
Soy beverage	250 ml	10	31	31 1/2
Tofu, calcium set	100 g	150	31	2
Broccoli	125 ml	38	52	5
Spinach	125 ml	129	5	15
Almonds	125 ml	200	21	2 1/3
Sesame seeds	125 ml	104	21	4 2/3
Fruit juice (fortified)	250 ml	300	30	1
Soy drink (fortified)	250 ml	300	30	1

Iron

Iron requirements during pregnancy are based on the iron that the nonpregnant, nonlactating woman needs (18 mg/d) plus the iron contributed to the fetus, the iron in the placenta and cord and the iron in the blood lost at delivery.

Your need for iron is estimated as follows:

1st trimester:	an extra 9 mg/day
2nd trimester:	an extra 10–15 mg/day
3rd trimester:	an extra 12–27 mg/day

Your need for iron will be the highest in your third trimester, when 30–45 mg is the recommended daily intake.

The best food sources, called heme iron, come from animal products such as red meat, fish and poultry.

Other important sources of iron, called non-heme iron, can be found in vegetable foods, fruits, grains and cereals and eggs.

To help your body absorb more iron, eat foods that contain heme iron and/or vitamin C when you eat vegetable foods and foods that act as iron inhibitors.*

****Beware of iron inhibitors, such as oxalates in spinach, phytates in whole grains, legumes and tannins in tea and coffee.***

All iron is not created equal

Heme iron

- approximately 23% absorption
- absorption not affected by other food staples
- found only in animal products
- good sources:
 - organ meats
 - beef
 - pork
 - oysters
 - scallops
 - turkey (dark meat)

Non-heme iron

- only 3–8% absorption
- absorption may be increased or decreased by other foods
- found mostly in vegetable foods
- good sources:
 - dried fruits
 - whole grain cereals
 - enriched cereals and pasta
 - dark green leafy vegetables
 - legumes (lentils, beans and peas)

Folic acid

Folic acid requirements during pregnancy are based on the needs of the nonpregnant woman (400 $\mu\text{g}/\text{day}$) plus the amount needed for the metabolism of proteins and the formation and reproduction of cells. In fact, because of its role in the prevention of neural tube defects, it is now recommended that folic acid intake be increased prior to conception.

During pregnancy, your need for folic acid is estimated as follows:

1st trimester:	an extra 200 $\mu\text{g}/\text{day}$
2nd trimester:	an extra 200–400 $\mu\text{g}/\text{day}$
3rd trimester:	an extra 400–800 $\mu\text{g}/\text{day}$

Folic acid is generally found in fresh greens, some fresh fruits, whole grains, organ meats, milk and oysters.

Prolonged or intense cooking can destroy much of the folic acid in foods.*

Your requirements for folic acid during pregnancy may be difficult to meet through diet alone. It is therefore suggested that you get additional folic acid through supplementation.

****Eating foods raw or fresh minimizes cooking losses of the vitamin.***

Food sources of folate

Excellent

Peanuts (60 ml)
 Soy flour (60 ml)
 Sunflower seeds
 (60 ml)
 Toasted wheat
 germ (30 g)
 Beef kidneys (60 g)
 Dry brewer's
 yeast (5 ml)
 Asparagus
 (4 spears)
 Brussels sprouts
 (125 ml)
 Spinach (125 ml)
 Leafy greens
 (125 ml)
 Beans, cooked
 (125 ml)
 Lentils, cooked
 (125 ml)

Good

Peanut butter (30 ml)
 Tahini (30 ml)
 Filberts, hazelnuts,
 walnuts (125 ml)
 Orange juice (fresh
 or frozen) (125 ml)
 Orange (1 med.)
 Bran cereals (30 g)
 Egg (1 large)
 Beets, cooked
 (125 ml)
 Broccoli, cooked
 (125 ml)
 Cauliflower, cooked
 (125 ml)
 Corn, cooked (125 ml)
 Peas, cooked (125 ml)
 Parsnips, cooked
 (125 ml)
 Chinese cabbage, cooked
 (125 ml)
 Beans sprouts, cooked
 (125 ml)

Fair

Tofu (100 g)
 Sesame seeds
 (60 ml)
 Banana (1 med.)
 Tomato (1 med.)
 Pear (1 med.)
 Carrot, raw (1 med.)
 Celery, raw (1 stalk)
 Grapefruit (1/2)
 Raspberries (125 ml)
 Strawberries (125 ml)
 Mixed vegs. (125 ml)
 Bread (1 sl.)
 Bagel (1/2)
 Whole wheat flour
 (125 ml)
 Milk (250 ml)

Supplementation

Emphasis should always first be placed on improving diet quality. However, women expecting multiples may benefit from supplementation.

Because of the plethora of products available, you should ask for advice in choosing safe and adequate supplements.*

Usually, **one** prenatal vitamin and mineral tablet is sufficient. Other supplements may be needed depending upon the laboratory data and the dietary intake. These may include folic acid, iron or calcium.

Supplements should be taken at bedtime or between meals, unless directed otherwise, with water or juice, not milk, tea or coffee. Supplemental calcium and iron are best absorbed when taken between meals and at different times of the day.

****When buying a maternal supplement, make sure there is a drug information number (DIN) on the label.***

Weight gain

Nutrition has a great overall influence on fetal growth in multiple gestations. Moreover, your rate of weekly weight gain is a very significant variable in the outcome of your pregnancy.

During the first trimester, your weight gain should be approximately 2.0–3.0 kg.

In the second and third trimesters, a gain of approximately .68–1.0 kg per week will help you reach a desirable total weight gain of ~ 16–20 kg for twins and 23 kg for triplets.

Weight gain is usually dependant on the pre-pregnancy body mass index (BMI). If your weight was below normal (BMI < 20), it is recommended to gain according to the upper range, while you may expect to gain less if your body weight was above normal (BMI > 27).

Use the grid on the next page to plot your gain and optimize your outcome.

Resources

Further advice:

- Call the dietitian: 737-8906
- Discuss with your nurse/health care provider.

Further reading:

- How to Eat Well While on Bedrest During Pregnancy (The Ottawa Hospital, revised 1997)
- Nutritional Guidelines to Help Control Nausea and Vomiting During Pregnancy (The Ottawa Hospital, revised 1997)
- Nutritional Guidelines to Help Increase Your Intake of Iron (The Ottawa Hospital, revised June 2002)
- Nutritional Guidelines to Help Increase Your Fibre Intake (The Ottawa Hospital, 2000)
- Nutritional Guidelines to Help Control Caffeine Intake (The Ottawa Hospital, 2000)
- Nutritional Guidelines for Eating Fish During Pregnancy (The Ottawa Hospital, 2002)
- Nutritional Guidelines to Help Increase Your Intake of Essential Fatty Acids (The Ottawa Hospital, 2002)

Notes
