

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

Recommendations

Recommend that breastfeeding women:

- Follow Eating Well with Canada's Food Guide and include an extra 2 to 3 Food Guide Servings from any food group(s) every day. Women who are underweight, nursing multiple infants or exercising vigorously may need additional food.
- Drink to thirst to meet the increased fluid needs during breastfeeding. The average adequate intake is about 12 cups of fluid (3.1 L) every day.
- Take a daily multivitamin and mineral supplement containing 0.4 mg (400 micrograms) of folic acid and 400 international units of vitamin D. It is recommended that the multivitamin/mineral supplement contain vitamin B₁₂.
- Consume at least 2 Food Guide Servings per week of fatty fish that are low in mercury (one Food Guide Serving is 75 g or 2 ½ oz).
- Follow Health Canada's guidance advice on limiting high mercury fish. High mercury fish include fresh or frozen tuna, shark, swordfish, escolar, marlin, and orange roughy.
- Attain a healthy BMI. If needed, gradually lose weight through appropriate nutrition and physical activity once breastfeeding is established, to promote a return to pre-pregnancy weight and/or a healthy body mass index (BMI).
- Consider avoiding alcohol as it is transferred into the breastmilk; however, if choosing to have an occasional alcoholic drink, wait until the alcohol has cleared breastmilk (approximately 2-3 hours per standard drink) before breastfeeding.
- Consider all sources of caffeine and limit caffeine intake to 300 mg per day.
- Review the ingredient list, directions for use, and warnings or cautions provided on the product label of any herbal and natural health products, including herbal teas. Only consume herbal products that are considered safe for breastfeeding women.
- Consider that no special diet is recommended during lactation to prevent an allergy in an infant.
- Consider that modifying the maternal diet to reduce or eliminate infant colic or gas is not normally effective or recommended. A trial elimination of suspected foods one at a time can be tried. Foods found to have no effect on infant colic or gas can be re-introduced into the diet.

Referral recommendations:

- If the breastfeeding mother is concerned about breastmilk production and additional support is needed, refer the mother to a healthcare provider who is knowledgeable about breastfeeding (ex. public health nurse, breastfeeding clinic, lactation consultant, etc.).
- Consider referring breastfeeding women to a Registered Dietitian for nutrition counselling in circumstances that could affect nutritional status, such as: restriction of a whole Food Group on Canada's Food Guide; <18 years of age; following a vegan diet; underweight; feeding multiple infants or an infant and young child; exercising vigorously; or when consuming a low calorie diet (<1500 kcal/day). Referral processes will vary based on zone and site policy.

Scope of this Guideline

The scope of this guideline covers the following:

- healthy mothers of healthy, full term infants
- women who are breastfeeding infant(s)/children of any age
- all ages of breastfeeding mothers, including adolescents

The scope of this guideline does not cover:

- preterm infants (which is defined as <37 weeks 0 days gestation)¹
- infants or mothers with specific health conditions (e.g. diabetes)

Background

Alberta Health Services is committed to the protection, promotion, and support for breastfeeding. Breastfeeding is the normal and unequalled method of feeding infants.² Exclusive breastfeeding for the first 6 months, and continued for up to 2 years or longer, is recommended for the healthy growth and development of infants and toddlers² and the benefits to mothers.³ Information on the benefits of breastfeeding can be found by taking the online course entitled “Breastfeeding Foundations”, available on My Learning Link (AHS staff) or the website: <http://aphp.dapasoft.com>.

Education to healthcare providers on breastfeeding has been shown to improve breastfeeding exclusivity and duration.⁴ As a strategy to support and encourage breastfeeding, this guideline provides healthcare providers with evidence-informed information in order to provide accurate and consistent information on maternal diet while breastfeeding, and helps address common maternal diet-related questions. The focus of this information is to help mothers achieve a nutritionally adequate diet to support the increased nutrient requirements of lactation in order to optimize the health benefits to herself and her infant.

Key Questions

**Do breastfeeding women need more energy and nutrients than non-breastfeeding women?
If so, how can breastfeeding women meet these needs?**

Yes, breastfeeding women have higher energy, protein and carbohydrate needs and some increased nutrient needs such as: vitamin A, vitamin C, vitamin E, B vitamins and zinc, than non-breastfeeding women.^{5,6,7} However, breastfeeding women need less iron than non-breastfeeding women due to the absence of menstruation.⁸ When breastfeeding women resume menstruation, their iron needs increase.⁸ However, some breastfeeding women may need higher amounts of iron based on individual assessment (e.g. anemia).⁹

The additional energy requirements needed for lactation are 350-400 calories/day during the first year.^{5,9,10,11} Refer to “What are the recommendations for weight loss for breastfeeding women?” for more information.

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

To meet these increased energy and nutrient needs, advise breastfeeding women to:

- Follow Eating Well with Canada's Food Guide and include an extra 2 to 3 Food Guide Servings from any food group(s)
 - Practical examples of 3 Food Guide Servings that are 350-400 calories that may be eaten as snacks or added to meals are:
 - $\frac{3}{4}$ cup (30 g) whole grain cold cereal with 1 cup (250 mL) 1% milk, and a medium pear, or
 - 1 small pita with 1.5 oz (50 g) of cheese, 75 g of chicken, or
 - 1 small apple, $\frac{1}{4}$ cup (60 mL) of almonds and $\frac{3}{4}$ cup (175 mL) of yogurt
- Take a daily multivitamin/mineral supplement containing 400 micrograms (0.4 mg) of folic acid¹² and 400 international units of vitamin D based on Alberta Health Services [Calcium and Vitamin D Nutrition Guideline](#). It is recommended that the multivitamin/mineral supplement contain vitamin B₁₂, as high doses of folic acid can mask a vitamin B₁₂ deficiency.¹² Health Canada only specifies that vitamin B₁₂ should be present in the supplement and does not specify an amount of vitamin B₁₂.¹²

Prenatal multivitamin/mineral supplements are often also marketed as postnatal supplements. Although prenatal/postnatal-specific multivitamin/mineral supplements are not necessary after delivery, finishing a breastfeeding woman's prenatal supplement is acceptable for practical reasons. These supplements typically have a higher iron and folic acid content than regular multivitamin/mineral supplements to meet the increased needs in pregnancy. Since breastfeeding women have lower iron requirements than in pregnancy, they can take any multivitamin/mineral supplement containing 400 micrograms (0.4 mg) of folic acid, 400 IU vitamin D, and vitamin B₁₂. If women were taking a specialized/prescription supplement during pregnancy, it is recommended they check with their physician for advice on continuing.

Breastfeeding women can be offered a referral to a Registered Dietitian for nutrition counselling in circumstances that could impact her nutritional status, such as:

- restriction of a whole food group (e.g. Vegetables and Fruit, Grain Products, Milk and Alternatives, or Meat and Alternatives; cow's milk protein-free diet)
- underweight
- exercising vigorously
- consuming a low calorie diet (<1500 kcal/day)
- <18 years of age
- following a vegan diet
- pregnant or breastfeeding multiple children

Do breastfeeding women need to drink more fluid than non-breastfeeding women?

Yes, breastfeeding women need to drink more fluid than non-breastfeeding women. The average adequate intake is about 12 cups (3.1 L) of fluid a day, which is higher than non-breastfeeding women (9 cups [2.2 L]/day).¹³ This includes all beverages such as water, milk, juice, coffee, tea, etc. It is recommended that breastfeeding women drink to thirst to meet their increased fluid needs and pay attention to early signs of insufficient fluid intake (e.g. dark-coloured urine).¹⁴ Even though low fluid intake has not been shown to impact breastmilk production, it could still cause mild maternal dehydration and associated maternal consequences (e.g. constipation).¹⁵ Additional fluids may be needed in hot weather and during exercise.¹³

See also: [Do extra fluids increase breastmilk production?](#)

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

What are the nutritional needs of a breastfeeding woman who is also pregnant or feeding multiple children?

Due to limited research, specific nutrition recommendations for breastfeeding women who are also pregnant cannot be made.¹⁶ The nutritional needs of pregnant breastfeeding women are expected to increase energy and nutrient needs beyond those of breastfeeding or pregnant women alone.¹⁶ It is important for the pregnant breastfeeding woman to gain the recommended amount of weight during pregnancy according to her pre-pregnancy body mass index (BMI). See [Nutrition Guideline Pregnancy](#).

There is currently not enough evidence to provide specific recommendations for breastfeeding mothers who are feeding multiple children. A recent Canadian expert consensus statement recommends “additional calories” for women who are underweight, feeding multiple infants, or exercising vigorously⁹ in addition to the extra 2 to 3 Food Guide Servings per day.

Consider referring breastfeeding women who are pregnant or are feeding multiple children to a Registered Dietitian for nutrition counselling.

Are there any extra considerations for adolescents (age <18 years) who are breastfeeding?

Adolescents may have higher energy requirements for their own growth, in addition to energy needed to support lactation. When considering additional nutrient needs, breastfeeding adolescents also need extra calcium (1300 mg calcium/day for non-breastfeeding and breastfeeding adolescents compared to 1000 mg/day for adult females.)¹⁷ Adolescents can meet their energy and nutrient needs for breastfeeding by following Canada’s Food Guide for their age and including the extra 2 to 3 Food Guide Servings from any food group(s) per day. To help meet their calcium requirement, healthcare providers can emphasize that adolescent females are recommended to have 3 to 4 Food Guide Servings of Milk and Alternatives per day (versus 2 Food Guide Servings for adult females).¹⁸ Adolescents also need to take a multivitamin/mineral supplement with the same nutrients advised for all breastfeeding women (0.4 mg of folic acid, vitamin B₁₂¹², and 400 units of vitamin D).

Do breastfeeding mothers need nutrition supplement drinks?

Some nutrition supplement drinks are marketed specifically for pregnant and breastfeeding women.¹⁹ These drinks are not required for a healthy diet and are not intended as a total diet replacement as they are missing essential nutrients such as fibre.¹⁹ A nutrition supplement drink may not provide enough important nutrients like folic acid and vitamin D¹⁹; therefore, it is not recommended as a multivitamin/mineral supplement replacement for breastfeeding women. If a woman is using this product, she is advised to follow the directions for use on the label¹⁹ unless otherwise advised by a physician or dietitian. Drinking more than the recommended amount may put women at risk of exceeding upper nutrient limits (e.g. vitamin A) when considering all oral sources of nutrients (food, drinks, and supplements).

Does maternal diet affect the quality and/or composition of breastmilk?

Research in the area of breastmilk composition is limited by the wide variation in study designs and because of the number of studies of low to moderate quality.²⁰ Overall, the literature suggests that the nutritional quality of breastmilk is highly preserved²¹ and day-to-day variations in diet do not affect breastmilk production and composition of nutrients.²² The nutritional composition of breastmilk is mainly affected by the mother's nutrient stores.²³

Refer to the questions below for the effects of these maternal diet components on breastmilk production, quality and composition:

- [flavour](#)
- [weight loss and calories](#)
- [fasting](#)
- [protein, carbohydrate and fat](#)
- [omega-3 fatty acids](#) (e.g. docosahexaenoic acid or DHA)
- [fluids](#)
- [vitamins and minerals](#)
- [iron-deficiency anemia](#)

Does a breastfeeding woman's diet affect the flavour of breastmilk?

Yes, a breastfeeding woman's diet can affect the flavour of breastmilk. The variety of flavours found in breastmilk is generally found to be beneficial to an infant's development of food preferences; however, there is not enough evidence to suggest that certain flavours adversely affect the acceptability of breastmilk to the infant.²⁴

Flavour exposure starts in utero when an infant swallows amniotic fluid.²⁵ Flavour exposure continues when components of a mother's diet pass through her breastmilk.²⁶ The extent of what is passed to an infant is highly variable between and within each individual mother.²⁴ Research shows that early exposure of different flavours to infants via breastmilk may improve their acceptance to these flavours later on in life when exposed to the same flavour in complementary feeding.²⁷

What are the recommendations for weight loss for breastfeeding women?

Not all breastfeeding women may need to lose weight if they are at or below a healthy body weight.¹¹ Additional energy demands for exclusively breastfeeding women compared to non-breastfeeding women are about 640 calories/day during the first 6 months; however, it is assumed that breastfeeding women draw on fat stores from pregnancy to help support milk production. Therefore, the energy requirements needed for lactation are only an additional 350-400 calories/day during the first year,^{5,9,10,11} which are likely to promote gradual weight loss.¹¹ Gradual weight loss can be defined as the average rate of weight loss postpartum, which is 0.5 -1.0 kg (1.1 - 2.2 pounds) per month after the first month postpartum.¹¹

For women who exceeded gestational weight gain targets or who were overweight or obese before pregnancy, it is recommended they return to pre-pregnancy weight and/or a healthy body mass index (BMI) through a combination of healthy eating and physical activity.^{9,28,29} For individualized dietary counselling, a referral can be made to a Registered Dietitian. Overweight (BMI ≥ 25) women can safely lose weight at a rate of 0.5 kg/week (2.0 kg/month or 4.4 pounds/month) without affecting breastmilk production.³⁰

See also: [Do breastfeeding women need more energy and nutrients than non-breastfeeding women?](#)

What is the effect of low-calorie intake and weight loss on breastmilk production?

Research suggests that only when caloric intake is less than 1500 kcal/day, milk output and infant intake may be decreased.³¹ The evidence on restricted caloric intake and effect on breastmilk production is dated and sparse and further limited by small sample sizes and high dropout rates in the studies. There is little evidence suggesting that breastmilk volume or nutrient composition is negatively affected by *gradual* weight loss.²⁹

It is recommended that breastfeeding women who are consuming less than 1500 kcal/day be referred to a Registered Dietitian.

What is the effect of religious fasting on breastmilk composition and a mother's nutrient intake?

Fasting is observed in many religions and is defined as a partial or total abstinence from all foods or prohibited foods, during a specific time period.³² Very little scientific research has examined the impact of religious fasting on breastfeeding. There are reported decreases in breastmilk micronutrient^{33,34} and macronutrient³⁴ composition, as well as nutrient intakes of mothers during Ramadan fasting.³³ However, research suggests there is no detrimental effect of this type of fasting on infant growth parameters.^{33,35}

It is recommended that breastfeeding women excuse themselves from fasting.^{33,36} Those who choose to participate in religious fasting are advised to make every effort to consume adequate food and fluids during non-fasting hours.

Can the level of protein, carbohydrate and fat in breastmilk be increased (or decreased) by eating more (or less) of these macronutrients?

The level of protein in breastmilk does not appear to be affected by the amount of protein in the breastfeeding woman's diet.²¹ Lactose is the main carbohydrate in breastmilk and its amount in breastmilk is not influenced significantly by maternal diet.²¹ Maternal diet does impact the types of fatty acids found in breastmilk but does not impact the total amount of fat.^{21,37} For example, the amount of trans fatty acids a mother has in her diet is also correlated to the amount found in her breastmilk.³⁸ It is therefore recommended to limit trans-fat intake.³⁸ As well, the amount of some omega-3 fatty acids (e.g. docosahexaenoic acid) in breastmilk is influenced by maternal diet (see question and answer below).²²

Does maternal intake of docosahexaenoic acid (DHA) affect the DHA composition in breastmilk?

Yes, maternal dietary DHA is positively correlated with the amount of DHA that is present in her breastmilk.³⁹ DHA is a type of omega-3 fatty acid that is known to be critical for brain and retinal development in infancy.⁴⁰ Omega-3 fatty acids are long chain polyunsaturated fatty acids (LCPUFA) that also include alpha-linolenic acid (ALA) and eicosapentaenoic acid (EPA). DHA is primarily found in fish, shellfish, fish oil supplements, and omega-3 enriched eggs.⁴¹

A European Union consensus statement recommends 200 mg DHA per day for pregnant and breastfeeding women.⁴² In a recent pregnancy and postpartum study of Albertan women (n= 600), less than 1/3 met this recommendation.⁴³ Eating 2 Food Guide Servings of fatty fish per week provides approximately 200 mg DHA per day.^{44,45} Recommend breastfeeding women eat at least 2 Food Guide Servings of low mercury fatty fish (e.g. salmon, herring, Atlantic mackerel, rainbow trout) per week to help support a healthy fat composition in breastmilk.

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

A woman can also increase the DHA content in her breastmilk by taking a DHA supplement.⁴⁶ Women who do not consume the recommended 2 Food Guide Servings of fatty fish per week can discuss supplementation with their healthcare provider.

ALA is found in plant sources such as walnuts, flaxseed, and canola and soybean oils.⁴⁷ Humans can convert ALA to DHA, however the amount of ALA converted is very low.⁴⁷ There is insufficient evidence to know if ALA consumption is adequate (in the absence of consuming any DHA containing foods) to maintain DHA status.⁴⁸

Do extra fluids increase breastmilk production?

Extra fluids likely do not increase breastmilk production. There is insufficient evidence to support this view (beyond what is required to 'satisfy thirst').¹⁴ One study observed a wide range (872-3704 mL/day) of total fluid intakes among a small sample of breastfeeding women with no significant relationship between 24 hour total fluid intake and breastmilk volume; however, breastfeeding women who consumed lower amounts of fluid had more concentrated urine.¹⁵

Does maternal diet affect the vitamin and mineral content of breastmilk?

Breastmilk content of some vitamins and minerals (thiamin, riboflavin, vitamin B₆, vitamin B₁₂, choline, vitamin A, vitamin D, selenium and iodine) may be low in mothers with these nutritional deficiencies.⁴⁹ However, deficiencies for the majority of these nutrients are rare in North America (although data specifically for breastfeeding women is not available).^{7,50} If maternal deficiency is suspected, it is recommended that the mother be referred to a Registered Dietitian to assess dietary adequacy and the potential need for nutritional supplements. Breastfeeding women who follow a vegan diet may not get enough vitamin B₁₂ in their diet, and may produce breastmilk deficient in B₁₂.^{6,49}

See also: [Are there any extra considerations with a vegan diet?](#)

Some studies have shown that an infant's vitamin D requirements can be met through breastmilk if the breastfeeding mom takes large doses of vitamin D (e.g., 6400 IU/day);⁵¹ however, this amount exceeds the tolerable upper intake level (UL) of 4000 units/day¹⁷ and is not recommended. At this time, breastfeeding women are recommended a [multivitamin/mineral supplement with 400 IU vitamin D](#), unless directed otherwise by their physician.

See [Nutrition Guideline: Vitamin D](#) for Healthy Infants and Young Children

Does iron deficiency anemia affect breastmilk production?

No, there is no evidence that postpartum iron deficiency anemia inhibits breastmilk production directly,^{52,53} although 2 observational studies reported a relationship between postpartum iron deficiency anemia and breastfeeding duration.^{52,53} Henly et al.⁵² found breastfeeding duration was shorter for anemic mothers compared to non-anemic mothers. Rioux et al.⁵³ observed anemia was associated with discontinuation of breastfeeding before 4 months.

It is recommended that breastfeeding mothers with signs and symptoms of postpartum iron deficiency anemia (e.g. fatigue and exhaustion, postpartum hemorrhage, pale skin, vegetarian/vegan dietary pattern, etc.) be referred to their healthcare provider to screen for low ferritin and hemoglobin.⁵²

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

Refer to the questions below for information on the following in relation to a breastfeeding mother's diet:

- [vegan diet](#)
- [constipation](#)
- [foodborne illness](#)
- [caffeine](#)
- [alcohol](#)
- [sugar substitutes](#)
- [fish](#)
- [herbal products](#)
- [galactagogues](#)
- [probiotics](#)
- [suspected allergies](#)
- [colic](#)
- [gas](#)
- [allergy prevention](#)
- [candidiasis/thrush](#)

Are there any extra considerations with a vegan diet?

A vegan diet excludes all food of animal origin including meat, fish, poultry, eggs, milk and milk products.⁵⁴ Vitamin B₁₂ is a nutrient found in food from animal sources, and therefore, vegan diets may not provide enough vitamin B₁₂.⁵⁴ Vegan breastfeeding women who do not get enough vitamin B₁₂ may produce breastmilk deficient in vitamin B₁₂.^{6,49} Severe vitamin B₁₂ deficiency in infants may lead to growth, developmental, and neurological concerns.⁵⁵ Vitamin B₁₂ deficient breastmilk can be prevented and improved by increasing the mother's vitamin B₁₂ intake.⁴⁹ If foods or supplements with vitamin B₁₂ are not consumed regularly, it is recommended that the breastfeeding mother consult a physician about having her vitamin B₁₂ levels checked.

Vegan mothers who are not deficient in B₁₂ can obtain adequate amounts (2.8 mcg/day) by consuming at least 2 daily food sources of vitamin B₁₂ foods and a multivitamin/mineral supplement (recommended for all women of childbearing years).^{6,12,56} It is recommended that the vitamin B₁₂ containing foods be eaten at separate times during the day to promote better absorption.⁶ There are many vegan foods fortified with vitamin B₁₂. Examples of these foods include: Red Star Nutritional Yeast, fortified soy beverage, fortified meat substitute, or fortified ready-to-eat breakfast cereals.

A vegan diet supplies little or no EPA or DHA.⁵⁴ Breastfeeding women who have no or low intakes of EPA and DHA will have breastmilk that is also low in these omega-3 fatty acids.⁵⁴ Breastfeeding mothers following a vegan diet may need to consume an EPA/DHA vegan supplement (derived from marine algae) to meet their daily needs.⁵⁷ Breastfeeding vegan women can be referred to a Registered Dietitian for further counselling on nutrition and supplementation.

What can a breastfeeding woman do about constipation?

Constipation is a common postpartum problem.⁵⁸ Advise breastfeeding women to gradually increase fluid and fibre intake to ensure they achieve adequate intakes (12 cups or 3.1 L/day for fluid¹³; 29 g/day for fibre.¹⁰)

To increase fibre intake, advise women to:

- Eat a variety of vegetables, fruit, whole grains, and legumes (beans, peas, lentils) daily.
- Compare food labels (Nutrition Facts table) to choose foods with more fibre. Choose foods with more than 2 g of fibre per serving.
- Refer to the handout: [Managing Constipation](#) under "Gastrointestinal"

If needed, bulk-forming laxatives (psyllium or methylcellulose) are a safe fibre supplement for breastfeeding women because they are not absorbed by the gut and as a result, do not find their way into infant circulation.^{9,59}

Are breastfeeding women more susceptible to foodborne illness?

No, breastfeeding women are not more susceptible to foodborne illness than the general population, as they are not considered a vulnerable population.⁶⁰ As such, food safety guidance aimed at vulnerable populations such as pregnant women does not apply to breastfeeding women. For example, breastfeeding women do not need to avoid uncooked deli meats or semi-soft cheeses. Breastfeeding women can be advised to follow the standard [food safety recommendations](#) given by Health Canada for the general population.

Are foodborne illnesses transmitted to the infant through breastmilk?

It is not clear if foodborne pathogens can be transmitted from a mother to her infant through breastmilk.⁶¹ In the vast majority of cases, the presence of maternal infection from foodborne pathogens is not a contraindication to breastfeeding.^{61,62,63} There does not appear to be a direct risk to the infant if a breastfeeding mother ate food containing harmful bacteria.⁶¹

Can expressed breastmilk cause foodborne illness in the infant?

If handled incorrectly, expressed breastmilk can be a reservoir for microorganism growth^{64,65} and can be a potential source of infection^{65,66,67} for foodborne illness. It is recommended to follow the guidelines for pumping, storing, thawing, and warming expressed breastmilk. Refer to [Storing Expressed Breastmilk in Healthy Parents Healthy Children](#).

Advise families that human milk obtained via the Internet or directly from individuals puts an infant at risk for negative outcomes.⁶⁸ There are potential risks the milk may be contaminated with bacteria that can cause foodborne illness, viruses such as HIV, or other substances which are health hazards.^{68,69} For these reasons the consumption of unprocessed donor human milk obtained from private sources is not recommended by Health Canada.⁶⁹

Pasteurized donor human milk from regulated milk banks is considered safe from these risks because milk banks abide by strict operating procedures and are regulated under the Food and Drugs Act and Regulations.⁶⁹

What are the recommendations for caffeine intake in breastfeeding women?

It is recommended that breastfeeding women limit their caffeine intake to 300 mg per day.⁷⁰ This amount is unlikely to have adverse effects on postnatal development.⁷¹ Caffeine rapidly passes into breastmilk after maternal ingestion, with a peak level usually occurring about 1 hour after ingestion.^{72,73,74,75} The elimination half-life of caffeine ranges between 3-7 hours and can be influenced by many factors, including, sex, age, use of oral contraceptives, pregnancy, and smoking.⁷¹ The half-life is the time required for a quantity to reduce to half its initial value.⁷⁶ Fussiness, jitteriness and poor sleep patterns have been reported in the infants of mothers with very high caffeine intakes, equivalent to about 10 or more cups of coffee daily.⁷⁷

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

Advise breastfeeding women to consider all sources of caffeine to keep to the limit of 300 mg per day, including:

- Drinks and food: It is not mandatory in Canada for manufacturers to include the caffeine content (amount) on food labels, unless caffeine is added to the food as an ingredient.⁷⁸ The approximate caffeine content of common beverages and food is presented in Table 1. The caffeine content of coffee and tea can vary depending on the plant variety and growing conditions, brewing method and time, proportion of coffee or tea to water, roasting method, particle size ('grind') and serving size.^{79,80,81} Breastfeeding women may be able to find the caffeine content of a specific brand from a product's company (website or customer service).
- Supplements and over the counter medications (e.g. pain relievers, diuretics, cold remedies and weight loss aids): Look at the medication label to determine caffeine content. Advise women to consult with their healthcare provider before taking any medications.

Caffeinated energy drinks (e.g. drinks and shots) are not recommended for breastfeeding women.^{82,83} Energy drinks may have herbal ingredients that have not undergone scientific evaluation.⁸⁴

Table 1. Approximate Caffeine Content of Common Beverages and Food

| Food and beverages | Volume | Approximate caffeine content (mg) |
|--|--|---|
| Coffee, brewed | 1 cup (250 mL) | 100 ^{45,85,86} range: 79 – 173 ⁸⁶ |
| Coffee, brewed, restaurant-prepared [§] | 1 cup (250 mL) | 113 (dark roast) ⁸⁷ - 191 (light roast) ^{87,88} |
| Coffee, espresso | 1 oz (30 mL) (typically 1 'shot') | 64 ⁴⁵ range: 47 ⁸⁶ – 125 ⁸⁷ |
| Coffee, espresso-based drinks | 1 cup (250 mL) 14 oz (425 mL) [§] 20 oz (591 mL) [§] | 66 – 133 ⁸⁶ 205 ⁸⁷ (cappuccino, latte & Americano) 150 (cappuccino, latte), 300 (Americano) ⁸⁹ |
| Coffee, single cup brewers | Per disc/pod | 85-105 (T Disc) ⁹⁰ 70-150 (K-Cup [®]) ⁹¹ |
| Coffee, instant | 1 cup (250 mL) | 66 ⁴⁵ - 79 ⁸⁶ |
| Tea, black | 1 cup (250 mL) | 50 ⁴⁵ |
| Tea, green | 1 cup (250 mL) | 30 ⁸⁵ |
| Tea, white | 1 cup (250 mL) | 16 ⁸⁶ |
| Tea, herbal (tisanes) | 1 cup (250 mL) | 0 ⁴⁵ |
| Tea, iced, sweetened | 1 cup (250 mL) | 8 ⁴⁵ - 28 ⁸⁵ |
| Carbonated drinks, cola, pepper-type, lemon-lime with added caffeine | 1 cup (250 mL) 1 can (355 mL) | 23 – 36 ⁴⁵ 33 – 51 ⁴⁵ |
| Chocolate milk | 1 cup (250 mL) | 3 ⁴⁵ |
| Energy drink | 1 cup (250 mL) 1 can (473 mL) | 75 ⁹² – 85 ^{93,94} 142 ⁹² – 160 ^{93,94,95} |
| Milk chocolate | 1 oz (30 g) (size of a white eraser) | 6 ⁴⁵ |
| Dark chocolate | 1 oz (30 g) (size of a white eraser) | 13-24 ⁴⁵ |

[§] Examples from common coffee-shops in Alberta

What are the recommendations about alcohol consumption during breastfeeding?

Advise breastfeeding women to consider avoiding alcohol⁹⁶ as it is transferred into the breastmilk.⁹⁷ The safest option for a breastfeeding mother is to not drink alcohol.^{98,99} However, if a woman chooses to have an occasional alcoholic drink, it is recommended that she wait until the alcohol has cleared her breastmilk (approximately 2-3 hours per standard drink, depending on the weight of the mother) before she breastfeeds.¹⁰⁰ One standard drink is defined as: 142 mL [5 oz.] of wine, 341 mL [12 oz.] of beer or 43 mL [1.5 oz.] of liquor.¹⁰¹

Alcohol has been detected in breastmilk at a level that parallels the mother's blood plasma level^{97,102,103} within approximately 30-60 minutes after ingestion.^{98,104} Alcohol does not remain in breastmilk; it clears from breastmilk at the same rate as the maternal blood concentration.^{97,103} There are many factors that influence the blood alcohol concentration of the mother such as the volume of alcohol ingested along with elimination factors such as kidney and liver function. Drinking water or coffee, resting, or pumping and dumping breastmilk while drinking won't clear the alcohol from breastmilk any faster.⁹⁷ However, breastfeeding mothers may choose to pump and discard just enough breastmilk during the 2-3 hour per drink timeframe to relieve discomfort.

The evidence around the effects of maternal alcohol intake on the breastfed infant is limited.^{97,98,101,103} Risks to an infant after exposure to alcohol through breastmilk include disrupted sleep patterns, decreased breastmilk intake due to reduced production, and potential negative effects on brain development.^{97,102,104,105,106}

If a breastfeeding mother makes the decision to occasionally consume alcohol some general information can be provided based on an assessment of the mother's alcohol use. Breastfeeding women can be advised to make a plan for the feeding times that they cannot breastfeed due to alcohol intake. To reduce the infant's risk, a breastfeeding mother can be advised to:

- Limit alcohol to 1 or 2 drinks per occasion.⁹⁸
- Feed her infant prior to alcohol ingestion.^{97,98}
- Allow enough time for the alcohol to be eliminated from her body before breastfeeding her infant.
- Pump and store her breastmilk before having a drink so the infant can continue to receive breastmilk.⁹⁸

Healthcare providers concerned about a mother's alcohol intake can refer to local protocols on screening and referral.

What factors influence the infant's exposure to alcohol through breastmilk?

The infant's level of alcohol exposure through breastmilk may be influenced by many factors. Some factors include:

- mother's ability to metabolize alcohol.^{97,98,102}
- frequency, volume, and concentration of alcohol consumption.^{97,98,102}
- infant's risk level based on their age and ability to metabolize alcohol.^{97,98,102}

As each of these factors varies from individual to individual, the safest option for a breastfeeding mother is to avoid alcohol.^{98,99}

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

Does alcohol increase breastmilk production?

Alcohol does not increase breastmilk production. In fact, drinking the equivalent of 1.5 standard drinks has been shown to lead to an overall reduction in milk production, block the release of oxytocin, and interfere with the milk ejection reflex.^{98,103,106}

In some traditions, beer is recommended for initiation of breastfeeding and enhancement of breastfeeding success.¹⁰⁷ Some evidence suggests that beer can stimulate prolactin secretion which may enhance lactogenesis.^{104,107} The component in beer responsible for the effect on prolactin secretion is not the alcohol content but a polysaccharide from barley.^{104,107} Non-alcoholic beer would have a similar effect on prolactin secretion.¹⁰⁷

Alcoholic beer is not recommended to increase breastmilk production as breastfeeding after consumption of a single dose of alcoholic beer by nursing mothers was found to decrease the amount of milk consumed by infants¹⁰⁸ and can cause infant agitation and poor sleep patterns.¹⁰⁴ Non-alcoholic beer is unlikely to affect a breastfed infant¹⁰⁹ and may be suggested as an appropriate substitute to alcoholic beer.¹⁰⁷

See also: [Are there foods or herbs that increase breastmilk production \(galactagogues\) that can be safely recommended to breastfeeding women?](#)

Are sugar substitutes safe for breastfeeding mothers?

The following sugar substitutes are permitted for use in Canada¹¹⁰ are considered safe for consumption at or below the acceptable daily intake (ADI).¹¹¹ The ADI is set for all Canadians and there are no specific recommendations for breastfeeding.¹¹¹

Table 2. Sugar Substitutes

| Safe Sugar Substitutes | ADI (mg/kg body weight) ¹¹² unless otherwise noted |
|--|---|
| Acesulfame potassium ¹¹³ | 15 |
| Advantame ¹¹⁴ | 5 ¹¹⁵ |
| Aspartame ^{113,116} | 40 |
| Monk fruit extract (also called <i>luo han guo</i>) ¹¹⁷ | Not specified |
| Neotame ¹¹³ | 2 |
| Saccharin ^{116,118} | 5 |
| Sucralose ¹¹³ | 8.8 |
| Sugar alcohols* (polyols), hydrogenated starch hydrolysate (mixture of sugar alcohols ¹¹⁹) and polydextrose ^{113,116} | Not specified; however, intake of >10-20 g/day may cause flatulence, diarrhea, and other gastrointestinal symptoms ^{120,121} |
| Stevia ¹¹⁶ | 4 |
| Thaumatococin ¹¹³ | 0.9 |

*Sugar alcohols permitted for use as food additives in Canada include: hydrogenated starch hydrolysates, isomalt, lactitol, maltitol, maltitol syrup, mannitol, sorbitol, sorbitol syrup, xylitol and erythritol.¹²²

It is not clear whether cyclamate (e.g. Sugar Twin®¹²³ or generic brands) is safe for use during breastfeeding.¹²⁴ Cyclamate is not permitted as a food additive in Canada but can be sold as a non-food product and must carry the following cautionary statement: "the sweetener should be used only on the advice of a physician".¹²⁵

Is fish safe to eat while breastfeeding?

Yes, it is safe and encouraged to eat low mercury fish while breastfeeding. However, it is recommended that breastfeeding women follow Health Canada's guidance on limiting high mercury fish. High mercury fish include fresh or frozen tuna, shark, swordfish, escolar, marlin, and orange roughy.¹²⁶ Health Canada states that breastfeeding women can eat up to 150 g (2 Food Guide Servings) per month of these fish species combined.¹²⁶ When purchasing canned tuna, breastfeeding mothers can be advised to choose light tuna such as skipjack, yellowfin and tongol which are relatively lower in mercury versus albacore or white tuna, which should be limited to 300 g (4 Food Guide servings) per week.^{126,127} It is recommended that breastfeeding women consume 2 Food Guide Servings of fatty fish per week.^{44,45} Fish and shellfish that contain higher levels of DHA and EPA and are also low in mercury include: anchovy, capelin, hake, herring, Atlantic mackerel, pollock (Boston bluefish), salmon (farmed and wild), smelt, rainbow trout, shrimp, clams, mussels and oysters.¹²⁷

Fish is the primary source of mercury exposure in humans.¹²⁶ Mercury exposure can adversely affect an infant's growing brain and nervous system.¹²⁸ Mercury is excreted into breastmilk,^{129,130} although its concentration is a fraction of the level of maternal blood supplied to the fetus during gestation.^{130,131} Typical diets consumed by breastfeeding mothers pose no health hazard to breastfed infants.¹³¹

If breastfeeding mothers plan to eat locally caught fish, they can be advised to look up local fish consumption advisories at My Wild Alberta: <http://mywildalberta.com/fishing/safety-procedures/fish-consumption-advisory.aspx>

What advice can be given to breastfeeding women on the safe use of natural health products, herbal teas, and herbs?

Because of the limited number of studies on herb use during breastfeeding, organizations have mixed reports and safety recommendations, making it confusing for both the mother and clinician.¹³² Organizations that provide recommendations for natural health products include: Practice-based Evidence in Nutrition,¹³³ LactMed,¹³⁴ Medications and Mother's Milk,¹³⁵ and the Natural Medicines Database.¹³⁶ The recommendations provided here take into account the recommendations from the above organizations as well as other evidence.

Herbal products (including herbal breastfeeding teas and some dietary substances) are often considered natural but many have pharmacologically-active substances that could have a positive or negative effect on the mother (e.g. breastmilk supply) or the infant.¹³⁷ Risks of using an unlicensed natural health product* include interaction with medications or other natural health products, non-standard dosing, and contamination or incorrect ingredients.¹³⁸

* Natural health products (NHPs), also referred to as "complementary" or "alternative" medicines, are naturally occurring substances used to restore or maintain good health.¹³⁸ They include vitamins and minerals, herbal remedies, homeopathic medicines, traditional medicines like traditional Chinese and Ayurvedic (East Indian) medicines, probiotics, and other products like amino acids and essential fatty acids.¹³⁸

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

If a breastfeeding woman chooses to use natural health products, herbal teas or other herbal products, the following advice can be provided:

- Due to insufficient evidence on their safety and efficacy, there are no natural health products, including herbal supplements, which can be widely recommended for breastfeeding women.
- Talk to a healthcare professional knowledgeable about natural health and herbal products¹³⁸ or call the Medication and Herbal Advice Line (1-800-332-1414) for advice.
- Choose a natural health product with an 8-digit Natural Product Number (NPN) or Homeopathic Medicine Number (DIN-HM) on the label,¹³⁸ which identifies the product as a licensed natural health product in Canada and indicates it is safe and effective when used according to the instructions on the label.¹³⁸ Note: some commercial herbal teas and beverages contain a NPN or DIN-HM.
- Read and follow all instructions on the product label (e.g., steeping time). Ensure there are no warnings for breastfeeding women.¹³⁸
- Review the ingredient list of commercial herbal teas to ensure the herbs are considered safe for breastfeeding women (see Table 3), and consume these in moderation (a total of 500 mL {2 cups} per day).¹³⁹ Many teas with names that indicate a single herb (e.g. “Lemon Zinger”)¹⁴⁰ contain multiple ingredients. Not all herbs in herbal teas marketed to breastfeeding women have been studied in lactation or are necessarily safe.
- Some herbs and herbal teas that are considered safe during pregnancy may not be safe during breastfeeding, and vice versa.
- Herbs commonly used in food preparation in small amounts are safe.

Table 3. Herbal Teas Generally Safe for Breastfeeding Women. *This list is not exhaustive.*

| Herbs as ingredients in commercial herbal teas generally considered safe for breastfeeding women to consume in moderation (a total of 2 cups {500 mL} per day) [†] . | | |
|---|---|---|
| Anise seed or fruit ^{146,145,144,143} | Fennel seed ^{143,144,147} | Milk thistle fruit/seed (silymarin) ^{148,149} |
| Blessed thistle herb/herb top ^{146,150,151} | Fruit pieces (ex: peaches, cherries) | Orange peel ^{139,145} |
| Caraway seed ^{146,143,152} | Ginger root ^{139,143,153} | Peppermint leaf ^{139,145,143} |
| Cinnamon spice/bark ^{143,144,145} | Lemon balm herb top/leaf ^{143,154} | Red raspberry leaf ^{139,155,156} (short term use - up to 2 weeks) ¹⁵⁷ |
| | Lemon verbena leaf ¹⁴⁶ | |
| Fenugreek seed ^{145,143,158,159} | Lemon peel ¹⁴⁵ | Rose hip ^{139,160} |

It is recommended that breastfeeding mothers avoid the following herbs in all forms (including teas and supplements) due to potential adverse effects for herself or her infant. Potential adverse effects for each herb can be found in the cited references.

- Aloe vera/aloe latex (oral use)^{161,162,163}
- Blue cohosh^{164,165,166}
- Borage leaf (*Borago officinalis*)^{167,168}
- Comfrey leaf (*Symphytum officinalis*)^{167,169}
- Kombucha tea^{170,171}

[†]Two cups (500 mL) per day was chosen as “in moderation” based on: Health Canada’s use of 2-3 cups as “in moderation” for certain herbal teas in pregnancy.¹⁴¹ From this, the lower range of 2 cups (500 mL) was chosen, as 3 cups (750 mL) of herbs in tea form is often presented as the medicinal dose.¹⁴²

[‡]The evidence for this recommendation and list of herbs is based on the following: the herb is listed as Generally Recognized as Safe (GRAS) for use as a food or food additive in the US¹⁴³ (note: Canada does not have this designation); and/or the herb is included in the Canadian Food and Drug Regulations as a permitted spice, dressing or seasoning (Division 7)¹⁴⁴ or flavouring preparation (Division 10)¹⁴⁵; and/or where there is research, there are no reported severe adverse effects of the herbal tea on mother or infant in amounts up to 500 mL/day.

Are there foods or herbs that increase breastmilk production (galactogogues) that can be safely recommended to breastfeeding women?

Galactogogues are substances believed to increase breastmilk production.¹³⁷ Many foods and herbs throughout history have been used and recommended to try to aid breastmilk production, including anise, blessed thistle, fennel, fenugreek, milk thistle, and shavarti (*Asparagus racemosus*),^{137,146,172,173} oats, dill, and barley.¹⁴²

There is a lack of research on the use of foods as galactogogues. Many herbal teas are marketed towards breastfeeding mothers to increase breastmilk production. (Refer to Table 3 for the assessed safety of some of these herbs). Although some herbs have shown potential as galactogogues,^{173,174} few randomized clinical trials are available to make conclusions about their effectiveness or safety for this purpose.¹⁷⁴ Due to this lack of evidence on their efficacy and/or safety,^{173,175} no food or herb can be broadly recommended to breastfeeding women to increase breastmilk production.¹⁷²

Galactogogues are not a substitute for evaluation and counselling on modifiable factors that affect milk production (breastmilk expression frequency, milk removal effectiveness).¹⁷² If breastfeeding women wish to use potential galactogogues in an effort to increase breastmilk production, they can discuss this with their healthcare provider in order to make an informed decision. Healthcare providers and breastfeeding women can also call the AHS Medication and Herbal Advice Line for advice on specific herbs (1-800-332-1414).

See also: [What advice can be given to breastfeeding women on the safe use of natural health products, herbal teas and herbs?](#)

See also: [Does alcohol increase breastmilk production?](#)

Are probiotics safe for breastfeeding mothers?

This section includes information pertaining only to the safety of probiotic use during lactation. For background information on probiotics please refer to the Nutrition Guideline for Healthy Infants and Young Children: Prebiotics and Probiotics www.albertahealthservices.ca/info/Page8567.aspx.

There are minimal studies on breastfeeding women consuming probiotic foods or supplements.^{176,177} Of those studies conducted, a variety of probiotic strains and dosages were used.¹⁷⁶ As probiotics are strain specific, benefits and safety from one strain cannot be extrapolated to another strain.¹⁷⁸ There have been no documented adverse effects on the mother or her infant when breastfeeding mothers have consumed probiotics.^{179,180,181} Bacteria, such as lactobacilli or bifidobacteria, are a natural part of the intestinal flora¹⁸² and various strains have been found in breastmilk.¹⁸³ Lactobacilli and bifidobacteria which have historically been used in foods are generally considered safe for consumption for the general public,^{182,184} including breastfeeding women.

Cow's milk proteins are a common growth substrate for some probiotics and very small quantities may be present in some probiotic supplements.¹⁸⁵ If a breastfeeding woman or her breastfed infant has a cow's milk protein allergy, it is recommended that the growth medium of the probiotic supplement be checked prior to consumption.

Breastfeeding women who do not have a cow's milk allergy can consume food products sold in Canada which contain probiotics (e.g. probiotic yogurt). Due to limited research on supplement strains and dosages, no public health recommendation can be made for breastfeeding women wanting to take a probiotic supplement.

What should a breastfeeding woman do if she suspects that her infant is having an allergic reaction to something in her breastmilk?

If a breastfed infant develops symptoms of a food allergy[§], such as bloody stools,¹⁸⁶ it is possible that the child is reacting to a nutrient (commonly a protein)¹⁸⁶ that has gone through the breastmilk from the mother's diet. If this is suspected and the mother can identify a food that may have caused the reaction, that food can be eliminated from the mother diet.^{186,187} A physician can then be consulted to determine the potential cause of the reaction and confirm if the infant has a food allergy. Even when milk allergy has been ruled out and the infant is exhibiting colic, a trial elimination of cow's milk from the maternal diet can be tried for 2 weeks.¹⁸⁸ Eliminated foods found to have no effect on the infant can be re-introduced into the diet. It is recommended that breastfeeding mothers who restrict a whole food group (e.g. Vegetables and Fruit, Grain Products, Milk and Alternatives or Meat and Alternatives) see a Registered Dietitian for nutritional counselling.

Do changes in the breastfeeding mother's diet help relieve infant colic?

Infant colic is a set of behaviours, most notably crying, that may occur in healthy infants and usually starts in the early weeks of life.¹⁸⁹ It peaks between 5 to 8 weeks of age and usually resolves between 4 to 6 months of age.¹⁸⁹ Colic is defined as an infant that is healthy, gaining weight well and has bouts of irritability, fussiness or crying. These bouts start and stop without obvious cause, last a total of 3 hours or more per day, happen at least 3 days per week (for at least 1 week) and there is no failure to thrive.¹⁸⁸

Both breastfed and formula fed infants can be affected by colic. While the cause of infant colic is unknown, it appears to be related to both the immaturity of the infant gut and possibly a protein from the mother's diet that passes through to her breastmilk.¹⁸⁹

Following a hypoallergenic maternal diet to reduce or treat colic is not normally recommended as it has limited evidence of effectiveness.^{9,188,189} A hypoallergenic diet is defined as excluding all foods containing cow's milk, soy, wheat, eggs, peanuts, tree nuts and fish.¹⁸⁹

Although impact on colic in most research was found to be ineffective, some studies have found an association with colic symptoms and maternal intake of cruciferous vegetables (cauliflower, cabbage, garden cress, bok choy, broccoli, and Brussels sprouts), cow's milk, and onion in exclusively breastfed young infants.^{2,9,189,190,191} Breastfeeding women may eliminate suspected foods one at a time to determine whether one is causing colic symptoms. Eliminated foods found to have no effect on infant colic can be re-introduced into the diet.

[§] See [Nutrition Guidelines for Healthy Infants and Young Children: Allergy Prevention](#) for more information on the prevention, symptoms and diagnosis of an infant allergy.

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

A breastfeeding mother wishing to follow a hypoallergenic diet or a diet that eliminates a whole food group (e.g. Milk and Alternatives) may be referred to a Registered Dietitian to ensure nutritional adequacy.

A mother who suspects her infant has colic can discuss her concerns with her healthcare provider. See also: [Are there foods a breastfeeding woman should or should not eat to prevent allergies in her infant?](#) and [Healthy Infants and Young Children Prebiotics & Probiotics Nutrition Guideline](#)

Does maternal diet impact infant gas?

The evidence suggests that spicy or gas producing foods (e.g. cruciferous vegetables) in the maternal diet do not usually affect breastfed infants.³⁷ Modifying the maternal diet to reduce or eliminate infant gas is not normally effective or recommended, although a trial elimination of suspected foods one at a time can be tried. If a food is removed from the diet and the mother observes no improvement in the infant's gas, the food can be reintroduced into the diet to prevent unnecessary food restrictions. Evidence also does not support lactase deficiency as a likely cause of gas as this condition is rare in infants.¹⁸⁸ It is normal for infants to have gas, but if a caregiver believes that an infant is experiencing distress due to being overly gassy, a physician can be consulted.

Are there foods a breastfeeding woman should or should not eat to prevent allergies in her infant?

No special diet is recommended during lactation to prevent an allergy in the infant.¹⁹² The available evidence does not support maternal avoidance of commonly allergenic foods (e.g. peanuts, seafood, cow's milk) while breastfeeding in an effort to prevent allergy in her infant.^{2,187,193,194,195,196,197} Furthermore, unnecessary exclusion of food (e.g. exclusion of the Milk and Alternatives food group) can put a mother and infant at risk of nutritional inadequacy.

What is the impact of the breastfeeding woman's diet on candidiasis/thrush?

The overgrowth of yeast, a type of fungus, called *Candida albicans* (*C. albicans*) is associated with the development of candidiasis or thrush.¹⁹⁸ Thrush is often a cause of breast and nipple pain in breastfeeding mothers.¹⁹⁸ It is a common belief that a diet restricted in simple sugars, dairy products, yeast, fermented foods, fungi, fruit, gluten-containing grains and starchy vegetables will prevent or possibly treat *C. albicans* infections. There is limited research on humans examining the effectiveness of these dietary restrictions on the prevention or treatment of candidiasis, therefore, this cannot be recommended.¹⁹⁹

Are there any related resources on maternal nutrition and breastfeeding that I can use with my clients?

Healthy Parents Healthy Children - Basic information on nutrition for healthy mothers and infants. Web page: www.healthyparentshealthychildren.ca. Also available as printed books.

Poison and Drug Information Service (PADIS) 1-800-332-1414. Medication and Herbal Advice. Free, confidential advice provided by an information specialist who is a nurse or pharmacist. Web page: www.albertahealthservices.ca/topics/Page11975.aspx

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

Income and social support for breastfeeding women

- Breastfeeding women who meet the Alberta Works eligibility criteria can request funding to help cover the cost of a healthy diet. Web page: <http://humanservices.alberta.ca/AWonline/IS/4874.html>
- The Canada Prenatal Nutrition Program may provide prenatal vitamins, food, food coupons and/or nutrition counselling. Web page: www.capccpnpalberta.com

Are there any professional resources on maternal nutrition while breastfeeding?

Alberta Health Services self-learning modules on [My Learning Link](#) platform, include:

- Breastfeeding Foundations
- Managing Breastfeeding Challenges and Supplementation
- Breastfeeding Management for the Healthcare Provider
- Public Health Nutrition Module: Nutrition for Breastfeeding Moms

Those external to Alberta Health Services can access *Breastfeeding Foundations* and *Managing Breastfeeding Challenges and Supplementation* at the following website: <http://aphp.dapasoft.com>.

[Poison and Drug Information Service](#) (PADIS) 1-800-332-1414. Medication and Herbal Advice. Services offered to assist healthcare professionals and clients.

[LactMed](https://www.toxnet.nlm.nih.gov/newtoxnet/lactmed.htm) (<https://www.toxnet.nlm.nih.gov/newtoxnet/lactmed.htm> - public access) and [Medications and Mothers' Milk Online](#) (<https://medsmilk.com> - access through AHS) are databases with information on the levels of drugs and herbs in breastmilk and infant blood, and possible risks to the infant and mother. Lactmed is updated monthly.

[Natural Medicines](https://naturalmedicines.therapeuticresearch.com) (<https://naturalmedicines.therapeuticresearch.com> - access through AHS) is a database which contains information on dietary supplements, natural medicines, and complementary alternative and integrative therapies. Drop down menu for quick search on Pregnancy and Lactation.

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

References

1. World Health Organization. Preterm birth [Internet]. 2017 [cited 2017 Dec 1]. Available from: <http://www.who.int/mediacentre/factsheets/fs363/en/>.
2. Health Canada, Canadian Paediatric Society, Dietitians of Canada, Breastfeeding Committee for Canada. Nutrition for healthy term infants: Recommendations from birth to six months [Internet]. 2015 [cited 2017 Jul 25]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/infant-feeding/nutrition-healthy-term-infants-recommendations-birth-six-months.html>.
3. Victora CG, Bahl R, Barros A, V A Franca G, Horton S, Krasevec J, et al. Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. *The Lancet*. 2016 Jan 30;387(10017):475-90.
4. Centers for Disease Control and Prevention. Strategies to prevent obesity and other chronic diseases: The CDC guide to strategies to support breastfeeding mothers and babies. U.S. Department of Health and Human Services. 2013 [cited 2017 Aug 24]. Available from: <https://www.cdc.gov/breastfeeding/pdf/BF-Guide-508.PDF>.
5. Health Canada. Prenatal nutrition guidelines for health professionals: Background on Canada's food guide [Internet]. 2009 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/reports-publications/nutrition-healthy-eating/prenatal-nutrition-guidelines-health-professionals-background-canada-food-guide-2009.html>.
6. Institute of Medicine. Dietary reference intakes for thiamin, riboflavin, niacin, vitamin B6, folate, vitamin B12, pantothenic acid, biotin, and choline. Washington, DC: National Academies Press; 1998.
7. Institute of Medicine. Dietary reference intakes for vitamin C, vitamin E, selenium, and carotenoids. Washington, DC: National Academies Press; 2000.
8. Institute of Medicine. Dietary reference intakes for vitamin A, vitamin K, arsenic, boron, chromium, copper, iodine, iron, manganese, molybdenum, nickel, silicon, vanadium, and zinc. Washington, DC: National Academies Press; 2001.
9. 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. *Journal of Obstetrics and Gynaecology Canada*. 2016;38(6):554.e18.
10. Institute of Medicine. Dietary reference intakes for energy, carbohydrate, fiber, fat, fatty acids, cholesterol, protein, and amino acids. Washington, DC: National Academies Press; 2005.
11. Institute of Medicine. Nutrition during lactation. Washington, DC: National Academies Press; 1991.
12. Health Canada. Prenatal nutrition guidelines for health professionals: Folate contributes to a healthy pregnancy [Internet]. 2009 [cited 2017 Jul 20]. 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>.
13. Institute of Medicine. Dietary reference intakes for water, potassium, sodium, chloride, and sulfate. Washington, DC: National Academies Press; 2005.
14. Ndikom CM, Fawole B, Ilesanmi RE. Extra fluids for breastfeeding mothers for increasing milk production. *Cochrane Database of Systematic Reviews*. 2014(6).
15. McKenzie A, Perrier E, Guelinckx I, Kavouras S, Aerni G, Lee E, et al. Relationships between hydration biomarkers and total fluid intake in pregnant and lactating women. *European Journal of Nutrition*. 2017 Sep;56(6):2161-70.
16. Dietitians of Canada. What are the nutritional needs of a mother who is pregnant and breastfeeding an older child? [Internet]. PEN: Practice-based Evidence in Nutrition. 2012 Sep 15 [cited 2016 Dec 07]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=3043&pqcatid=146&pqid=14575>.
17. Institute of Medicine. Dietary reference intakes for calcium and vitamin D. Washington: National Academies Press; 2011.
18. Health Canada. Eating well with Canada's food guide [Internet]. 2011 [cited 2017 Jun 22]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/canada-food-guide/get-your-copy/eating-well-2007.html>.
19. Similac. Similac® mom [Internet]. 2015 [cited 2016 Nov 29]. Available from: <https://similac.ca/en/products/similac-mom>.
20. Bravi F, Wiens F, Decarli A, Dal Pont A, Agostoni C, Ferraroni M. Impact of maternal nutrition on breast-milk composition: A systematic review. *The American Journal of Clinical Nutrition*. 2016;104(3):646-62.
21. Ballard O, Morrow AL. Human milk composition: Nutrients and bioactive factors. *Pediatric Clinics of North America*. 2013;60(1):49.
22. Riordan J, Wambach K. Breastfeeding and human lactation. 4th ed. Sudbury, Massachusetts: Jones & Bartlett Learning; 2010.
23. Wambach K, Riordan J. Breastfeeding and human lactation. 5th ed. Burlington: Jones & Bartlett Learning; 2014.
24. Hausner H, Bredie WLP, Mølgaard C, Petersen MA, Møller P. Differential transfer of dietary flavour compounds into human breast milk. *Physiology & Behavior*. 2008;95(1):118-24.
25. Mennella JA. Mother's milk: A medium for early flavor experiences. *Journal of Human Lactation*. 1995;11(1):39-45.
26. Mennella JA, Johnson A, Beauchamp GK. Garlic ingestion by pregnant women alters the odor of amniotic fluid. *Chemical Senses*. 1995 Apr;20(2):207-9.
27. Cooke L, Fildes A. The impact of flavour exposure in utero and during milk feeding on food acceptance at weaning and beyond. *Appetite*. 2011;57(3):808-11.

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

28. Lim S, O'Reilly S, Behrens H, Skinner T, Ellis I, Dunbar JA. Effective strategies for weight loss in post-partum women: A systematic review and meta-analysis. *Obesity Reviews*. 2015;16(11):972-87.
29. Amorim Adegboye AR, Linne YM. Diet or exercise, or both, for weight reduction in women after childbirth. *The Cochrane Database of Systematic Reviews*. 2013(7):CD005627.
30. Lovelady CA, Garner KE, Moreno KL, Williams JP. The effect of weight loss in overweight, lactating women on the growth of their infants. *The New England Journal of Medicine*. 2000;342(7):449-53.
31. Storde MA, Dewey KG, Lönnerdal BO. Effects of short-term caloric restriction on lactational performance of well-nourished women. *Acta Paediatrica*. 1986;75(2):222-9.
32. Trepanowski JF, Bloomer RJ. The impact of religious fasting on human health. *Nutrition Journal*. 2010;9(1):57.
33. Rakicioglu N, Samur G, Topcu A, Topcu AA. The effect of Ramadan on maternal nutrition and composition of breast milk. *Pediatrics International*. 2006;48(3):278-83.
34. Salah ET, Malik NME, Hassan MS, Mohammed IA, Mohamed M, Mohamed MO, et al. How does the fasting of Ramadan affect breast milk constituents? *Sudan Journal of Medical Sciences*. 2016;11(1):17-21.
35. Haratipour H, Sohrabi MB, Ghasemi E, Karimi A, Zolfaghari P, Yahyaei E. Impact of maternal fasting during Ramadan on growth parameters of exclusively breastfed infants in shahroud, 2012. *Journal of Fasting and Health*. 2013;1(2):66-9.
36. Zimmerman DR, Goldstein L, Lahat E, Braunstein R, Stahi D, Bar-Haim A, et al. Effect of a 24+ hour fast on breast milk composition. *Journal of Human Lactation*. 2009;25(2):194-8.
37. Lawrence RA, Lawrence RM. *Breastfeeding: A guide for the medical profession*. 7th ed. Maryland Heights: Elsevier Inc; 2011.
38. Dietitians of Canada. Women's health - lactation evidence summary [Internet]. PEN: Practice-based Evidence in Nutrition. 2017 Feb 13 [cited 2017 Feb 17]. PEN: Practice-based Evidence in Nutrition. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=3121&trcatid=42&trid=4266>.
39. Innis SM. Maternal nutrition, genetics, and human milk lipids. *Current Nutrition Reports*. 2013;2(3):151-8.
40. Innis SM. Impact of maternal diet on human milk composition and neurological development of infants. *American Journal of Clinical Nutrition*. 2014;99(3):741S.
41. Dietitians of Canada. What are the omega-3 fatty acid needs for breastfeeding women? [Internet]. PEN: Practice-based Evidence in Nutrition. 2012 Sep 14 [cited 2017 Jan 17]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=3121&pqcatid=146&pqid=14580>.
42. Koletzko B, Lien E, Agostoni C, Böhles H, Campoy C, Cetin I, et al. The roles of long-chain polyunsaturated fatty acids in pregnancy, lactation and infancy: Review of current knowledge and consensus recommendations. *Journal of Perinatal Medicine*. 2008;36(1):5-14.
43. Jia X, Pakseresht M, Wattar N, Wildgrube J, Sontag S, Andrews M, et al. Women who take n-3 long-chain polyunsaturated fatty acid supplements during pregnancy and lactation meet the recommended intake. *Applied Physiology, Nutrition, and Metabolism*. 2015;40(5):474-81.
44. Koletzko B, Cetin I, Thomas Brenna J. Dietary fat intakes for pregnant and lactating women. *British Journal of Nutrition*. 2007;98(5):873-7.
45. Health Canada. Canadian nutrient file [Internet]. 2015 [cited 2017 Nov 21]. Available from: <https://food-nutrition.canada.ca/cnf-fce/index-eng.jsp>.
46. Sherry CL, Oliver JS, Marriage BJ. Docosahexaenoic acid supplementation in lactating women increases breast milk and plasma docosahexaenoic acid concentrations and alters infant omega 6:3 fatty acid ratio. *Prostaglandins Leukotrienes and Essential Fatty Acids*. 2015;95:63-9.
47. Burdge GC, Calder PC. Conversion of α -linolenic acid to longer-chain polyunsaturated fatty acids in human adults. *Reproduction Nutrition Development*. 2005;45(5):581-97.
48. Dietitians of Canada. Are the adequate intakes (AIs) for alpha linolenic acid (ALA) adequate for vegetarian (lacto-ovo, lacto, and vegan) women who are pregnant and breastfeeding? [Internet]. PEN: Practice-based Evidence in Nutrition. 2012 Sep 14 [cited 2017 Jan 17]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=2709&pqcatid=146&pqid=2674>.
49. Allen LH. B vitamins in breast milk: Relative importance of maternal status and intake, and effects on infant status and function. *Advances in Nutrition*. 2012;3(3):362-9.
50. Shakur YA, Tarasuk V, Corey P, O'Connor DL. A comparison of micronutrient inadequacy and risk of high micronutrient intakes among vitamin and mineral supplement users and nonusers in Canada. *Journal of Nutrition*. 2012;142(3):534-40.
51. Hollis BW, Wagner CL, Howard CR, Ebeling M, Shary JR, Smith PG, et al. Maternal versus infant vitamin D supplementation during lactation: A randomized controlled trial. *Pediatrics*. 2015;136(4):625-34.
52. Henly SJ, Anderson CM, Avery MD, Hills-Bonuyk S, Potter S, Duckett LJ. Anemia and insufficient milk in first-time mothers. *Birth*. 1995;22(2):87-92.
53. Rioux FM, Savoie N, Allard J. Is there a link between postpartum anemia and discontinuation of breastfeeding? *Canadian Journal of Dietetic Practice and Research*. 2006;67(2):72-6.
54. Amit M. Vegetarian diets in children and adolescents. *Paediatrics & Child Health*. 2010;15(5):303-14.
55. Dror DK, Allen LH. Effect of vitamin B12 deficiency on neurodevelopment in infants: Current knowledge and possible mechanisms. *Nutrition Reviews*. 2008;66(5).

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

56. Dietitians of Canada. Do infants born to vegetarian women (lacto-ovo, lacto, vegan), and who breastfeed their infant, require a vitamin B12 supplement? [Internet]. PEN: Practice-based Evidence in Nutrition. 2012 Sep 16 [cited 2017 Apr 21]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=2709&pqcatid=146&pqid=19630>.
57. Arterburn LM, Oken HA, Bailey Hall E, Hamersley J, Kuratko CN, Hoffman JP. Algal-oil capsules and cooked salmon: Nutritionally equivalent sources of docosahexaenoic acid. *Journal of the American Dietetic Association*. 2008;108(7):1204-9.
58. National Institute for Health and Clinical Excellence. Routine postnatal care of women and their babies [Internet]. 2006 Jul [cited 2016 Dec 21]. Available from: <https://www.nice.org.uk/guidance/cg37/evidence/full-guideline-485782237>.
59. TOXNET: Toxicology Data Network. Psyllium [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2017 Apr 11 [cited 2017 Jul 19]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+471>.
60. Government of Canada. Food safety for vulnerable populations [Internet]. 2015 May 27 [cited 2016 Dec 30]. Available from: <https://www.canada.ca/en/health-canada/services/food-safety-vulnerable-populations/food-safety-vulnerable-populations.html>.
61. Dietitians of Canada. Are foodborne pathogens transmitted through breastmilk? [Internet]. PEN: Practice-based Evidence in Nutrition. 2011 Jan 20 [cited 2016 Dec 07]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=2861&pqcatid=146&pqid=17054>.
62. Lanari M, Sogno Valin P, Natale F, Capretti MG, Serra L. Human milk, a concrete risk for infection? *The Journal of Maternal-Fetal & Neonatal Medicine*. 2012;25 Suppl 4:75-7.
63. Jones CA. Maternal transmission of infectious pathogens in breast milk. *Journal of Paediatrics and Child Health*. 2001;37(6):576-82.
64. Cossey V, Jeurissen A, Thelissen M, Vanhole C, Schuermans A. Expressed breast milk on a neonatal unit: A hazard analysis and critical control points approach. *American Journal of Infection Control*. 2011;39(10):832-8.
65. Decousser J, Ramarao N, Duport C, Dorval M, Bourgeois-Nicolaos N, Guinebretière M, et al. *Bacillus cereus* and severe intestinal infections in preterm neonates: Putative role of pooled breast milk. *American Journal of Infection Control*. 2013;41(10):918-21.
66. Godambe S, Shah PS, Shah V. Breast milk as a source of late onset neonatal sepsis. *The Pediatric Infectious Disease Journal*. 2005;24(4):381-2.
67. Widger J, O'Connell NH, Stack T. Breast milk causing neonatal sepsis and death. *Clinical Microbiology and Infection*. 2010;16(12):1796-8.
68. Keim SA, Hogan JS, McNamara KA, Gudimetla V, Dillon CE, Kwiek JJ, et al. Microbial contamination of human milk purchased via the internet. *Pediatrics*. 2013;132(5):1227.
69. Health Canada. Safety of donor human milk in Canada [Internet]. 2014 May 20 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/infant-feeding/safety-donor-human-milk-canada.html>.
70. Government of Canada. Caffeine in food [Internet]. 2012 Feb 16 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-additives/caffeine-foods/foods.html>.
71. Nawrot P, Jordan S, Eastwood J, Rotstein J, Hugenoltz A, Feeley M. Effects of caffeine on human health. *Food Additives and Contaminants*. 2003;20(1):1-30.
72. Findlay JW, DeAngelis RL, Kearney MF, Welch RM, Findlay JM. Analgesic drugs in breast milk and plasma. *Clinical Pharmacology and Therapeutics*. 1981;29(5):625-33.
73. Berlin J, C M, Denson HM, Daniel CH, Ward RM. Disposition of dietary caffeine in milk, saliva, and plasma of lactating women. *Pediatrics*. 1984;73(1):59.
74. Stavchansky S, Combs A, Segraves R, Delgado M, Joshi A. Pharmacokinetics of caffeine in breast milk and plasma after single oral administration of caffeine to lactating mothers. *Biopharmaceutics & Drug Disposition*. 1988;9(3):285-99.
75. Tyralla EE, Dodson WE. Caffeine secretion into breast milk. *Archives of Disease in Childhood*. 1979;54(10):787-9.
76. Wikipedia. Half-life [Internet]. 2017 [cited 2017 Mar 27]. Available from: <https://en.wikipedia.org/wiki/Half-life>.
77. TOXNET: Toxicology Data Network. Caffeine [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2016 Aug 19 [cited 2016 Nov 17]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+582>.
78. Government of Canada. Preliminary guidance for industry on the labelling of caffeine content in prepackaged foods [Internet]. 2010 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/legislation-guidelines/guidance-documents/preliminary-guidance-industry-labelling-caffeine-content-prepackaged-foods-march-2010.html>.
79. McCusker RR, Goldberger BA, Cone EJ. Caffeine content of specialty coffees. *Journal of Analytical Toxicology*. 2003 Oct;27(7):520-2.
80. Heckman MA, Weil J, Gonzalez de Mejia E. Caffeine (1, 3, 7-trimethylxanthine) in foods: A comprehensive review on consumption, functionality, safety, and regulatory matters. *Journal of Food Science*. 2010;75(3):R87.
81. Ludwig IA, Mena P, Calani L, Cid C, Del Rio D, Lean ME, et al. Variations in caffeine and chlorogenic acid contents of coffees: What are we drinking? *Food & Function*. 2014;5(8):1718-26.
82. Government of Canada, Health Canada, Health Products and Food Branch. Category specific guidance for temporary marketing authorization - caffeinated energy drinks [Internet]. 2013 Dec [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/legislation-guidelines/guidance-documents/category-specific-guidance-temporary-marketing-authorization-caffeinated-energy-drinks.html>.
-

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

83. Rotstein J, Barber J, Strowbridge C, Hayward S, Huang R, Godefroy SB. Energy drinks: An assessment of the potential health risks in the canadian context. *International Food Risk Analysis Journal*. 2013;3(5):1-29.
84. Thorlton J, Ahmed A, Colby DA. Energy drinks: Implications for the breastfeeding mother. *American Journal of Maternal Child Nursing*. 2016;41(3):1-6.
85. US Department of Agriculture. USDA food composition databases [Internet]. 2017 [cited 2017 Dec 18]. Available from: <https://nbd.nal.usda.gov/ndb>.
86. Mitchell DC, Knight CA, Hockenberry J, Teplansky R, Hartman TJ. Beverage caffeine intakes in the U.S. *Food and Chemical Toxicology*. 2014;63:136-42.
87. Tim Hortons. Nutrition and wellness - find a menu item [Internet]. 2017 [cited 2017 Dec 15]. Available from: <http://www.timhortons.com/ca/en/menu/nutrition-and-wellness.php>.
88. Starbucks Coffee Company. Beverage nutrition information - brewed coffee - true north blend blonde roast [Internet]. 2017 [cited 2017 Dec 15]. Available from: <http://globalassets.starbucks.com/assets/94fbcc2ab1e24359850fa1870fc988bc.pdf>.
89. Starbucks Coffee Company. Beverage nutrition information - caffe latte, cappuccino, Americano [Internet]. 2017 [cited 2017 Nov 25]. Available from: <https://globalassets.starbucks.com/assets/94fbcc2ab1e24359850fa1870fc988bc.pdf>.
90. Gevalia. Tassimo YUBAN 100% Colombian coffee [Internet]. 2017 [cited 2017 Dec 15]. Available from: <https://www.gevalia.com/yuban-100-colombian-coffee>.
91. Keurig Green Mountain. Coffee caffeine content [Internet]. 2017 [cited 2017 Dec 18]. Available from: http://support.keurig.com/apex/article?id=kA03600000CJGYCA4&retURL=/apex/Beverage_Support.
92. PepsiCo Canada. AMP ENERGY™ energy drink power [Internet]. no date [cited 2018 Jan 26]. Available from: http://www.pepsico.ca/en/Brands/Pepsi_Cola-Brands.html.
93. NOS Energy Company. NOS® energy drink [Internet]. 2016 [cited 2018 Jan 26]. Available from: <https://www.drinknos.com/products#/16oz-Rowdy>.
94. Energy Beverages LLC. Full throttle energy drink [Internet]. 2017 [cited 2018 Jan 26]. Available from: <https://www.drinkfullthrottle.com/product-page.html#citrus>.
95. PepsiCo Canada. AMP ENERGY™ energy drink endurance [Internet]. no date [cited 2018 Jan 26]. Available from: http://www.pepsico.ca/en/Brands/Pepsi_Cola-Brands.html.
96. Government of Canada. Breastfeeding & infant nutrition [Internet]. 2014 Dec 18 [cited 2017 Jan 30]. Available from: <https://www.canada.ca/en/public-health/services/health-promotion/childhood-adolescence/stages-childhood/infancy-birth-two-years/breastfeeding-infant-nutrition.html>.
97. Fríguls B, Joya X, García-Algar O, Pallás CR, Vall O, Pichini S. A comprehensive review of assay methods to determine drugs in breast milk and the safety of breastfeeding when taking drugs. *Analytical and Bioanalytical Chemistry*. 2010;397(3):1157-79.
98. Giglia RC. Alcohol and lactation: An updated systematic review. *Nutrition & Dietetics*. 2010;67(4):237-43.
99. World Health Organization. Acceptable medical reasons for use of breast-milk substitutes [Internet]. Geneva: WHO Press. 2009 [cited 2016 Oct 14]. Available from: http://www.who.int/maternal_child_adolescent/documents/WHO_FCH_CAH_09.01/en/
100. Koren G. Drinking alcohol while breastfeeding: Will it harm my baby? [Internet]. 2002 [cited 2017 Apr 21]. Available from: http://www.mothersisk.org/women/updatesDetail.jsp?content_id=347.
101. Butt P, Beirness D, Gliksman L, Paradis C, Stockwell T. Alcohol and health in Canada: A summary of evidence and guidelines for low-risk drinking [Internet]. 2011 [cited 2016 Oct 12]. Available from: http://www.ccsa.ca/Resource_Library/2011-Summary-of-Evidence-and-Guidelines-for-Low-Risk-Drinking-en.pdf
102. D'Apolito K. Breastfeeding and substance abuse. *Clinical Obstetrics and Gynecology*. 2013;56(1):202-11.
103. Haastrup MB, Pottegård A, Damkier P. Alcohol and breastfeeding. *Basic and Clinical Pharmacology and Toxicology*. 2014;114(2):168-73.
104. TOXNET: Toxicology Data Network. Alcohol [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2017 Oct 10 [cited 2017 Oct 20]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+584>.
105. Rowe H, Baker T, Hale TW. Maternal medication, drug use, and breastfeeding. *Pediatric Clinics of North America*. 2013;60(1):275-94.
106. Bowen A, Tumback L. Alcohol and breastfeeding: Dispelling the myths and promoting the evidence. *Nursing for Women's Health*. 2010;14(6):454-61.
107. Koletzko B, Lehner F. Beer and breastfeeding. *Short and Long Term Effects of Breast Feeding on Child Health Boston*: Kluwer Academic Publishers; 2000. p. 23-28.
108. Mennella JA, Beauchamp GK. Beer, breast feeding, and folklore. *Developmental Psychobiology*. 1993;26(8):459-66.
109. Schneider C, Thierauf A, Kempf J, Auwärter V. Ethanol concentration in breastmilk after the consumption of non-alcoholic beer. *Breastfeeding Medicine*. 2013;8(3):291-3.
110. Health Canada. List of permitted sweeteners (lists of permitted food additives) [Internet]. 2017 Aug 30 [cited 2017 Oct 17]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-additives/lists-permitted/9-sweeteners.html>.
111. Dietitians of Canada. Sweeteners - evidence summary [Internet]. PEN: Practice-based Evidence in Nutrition. 2013 Oct 19 [cited 2017 Apr 12]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=1323&trcatid=42&trid=17794>.
112. Canadian Diabetes Association Clinical Practice Guidelines Expert Committee. Clinical practice guidelines: Nutrition therapy. *Can J Diabetes*. 2013;37:S55.

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

113. Health Canada. The safety of sugar substitutes [Internet]. 2008 Apr 30 [cited 2016 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/healthy-living/your-health/food-nutrition/safety-sugar-substitutes.html>.
114. Health Canada. Notice of modification to the list of permitted sweeteners to enable the use of advantame as a sweetener in certain unstandardized foods including certain beverages – reference number: NOM/ADM-0092 [Internet]. 2017 Apr 19 [cited 2017 Oct 19]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/public-involvement-partnerships/notice-modification-list-permitted-sweeteners-enable-use-advantame-a-sweetener-certain-unstandardized-foods-including-certain-beverages-reference.html>.
115. WHO Expert Committee on Food Additives. Advantame [Internet]. 2015 [cited 2017 Oct 18]. Available from: <http://apps.who.int/food-additives-contaminants-jecfa-database/chemical.aspx?chemID=6181>.
116. Health Canada. Sugar substitutes [Internet]. 2010 Mar 5 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-additives/sugar-substitutes.html>.
117. Health Canada. Consultation document on Health Canada's proposal to enable the use of a new food additive, monk fruit extract (luo han guo extract), as a sweetener in table-top sweeteners [Internet]. 2013 Dec 31 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/public-involvement-partnerships/notice-proposal-enable-use-new-food-additive-monk-fruit-extract-extract-sweetener-table-top-sweeteners/consultation.html>.
118. Health Canada. Questions and answers: Saccharin [Internet]. 2007 Jul 30 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-additives/sugar-substitutes/questions-answers-saccharin-artificial-sweeteners.html>.
119. Modderman JP. Safety assessment of hydrogenated starch hydrolysates. *Regulatory Toxicology and Pharmacology*. 1993;18(1):80-114.
120. Wolever T, Piekarz A, Hollands M, Younker K. Sugar alcohols and diabetes: A review. *Can J Diabetes*. 2002;26(4):356-62.
121. Grembecka M. Sugar alcohols—their role in the modern world of sweeteners: A review. *European Food Research and Technology*. 2015 Jul;241(1):1-14.
122. Health Canada. Sugar alcohols (polyols) and polydextrose used as sweeteners in foods - food safety [Internet]. 2005 Feb 2 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-additives/sugar-substitutes/sugar-alcohols-polyols-polydextrose-used-sweeteners-foods-food-safety.html>.
123. Sugar Twin. Sugar twin® sachets [Internet]. 2017 [cited 2017 Apr 11]. Available from: <http://www.sugartwin.ca/en/products/sugar-twin-sachets/>.
124. MyHealth Alberta. Comparing sugar substitutes - topic overview [Internet]. 2017 May 4 [cited 2017 May 16]. Available from: <https://myhealth.alberta.ca/Health/pages/conditions.aspx?hwid=abj7112>.
125. Canadian Food Inspection Agency. Sweeteners [Internet]. 2016 Dec 1 [cited 2017 Jul 20]. Available from: <http://www.inspection.gc.ca/food/labelling/food-labelling-for-industry/sweeteners/eng/1387749708758/1387750396304?chap=0#s11c5>.
126. Health Canada. Mercury in fish - questions and answers [Internet]. 2011 Jan 25 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/chemical-contaminants/environmental-contaminants/mercury/mercury-fish-questions-answers.html>.
127. Health Canada. Mercury in fish: Consumption advice: Making informed choices about fish [Internet]. 2008 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/chemical-contaminants/environmental-contaminants/mercury/mercury-fish.htm>.
128. World Health Organization. Mercury and health [Internet]. 2016 [cited 2016 Dec 6]. Available from: <http://www.who.int/mediacentre/factsheets/fs361/en/>.
129. Grandjean P, Jørgensen PJ, Weihe P. Human milk as a source of methylmercury exposure in infants. *Environmental Health Perspectives*. 1994;102(1):74-7.
130. Björnberg KA, Vahter M, Berglund B, Niklasson B, Blennow M, Sandborgh-Englund G. Transport of methylmercury and inorganic mercury to the fetus and breast-fed infant. *Environmental Health Perspectives*. 2005;113(10):1381-5.
131. Dorea JG. Mercury and lead during breast-feeding. *The British Journal of Nutrition*. 2004;92(1):21-40.
132. Budzynska K, Gardner ZE, Low Dog T, Gardiner P. Complementary, holistic, and integrative medicine: Advice for clinicians on herbs and breastfeeding. *Pediatrics in Review*. 2013;34(8):3.
133. Dietitians of Canada. PEN: Practice-based evidence in nutrition [Internet]. 2017 [cited 2017 Jun 22]. Available from: <https://www.pennutrition.com/Home.aspx>.
134. TOXNET: Toxicology Data Network. LactMed: Drugs and lactation database [Internet]. Bethesda, MD: National Library of Medicine (US); 2017 [cited 2017 Jun 22]. Available from: <https://toxnet.nlm.nih.gov/newtoxnet/lactmed.htm>.
135. Hale T, Rowe H. Medications and mothers' milk online [Internet]. New York, NY: Springer Publishing Company; 2017 [cited 2017 Jun 22]. Available from: <http://medsmilk.com/pages/home>.
136. Therapeutic Research Center. Natural medicines [Internet]. 2017 [cited 2017 Jun 22]. Available from: <https://naturalmedicines-therapeuticresearch.com.ahs.idm.oclc.org/>.
137. Budzynska K, Gardner ZE, Dugoua J, Low Dog T, Gardiner P. Systematic review of breastfeeding and herbs. *Breastfeeding Medicine*. 2012;7(6):489-503.
138. Health Canada. About natural health products [Internet]. 2016 Mar 13 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/drugs-health-products/natural-non-prescription/regulation/about-products.html>.

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

139. Dietitians of Canada. What herbal beverages/supplements are safe to take during pregnancy and lactation? [Internet]. PEN: Practice-based Evidence in Nutrition. 2012 Sep 14 [cited 2016 Oct 16]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=3043&pqcatid=146&pqid=3092>.
140. Celestial Seasonings. Lemon zinger herbal tea (product information) [Internet]. 2016 [cited 2016 Dec 19]. Available from: <http://www.celestialseasonings.com/products/herbal/lemon-zinger-herbal-tea>.
141. Government of Canada. Healthy pregnancy. caffeine and pregnancy [Internet]. 2014 Jan 31 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/public-health/services/health-promotion/healthy-pregnancy/already-pregnant/caffeine-pregnancy.html>.
142. Nice FJ. Selection and use of galactogogues. ICAN: Infant, Child, & Adolescent Nutrition. 2015;7(4):192-4.
143. US Government Publishing Office. Part 182. Substances generally recognized as safe [Internet]. 2016 [cited 2016 Dec 19]. Available from: <https://www.ecfr.gov/cgi-bin/text-idx?SID=4979eec059872026397c6a4261c77c14&mc=true&node=pt21.3.182&rgn=div5>.
144. Government of Canada. Food and drug regulations. Division 7. Spices, dressings and seasonings [Internet]. 2016 [cited 2016 Dec 19]. Available from: http://laws-lois.justice.gc.ca/PDF/C.R.C.,_c._870.pdf.
145. Government of Canada. Food and drug regulations. Division 10. Flavouring preparations [Internet]. 2016 [cited 2016 Dec 19]. Available from: http://laws-lois.justice.gc.ca/PDF/C.R.C.,_c._870.pdf.
146. Dietitians of Canada. Do herbs/herbal teas have an effect on breastmilk production? [Internet]. PEN: Practice-based Evidence in Nutrition. 2012 Sep 15 [cited 2016 Dec 19]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=3121&pqcatid=146&pqid=14578>.
147. TOXNET: Toxicology Data Network. Fennel [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2017 Jul 8 [cited 2017 Aug 22]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+883>.
148. Hale T, Rowe H. Milk thistle [Internet]. Medications and mothers' milk online. New York, NY: Springer Publishing Company; 2017 [cited 2017 Feb 6]. Available from: <http://www.medsmilk.com.ahs.idm.oclc.org/drugs/view/460>.
149. TOXNET: Toxicology Data Network. Milk thistle [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2016 [cited 2017 Feb 06]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+863>.
150. Conover E, Buehler BA. Use of herbal agents by breastfeeding women may affect infants. Pediatric Annals. 2004;33(4):235-40.
151. Hale T, Rowe H. Blessed thistle [Internet]. Medications and mothers' milk online. New York, NY: Springer Publishing Company; 2016 [cited 2017 Feb 6]. Available from: <http://www.medsmilk.com/drugs/view/67>.
152. TOXNET: Toxicology Data Network. Caraway [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2017 Apr 11 [cited 2017 Jul 19]. Available from: <https://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+881>.
153. TOXNET: Toxicology Data Network. Ginger [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2017 May 2 [cited 2017 Aug 22]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+877>.
154. TOXNET: Toxicology Data Network. Lemon balm [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2017 Apr 11 [cited 2017 Jul 11]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+926>.
155. Health Canada. Organic raspberry leaf (tea). Traditional Medicinals, Inc [Internet]. 2016 [cited 2017 Aug 21]. Available from: <https://health-products.canada.ca/lnhpd-bdpsnh/info.do?licence=80012819>.
156. TOXNET: Toxicology Data Network. Red raspberry [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2017 Apr 11 [cited 2017 Jun 22]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+876>.
157. Nice FJ, Nice MH. The galactogogue recipe book. Plano: Hale Publishing, L.P.; 2014.
158. Dietitians of Canada. Women's health - lactation. Practice guidance toolkit. Key findings and recommendations [Internet]. PEN: Practice-based Evidence in Nutrition. 2017 Feb 13 [cited 2017 Feb 20]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=3121&tkid=20281&secid=20356>.
159. Therapeutic Research Center. Fenugreek [Internet]. 2017 Aug 24 [cited 2017 Aug 24]. Available from: <https://naturalmedicines.therapeuticresearch.com/databases/food,-herbs-supplements/professional.aspx?productid=733>.
160. Lawrence R, Lawrence RM. Approach to breast-feeding. In: Duggan C, Watkins JB, Walker WA, editors. Nutrition in pediatrics. Basic science. Clinical applications. 4th ed. Hamilton, Ontario: BC Decker Inc; 2008.
161. TOXNET: Toxicology Data Network. Aloe [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2016 [cited 2017 Feb 06]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+915>.
162. Hale T, Rowe H. Aloe vera [Internet]. Medications and mothers' milk online. New York, NY: Springer Publishing Company; 2017 [cited 2017 Feb 06]. Available from: <http://www.medsmilk.com/drugs/view/22>.
163. Therapeutic Research Center. Aloe [Internet]. 2016 Jul 18 [cited 2017 Feb 06]. Available from: <https://naturalmedicines.therapeuticresearch.com/databases/food,-herbs-supplements/professional.aspx?productid=607>.
164. TOXNET: Toxicology Data Network. Blue cohosh [Internet]. Lactmed. Bethesda, MD: National Library of Medicine (US); 2017 Apr 11 [cited 2017 Jul 22]. Available from: <http://toxnet.nlm.nih.gov/cgi-bin/sis/search2/r?dbs+lactmed:@term+@DOCNO+871>.
165. Hale T, Rowe H. Blue cohosh [Internet]. Medications and mothers' milk online. New York, NY: Springer Publishing Company; 2017 [cited 2017 Jan 24]. Available from: <http://www.medsmilk.com/drugs/view/68>.
-

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

166. Therapeutic Research Center. Blue cohosh [Internet]. 2015 Feb 14 [cited 2017 Feb 06]. Available from: https://naturalmedicines.therapeuticresearch.com/databases/food_-herbs-supplements/professional.aspx?productid=987.
167. Panter KE, James LF. Natural plant toxicants in milk: A review. *Journal of Animal Science*. 1990;68(3):892-904.
168. Hale T, Rowe H. Borage [Internet]. Medications and mothers' milk online. New York, NY: Springer Publishing Company; 2017 [cited 2017 Oct 31]. Available from: <http://www.medsmilk.com/drugs/view/795>.
169. Hale T, Rowe H. Comfrey [Internet]. Medications and mothers' milk online. New York, NY: Springer Publishing Company; 2017 [cited 2017 Oct 31]. Available from: <http://www.medsmilk.com/drugs/view/170>.
170. Therapeutic Research Center. Kombucha tea [Internet]. 2017 Aug 8 [cited 2017 Aug 22]. Available from: https://naturalmedicines.therapeuticresearch.com/databases/food_-herbs-supplements/professional.aspx?productid=538.
171. Hale T, Rowe H. Kombucha tea [Internet]. Medications and mothers' milk online. New York, NY: Springer Publishing Company; 2018 [cited 2018 Jan 10]. Available from: <http://www.medsmilk.com/drugs/view/379>.
172. The Academy of Breastfeeding Medicine, Protocol Committee. ABM clinical protocol #9: Use of galactogogues in initiating or augmenting the rate of maternal milk secretion (first revision January 2011). *Breastfeeding Medicine*. 2011;6(1):41-9.
173. Forinash AB, Yancey AM, Barnes KN, Myles TD. The use of galactogogues in the breastfeeding mother. *Annals of Pharmacotherapy*. 2012;46(10):1392-404.
174. Zapantis A, Steinberg JG, Schilit L. Use of herbals as galactogogues. *Journal of Pharmacy Practice*. 2012;25(2):222-31.
175. Amer MR, Cipriano GC, Venci JV, Gandhi M. Safety of popular herbal supplements in lactating women. *Journal of Human Lactation*. 2015;31(3):348-53.
176. Cuello-Garcia C, Brožek J.L., Flocchi A, Pawankar R, Yepes-Nuñez JJ, Terracciano L, et al. Probiotics for the prevention of allergy: A systematic review and meta-analysis of randomized controlled trials. *The Journal of Allergy and Clinical Immunology*. 2015;136(4):952-61.
177. Elias J, Bozzo P, Einarson A. Are probiotics safe for use during pregnancy and lactation? *Canadian Family Physician Médecin De Famille Canadien*. 2011;57(3):299-301.
178. Dietitians of Canada. Gastrointestinal system - probiotics. Background [Internet]. PEN: Practice-based Evidence in Nutrition. 2010 Feb 9 [cited 2016 Dec 16]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=3608&trcatid=38&trid=3985>.
179. Abrahamsson TR, Sinkiewicz G, Jakobsson T, Fredrikson M, Björkstén B. Probiotic lactobacilli in breast milk and infant stool in relation to oral intake during the first year of life. *Journal of Pediatric Gastroenterology and Nutrition*. 2009;49(3):349-54.
180. Ortiz-Andrellucchi A, Sánchez-Villegas A, Rodríguez-Gallego C, Lemes A, Molero T, Soria A, et al. Immunomodulatory effects of the intake of fermented milk with lactobacillus casei DN114001 in lactating mothers and their children. *British Journal of Nutrition*. 2008 Oct 1;100(4):834-45.
181. Baldassarre ME, Di Mauro A, Mastromarino P, Fanelli M, Martinelli D, Urbano F, et al. Administration of a multi-strain probiotic product to women in the perinatal period differentially affects the breast milk cytokine profile and may have beneficial effects on neonatal gastrointestinal functional symptoms. A randomized clinical trial. *Nutrients*. 2016;8(11):677.
182. Joint FAO/WHO Working Group. Guidelines for the evaluation of probiotics in food [Internet]. 2002 [cited 2016 Jul 18]. Available from: http://who.int/foodsafety/fs_management/en/probiotic_guidelines.pdf
183. Soto A, Martín V, Jiménez E, Mader I, Rodríguez JM, Fernández L. Lactobacilli and bifidobacteria in human breast milk: Influence of antibiotherapy and other host and clinical factors. *Journal of Pediatric Gastroenterology and Nutrition*. 2014;59(1):78-88.
184. Health Canada. Questions and answers on probiotics [Internet]. 2009 Apr 16 [cited 2017 Jul 20]. Available from: <https://www.canada.ca/en/health-canada/services/food-nutrition/food-labelling/health-claims/questions-answers-probiotics.html>.
185. Dietitians of Canada. What are the risks associated with probiotic intake in infants? [Internet]. PEN: Practice-based Evidence in Nutrition. 2010 Jan 31 [cited 2016 Dec 16]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=3085&pqcatid=147&pqid=15350>.
186. The Academy of Breastfeeding Medicine. ABM clinical protocol #24: Allergic proctocolitis in the exclusively breastfed infant. *Breastfeeding Medicine*. 2011;6(6):435-40.
187. Greer FR, Sicherer SH, Burks aW. Effects of early nutritional interventions on the development of atopic disease in infants and children: The role of maternal dietary restriction, breastfeeding, timing of introduction of complementary foods, and hydrolyzed formulas. *Pediatrics*. 2008;121(1):183-91.
188. Critch J. Infantile colic: Is there a role for dietary interventions? *Paediatrics & Child Health*. 2011;16(1):47-9.
189. Iacovou M, Ralston RA, Muir J, Walker KZ, Truby H. Dietary management of infantile colic: A systematic review. *Maternal and Child Health Journal*. 2012;16(6):1319-31.
190. Dietitians of Canada. Does a breastfeeding mother's diet contribute to infant colic? [Internet]. PEN: Practice-based Evidence in Nutrition. 2012 Aug 2 [cited 2016 Dec 16]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=13089&pqcatid=146&pqid=13174>.
191. Harb T, Matsuyama M, David M, Hill RJ. Infant colic-what works: A systematic review of interventions for breast-fed infants. *Journal of Pediatric Gastroenterology and Nutrition*. 2016;62(5):668-86.
192. de Silva D, Geromi M, Halken S, Host A, Panesar SS, Muraro A, et al. Primary prevention of food allergy in children and adults: Systematic review. *Allergy*. 2014;69(5):581-9.
-

Nutrition Guideline

Nutrition for the Breastfeeding Mother

For Professional Reference Only

Applicable to: Nurses, Physicians and Other Health Professionals

193. Høst A, Halken S, Muraro A, Dreborg S, Niggemann B, Aalberse R, et al. Dietary prevention of allergic diseases in infants and small children. *Pediatric Allergy and Immunology*. 2008;19(1):1-4.

194. Muche-Borowski C, Kopp M, Reese I, Sitter H, Werfel T, Schäfer T. Allergy prevention. *JDDG: Journal Der Deutschen Dermatologischen Gesellschaft*. 2010;8(9):718-24.

195. Kramer MS, Kakuma R. Maternal dietary antigen avoidance during pregnancy or lactation, or both, for preventing or treating atopic disease in the child. *Evidence-Based Child Health: A Cochrane Review Journal*. 2014;9(2):447-83.

196. Du Toit G, Lack G. Can food allergy be prevented? The current evidence. *Pediatric Clinics of North America*. 2011;58(2):481-509.

197. Pali-Schöll I, Renz H, Jensen-Jarolim E. Update on allergies in pregnancy, lactation, and early childhood. *Journal of Allergy and Clinical Immunology*. 2009;123(5):1012-21.

198. Matsubara VH, H N Bandara, H M, Mayer MPA, Samaranayake LP, Paulo S. Probiotics as antifungals in mucosal candidiasis. *Clinical Infectious Diseases*. 2016;62(9):1143-53.

199. Dietitians of Canada. Do dietary restrictions affect the growth of candida albicans? [Internet]. PEN: Practice-based Evidence in Nutrition. 2015 Sep 25 [cited 2016 Jan 1]. Available from: <http://www.pennutrition.com/KnowledgePathway.aspx?kpid=2814&pqcatid=146&pqid=2815>.