

Pediatric Nutrition Guidelines (Birth to Six Years) for Health Professionals



BACKGROUND AND ACKNOWLEDGEMENTS

Background

This document outlines evidence-based nutrition and feeding guidelines along with red flags for healthy, full-term infants and children up to 6 years of age.

Further investigation, including possible referral to a registered dietitian (RD) for nutrition assessment and ongoing follow-up, may be warranted for infants and children who do not meet guidelines or present with red flags.

We acknowledge all individuals, regardless of sex and/or gender identity or expression may be in a feeding relationship with their baby/child. The term *parent* is used throughout this document and refers to a parent or caregiver who is involved in the child's care.

Parent resources are included at the end of this document.

Definitions

Milestones - Marker or point in development related to feeding

Guidelines - Evidence-based recommendations for nutrition and feeding

Red Flags - Findings that may require additional action, investigation and/or referral

Acknowledgements

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About ODPH

Ontario Dietitians in Public Health (ODPH) is the independent and official voice of registered dietitians working in the Ontario public health system. These guidelines were written by members of the Family Health Nutrition Advisory Working Group, a subgroup of ODPH. For more information, please visit our website at odph.ca or contact us via email at info@odph.ca.



0 TO 6 MONTHS

Guidelines

Fluids:

- Breastfeed exclusively for the first 6 months*^{1,2}
- Offer parent's expressed breastmilk if feeding from the breast is not possible*²
- If expressed breastmilk is not available, offer commercial infant formula that is prepared safely*²
- Follow infant's feeding cues, referred to as 'infant-led', 'on-cue' feeding or 'feeding on demand²
- Give a liquid vitamin D supplement of 400 IU (10 mcg) daily to infants who are fully or partially breastfed.² Non-breastfed infants do not require a vitamin D supplement because infant formula contains vitamin D*²
- Avoid water unless medically indicated. Avoid juice or other liquids 2,3

Food:

- Infants at high risk for developing a food allergy have a personal history of atopy, including eczema, or have a first-degree relative with atopy (e.g. eczema, food allergy, allergic rhinitis or asthma). For these high-risk infants, based on developmental readiness, consider introducing common allergenic complementary foods at about 6 months of age, but not before an infant is 4 months of age. Common allergenic foods include milk products, egg, peanut, tree nuts, fish, shellfish, wheat and soy.⁴
- Infants at no or low risk for food allergy, introduce complementary foods at about 6 months of age⁴
- Introduce allergenic foods one at a time to gauge reaction, without unnecessary delay⁴ (i.e. every 2 days) between each food⁵. Continue to offer common allergenic foods that are tolerated a few times a week to maintain tolerance⁴
- Offer iron-rich foods first (meat, meat alternatives, and iron-fortified infant cereals)*²
- Avoid honey, including pasteurized or cooked until after 12 months (risk for infant botulism)⁵

Division of responsibility:

- Parent is responsible for what to offer⁶
- Infant is responsible for how much, when and where 6
- *See Additional Information pages 8, 9, 10, 11.

Milestones

By 1 month:

Sucks well on the nipple⁷

By 2 months:

 Feeds every 2 to 4 hours during the day and may need to feed during the night⁷

By 4 months:

 Holds head steady when supported in a sitting position⁷

At about 6 months, signs of developmental readiness for complementary foods:

- Has better head control²
- Can sit up and lean forward²
- Can let parent know when they are full (turns head away)²
- Can pick up food and try to put it in their mouth²

- Has < 6 wet diapers each day after 5 days⁸
- Loses > 10% of birth weight within the first 2 weeks;⁸ or by 2 weeks, does not regain birth weight² or does not gain ≥ 20 g per day⁸
- Consumes cow's or goat's milk (including pasteurized or raw), plant-based beverages (soy, rice, almond), evaporated milk or homemade formula²
- Consumes water, juice, herbal teas or other liquids²
- Introduces complementary foods too early (before infant is showing signs of developmental readiness), including adding cereal to a bottle²
- Uses a propped bottle or infant is not supervised during feeding²
- Feedings are forced or restricted²
- Skips feeds in attempts to facilitate longer sleep times⁹
- Parent has depressive symptomatology in the early postpartum period (may impact breastfeeding duration, self-efficacy and increase breastfeeding difficulties)¹⁰



6 TO 9 MONTHS

Guidelines

Fluids:

- Continue to breastfeed. 5 Offer parent's expressed breastmilk if feeding from the breast is not possible*2
- If expressed breastmilk is not available, offer commercial infant formula that is prepared safely*²
- Give a liquid vitamin D supplement of 400 IU (10 mcg) daily to infants who are fully or partially breastfed. Non-breastfed infants do not require a vitamin D supplement because infant formula contains vitamin D*2
- Delay fluid cow's milk until 9 to 12 months (risk of iron deficiency with early introduction)⁵
- Avoid juice as it offers no nutritional benefit³
- Offer water from an open cup with complementary food⁵

Foods:

- Infants at no or low risk for food allergy, introduce complementary foods at about six months of age⁴
- Delaying complementary foods beyond 6 months increases the risk of iron deficiency^{2,5}
- Offer complementary foods before, after or between breastfeeds⁵
- Provide a variety of textures (lumpy, soft-cooked, finely minced, pureed, mashed and ground textures)*5
- Offer finger foods as early as 6 months to encourage self-feeding (soft, cut-up family foods such as pieces of cooked vegetables, ripe fruit)⁵
- There is no recommendation on the baby-led weaning approach in Federal infant feeding recommendations. More research on the impacts of this feeding style on weight and nutrient intake are needed.
- Offer iron-rich foods first and offer them 2 or more times a day*^{1,5}
- Vegetables, fruit, and milk products such as cheese and yogurt can be introduced, between 6 to 9 months, along with a variety of iron-rich foods like beef, legumes, eggs and fish⁵
- Do not restrict fat intake. Higher fat milk products include yogurt with >2% M.F. or cheese with >20% M.F. 12
- Offer a variety of iron-fortified infant cereals and grain products, not only rice-based products due to the risk of dietary arsenic exposure¹³
- Introduce allergenic foods one at a time to gauge reaction, without unnecessary delay⁴ (i.e. every 2 days) between each food.⁵ Continue to offer common allergenic foods that are tolerated a few times a week to maintain tolerance*⁴
- Start by offering small amounts of food (2 to 3 tbsp per day) and gradually offer more based on the principles of responsive feeding*⁵
- Provide 2 to 3 larger feedings (meals) and 1 to 2 smaller feedings (snacks) per day, depending on the infant's appetite.
 Include infant in family meals⁵
- From 6 to 8 months of age, complementary foods account for about ½ of the infant's total energy needs⁵
- Avoid honey, including pasteurized or cooked until after 12 months (risk for infant botulism)⁵

Division of responsibility:

- The parent is responsible for what is offered and is becoming responsible for when and where the infant is fed⁶
- The infant is responsible for how much and whether to eat the foods offered⁶

Milestones

Signs of developmental readiness for complementary foods:

- Has better head control²
- Can sit up and lean forward²
- Lets parent know when they are full (turns head away)²
- Can pick up food and try to put it in their mouth²
- Has vertical jaw movement (munching)¹⁴
- May still have early gag reflex until around 7 months⁸

- Does not consume iron-rich foods daily⁵
- Consumes cow's or goat's milk or plant-based beverages (soy, rice, almond) as main milk source⁵
- Consumes fruit juice, fruit drinks/punch, sports drinks, pop or beverages containing artificial sweeteners or caffeine (coffee, tea, hot chocolate)^{3,5}
- Consumes raw or unpasteurized milk or milk products or unpasteurized juice⁵
- By 9 months, lumpy textures have not been introduced or consumed⁵
- Unsupervised during feedings⁵
- Feedings are forced, restricted or infant is pressured to eat⁵

^{*}See Additional Information pages 8, 9, 10, 11, 12, 13.



9 TO 12 MONTHS

Guidelines

Fluids:

- Continue to breastfeed*5
- Give a liquid vitamin D supplement of 400 IU (10 mcg) daily to children who are breastfed or receiving breastmilk.⁵ Non-breastfed infants do not require a vitamin D supplement because infant formula contains vitamin D*²
- Optional: If not breastfeeding, can introduce pasteurized, unsweetened homogenized (3.25% M.F.) cow's milk. Pasteurized, full-fat goat's milk enriched with folic acid and vitamin D can be an alternative to cow's milk⁵
- Avoid juice as it offers no nutritional benefit³
- Offer water and other fluids such as pasteurized, unsweetened homogenized (3.25% M.F.) cow's milk in an open cup⁵

Foods:

- Continue to offer iron-rich foods 2 or more times a day*5
- Most new foods can be offered every day in any sequence (vegetables, fruit, meats, most grains)⁵
- Continue to offer common allergenic foods that are tolerated a few times a week to maintain tolerance*⁴
- Offer a quantity of food based on the principles of responsive feeding (sensitive to infant's hunger and satiety cues)*⁵
- Provide up to 3 larger feedings (meals) and 1 to 2 smaller feedings (snacks) per day, depending on the infant's appetite. Include infant in family meals*⁵
- By 9 to 11 months, complementary foods contribute to just under half of the estimated total energy requirement⁵
- By 12 months, a variety of family foods with various textures are consumed⁵
- Avoid honey, including pasteurized or cooked until after 12 months (risk for infant botulism)⁵

Division of responsibility:

- The parent is responsible for what is offered and is becoming responsible for when and where the infant is fed⁶
- The infant is responsible for how much and whether to eat the foods offered^{3,6}

Milestones

- Between 8 to 12 months, lateral movements of the tongue are developed allowing food to be moved to the teeth (enables biting and chewing of chopped foods and a greater variety of finger foods)⁵
- Feeds self by holding small foods between thumb and forefinger^{7,8}
- Uses jaw and tongue to bite and mash a variety of textures⁸

- Does not consume iron-rich foods daily⁵
- By 9 months, lumpy textures have not been introduced or consumed⁵
- Consumes > 750 mL (24 oz) of cow's or goat's milk a day⁵
- Consumes skim or partly skimmed (2% or 1% M.F.) cow's or goat's milk or plant-based beverages (soy, rice, almond) as main milk source⁵
- Consumes fruit juice, fruit drinks/punch, sports drinks, pop or beverages containing artificial sweeteners or caffeine (coffee, tea, hot chocolate)^{3,5}
- Consumes raw or unpasteurized milk or milk products or unpasteurized juice⁵
- Unsupervised during feedings⁵
- Feedings are forced, restricted or infant is pressured to eat⁵

^{*}See Additional Information pages 8, 10, 11, 12, 13, 14.



12 TO 24 MONTHS

Guidelines

Fluids:

- Continue to breastfeed*5
- Give a liquid vitamin D supplement of 400 IU (10 mcg) daily to children who are breastfed or receiving breastmilk*5
- Offer 500 mL (16 oz) pasteurized, unsweetened homogenized (3.25% M.F.) cow's milk each day to non-breastfed children.
 Pasteurized, full-fat goat's milk, with added folic acid and vitamin D can be an alternative to cow's milk⁵
- Offer water when child is thirsty⁵
- Avoid juice and replace it with water.¹⁵ If given, limit to at most 125 mL (4 oz) per day of 100% fruit juice as part of meal or snack in an open cup^{3,5}
- Complete transition from bottle-feeding to an open cup for all fluids (except breastfeeding) no later than 18 months⁵

Foods:

- Offer a variety of food from Canada's Food
 Guide. Modify textures of family foods to reduce choking risk*5
- Offer iron-rich foods at each meal*5
- Offer an amount of food based on the principles of responsive feeding (sensitive to child's hunger and satiety cues)*5
- Schedule 3 small meals and 2 to 3 nutrient-dense snacks per day. Include child in family meals*5
- During the second year, energy from complementary foods account for about ¾ of the total energy needs⁵

Division of responsibility:

- The parent is responsible for what, when, and where to eat⁶
- The child is responsible for how much and whether to eat the foods offered⁶

Milestones

- Growth slows compared with the first year resulting in decreased appetite and erratic and unpredictable food intake^{8,16}
- Unfamiliar foods are often rejected the first time¹⁶

By 12 to 18 months:

 Acquires full chewing movements⁵

By 24 months:

- Eats most foods without coughing and choking⁷
- Eats most of the same foods as the rest of the family with some extra preparation to prevent choking⁸
- Eats with a utensil with little spilling⁷
- May only consume 4 or 5 wellaccepted foods⁸

- Does not eat a variety of textures and family foods including iron-rich foods each day⁵
- Dietary fat intake is restricted⁵
- Consumes > 750 mL (24 oz) cow's or goat's milk a day and/or > 175 mL (6 oz) of juice a day.⁵ Consuming these beverages in excessive amounts displaces complementary foods¹⁶
- Does not eat a variety of foods from Canada's Food Guide⁵
- Has not transitioned from bottle to an open cup by 18 months⁵
- Drinks from a bottle filled with fluids other than water at night⁵
- Consumes skim or partly skimmed (2% or 1% M.F.) cow's or goat's milk or plant-based beverages (soy, rice, almond) as main milk source⁵
- Consumes fruit drinks/punch, sports drinks, pop or beverages containing artificial sweeteners or caffeine (coffee, tea, hot chocolate)^{3,5}
- Consumes raw or unpasteurized milk or milk products or unpasteurized juice⁵
- Unsupervised during feedings⁵
- Feeding is forced, restricted or child is pressured to eat⁵
- Coughs and chokes often when eating at 24 months⁷
- Scores "high nutrition risk" on Toddler NutriSTEP® nutrition screen*

^{*}See Additional Information pages 8, 10, 11, 12, 13, 14.



2 TO 6 YEARS

Guidelines

Fluids:

- Continue to breastfeed as long as child and parent want⁵
- Offer 500 mL (16 oz) pasteurized, skim or partly skimmed (2% or 1% M.F.) cow's milk or fortified soy beverage daily to help meet vitamin D needs¹⁶
- Offer water when child is thirsty³
- Avoid juice and replace it with water.¹⁴ If given, limit to at most 125 mL (4 oz) per day for ages 1 to 3, and to at most 125 to 175 mL (4 to 6 oz) per day for ages 4 to 6 of 100% fruit juice in an open cup as part of a meal or snack³

Foods:

- Schedule 3 small meals and 2 nutrient-dense snacks per day⁸
- Follow the advice in <u>Canada's Food Guide</u>¹⁶
- Offer an amount of food based on the principles of responsive feeding*¹⁶
- Eat together as a family as often as possible*16

Division of responsibility:

- The parent is responsible for what, when, and where to eat⁶
- The child is responsible for how much and whether to eat the foods offered⁶

Milestones

- Food consumption moderates to match a slower rate of growth¹⁶
- Eats most foods without coughing and choking⁷
- Lift and drink from a cup at the table⁷
- May be resistant to new foods 16
- Progressing to adult eating pattern but needs adult modelling^{8,16}
- May have periods of disinterest in food¹⁶

- Consumes most of their milk and other beverages from a bottle¹⁸
- Consumes fruit drinks/punch, sports drinks, pop or beverages containing artificial sweeteners or caffeine (coffee, tea, hot chocolate) 8,19
- Feeding is coerced, restricted or child is pressured to eat^{8,16}
- Rarely or never eats meals with their family¹⁶
- Consumes plant-based beverages other than fortified soy beverage (rice, almond) as main milk source²⁰
- Consumes raw or unpasteurized milk or milk products²¹ or unpasteurized juice²²
- Exceeding milk recommendations can compromise iron status¹⁷
- Depends on vitamin/mineral supplements or specialty oral supplements instead of offering a variety of foods¹⁶
 Scores "high nutrition risk" on Toddler or Preschooler NutriSTEP nutrition screen

^{*}See Additional Information pages 13, 14.



Expressed breastmilk (EBM)

- Offering EBM from the infant's lactating parent, by hand expression or by pump, is the first choice for supplemental feeding²³
- For selected infants who are receiving care in hospital, donor human milk may be an alternative nutrition source. Such milk should be obtained from a reliable source such as a recognized human milk bank, and is typically only available to neonates in the hospital setting. The sharing of unprocessed human milk is not recommended^{24,25}
- Hold infant skin-to-skin, with frequent opportunities to breastfeed if infant is not latching well, or is not able to latch, to help preserve breastfeeding²³
- Switch frequently between breasts with compressions to increase milk production and milk transfer to infant.²³ Encourage frequent and effective milk expression to maintain or increase milk production; usually once for each time the infant is supplemented or at least 8 times in 24 hours if the infant is not feeding effectively at the breast²³
 - o 'Fully drain' breast each time breastmilk is expressed to prevent engorgement, compromised milk supply and other complications²³
 - Hand expression may result in larger volumes than a breast pump in the first few days following birth and may increase overall milk supply²³
 - o Breast massage and/or compression along with expressing with a mechanical pump may also increase available milk²³
- Options for offering EBM: supplemental feeding device at the breast (lactation tube), cup, spoon, dropper, finger, syringe or bottle²³
 - o Cup feeding allows infants to control feeding pace. ²³ Cup feeding has been shown to be safe and may help preserve breastfeeding duration among those who require multiple supplemental feedings²³
 - o When an infant is not breastfed, skin to skin contact should still be encouraged while feeding²
- Once hands have been washed with warm soapy water, clean containers and feeding devices with soap and water and air dry or dry with a
 paper towel before/after every use. They do not need to be sterilized for a healthy infant²⁶
- Use fresh milk first when both fresh and frozen milk are available; frozen milk may have certain immune factors altered²⁶
 Options to thaw frozen EBM: place the container in the refrigerator overnight, run the container under warm water, set the container in a bowl of warm water or use a waterless warmer²⁶

Storage	Temperature	Optimal maximum recommended storage duration for fresh EBM under very clean conditions
Room temperature	16 to 29 °C (60 to 85 °F)	4 hours optimal
		6 to 8 hours under very clean conditions
Refrigerator	~4 °C (39.2 °F)	4 days optimal
	4 C (39.2 F)	5 to 8 days under very clean conditions
Freezer	< -4 °C (24.8 °F)	6 months optimal
		12 months is acceptable

Source: © Eglash A, Simon L, Academy of Breastfeeding Medicine. ABM Clinical Protocol #8. Human milk storage information for home use for full-term infants, revised, 2017. Reproduced with permission.



Infant formula

- Discuss infant feeding options with parents. Refer to health professional document <u>Informed Decision Making: Having Meaningful Conversations</u>
 Regarding Infant Feeding
- Refer to breastfeeding supports as needed (local health unit or local breastfeeding clinics) since it is difficult to reverse the decision to stop breastfeeding*²
- For infants who are not exclusively fed breastmilk and whose parents have made the informed decision to provide infant formula, select a commercial infant formula based on the infant's medical and family's cultural/religious needs^{2,5}
- When an infant is not breastfed, skin-to-skin contact should still be encouraged while feeding. Formula fed infants need to be fed 'on cue'²
- There is no established superiority for commercial follow-up infant formulas for infants older than 6 months⁵
- Homemade infant formula, including those made with evaporated milk are not safe alternatives to commercial infant formula as they can cause severe malnutrition and potential fatal illness²⁷
- For most children, there is no indication for the use of commercial infant formulas beyond 12 months. If an older infant is no longer breastfed, pasteurized, unsweetened homogenized (3.25% M.F.) cow's milk is recommended as the main milk source, and can be introduced from 9 to 12 months⁵

*See Additional Information page 15

Infant formula type	Indications for use	Notes
Cow's milk-based	Standard breastmilk substitute for healthy-term infants	 Iron ranges from 0.4 to 1.3 mg per 100 mL Choose the higher range for infants at high risk for iron deficiency
Partially hydrolyzed cow's milk-based	• None	 Contraindicated for infants with cow's milk protein allergy No advantage over standard cow's milk-based infant formulas on the digestive system
Lactose-free	• None	 Contraindicated for galactosemia, congenital lactase deficiency and cow's milk allergy No advantage over cow's milk-based infant formulas, even for acute gastroenteritis Ineffective for the dietary treatment of colic
Soy-based	GalactosemiaCongenital lactase deficiencyCultural or religious reasons	 May consider for cow's milk protein allergy if diagnosis for non-IgE-mediated cow's milk protein allergy can be ruled out No conclusive evidence that dietary soy isoflavones adversely affect development, reproduction or endocrine function
Extensively hydrolyzed protein	Physician-confirmed food allergies or malabsorption syndromes that cannot tolerate formula based on intact cow's milk protein or soy protein	 Protein in this formula has been extensively broken down to the small peptide and amino acid level For infants experiencing allergic reactions on extensively hydrolyzed proteins, an amino acid-based infant formula may be recommended

Source: © Health Canada. Nutrition for healthy term infants: recommendations from birth to six months [Internet]. 2015. Available from: https://www.canada.ca/en/health-canada.ca/en/health-canada.ca/en/health-canada.ca/en/health-canada/services/canada-food-guide/resources/infant-feeding/nutrition-healthy-term-infants-recommendations-birth-six-months.html. Reprinted with permission by the copyright



Preparing infant formula

- Liquid infant formulas (liquid concentrate and ready-to-feed) are sterile. Powdered infant formula is not sterile and can be used if prepared properly. Ready-to-feed is the safest choice for higher-risk infants²
- For infants at greatest risk (pre-term, low-birth weight, immunocompromised) commercially produced liquid infant formulas (both concentrated and ready-to-feed) are recommended to be used²⁸
- Wash all feeding equipment with soap and warm water, then boil in clean water for 2 minutes, until 6 months. Beyond 6 months, parent can refer to manufacturer's instructions⁵
- Safe water sources include fluoridated municipal tap water, commercial bottled spring, tap water and regularly tested well water. Avoid carbonated, mineral or distilled water. If water is naturally high in fluoride (higher than the guideline of 1.5 mg/L), another water source is recommended²
- Boil all water sources used for infant formula preparation for 2 minutes, until 6 months. Beyond 6 months, parent can refer to manufacturer's instructions⁵
 - o **Ready-to-feed** No additional water required²⁹
 - o Liquid concentrate Mix with previously boiled water. Follow the manufacturer's instructions on preparation²
 - Powdered If fed immediately after preparation, it is safe to mix with previously boiled water that has been cooled to room temperature. If preparing bottles in advance, mix with very hot water (boiled and cooled to no less than 70°C) to kill any harmful bacteria²
- Store any prepared formula in the refrigerator for up to 24 hours²⁹
- Use formula within 2 hours from the start of a feeding and discard any leftovers²

Growth monitoring

- Measure weight, length/height and head circumferences at 1 to 2 weeks after birth and at 1, 2, 4, 6, 9, 12, 18 and 24 months and once per year for children over 2 years. Infants should be weighed nude on a calibrated beam or electronic scale³⁰
- Plot on <u>WHO Growth Charts for Canada</u> when assessing growth³¹
- Serial measures are more useful than unique measures and are ideal for assessing and monitoring growth patterns³¹
- Growth measurements indicating a sharp incline or decline in growth in serial growth measures, or a growth-line that remains flat on the WHO Growth Charts for Canada, may indicate growth issues³¹
- Refer to A Health Professional's Guide for Using the WHO Growth Charts for Canada for recommended cut-off criteria
- Refer to <u>WHO Growth Chart Training</u> e-modules for more information



Vitamin D

- Give a liquid vitamin D supplement of 400 IU (10 mcg) daily to all infants or children younger than 2 years who are breastfed or receiving breastmilk until diet includes ≥400 IU per day of vitamin D from dietary sources^{2,5}
- Offer 500 mL (16 oz) of skim or partly skimmed (2% or 1% M.F.) cow's milk and follow an eating pattern based on Canada's Food Guide when 2 years of age⁵
- Due to the high level of vitamin D deficiency and insufficiency found in First Nations and Inuit populations, special attention needs to be focused on these groups³²
- Food sources of Vitamin D include: fortified infant formula 100 IU in 250 mL (8 oz), cow's milk 100 IU in 250 mL (8 oz), salmon 82-257 IU in 30 g (1 oz), egg yolk 32 IU in one yolk, fortified margarine 35 IU in 5 mL (1 tsp), vitamin D fortified yogurt 37-60 IU in 125 mL (4 oz)³³

Age group	Recommended Dietary Allowance per day	Tolerable Upper Intake Level per day
0 to 6 months	400 IU (10 mcg)	1000 IU (25 mcg)
7 to 12 months	400 IU (10 mcg)	1500 IU (38 mcg)
1 to 3 years	600 IU (15 mcg)	2500 IU (63 mcg)
4 to 8 years	600 IU (15 mcg)	3000 IU (75 mcg)

Source: © Health Canada. Vitamin D and calcium: updated dietary reference intakes [Internet]. 2019. Available from: <a href="https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/vitamins-minerals/vitamin

Iron

- Offer iron-rich foods 2 or more times each day to reduce the risk of iron deficiency^{2,5}
- Enhance absorption of iron by eating heme and non-heme sources together and consuming foods rich in vitamin C (vegetables and fruit). Iron from meat sources (heme) is better absorbed than iron from non-meat sources (non-heme)⁵
 - o Heme iron beef, lamb, chicken, turkey, pork, fish
 - o Non-heme iron beans, lentils, chickpeas, tofu, eggs, fortified grains (including iron-fortified infant cereal)
- Infants at a high risk of iron deficiency include: birth weight ≤3000 grams (≤6 lbs 10 oz), born to mothers with iron deficiency, diabetes or alcohol consumption while pregnant⁵
- Signs of iron deficiency include: pallor, poor appetite, irritability, and slowed growth and development⁵

Age group	Recommended Dietary Allowance per day
7 to 12 months	11 mg
1 to 3 years	7 mg
4 to 8 years	10 mg

Source: © Health Canada. Dietary reference intakes [Internet]. 2006. Available from: https://www.canada.ca/en/healthy-eating/dietary-reference-intakes/tables/reference-intakes/tables/reference-intakes-tables-2005.html.. Reprinted with permission by the copyright holder.



Food allergies

- Infants at high risk for developing a food allergy have a personal history of atopy, including eczema, or having a first-degree relative with atopy (e.g. eczema, food allergy, allergic rhinitis or asthma). For these high-risk infants, based on developmental readiness, consider introducing common allergenic complementary foods at about 6 months of age, but not before an infant is 4 months of age. Common allergenic foods include milk products, egg, peanut, tree nuts, fish, shellfish, wheat and soy. Breastfeeding should be protected, promoted and supported up to the age of 2 years and beyond
- Infants at no or low risk for food allergy, introduce complementary foods at about six months of age⁴
- Introduce allergenic foods one at a time to gauge reaction, without unnecessary delay⁴ (i.e. every 2 days) between each food.⁵ Continue to offer common allergenic foods that are tolerated a few times a week to maintain tolerance⁴
- Goat's milk is not a suitable alternative for infants with cow's milk protein allergy⁵

Choking prevention

- Children younger than 4 years are at higher risk of choking. Recommend being aware of child's ability to chew and swallow, supervising eating and knowing how to respond if choking occurs. As long as an infant or child is attentive, sitting upright and is free from distractions, the risk of choking is the same as for an adult⁵
- Gagging is not choking and is a natural reflex that helps older infants to avoid choking⁵
- Avoid hard, small and round, or smooth and sticky, solid foods including: hard candies, cough drops, gum, popcorn, marshmallows, whole nuts, seeds, fish with bones and snacks using toothpicks or skewers for children younger than 4 years⁵
- Reduce the risk of choking by dicing or cutting lengthwise hot dogs or sausages, grating raw carrots or hard fruits such as apples, removing pits from fruits, chopping grapes, thinly spreading nut butters on crackers or toast, and finely chopping foods that are fibrous or stringy in texture such as celery, pineapple or oranges⁵

Fish consumption and methylmercury

- Increase gradually to 2 servings of fish per week as a general guideline by 24 months. Fatty fish is a good source of the omega-3 fats EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid). The optimal amount of EPA and DHA for infants and young children has not been determined⁵
- Avoid or limit consumption of the following high mercury containing fish fresh/frozen tuna, shark, swordfish, escolar, marlin, orange roughy, and canned albacore (white) tuna as follows:³⁴
 - o <1 year of age 40 g per month of these fresh/frozen types of fish or 40 g per week of canned albacore tuna
 - o 1 to 4 years of age 75 g per month of these fresh/frozen types of fish or 75 g per week of canned albacore tuna
 - o 5 to 11 years of age 125 g per month of these fresh/frozen types of fish or 150 g per week of canned albacore tuna



NutriSTEP® and Nutri-eSTEP - Nutrition Screening Tools for Toddlers and Preschoolers

- Toddler and Preschooler NutriSTEP® are validated Canadian nutrition risk screening questionnaires for toddlers 18 to 35 months and preschoolers 3 to 5 years
- Screens children for food and fluid intake, factors affecting eating behaviour, physical growth, physical activity and sedentary behaviour
- Use NutriSTEP to identify children at nutritional risk and to initiate a discussion and educate parents around feeding
- Toddler NutriSTEP® is available in English and French, can be used at the 18 Month Well Baby Visit, and can be added to Electronic Medical Records
- Preschooler NutriSTEP® is available in English, French, Simplified Chinese, Traditional Chinese, Punjabi, Vietnamese, Tamil and Spanish
- Contact your <u>local public health unit</u> for copies of NutriSTEP OR direct parents to Nutri-eSTEP at <u>www.nutritionscreen.ca</u>
- Parents who have questions after completing NutriSTEP can contact Telehealth Ontario at 1-866-797-0000

Responsive feeding and the division of responsibility

- The development of healthy eating skills is a shared responsibility:^{5,6}
 - Birth to 6 months Parents decide what milk source to provide. The infant, with infant-led or on-cue feeding, decides when, where and how much they are fed⁵
 - 6 **months and older** Parents provide a selection of nutritious foods and milk source, and begin to become responsible for *when* and *where* the infant is fed. The infant decides *whether* to eat and *how much* to eat.
 - o **By 12 months** Parents take over the responsibility for *when* and *where* the child is fed by providing regular meals and snacks. Parents need to trust the child's ability to decide *how much* to eat and *whether* to eat⁵
- In a non-controlling, non-coercive environment, healthy children have the ability to self-regulate the amount of food and energy consumed.

 Children will compensate for eating less on some days or at a particular meal and by eating more at other meals

 Output
- Most children have an appetite that is appropriate for their age and growth rate¹⁶
- Pressuring children positively or negatively will not help them eat more or less of certain foods. Pressure may lead to negative attitudes about eating and poor eating habits, as well as excessive feeding and weight gain. Pressuring and coercion may have short-term benefits but will make feeding more challenging and eating less rewarding.
 - o Positive pressure includes offering rewards, bribes ("if you eat your peas you can have dessert"), praise ("you are a good girl for eating the peas") or reminding a child to eat a certain food
 - Negative pressure includes prodding, scolding, punishment, pleading, coercing ("clean your plate")¹⁶ or using excessive verbal encouragement ("come on, you've tried it before")



Offering food

- Restricting higher-fat, energy-dense foods due to concern about overeating may adversely affect self-regulation and actually increase the amount of foods the child consumes⁵
- Prepare food with little or no added sugar or salt⁵
- Offer children small portions of foods initially, along with the opportunity to ask for more⁵
- Give special attention to vegetarian and vegan children's intake of certain nutrients, especially for children who are not consuming milk or egg products^{5,35-37}
- Do not to allow children to graze throughout the day or to drink an excessive amount of milk or juice; both practices lead to eating less at mealtimes¹⁶

Family mealtimes

- Early childhood food experiences are critical to the development of food preferences and eating behaviours³⁸
- Parents play a role in a child's acceptance of a wider variety of foods⁵
- Plan 3 meals and 2 snacks per day. Structure and routine for eating is important⁸
- Eating together as a family provides the child with a pleasurable, social experience and the opportunity to develop healthy eating habits and learn skills through imitation¹⁶
- Recommend avoiding distractions such as toys, books or screens during mealtimes¹⁶
- Children are more likely to try and enjoy a variety of foods when they are offered the same foods the rest of the family are eating^{5,16}
- Provide children with opportunities and support for mastering self-feeding skills with the understanding that messy mealtimes are part of the learning process⁵
- Allow about 20 minutes for children to stay at the table. When mealtime is over, remove the food¹⁶
- Reassure parents that it is common to offer a new food more than 10 times before a child will accept it. Continue to keep offering these foods and wait for the child to try it on their own⁵

Food insecurity

- Food insecurity is the inadequate or insecure access to food because of financial constraints³⁹
- The experience of food insecurity can range from concerns about running out of food before there is more money to buy more, the inability to afford a balanced diet, going hungry, missing meals and in extreme cases, to not eating for a whole day⁴¹
- Exposure to food insecurity impacts children's physical and mental health by putting them at a greater risk for asthma and depression⁴⁰
- Consider using the <u>Centre for Effective Practice Poverty: A Clinical Tool for Primary Care Providers</u>
- Refer clients to local community resources or online directories like <u>211ontario.ca</u>



Resource for parents

Parents can call Telehealth Ontario and speak to a registered dietitian for free at 1-866-797-0000. Parents looking for breastfeeding support can visit their <u>local public health unit's</u> breastfeeding clinic.

Websites

Ellyn Satter Institute - Division of responsibility (sDOR)

Government of Canada - Canada's Food Guide*

Government of Canada - Healthy eating at school*

Government of Canada - Tips for healthy eating*

UnlockFood.ca™ - Expert Guidance. Everyday Eating. Brought to you by Dietitians of Canada*

Breastfeeding

Best Start Resource Centre - Bilingual Online Ontario Breastfeeding Services Directory (2016)*

Best Start Resource Centre - Breastfeeding Matters: An Important Guide to Breastfeeding for Women and their Families (2017)*

Best Start Resource Centre - My Breastfeeding Guide (2015)*

Breastfeeding Resources Ontario*

Expressed Breastmilk

Healthy Families BC - Video on Hand Expressing Breastmilk (2013)

Stanford University - Hand Expression of Breastmilk (video)

Infant Formula

Best Start Resource Centre - Infant Formula: What You Need to Know (2017)*

Feeding Babies

Nutrition Resource Centre - Feeding Your Baby: A Guide to Help You Introduce Solid Foods (2017)

Feeding Young Children

Best Start Resource Centre - How to Feed Your Growing Child Ages 2 to 5 (2016)

NutriSTEP®- Nutrition Screening Tool for Toddlers and Preschoolers

Nutrition Resource Centre - Eat Right Be Active: A Guide for Caregivers of Toddlers 12-36 Months (2017)

Nutrition Resource Centre - Eat Right Be Active: A Guide to Caregivers of Preschoolers Ages 3-5 (2017)

Nutrition Resource Centre - Eat Right Be Active: A Guide to Caregivers of Children Ages 6-8 (2017)

^{*}Resource available in other languages

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