Pediatric Nutrition Guidelines (Birth to 6 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](http://odph.ca) or contact us via email at [info@odph.ca](mailto: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 demand’
- 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
- 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 delay (i.e. every 2 days) between each food5. Continue to offer common allergenic foods that are tolerated a few times a week to maintain tolerance5
- 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 where6

*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 mouth7

### Red Flags

- Has < 6 wet diapers each day after 5 days8
- Loses > 10% of birth weight within the first 2 weeks; or by 2 weeks, does not regain birth weight7 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. **5** 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 benefit **3**
- Offer water from an open cup with complementary food **5**

**Foods:**
- Infants at no or low risk for food allergy, introduce complementary foods at about six months of age **4**
- Delaying complementary foods beyond 6 months increases the risk of iron deficiency **2,5**
- Offer complementary foods before, after or between breastfeeds **5**
- 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. **5** More research on the impacts of this feeding style on weight and nutrient intake are needed **11**
- 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 fish **5**
- Do not restrict fat intake. **5** 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 exposure **13**
- Introduce allergenic foods one at a time to gauge reaction, without unnecessary delay **4** (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** **4**
- 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 meals **5**
- From 6 to 8 months of age, complementary foods account for about ⅕ of the infant’s total energy needs **5**
- 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 fed **6**
- The infant is responsible for how much and whether to eat the foods offered **6**

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

**Milestones**

**Signs of developmental readiness for complementary foods:**
- Has better head control **2**
- Can sit up and lean forward **2**
-Lets parent know when they are full (turns head away) **2**
- Can pick up food and try to put it in their mouth **2**

**Red Flags**

- Does not consume iron-rich foods daily **7**
- Consumes cow’s or goat’s milk or plant-based beverages (soy, rice, almond) as main milk source **5**
- 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 juice **5**
- By 9 months, lumpy textures have not been introduced or consumed **5**
- Unsupervised during feedings **5**
- Feedings are forced, restricted or infant is pressured to eat **5**
- Has vertical jaw movement (munching) **14**
- May still have early gag reflex until around 7 months **8**
**Pediatric Nutrition Guidelines (Birth to 6 Years) for Health Professionals**

### 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 milk[^5].
- Avoid juice as it offers no nutritional benefit[^3].
- Offer water and other fluids such as pasteurized, unsweetened homogenized (3.25% M.F.) cow’s milk in an open cup[^7].

**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 requirement[^5].
- By 12 months, a variety of family foods with various textures are consumed[^5].
- 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 fed[^6].
- The infant is responsible for how much and whether to eat the foods offered[^3,6].

[^5]: See Additional Information pages 8, 10, 11, 12, 13, 14.

**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 textures[^8].

**Red Flags**

- Does not consume iron-rich foods daily[^5].
- By 9 months, lumpy textures have not been introduced or consumed[^1].
- Consumes > 750 mL (24 oz) of cow’s or goat’s milk a day[^5].
- 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 source[^5].
- 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 juice[^5].
- Unsupervised during feedings[^5].
- Feedings are forced, restricted or infant is pressured to eat[^5].
**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 milk[^5]
- Offer water when child is thirsty[^5]
- 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 months[^5]

**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 ⅔ of the total energy needs[^5]

**Division of responsibility:**
- The parent is responsible for what, when, and where to eat[^6]
- The child is responsible for how much and whether to eat the foods offered[^6]

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

### Milestones

**By 12 to 18 months:**
- Acquires full chewing movements[^5]

**By 24 months:**
- Eats most foods without coughing and choking[^7]
- Eats most of the same foods as the rest of the family with some extra preparation to prevent choking[^8]
- Eats with a utensil with little spilling[^7]
- May only consume 4 or 5 well-accepted foods[^8]

### Red Flags

- Does not eat a variety of textures and family foods including iron-rich foods each day[^5]
- Dietary fat intake is restricted[^5]
- Consumes > 750 mL (24 oz) cow’s or goat’s milk a day and/or > 175 mL (6 oz) of juice a day[^7]. Consuming these beverages in excessive amounts displaces complementary foods[^16]
- Does not eat a variety of foods from Canada's Food Guide[^5]
- Has not transitioned from bottle to an open cup by 18 months[^5]
- Drinks from a bottle filled with fluids other than water at night[^5]
- 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 source[^5]
- 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 juice[^5]
- Unsupervised during feedings[^5]
- Feeding is forced, restricted or child is pressured to eat[^5]
- Coughs and chokes often when eating at 24 months[^7]
- Scores “high nutrition risk” on Toddler NutriSTEP® nutrition screen*
**Pediatric Nutrition Guidelines (Birth to 6 Years) for Health Professionals**

### 2 TO 6 YEARS

<table>
<thead>
<tr>
<th>Guidelines</th>
<th>Milestones</th>
<th>Red Flags</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fluids:</strong></td>
<td>• Food consumption moderates to match a slower rate of growth&lt;sup&gt;16&lt;/sup&gt;</td>
<td>• Consumes most of their milk and other beverages from a bottle&lt;sup&gt;18&lt;/sup&gt;</td>
</tr>
<tr>
<td>• Continue to breastfeed as long as child and parent want&lt;sup&gt;5&lt;/sup&gt;</td>
<td>• Eats most foods without coughing and choking&lt;sup&gt;7&lt;/sup&gt;</td>
<td>• Consumes fruit drinks/punch, sports drinks, pop or beverages containing artificial sweeteners or caffeine (coffee, tea, hot chocolate) &lt;sup&gt;8,19&lt;/sup&gt;</td>
</tr>
<tr>
<td>• 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 needs&lt;sup&gt;16&lt;/sup&gt;</td>
<td>• Lift and drink from a cup at the table&lt;sup&gt;7&lt;/sup&gt;</td>
<td>• Feeding is coerced, restricted or child is pressured to eat&lt;sup&gt;8,16&lt;/sup&gt;</td>
</tr>
<tr>
<td>• Offer water when child is thirsty&lt;sup&gt;3&lt;/sup&gt;</td>
<td>• May be resistant to new foods&lt;sup&gt;16&lt;/sup&gt;</td>
<td>• Rarely or never eats meals with their family&lt;sup&gt;16&lt;/sup&gt;</td>
</tr>
<tr>
<td>• Avoid juice and replace it with water.&lt;sup&gt;14&lt;/sup&gt; 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 snack&lt;sup&gt;3&lt;/sup&gt;</td>
<td>• Progressing to adult eating pattern but needs adult modelling&lt;sup&gt;8,16&lt;/sup&gt;</td>
<td>• Consumes plant-based beverages other than fortified soy beverage (rice, almond) as main milk source&lt;sup&gt;20&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Foods:</strong></td>
<td>• May have periods of disinterest in food&lt;sup&gt;16&lt;/sup&gt;</td>
<td>• Consumes raw or unpasteurized milk or milk products&lt;sup&gt;21&lt;/sup&gt; or unpasteurized juice&lt;sup&gt;22&lt;/sup&gt;</td>
</tr>
<tr>
<td>• Schedule 3 small meals and 2 nutrient-dense snacks per day&lt;sup&gt;8&lt;/sup&gt;</td>
<td></td>
<td>• Exceeding milk recommendations can compromise iron status&lt;sup&gt;17&lt;/sup&gt;</td>
</tr>
<tr>
<td>• Follow the advice in Canada’s Food Guide&lt;sup&gt;16&lt;/sup&gt;</td>
<td></td>
<td>• Depends on vitamin/mineral supplements or specialty oral supplements instead of offering a variety of foods&lt;sup&gt;16&lt;/sup&gt;</td>
</tr>
<tr>
<td>• Offer an amount of food based on the principles of responsive feeding*&lt;sup&gt;16&lt;/sup&gt;</td>
<td></td>
<td>Scores “high nutrition risk” on Toddler or Preschooler NutriSTEP&lt;sup&gt;®&lt;/sup&gt; nutrition screen</td>
</tr>
<tr>
<td>• Eat together as a family as often as possible*&lt;sup&gt;16&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Division of responsibility:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The parent is responsible for what, when, and where to eat&lt;sup&gt;6&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The child is responsible for how much and whether to eat the foods offered&lt;sup&gt;6&lt;/sup&gt;</td>
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</tbody>
</table>

*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 feeding\(^{23}\)
- 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 breastfeeding\(^{23}\)
- 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 breast\(^{23}\)
  - ‘Fully drain’ breast each time breastmilk is expressed to prevent engorgement, compromised milk supply and other complications\(^{23}\)
  - Hand expression may result in larger volumes than a breast pump in the first few days following birth and may increase overall milk supply\(^{23}\)
  - Breast massage and/or compression along with expressing with a mechanical pump may also increase available milk\(^{23}\)
- Options for offering EBM: supplemental feeding device at the breast (lactation tube), cup, spoon, dropper, finger, syringe or bottle\(^{23}\)
  - 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 feedings\(^{23}\)
  - When an infant is not breastfed, skin to skin contact should still be encouraged while feeding\(^{2}\)
- 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 infant\(^{26}\)
- Use fresh milk first when both fresh and frozen milk are available; frozen milk may have certain immune factors altered\(^{26}\)

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 warmer\(^{26}\)

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

Infant formula

- Discuss infant feeding options with parents. Refer to health professional document Informed Decision Making: Having Meaningful Conversations 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
- 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
- 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’
- There is no established superiority for commercial follow-up infant formulas for infants older than 6 months
- 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 illness
- 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 months

*See Additional Information page 15

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

**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 infants.
- 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 used.
- 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 instructions.
- 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 recommended.
- Boil all water sources used for infant formula preparation for 2 minutes, until 6 months. Beyond 6 months, parent can refer to manufacturer’s instructions.
  - **Ready-to-feed** - No additional water required.
  - **Liquid concentrate** - Mix with previously boiled water. Follow the manufacturer’s instructions on preparation.
  - **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 bacteria.
- Store any prepared formula in the refrigerator for up to 24 hours.
- Use formula within 2 hours from the start of a feeding and discard any leftovers.

**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 scale.
- Plot on **WHO Growth Charts for Canada** when assessing growth.
- Serial measures are more useful than unique measures and are ideal for assessing and monitoring growth patterns.
- 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 issues.
- Refer to **A Health Professional’s Guide for Using the WHO Growth Charts for Canada** for recommended cut-off criteria.
- Refer to **WHO Growth Chart Training** 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 age.\(^5\)
- 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 groups.\(^3,2\)
- 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).\(^3,3\)

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


**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)\(^5\)
  - Heme iron – beef, lamb, chicken, turkey, pork, fish
  - 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 pregnant.\(^5\)
- Signs of iron deficiency include: pallor, poor appetite, irritability, and slowed growth and development.\(^5\)

<table>
<thead>
<tr>
<th>Age group</th>
<th>Recommended Dietary Allowance per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>7 to 12 months</td>
<td>11 mg</td>
</tr>
<tr>
<td>1 to 3 years</td>
<td>7 mg</td>
</tr>
<tr>
<td>4 to 8 years</td>
<td>10 mg</td>
</tr>
</tbody>
</table>

Food allergies

- Infants at high risk for developing a good 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 age.
- Introduce allergenic foods one at a time to gauge reaction, without unnecessary delay (i.e. every 2 days) between each food.
- Continue to offer common allergenic foods that are tolerated a few times a week to maintain tolerance.
- Goat’s milk is not a suitable alternative for infants with cow’s milk protein allergy.

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 free from distractions, the risk of choking is the same as for an adult.
- Gagging is not choking and is a natural reflex that helps older infants to avoid choking.
- 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 years.
- 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 oranges.

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 determined.
- 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:
  - < 1 year of age - 40 g per month of these fresh/frozen types of fish or 40 g per week of canned albacore tuna
  - 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
  - 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 local public health unit for copies of NutriSTEP® OR direct parents to Nutri-eSTEP at www.nutritionscreen.ca.
- 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 fed.⁵
  - **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.
  - **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 eat.⁵
- In a non-controlling, non-coercive environment, healthy children have the ability to self-regulate the amount of food and energy consumed.¹⁶
- Children will compensate for eating less on some days or at a particular meal and by eating more at other meals.⁵
- Most children have an appetite that is appropriate for their age and growth rate.¹⁶
- 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.⁵ Pressuring and coercion may have short-term benefits but will make feeding more challenging and eating less rewarding.⁸
  - 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”).

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³⁶ "Ontario Nutrition Guidelines for Health Professionals (Birth to 6 Years)" (2021), Ontario Ministry of Health and Long-Term Care.
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 consumes\(^5\)
- Prepare food with little or no added sugar or salt\(^5\)
- Offer children small portions of foods initially, along with the opportunity to ask for more\(^5\)
- 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 mealtimes\(^16\)

Family mealtimes

- Early childhood food experiences are critical to the development of food preferences and eating behaviours\(^38\)
- Parents play a role in a child's acceptance of a wider variety of foods\(^5\)
- Plan 3 meals and 2 snacks per day. Structure and routine for eating is important\(^8\)
- 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 imitation\(^16\)
- Recommend avoiding distractions such as toys, books or screens during mealtimes\(^16\)
- 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 process\(^5\)
- Allow about 20 minutes for children to stay at the table. When mealtime is over, remove the food\(^16\)
- 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 own\(^5\)

Food insecurity

- Food insecurity is the inadequate or insecure access to food because of financial constraints\(^39\)
- 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 day\(^41\)
- Exposure to food insecurity impacts children’s physical and mental health by putting them at a greater risk for asthma and depression\(^40\)
- Consider using the Centre for Effective Practice Poverty: A Clinical Tool for Primary Care Providers
- Refer clients to local community resources or online directories like 211ontario.ca
## ADDITIONAL INFORMATION

### 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 local public health unit’s 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)*
- 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**

**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

*Resource available in other languages
Pediatric Nutrition Guidelines (Birth to 6 Years) for Health Professionals

References


