

## Healthy Infants and Young Children Homemade Infant Formula

Applicable to: Nurses, Physicians and Other Health Professionals

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### Summary of Key Recommendations

- Human milk feeding is the normal and unequalled method of feeding infants. Human milk feeding is recommended, exclusively for the first six months, and sustained for up to two years or longer with appropriate complementary feedings.
- In the first nine months of life, commercial infant formulas are the only recommended alternative to human milk in absence of lactation or when an informed decision to use infant formula has been made.
- Homemade infant formulas are not appropriate alternatives to human milk or commercial infant formula. Homemade infant formulas should only be considered for emergency short-term use if a commercial formula is unavailable.
- Homemade infant formulas are not more natural than commercial infant formulas. All ingredients in commercial infant formula are there in specific amounts for nutritional purposes.
- Families who have made an informed decision to use homemade infant formula and who are experiencing financial hardship should be directed to community programs and supports that will help them access commercial infant formula.
- Families who continue to use homemade infant formula should be informed of the risk and offered a referral to a registered dietitian (RD).

### Health Benefits

Homemade infant formulas are not an appropriate alternative to human milk or commercial infant formula except for emergency short-term use.<sup>1</sup> This document provides guidance on homemade infant formula to assist health professionals when discussing the topic with parents or caregivers.



# Nutrition Guideline

## Healthy Infants and Young Children

### Homemade Infant Formula

---

#### Considerations

##### Household Food Insecurity

Household food insecurity (HFI) is defined as “an inadequate or insecure access to food because of financial constraints”;<sup>2</sup> it impacts physical, mental and social well-being. Health professionals will encounter infants and children living in food-insecure households.<sup>3</sup>

Infant formula in those experiencing HFI may be difficult to obtain due to access, availability, or cost.

Health professionals can offer better support if they are aware when parents or caregivers are worried about having enough money for food and are experiencing other challenges because of financial strain.<sup>4,5</sup> Health professionals are encouraged to work with patients to develop interventions that are sensitive to financial strain.

Key steps for health professionals include:

- Review the Nutrition Guideline: Household Food Insecurity ([ahs.ca/NutritionGuidelinesHP](https://ahs.ca/NutritionGuidelinesHP)) for additional information on how to support patients experiencing HFI.
- Assist patients in accessing available income supports. The provincial directory 211 ([ab.211.ca](https://ab.211.ca)) can be used to identify financial benefits, programs, and services.

#### Key Questions

##### What are homemade infant formulas?

Homemade infant formulas are unregulated formulas made at home. These formulas may contain a variety of ingredients such as different animal milks which may or may not be pasteurized (e.g. cow, goat, buffalo, etc.), plant-based beverages, coconut fat, meat broths, and liver. Although recipes for homemade infant formulas are promoted on the internet and by some practitioners who give health advice, these formulas are not recommended.<sup>6</sup>

The World Health Organization (WHO) provides homemade infant formula recipes using fresh, full-fat powdered, or full-fat canned evaporated animal milks mixed with water and sugar to meet the energy and hydration needs of non-human milk-fed infants who have no access to commercial infant formula in emergencies (i.e. natural disasters), typically in developing countries. Homemade infant formulas should only be considered for emergency short-term use.<sup>1,7</sup> These homemade formulas must be prepared safely, following directions from [WHO's Guidelines for Use of Breast-milk Substitutes in Emergency Situations](#).<sup>8</sup> Unpasteurized milk in homemade infant formula recipes poses serious health risks. For information on how to pasteurize raw milk refer to [How to Pasteurize Milk at Home](#).

As homemade infant formulas are nutritionally incomplete, WHO recommends additional iron and micronutrient supplementation. However, the feasibility and safety of adding vitamins and minerals to homemade infant formula is of concern due to the real possibility of home mixing errors and the lack of availability of complete multi-vitamin and mineral supplements.<sup>1</sup>

Health Canada no longer provides a recipe for homemade infant formula due to the risks outlined below.

# Nutrition Guideline

## Healthy Infants and Young Children

### Homemade Infant Formula

---

#### Are homemade infant formulas an acceptable alternative to human milk or commercial infant formula?

Homemade infant formulas are not recommended alternatives to human milk or commercial infant formulas.<sup>6,8</sup> Homemade infant formulas can cause severe malnutrition and potentially fatal illness in infants.<sup>9</sup> These formulas may:

- be nutritionally incomplete (i.e. low in iron, essential fatty acids, and other essential nutrients).<sup>1,9,10</sup> Poor iron status may persist into childhood and iron deficiency anemia is associated with long-lasting adverse effects on cognition.<sup>11</sup> Essential fatty acid deficiencies may lead to dermatitis, growth retardation, and impaired cognitive development.<sup>1</sup>
- deliver a high renal solute load which can affect renal function with prolonged use.<sup>1,7,10</sup>
- increase food safety risk.<sup>7</sup>
- exceed recommended levels of some vitamins or minerals. (e.g. vitamin A).<sup>1,7,10</sup>

Human milk is the normal and unequalled food for infants. Health professionals may be able to support the family with lactating or re-lactating if this is a goal of the family. Where human milk is not possible or chosen, commercial infant formula will meet the nutrition needs of infants and is the only recommended alternative to human milk for infants younger than nine months of age.

All commercial infant formulas must undergo a full safety and nutritional quality assessment before they can be sold in Canada.<sup>6</sup> All manufacturers, importers and distributors of infant formula are responsible for ensuring that their products comply with Canadian legislation.<sup>6</sup> Health Canada cautions individuals against purchasing infant formula from internet sites or other countries. Infant formula that has not been approved by Health Canada poses safety and nutritional risks, as they may not meet Health Canada safety and nutrition regulations.

Preterm infants and those with specific needs may require additional nutrients in addition to human milk or commercial formula. For information on commercial infant formulas refer to the [Infant Formulas for Healthy Term Infants – Compendium & Summary Sheet](#).

#### Are homemade infant formulas more economical than commercial infant formula?

The cost of using homemade infant formulas may be even higher than using commercial infant formulas when one considers the vitamin and mineral supplementation needed to accompany homemade infant formulas. Although the use of homemade infant formulas has declined with the introduction of lower-cost store brand infant formulas, homemade infant formulas may continue to be used due to a perceived lower cost and better availability in remote areas.<sup>6</sup> When the cost of store brand powdered and liquid concentrate infant formulas was compared to a common homemade evaporated milk infant formula recipe, it was found that there was little to no cost savings with providing the homemade infant formula.

In Canada, there are supports in place to help families access commercial infant formula. Community agencies such as food banks, churches, and service groups, as well as income support programs, may be able to provide commercial infant formula or other financial and/or social supports for families. Families receiving income support can receive additional funds to cover the cost of commercial infant formula provided: they have a physician's prescription for the infant formula, a health care provider has provided an estimate of the monthly cost of the formula for special diet approval, and the formula is purchased through a pharmacy.

# Nutrition Guideline

## Healthy Infants and Young Children

### Homemade Infant Formula

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Further information can be found under the [Government of Alberta Income Support Programs](#). Medically indicated formulas are covered for families with limited income through the [Alberta Child Health Benefit](#) and [Government of Alberta Income Support Programs](#). The formula also needs to be purchased through a pharmacy with a physician's prescription. In Alberta, free commercial infant formula is provided to HIV-positive mothers through their infant's first year through the [Free Formula Programs for mothers with HIV](#).

Families should be encouraged to access these programs if needed. Health professionals may also be able to support the family with human milk feeding or re-lactating if this is a goal of the family.

#### Are homemade infant formulas more natural than commercial infant formula?

Homemade infant formulas are not more “natural” than commercial infant formulas.<sup>6</sup> “Natural” is often defined as containing no preservatives or additives. Although homemade infant formulas may be perceived as more natural or some alternative practitioners or companies promote them as such,<sup>9</sup> there is no evidence to support these claims.

Some people may perceive commercial infant formula as unnatural as the ingredients are listed using technical terminology. For example, vitamin E is listed as DL-alpha-tocopherol-acetate and vitamin B6 is listed as pyridoxine hydrochloride. It is important to note that all ingredients in commercial formulas, including the added vitamins and minerals, are included in specific amounts for nutritional purposes.<sup>6</sup> Additionally, all commercial infant formulas must undergo a full safety and nutritional quality assessment by Health Canada before they can be sold in Canada.<sup>9</sup>

If providing an organic formula is important to parents or caregivers, there are organic commercial infant formulas available to choose from. Organic formulas have received organic certification from a Certification Body accredited by the Canadian Food Inspection Agency but this certification does not represent specific health claims. For information on commercial infant formulas refer to the [Infant Formulas for Healthy Term Infants – Compendium & Summary Sheet](#).

Families who continue to use homemade infant formula should be offered a referral to an RD.

#### Are there any other resources related to feeding healthy infants and children that I can use with my patients?

For infant nutrition resources visit at [ahs.ca/NutritionHandouts](https://ahs.ca/NutritionHandouts) and click on **Infants**.

For more information related to healthy infants and children see [Healthy Parents Healthy Children](#).

# Nutrition Guideline

## Healthy Infants and Young Children

### Homemade Infant Formula

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