

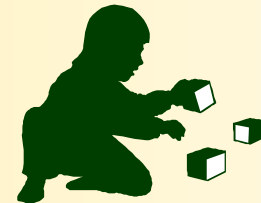
Nutrition for Healthy Term Infants

Statement of the Joint Working Group:

- Canadian Paediatric Society
 - Dietitians of Canada
 - Health Canada
-

Target Population

Nutrition for Healthy Term Infants is the new national statement on nutrition for infants from birth to 24 months.



Objectives

- The document summarizes existing scientific literature on infant nutrition.
- The Statement presents principles and recommendations to help health professionals promote optimal, evidence-based nutritional care for infants in Canada.
- The Statement is not designed to be an all-encompassing practical guide, but rather to serve as the basis for the development of practical feeding guidelines by provinces, territories and other organizations.

Methods

- The Statement was developed by a working group with extensive input from a broad range of individuals, professional health care associations/organizations, and companies involved in infant nutrition.
- The external review process included representatives from the fields of medicine, dietetics, public health and community services, nursing, pharmacy, breastfeeding/ lactation, and manufacturers of infant food and alternate milks.



Methods

- An attempt was made to clearly distinguish those recommendations based on scientific evidence versus those based on common practice.
- In the case of emerging issues, where sufficient research has not yet been performed, or where results are conflicting, caution is expressed against changing existing practices until conclusive data becomes available.

Application

- *Nutrition for Healthy Term Infants* offers multidisciplinary health professionals the most current scientific tool for advising parents and caregivers and positively influencing the nutritional environment provided to infants in Canada.

Contents

- **Breastfeeding**
 - **Benefits:**
 - Reduced incidence of infection
 - Prevention of SIDS
 - Prevention of allergies
 - Enhanced cognitive development
 - **Maintenance of acceptable growth**
 - **Factors influencing initiation and duration:**
 - Maternal lifestyle
 - Shortened postpartum length of stay
 - “Top-up” feeds
 - Smoking

Contents (cont.)

- **Potential contraindications:**
 - Drugs
 - Alcohol
 - Environmental contaminants
 - Maternal infections
- **Vitamin/Mineral Supplementation:**
 - Vitamin D

Contents (cont.)

- **Alternate Milks**
 - **Infant formulas:**
 - Cow's milk protein-based formulas
 - Soy protein-based formulas
 - **Specialized infant formulas:**
 - Lactose-free, cow's milk protein-based formulas
 - Protein hydrolysate formulas
 - **Follow-up formulas**
 - **Homemade evaporated milk formulas**
 - **Other alternate milks**
 - Pasteurized cow's milk
 - Goat's milk
 - Soy, rice and other vegetarian beverages

Contents (cont.)

- **Unresolved issues in the composition of infant formulas:**
 - Fatty acids
 - Nucleotides
 - Level of iron fortification
 - Phyto-estrogens

Contents (cont.)

- **Other Fluids in Infant Feeding**
 - **Water**
 - Tap water
 - Well water
 - Commercially bottled non-carbonated water
 - Home water treatment equipment
 - **Fruit juices**
 - **Other beverages**
 - **Herbal teas**

Contents (cont.)

- **Transition to Solid Foods**
 - **Age of introduction**
 - **First foods**
 - **Table foods**
 - **Home-prepared foods**
 - **Commercial baby foods**
- **Safety Issues Around Feeding**
 - **Infant botulism**
 - **Salmonellosis**
 - **Choking and aspiration**
 - **Supervision**
 - **Unsafe foods**

Contents (cont.)

- **Nutrition in the Second Year**
 - **Small, frequent feedings**
 - **Variety**
- **Other Issues in Infant Nutrition**
 - **Food allergies**
 - **Colic**
 - **Constipation**
 - **Dietary fat**
 - **Dental caries**
 - **Gastroenteritis**
 - **Diabetes**
 - **Iron deficiency anemia**
 - **Vegetarian diets**

Principles

- **Breastfeeding:**
 - *Breastfeeding is the optimal method of feeding infants. Breastfeeding may continue for up to 2 years of age and beyond.*
 - *Active public health, hospital, community and workplace support of breastfeeding will increase initiation rates and duration of breastfeeding.*



Principles (cont.)

- *Breastfeeding is rarely contraindicated. Neither smoking nor environmental contaminants are necessarily contraindications to breastfeeding. Moderate, infrequent alcohol ingestion, the use of most prescription and over-the-counter drugs and many maternal infections do not preclude breastfeeding.*
- *Vitamin D deficiency is a health concern in Canada. Infant formulas and milks are fortified with vitamin D. Breastfed infants should also receive extra vitamin D in the form of a supplement.*

Principles (cont.)

- **Alternate Milks:**

- *If an infant is not breastfed, or is partially breastfed, commercial formulas are the most acceptable alternative to breast milk until 9 to 12 months of age.*
- *The use of nutritionally incomplete alternate milks as the sole source of nutrition for infants is inappropriate. Pasteurized whole cow's milk, however, is an important component of a mixed infant diet after 9 months of age. For infants unable to take cow's milk products, continue commercial soy formula until 2 years of age.*

Principles (cont.)

- **Other Fluids in Infant Feeding:**
 - *Tap water, well water meeting established standards of safety and commercially bottled water, except mineral or carbonated water, are generally suitable for infants. Limit the use of “fruit juice” to avoid interfering with the intake of nutrient-containing foods and fluids. Herbal teas and other beverages are of no known benefit to an infant and may be harmful.*

Principles (cont.)

- **Transition to Solid Foods:**
 - *Infants between 4 and 6 months of age are physiologically and developmentally ready for new foods, textures and modes of feeding. By 1 year of age, the ingestion of a variety of foods from the different food groups of Canada's Food Guide to Healthy Eating is desirable.*

Principles (cont.)

- **Safety Issues Around Feeding:**
 - *Foods provided to infants must be free of pathogens, appropriate in size and texture, nutritionally sound and fed safely.*

Principles (cont.)

- **Nutrition in the Second Year:**
 - *Healthy eating is important in the second year to:*
 - *provide the energy and nutrients needed to grow and develop*
 - *develop a sense of taste and an acceptance and enjoyment of different foods*
 - *instill attitudes and practices which may form the basis for lifelong health-promoting eating patterns.*

Principles (cont.)

- **Other Issues in Infant Nutrition:**

- Food Allergies:**

- *Whenever possible allergies to food should be prevented.*
- *Treatment of proven food allergies involves avoidance of foods known to cause symptoms.*

- Colic:**

- *Dietary manipulations have had limited success in the treatment of colic.*

- Constipation:**

- *In infancy, true constipation is infrequent.*

Principles (cont.)

Dietary Fat:

- *Dietary fat is an important source of energy and the only source of essential fatty acids.*

Dental Caries:

- *Prevalence of dental caries is lower where infants and children have access to fluoridated water and where long-term exposure of teeth to nutrient-containing liquids is avoided. Excessive fluoride intake can cause dental fluorosis.*

Principles (cont.)

Gastroenteritis:

- *Manage mild to moderate dehydration associated with gastroenteritis with oral rehydration therapy (ORT). Prevent malnutrition.*

Diabetes:

- *The exact role of early infant nutrition as a possible etiologic factor for infants genetically at risk for diabetes has not been proven.*

Principles (cont.)

Iron Deficiency Anemia:

- *Iron deficiency is preventable through appropriate feeding choices.*

Vegetarian Diets:

- *Nutritional needs can be met by most well-planned vegetarian diets. For vegetarian diets that are limited in variety and nutritional quality, professional advice regarding supplements is appropriate.*

Recommendations

Breastfeeding:

1. Encourage exclusive breastfeeding for at least first 4 months of life.
2. Provide antenatal and postnatal counselling the principles and practice of breastfeeding.
3. Encourage frequent feeds during the early postnatal period.
4. Provide more community-based programs supporting breastfeeding families as the length of hospital stays decreases. . Encourage support in the community and workplace for flexible work schedules, part-time nursing and the use of expressed breast milk.



Breastfeeding (cont.):

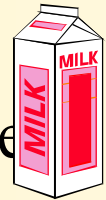
5. Encourage support in the community and workplace for flexible work schedules, part-time nursing and the use of expressed breast milk.
6. Encourage women who smoke to stop or reduce smoking; however, even if smoking is continued, breastfeeding is still the best choice.
7. Limit intake of alcohol.
8. Whenever drugs are prescribed or infection detected, assess each case on an individual basis.
9. When the mother is known to be HIV antibody positive, alternatives to breastfeeding are indicated.
10. Provide a vitamin D supplement to all breastfed infants starting at birth and until the diet provides a source of vitamin D.

Alternate Milks:

11. Use cow's milk-based, iron-fortified formulas until 9 to 12 months of age.
12. Iron-fortified follow-up formulas are a preferred alternative to cow's milk from 6 months until 9 to 12 months of age.
13. Use soy-based formulas only for those infants who cannot take dairy-based products for health, cultural or religious reasons, such as a vegan lifestyle or galactosemia.
14. Specialty formulas are indicated only for infants with detected or suspected pathology.

Alternate Milks (cont.):

15. Pasteurized whole cow's milk may be introduced at 9 to 12 months of age and continued throughout the second year of life.



16. Partly skimmed milk (1% and 2%) is not routinely recommended in the first two years.

17. Skim milk is inappropriate in the first 2 years.

18. Soy (except soy formula), rice or other vegetarian beverages, whether or not they are fortified, are inappropriate alternatives to breast milk, formula or pasteurized whole cow's milk in the first 2 years.

Other Fluids in Infant Feeding:

19. Bring all water for feeding infants under months of age to a rolling boil for at least minutes to ensure that it is pathogen-free.
20. Limit fruit juice to avoid interfering with the intake of breast milk or infant formula.
21. Do not use herbal teas or other beverages.



Transition to Solid Foods:

22. Introduce complementary foods at to 6 months to meet the infant's increasing nutritional requirements and developmental needs.
23. To prevent iron deficiency, iron-containing foods such as iron-fortified cereals are recommended as the first foods.



Safety Issues Around Feeding:

24. To prevent infant botulism, do not use honey in the feeding of infants under 1 year of age.
25. To prevent salmonella poisoning, cook all eggs well and do not use products containing raw eggs.
26. Hard, small and round, smooth and sticky solid foods are not recommended because they may cause choking and aspiration.
27. Ensure that infants and toddlers are always supervised during feeding.
28. Avoid feeding an infant using a “propped” bottle.

Nutrition in the Second Year:

29. Small, frequent, nutritious and energy-dense feedings of a variety of foods from the different food groups are important to meet the nutrient and energy needs during the second year.



Other Issues in Infant Nutrition:

Allergies:

30. Encourage exclusive breastfeeding for at least 4 months to decrease the risk of allergy in infants with a positive family history.
31. When food choices are restricted, ensure that dietary intake continues to meet nutrient and energy needs.

Colic:

32. Ensure that any dietary modification or pharmacological interventions are safe.

Constipation:

33. Parents need to be educated about the wide variation in normal bowel function in infants and toddlers to avoid overtreatment of normal variants.

Other Issues in Infant Nutrition (cont.):

Dietary Fat:

34. Dietary fat restriction during the first 2 years is not recommended because it may compromise the intake of energy and essential fatty acids and adversely affect growth and development.

Other Issues in Infant Nutrition (cont.):

Dental Caries:



35. Fluoride supplementation is not recommended for infants less than 6 months of age.
36. For infants between the ages of 6 months to 2 years who are living in areas where the household water supply contains less than 0.3 ppm ($\mu\text{g/L}$) fluoride, daily supplementation with 0.25 mg fluoride is recommended. Where the principal drinking water source contains ≥ 0.3 ppm ($\mu\text{g/L}$) fluoride, supplementation is not recommended.
37. Avoid excessive intake of fluoride.
38. Avoid the use of a bottle during sleep time or as a pacifier. Avoid nocturnal and long-term use of baby bottles containing liquids other than water.
39. Do not dip pacifiers or nipples in sugar or honey.

Other Issues in Infant Nutrition (cont.):

Gastroenteritis:

40. Manage mild to moderate dehydration with an oral electrolyte solution and early refeeding.
41. For infants who are breastfed, continue breastfeeding while supplementing fluid intake with an oral electrolyte solution.

Diabetes:

42. There is no justification at this time to recommend changes to infant feeding practices for the purpose of preventing diabetes.

Other Issues in Infant Nutrition (cont.):

Iron Deficiency Anemia:

43. Continue exclusive breastfeeding for at least 4 months.
44. Introduce complementary foods containing iron at 4 to 6 months of age.
45. Choose iron-containing formulas for infants who are not breastfed or for infants receiving formula as well as breast milk.
46. Delay the introduction of whole cow's milk until 9 to 12 months of age.
47. Continue to offer iron-fortified foods beyond 1 year of age to provide sufficient iron.
48. Where informed parents choose not to adhere to these recommendations, screen for anemia at 6 to 8 months of age and provide medicinal iron drops if necessary.

Other Issues in Infant Nutrition (cont.):

Vegetarian Diets:

49. For vegan infants who are not breastfed, promote commercial soy-based infant formula during the first 2 years of life.
50. After dietary assessment, recommend nutrient supplements for vegan diets which are found to be nutritionally incomplete.

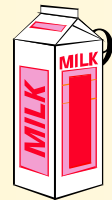
Highlights

- ▶ Breastfeeding is the optimal method of feeding infants. Breastfeeding may continue for up to 2 years of age and beyond. Breastfeeding is rarely contraindicated.
- ▶ Active public health, hospital community and workplace support of breastfeeding will increase initiation rates and duration of breastfeeding.
- ▶ If an infant is not breastfed, or is partially breastfed, commercial iron-fortified formulas are the most acceptable alternative to breast milk until 9 to 12 months of age.



Highlights (cont.)

- ▶ Vitamin D deficiency is a health concern in Canada. Infant formulas and milks are fortified with vitamin D. Breastfed infants should also receive extra vitamin D in the form of a supplement. The use of nutritionally incomplete alternate milks as the sole source of nutrition for infants is inappropriate.
- ▶ Pasteurized whole cow's milk may be introduced to 12 months of age and continued throughout the second year of life.
- ▶ Partly skimmed milk (1% and 2%) is not routinely recommended in the first 2 years.
- ▶ Skim milk is inappropriate in the first 2 years.



Highlights (cont.)

- ▶ Limit the use of “fruit juice” to avoid interfering with the intake of nutrient-containing foods and fluids. Herbal teas and other beverages are of no known benefit to an infant and may be harmful.
- ▶ Infants between 4 and 6 months of age are physiologically and developmentally ready for new foods, textures and modes of feeding. By 1 year of age, the ingestion of a variety of foods from the different food groups of *Canada's Food Guide to Healthy Eating* is desirable.
- ▶ To prevent iron deficiency, iron-containing foods such as iron-fortified cereals are recommended as the first foods.

Highlights (cont.)

- ▶ Foods provided to infants must be free of pathogens, appropriate in size and texture, nutritionally sound and fed safely.
- ▶ Healthy eating is important in the second year of life to:
 - provide the energy and nutrients needed to grow and develop
 - develop a sense of taste and an acceptance and enjoyment of different foods
 - instill attitudes and practices which may form the basis for lifelong health-promoting eating patterns.
- ▶ Dietary fat restriction during the first 2 years is not recommended because it may compromise the intake of energy and essential fatty acids and adversely affect growth and development.

Highlights (cont.)

- ▶ The exact role of early infant nutrition as a possible etiologic factor for infants genetically at risk for diabetes has not been proven.
- ▶ There is no justification at this time to recommend changes to infant feeding practices for the purpose of preventing diabetes. Nutritional needs can be met by most well-planned vegetarian diets. For vegetarian diets that are limited in variety and nutritional quality, professional advice regarding supplements is appropriate.

Availability

- The Statement is available on Internet at the following address:

<http://www.hc-sc.gc.ca/childhood-youth>

