



Nutrition for healthy term infants

A joint statement of The Canadian Paediatric Society, Dietitians of Canada and Health Canada

Nutrition for Healthy Term Infants is the new national statement on nutrition for infants from birth to 24 months, developed collaboratively by the Canadian Paediatric Society, Dietitians of Canada and Health Canada.

The document summarizes the existing scientific literature on infant nutrition and presents principles and recommendations to help health care professionals promote optimal, evidence-based nutritional care for infants in Canada. Collaboration between the three key organizations involved in infant nutrition has produced unified messages for health professionals to deliver to the public.

For the first year of life four major topics are discussed: Breastfeeding, Alternate Milks, Other Fluids in Infant Feeding and Transition to Solid Foods. Safety Issues Around Feeding is presented next, followed by Nutrition in the Second Year of Life. The final section covers Other Issues in Infant Nutrition, and includes topics such as food allergies, colic, constipation, dietary fat, dental caries, gastroenteritis, diabetes, iron deficiency anemia and vegetarian diets. An extensive reference list of more than 200 citations is provided.

The Summary of Principles and Recommendations will be published in the official journals of the Canadian Paediatric Society (*Paediatrics & Child Health*, March/April 1998) and Dietitians of Canada (*Canadian Journal of Dietetic Practice and Research*, June 1998). The complete document can be downloaded from all three of the collaborating organizations' web sites or a hard copy of the Statement, in either official language, can be obtained from the Canadian Paediatric Society, Dietitians of Canada or Health Canada.

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

Key Words: *Guidelines, Infants, Nutrition*

EXECUTIVE SUMMARY

The Canadian Paediatric Society Nutrition Committee, Dietitians of Canada and Health Canada collaborated on the preparation of this statement on nutrition for healthy term infants from birth to 24 months of age. This statement is intended for the use of health care professionals. It provides information that is basic to communicating consistent messages about infant nutrition to parents and caregivers across Canada. It is not designed, however, to be an all-encompassing practical guide to infant feeding. The recommendations in this statement are based on available scientific evidence. However, many studies on infant nutrition are not based on randomized trials because they are neither possible nor ethical in many circumstances. In the absence of solid science, accepted practice and its rationale is presented. Throughout the document, we have attempted to clearly distinguish those recommendations based on science

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versus those based on common practice. A summary of the principles and recommendations found in the document is presented below.

SUMMARY OF PRINCIPLES AND RECOMMENDATIONS

Breastfeeding

Breastfeeding is the optimal method of feeding infants. Breastfeeding may continue for up to two years of age and beyond.

Recommendation:

1. Encourage exclusive breastfeeding for at least the first four months of life.

Active public health, hospital, community and workplace support of breastfeeding will increase initiation rates and duration of breastfeeding.

Recommendations:

2. Provide antenatal and postnatal counselling about 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.
5. Encourage support in the community and workplace for flexible work schedules, part-time nursing and the use of expressed breast milk.

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.

Recommendations:

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.

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.

Recommendation:

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

If an infant is not breastfed, or is partially breastfed, commercial formulas are the most acceptable alternative to breast milk until nine to 12 months of age.

Recommendations:

11. Use cow's milk-based, iron-fortified formulas until nine to 12 months of age.
12. Iron-fortified follow-up formulas are a preferred alternative to cow's milk from six months until nine 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.

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 nine months of age. For infants unable to take cow's milk products, continue commercial soy formula until two years of age.

Recommendations:

15. Pasteurized whole cow's milk may be introduced at nine 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 two 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 two years.

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.

Recommendations:

19. Bring all water for feeding infants under four months of age to a rolling boil for at least 2 mins 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

Infants between four and six months of age are physiologically and developmentally ready for new foods, textures and modes of feeding. By one 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.

Recommendations:

22. Introduce complementary foods at four to six 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

Foods provided to infants must be free of pathogens, appropriate in size and texture, nutritionally sound and fed safely.

Recommendations:

24. To prevent infant botulism, do not use honey in the feeding of infants under one 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, and 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

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

Recommendation:

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

(i) Food allergies

Whenever possible, allergies to food should be prevented.

Recommendation:

30. Encourage exclusive breastfeeding for at least four months to decrease the risk of allergy in infants with a positive family history.

Treatment of proven food allergies involves avoidance of foods known to cause symptoms.

Recommendation:

31. When food choices are restricted, ensure that dietary intake continues to meet nutrient and energy needs.

(ii) Colic

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

Recommendation:

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

(iii) Constipation

In infancy, true constipation is infrequent.

Recommendation:

33. Parents need to be educated about the wide

variation in normal bowel function in infants and toddlers to avoid overtreatment of normal variants.

(iv) Dietary fat

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

Recommendation:

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

(v) 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.

Recommendations:

35. Fluoride supplementation is not recommended for infants less than six months of age.
36. For infants between the ages of six months to two 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.

(vi) Gastroenteritis

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

Recommendations:

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.

(vii) Diabetes

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

Recommendation:

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

(viii) Iron deficiency anemia

Iron deficiency is preventable through appropriate feeding choices.

Recommendations:

43. Continue exclusive breastfeeding for at least four months.

44. Introduce complementary foods containing iron at four to six 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 nine to 12 months of age.
47. Continue to offer iron-fortified foods beyond one year of age to provide sufficient iron.
48. Where informed parents choose not to adhere to these recommendations, screen for anemia at six to eight months of age and provide medicinal iron drops if necessary.

(ix) 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:

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

The recommendations in this Clinical Practice Guideline do not indicate an exclusive course of treatment or procedure to be followed. Variations, taking into account individual circumstances, may be appropriate.