Nutrition Supervision
Infancy

0–11 Months
INFANCY

Infancy is a period marked by the most rapid physical growth and development of a person’s life. The energy required to support these processes is phenomenal. Infancy is divided into several stages, with physical growth, developmental achievements, nutrition needs, and feeding patterns varying significantly in each. The most rapid changes occur in early infancy, between birth and 6 months of age. In middle infancy, from 6 to 9 months, and late infancy, from 9 to 12 months, growth slows but is still rapid. In late infancy, infants’ physical maturation, mastery of purposeful activity, and loss of newborn reflexes allow them to eat a wider variety of foods.¹

Infants’ vitality and successful development depend on good nutrition in the first year of life. Full-term infants who are fed on demand usually consume the amount they need to grow well. But feeding infants is much more complex than simply offering food when they are hungry, and it serves purposes far beyond supporting their physical growth. Feeding provides opportunities for emotional bonding between the parent and infant.

When feeding their infant, parents clarify and strengthen their sense of what it means to be a parent. They gain a sense of responsibility by caring for an infant, they experience frustration when they cannot interpret the infant’s cues, and they develop an ability to negotiate and solve problems through their interactions with the infant. They also identify their values and priorities, and expand their abilities to meet their infant’s needs. Anticipatory guidance from health professionals can reinforce parents’ strengths and encourage good parenting.

Growth and Physical Development

Immediately after birth, infants lose approximately 6 percent of their body weight because of fluid loss and some breakdown of tissue. Infants usually regain their birthweight by 10 to 14 days after birth, and thereafter weight gain proceeds at a slower rate. Typically, infants double their birthweight by 4 to 6 months and triple it by 1 year. On average, infants gain 5 to 7 oz per week in the first 4 to 6 months and 3 to 5 oz per week from 6 to 18 months. Infants usually increase their length by 50 percent in the first year, but the rate of increase slows down during the second half of the year. From birth to 6 months, infants gain approximately 1 inch a month, and from 6 to 12 months of age, they gain about 1/2 inch each month.

Growth rates of breastfed and formula-fed infants differ. Breastfed infants grow more rapidly in the first 2 to 3 months but less rapidly from 3 to 12 months of age. Infants who are genetically determined to be tall but who are born short may experience catch-up growth during the first 3 to 6 months. However, infants who are genetically determined to be short but who are long at birth tend to maintain the same rate of growth for several months and then experience a lag down in growth.

To meet growth demands, infants require a high intake of calories as well as adequate intake of fat, protein, vitamins, and minerals. From birth to 6 months of age, infants require about 108 kcal/kg of body weight per day. By 12 months, this need
decreases to 100 kcal/kg of body weight per day. Thirty percent of calories should be obtained from fat to meet the demands of growth and development. Vitamin and mineral needs are usually met if the full-term infant is breastfed by a well-nourished mother or receives correctly prepared infant formula. Premature infants may require a vitamin and mineral supplement.

Significant developmental changes that occur in the first year have a profound effect on the way infants feed. Newborns are able to locate the mother’s breast, latch onto the nipple, and suck to receive colostrum and then milk. At about 4 to 6 months of age, infants are developmentally ready to eat supplemental foods. Over the next few months, they will learn to chew and swallow, manipulate finger foods, drink from a cup, and ultimately feed themselves.

As infants grow, their ability to digest a greater volume and variety of foods increases. Thus, newborns need small, frequent feedings, whereas older infants are able to consume more food at one time and require fewer feedings. The digestive systems of newborns are designed to effectively digest breast-milk. By 6 months of age, an infant’s digestive system has matured enough to allow the absorption of more complex foods.

For most infants, the first primary tooth appears around 6 months of age. Teeth erupt every few months, usually in right and left pairs alternating between the upper and lower jaws, and proceeding from the front of the mouth to the back. These first teeth, however, do not change how infants process food, because they usually gum their food even if they have teeth.

Infants 6 months and older need fluoride to protect the teeth. The risk of developing early childhood caries can be reduced if infants at this age drink fluoridated water or take fluoride supplements. This is especially important if the water is severely deficient in fluoride (less than 0.3 ppm).²

Social and Emotional Development

Feeding is crucial for developing a healthy relationship between parents and infants. A parent’s responsiveness to an infant’s cues of hunger and satiation and the close physical contact during feeding facilitate healthy social and emotional development. During the first year, being fed when hungry helps infants develop the trust that their needs will be met. For optimum development, newborns need to be fed as soon as possible when they express hunger. As they grow older and become more secure in that trust, infants can wait longer for feeding.

Quickly responding to their infant’s cues also strengthens parents’ sense of competence. As they feed their infant, they learn how their actions comfort and satisfy. Over time, parents become more skilled at interpreting their infant’s cues, and they increase their repertoire of successful responses to those cues. Physical contact during feeding enhances communication between the parent and infant because it provides the infant with essential sensory stimulation, including skin and eye contact, and strengthens the psychological bond between the parent and infant. A sense of caring and trust evolves and lays the groundwork for communication patterns throughout life.
Healthy Lifestyles

During infancy, the amount and type of physical activity change dramatically. At first, infants spend most of their time sleeping and eating. Activity begins with reflexes that ensure the infant’s survival. Over the next few months, these reflexes disappear, and infants slowly gain voluntary control over their movements. With increasing control comes more physical activity, including sitting up, rolling over, crawling, standing, and eventually walking.

Development is an individual process. Some infants sit earlier than others. Some walk as early as 9 months, and others walk months after their first birthday. Although the order in which infants acquire motor skills is the same, the speed with which they acquire them is individual. The ways infants are held and handled, the toys they play with, and their environment all influence their physical activity and motor skills development.

Families that play with their infants, encouraging rolling, crawling, and then walking, are nurturing age-appropriate development.

Building Partnerships

Partnerships among health professionals, families, and communities are essential for ensuring that parents receive guidance on infant nutrition and feeding. Health professionals can have a tremendous impact on decisions about infant feeding as they inform parents about the various options for infant feeding. They provide an opportunity for parents to discuss, reflect on, and decide which options best suit their circumstances. Health professionals also identify and contact community resources that help parents.

Many hospitals, including those striving to meet the requirements of the World Health Organization and UNICEF Baby-Friendly Hospital Initiative, are taking the following steps to promote and support breastfeeding:

1. Developing a written breastfeeding policy and communicating it to all health care staff
2. Training staff members to ensure that they have the skills to implement the policy
3. Educating pregnant women about the benefits and management of breastfeeding
4. Initiating breastfeeding early
5. Educating mothers on how to breastfeed and maintain lactation
6. Limiting the use of any foods or beverages other than breastmilk
7. Having newborns stay in the mother’s room
8. Supporting mothers so that they can breastfeed their infants on demand
9. Limiting the use of pacifiers
10. Fostering breastfeeding support groups

Health professionals should emphasize that breastmilk is the ideal food for infants and encourage breastfeeding whenever possible. Even if the infant is breastfed for only a few weeks or months, the benefits are innumerable. Health professionals can help identify barriers to breastfeeding and provide referrals to lactation support services. For infants with special health care needs, breastfeeding can be successful, although mothers may need extra emotional support, instruction about special techniques for positioning, or special equipment to help overcome feeding problems.

Health professionals should be aware of lactation specialists available in the area; tell parents about the benefits of using these specialists, even for mothers who have breastfed before; and provide referrals as appropriate. In many cases, lactation specialists provide follow-up care after the mother and infant are discharged from the hospital, consult with the mother by phone, and schedule follow-up visits in a hospital-based lactation clinic. They also offer suggestions to health professionals for use during follow-up visits. Moreover, lactation specialists help families manage breastfeeding when mothers return to work or when breastfeeding needs to be interrupted because of severe illness in the mother or infant. Breastfeeding support groups, such as La Leche League, may be available in the community.

As more women breastfeed, some workplaces are adapting to meet their needs. Some employers offer longer breaks and a private setting for pumping breastmilk, refrigeration to safely store breastmilk, and on-site child care so that mothers can breastfeed their infants during the workday.

Other nutrition resources may be available in the community. For adolescent parents, school programs can focus on the importance of prenatal nutrition, the value and benefits of breastfeeding, and the nutrition needs of infants. Health departments offer similar educational services through WIC and other programs in which community health nurses or nutritionists visit families at home. Health maintenance organizations and community hospitals may also offer infant nutrition education.

The community may also need to supply financial resources to families to ensure that their infants are adequately nourished. For families with low incomes, WIC offers a food package for pregnant, postpartum, and breastfeeding women and for infants and children up to 5 years of age. Families may also qualify for programs such as the Food Stamp Program. (See Tool K: Federal Food Assistance and Nutrition Programs.) A community food shelf or pantry can provide additional food for families in
need. In some cases, infants may need access to human breastmilk banks. Families may also need assistance in procuring special equipment, such as breast pumps, special nipples, and bottles.

**Common Nutrition Concerns**

Many parents are concerned about whether to feed their infants breastmilk or infant formula. They want to be certain their infants are receiving the nutrients they need but are unsure whether breastfeeding or bottle feeding is best.

Health professionals can help families decide when to introduce supplemental foods into the infant’s diet by providing information on the infant’s nutrition needs and developmental abilities. Infants are developmentally ready to eat supplemental foods by about 4 to 6 months, when their sucking reflex has changed to allow coordinated swallowing, they can sit with support, and they have good head and neck control. Cognitively, infants begin to associate feeding with satiation and comfort and are able to cooperate during feeding.

Between 6 and 12 months, infants master chewing, swallowing, and manipulation of finger foods; begin to use cups and utensils; and try foods with different tastes and textures.

Infants with special health care needs may have feeding challenges. Resources are available to provide education and support for parents of infants with these needs. For infants with developmental disabilities, nutrition problems may be addressed as part of nutrition therapy in an early intervention program. (See the Children and Adolescents with Special Health Care Needs chapter.)
An infant’s nutrition status should be evaluated during nutrition supervision visits or as part of health supervision visits. (For more information on health supervision, see *Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents*, listed under Suggested Reading in this chapter.)

Health professionals begin nutrition supervision by gathering information about the infant’s nutrition status. This can be accomplished by selectively asking key interview questions listed in this chapter or by reviewing a questionnaire filled out by parents before the visit. (See Tool A: Nutrition Questionnaire for Infants.) These methods provide a useful starting point for identifying nutrition concerns.

Health professionals can then use this chapter’s screening and assessment guidelines, and counseling guidelines, to provide families with anticipatory guidance. Nutrition supervision information that pertains to the entire infancy developmental period (Nutrition Supervision Throughout Infancy) is provided first in this chapter, followed by information for age-specific visits. Interview questions, screening and assessment, and counseling should be used as appropriate and will vary from visit to visit and from infant to infant.

To assist health professionals in promoting optimal nutrition that will last a lifetime, desired outcomes for the infant and the role of the family are identified in Table 1.

### Nutrition Supervision Throughout Infancy

#### Interview Questions

Health professionals can ask the following questions to elicit key nutrition information:

- How do you think feeding is going? Do you have any questions about breastfeeding Shelley?
- How does Shelley let you know when she is hungry? How do you know when she has had enough to eat?
- How often is Shelley eating?
- Have you noticed changes in the way she eats?
- How do you feel about the way Shelley is growing?
Are you concerned about having enough money to buy food or infant formula?

What is the source of your drinking and cooking water? Do you use bottled or processed water?

Do you smoke? Does anyone smoke in your house?

**Screening and Assessment**

- Measure the infant’s length, weight, and head circumference, and plot these on a standard growth chart. (See Tool M: CDC Growth Charts.) Deviation from the expected growth pattern (e.g., a major change in growth percentiles on the chart) should be evaluated. This may be normal or may indicate a nutrition problem (e.g., difficulties with eating).

- Evaluate the appearance of the infant’s skin, hair, teeth, gums, tongue, and eyes.

- Assess the infant for age-appropriate development.

- Observe the parent-infant interaction and assess their responses to one another (e.g., affectionate, comfortable, distant, anxious).

**Counseling**

Health professionals can use the following information to provide anticipatory guidance to parents. Anticipatory guidance provides information on the infant’s nutrition status and on what to expect as the infant enters the next developmental period, and fosters the promotion of healthy eating behaviors. (For more information on nutrition counseling, see Tool G: Strategies for Promoting Healthy Eating Behaviors.)

**For Parents of All Infants**

**Growth and Development**

- Inform parents that the infant needs fat for growth and energy and that they should not restrict the infant’s fat intake. Between 2 and 6 months of age, body fat increases twice as much as muscle; therefore, many infants seem chubby at 6 months. Girls deposit a greater percentage of fat than boys. Between 6 and 12 months, however, infants gain more muscle and less fat, and the chubby appearance often disappears.

- Reassure parents that infants develop feeding skills at their own rates. The infant must be ready before being introduced to new foods and textures. If the infant has significant delays in the development of feeding skills, further assessment by a health professional is needed.

**Feeding Practices**

- Emphasize to parents that an infant weaned from breastmilk before 12 months needs iron-fortified infant formula rather than cow’s milk.4

- Until the infant is 12 months, breastmilk or iron-fortified infant formula is recommended and low-iron milk (e.g., cow’s, goat’s, soy) should not be used, even in infant cereal.5

- Explain to parents that infants who are constipated (i.e., who have hard, dry stools that are passed with difficulty) may not be getting enough breastmilk or infant formula, may be receiving formula that is prepared incorrectly, or may be eating other foods too soon. Constipation is uncommon in breastfed infants, although breastfed infants 6 weeks and older may go several days without a bowel movement.
Juice should not be given to infants before 6 months of age. It should be provided in a cup instead of a bottle and limited to 4 to 6 oz per day.6

**Food Safety**

- Tell parents to discard any bottles of expressed breastmilk or open containers of ready-to-feed or concentrated infant formula that have been stored in the refrigerator for 48 hours or more. Any bottles of prepared infant formula stored in the refrigerator should be discarded after 24 hours.7

- Tell parents not to warm expressed breastmilk, infant formula, or any food in containers or jars in a microwave. The container may feel cool, but the contents can be too hot because of uneven heating and cause a burn.7 Bottles can be warmed by holding them under hot running water or placing them in a bowl of hot water for a few minutes. To make sure that the fluid isn’t too warm, parents can sprinkle a few drops on their wrist (it should feel lukewarm). If necessary, they can wait for it to cool down and test it again.

- Emphasize that choking can be a problem for infants because they may not have enough muscle control to chew and swallow foods properly. Infants can choke on foods that are small or slippery (e.g., hard candy, whole grapes, hot dogs) and foods that are dry and difficult to chew (e.g., popcorn, raw carrots, nuts). Foods that are sticky or tough to break apart (e.g., peanut butter, large chunks of meat) can get lodged in the throat.1

- Tell parents not to add honey to food, water, or formula because it can be a source of spores that cause botulism poisoning in infants. Processed foods containing honey should not be given to infants.5

- Inform parents that infants are at high risk for many foodborne illnesses because their immune and gastrointestinal systems are not fully developed. To reduce the risk of foodborne illness, parents need to follow food safety practices. (See Tool H: Tips for Promoting Food Safety.)

**Supplements**

- Explain to parents that preterm or low-birthweight infants younger than 6 months who are breastfed or who are not fed an iron-fortified formula may need iron supplements. Because these infants are born with much less stored iron than full-term infants and experience a greater rate of growth during infancy, their iron stores become depleted much earlier, often by 2 to 3 months of age. Iron-deficiency anemia should be confirmed or ruled out by subsequent measurement of hemoglobin and hematocrit based on capillary blood sampling. After diagnosis, iron-deficiency anemia can be treated with oral (elemental) iron, at 3 mg/kg per day for 4 weeks.8

- Although clinical vitamin B₁₂ deficiency is rare, a breastfed infant may need vitamin B₁₂ supplements before 6 months of age if the mother is vitamin B₁₂ deficient (e.g., if she is a vegan [eats no animal products], if she is undernourished and does not take B₁₂ supplements).

- Vitamin D supplements may be needed if the infant is not exposed to adequate sunlight, especially if the infant has very dark skin or is living in areas with limited sunlight.4
Common Concerns

- Reassure parents that it is normal for infants to spit up a little milk at each feeding. Burping the infant several times during a feeding, and avoiding excessive movement soon after a feeding, may help.

- Explain to parents that infants who have diarrhea, fever, or other illnesses may need to drink extra water or other fluids as directed by a health professional.

- Inform parents that they can prevent infant injury by using a safety belt when the infant is placed in a shopping cart.

- Explain to parents that long-term exposure to secondhand smoke may put infants at risk for respiratory illness and heart disease. Tell parents not to smoke or allow others to smoke in their home. If parents do smoke, they should avoid smoking in the car, inside the home, or anywhere near infants.

Oral Health

- Instruct parents to clean the infant’s gums and teeth twice a day. A clean, moist washcloth can be used to wipe the gums. A small, soft toothbrush (without toothpaste) and water can be used to clean the teeth. (See the Oral Health chapter.)

- If appropriate, refer infants to the dentist or primary health care provider to assess the need for fluoridated toothpaste.

- Explain to parents that early childhood caries (baby bottle tooth decay) may result from frequent or prolonged bottle feedings or snacking on sugary or carbohydrate-rich foods. Giving infants a bottle filled with anything but water to encourage sleep or to quiet them may promote caries in newly erupted primary teeth if decay-causing bacteria are present in the mouth. To help prevent early childhood caries, parents should introduce a cup for drinking at 6 months and wean their infant from the bottle by 12 to 14 months.

- Juice should not be given to infants before 6 months of age. It should be served in a cup instead of a bottle and limited to 4 to 6 oz per day.

- Explain to parents that community water fluoridation is a safe and effective way to significantly reduce the risk of early childhood caries in infants. It is best for families to drink fluoridated water; for families that prefer bottled water, a
brand in which fluoride is added at a concentration of approximately 0.8 to 1.0 mg/L (ppm) is recommended.²

■ Inform parents that infants 6 months and older who receive breastmilk or infant formula prepared with water that is severely deficient in fluoride (less than 0.3 ppm) require fluoride supplementation.²

For Mothers of Breastfed Infants

Feeding Practices

■ Breastfeeding an infant exclusively for about the first 6 months of life provides ideal nutrition and supports the best possible growth and development.⁴ (See the Breastfeeding chapter.)

■ Inform parents that breastfeeding can continue for 12 months or as long as the mother and infant wish to continue.⁴

■ Explain that breastfeeding can be more relaxing if the mother has a quiet place to breastfeed. The feeding position should be comfortable and the experience nurturing for the infant.

■ Explain to parents that the longer an infant sucks, the more breastmilk the mother’s body will make. Feeding the infant on demand is the best way to stimulate the lactation process. Manually expressing breastmilk or using a breast pump is recommended to increase or maintain milk supply when the mother is away from her infant.

■ Emphasize that the infant should be allowed to finish feeding at one breast before the other breast is offered. The length of feedings should not be restricted, although 20 to 45 minutes provides adequate intake and allows the mother some time to rest between feedings.

■ Inform parents that the frequency of feedings is typically 10 to 12 times in 24 hours during the early weeks of lactation. In the first 2 to 4 weeks, infants should not be allowed to sleep more than 4 hours without breastfeeding.

■ Explain that infants have periods when they grow very fast. At these times, it may be necessary to feed them more often to give the mother’s milk production a chance to adjust to the infant’s needs. Frequent feedings help establish milk supply and prevent the breasts from getting too full.

■ Instruct parents to gradually introduce well-cooked, strained or pureed meats with iron (e.g., lean beef, pork, chicken, turkey) in the second half of the first year to supplement breastfeeding.⁵
Food Safety

■ Tell parents to use refrigerated, expressed breast-milk within 48 hours. Safe storage time for frozen breastmilk ranges from 2 weeks to 6 months, depending on the temperature in the freezer.7

Maternal Eating Behaviors

■ Encourage mothers to eat a variety of healthy foods. Eating well helps the mother stay healthy and the infant grow. (See the Healthy Eating and Physical Activity chapter.)

■ Encourage mothers to drink liquids such as milk or juice when they are thirsty and to drink a glass of water at every feeding.

■ Tell mothers to limit the consumption of drinks containing caffeine (e.g., coffee, tea, soft drinks) to two servings per day.11

■ Explain that it is best for the mother to avoid drinking alcoholic beverages. If she does, no more than 2 to 2 1/2 oz of liquor, 8 oz of wine, or 2 cans of beer should be consumed per day (less for small women).11

Support

■ Emphasize that mothers who are breastfeeding more than one infant may need to eat more, receive additional nutrition counseling, and have extra help at home.

■ Additional sources of breastfeeding information include friends and family, support groups (e.g., La Leche League), lactation consultants, and educational materials.

■ Encourage fathers to help care for breastfed infants. Fathers can bring the infant to the mother when it is time to breastfeed. When the infant is finished breastfeeding, the father can cuddle the infant and help with burping, diapering, or bathing.

For Parents of Formula-Fed Infants

Feeding Practices

■ Explain to parents that iron-fortified infant formula is an appropriate substitute for breastmilk for feeding the full-term infant during the first year of life.

■ Encourage parents to hold the infant close, in a semi-upright position, during feeding. The parent should be able to look into the infant’s eyes.

■ Discuss with parents that they will need to prepare and offer more infant formula as the infant’s appetite increases.

■ Inform parents that infants do not usually need water, but water can be offered on hot days between feedings.

■ Instruct parents to check the following if the infant is crying more than usual or seems to want to eat all the time:
  - Is the infant positioned in a semi-erect, comfortable position for feeding?
  - Is the formula prepared correctly? Has too much water been added?
  - Is the bottle nipple too firm? Is the nipple hole too large?
  - Are they responding to the infant’s cues of hunger?
  - Is the feeding environment too distracting?
Food Safety

- Tell parents to carefully prepare infant formula as instructed and to follow these sanitary procedures:
  - Wash their hands before preparing infant formula.
  - Clean the area where infant formula is prepared.
  - Clean and disinfect reusable bottles, caps, and nipples before every use.
  - Wash and dry the top of the infant formula container before opening.
- Emphasize that cereal or other foods should not be added to infant formula in the bottle.
- Tell parents to discard any milk left in the bottle when the infant has finished eating. A bottle that has been started should not be reused.
- Inform parents that open containers of ready-to-feed or concentrated infant formula should be covered and refrigerated.
- Powdered infant formula can be stored at room temperature.

Nutrition Supervision by Visit

PRENATAL

Interview Questions

For Pregnant Women

- Have you thought about breastfeeding?
- Do you know about the benefits of breastfeeding for you and your baby?
- Do you have any concerns about your diet and breastfeeding?
- Do you restrict any foods in your diet because of lack of appetite, food aversions, vegan or vegetarian diets, weight gain, food allergies and sensitivities, or any other reason?
- Does your family have a history of food allergies?
- Are you taking prenatal vitamins? Do you plan to take any in the future?
- Do you take vitamin or mineral supplements?
- Do you drink wine, beer, or other alcoholic beverages?
- Do you use any drugs (for example, prescription, over-the-counter, or illegal)?
- Do you have any questions about feeding your baby?
- What experiences have you had feeding babies? With your own children? Other children? Your siblings?
- What does your partner or family think about your plan for feeding?
Are you concerned about having enough money to buy food?

Do you smoke? Does anyone smoke in your home?

Do you have problems with your teeth?

Does the water you drink contain fluoride?

**For Women Planning to Breastfeed**

Do you have any questions about breastfeeding?

Have you attended any classes on breastfeeding?

Do you have family members or friends who will help as you are learning to breastfeed?

Do you know how to contact breastfeeding support groups or lactation consultants?

Do you know your HIV status?

**For Parents Planning to Formula-Feed**

Do you know what infant formula you plan to use? Is the infant formula iron fortified?

How will you prepare the infant formula?

After the infant formula is made, how will you store it?

Do you have family members or friends who will help you feed your baby?

**Counseling**

**For Pregnant Women**

To minimize the risk of females giving birth to an infant with a neural tube defect, encourage them to consume folic acid, particularly before pregnancy and during the first trimester. Before pregnancy, females should consume 400 µg per day of folic acid (the synthetic form of folate) from fortified foods and/or supplements in addition to consuming a variety of foods that contain folate. Once pregnancy is confirmed, recommended intake is 600 dietary folate equivalents (DFEs) per day of food folate, folic acid, or a mixture of both.12

DFEs account for differences in the absorption of food folate and folic acid (i.e., 1 DFE equals 1 µg food folate, 0.6 µg folic acid [from fortified foods or supplements] consumed with
food, or 0.5 µg folic acid [from supplements] taken on an empty stomach). Thus, 600 DFEs equal 600 µg food folate, 360 µg folic acid consumed with food, or 300 µg folic acid taken on an empty stomach.\(^{12}\)

- Inform women that concentrated sources of food folate include fruits (e.g., oranges, strawberries, avocados); dark-green leafy vegetables (e.g., spinach, turnip greens); some other vegetables (e.g., asparagus, broccoli, Brussels sprouts); and legumes (e.g., black, pinto, navy, and kidney beans). Folic acid can be obtained from fortified food products (e.g., fortified grain products, most ready-to-eat breakfast cereals).

- Women should try to maintain a healthy weight throughout pregnancy.

- Explain that a safe amount of alcohol consumption by pregnant women is not known. Therefore, the only sure way to avoid the possible harmful effects of alcohol on the fetus is to avoid drinking alcoholic beverages entirely.\(^{11}\)

- Encourage women who smoke to quit or cut back to improve their health and reduce the risk of giving birth to an infant with fetal growth retardation.\(^{11}\)

- Encourage women to maintain good oral hygiene and obtain dental care if needed. (See the Oral Health chapter.)

- Explain that weight loss after pregnancy should occur gradually by adjusting caloric intake, level of physical activity, or both.\(^{11}\)

- Moderate physical activity, such as gentle aerobics (e.g., walking, swimming), is recommended as soon as possible after delivery to increase the mother’s energy level.

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**For Women Planning to Breastfeed**

- Encourage women to learn their HIV status. If they are HIV positive, breastfeeding is contraindicated. (See the Human Immunodeficiency Virus chapter.)

- Encourage women to begin breastfeeding their newborns as soon as possible after birth, usually within the first hour.\(^{4}\) (See the Breastfeeding chapter.)

- Instruct women to breastfeed when their newborns show signs of hunger (e.g., increased alertness or activity, mouthing, rooting). Tell women not to wait until their infants are crying; crying is the last indicator of hunger.\(^{4}\)

- Instruct mothers to breastfeed their newborns approximately 8 to 12 times every 24 hours until they seem satisfied.\(^{4}\)

- No supplements (e.g., water, glucose, formula) should be given to breastfeeding infants unless a medical condition requires it.\(^{4}\)

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**For Parents Planning to Formula-Feed**

- Instruct parents to prepare 2 oz of infant formula every 2 to 3 hours at first. More should be prepared if the infant seems hungry, especially as the infant grows.

- To reduce the infant’s risk of developing early childhood caries, encourage parents to avoid doing things that may harm the infant’s teeth (e.g., putting her to bed with a bottle, propping a bottle in her mouth, giving her a bottle when she’s not hungry).
NEWBORN

Health professionals can use the general information in the section Nutrition Supervision Throughout Infancy (pp. 30–36), as well as the age-specific information that follows.

Interview Questions

For Parents of All Infants

What is the longest time Amanda has slept at one time?
How much rest are you getting?
How many wet diapers does Amanda have each day?
Do you burp her during or after a feeding?
Is anyone helping you feed Amanda?

For Mothers of Breastfed Infants

Do you have any questions about breastfeeding?
Do you need any help with breastfeeding?
How often do you feed Edward? How do you know when he is hungry?
Does Edward attach to your breast and suck well?
Do you hear him make swallowing sounds when you breastfeed?
Have you had any problems with your breasts or nipples (for example, tenderness, swelling, or pain)?
Do you restrict any foods in your diet?
What vitamin or mineral supplements do you take or plan to take?
Do you drink wine, beer, or other alcoholic beverages?
Do you use any drugs (for example, prescription, over-the-counter, or illegal)?
Do you know your HIV status?

For Parents of Formula-Fed Infants

What infant formula do you use? Is the formula iron fortified?
How do you prepare the infant formula?
How do you store the infant formula after you make it?
How do you clean the nipples, bottles, and other equipment before and after feeding?
What do you do with the milk in the bottle after Amanda has finished eating?
How do you hold Amanda when you feed her?

Screening and Assessment

- Perform metabolic screening as indicated by the state.
- If the mother does not know her HIV status, suggest HIV screening.
- If possible, observe the mother breastfeeding her infant. Assess the mother’s comfort in feeding the infant, eye contact between the mother and infant, the mother’s interaction with the infant, the mother’s and infant’s responses to distractions in the environment, and the infant’s ability to suck. Help the mother and infant develop successful breastfeeding behaviors.
Counseling

■ Instruct parents to feed the infant when she is hungry, typically 10 to 12 times in 24 hours. Signs of hunger include hand-to-mouth activity, rooting, pre-cry facial grimaces, fussing sounds, and crying.

■ Emphasize that the infant should be awakened for feeding during the first 2 weeks if the infant sleeps more than 4 hours at a time.4

■ Instruct parents to feed the infant until he seems full. Signs of fullness are turning his head away from the nipple, showing interest in things other than eating, and closing his mouth.

■ Encourage parents to burp the infant at natural breaks (e.g., midway through or after a feeding) by gently rubbing or patting her back while holding her against the shoulder and chest or supporting her in a sitting position on the lap.

■ Reassure parents that infants are getting enough milk if

  They make swallowing sounds.

  They have one or two wet and/or soiled diapers on the first day, increasing to six to eight wet cloth diapers or five or six disposable diapers and three or four stools every 24 hours. (The urine should be pale yellow, and stools should have the consistency of cottage cheese and be mustard-colored by the fourth day.)

  They are gaining weight appropriately.

■ Encourage mothers to breastfeed the infant exclusively for the first 6 months. Explain that breastfeeding provides ideal nutrition and promotes the best possible growth and development. Water, juice, and other foods are generally unnecessary for breastfed infants.4

■ Explain to parents that neither breastfed nor formula-fed infants need to drink fluoridated water or take fluoride supplements during the first 6 months.10
WITHIN 1 WEEK

Infants should be seen by a health professional when they are 2 to 4 days old, especially if they were discharged less than 48 hours after delivery. Health professionals can use the general information in the section Nutrition Supervision Throughout Infancy (pp. 30–36), as well as the age-specific information that follows.

Interview Questions

For Parents of All Infants

Do you burp Claire during or after a feeding?
Is anyone helping you feed her?
How many wet diapers and bowel movements does Claire have each day?
How active is Claire?

For Mothers of Breastfed Infants

Do you feel your let-down reflex (milk “ejection” from the alveoli and ducts)?
Have you noticed changes in your milk?
Have you had any problems with sore breasts or nipples?
How often do you feed Spencer? How long do you feed him each time?
Does Spencer suck well? Does he latch on well and breastfeed in a rhythm?
Do you have any concerns or questions about what you are eating?

For Parents of Formula-Fed Infants

What infant formula do you feed Claire? Is the formula iron fortified?
How often do you feed Claire? How much does she eat at a feeding?
How do you hold Claire while feeding? How do you hold the bottle?
How do you know if Claire is hungry? How does she let you know she has had enough to eat?
Do you think the bottle nipples you are using are appropriate for Claire?

Screening and Assessment

■ Perform metabolic screening as indicated by the state.

■ Assess the infant for weight gain, milk intake, hydration, jaundice, and age-appropriate elimination patterns (at least five or more wet diapers per day and three or four stools per day by 5 to 7 days of age).4

■ If possible, observe the mother breastfeeding her infant. Assess the mother’s comfort in feeding the infant, eye contact between the mother and infant, the mother’s interaction with the infant, the mother’s and infant’s responses to distractions in the environment, and the infant’s ability to suck. Help the mother and infant develop successful breastfeeding behaviors.

■ If the infant has a weak suck, investigate whether it is caused by immaturity or a neurological problem. Evaluate whether the suck is so weak that it will compromise the infant’s food intake and ability to gain weight.
Counseling

- Instruct parents to feed the infant when she is hungry, typically 10 to 12 times in 24 hours. Signs of hunger include hand-to-mouth activity, rooting, pre-cry facial grimaces, fussing sounds, and crying.

- Emphasize that the infant should be awakened for feeding during the first 2 weeks if he is sleeping more than 4 hours at a time.4

- Instruct parents to feed the infant until she seems full. Signs of fullness are turning her head away from the nipple, showing interest in things other than eating, and closing her mouth.

- Encourage parents to burp the infant at natural breaks (e.g., midway through or after a feeding) by gently rubbing or patting his back while holding him against the shoulder and chest or supporting him in a sitting position on the lap.

- The infant is getting enough milk if she has six to eight wet cloth diapers (five or six disposable diapers) and three or four stools per day and is gaining weight appropriately.

- Explain to parents that neither breastfed nor formula-fed infants need to drink fluoridated water or take fluoride supplements during the first 6 months.10

- Inform parents that infants may be distracted by lights and noise and may need help to focus on feeding. A calm, gentle approach, using repetitive movements such as rocking, patting, or stroking, is usually most helpful. Some infants may need to be swaddled or fed in a room with less light and noise.

2 WEEKS TO 2 MONTHS

Health professionals can use the general information in the section Nutrition Supervision Throughout Infancy (pp. 30–36), as well as the age-specific information that follows.

Interview Questions

For Parents of All Infants

Have you offered Morgan anything other than breastmilk or infant formula?
Is anyone helping you feed her?
What is the longest time Morgan has slept?
Have there been times when she seemed to be growing very fast and seemed to want to eat all the time? What did you do?
Do you burp Morgan during or after a feeding?
How many wet diapers does she have each day?
Have you had a postpartum medical visit? If so, did you discuss family planning?

For Mothers of Breastfed Infants

Do you have any questions about breastfeeding?
How often do you feed Fernando? How long do you feed him each time?
Are you planning to return to work or school? If so, are you expressing your breastmilk? How do you store it? How long do you keep it?
Has Fernando had any infant formula in addition to breastmilk?
For Parents of Formula-Fed Infants

What infant formula are you feeding Morgan? Is it iron fortified?
How often do you feed her? How much does she eat at a feeding?
How long does it take to feed Morgan?
Have you offered her anything other than infant formula?
What do you do with milk left in the bottle after Morgan has finished eating?
Do you prop the bottle or let her feed herself?
Do you put Morgan to bed with a bottle?

Screening and Assessment

- Perform metabolic screening as indicated by the state.
- If possible, observe the mother breastfeeding her infant. Assess the mother’s comfort in feeding the infant, eye contact between the mother and infant, the mother’s interaction with the infant, the mother’s and infant’s responses to distractions in the environment, and the infant’s ability to suck. Help the mother and infant develop successful breastfeeding behaviors.
- Assess the need for vitamin D supplementation.

Counseling

- Instruct parents to feed the infant when she is hungry, typically 10 to 12 times in 24 hours. Signs of hunger include hand-to-mouth activity, rooting, pre-cry facial grimaces, fussing sounds, and crying.
- Instruct parents to feed the infant until he seems full. Signs of fullness are turning his head away from the nipple, showing interest in things other than eating, and closing his mouth.
- Encourage parents to burp the infant at natural breaks (e.g., midway through or after a feeding) by gently rubbing or patting her back while holding her against the shoulder and chest or supporting her in a sitting position on the lap.
- Infants often go through growth spurts between 2 and 4 weeks of age and significantly increase their milk intake during that time.
- Explain to parents that if the infant cries inconsolably for several hours each day and passes a lot of gas, he may have colic. If the infant is breastfeeding, short, frequent feedings are recommended. Some foods, such as cow’s milk, wheat, peanuts, eggs, and seafood, should be eliminated from the mother’s diet.
- Reassure parents that breastfed newborns usually have loose, frequent stools. This is not diarrhea. After several weeks, the number of bowel movements may decrease. Breastfed infants 6 weeks and older may have stools as infrequently as every 3 days.
- Explain that as infants grow, they are more easily distracted during feeding and may need gentle, repetitive stimulation (e.g., rocking, patting, stroking).
- Emphasize that infants should not be offered food other than breastmilk or infant formula until they can sit with support and have good control of the head and neck, at about 4 to 6 months.
Explain to parents that neither breastfed nor formula-fed infants need to drink fluoridated water or take fluoride supplements during the first 6 months.\textsuperscript{10}

Encourage parents to play with the infant, encouraging her to follow objects with her eyes. Playing stimulates the nervous system and helps infants develop head and neck control and motor skills.

\section*{4 MONTHS}

Health professionals can use the general information in the section Nutrition Supervision Throughout Infancy (pp. 30–36), as well as the age-specific information that follows.

\section*{Interview Questions}

\textbf{For Parents of All Infants}

Is Carmen able to wait without crying while you get ready to feed her?

Have you given her any food besides breastmilk or infant formula?

Does Carmen seem interested in your food?

Have you offered her foods from the family meal? If so, which ones?

Do you have any concerns about what, how, or how much Carmen eats?

In addition to feeding her at home, where else is she fed (for example, at child care or a relative’s home)?

Does Carmen have any teeth?

\textbf{For Mothers of Breastfed Infants}

Do you have any questions about breastfeeding?

How often does Ajay nurse? How long do you feed him each time?

Does it seem like he is breastfeeding more often or for longer periods of time? Are you able to keep up with the demand?

Has Ajay received breastmilk or other fluids from a bottle?
Are you planning to return to work or school? If so, are you expressing your breastmilk? How do you store it? How long do you keep it?

For Parents of Formula-Fed Infants

What infant formula are you feeding Carmen? Is it iron fortified?

How often do you feed her? How much does she eat at a feeding?

Have you offered Carmen anything other than infant formula?

What do you do with infant formula left in the bottle when she has finished eating?

Do you have any concerns about the infant formula (for example, cost, preparation, amount, or nutrient content)?

Screening and Assessment

Assess the need for vitamin D supplementation.

Counseling

Emphasize to parents that infants should not be offered food other than breastmilk or infant formula until they can sit with support and have good control of the head and neck, at about 4 to 6 months.

Explain that no nutritional advantage is known, but disadvantages may exist, in introducing supplemental foods before the infant is developmentally ready, at about 4 to 6 months.5

Explain to parents the importance of offering new foods one at a time and observing their infants for 7 days or more after a new food is introduced to make sure they do not have an allergic reaction (e.g., a rash).

Instruct parents to offer iron-fortified, single-grain infant cereals (e.g., rice cereal) as the first solid food, because they are least likely to cause an allergic reaction.5 (See the Food Allergy chapter.)

Encourage parents to gradually introduce pureed or soft fruits, vegetables, and meats.

Iron-fortified infant cereal and meat are good choices as supplemental foods because they are high in iron.

The gradual introduction of a variety of foods contributes to a balanced diet and helps promote healthy eating behaviors.5

Emphasize that before 6 months of age, infants should not be fed spinach, beets, turnips, carrots, or collard greens canned at home or by the manufacturer because they may contain too much nitrate, which can cause methemoglobinemia (also called blue baby syndrome).5,13

Reassure parents that it is normal for infants to drool more at 3 to 4 months of age as their salivary glands become more active.

Encourage parents to talk to the infant during feedings. As infants develop, they increasingly respond to social interaction.

Explain to parents that neither breastfed nor formula-fed infants need to drink fluoridated water or take fluoride supplements during the first 6 months.10

Inform parents that infant toys encourage physical activity. Playing with safe, age-appropriate toys (e.g., rattles, stuffed animals, plastic toys) and moving them from hand to mouth and sucking and gumming them helps infants develop skills they will use later when they feed themselves.
6 MONTHS

Health professionals can use the general information in the section Nutrition Supervision Throughout Infancy (pp. 30–36), as well as the age-specific information that follows.

Interview Questions

For Parents of All Infants

Can Rebecca wait without crying while you get ready to feed her?

When does Rebecca have something to eat or drink? How much does she eat or drink at a time? What does she do when she has had enough to eat?

How does Rebecca let you know when she likes a certain food? Does she have favorite foods? If so, what are they?

Has she eaten any foods from the family meal? If so, which ones?

Has Rebecca fed herself anything?

Has she put any nonfood items in her mouth? If so, what were they? Did she swallow them?

Do you know what Rebecca is fed when she is away from home (for example, at child care)?

Has Rebecca’s first tooth erupted? Has she had any teething problems?

For Mothers of Breastfed Infants

Do you have any questions about breastfeeding?

How often does Paul breastfeed? How long do you feed him each time?

Has he received breastmilk or other fluids from a bottle or cup?

Have you given Paul any infant formula or cow’s, goat’s, or soy milk?

For Parents of Formula-Fed Infants

How often do you feed Rebecca? How much infant formula does she drink at a time?

Have you offered her anything other than infant formula?

Does Rebecca want to help hold her bottle?

Do you have any concerns about the infant formula (for example, cost, preparation, amount, or nutrient content)?

What kind of water is used to prepare the formula? Does the water contain fluoride?

Screening and Assessment

- Assess the need for vitamin D and iron supplementation.

- Assess all sources of water used by the family (including municipal, well, commercially bottled, and home system–processed) and ready-to-feed infant formula manufactured without fluoridated water to determine the need for fluoride supplementation. If the infant is not getting enough fluoride, refer the infant to a dentist or primary care health professional.

Counseling

- Instruct parents to feed the infant when he is hungry. Signs of hunger include hand-to-mouth activity, rooting, pre-cry facial grimaces, fussing sounds, and crying.

- Instruct parents to introduce supplemental foods to the infant when her sucking reflex has changed.
to allow coordinated swallowing, she can sit with support, and she has good head and neck control.

- Explain to parents the importance of offering new foods one at a time and observing their infants for 7 days or more after a new food is introduced to make sure they do not have an allergic reaction (e.g., a rash).

- Instruct parents to offer iron-fortified, single-grain infant cereals (e.g., rice cereal) as the first solid food, because they are least likely to cause an allergic reaction. (See the Food Allergy chapter.)

- Encourage parents to gradually introduce pureed or soft fruits, vegetables, and meats.

- Iron-fortified infant cereal and meat are good choices as supplemental foods because they are high in iron.

- Tell parents to offer the infant fruits and vegetables rich in vitamin C, which helps the infant absorb iron.

- The gradual introduction of a variety of foods contributes to a balanced diet and helps promote healthy eating behaviors. (See the Food Allergy chapter.)

- Instruct parents to use a spoon when offering the infant a new food.

- Emphasize that if the infant does not like a new food, she should not be forced to eat it. The food can be offered at a later time. It may take 15 to 20 attempts before an infant accepts a particular food.

- Tell parents that infants do not need salt, spices, or sugar added to their food.

- Encourage parents to offer the infant finger foods (e.g., green beans, cereal, crackers) when he can eat solid foods.

- Inform parents that they can offer store-bought and home-prepared baby food, but infants who can feed themselves soft foods do not need it.

- Explain that a highchair allows the infant to be part of the family circle at mealtime, but a safety belt should be used to secure her.

- Inform parents that by 6 months of age, infants become very active and benefit from playing with toys for stacking, shaking, pushing, or dropping and from playing with others. Encourage parents to include the infant in family play times.
9 MONTHS

Health professionals can use the general information in the section Nutrition Supervision Throughout Infancy (pp. 30–36), as well as the age-specific information that follows.

Interview Questions

For Parents of All Infants

Who feeds Bonnie?

When does Bonnie have something to eat or drink? How much does she eat or drink at a time? What does she do when she has had enough to eat?

Is Bonnie interested in feeding herself?

What foods does Bonnie eat with her fingers? Has she used a cup?

Is Bonnie interested in the food you eat?

Do you know what Bonnie eats when she is away from home (for example, at child care)?

Is Bonnie drinking less breastmilk or infant formula?

Has she ever choked or gagged on food?

Has Bonnie’s first tooth erupted? Does she have any teething problems?

For Mothers of Breastfed Infants

How often does Juan breastfeed? How long do you feed him each time?

How is your milk supply?

Has Juan had infant formula or cow’s, goat’s, or soy milk?

For Parents of Formula-Fed Infants

How much infant formula does Bonnie drink?

Are you using fluoridated water to prepare her infant formula?

Do you have any questions about weaning Bonnie from the bottle?

Screening and Assessment

- Screen the infant for iron-deficiency anemia if any of these risk factors are present (see the Iron-Deficiency Anemia chapter):8
  - Was born preterm or with low birthweight
  - Was fed non–iron-fortified infant formula for more than 2 months
  - Was fed cow’s milk before 12 months of age
  - Consumes more than 24 oz of cow’s milk per day
  - Is breastfed and doesn’t get enough iron
  - Is from a family with low income
  - Is eligible for WIC
  - Is from a migrant family
  - Is from a family of recently arrived refugees
  - Has special health care needs (e.g., takes medications that interfere with iron absorption; has chronic infection, inflammatory disorders, restricted diets, extensive blood loss from a wound, an accident, or surgery)

- Screen the infant for lead exposure. (See Tool E: Screening for Elevated Blood Lead Levels.)
Assess the need for neurological evaluation if the infant stiffens during feeding, retains oral reflexes such as rooting, experiences delays in learning feeding skills, has difficulty swallowing, or refuses textured food when developmentally ready (i.e., textural aversion).

Assess all sources of water used by the family (including municipal, well, commercially bottled, and home system–processed) and ready-to-feed infant formula manufactured without fluoridated water to determine the need for fluoride supplementation. If the infant is not getting enough fluoride, refer the infant to a dentist or primary care health professional.

**Counseling**

- Instruct parents to offer soft, moist foods (e.g., mashed potatoes and other cooked vegetables, spaghetti with sauce, rice, tuna, meat loaf) as the infant gradually changes from gumming to chewing foods.

- Explain that as the infant gains more control over picking up and holding food, small pieces of soft foods can be offered.

- Encourage parents to be patient and understanding as the infant tries new foods and learns to feed herself.

- Encourage parents to remove distractions so that the infant stays focused on the food.

- Explain that a highchair allows the infant to be part of the family circle at mealtime, but a safety belt should be used to secure him.

- Infants should be encouraged to drink from a cup with assistance.

- Most 9-month-olds are on the same eating schedule as the family: breakfast, lunch, and dinner. Instruct parents to give the infant snacks midmorning, in the afternoon, and at bedtime.

- If infants are fed away from home, parents need to know what and how much they eat.

- Most infants are crawling by 9 months and may begin to walk by holding onto furniture. Warn parents never to put the infant in a walker because of the risk of severe injury or death. Parents can physically support the infant as she plays and explores her newly found strength and agility.
Table 1. Desired Outcomes for the Infant, and the Role of the Family

**Infant**

<table>
<thead>
<tr>
<th>Educational/Attitudinal</th>
<th>Behavioral</th>
<th>Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has a sense of trust</td>
<td>Breastfeeds successfully</td>
<td>Develops normal rooting, sucking, and swallowing reflexes</td>
</tr>
<tr>
<td>Bonds with parents</td>
<td>Bottle feeds successfully if not breastfeeding</td>
<td>Develops fine and gross motor skills</td>
</tr>
<tr>
<td>Enjoys eating</td>
<td>Consumes supplemental foods to support appropriate growth and development</td>
<td>Grows and develops at an appropriate rate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Maintains good health</td>
</tr>
</tbody>
</table>

**Family**

<table>
<thead>
<tr>
<th>Educational/Attitudinal</th>
<th>Behavioral</th>
<th>Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bonds with the infant</td>
<td>Meets the infant’s nutrition needs</td>
<td>Maintains good health</td>
</tr>
<tr>
<td>Enjoys feeding the infant</td>
<td>Responds to infant’s hunger and satiety cues</td>
<td></td>
</tr>
<tr>
<td>Understands the infant’s nutrition needs</td>
<td>Holds the infant when breastfeeding or bottle feeding and maintains eye contact</td>
<td></td>
</tr>
<tr>
<td>Acquires a sense of competence in meeting the infant’s needs</td>
<td>Talks to the infant during feeding</td>
<td></td>
</tr>
<tr>
<td>Understands the importance of a healthy lifestyle, including healthy eating behaviors and regular physical activity, to promote short-term and long-term health</td>
<td>Provides a pleasant eating environment</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Uses nutrition programs and food resources if needed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seeks help when problems occur</td>
<td></td>
</tr>
</tbody>
</table>
References


Suggested Reading


Successfully Introducing Solid Foods

John’s mother is careful to offer new foods one at a time and to observe John for 7 days or more to make sure he does not have an adverse reaction.

John Matthews is a 5-month-old infant who has been fed only breastmilk. He is 27 inches long and weighs 18 pounds. Both his length and weight have been between the 75th and 90th percentiles since he was 2 months old. Lately, his appetite appears to have increased.

At the health clinic, John’s mother tells Liz Roberts, the dietitian, that her son seems to want to breastfeed all the time, and she wonders whether it would be all right to add some solid foods to his diet. The dietitian confirmed that John has good head and neck control and can maintain a sitting position with little or no assistance. His sucking pattern has changed from the weaker, up-and-down movements of early infancy to stronger, back-and-forth movements. He is able to grasp objects that are placed within his reach, and he brings them to his mouth. He no longer exhibits the “tongue thrust” motion when a spoon or object is placed in his mouth.

Ms. Roberts advises mixing a small amount of iron-fortified rice cereal with expressed breastmilk and offering it to John on a spoon. She recommends that John’s mother try feeding him the cereal when he is well rested and slightly hungry.

When John’s mother first feeds him the rice cereal, he looks surprised but swallows it. He accepts a second spoonful, then turns his head away. The next day, John’s mother offers him the cereal mixture again, and he eagerly eats four spoonfuls. She slowly increases the amount of cereal to several tablespoons.

Over the next few weeks, John’s mother gradually begins to introduce pureed or soft fruits, vegetables, and meats into John’s diet. She is careful to offer new foods one at a time and to observe John for 7 days or more to make sure he does not have an adverse reaction. John continues to breastfeed on demand.
FREQUENTLY ASKED QUESTIONS ABOUT NUTRITION IN INFANCY

■ What should I feed my baby?

Breastmilk is the ideal food for babies, and breastfeeding offers many benefits to both mother and baby. Breastfeeding helps mother and baby form a special bond, and it helps the baby resist colds, ear infections, allergies, and other illnesses.

It is best to breastfeed for the first 6 months of life, but breastfeeding even for just a few months or weeks is beneficial.

If you think you may not be able to breastfeed (for example, you have conflicts with school or work or a medical condition), or you are worried about not producing enough breastmilk, talk to a health professional, breastfeeding specialist, or breastfeeding support group. They can answer your questions and help you come up with solutions. Your family and friends are also sources of support.

If you decide to feed your baby infant formula, a health professional can help you choose the right kind and answer your questions about feeding.

Cow’s milk, goat’s milk, and soy milk are not recommended until after your baby’s first birthday.

■ What is colic? How can I prevent or manage it?

When your baby cries without apparent reason for several hours on a regular basis, he may have colic. Colic occurs in almost 10 percent of babies. No one knows what causes colic—it is not caused by poor parenting. Colic usually develops between 2 and 6 weeks of age and disappears by 3 or 4 months.

There is no cure for colic. Here are some tips to help manage colic as you wait for your baby to outgrow it:

• If you are breastfeeding, try avoiding some foods, such as cow’s milk, wheat, peanuts, eggs, and seafood.
• Cuddle and rock your baby during crying bouts.
• Swaddle your baby or apply firm but gentle pressure to the stomach.
• Darken the room or play soft music.
• Get help so you can take time off from caring for your baby.

■ How do I know if I am feeding my baby enough breastmilk?

Your baby may show he is still hungry by sucking, putting his hands in his mouth, opening and closing his mouth, or looking for the nipple. He may show he is full by falling asleep.

Your baby will usually have five to eight wet diapers and three or four stools per day by the time she is 5 to 7 days old.

Your baby will be gaining weight. She should gain 5 to 7 ounces per week and should double her birthweight by 4 to 6 months of age.

■ How can I tell if my baby is ready to feed herself?

If your baby can pick up food and chew or mash it, she is ready to feed herself soft pieces of table food.
■ When and how should I introduce solid foods?

Introduce solid foods when your baby can sit with support and has good head and neck control.

Offer a small amount (for example, 1 or 2 teaspoons) of one new food at a time. Wait 7 days or more to see how your baby tolerates the new food before introducing the next new food.

Offer iron-fortified, single-grain infant cereal (for example, rice cereal) as the first solid food, because it is least likely to cause an allergic reaction, such as a rash.

Iron-fortified infant cereal and meat are good choices for foods high in iron.

Gradually introduce pureed or soft fruits, vegetables, and meats. Eating a variety of foods contributes to a healthy diet.

Do not add honey to food, water, or infant formula because it can be a source of spores that cause botulism, which can poison your baby.

Do not add cereal to bottles, and do not use “baby food nurser kits” (which let solid food filter through the bottle nipple along with the liquid).

■ When should I introduce juice and how much?

At 4 to 6 months or later, introduce juice by using a cup.

Give your baby juice in a cup, not a bottle, because juice in a bottle can bathe her teeth in sugar for long periods of time. Juice in a bottle also makes it harder to wean your baby from a bottle.

Although juices provide carbohydrates and vitamin C, do not use them instead of breastmilk or infant formula.

Offer juice in small amounts. A reasonable amount of juice is 4 to 6 ounces per day. Too much juice (more than 8 to 10 ounces per day) may decrease your baby’s appetite for other foods and increase the risk of loose stools and diarrhea.

■ How can I protect my baby’s teeth from tooth decay?

Serve 100 percent fruit juice in a cup in small amounts, about 4 to 6 ounces per day.

Do not serve juice in a bottle. Juice served in a bottle can cover your baby’s teeth with sugar for long periods of time and contribute to tooth decay (early childhood caries).

Do not put your baby to bed with a bottle or allow him to have a bottle whenever he wants.

Clean your baby’s gums and teeth twice a day. Use a clean, moist washcloth to wipe his gums. Use a small, soft toothbrush (without toothpaste) and water to clean his teeth.

■ When should I wean my baby from the bottle?

As your baby begins to eat more solid foods and drink from a cup, she can be weaned from the bottle.

Begin to wean your baby gradually, at about 9 to 10 months. By 12 to 14 months, most babies can drink from a cup.
■ When should I give my baby cow’s milk?

Continue to feed your baby breastmilk or iron-fortified infant formula for the first year.

Cow’s milk, goat’s milk, and soy milk are not recommended until after your baby’s first birthday.

Do not give your baby reduced-fat (2 percent), low-fat (1 percent), or fat-free (skim) milk. He needs the extra fat in whole milk for growth and development.

■ Should I give my baby sweets?

Do not give your baby sweets, such as candy, cake, or cookies, during the first 12 months. She needs to eat healthy foods for growth and development.

■ How do I avoid feeding my baby too much?

Breastfeed if possible.

Learn how your baby shows he is hungry, and feed him when he is hungry.

Feed your baby slowly. Do not enlarge the hole in the bottle nipple to make expressed breastmilk or infant formula come out faster.

Do not add cereal to the bottle—this may cause your baby to eat more than he needs.

Comfort your baby by talking to him and by cuddling, rocking, and walking him—not by feeding him. Using food to comfort your baby may teach him to use food as a source of comfort as he gets older.

Feed your baby until he is full. It takes about 20 minutes for your baby to feel full. Do not force him to finish a bottle or other foods.

■ What can I expect my baby to do as he grows?

From birth to 1 month of age, your baby will

Begin to develop the ability to start and stop sucking.

Wake up and fall asleep easily.

At about 3 to 4 months of age, your baby will

Drool more.

Put his hand in his mouth a lot.

At 4 to 6 months of age, your baby will

Bring objects to his mouth.

Begin to eat solid foods, such as iron-fortified infant cereals and pureed or soft fruits, vegetables, and meats.

Explore foods with his mouth.

At 7 to 9 months of age, your baby will

Try to grasp foods, such as toast, crackers, and teething biscuits, with all fingers and pull them toward her palm.

Move food from one hand to the other.

At 9 to 11 months of age, your baby will

Reach for pieces of food and pick them up between her thumb and forefinger.

Try to hold a cup.

Pick up and chew soft pieces of food.
Resources for Families


