



## **ADDING SOLID FOODS**

The practice of introducing complementary foods (solid foods and liquids other than breast milk or infant formula) during the first year of life has varied over time and across cultures. The American Academy of Pediatrics and World Health Organization recommend that complementary foods be introduced around six months of age

### **WHEN SHOULD MY INFANT START SOLIDS?**

**Developmental milestones** — The best time to start solid foods depends not only on your child's age, but also on your child's ability to sit up, support his or her head, and meet other developmental milestones. These guidelines apply to all children, including those who have delays with gross motor skills. Your infant should be able to do the following:

- Sit with support
- Have good head and neck control
- Push up with straight elbows from lying face down
- Show readiness for varied textures of supplemental foods by placing their hands or toys in their mouth
- Lean forward and open the mouth when interested in food, and lean back and turn away when uninterested in the food or not hungry

Additional skills are necessary before your infant should be allowed to progress to eating finger foods:

- By 8 to 10 months, infants begin to have the skills necessary to eat finger foods independently (can sit independently, grasp and release food, chew food [even without teeth], and swallow).
- By 12 months, fine motor skills improve, allowing children to grasp pieces of food between two fingers.

**Why wait to start solids?** — Introducing solid foods before age four to six months is not helpful and could be harmful. Reasons that expert groups recommend delaying the introduction of solid foods include the following:

- Introducing solid foods before your infant is four to six months of age may interfere with his or her ability to take in an adequate number of calories or nutrients, and may increase the risk of developing food allergies.
- Young infants do not have the coordination and/or skills to safely swallow solid foods, which could lead to aspiration (inhaling food/liquid into the lungs).
- Infants have a reflex (called the extrusion reflex) that causes them to raise the tongue and push against any object that is placed between their lips. This reflex usually disappears between four and five months of age. Trying to spoon-feed an infant who still has the extrusion reflex can be a frustrating and difficult experience for both of you.

### **SOLID FOOD PRECAUTIONS**

**Foods to avoid** — Honey should not be given to any child under 12 months. liquid cow's milk should be avoided until 9-12 months when it can be used as part of a balanced diet. ;Avoid hard, round foods that could cause choking (e.g., nuts, grapes, raw vegetables, popcorn or candies);until 3 years. Cow's milk is not recommended because it does not contain adequate iron; Honey is not recommended due to the potential risk of exposure to a harmful bacteria toxin (botulism poisoning).

**Food allergy concerns** — An infant is said to be at "high risk" for developing allergic disease if there is at least one first-degree relative (parent or sibling) with an allergic condition, including a documented food allergy, asthma, allergic rhinitis, or atopic dermatitis (eczema).

In 2000, parents were told to delay giving highly allergenic foods, such as eggs, peanuts, tree nuts, and fish, for months or years longer than other foods. However, this advice was changed in 2008 because studies did not show enough evidence in support of waiting to introduce these foods. Furthermore, there is now evidence that early introduction of these foods may actually decrease the risk of allergy. Randomized controlled trials have evaluated the specific timing of introducing highly allergenic foods, such as peanut and egg, and the risk of developing food allergies to them. Experts now recommend that high-risk infants be introduced to traditional supplemental foods between four and six months. *All other infants should be offered peanut butter as a slurry mixed with some fruit to allow early exposure and reduce the possibility of peanut allergy that has grown so common.*

If your infant has no signs of allergy (including eczema) with the initial foods, additional foods can be introduced gradually, including the highly allergenic foods (e.g., cow's milk, eggs, peanuts, tree nuts [although not whole nuts because of choking risk], soy, wheat, fish, and shellfish). Whole cow's milk should not be given to any child until after age 9- 12 months, but yogurt and cheese can be given before 12 months.

The safest way to introduce highly allergenic foods has not been studied. It is possible for an allergic reaction to occur the first time a child eats a particular food. We recommend giving highly allergenic foods to high-risk children in the following manner

- Your infant can be given an initial taste of one of these foods at home, rather than at day care or at a restaurant.
- If there is no apparent reaction, the food can be introduced in gradually increasing amounts.
- Consult your child's health care provider if your child has signs of an allergic reaction after eating a food, has moderate to severe eczema that is difficult to control, or has a sibling with a peanut allergy. An allergy evaluation may be suggested in these cases.

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## TYPES OF SUPPLEMENTAL FOODS

There is no one food that is recommended as a first food. Single-ingredient foods should be introduced first, one at a time, every few days, to determine if your child has an allergic reaction. As solid foods are introduced, infants should consume no more than 28 to 32 ounces of formula per day. Breastfed children can continue to nurse on demand.

**Cereal** — Single-grain infant cereal is a good first supplemental food because it supplies additional calories and iron. Rice cereal is traditionally offered first because it is widely available and is least likely to cause an allergic reaction. Oat cereal is another good choice. However, wheat products (in cereal or other foods) may be offered by six months of age.

Infant cereals can be prepared by adding breast milk, infant formula, or water. The consistency should initially be thin and may be made thicker over time. Cereal should be offered initially by spoon in small amounts (one teaspoon [5 mL]) at the end of breast- or bottle-feeding. Spoon-feeding helps to develop your infant's ability to coordinate mouth and swallowing movements as well as enhance future speech development. Gradually increase the amount of cereal to one to four tablespoons (15 to 60 mL) twice per day

If your child refuses or appears uninterested in the cereal, try again the following day using a thinner mixture.

Cereal should not be added to a bottle unless this is recommended by a health care provider.

**Could cereal help my child sleep through the night?** — Most parents are eager for their infant to sleep through the night. However, there is no evidence that giving cereal to a child who is younger than four to six months old will help him or her to sleep better

**Puréed foods** — Single-ingredient puréed foods, including meats, vegetables, and fruits, should be introduced one at a time, every few days. If your child has no signs or symptoms of an allergic reaction, a second food may be added. Signs and symptoms of a food allergy include hives (skin welts) or other skin rash, facial swelling, vomiting, diarrhea, coughing, wheezing, difficulty breathing, weakness, or pale skin. Consult your child's health care provider if any of these problems.

The goal is to expose your infant to new flavors and textures of food. The amount eaten is less important. The order in which foods are introduced (vegetable, fruit, or meat first) is probably less important than the texture and consistency of the food.

Remember, for the first year of life almost all your child's good nutrition comes from breast milk or formula. It will take some time to move toward the 3 meal a day program. As this happens we recommend that breast milk or formula precede the meal, since it is of most importance and the food is quite secondary.

By the time your infant is eight months of age, we suggest that he or she consume approximately 1/2 cup (four ounces) of vegetables and 1/2 cup of fruit per day

- First foods should be finely puréed, contain only one ingredient, and should not contain additives (salt, sugar). Vitamin C (also called ascorbic acid) is often added to commercially prepared infant foods.
- Second foods are puréed or strained, often contain two or more ingredients (eg, fruit and grain, meat and vegetable), and should not contain additives (salt, sugar). Combination foods may be given after your child tolerates the individual components. Once thin purées are tolerated, thicker purées can be introduced.
- Third foods are usually combinations of food types, some of which have texture to encourage chewing. Some are seasoned with spices, although foods should not contain added salt or sugar. Chunkier blends often contain puréed food with small pieces of pasta, vegetables, or meat.

**Safety issues with jarred baby food** — Safety issues regarding jars of baby food include the following:

- After opening a jar or container of baby food, store it carefully to avoid spoilage.
- Jars of infant foods, once opened, should be discarded after two to three days according to most manufacturers.
- Store-bought foods should be served from a bowl rather than out of the jar to avoid contaminating the unused portion. Food left in the bowl should be discarded.
- Jarred foods may be served cold, room temperature, or warm.

**Preparing baby food at home** — You may choose to make your own puréed baby food for a variety of reasons (e.g., freshness, increased variety and texture, cost, avoidance of preservatives, etc). The [United States Department of Agriculture](#) provides guidelines for safe preparation of baby food at home.

It is important to be careful when preparing certain foods at home. Home-prepared spinach, beets, green beans, squash, and carrots should not be given to infants younger than four months of age because they may contain enough of a chemical (nitrates) to cause a condition that reduces the amount of oxygen carried by the blood (methemoglobinemia) In addition, home-prepared foods should not be given as infant food if they contain large amounts of added salt and/or sugar

**Finger foods** — **As your child gains the ability to feed himself/herself (~8 months)**, a greater variety of "adult" foods can be offered, including finely chopped, soft foods . (Soft vegetable, puffs, soft meats and fruits)

Foods that are choking hazards are not recommended in children younger than three years. These foods include hot dogs, peanuts, tree nuts, grapes, raw carrots, popcorn, and round candies.

**Fruit juice** — Fruit juice could be introduced when an infant is older than 12 months, and then in only small amounts. Before age 12 months, fruit juice is usually not necessary or recommended

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## VITAMIN AND MINERAL SUPPLEMENTS

Some children require vitamin or mineral supplements.

**Iron** — Iron deficiency is the most common nutrient deficiency in the United States. The amount of iron required depends upon your child's gestational age and birth weight.

- Premature and very low birth weight infants are at risk for iron deficiency and should be given an iron supplement (in the form of multivitamin drops) beginning at one month of age and continuing until your child is at least 12 months of age.
- Infants who are not premature who are given iron-fortified formula usually do not need any additional iron supplementation. Low-iron formulas are not recommended in any situation and are no longer available in the United States.

After four to six months of age, a full-term breastfed infant may not get an adequate amount of iron from breast milk alone. At this time, some form of iron supplementation (eg, iron-fortified infant cereal) is recommended. An average of two servings (two ounces of dry cereal per serving) of iron-fortified cereal per day is sufficient to meet an infant's daily iron requirement. *Additional iron can be given (in the form of multivitamin drops or iron supplement) if your infant cannot consume an adequate amount of iron-fortified cereal.*

After solid foods have been introduced, at least one feeding per day should contain foods rich in vitamin C (e.g., citrus fruits and juices, cantaloupe, strawberries, tomatoes, and dark green vegetables) to promote iron absorption from iron-rich foods (such as puréed meat) eaten during the same meal.

**Vitamin D** — The body requires vitamin D to absorb calcium and phosphorus, which are essential minerals for the formation of bones. Inadequate levels of vitamin D in children can lead to a condition known as rickets, which causes bones to be fragile and to break easily. This is especially true in dark-skinned children.

All infants, including those who breastfeed and/or bottle-feed, should be given a supplement containing 400 IU of vitamin D per day, starting within days of birth [13]. Vitamin D is included in most nonprescription infant vitamin drops. In some countries, it is possible to buy infant drops that contain only vitamin D.