

## Food for Babies

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This NebGuide explains how to add solid food to your baby's diet.

Good nutrition is vital for a baby's growth and development. The American Academy of Pediatrics (AAP) strongly recommends breast-feeding for most full-term infants; moms should exclusively breast-feed for at least four to six months unless advised otherwise for medical reasons. No formula can replace the immunological protection a baby receives from breast milk. It is important to breast-feed, even if it cannot be continued for a long time. Consult a doctor if you are unable to breast-feed or if breast-feeding is discontinued.

Nutrients found in breast milk or commercially prepared iron-fortified infant formulas are the only sources of food your baby needs for the first four, preferably six, months and should remain the core of your baby's diet throughout the first year. What you feed your baby in the first year of life is very important, because this is when your baby grows most rapidly.

### When and Why to Start Solid Foods

Solid foods help ensure your baby is getting the calories, iron, vitamins, and minerals needed for growth and development.

- **Iron** is vital for growth and development and your baby should be fed foods that are a good source of iron once they reach 6 months of age. If iron deficiency is a concern, your doctor may prescribe an iron supplement for your baby.
- **Vitamin D** is also an important nutrient for growth and development. The AAP recommends that all babies — especially breast-fed babies — receive 400 IU of vitamin D each day starting the first few days after birth. Talk with your baby's doctor before beginning any supplementation.

Starting solids is an important milestone in your baby's development. Eating solid foods helps your baby learn new oral and motor skills and helps diversify your baby's diet by introducing new textures and flavors. A solid food is any food or liquid that your baby gets that is not breast milk or formula, including juice, rice cereal, etc. The AAP recommends gradually introducing solid foods to babies when they are about 6 months old, though they may show signs of being ready for solids foods before that. The time to start solid food depends on your baby's development. A baby's digestive system or immature kidneys may not be ready for solid foods before 4 to 6 months of age. When considering whether or not to begin

feeding solids, be sure your baby is showing signs of being ready, such as good head control and readiness to accept a spoon. Check with your baby's doctor before beginning to feed solid foods.

Look for these signs of physical readiness that indicate babies may be ready for solid foods:

- They can sit up with support and can control their head.
- They can control upper body movements and pull forward when food is wanted or move back when full.
- Their tongue does not push food out.
- They are showing an interest in food.

### How to Feed Your Baby Solid Foods

When offering solid foods to your baby for the first time, pick a time of the day that works best for both you and your baby. If you are breast-feeding, late in the day may be best because your milk supply is often lower. Trying solid food for the first time is a big event for both you and your baby so this time should not be rushed. Start by offering your baby a partial feeding of breast milk or formula and then offer a small amount of food on a small baby spoon. Spoons designed for babies are available at most grocery or department stores. Using a baby spoon commercially coated with plastic will help protect baby's tender gums. Do not use a bottle to feed solid foods like baby cereal because it can increase the possibility of overfeeding, which may cause your baby to choke or gain too much weight. Portion out a small amount of baby food into a separate container and feed your baby using a clean spoon. Once your baby is full, discard any food that has come into contact with your baby's saliva. Store the remaining leftovers in the refrigerator for up to two days.

- **Introduce only one new food at a time.** Wait three to five days before introducing another food and as always, be sure to watch for signs of sensitivity. If your baby does not want to eat a new food, do not force it, and offer it again the next day. If the food is still refused, wait two or three weeks before offering it again. When introducing a new food, offer that same food multiple days in a row to make sure your baby is tolerating it. Once a new food has been introduced, you can combine foods to create new flavors and textures.
- **Your role.** During the first year, the main source of nutrition should be breast milk or formula. Your baby should continue to have five to six breast-feedings or 24 to 40 ounces of formula in 24 hours. If breast milk consumption drops below 24 ounces or your baby does not want to nurse or take a bottle, you may be feeding

too much solid food. Your baby's appetite will vary from day to day. Do not force your baby to drink every drop or eat an extra spoonful. Learn your baby's signals for fullness such as starting to play, blowing bubbles, pushing the spoon away, or turning the head. Respect your baby's signals for being full.

It is your job as the caregiver to be responsible for what your baby is offered to eat and when that food is offered. Your baby is responsible for what and how much he or she wants to eat. Never force-feed your baby. Feeding babies only when hungry will teach them to pay attention to their appetite. If you feel your baby is not eating enough, consult your baby's doctor or a registered dietitian.

### What to Feed Your Baby

Deciding what to feed your baby can feel overwhelming, but it doesn't have to be. Currently, there is no medical evidence stating any advantage of introducing foods in a certain order. As mentioned below, many pediatricians will recommend vegetables before fruit, but it ultimately does not matter. The important thing to remember is what you feed your baby is setting the stage for how and what you want your baby to eat in the future. As you introduce your baby to new foods, keep in mind variety is important. By 8-9 months, try to include foods from all five food groups each day.

- **Cereal.** Iron-fortified infant cereal can be a good first choice when deciding what to feed your baby. Start with a single ingredient cereal, such as rice or oatmeal, as it is least likely to cause an allergic reaction. If you are thinking of feeding your baby wheat cereal before 8 months of age, first consult with your doctor as some research shows it may cause an intolerance or sensitivity in young babies. After discussing it with your doctor and deciding to try wheat cereal, be sure your baby is tolerating rice cereal and watch closely for any signs of intolerance or sensitivity.
- **Cereal preparation.** Cereal is typically mixed with breast milk, formula, or water and should have a soup-like consistency when fed to your baby during the first feedings. Do not use raw or pasteurized cow's milk to mix cereal; cow's milk is difficult for a baby to digest until after the baby is a year old. To prepare, mix infant cereal with breast milk, formula, or water. **Do not use formula if your baby has not had it before. If your baby has a reaction, you won't know if it was caused by the cereal or the formula.** Read the label on the dry cereal package and use the recommended amount of liquid.
- **Vegetables and fruits.** When introducing fruits and vegetables, begin with single ingredient vegetable and fruit purees. Remember to introduce one vegetable or fruit at a time and watch for reactions that may indicate an intolerance or sensitivity. Begin by adding mild-flavored vegetables and fruits such as carrots, yellow squash, sweet potatoes, green beans, peaches, applesauce, and pears. Pay close attention when adding acidic fruits and vegetables (citrus fruits, berries, and tomatoes) to your baby's diet as they may cause diaper rash.
- **Meats.** Meat is an excellent source of iron and is often recommended as a first food for breast-fed babies and those with food sensitivities. Offer pureed lean meats, such as turkey, chicken, or beef, one at a time and watch for any possible reaction.

- **First finger foods.** Around 7-9 months of age, babies will be able to grab small foods with their fingers. Good finger foods include toast, crackers, O-shaped cereal, cooked pasta pieces, tofu chunks, and cooked vegetables and fruits. Be sure to cut the foods into small pieces and be alert for possible choking hazards.
- **Juice.** The AAP recommends that juice not be given until after 6 months of age. Although it can be given to babies older than 6 months, whole fruits are a better choice because they provide fiber and other important nutrients. When given, offer 100 percent juice in a cup, not a bottle. Offering juice in a bottle can increase the risk for tooth decay. Limit juice to 4 to 6 ounces per day. Breast milk or formula should remain your baby's main source of nutrition until your baby is 1 year old.
- **Water.** Water should be offered to your baby in small amounts once your baby starts eating solid foods. During meals, offer your baby a few ounces of water in a cup. It will take some practice, but your baby will master the skill of drinking from a cup over time.
- **Organic foods.** Many parents choose to eat organic foods and therefore naturally feed their babies organic foods. It is important to remember that organic refers to a growing method and does not necessarily mean that organic foods are healthier.
- **Honey** is not recommended for an infant before age 1 due to the risk of botulism, but this is not allergen related.

*Table I* outlines a baby's ages, the developmental milestones that typically happen at that age, and the solid foods to feed based on development. *Table II* indicates a baby should be eating at 8 months of age.

### Allergic Responses to Food

A food allergy is defined as an adverse health effect arising from a specific immune response that occurs reproducibly on exposure to a given food. Babies with no known allergic disease can be introduced to new foods as long as it is done at age-appropriate times (described above). Introduce commonly allergenic foods in small amounts at home instead of day care, etc. Infants considered at-risk of developing a food allergy have a parent or sibling with an allergic disease such as food allergy. If your baby has an existing allergic disease or has been diagnosed with a food allergy, discuss the introduction of new foods with your baby's doctor. The most commonly allergenic foods among infants are:

- Cow's milk
- Egg
- Soy
- Wheat

Tree nuts, peanuts, fish, and crustacean shellfish are also common allergenic foods.

Signs and symptoms of an allergic reaction can appear in the skin, eyes, nose, mouth, throat, lungs, digestive system, cardiovascular system, and/or nervous system. Symptoms of food allergy may include:

#### Skin

- Hives, flushing, itching, skin rash, or eczema

#### Eyes

- Itchy, puffy, or teary eyes
- Redness or swelling of the skin around the eyes

**Table I. Infant Feeding by Age and Development.**

<i>Age</i>	<i>Development</i>	<i>What to Feed</i>
<b>Birth to 6 months</b>	Baby can suck and swallow.	Breast milk is best. Use formula if not breast-feeding. Do not feed water or juice.
<b>6-8 months</b>	Baby can sit with support and control head movement.  Spoon feeding begins.	Begin offering solids foods one at a time. This can include iron-fortified infant cereals, pureed fruits and vegetables, and pureed meats.
<b>7-9 months</b>	Baby begins to chew, grasp, and hold items.  Using fingers for feeding begins.  Introduce a cup with water.	Try well-cooked vegetables such as carrots, sliced bananas, unsweetened dry cereals, and crackers. Beware of choking hazards.
<b>9-12 months</b>	Baby successfully eats with a spoon and feeds self more often.  Baby likes to eat with hands.	Offer new tastes and textures. Offer soft foods from the family meal. Limit juice to 4 ounces per day. Eat together as a family. Avoid foods that could be a choking hazard, such as nuts, seeds, whole grapes, hot dogs, marshmallows, and popcorn.
<b>1 year and beyond</b>	Encourage self-feeding.	Begin offering whole cow's milk in cup. No low-fat or skim milk until 2 years old. Never force infant to eat or drink. No sweetened drinks or soda.

**Table II. An example of what a baby may be eating at about 8 months of age.**

<i>Food Groups</i>	<i>Serving Size</i>	<i>Servings Per Day</i>	<i>Daily Total</i>
Breast milk or formula	4-6 ounces	6-8	24-40 ounces
Vegetables	2 tablespoons	2	<b>¼ cup (4 tablespoons)</b>
Fruits	2 tablespoons	2	<b>¼ cup (4 tablespoons)</b>
Meat/Beans	1 tablespoon	1	1 tablespoon
Grains	3-4 tablespoons dry cereal	2	6-8 tablespoons

Below is a sample menu for a baby 7-8 months old. Breast milk or formula feedings are accompanied by a meal (complementary feeding).

<b>Morning Feeding</b>	=	4 ounces breast milk
<b>Breakfast</b>	=	2 tablespoons pears and 4 tablespoons iron-fortified infant cereal
<b>Mid-Morning Snack</b>	=	4 ounces breast milk
<b>Lunch</b>	=	4 ounces breast milk and 2 tablespoons sweet potatoes
<b>Afternoon Snack</b>	=	4 ounces breast milk and 2 tablespoons peaches
<b>Dinner</b>	=	4 ounces breast milk and 2 tablespoons green beans
<b>Evening Feeding</b>	=	4 ounces breast milk

**Nose and Mouth**

- Nasal congestion, runny nose, or sneezing (although isolated nasal symptoms are rarely caused by food allergy)
- Tingling, itching, or swelling of the lips, mouth, tongue, or throat
- Sensation of choking

**Respiratory**

- Wheezing or whistling sound, shortness of breath, and tightness in the chest
- Hoarseness or change in voice quality
- Trouble breathing
- Repeated coughing

**Gastrointestinal**

- Nausea, vomiting, dry heaves
- Abdominal pain or cramps
- Diarrhea

**Cardiovascular**

- Dizziness, light-headedness, fainting, or loss of consciousness
- Slow, rapid, or irregular heart rate
- Cyanosis (bluish circle around lips and mouth)
- Low blood pressure

**Nervous System**

- Change in level of awareness
- Crying, anxiety, or panic

All of the medical signs and symptoms of allergic reaction listed on the previous page warrant immediate medical treatment. If you suspect your child may have an allergy or has an allergic response to a food, consult your baby's doctor or a board-certified allergist. In discussing this with the physician, record what food was eaten, symptoms of the reaction, how much was eaten, and when the symptoms began. Remove the problem food from your baby's diet until consulting your baby's doctor.

### Home-prepared Baby Food

Many parents prefer to make their own baby food, which is great because even at a very young age your baby can learn to eat what you do. You do not need special equipment, but a food processor, blender, strainer, masher, grinder, or specialized baby food maker come in handy. If you choose to make your own baby food, keep the following in mind:

- Be sure to thoroughly wash your hands and the equipment before and after use.
- Baking, steaming, roasting, and microwaving are the best preparation methods.
- Scrub, peel, and core fresh fruits and vegetables before use. Frozen or canned fruits and vegetables work well. Choose those with no added sugar or salt. Simply thaw or drain the juice and puree or chop to the desired consistency.
- Prepare your baby's food without adding salt or sugar. If needed, you can add seasonings and spices at the table as desired for your taste.
- Do not use honey or corn syrup in preparation because it may contain clostridium botulinum spores. These spores may make your baby very ill.
- Store food in airtight containers in either the refrigerator or freezer. One way to freeze baby food is to pour pureed food into ice cube trays and freeze. When food is firmly frozen, remove the cubes and store in plastic bags or containers in the freezer for no more than two months.
- Label home-prepared baby food with the kind of food and the date prepared.

If you buy commercially prepared food, remember that combination foods such as dinners and desserts often have added starch. Combination foods are often more expensive and less nutritious than individual foods. Read labels to know what prepared foods contain. Check the "use by" date on baby food containers and do not buy containers of baby food that are sticky or stained because they may be broken.

### Heating Baby Food

Baby food may be served cold, at room temperature, or heated. A microwave is typically used to heat baby food. Heat a few seconds in a microwave-safe dish and let the food stand for a short period of time before serving. Be sure to stir the food thoroughly as hot spots may be created. To test the temperature of the food, place some on your wrist or taste it using your own spoon. Heat food only one time and

if the food is not eaten after this heating, discard it. Do not feed your baby food that has been open in the refrigerator for more than two days.

### Summary Tips

Feeding your baby solids foods should be enjoyable for both you and your baby; mealtime should be pleasant. Remember, when beginning to feed solid foods, choose the time of day that will work best for both you and your baby. Once you begin, gradually introduce new foods, textures, and flavors. Be sure to start feeding individual foods before gradually moving to mixed foods. Aim to offer a variety of foods from each of the food groups. Even while beginning to feed solids, keep in mind that breast milk or formula is still the main source of nutrition during the first year. Lastly, be patient as you begin feeding solids as it takes time and practice for your baby to learn to eat solid foods.

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**Index: Foods & Nutrition  
Food**

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