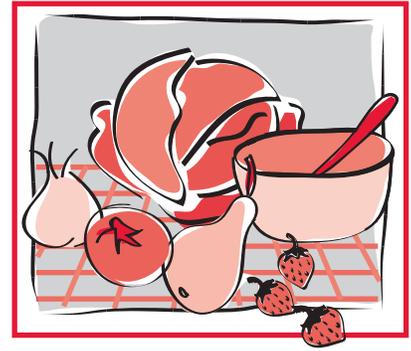


# Introducing Solid Foods to Infants

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The introduction of semi-solid and solid foods to an infant's diet can be confusing and complicated for many parents. There is even some disagreement among the leading health authorities regarding when to incorporate new foods and which foods to include. Essentially, the exact order of food introduction does not matter for many babies. The most important factor is which foods to introduce at each age, and the child's relationship with these foods. During the first 6 months of life, breast milk is capable of supplying all of the nutrition an infant needs and also provides protection against illness. Most experts agree that solid foods should be incorporated around the first 6 months of life, beginning with single-grain cereals followed by fruits, vegetables, and proteins in later months. Ultimately, an infant's developmental readiness should determine when to introduce semi-solid foods to the diet.

## Starting Solid Foods Too Early

There are many misconceptions that come along with the decision to feed an infant solid foods before 6 months of age- a common belief being that feeding solid foods such as cereal will make an infant sleep through the night. In reality however, sleeping through the night is actually associated with mental development, not the fullness of an infant. Feeding an infant solid foods before 6 months may increase the risk of choking, food allergies, gastric discomfort, and becoming overweight or obese later in life.

## Waiting Too Long to Start Solid Foods

Introducing solid foods after 9 months may result in an infant who is resistant to trying solid foods, and may have difficulty chewing. Beyond 9 months of age, it is important to incorporate an external source of iron, since an infant's iron stores will gradually become depleted.

## When to Start

The child's age, appetite, and growth rate are all factors that help determine when to feed solid foods. According to the American Academy of Pediatrics (AAP), semi-solid foods are a significant change and should not be introduced until 6 months of age. This age usually coincides with the neuro-muscular development necessary to eat solid foods. Fruit juice is not recommended until 7 months of age, and should be limited to 4-6 ounces per day. It is important to note that although only 100% fruit juice is acceptable at this age, it is not recommended.

Before feeding solid foods, the baby should be able to:

- Swallow and digest semi-solid foods.
- Sit up well, an important step in order to be able to stay seated in a high chair to feed.
- Maintain neck and head control while seated, a necessity in order to turn his or her head to signal when he is finished eating.
- Be able to open his or her mouth and move the tongue and lips well, allowing the movement of food around the mouth.
- Demonstrate an interest in food and eating solid foods.

## Quick Facts

- During the first year of life, breast milk or an iron-fortified formula provides all the nutrients an infant needs for healthy growth and development.
- The American Academy of Pediatrics (AAP) recommends introducing solid foods along with breast milk or formula, preferably at 6 months of age. Single-ingredient foods should be introduced one at a time at weekly intervals.
- Ultimately, an infant's developmental readiness should determine when to feed solid foods.
- Avoid offering your infant sweetened foods since they can promote tooth decay, excess calories, and weight gain.
- Never force-feed bottles or food as this may cause a baby to ignore what his or her body says, which can ultimately lead to poor eating habits later in life.

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## Starting Solid Foods

During the first feeding, many parents find it beneficial to offer semi-solid foods after breast or formula feeding, when the infant may be more likely to experiment with new foods. The sequence of new foods is not critical, but iron-fortified rice cereal mixed with breast milk or formula is a good first choice. In the beginning, it may be best to introduce single-ingredient foods one at a time at weekly intervals. This process helps identify any food sensitivities the child might have. Gradually add vegetables, fruits, and meats to the infant's diet one at a time. Serving mixed foods is not recommended in the beginning.

### Important Tips:

- Prepare for feeding with a baby spoon (plastic is best), bib, and an infant seat or high chair. Using the baby spoon, place a small amount of food, about 1/2 teaspoon, on the baby's tongue. Never use a bottle or other feeding device for feeding semi-solid food.
- Begin with single-ingredient foods, such as iron-fortified rice cereal. Wait five days between introducing new foods so that any allergies or intolerances to these new foods can be identified.
- Feed the baby when he or she is hungry, but do not overfeed. Look for signals that the feeding is finished such as shaking the head.
- Make meal time a happy time, usually morning or midday is the best time for offering feeding new foods.
- Never force your child to finish bottles or food. This can cause the baby to ignore what his or her body says and may lead to poor eating habits later. Watch for body language cues.
- Never leave your child alone while eating.

## Foods for the First Year

*Breast milk or infant formula*—In addition to incorporating new foods, it is also best to supplement a child's diet with breast milk or infant formula to ensure adequate nutrition. This can be accomplished through the addition of breast milk or formula to solid foods.

During the first year of life infants are not ready for milk products from animals (such as cow or goat milk).

*Grain Products*—Simple grains such as rice cereal are a good first choice for introducing solid foods to an infant. Grains offer additional iron needed for proper growth and development. Introduce wheat products last, since they are more allergenic.

*Fruit*—Choose plain, ripe, or pureed fruit such as applesauce, peaches or mashed bananas. Combine the fruit with breast milk or infant formula, and puree. Steer clear of citrus fruits during the first year of life due to their high acidity, and avoid fruit desserts that contain unnecessary sugar. Desserts provide unneeded, excess calories and may lead to overweight and obesity. Fruit juices that are 100% may be introduced at 7 months when the baby learns to drink from a cup. It is important to dilute 100% fruit juice half and half with water or strain the pulp before giving to a baby. Avoid sweet drinks, such as soda, tea, and sports drinks as they can promote tooth decay and lead to unnecessary calories.

*Vegetables*—Puree vegetables with breast milk or infant formula in a manner similar to fruits. Do not add salt to vegetables as this may cause strain on an infant's kidneys.

*Protein*—Puree proteins such as chicken, beef, pork, tofu, or beans with breast milk or infant formula, similar to fruit and vegetable preparation.

See Tables 1 and 2 for more information on introducing foods during the first year.

## Foods to Avoid During the First Year

*Risk for allergic reaction*—nuts and nut products, egg whites, and shellfish.

*Choking Risk*—celery, grapes, candy, carrots (raw), corn, raisins, cherry tomatoes, nuts, olives, popcorn, peanut butter, sausage, hotdogs, and gum.

*Additional foods to avoid*—Honey (due to hazardous botulism spores), cow's milk (harmful to an infant's kidneys), rare meat, cheese (due to contamination with harmful bacteria), unpasteurized juice, bean sprouts, and alfalfa sprouts.

## Summary

- Offer new foods when your baby is in a good mood- not too tired and not too hungry.
- Serve solids after your baby has had a little breast milk or formula.
- Give your baby time to learn to swallow these foods and get used to the new tastes and textures. Be flexible with how your child experiences new foods (touching the food, exploring its texture, etc.).
- Do not feed your baby directly from the jar; use a clean dish. Heat only the amount baby will eat, starting with half of a teaspoon, and throw any leftovers away.
- Make meal time fun for your infant.
- Infants have a natural sense of fullness, it is important never to overfeed or force-feed your infant. Doing so will lead an infant to disregard its sense of fullness, which can lead to eating disorders or obesity later in life.
- Never add salt or sugar to foods to make them more appealing for your infant.

## Additional Resources

American Academy of Pediatrics: [www.healthychildren.org](http://www.healthychildren.org)

## References

- American Academy of Pediatrics: Switching to Solid Foods. 2012. [www.healthychildren.org](http://www.healthychildren.org).
- Academy of Nutrition and Dietetics: Introducing solid foods to toddlers. 2012. [www.eatright.org](http://www.eatright.org).
- Douglas, Ann. Mealtime Solutions for Your Baby, Toddler, and Preschooler: The Ultimate No-Worry Approach for Each Age and Stage. John Wiley & Sons, Inc., 2008.

**Table 1. Calendar for feeding your baby for the first year of life.\***

Foods	Birth	1	2	3	4	5	6	7	8	9	10	11	12 months
Breast milk or iron-fortified formula	Breast milk or formula				Continue breast milk or iron-fortified formula								Start whole cow's milk from cup.
Cereals and grain products							Iron-fortified cereals (rice, barley, oats.) Iron-fortified plain infant cereal (no fruit flavor or mixed grains). Start with rice.	Mixed-grain, iron-fortified cereals. Spiral pasta, teething crackers, rice. Bread and toast strips.					
Vegetables							Pureed, single vegetables such as sweet potatoes, or squash.	Cooked vegetables mashed or chopped.	Bite-size, soft, cooked vegetables for finger-feeding.				
Fruit & fruit juices							Pureed, single fruits such as bananas, peaches, pears, or apples.	Cooked, canned, or soft fresh fruits, mashed or chopped.	Sliced soft fruit for finger feeding.				
Meat, dairy, and other protein foods							Pureed single meats such as chicken, pork, or beef. Pureed tofu, and beans.	Same foods, pureed or mashed beans. Cottage cheese, soft pasteurized cheese, and yogurt may also be introduced.	Same foods, bite-sized pieces for finger feeding.				
Egg and fish									Egg, and boneless fish.				
*SPECIAL NOTE: Some foods may cause choking. Because of this, avoid raw carrots, nuts, seeds, raisins, grapes, popcorn and pieces of hot dogs during baby's first year.													

**Table 2. Infant serving sizes based on age.\***

Age	6 months	6-8 months	8-10 months	10-12 months
Serving Size	Mix with 1 teaspoon of pureed cereal, fruit, or vegetable and 4-5 teaspoons of breast milk or formula to begin with. Increase to 1 tablespoon of pureed cereal, fruit, or vegetable mixed with breast milk or formula, two times a day. Gradually thicken the consistency of the pureed foods.	Feed 3-9 tablespoons of cereal, in 2-3 feedings.  When feeding fruits and vegetables, start with 1 teaspoon, and gradually increase to ¼ to ½ cup in 2-3 feedings.	Dairy: 1/4-1/3 cup, 1/2 ounces of cheese.  Iron-fortified cereal: 1/4-1/2 cup.  Fruit: 1/4-1/2 cup.  Vegetables: 1/4-1/2 cup.  Protein: 1/8-1/4 cup.	Dairy: 1/3 cup, 1/2 ounces of cheese.  Iron-fortified cereal: 1/4-1/2 cup.  Fruit: 1/4-1/2 cup.  Vegetables: 1/4-1/2 cup.  Combo foods (such as macaroni and cheese, or casseroles): 1/8-1/4 cup.  Protein foods: 1/8-1/4 cup.
*It is important to not feel bound to these serving size guidelines, as they are only estimates. Infants may naturally consume more or less than these amounts.				