

Infant Nutrition

Hilliard Pediatrics, Inc. - Dr. Tim Teller, MD

Introduction

This protocol hopes to help you understand how much and when to feed your infant from birth until their 1st birthday. The amounts listed are guidelines that apply to most infants. There are many happy, healthy, well-fed infants who do not follow these amounts – they may take more or less. If there are big differences between what is here and what your child does, ask us at your child's check-up or call during routine hours if you have questions.

Nutrition by Age

- **Birth to 4 Months – Just breast milk or formula.**
 - Breast milk: 5-12 feedings per day. Feedings every 2-3 hours initially are average. As months go by, feedings every 4-5 hours are common.
 - **or** Formula: 16-32 ounces per day. Feedings every 2-3 hours initially are usual. As months go by, feedings every 4-5 hours are common.
 - Note that if you are breast-feeding and supplementing with formula, the amounts listed above may vary.
 - Water, juice, cereal, vegetables, or fruit: none.
- **4 Months to 6 Months – Add cereal.**
 - Breast milk: 4-7 feedings per day **or** Formula: 26-40 ounces per day.
 - Infant cereal: 2-3 teaspoons of infant rice cereal mixed with pumped breast milk or formula. Start with one evening feeding per day. After one month, begin doing a morning feeding and an evening feeding. Once you have tried rice cereal, it is fine to also give oat cereal.
 - Fruit juice: 2-4 ounces of 100% apple, white grape, pear, or prune juice is fine but not necessary. See notes below.
 - Water, vegetables, or fruit: none.
- **6 Months to 8 Months – Add vegetables and fruits.**
 - Breast milk: 3-5 feedings per day **or** Formula: 26-33 ounces per day.
 - Infant cereal: Continue to offer cereal. When the vegetables and fruits are started, most infants will only do only once a day, 3-5 tablespoons per day.
 - Fruit juice or water: 4 ounces of water or 100% apple, white grape, pear, or prune juice is fine but not necessary. See notes below.
 - Vegetables and fruits: Start with stage 1 vegetables. Offer each vegetable once a day for 3-4 days in a row. Try all of the stage 1 vegetables. Then go through the individual fruits, offering each fruit once a day for 3-4 days in a row. After trying each vegetable and fruit, it is fine to continue the vegetables and fruits. Initially, ½-1 (4-5 ounce) jar. May be 1-2 (4-5 ounce) jars after a few weeks. If you have gone through all of the stage 1 vegetables and fruits AND the cereal your infant is doing well with is thicker than the stage 1 foods, it is fine to try the thicker stage 2 vegetables and fruits. The stage 2 foods also provide for mixed fruits and mixed vegetables.
 - Milk, cheese, yogurt, and honey: none.

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- **8 Months to 10 Months – Add proteins and other complementary foods.**
 - Breast milk: 3-4 feedings per day **or** Formula: 21-32 ounces per day.
 - Infant cereal: 2-4 tablespoons once or twice a day.
 - Fruit juice or water: 4-8 ounces of water or 100% apple, white grape, pear, or prune juice is fine but not necessary. See notes below.
 - Vegetables and fruits: Stage 2 fruits and vegetables until your child is crawling and picking-up small items with a pincer grasp and putting them in their mouth, then they are ready for stage 3. Typically 1-2 jars a day of vegetables and 1-2 jars of fruits per day.
 - Soft, cooked vegetables and soft, mashed fruits: For infants doing well with stage 3 fruits and vegetables, you can start doing small bits of soft banana, cooked peas, cooked sweet potato, and small pieces of cooked carrots and green beans. A typical serving: 1-2 tablespoon.
 - Ground or finely chopped meats and cooked egg: For infants doing well with stage 3 textures, it is fine to add meats as either 1 jar of stage 3 meats with vegetables or 2 tablespoons of ground or finely chopped chicken, turkey, or beef. Small pieces of scrambled egg are fine, also.
 - Other complementary foods: If your child is handling stage 3 foods well, puffs, Cheerios®, soft bits of crackers, soft pieces of toast, or teething biscuits are fine. As your child eats more of these grains, they will generally eat less or stop eating the infant cereal.
 - Peanut and tree nut products: For children with no personal or family history of food allergies, it is now recommended to start introducing small amounts of peanut products at 9 months of age. If your child is doing fine with the texture of Cheerios® or puffs, the recommendation is to offer twice a week 6-12 puffs of Reece's Puffs® cereal. Offering a thin layer of peanut butter or tree nut butter on bread or crackers is also fine.
 - Cheese and yogurt: It is fine to introduce yogurt and soft cheeses when your child is at this stage.
 - Milk and honey: none.
- **10 Months to 12 Months – Transitioning to toddler and table foods.**
 - Breast milk: 3-4 feedings a day **or** Formula: 21-29 ounces a day.
 - Infant cereal: 2-4 tablespoons once or twice a day.
 - Fruit juice or water: 4-8 ounces of water or 100% apple, white grape, pear, or prune juice is fine but not necessary. See notes below.
 - Vegetables and fruits: One to two jars of stage 3 vegetables per day or 1-2 tablespoons of soft, cooked peas, sweet potato, carrots, and green beans once or twice a day. One to two jars of stage 3 fruits per day or 1-2 tablespoons of soft fruits such as applesauce and bananas.
 - Protein foods: Two tablespoons of ground or finely chopped chicken, turkey, or beef or 1 jar of stage 3 meats with vegetables. Small pieces of scrambled egg and fish are fine to introduce.
 - Grains, cereals, and breads: Puffs, Cheerios®, soft pieces of crackers, toast, pancakes, and waffles, teething biscuits, cooked rice, mashed potatoes, and soft, cooked noodles are fine. Two servings per day of ¼ cup would be typical.

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- Peanut and tree nut products: Peanut puff cereals (Reece's Puffs®) and peanut or tree nut butters are fine to continue.
- Cheese and yogurt: It is fine to continue cheese and yogurt daily.
- Milk: Because of milk's lower iron content and how it is hard on infant's kidneys before their first birthday, we recommend waiting to introduce cow's milk until just before or on the first birthday. It is whole milk (called "Vitamin D Milk" in the stores) that is recommended from the 1st to 2nd birthday.
- Honey: Because of botulism spores in honey, it is recommended to avoid giving honey before the first birthday.
- **Measurements.**
 - One teaspoon = 5 mL
 - One tablespoon = 3 teaspoons = 15 mL
 - One ounce = 30 mL or 30 grams.
- The amounts given on the infant feeding chart are a guideline. Some infants will take more or less. What is important is for each infant to be growing well.

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Juice and Water:

Although it is fine to offer juice and water in small amounts at 4 months of age and above, for infants with soft, regular bowel movements who do not need an extra few ounces to drink per day can skip the juice. We do not want the juice or water to take the place of more important nutrition from breast milk or formula.

Cereal:

By 4 months of age, most infants are ready for cereal. Their digestive system can properly digest cereal at this age. Also, infants at this age have the back and neck strength to propped into a sitting position while being fed. A normal reflex called "tongue thrust" (where infants stick their tongue out of their mouth when something is placed on their tongue) fades that would make spoon-feeding cereal difficult.

- **Rice cereal** is the easiest cereal to digest for most infants, and it should be the first cereal offered. Because of new information out in 2012 about arsenic in infant rice cereal, do not do rice cereal more than once a day.
- The cereal should be mixed with **pumped breast milk or formula**. When you start, the consistency should be that of runny applesauce. Follow the instructions on the package. The temperature of the mixture can be varied to the liking of your infant.
- Initially, most infants will take 6-8 infant spoonfuls. It is going to be messy for most infants! For the first month, one daily feeding is recommended. You can gradually increase towards

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2-3 teaspoons. By 6 months, many infants will take 2-3 tablespoons twice a day. If your infant shows little interest in the cereal, do not worry. Many infants need a few weeks to warm-up to taking the cereal well.

- **Do not mix the cereal into the bottle** unless we specifically tell you to do this. Use an **infant spoon**.
- Initially, most children will either sit on your lap while you steady them, in a high chair, or in a Bumbo® seat.
- It is not uncommon for infants to have their **bowel movements firm up** when they start cereal. If they become constipated with hard, infrequent bowel movements, a few things can help: switch to oat cereal; mix it with 100% apple, pear, white grape, or prune juice; or decrease how much cereal is eaten per day.
- Many infants take their cereal **in the evening initially**. When they are taking two feedings a day (by 5-6 months of age), one is offered in the morning and one in the evening. Some infants do not want the cereal right away if they slept a long stretch overnight. Offer it a little later in the morning when they are hungry but “not starved”.
- You will quickly learn the clues for when your infant wants more food fed to them: they lean forward and open their mouths. Infants will turn their heads away, close their mouths, or simply keep chewing on the same mouthful of food when they are finished.

Vegetables and fruits:

The right time to start vegetables and fruits for most infants is **6 months of age**. Infants are ready to digest these foods and they are ready for the texture. It is recommended to **start with vegetables**. We hope your infant gets a taste for vegetables and learns to like eating them before they try the fruits. It may be more likely your child will reject vegetables if they have already eaten the naturally sweeter fruits. The different **stages** of vegetables and fruits are divided this way: **stage 1** is single items and thin texture, **stage 2** is combinations with a thicker texture, and **stage 3** is combinations with a thicker texture and chunks of food.

- Start with **stage 1 vegetables** then **stage 1 fruits**. After doing this, different fruits or vegetables can be given on the same day. -- When you first introduce a new vegetable or fruit, offer each food **once a day for 3-4 straight days**. If no problems, continue to try different vegetables then fruits. If your infant has mild spitting, diarrhea, or rash only around the face, avoid the food for a few days to a couple weeks then try that food again. If your infant has vomiting, severe diarrhea, or hives, avoid this food until the child’s next checkup.
- There is no real advantage to beginning one vegetable over another. Traditionally, many families start with orange vegetables – carrots and sweet potatoes – but there is no scientific reason to start with orange versus green vegetables. One might argue the green vegetables are better to start with as they are naturally less sweet and we hope your infant learns to enjoy eating these vegetables.

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Peanuts and tree nuts:

If your child has a history of food allergies, severe eczema, or there is a family history of food allergies, ask us about when to introduce peanut products. There is a significant increase in the number of children with peanut allergies over the last 20 years. It is now believed by the national allergy specialists that we should introduce small amounts of peanuts by 6-9 months of age if there is no worrisome personal or family history of food allergies. It is hoped that these early exposures will allow the child to tolerate peanuts as they grow. Once a child is doing fine with the texture, tree nut butters are fine as well. For peanut products, peanut butter powder mixed into purees and thinned peanut butter work well.

Milk, yogurt, and cheese:

Small amounts of yogurt and soft cheese are fine from 8-12 months of age if your child is doing well with these textures. It is still recommended to wait on milk until on or just before your child's first birthday.

Starting solids too early or late:

Two recent scientific studies found that starting cereal, vegetables, or fruits before *4 months of age* or *after 6 months of age* significantly increased the infants chances of developing diabetes or celiac disease (gluten sensitivity) in the later years. This is one of many reasons we highly recommend following the routine schedule.

Resources

- Nutrition: What Every Parent Needs to Know American Academy of Pediatrics, 2011.
- Your Child's First Year American Academy of Pediatrics, 2010.
- Caring For Your Baby and Young Child, Birth to Age 5 American Academy of Pediatrics, 2009.
- Food Fights Drs. Jana and Shu, 2012.
- Healthy Children website at <http://www.healthychildren.org/english/ages-stages/baby/feeding-nutrition/Pages/default.aspx>
- Any of the commonly available baby food companies have websites, including www.gerber.com; www.heinzbaby.com; www.beechnut.com; www.naturesgoodness.com; and www.earthsbest.com. They have helpful information