



Recommendation and Guidelines for Introduction of Solids

Human milk or commercial formula alone will meet the nutritional needs of infants up to age **6 months**.

After that, solid foods are needed to augment energy sources and provide adequate vitamins and iron. Evidence does not support benefits of earlier feeding or a full belly for promoting sleep. There is some evidence that delaying solid foods until age 4 to 6 months can reduce the risk of atopic disease and obesity. **The American Academy of Pediatrics (AAP)** recommends starting solids no earlier than age 4-6 months.

We recommend to begin introducing solids when the infant is **developmentally ready**, such as when the infant has good head and neck control and is able to sit with support. At this time, typically age 4 to 6 months, the infant no longer pushes out material placed between the lips and can communicate interest by leaning forward and opening the mouth or indicate satiety or disinterest by leaning back or turning away.

Feeding solids before age 4 months may result in aspiration and is associated with a slightly increased risk of developing obesity, atopic dermatitis, type 1 diabetes, and celiac disease. Waiting until significantly later than age 6 months can result in inadequate energy intake, leading to slow growth, disinterest in solid foods, delayed oropharyngeal motor development, and iron deficiency.

There is no need to limit fat and cholesterol intake in infant foods, but high salt and sugar content can set the taste threshold higher so that the infant prefers these later in life. Avoid cow's milk until age 12 months because of the high renal solute load and association with iron deficiency. Avoid honey for the first year because of botulism risk. Although there is a tradition of delaying allergenic foods (e.g., eggs, fish, peanuts), there is no convincing evidence to support the delay, and the AAP does not recommend this practice.

When to start solids?

The American Academy of Pediatrics recommends for babies to start solids between 4 and 6 months of age. Personally, I recommend waiting until the baby is 6 months of age.

1. Why?

- Gross motor development- by 4 months some babies still have a certain degree of head lag.
- Babies begin to tri-pod by 6 months and sit without support between 6-8 months
- Need for complementary foods to support growth
- Increase risk of developing diabetes and obesity when solid foods are started too early.
- Increase risk of choking if the baby is not ready to chew.

2. Some signs that the baby is ready to begin solids foods:

- The baby can sit upright and hold up his head
- The baby is curious and is beginning to be interested in the food around
- The baby has lost the tongue thrust reflex that automatically pushes food out of the mouth
- The baby still seems hungry after getting a full day's portion of milk (8-10 breast feedings or about 32 ounces of formula)



How to start solids?

1. Select foods from the **Five food groups**:
 - Vegetables
 - Fruits
 - Grains
 - Low fat dairy
 - Quality protein- including meats, fish, nuts, seeds and eggs.
2. Offer a variety of foods to experience
3. Avoid highly processed foods
4. Offer age appropriate portions
5. During the first 6 months of life, breast milk or formula will provide practically every nutrient the baby needs.
6. At 6 months babies need more **iron and zinc** in their diet than what milk can provide, therefore it is the perfect time for the introduction of solids.
 - Foods rich in **iron**: spinach, broccoli, red meat, legumes- (beans, lentils, peas, chickpeas), quinoa, pumpkin seeds, turkey, tofu.
 - Foods rich in **zinc**: red meat, legumes, seeds, nuts, dairy, eggs, whole grains- (wheat, quinoa, rice, oats), vegetables- (potatoes, green beans, kale)
7. Do not go low fat crazy- a healthy amount of fat is important for babies' brain and nerve development. Fat is more important for babies than adults, it is crucial for proper cell and brain development and vitamin absorption- especially for absorbing vitamins A, D, E, and K. Under the age of 2 half of the babies' calories should come from healthy fats.
 - **"Good fats"** – polyunsaturated and monosaturated fats- found in fruits, vegetables, like olives, nuts, avocados, healthy fats.
 - **Saturated fats**- found primarily in animal sources, like butter, cheese, meat
 - **Omega-3 fatty acids**-polyunsaturated fatty acids occur primarily in fish oils, and some plants. They are need it for optimum bodily function and help your baby's brain development.
 - *Trans fats*-not considered healthy for babies-typically found in processed foods, can have negative effect in cholesterol and the baby's heart.
 - Right type of fat- avocado, sunflower seed butter, olive oil, nut butters, yogurt, wild caught salmon, whole milk, coconut.
8. Foods to avoid- **honey, and choking hazards- grapes, popcorn, hot dogs**. Honey- because it can be contaminated with a toxin from clostridium botulinum bacteria. As kids get older, they can have honey because their gastrointestinal system can move the spores through the body without causing any harm, which babies cannot do.
9. The Big 8 -introduce this group of highly allergenic foods early, at 6 months. Continue to expose
 - **Milk products** (*yogurt, cheese*)
 - **Soy**
 - **Egg** (*begin with egg yolk and then egg white*)
 - **Fish**
 - **Seafood**
 - **Tree nuts**
 - **Peanut**
 - **Wheat**



What should be a good feeding schedule?

1. At 6 months, you can offer the baby breast milk or a bottle and begin the introduction of solids:
 - First thing in the morning when the baby wakes up offer *-breast or formula.*
 - At around 8-9am offer breakfast *-a solid meal*
 - Around 10am offer a snack can be solid or milk
 - Around noon offer a lunch-*a solid meal*
 - Around 2-3pm a snack (solid or breast or formula)
 - Around 5-6pm dinner-*solid meal*
 - Before bedtime, breastmilk or formula.
2. *(you have to experiment what works best, the solid meal first or the breastmilk or formula first during meals with solid. Never force feed a baby to eat! If the baby shakes his head no, turns away or refuses to open his mouth, try again at another time.)*
3. At 9 months a baby is feeding around 24-28 ounces of breast milk or formula.
4. By 12 months a baby should be feeding around 16-20 ounces of breastmilk or formula and most of the nutrition should be coming from solid meals.

My goal is for babies to be eating on a regular feeding schedule by the time they are 12 months. At this age, babies are big boy and girls and should be feeding 3 full meals: breakfast, lunch and dinner, 1 or 2 snacks a day and no more than 16 ounces of whole milk a day.

What foods should be given and at what age?

There is no specific hard rule as to which should be a baby's first food! The recommendation is to offer the baby a variety of foods, with different flavor and textures so the baby can get use to different tastes.

1. **6 - 7 months:**
 - Babies' stores of iron while in utero drop after birth and reach its lowest around 6-9 months of age. Therefore, the key nutrient at this age are foods rich in **iron**.
 - You can choose to start with iron fortified cereal, however, there are also many foods rich in iron which can be perfect choices. -vegetables, fruits, meat, legumes.
 - Introduce one food at a time, single ingredient food and offer the food a few times a day for a few days. If the baby tolerates the food well, you can advance to
 - Pureed consistencies are ideal to begin solids, a few teaspoons at a time, which can increase depending on the baby's desires.
 - There is a long-standing belief that introducing fruits (sweet foods) before vegetables, can lead to a lifelong preference for sweets, however, there is no research supporting this belief. You can start whatever you want!
 - *Do not add any salt or added sugar to the foods.*
 - *The AAP believes based on multiple studies that the early introduction of highly allergenic foods: **eggs, peanut dairy**, can be beneficial and reduce the risk of developing allergies even in at risk children.*



- The baby should continue to receive most of the nutrition from breastmilk or formula, feeding around 28-32 ounces of a day. This volume will begin to decrease as the baby eats more solids, and will eventually be mostly replaced by solid meals.
- 2. 7 - 8 months:**
 - Babies should continue to feed 3-4 solids meals.
 - Consistencies should be thicker, chunkier, such as mashed beans, lentils, vegetables.
 - While feeding the baby with a spoon, we should allow the baby to feed some finger foods: small wedges of avocado, mashed potato, small wedges of banana etc. Foods which are soft in consistency.
 - Avoid any foods which can be a choking hazard: raw foods such as slices of apple, sticks of carrots. Also, certain shapes, like a whole grape. Difficult textures such as popcorn, a piece of steak, a hot dog, nuts, seeds, raisins.
 - The baby should be able to experiment and enjoy playing with the food and eating with his hands.
 - The baby's volume of milk-breastmilk or formula, should decrease to about 24-28oz a day.
 - 3. 8 – 9 months:**
 - Babies should be feeding 3-4 solid meals a day.
 - Babies should be feeding a greater variety of textures and more finger foods.
 - Foods such as quinoa, couscous, rice, mashed legumes, mashed vegetables.
 - Continue with iron rich foods such as red meat, and more protein such as chicken, fish, turkey.
 - The baby's volume of milk- breastmilk or formula- should decrease to about 24oz a day.
 - 4. 9 – 12 months:**
 - Babies should be feeding a very established schedule of 3 meals: breakfast, lunch and dinner with 1-2 snacks in the morning and in the afternoon.
 - Babies should be completely transitioning out of smooth purees and feeding more textures including soft finger foods, and ground or shredded meats, fish, chicken, turkey. All types of fruits and vegetables in wedges.
 - The baby's volume of milk- breastmilk or formula should decrease to 16-20oz a day.
 - 5. 12 months of age- BIG BOYS and GIRLS**
 - Babies should be feeding 3 meals, 2 snacks and feeding no more than 16 ounces of milk a day.
 - Babies should be feeding all types of textures, eating with the family at mealtimes and sharing a healthy diet.
 - Babies can now eat **HONEY**.

Babies can now begin drinking **MILK**. The recommendation is to transition to whole milk, as it contains all the nutrients, protein, fats, and vitamins essential for brain development and growth. Avoid cow's milk until age 12 months because of the high renal solute load and association with iron deficiency. For babies who were drinking formula, parents can fully transition to whole milk. For babies who are breastfed, parents can choose to wean off breastfeeding or continue with both breast and whole milk, limiting the total volume to no more than 16-20 ounces a day.