

Iron Deficiency Anemia

McKenzie Pediatrics 2010

What Is Anemia?

Anemia means that the number of red blood cells in your child's body is below normal. Red blood cells carry oxygen in the blood stream to the body's cells, and iron is needed for the bone marrow to produce the red blood cells. Iron deficiency is the most common cause of anemia in children, and is usually easily correctable.

What Causes Iron Deficiency?

Iron deficiency results from either too little iron in an infant or child's diet, or too little iron passed from the mother to her fetus during pregnancy. Because most iron is passed in the later weeks of pregnancy, babies who were born premature (before 37 weeks gestation) are more likely to be iron deficient. Babies who feed on human milk are also more likely to become iron deficient, given that one in ten mothers is also iron deficient.

How Do We Screen For Iron Deficiency?

The preferred screening test is known as a hemoglobin screen, performed at ages 9 and 18 months. A small drop of blood is obtained from the toe or heel, and the hemoglobin level is checked by way of a handheld device. If your child's hemoglobin level is 10.5 or less, you will be given a lab requisition slip to have a full complete blood count and serum iron level checked to determine the cause of the anemia. The results are usually returned within 24 hours.

If your child's hemoglobin level is 10.6 to 11.0, we advise increasing the number of iron-rich foods in your child's diet (see the list below), and we will recheck the hemoglobin level at the next well-child appointment. If your young child's hemoglobin level is >11.0, this is considered normal.

How Do We Treat Iron Deficiency?

If your child's serum iron level is low, we may prescribe iron supplements to be taken in addition to boosting iron-rich foods in their regular diet. Iron supplements need to be taken for a minimum of 3 months in order to restore your child's hemoglobin and red blood cell count to normal levels. We would like for the complete blood count and iron level to be rechecked 6 weeks after starting therapy to assure that the replacement therapy is working.

Iron supplements should be taken with food to reduce the upset stomach that may occur. You might consider mixing the iron drops with orange juice to help disguise the flavor. Foods rich in Vitamin C help to increase the amount of iron that is absorbed into the body; such foods include: citrus fruits, pineapples, strawberries, cantaloupe, kiwifruit, raspberries, bell peppers, broccoli, tomatoes, cabbage, potatoes, leafy green vegetables, and cauliflower.

Iron supplements, if not mixed with juice, need to be given towards the back of the mouth to avoid staining the teeth. If the teeth become stained, brushing them with baking soda usually removes the stains. Iron supplements may also change the color of the bowel movements to a greenish-black color, which is harmless, but be sure that your child drinks plenty of fluids to avoid becoming constipated.

Most importantly, keep the iron out of reach! An overdose of iron is potentially fatal.

What If I Choose Not To Give My Child Iron Supplements?

Chronic anemia leads to chronic oxygen starvation for the cells of the body and all its organs, most importantly the brain. This may lead to slower development and slower growth during the most important years of your young, developing child's life. These developmental delays will likely be permanent if the iron deficiency anemia is not corrected by age two years.

Dietary measures alone can help those children with MILD anemia, but more moderate or severe anemia seldom is correctable through diet alone.

What Are Good Dietary Iron Sources?

Infants and young children need a minimum of 12 milligrams of iron daily from their diet. Formula-fed infants usually receive enough iron from their fortified formula. However, young children fed human milk may not be getting enough iron from their mother, which is why it is extra important that they be started on iron-fortified infant cereals by 4 to 6 months of age.

Commercial baby foods that contain meat usually have between 0.5 and 1.0 milligram of iron per jar. Baby food vegetables that contain iron include green beans, peas, spinach, and sweet potatoes (between 0.7 and 0.9 milligrams per jar). Infant cereals contain between 1.1 and 1.8 milligrams of iron per tablespoon.

For the older infant and toddler, good animal sources of dietary iron (in descending order) include: clams, chicken liver, oysters, beef liver, shrimp, lean beef, sardines, dark-meat turkey, lamb, tuna, chicken, light-meat turkey, pork, and salmon.

Non-animal sources of iron (in descending order) include: instant oatmeal, tofu, wheat germ, fortified ready-to-eat cereals, soybeans, dried apricots, sunflower seeds (only use baked into something because of the choking risk), lentils, spinach, chickpeas/garbanzo beans/hummus, dried prunes, navy/kidney/pinto beans, seedless raisins, prune juice, whole eggs, fortified white rice, bread, pasta, and peanut butter.

A Note About Premature Infants

Babies born prematurely (before 37 weeks gestation) usually are iron deficient because they did not have enough time to receive the full amount of iron they need from their mother. Because of this, if a premature baby is being fed human milk, daily iron supplementation is usually started at age 1 month, and continued until 12 months, or until human milk is discontinued and iron-fortified formula is begun.