

Tennessee Family Medicine

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Iron in diet

Definition

Iron is a mineral found in every cell of the body. Iron is considered an essential mineral because it is needed to make part of blood cells.

Alternative Names

Diet - iron

Function

The human body needs iron to make the oxygen-carrying proteins hemoglobin and myoglobin. Hemoglobin is found in red blood cells and myoglobin is found in muscles.

Iron also makes up part of many proteins in the body.

Food Sources

The best sources of iron include:

- Dried beans
- Dried fruits
- Eggs (especially egg yolks)
- Iron-fortified cereals
- Liver
- Lean red meat (especially beef)
- Oysters
- Poultry, dark red meat
- Salmon
- Tuna
- Whole grains

Reasonable amounts of iron are also found in lamb, pork, and shellfish.

Iron from vegetables, fruits, grains, and supplements is harder for the body to absorb. These sources include:

- Dried fruits
 - prunes

- raisins
- apricots
- Legumes
 - lima beans
 - soybeans
 - dried beans and peas
 - kidney beans
- Seeds
 - almonds
 - Brazil nuts
- Vegetables
 - broccoli
 - spinach
 - kale
 - collards
 - asparagus
 - dandelion greens
- Whole grains
 - wheat
 - millet
 - oats
 - brown rice

If you mix some lean meat, fish, or poultry with beans or dark leafy greens at a meal, you can improve absorption of vegetable sources of iron up to three times. Foods rich in vitamin C also increase iron absorption.

Some foods reduce iron absorption. For example, commercial black or pekoe teas contain substances that bind to iron so it cannot be used by the body.

Side Effects

LOW IRON LEVELS

The human body stores some iron to replace any that is lost. However, low iron levels over a long period of time can lead to iron deficiency anemia. Symptoms include lack of energy, shortness of breath, headache, irritability, dizziness, or weight loss. For more details on this condition see iron deficiency anemia.

Those at risk for low iron levels include:

- Women who are menstruating, especially if they have heavy periods
- Women who are pregnant or who have just had a baby

- Long-distance runners
- Strict vegetarians
- People with any type of bleeding in the intestines (for example, a bleeding ulcer)
- People who frequently donate blood
- People with gastrointestinal conditions that make it hard to absorb nutrients from food

Babies and young children are at risk for low iron levels if they do not receive the appropriate foods. Babies moving to solid foods should eat iron-rich foods. Infants are born with enough iron to last about six months. An infant's additional iron needs are met by breast milk. Infants that are not breastfed should be given an iron supplement or iron-fortified infant formula.

Children between age 1 and 4 grow rapidly, which uses up iron in the body. They should be given iron-fortified foods or iron supplements. Note: Milk is a very poor source of iron. Children who drink large quantities of milk and avoid other foods may develop "milk anemia." Recommended milk intake is two to three cups per day for toddlers.

Adolescents are more prone to low iron levels because of rapid growth rates and inconsistent eating habits.

TOO MUCH IRON

The genetic disorder called hemochromatosis affects the body's ability to control how much iron is absorbed. This leads to too much iron in the body. Treatment consists of a low-iron diet, no iron supplements, and phlebotomy (blood removal) on a regular basis.

It is unlikely that a person would take too much iron. However, children can sometimes develop iron poisoning by swallowing too many iron supplements. Symptoms of iron poisoning include:

- Fatigue
- Anorexia
- Dizziness
- Nausea
- Vomiting
- Headache
- Weight loss
- Shortness of breath
- Grayish color to the skin

See: National Poison Control center

Recommendations

The Food and Nutrition Board at the Institute of Medicine recommends the following:

Infants and children

- Younger than 6 months: 0.27 milligrams per day (mg/day)
- 7 months to 1 year: 11 mg/day
- 1 to 3 years: 7 mg/day
- 4 to 8 years: 10 mg/day