

# Iron

Iron is a trace mineral found in every cell of the body. Iron is an essential mineral for humans because it is part of blood cells. Iron is part of the molecules hemoglobin (in red blood cells) and myoglobin (in muscles). The role of both of these molecules is to carry oxygen. Iron also makes up part of many proteins and enzymes in the body.

## Food Sources

The **best sources** of iron include:

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

**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:

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

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.

## Deficiency

The human body stores some iron to replace any that is lost. However, continual low iron can lead to a type of anemia. (See iron deficiency anemia.) This is the most common nutritional deficiency worldwide.

The symptoms of low iron include lack of energy, shortness of breath, headache, irritability, dizziness, or weight loss. Other symptoms include pica (the development of an appetite for unusual substances such as paper or clay products) and pacophagia (the development of an appetite for ice).

If you have constant tiredness, see your doctor. There are many causes of such symptoms, and simply taking an iron supplement may not be enough.

Those at risk for low iron include:

- Menstruating women, especially those with heavy periods.
- Pregnant and postpartum women -- extra iron is needed to meet the needs of the growing fetus and to make up for iron lost due to blood loss during childbirth.
- Babies moving to solid foods -- foods containing high amounts of iron should be selected to prevent the development of iron deficiency. (Infants are born with iron stores that last about six months. An infant's additional iron needs are met by breast milk. A non-breast-fed infant's iron needs can be met with an iron supplement or iron-fortified infant formula.)
- Toddlers between 1 and 4 years of age -- they experience rapid growth and a possible lack of iron in their diets, unless iron-fortified foods or a supplement is available. Because milk is a very poor source of iron, children who drink large quantities of milk at the expense of other foods may develop "milk anemia." Recommended milk intake is two to three cups per day for toddlers.
- Adolescents -- both boys and girls -- traditionally have been prone to anemia because of rapid growth rates, erratic eating habits, and concerns about body image.
- Long-distance runners -- demanding exertions may damage red blood cells.
- Strict vegetarians.
- People with any type of intestinal blood loss (for example, from bleeding lesions).
- People who frequently donate blood.
- People with absorption problems in the gastrointestinal tract, such as celiac sprue or having had portions of the intestines removed, which may lead to low levels of iron.

## Recommendations

According to USDA recommendations, the allowances of dietary iron intake are as follows:

- Males and females
  - Younger than 6 months: 6 mg
  - 6 months to 1 year: 10 mg
  - 1 to 10 years: 10 mg
- Males
  - 11 to 18 years: 12 mg
  - 19 and older: 10 mg
- Females
  - 11 to 50: 15 mg
  - 51 and older: 10 mg
  - Pregnant: 30 mg
  - Lactating: 15 mg

Any male or postmenopausal female with iron deficiency should be evaluated by a health care provider to rule out whether the problem may be due to a more serious gastrointestinal cause, such as ulcers, polyps, or tumors.

Adapted from: <http://www.nlm.nih.gov/medlineplus/ency/article/002422.htm>