

# **Iron Deficiency Anemia**

**Signs of iron deficiency anemia** [1,5-6,42]:

- feeling tired and weak
- decreased work and school performance
- slow cognitive and social development during childhood
- difficulty maintaining body temperature
- decreased immune function, which increases susceptibility to infection
- glossitis (an inflamed tongue)

**Who may need extra iron to prevent a deficiency?**

Three groups of people are most likely to benefit from iron supplements: people with a greater need for iron, individuals who tend to lose more iron, and people who do not absorb iron normally. These individuals include [1,36-38,41,49-57]:

- pregnant women
- preterm and low birth weight infants
- older infants and toddlers
- teenage girls
- women of childbearing age, especially those with heavy menstrual losses
- people with renal failure, especially those undergoing routine dialysis
- people with gastrointestinal disorders who do not absorb iron normally

Women taking oral contraceptives may experience less bleeding during their periods and have a lower risk of developing an iron deficiency. If laboratory tests indicate iron deficiency anemia, iron supplements may be recommended.

Total dietary iron intake in vegetarian diets may meet recommended levels; however that iron is less available for absorption than in diets that include meat [58]. Vegetarians who exclude all animal products from their diet may need almost twice as much dietary iron each day as non-vegetarians because of the lower intestinal absorption of nonheme iron in plant foods [1]. Vegetarians should consider consuming nonheme iron sources together with a good source of vitamin C, such as citrus fruits, to improve the absorption of nonheme iron [1].

**Some facts about iron supplements**

Iron supplementation is indicated when diet alone cannot restore deficient iron levels to normal within an acceptable timeframe. Supplements are especially important when an individual is experiencing clinical symptoms of iron deficiency anemia. The goals of providing oral iron supplements are to supply sufficient iron to restore normal storage levels of iron and to replenish hemoglobin deficits. When hemoglobin levels are below normal, health care providers often measure serum ferritin, the storage form of iron. A serum ferritin level less than or equal to 15 micrograms per liter confirms iron deficiency anemia in women, and suggests a possible need for iron supplementation [33].

Supplemental iron is available in two forms: ferrous and ferric. Ferrous iron salts (ferrous fumarate, ferrous sulfate, and ferrous gluconate) are the best absorbed forms of iron supplements [64]. Elemental iron is the amount of iron in a supplement that is available

for absorption. Ferrous fumarate contains about 33 % elemental iron, Ferrous Sulfate 20%, and Ferrous gluconate 12%.

The amount of iron absorbed decreases with increasing doses. For this reason, it is recommended that most people take their prescribed daily iron supplement in two or three equally spaced doses. For adults who are not pregnant, the CDC recommends taking 50 mg to 60 mg of oral elemental iron (the approximate amount of elemental iron in one 300 mg tablet of ferrous sulfate) twice daily for three months for the therapeutic treatment of iron deficiency anemia [33].

Therapeutic doses of iron supplements, which are prescribed for iron deficiency anemia, may cause gastrointestinal side effects such as nausea, vomiting, constipation, diarrhea, dark colored stools, and/or abdominal distress [33]. Taking the supplement in divided doses and with food may help limit these symptoms. Iron from enteric coated or delayed-release preparations may have fewer side effects, but is not as well absorbed and not usually recommended [64].

### **What is the risk of iron toxicity?**

There is considerable potential for iron toxicity because very little iron is excreted from the body. Thus, iron can accumulate in body tissues and organs when normal storage sites are full.

In children, death has occurred from ingesting 200 mg of iron [7]. **It is important to keep iron supplements tightly capped and away from children's reach. Any time** excessive iron intake is suspected, **immediately** call your physician or Poison Control Center, or visit your local emergency room. Doses of iron prescribed for iron deficiency anemia in adults are associated with constipation, nausea, vomiting, and diarrhea, especially when the supplements are taken on an empty stomach [1].

Adapted from Office of dietary Supplements Fact Sheet: Iron

For more information and references, visit <http://ods.od.nih.gov/factsheets/iron.asp> or ask your midwife.