

# IRON DEFICIENCY ANEMIA

Anemia is a decrease in hemoglobin, the molecule that carries oxygen in red blood cells and supplies this oxygen to our brains and tissues. Iron is necessary for the creation of hemoglobin, and iron deficiency anemia is the most common human anemia. As iron levels decrease (most commonly from blood loss, such as menses, or from an iron-poor diet), red blood cells become fewer, paler, smaller and less able to carry oxygen to the tissues of the body. Groups most prone to iron deficiency anemia include growing infants and adolescents, menstruating women and pregnant women. Iron deficiency is uncommon in adult American men unless there is an undetected blood loss (such as blood loss in the stool from an ulcer, polyp or tumor).

Iron deficiency is diagnosed by symptoms and blood tests (CBC, ferritin, others). Since most iron deficiencies develop very slowly (over months and years), many



patients do not notice any symptoms until their anemia is severe. Due to this fact, a blood count (CBC) is often included as a part of a woman's yearly gynecologic exam. When symptoms develop, they are most often nonspecific, and can include fatigue, decreased exercise tolerance and sometimes difficulty concentrating. As the anemia progresses, patients may develop a paleness of the inside of the eyelids and the nail beds. "Pica," which is the compulsive eating of starch, dirt, clay, tar, paper or ice, can also be seen.

Treatment of iron deficiency, except in the most severe or persistent cases, is accomplished by iron supplementation by mouth. Iron is present in many foods. Meat (especially liver and red meats), fish, and iron-enriched cereals and breads are excellent sources of iron. Green leafy vegetables and eggs are also high in iron, but the iron is less usable (bioavailable) due to binding to phosphates and phytates in these foods.

Iron supplements are available both by prescription and over the counter. Many vitamins contain 65 mg. of iron (usually in the ferrous sulfate form) and can help to maintain iron levels in young women. In general, it is not necessary to pay inflated prices for "name brand" vitamins; generics are cheaper and usually just as effective. Prescription iron (ferrous sulfate) commonly comes in 300-325 mg. tablets, which may be prescribed one to three times a day. Iron supplements are available at virtually all pharmacies at reasonable prices.

Iron is best absorbed on an empty stomach. However, the major side effects of oral iron are all gastrointestinal: stomach upset, heartburn, cramping, constipation, and occasionally vomiting. Most of these symptoms are dose related (more iron pills lead to more side effects). They can be improved by taking the iron with some food, using ferrous gluconate, liquid, coated or time-

release iron, all of which increase the cost. If side effects occur, discuss your symptoms with your health care provider. It should also be noted that iron can be toxic when overdosed, so iron prescriptions should be kept out of the reach of children and iron supplementation should not be taken without a diagnosis of iron deficiency by a healthcare provider. It is usually safe, however, to take a multivitamin with iron at doses recommended by the manufacturer (usually one tablet a day).

The response to iron therapy can usually be noted on special blood tests (reticulocyte counts) within 4 to 7 days. Blood counts usually return to near normal over several weeks. Your provider will repeat the blood count after one to three months in cases of significant anemia. Iron therapy is often continued for an additional 3 to 6 months to replenish iron stores in the body. Do not continue to take iron supplements unless recommended by your healthcare provider.

Michael J. Huey, MD, 1992. Updated Carolyn Krone, ARNP, California State University, Bakersfield Student Health Services 1996. Updated Michael J. Huey, MD, 2004.

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### Helpful links:

The American Academy of Family Physicians patient information web site (familydoctor.org), at <http://familydoctor.org/x2682.xml>.

The Emory Healthcare Health Information Library at <http://healthlibrary.epnet.com/GetContent.aspx?deliverycontext=&touchurl=&CallbackURL=&token=8482e079-8512-47c2-960c-a403c77a5e4c&chunkid=14683&docid=/healthy/woman/2000/anemia/index>

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