

Dietary Sources of Iron

Iron is essential to all body cells. Iron functions primarily as a carrier of oxygen in the body, both as a part of hemoglobin in the blood and of myoglobin in the muscles. Iron deficiency anemia occurs when there is not enough iron in the red blood cells. This is a common problem often caused by pregnancy, blood loss, a diet low in iron or poor absorption of iron by the body. There are a variety of possible symptoms of iron deficiency including:

- lack of energy or tiredness
- extreme fatigue and feeling of weakness
- pale skin
- light headedness
- headache
- pale skin on the lining of the eyes, the inner mouth and the nails
- rapid and forceful heartbeat
- low blood pressure with position change from sitting to standing up
- finger nails that become thin, brittle and white – they may grow abnormally and get a spoon-shaped appearance
- tongue may become sore, smooth and reddened
- decrease in appetite
- shortness of breath during exercise
- brittle hair
- reduction in immunity and increased vulnerability to infection
- a strong desire to eat nonfoods such as ice, paint or dirt (a condition called Pica)
- disturbed sleep
- abdominal pain

Because the typical symptoms of iron deficiency have many causes, diagnosis by a blood test is needed to confirm the presence of iron deficiency anemia.

If your blood iron level is low, your health care provider may refer you to a dietitian to discuss a dietary increase in iron-rich foods. He or she may also recommend a multivitamin pill or prescribe an iron supplement. Although iron is found in a variety of different foods and supplements, its availability to the body varies significantly. In general, iron is not readily absorbed by the body. Availability is partially determined by whether the iron is found in the form of HEME or NON-HEME iron.

HEME iron is found only in meat, fish and poultry and is absorbed much more easily than NON-HEME iron, which is found primarily in fruits, vegetables, dried beans, nuts and grain products.

The Recommended Dietary Allowance (RDA) for iron for non-vegetarian pre-menopausal women is 18 mg/day. The RDA for non-vegetarian men and post-menopausal women is 8 mg/day. Because of iron absorption issues in a healthful, high-fiber vegetarian diet, the RDAs for vegetarians are higher - 14 mg/day for vegetarian men and 33 mg/day for vegetarian women. The upper level of intake should not exceed 45mg/day.

HEME IRON SOURCES

| Food Source | Serving Size (oz.) | Iron (mg) |
|----------------------------|--------------------|-----------|
| Beef, liver | 3.0 | 7.5 |
| Beef, corned | 3.0 | 2.5 |
| Beef, lean ground; 10% fat | 3.0 | 3.9 |
| *Beef, round | 3.0 | 4.6 |
| *Beef, chuck | 3.0 | 3.2 |
| *Beef, flank | 3.0 | 4.3 |
| Chicken, breast w/out bone | 3.0 | 0.9 |
| Chicken, leg w/bone | 2.0 | 0.7 |
| Chicken, liver | 3.0 | 7.3 |
| Chicken, thigh w/ bone | 2.3 | 1.2 |
| Cod, broiled | 3.0 | 0.8 |
| Flounder, baked | 3.0 | 1.2 |
| *Pork, lean ham | 3.0 | 1.9 |
| *Pork, loin chop | 3.0 | 3.5 |
| Salmon, pink canned | 3.0 | 0.7 |
| Shrimp, 10 - 2 1/2 inch | 1.1 | 0.5 |
| Tuna, canned in water | 3.5 | 1.0 |
| Turkey, dark meat | 3.0 | 2.0 |
| Turkey, white meat | 3.0 | 1.2 |

*Lean, trimmed of separable fat

NON-HEME FOOD SOURCES

| Food Source | Serving Size | Iron (mg) |
|------------------------------|--------------|-----------|
| Almonds, raw | 10 - 12 each | 0.7 |
| Apricots, dried, med.-size | 10 each | 1.7 |
| Bagel | 1 whole | 1.5 |
| Baked beans, canned | 1/2 cup | 2.0 |
| Bread, white | 2 slices | 1.4 |
| Bread, whole wheat | 2 slices | 1.7 |
| Broccoli, cooked | 1/2 cup | 0.6 |
| Broccoli, raw | 1 stalk | 1.1 |
| Dates | 10 each | 1.6 |
| Kidney beans | 1/2 cup | 3.0 |
| Lima beans | 1/2 cup | 1.8 |
| Macaroni, enriched, cooked | 1 cup | 1.9 |
| Molasses, blackstrap | 1 tbsp. | 2.3 |
| Peas, frozen and prepared | 1/2 cup | 1.3 |
| Prune juice | 1/2 cup | 1.5 |
| Raisins, not packed | 1/4 cup | 1.0 |
| Rice, brown, cooked | 1 cup | 1.0 |
| Rice, white enriched, cooked | 1 cup | 1.8 |
| Spaghetti, enriched, cooked | 1 cup | 1.6 |
| Spinach, cooked | 1/2 cup | 2.0 |
| Vitamin supplements | varies | varies |

In addition, many breakfast cereals are iron-fortified. Check nutrition information on package label for specific iron content.

The following factors will increase the iron absorption from non-heme foods:

- A good source of vitamin C (ascorbic acid) - i.e., oranges, grapefruits, tomatoes, broccoli, bell peppers, and strawberries, eaten with a NON-HEME food
- A HEME and NON-HEME food eaten together
- A NON-HEME food cooked in an iron pot, such as a cast iron skillet

The following factors will decrease non-heme iron absorption:

- Large amounts of tea or coffee consumed with a meal (the polyphenols bind the iron).
- Excess consumption of high fiber foods or bran supplements (the phytates in such foods inhibit absorption).
- High intake of calcium - take your calcium supplement at a different time from your iron supplement.