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Food Sources:

Iron

The Recommended Dietary Allowances (RDAs) for iron are as follows:[1]

- **Females, ages 19-50:** 18 milligrams (mg) per day
- **Females, ages 51+:** 8 mg per day
- **Females (pregnant), ages 19-50:** 27 mg per day
- **Females (lactating), ages 19-50:** 9 mg per day
- **Males, ages 19+:** 8 mg per day
- **Vegetarians and vegans:** The iron needs of vegetarians and vegans are 1.8 times higher than for people who eat meat, poultry, and seafood because iron absorption from plant foods is lower than animal foods.[4] This means the RDA is 14 mg/day for a vegetarian male, 33 mg/day for vegetarian females ages 19-50, and 14 mg/day for vegetarian females ages 51+.

Iron is a mineral found in a variety of foods and added to others through the fortification process. The amount of iron absorbed from food depends on whether the iron is in the heme or non-heme form and the presence of other dietary factors. This guide discusses the two forms of dietary iron, food sources of each, and foods that influence iron absorption, to help you optimize your iron intake.

Iron plays an important role in hundreds of processes in the body, particularly oxygen transport, energy production, DNA synthesis, and immune function.[1] Iron deficiency is the most common nutritional deficiency in the world[2] and can cause anemia,[3] a condition that affects the transport of oxygen throughout the body.

Heme Iron and Non-Heme Iron

Dietary iron is available in two forms – heme iron and non-heme iron. Non-heme iron is the exclusive form of iron found in plant foods and fortified foods. Heme iron is the primary form of iron found in animal foods, including meat, poultry, seafood, and eggs. However, meat and eggs also provide some non-heme iron.[5,6] Many peoples' dietary iron intake comes primarily from non-heme iron, though individual dietary choices affect the amounts of heme and non-heme iron in the diet.[7,8]

Heme iron is better absorbed by the body than non-heme iron.[3] This is why vegans and vegetarians have higher daily iron intake needs than those who eat meat, poultry, and seafood.[3] Consuming vitamin C with non-heme iron is linked to modest improvements in iron absorption, but this strategy may not help those with very low iron levels and depends on the amount of vitamin C consumed.[9]

The following tables show foods that are healthy sources of heme and non-heme iron:[10]

Table 1. Heme Iron Foods

Food, Standard Serving Size	Average Iron Content (in milligrams)
Organ meats, grass-fed and organic (beef, chicken, or turkey liver, heart, kidney, giblets, etc.), 3 ounces	2.9-11
Mussels, 3 ounces	5.7
Oysters (steamed), 3 ounces/6 medium	5.3
Bison chuck roast (braised), 3 ounces	4.1
Duck breast (roasted), 3 ounces	2.8
Ground bison, grass-fed, 3 ounces	2.7
Beef chuck roast (braised), 3 ounces	2.6

Table 1. Heme Iron Foods (continued)

Food, Standard Serving Size	Average Iron Content (in milligrams)
Ground beef, 90% lean (baked), 3 ounces	2.5
Duck egg, 1 whole egg	2.5
Sardines (Atlantic, canned), 3 ounces	2.5
Clams (steamed), 3 ounces	2.4
Turkey, dark meat, 3 ounces	1.2
Chicken egg, 1 whole egg	0.9
Chicken breast, skinless, 3 ounces	0.4

Non-Heme Iron Foods

Food, Standard Serving Size	Average Iron Content (in milligrams)
Breakfast cereal (fortified with 100% Daily Value), ½ cup	12
Soybeans, ½ cup	4.4
White beans (canned), ½ cup	3.9
Blackstrap molasses, 1 tablespoon	3.6
Lentils, ½ cup	3.3
Spinach (cooked), ½ cup	3.2
Chickpeas, ½ cup	2.4
Adzuki beans, ½ cup	2.3
Navy beans, ½ cup	2.2
Kidney beans, ½ cup	1.5
Pumpkin seeds (roasted), 1 tablespoon	1.5
Tofu, 3 ounces	1.4
Sesame seeds, 1 tablespoon	1.3
Collard greens (cooked), ½ cup	1
Cashews, 6	0.5

Foods That Affect Iron Absorption

Some foods are linked to decreased or increased iron absorption. Tea and coffee contain phytonutrients that reduce iron absorption,[4] and regularly drinking these beverages is associated with lower iron levels.[11,12] However, that doesn't mean you need to avoid these healthy beverages – just drink them in moderation and space them away from iron-rich foods.[13]

Consuming calcium-rich foods and calcium supplements near iron-rich foods and iron supplements is linked to reduced iron absorption in the short-term.[14] However, whether this dietary habit affects long-term iron levels is unclear.[14] Until more research is available, consume calcium-rich foods and supplements away from iron-rich foods and supplements.

Prebiotics are linked to improved iron absorption.[15,16] Prebiotics are food components that increase health-promoting gut bacteria.[17-19] They may enhance iron absorption by increasing intestinal acidity, which releases iron from food and makes it more available for absorption.[15,16] Examples of prebiotics include fructooligosaccharides (FOS) and galactooligosaccharides (GOS). FOS are found in

asparagus, artichokes, bananas, chicory, garlic, honey, and wheat,[20] and GOS are found in dairy products and legumes.[21]

Adding small amounts of heme iron foods to meals with non-heme iron foods is linked to improved non-heme iron absorption.[22,23] This could look like adding a small amount of red meat, poultry, or fish to a legume-based meal.

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