



RDN Resources for Consumers:

Iron in Vegetarian Diets

Iron Overview

Iron is a mineral that is naturally present in many foods, added to certain food products, and available as a dietary supplement. It is an essential mineral needed to help red blood cells supply oxygen to our muscles for energy. It is also involved in other body processes such as helping to build our immune system and DNA synthesis.

Iron Deficiency

Iron deficiency is the most common nutrient deficiency globally. It occurs most often in young children, pregnant women, and women of childbearing age. Iron status is easily assessed through blood tests administered by a physician.

Low iron levels can result in anemia. Symptoms of iron-deficiency anemia are fatigue, a fast heartbeat, and shortness of breath during physical activity.

Dietary Iron

There are two types of iron in food: heme and non-heme.

Much of the iron in meat is heme iron, which is more easily absorbed from food and used by your body. Plant foods contain only non-heme iron. Although some plant foods are good sources of iron, it is often attached to compounds that reduce its absorption. These compounds are called phytates and are found in whole grains and dried beans.

Compounds in coffee and tea also reduce iron absorption, as do calcium supplements.

Vitamin C can counter the effects of some of these compounds. Eating vitamin C-rich foods and iron-rich foods at the same time can increase iron absorption. Good sources of vitamin C include oranges, grapefruits, strawberries, green leafy vegetables (kale, collard greens, Swiss chard), broccoli, Brussels sprouts, bell peppers (yellow, red, and green), and cauliflower.

Iron and Vegetarians

Vegetarian (including vegan) men and women tend to have less iron stored in their bodies than people who eat meat.

There is not a separate iron daily requirement for vegetarians. However, doing the following to increase iron absorption will be more effective than increasing the amount of iron in your diet:

- Include vitamin C-rich foods in meals
- Drink coffee and tea between meals rather than with them
- Take calcium supplements between meals

If you think you might have low iron, ask your doctor to test for it. Iron supplements are the treatment for anemia for both vegetarians and meat-eaters.

Iron and Chronic Disease

Everyone has iron storage in his or her body. Vegetarians tend to have lower stores than people who eat meat. Their lower stores may be beneficial as too much iron in the body may contribute to diabetes and possibly premature death. High amounts of iron in the diet may also contribute to

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colon cancer. The research in these areas is mixed and more evidence is needed before conclusions can be drawn.

There is also an uncommon disease called hemochromatosis in which someone absorbs iron very easily. This disease is genetic and people of Northern European descent are at the highest risk. The excess iron builds up and can lead to liver damage and many other problems. For this reason, it is a good idea for men, especially, to have their iron levels tested at some point to make sure they are not absorbing too much iron.

Because very high iron levels may raise disease risk, it's a good idea to avoid high doses of iron from supplements. Iron supplements can also cause constipation. Check with your doctor or registered dietitian nutritionist before adding an iron supplement to your diet.

Athletes

Vegetarian athletes may be at risk for low intakes of iron. Iron deficiency can reduce athletic performance, with or without anemia, by impairing muscle function.

People, especially females, who take part in regular, intense endurance exercise, especially running, need more iron. The average requirement may be 30% to 70% higher in athletes due to the loss of very small amounts of iron that occurs with intense exercise.

Low iron status typically results from limited intake of iron rich foods and low calorie intake. Some athletes in intense training may lose iron through sweat, urine, and feces.

Conclusion

Iron is an essential mineral needed to help our red blood cells, DNA synthesis, and immune system. If you feel you are at risk for low iron, talk to your registered dietitian nutritionist or doctor to find an option that's best for you.

Iron Content of Selected Foods

Food	Serving	Prep	Iron (mg)
Vegetables			
Spinach	1/2 C chopped	boiled	3.2
Swiss chard	1/2 C chopped	boiled	2.0
Grains			
Oatmeal	1/2 C	cooked	1.0
Rice (white, long-grain, enriched)	1/2 C	cooked	1.4
Soy Products & Legumes			
Tempeh	3 oz	cooked	1.5
Soy milk	1 C		1.0 - 1.5
Nuts			
Almonds	1/4 C	roasted	1.3
Pistachios	1/4 C	dry roasted	1.2
Fruits			
Dried figs	1/2 C		1.5
Raisins	1/2 C		1.4
Enriched Cereals			
Grape nuts	1/2 C		16
Total- whole grain	1/2 C		8.0
Other			
Molasses	2 T		3.8

A registered dietitian nutritionist can help you develop a healthy vegetarian eating plan that meets your needs. To find an RDN in your area, visit <http://www.eatright.org/find-an-expert>