

7018 - Iron, the Body's Gold: Are you Getting Enough?



Every living cell in the body contains iron. It is a component of two proteins: **hemoglobin** in red blood cells, and **myoglobin** in muscle cells.

Hemoglobin proteins are responsible for carrying fresh oxygen from the lungs to tissues throughout the body. **Myoglobin proteins** are responsible for carrying and storing oxygen for muscles. Therefore, Iron is so important because it helps these proteins hold and carry oxygen and then release it. Iron is also needed to create new cells, amino acids, hormones, and neurotransmitters as well as helping many enzymes to use oxygen. These tasks are critical for your body's proper functioning and this is why it is vital that you get enough iron!

➤ What happens when you don't get enough Iron?

Iron deficiency or iron deficiency anemia can develop when you do not consume or absorb enough iron.

Iron deficiency is when the body has depleted iron stores, which can cause iron deficiency anemia.

Iron deficiency anemia is caused by having a lack of iron and is characterized by smaller red blood cells that are lighter in colour than normal. Anemia literally means "too little blood". When the body does not have enough iron, it will be making fewer and smaller red blood cells and will have less hemoglobin, resulting in a lack of oxygen being delivered to the body's cells. This limited supply of oxygen hinders the cells' energy metabolism and can greatly affect your energy levels.

➤ Who is at risk for iron-deficiency anemia?

Women are especially vulnerable to iron deficiency anemia because not only do they need more iron than men, but they also tend to eat less food. Infants over six months of age, young children, adolescents, menstruating women, and pregnant women all have increased need for iron to support the growth of new body tissues or replace losses.

➤ Common causes of Iron-deficiency anemia:

- **Heavy menstrual bleeding:** Because most of the iron in the body is in the blood, losing blood means losing iron. Women need one and a half times as much iron as men do due to menstrual losses.
- **Not getting enough iron from food:** Many substances in foods can hinder iron absorption such as coffee or tea, so eating the right foods at the right time is important.
- **Bleeding inside the body.** This can be caused by ulcers, hemorrhoids or cancer. Bleeding inside the body is the most common cause of iron deficiency anemia in men and in women after menopause.
- **Poor iron absorption in the body:** This can occur in people with celiac disease or if one has had part of their stomach or small intestine removed.

Symptoms of Iron Deficiency Anemia:

- weakness
- fatigue
- dizziness
- irritability
- headaches
- pale skin
- trouble concentrating
- clumsiness
- lack of appetite
- intolerance to cold



- **How much Iron do you need?** The Recommended Dietary Allowance (RDA) for Iron is 8mg/day for men (19-50 years old). Women (19-50 years old) need 18mg/day and women who are pregnant need significantly more iron at 27mg/day. Women 51+ need 8mg/day.

Sources of Iron: To meet your iron needs it is best to get it from food sources because they are absorbed into the body more effectively than through supplements. Some women may need a supplement though, if they experience heavy menstrual cycles or if they are pregnant. However, do not take a supplement without a physician's recommendation as too much iron can lead to iron toxicity.

Iron occurs in two forms in foods. **Heme iron** is the iron containing part of hemoglobin and myoglobin in meat, poultry, and fish. **Nonheme iron** is found in foods from plants and the nonheme iron in meats. These two types of iron differ in their absorption in the body. Heme iron is absorbed much easier than nonheme iron.

Heme Iron Food Sources	Amount of Iron (mg)	Serving Size
Clams	21 mg	75g
Liver (beef)	4.9mg	75g
Oysters	6.4mg	75g
Mussels	5mg	75g
Beef	2.4mg	75g
Shrimp	2.3mg	75g
Non heme Iron Food Sources	Amount of Iron (mg)	Serving Size
Pumkin seeds	8.6mg	1/4 cup
Tofu	8.0mg	3/4 cup
Soybeans	6.5mg	3/4 cup
Lentils	4.9mg	3/4 cup
Enriched cold cereal	4.0mg	30g
Dark red kidney beans	3.9mg	3/4 cup
Spinach	3.2mg	1/2 cup
Swiss Chard	3.2mg	1/2 cup

Ways to increase Iron Absorption: Meat, Fish, and Poultry contain a factor that helps in the absorption of nonheme iron present in the same foods or in other foods eaten at the same time and this is called the **MFP factor**. Therefore by combining one of these foods with plant forms of iron can help increase your absorption of nonheme iron. For example when you eat meat with legumes (ie. chilli with ground beef and kidney beans) the iron from the meat is well absorbed and the MFP factor *enhances iron absorption from the beans*.

Vitamin C also aids in the absorption of iron and can almost triple nonheme iron absorption from foods eaten in the same meal. For example the vitamin C from a slice of tomato and a leaf of lettuce in a sandwich will *enhance iron absorption from the bread*.

However, some substances **inhibit** iron absorption, they include;

- tannins of tea and coffee because they bind to iron and denature the proteins.
- calcium and phosphorus in milk
- phytates that are found in lightly processed *fiber* which also bind to iron preventing absorption.

Thus, the absorption of iron depends on the interaction between the promoters and inhibitors of iron absorption. Therefore a coffee would be better to drink between meals rather than with or right after a meal because it would negatively affect your iron absorption.