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# Iron

## What is iron?

Iron is a **mineral** [<https://medlineplus.gov/minerals.html>] that our bodies need for growth and development. Your body uses iron to make hemoglobin, a protein in red blood cells. Hemoglobin carries oxygen from the lungs to all parts of the body. Iron is also important for healthy muscles, bone marrow, and organ function. Your body also needs iron to make some **hormones** [<https://medlineplus.gov/hormones.html>] .

## How do you get iron?

Iron is found naturally in many foods and is added to some fortified food products. Foods that are high in iron include:

- Lean meat, seafood, and poultry
- Iron-fortified breakfast cereals and breads
- White beans, lentils, spinach, kidney beans, and peas
- Nuts and some dried fruits, such as raisins

Iron is available in supplements, either on its own or as part of many multivitamin/mineral supplements.

## What causes low iron?

Most people in the United States get enough iron. The amount that you need each day depends on your age, your sex, and whether you consume a mostly plant-based diet.

Sometimes people can have trouble getting enough iron. There can be many causes, including blood loss, a poor diet, or a problem absorbing enough iron from foods. Those who are more likely to have low iron include people who:

- Have heavy periods [<https://medlineplus.gov/menstruation.html>]
- Are pregnant [<https://medlineplus.gov/pregnancy.html>] or breastfeeding [<https://medlineplus.gov/breastfeeding.html>]
- Are infants (especially if they were born premature [<https://medlineplus.gov/prematurebabies.html>] or low birth weight [<https://medlineplus.gov/birthweight.html>] )
- Are frequent blood donors [<https://medlineplus.gov/bloodtransfusionanddonation.html>]
- Have cancer [<https://medlineplus.gov/cancer.html>] , certain digestive diseases [<https://medlineplus.gov/digestivediseases.html>] , or heart failure [<https://medlineplus.gov/heartfailure.html>]
- Are on kidney dialysis [<https://medlineplus.gov/dialysis.html>]
- Have trouble absorbing iron because they:
  - Have a digestive condition such as celiac disease [<https://medlineplus.gov/celiacdisease.html>] , ulcerative colitis [<https://medlineplus.gov/ulcerativecolitis.html>] , Crohn's disease [<https://medlineplus.gov/crohnsdisease.html>] , or Helicobacter pylori infection [<https://medlineplus.gov/helicobacterpyloriinfections.html>]
  - Had weight loss surgery [<https://medlineplus.gov/weightlosssurgery.html>]

## What happens if you don't get enough iron?

If you have too little iron, you may develop iron-deficiency anemia [https://medlineplus.gov/anemia.html] . It may not cause symptoms at first, but over time, it can cause fatigue [https://medlineplus.gov/fatigue.html] , shortness of breath [https://medlineplus.gov/breathingproblems.html] , and trouble with memory [https://medlineplus.gov/memory.html] and concentration. Treatment for low iron and iron-deficiency anemia is usually with iron supplements.


### What happens if you get too much iron?

Too much iron can damage your body. For example, if you are healthy and take too many iron supplements, you may have symptoms such as constipation [https://medlineplus.gov/constipation.html] , nausea and vomiting [https://medlineplus.gov/nauseaandvomiting.html] , abdominal (belly) pain [https://medlineplus.gov/abdominalpain.html] , and diarrhea [https://medlineplus.gov/diarrhea.html] . Higher iron levels can cause ulcers [https://medlineplus.gov/pepticulcer.html] . Extremely high levels can lead to organ damage, coma [https://medlineplus.gov/coma.html] , and death.



A disease called hemochromatosis [https://medlineplus.gov/hemochromatosis.html] can cause too much iron to build up in the body. Hemochromatosis is inherited (passed down through families). It is usually treated by removing blood (and iron) from your body on a regular basis.

*National Institutes of Health, Office of Dietary Supplements*


### Start Here

- Iron [https://ods.od.nih.gov/factsheets/Iron-Consumer/]  (National Institutes of Health, Office of Dietary Supplements)  
Also in Spanish [https://ods.od.nih.gov/factsheets/Iron-DatosEnEspanol/]



### Diagnosis and Tests

- Ferritin Blood Test [https://medlineplus.gov/lab-tests/ferritin-blood-test/]  (National Library of Medicine)  
Also in Spanish [https://medlineplus.gov/spanish/pruebas-de-laboratorio/prueba-de-sangre-de-ferritina/]
- Iron Tests [https://medlineplus.gov/lab-tests/iron-tests/]  (National Library of Medicine)  
Also in Spanish [https://medlineplus.gov/spanish/pruebas-de-laboratorio/pruebas-de-hierro/]

### Specifics

- Anemia [https://familydoctor.org/condition/anemia/?adfree=true] (American Academy of Family Physicians)  
Also in Spanish [https://es.familydoctor.org/condicion/anemia-es/?adfree=true]
- Iron-Deficiency Anemia [https://www.nhlbi.nih.gov/health/anemia/iron-deficiency-anemia]  (National Heart, Lung, and Blood Institute)  
Also in Spanish [https://www.nhlbi.nih.gov/es/salud/anemia/anemia-ferropenica]


### Genetics

- African iron overload: MedlinePlus Genetics [https://medlineplus.gov/genetics/condition/african-iron-overload]  (National Library of Medicine)
- Hyperferritinemia-cataract syndrome: MedlinePlus Genetics [https://medlineplus.gov/genetics/condition/hyperferritinemia-cataract-syndrome]  (National Library of Medicine)

### Statistics and Research

- FastStats: Anemia or Iron Deficiency [https://www.cdc.gov/nchs/fastats/anemia.htm] (National Center for Health Statistics)

### Clinical Trials


- ClinicalTrials.gov: Ferritins [https://clinicaltrials.gov/search?cond=%22Ferritins%22&aggFilters=status:not%20rec]  (National Institutes of Health)

## Journal Articles

### References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: A TMPRSS6-inhibiting mAb improves disease in a  $\beta$ -thalassemia mouse model and...  
[https://www.ncbi.nlm.nih.gov/pubmed/40548380]
- Article: Effect of Empagliflozin on the Mechanisms Driving Erythropoiesis and Iron Mobilization in...  
[https://www.ncbi.nlm.nih.gov/pubmed/40335252]
- Article: Assessing the adherence and acceptability to iron and folic acid compared...  
[https://www.ncbi.nlm.nih.gov/pubmed/40334750]
- Iron -- see more articles [https://pubmed.ncbi.nlm.nih.gov/?term=%22Iron%22%5Bmajr%3Anoexp%5D+AND+humans%5Bmh%5D+AND+english%5Bla%5D+AND+%22last+1+Year%22+%5Bedat%5D+AND+%28patient+education+handout%5Bpt%5D+OR+guideline%5Bpt%5D+OR+clinical+trial%5Bpt%5D%29++NOT+%28letter%5Bpt%5D+OR+case+reports%5Bpt%5D+OR+editorial%5Bpt%5D+OR+comment%5Bpt%5D%29+AND+free+full+text%5Bsb%5D+]

## Find an Expert

- Food and Drug Administration [https://www.fda.gov/]
- Food and Nutrition Information Center [https://www.nal.usda.gov/programs/fnic]
- National Institutes of Health, Office of Dietary Supplements [https://ods.od.nih.gov/] 

## Children

- Iron [https://kidshealth.org/en/parents/iron.html] (Nemours Foundation)  
Also in Spanish [https://kidshealth.org/es/parents/iron.html]
- Iron-Deficiency Anemia [https://kidshealth.org/en/parents/ida.html] (Nemours Foundation)  
Also in Spanish [https://kidshealth.org/es/parents/ida.html]

## Patient Handouts

- Anemia caused by low iron - infants and toddlers [https://medlineplus.gov/ency/article/007618.htm] (Medical Encyclopedia)  
Also in Spanish [https://medlineplus.gov/spanish/ency/article/007618.htm]
- Ferritin blood test [https://medlineplus.gov/ency/article/003490.htm] (Medical Encyclopedia)  
Also in Spanish [https://medlineplus.gov/spanish/ency/article/003490.htm]
- Iron deficiency anemia [https://medlineplus.gov/ency/article/000584.htm] (Medical Encyclopedia)  
Also in Spanish [https://medlineplus.gov/spanish/ency/article/000584.htm]
- Iron in diet [https://medlineplus.gov/ency/article/002422.htm] (Medical Encyclopedia)  
Also in Spanish [https://medlineplus.gov/spanish/ency/article/002422.htm]
- Serum iron test [https://medlineplus.gov/ency/article/003488.htm] (Medical Encyclopedia)  
Also in Spanish [https://medlineplus.gov/spanish/ency/article/003488.htm]
- Taking iron supplements [https://medlineplus.gov/ency/article/007478.htm] (Medical Encyclopedia)  
Also in Spanish [https://medlineplus.gov/spanish/ency/article/007478.htm]
- Total iron binding capacity [https://medlineplus.gov/ency/article/003489.htm] (Medical Encyclopedia)  
Also in Spanish [https://medlineplus.gov/spanish/ency/article/003489.htm]



## MEDICAL ENCYCLOPEDIA

Anemia caused by low iron - children [<https://medlineplus.gov/ency/article/007134.htm>]

Anemia caused by low iron - infants and toddlers [<https://medlineplus.gov/ency/article/007618.htm>]

Ferritin blood test [<https://medlineplus.gov/ency/article/003490.htm>]

Iron deficiency anemia [<https://medlineplus.gov/ency/article/000584.htm>]

Iron in diet [<https://medlineplus.gov/ency/article/002422.htm>]

Iron overdose [<https://medlineplus.gov/ency/article/002659.htm>]

Serum iron test [<https://medlineplus.gov/ency/article/003488.htm>]

Taking iron supplements [<https://medlineplus.gov/ency/article/007478.htm>]

Total iron binding capacity [<https://medlineplus.gov/ency/article/003489.htm>]

## Related Health Topics

Anemia [<https://medlineplus.gov/anemia.html>]

Hemochromatosis [<https://medlineplus.gov/hemochromatosis.html>]

Minerals [<https://medlineplus.gov/minerals.html>]

Thalassemia [<https://medlineplus.gov/thalassemia.html>]

## National Institutes of Health

The primary NIH organization for research on *Iron* is the NIH Office of Dietary Supplements [<https://ods.od.nih.gov/>]

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