

Anemia

This information (which is focused on anemia in women – in whom it is more common) is at <http://www.4woman.gov/faq/anemia.htm>, and was provided by the National, Heart, Lung and Blood Institute at the National Institutes of Health. Reviewed March 2004.

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| | |
|-----------------------------------------------------------------------------------|---|
| What is anemia? | 1 |
| What causes anemia? | 1 |
| What are the signs of anemia? | 2 |
| How do I find out if I have anemia? | 3 |
| What's the treatment for anemia?..... | 3 |
| How do I prevent anemia? | 3 |
| How much iron do I need every day? | 4 |
| Are there special iron guidelines for pregnant women? | 5 |
| Does birth control affect my risk for anemia? | 5 |
| I am a vegetarian. What steps should I take to make sure I get enough iron? | 5 |
| What happens if I take too much iron? | 5 |
| If I have hemochromatosis, what can I do to stay healthy? | 6 |

What is anemia?

Anemia happens when your blood doesn't have enough hemoglobin (he-mo-GLOBE-in). Hemoglobin helps red blood cells carry oxygen from your lungs to all parts of your body.

What causes anemia?

There are many types of anemia, all with different causes:

Iron deficiency anemia (IDA). IDA is the most common type of anemia. IDA happens when you don't have enough iron in your body. You need iron to make hemoglobin. This can happen when you lose blood from problems like heavy periods, ulcers, colon polyps, or colon cancer. A diet that doesn't have enough iron in it can also cause IDA. Pregnancy can also cause IDA if there's not enough iron for the mother and fetus. You can get iron from foods like ground beef, clams, spinach, lentils, baked potato with skin, sunflower seeds, and cashews.

Megaloblastic (or vitamin deficiency) anemia. This most often happens when your body doesn't get enough folic acid or vitamin B-12. These vitamins help your body keep healthy blood and a healthy nervous system. With this type of anemia, your body makes red blood cells that can't deliver oxygen right. Folic acid supplements (pills) can treat this type of anemia. You can also get folic acid in beans and legumes; citrus fruits and juices; wheat bran and other whole grains; dark green leafy vegetables; and poultry, pork, shellfish, and liver. Sometimes, with this disease, your health care provider may not realize you're not getting enough B-12. This usually happens to someone with pernicious

anemia, a type of autoimmune disease. B-12 deficiency may also be more common in people with other autoimmune diseases, like Crohn's disease. Not getting enough B-12 can cause numbness in your legs and feet, problems walking, memory loss, and problems seeing. The treatment depends on the cause. But you may need to get B-12 shots or take special B-12 pills.

Underlying diseases. Certain diseases can hurt the body's ability to make red blood cells. For example, people with kidney disease, especially those getting dialysis (takes out wastes from your blood if your kidneys can't), are at higher risk for developing anemia. Their kidneys can't create enough hormones to make blood cells, and iron is lost in dialysis.

Inherited blood disease. If you have a blood disease in your family, there is a higher risk that you will also have this disease. One type of inherited blood disease is sickle cell anemia. Instead of having normal red blood cells that move through blood vessels easily, sickle cells are hard and have a curved edge. These cells cannot squeeze through small blood vessels and block the organs from getting blood. Your body destroys sickle red cells quickly, but it can't make new red blood cells fast enough. This causes anemia. Another inherited blood disease is thalassemia. It happens when the body is missing certain genes or when variant (different from normal) genes are passed down from parents that affect how the body makes hemoglobin.

Aplastic anemia. This rare problem happens when your body doesn't make enough red blood cells. Since this affects the white blood cells too, there is a higher risk for infections and bleeding that can't be stopped. This can be caused by many things:

- cancer treatments (radiation or chemotherapy)
- exposure to toxic chemicals (like those used in some insecticides, paint, and household cleaners)
- some drugs (like those that treat rheumatoid arthritis)
- autoimmune diseases (like lupus)
- viral infection that affects bone marrow or bone marrow diseases
- The treatment depends on how serious the anemia is. It can be treated with blood transfusions, medicines, or a bone marrow transplant.

What are the signs of anemia?

Anemia takes some time to develop. In the beginning, you may not have any signs or they may be mild. But as it gets worse, you may have these symptoms:

- fatigue
- weakness
- not doing well in work or school
- low body temperature
- pale skin
- rapid heartbeat

- shortness of breath
- chest pain
- dizziness
- irritability
- numbness or coldness in your hands and feet
- headache

How do I find out if I have anemia?

Anemia is diagnosed by a blood test. If you have anemia, your health care provider (HCP) may want to do other tests to find out what's causing it, like ulcers (sore on the lining of the stomach or duodenum [beginning of the small intestine]) or polyps (growths).

What's the treatment for anemia?

It depends on the cause of the anemia. For example, treatment for sickle cell anemia is different than treatment for a diet low in iron or folic acid. Talk to your HCP about the best treatment for the cause of your anemia.

How do I prevent anemia?

Take these steps to help prevent some types of anemia:

- Eat foods high in iron:
 - red meat
 - fish
 - chicken
 - liver o eggs
 - dried fruits, like apricots, prunes, and raisins
 - lentils and beans
 - green, leafy vegetables, like spinach and broccoli o tofu o cereal with iron in it (iron-fortified)
- For more sources of iron, visit www.cc.nih.gov/ccc/supplements/iron.html.
- Eat/drink foods that help your body absorb iron, like orange juice, strawberries, broccoli, or other fruits and vegetables with vitamin C.
- Don't drink coffee or tea with meals. These drinks make it harder for your body to absorb iron.
- Calcium can hurt your absorption of iron. If you have a hard time getting enough iron, talk to your health care provider about the best way to get enough calcium too.
- Make sure you get enough folic acid and vitamin B-12 in your diet.

Talk to your HCP about taking iron pills (supplements). Do NOT take these pills without talking to your health care provider first. These pills come in two forms: ferrous and ferric. The ferrous form is better absorbed by your body. But taking iron pills can cause

side effects, like nausea, vomiting, constipation, and diarrhea. Reduce these side effects by taking these steps:

- Start with half of the recommended dose. Gradually increase to the full dose.
- Take the pill in divided doses.
- Take the pill with food.
- If one type of iron pill is causing problems, ask your HCP for another brand.

If you are a non-pregnant woman of childbearing age, get tested for anemia every 5 to 10 years. This can be done during a regular health exam. Testing should start in adolescence. If you are a non-pregnant woman of childbearing age with these risk factors for iron deficiency, get tested every year:

- heavy periods
- low iron intake
- previous diagnosis of anemia

How much iron do I need every day?

Most people get enough iron through a regular healthy diet that has iron-rich foods. But some groups of people don't get enough iron:

- teenage girls/women of childbearing age (who have heavy menstrual losses, who have had more than one child, or use an intrauterine device [IUD])
- older infants and toddlers
- pregnant women

These groups of people should be screened periodically for iron deficiency. If the tests show that the body isn't getting enough iron, iron supplements may be prescribed. Many health care providers prescribe iron supplements during pregnancy because many pregnant women don't get enough. They can help when diet alone can't restore the iron level back to normal. Talk with your HCP to find out if you are getting enough iron through your diet or if you or your child needs to be taking iron supplements. Please see the chart below to see how many milligrams (mg) of iron you should take every day.

| Age | Infants & Children | Women | Pregnant | Breastfeeding |
|----------------|--------------------|-------|----------|---------------|
| 7 to 12 months | 11 mg | | | |
| 1 to 3 years | 7 mg | | | |
| 4 to 8 years | 10 mg | | | |
| 9 to 13 years | | 8 mg | 27 mg | 10 mg |
| 14 to 18 years | | 15 mg | 27 mg | 10 mg |
| 19 to 50 years | | 18 mg | 27 mg | 9 mg |
| 51+ years | | 8 mg | | |

Are there special iron guidelines for pregnant women?

Many pregnant women have a hard time getting enough iron. During pregnancy, your body demands more iron because of the growing needs from the fetus, the higher volume of blood, and blood loss during delivery. Not getting enough iron can cause preterm labor and delivering a low-birthweight baby. If you're pregnant, follow these tips:

- Make sure you get 27mg of iron every day. Take an iron supplement (pill). It may be part of your prenatal vitamin. Start taking it at your first prenatal visit.
- Get tested for anemia at your first prenatal visit.
- I am taking hormone therapy (HT). Does that affect how much iron I should take?
- It might. If you are still getting your period while taking HT, you may need more iron than women who are postmenopausal and not taking HT. Talk to your health care provider.

Does birth control affect my risk for anemia?

It could. Some women who take birth control pills have less bleeding during their periods. This would lower their risk for anemia. But women who use an intrauterine device (IUD) may have more bleeding and increase their chances of getting anemia. Talk to your health care provider.

I am a vegetarian. What steps should I take to make sure I get enough iron?

It depends on your diet. Since it's easier to get iron from meat than from plant-derived foods, some vegetarians may need to take a higher amount of iron each day than what is recommended for other people. Follow the tips above to prevent anemia, and try to take vitamin C with other iron-rich foods.

What happens if I take too much iron?

Iron overload happens when the body absorbs too much iron over many years. Excess iron builds up in organs, like the heart and liver. Many problems can cause iron overload. It can happen from years of taking too much iron or from repeated blood transfusions. But the most common form of iron overload in the United States is an inherited condition (runs in families) called hereditary hemochromatosis (he-mo-kro-ma-toe-sis).

Signs of early hemochromatosis may include:

- fatigue
- weakness
- weight loss
- abdominal pain
- joint pain

As iron accumulation progresses, patients may have these symptoms:

- arthritis
- amenorrhea
- early menopause
- loss of sex drive
- impotence (repeated inability to get or keep an erection firm enough for sexual intercourse)
- shortness of breath

Signs of advanced stages of hemochromatosis include:

- arthritis
- liver disease, including an enlarged liver, cirrhosis, cancer, and liver failure
- damage to the pancreas, possibly causing diabetes
- chronic (ongoing) abdominal pain
- severe fatigue
- weakening of the heart muscle
- problems with your heart rate or rhythms
- heart failure
- abnormal skin color, making it look gray or bronze

Treatment depends on how severe the iron overload is. The first step is to get rid of the extra iron in the body. The process is called phlebotomy (fle-bot-o-me), which means removing blood. It is simple and safe. A pint of blood will be taken once or twice a week for several months to a year, and sometimes longer. Once iron levels go back to normal, you will give a pint of blood every 2 to 4 months for life. Although treatment cannot cure the problems caused by hemochromatosis, it will help most of them. Arthritis is the only problem that does not improve after excess iron is removed.

If I have hemochromatosis, what can I do to stay healthy?

There is a lot you can do to make your life as healthy as possible:

- Get check ups. Have the amount of iron in your blood tested regularly.
- Get your blood removed. Make sure to get phlebotomies when you need them.
- Watch the food you eat. Don't eat raw fish or raw shellfish.
- Limit your alcohol intake. If you choose to drink alcohol, drink very little. Women should have no more than one drink a day. Men should have no more than two a day. But if you have liver damage, do NOT drink any alcohol.
- Don't take iron pills. Don't take iron pills, supplements, or multivitamin supplements that have iron in them. But eating foods that contain iron is fine.

- Watch your vitamin C intake. Vitamin C increases the amount of iron your body absorbs. So don't take pills with more than 500mg of vitamin C per day. Eating foods with vitamin C is fine.
- Exercise. You can exercise as much as you want. Try to get 30 minutes of exercise every day to stay fit and healthy.

For more information...

For more information on anemia, contact the National Women's Health Information Center at 800-994-9662 or the following organizations:

Division of Nutrition and Physical Activity, NCCDPHP, CDC, HHS

Phone: (770) 488-5820 or (888) 232-4674

Internet Address: <http://www.cdc.gov/nccdphp/dnpa/>

National Heart, Lung, and Blood Institute Information Center, NHLBI, NIH, HHS

Phone: (301) 592-8573

Internet Address: <http://www.nhlbi.nih.gov/health/infoctr>

American Dietetic Association

Phone: (312) 899-0040 or (800) 366-1655 (Consumer Nutrition Hotline)

Internet Address: <http://www.eatright.org>

Aplastic Anemia & MDS International Foundation, Inc.

Phone: (800) 747-2820

Internet Address: <http://www.aamds.org>

Iron Disorders Institute

Phone: (864) 241-0111 or (864) 244-2104

Internet Address: <http://www.irondisorders.org>

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