

Anemia

What is anemia?

Anemia is a blood disorder that is defined as:

- a level of red blood cells (RBCs) that is below the normal range, or
- a level of hemoglobin, the oxygen-carrying protein in RBCs, that is below normal.

There are several forms of anemia including:

- iron deficiency anemia
- hemolytic anemia (destruction of RBCs)
- vitamin B-12 deficiency anemia
- folic acid deficiency anemia
- anemias caused by inherited abnormalities of RBCs (for example, sickle cell anemia and thalassemia)
- anemia caused by chronic (ongoing) disease.

How do the different forms of anemia occur?

Iron deficiency anemia:

This most common form of anemia is caused by blood loss. Women most often develop iron deficiency anemia from the loss of blood during their menstrual periods and from repeated pregnancies. This type of anemia may also develop as a result of internal bleeding in the stomach (as with ulcers) or in the intestine (as with colon cancer).

Iron deficiency anemia can also be caused by a lack of iron in the diet. Pregnant women may have this form of anemia because the growing fetus draws upon the mother's iron for the development of red blood cells and other tissues.

Hemolytic anemia:

This kind of anemia occurs when red blood cells are destroyed or damaged by infection, drugs, or inherited conditions.

Vitamin B-12 (cobalamin) deficiency anemia:

This type of anemia results from an inability of the stomach or intestines to absorb vitamin B-12. For example, an immune system disorder called pernicious anemia prevents normal absorption of the vitamin by the intestinal tract. Gastrointestinal illness, certain medications, and some

inherited disorders may also cause vitamin B-12 deficiency. Some vegetarians may not get enough vitamin B-12 from the foods they eat. Besides causing anemia, a lack of vitamin B-12 affects the nervous system and may first cause symptoms of numbness, tingling, balance problems, depression, or memory difficulties.

Folic acid deficiency anemia:

Anemia due to a lack of folic acid in the diet is similar to B-12 deficiency anemia, but there is no damage to specific nerves. However, it can cause depression. This anemia is common in:

- alcoholics, who often suffer from malnutrition
- pregnant women
- people with intestinal malabsorption problems
- people using some daily medications, such as phenytoin, sulfasalazine, and possibly oral contraceptives.

Anemia caused by inherited abnormalities of RBCs:

Among several types of anemia caused by inherited abnormalities of RBCs, the most common are sickle cell anemia and thalassemia. Sickle cell anemia is an inherited disease predominantly of the black race. This anemia is characterized by abnormal hemoglobin structure and sickle-shaped RBCs. The abnormal sickle-shaped RBCs are damaged or destroyed as they pass through the circulatory system. The anemia usually has many noticeable effects on the person with this disease. It can cause a condition called sickle cell crisis. The crisis may occur under certain conditions such as altitude or pressure changes, low oxygen, or some illnesses. In sickle cell crisis the RBCs become even more deformed and block tiny blood vessels, causing acute, prolonged pain and other complications. Thalassemias are a group of inherited anemias caused by abnormal hemoglobin. The abnormal hemoglobin may cause abnormal red blood cells as well as low hemoglobin levels. Thalassemias most commonly affect people of Mediterranean descent, but some types also affect peoples of Africa, Asia, India, and the South Pacific. Most forms of thalassemia are mild, but some forms cause disease in children and may result in death before adulthood. People who have thalassemia should not take iron medication.

Anemia caused by disease:

Anemia caused by ongoing (chronic) disease is common in people who have:

- cancer
- leukemia
- inflammatory diseases, such as rheumatoid arthritis
- ongoing infections
- kidney disease

What are the symptoms?

Mild anemia usually does not produce symptoms.

More severe anemia is associated with:

- weakness
- fatigue
- pale skin, gums, skin creases, and nailbeds.

Other symptoms of worsening anemia include:

- lightheadedness
- rapid heartbeat
- shortness of breath, fainting
- chest pain
- heart failure.

Jaundice (yellow skin and eyes) may be a symptom of hemolytic anemia.

How is it diagnosed?

To diagnose the cause of anemia, the doctor will carefully review your symptoms and examine you. A complete blood count (CBC) is needed to confirm anemia and measure its severity. Specific blood tests may be necessary to evaluate the type of anemia.

How is it treated?

The treatment depends on the type of anemia you have. Your doctor will check your blood count periodically to monitor the effect of your treatment.

Iron deficiency anemia:

To treat iron deficiency anemia (if there is no underlying disease causing blood loss), the doctor will simply prescribe iron supplements and/or a [diet of foods rich in iron](#). Iron tablets may have side effects such as abdominal cramping; nausea; constipation; and dark, hard stools. To minimize side effects, your doctor will start you on a low dose of iron and slowly increase

your dose to the necessary amount. He or she may suggest that you take vitamin C with the iron pills to help your body absorb the iron. Taking the iron at mealtimes can help prevent stomach and intestinal upset. Do not take antacids and do not eat or drink any dairy products at the same time you take the iron pills. Antacids and dairy products prevent the body from absorbing iron. Only rarely are iron injections necessary.

Vitamin B-12 deficiency anemia:

If you have this form of anemia because your stomach does not absorb vitamin B-12 well, the usual treatment is an injection of vitamin B-12 once a month. Sometimes an oral form (tablet) is used, but it must be taken in very high doses with a doctor's recommendation.

Folic acid deficiency anemia:

The treatment for folic acid deficiency anemia is daily oral folate tablets. This anemia is similar to vitamin B-12 deficiency anemia. Your doctor will not begin treatment with folate until he or she makesure that your anemia is not caused by vitamin B-12 deficiency.

Anemia caused by inherited abnormalities of RBCs:

Sickle cell anemia usually requires frequent complex treatments. Sickle cell crisis requires intravenous fluids, rest, pain relief, and sometimes a blood transfusion. The treatment for thalassemias depends on such factors as the severity of the anemia, your age, and the risk of blood transfusions. When blood transfusions are needed for acute anemia, there is a small risk of acquiring blood-borne diseases such as hepatitis or AIDS, even though donated blood is carefully screened. Therefore, your doctor will recommend a transfusion only when it is clearly the best treatment for you. People who have thalassemia must not take iron medication.

Anemia caused by chronic disease:

Fortunately, the effects of this type of anemia usually tend to be mild. For certain conditions, such as chronic kidney disease, your doctor may prescribe regular injections of erythropoietin to stimulate your body's production of red blood cells.

How long will the effects last?

The symptoms of mild, treatable anemias, such as iron deficiency anemia, respond quickly to treatment and improve in just a few days.

The symptoms of chronic anemias, such as sickle cell anemia, come and go. Anemia associated with a chronic disease usually improves or worsens as the disease improves or worsens.

How can I take care of myself?

Follow your doctor's instructions. Take your medication as prescribed. A serious complication of taking folate tablets is the possible masking of vitamin B-12 deficiency anemia. Do not start taking folate supplements until your doctor has made sure you do not have vitamin B-12 deficiency anemia.

What can be done to help prevent anemia?

The prevention of anemia depends on its cause. If your anemia is caused by a deficiency in your diet, eating foods rich in the missing nutrient will help to prevent a recurrence. To prevent the complications of vitamin B-12 deficiency anemia, follow your doctor's treatment of vitamin B-12 injections. If you have sickle cell disease, it is important not to get dehydrated (that is, not to lose too much body fluid). Dehydration can trigger a sickle cell crisis. Genetic counseling is important for families with inherited anemias.

For additional questions please contact the SCC Nurse at 702-1915 or make an appointment with your SCC health care provider at 702-4156.