

## Anemia

Anemia is a blood cell condition in which there is a drop in the percentage of oxygen-rich red blood cells. A low level of hemoglobin, the iron-rich protein that carries the oxygen in red blood cells, is an indicator for the condition. Anemia can be chronic or it can be a temporary condition caused by other health issues, including bleeding, cancer or treatments for cancer, kidney disease, and HIV/AIDS. Anemia frequently remains undiagnosed because it is an underlying condition of other health issues. The most common type of anemia results from an iron deficiency from blood loss. There are other, less common types of anemia. For example, aplastic anemia is a bone marrow condition in which the body does not produce enough red and white blood cells and platelets. Sickle cell anemia is an inherited blood disorder affecting red blood cells.

At-risk groups include people with the following conditions or age groups:

- Heart disease, diabetes, or rheumatoid arthritis
- Cancer
- Chronic kidney disease
- Inflammatory bowel disease
- Intestinal disorders
- Older and elderly adults
- HIV/AIDS
- Autoimmune diseases
- Liver or thyroid disease
- Chronic health conditions
- Long-term infections
- Pre-menopausal women
- Women with heavy menses
- Pregnant women
- Infants with inadequate amounts of iron

### Statistics

- More than 40 percent of cancer patients have anemia and up to nine in 10 chemotherapy patients will have anemia during treatment.
- Seventeen percent of pregnant women in the United States are anemic.
- About 4,900 deaths in the U.S. occurred due to anemia in 2013 (latest available data).
- Approximately 237,000 emergency department visits in the U.S. were due to anemia in 2011 (latest data available).
- About 1 to 2 percent of U.S. children ages 1 to 5 has iron deficiency anemia.
- Approximately 1,000 children in the U.S. are born each year with sickle cell disease, many of which have sickle cell anemia.
- Between 600 and 900 U.S. adults are diagnosed with aplastic anemia each year.

### Risk Factors

- Menstruation in women
- Loss of blood from disease, injuries, or surgery
- Long-term infections
- Family history, including sickle cell anemia and thalassemia
- Low iron and folic acid during pregnancy
- Serious illnesses, including cancer, diabetes, heart failure, HIV/AIDS, inflammatory bowel disease, kidney disease, liver disease, rheumatoid arthritis, and thyroid disease
- Low amounts of iron caused by an iron-deficient diet

### Symptoms

- Fatigue is the main symptom of most types of anemia
- Swelling of hands or feet
- Weakness or dizziness
- Rapid or irregular heartbeat
- Chest pain
- Shortness of breath
- Headache
- Cold hands and feet
- Paleness of the skin, nails, mouth, and gums
- Pounding sensation in ears

### Treatments

Anemia treatment can reduce blood loss or increase survival or production of red blood cells, and increase the amount of oxygen in the blood. The exact treatment depends on the severity, cause, and type of disorder, but can include:

- Dietary and nutritional changes or supplements, including intake of B12, folic acid, iron, and vitamin C. Iron can be replenished through foods including eggs, fish, meat, poultry, beans, green leafy vegetables, and dried fruits, and B12 can be replenished through foods including eggs, fish, meat, poultry, and dairy products.
- Medication, such as antibiotics or hormones
- Procedures such as blood transfusions, blood and marrow stem cell transplants, or surgery.

*Sources: American Cancer Society, American Society of Hematology, Annals of Oncology, Aplastic Anemia and MDS International Foundation, Centers for Disease Control and Prevention, National Heart, Lung and Blood Institute, Sickle Cell Disease Association, U.S. Preventive Services Task Force, World Bank*



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