

## Common types of Leukemia and its Symptoms

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### Introduction

Leukemia, also spelled leukaemia, is a group of blood cancers that usually begin in the bone marrow and result in high numbers of abnormal blood cells. These blood cells are not fully developed and are called blasts or leukemia cells. Symptoms may include bleeding and bruising, fatigue, fever, and an increased risk of infections. These symptoms occur due to a lack of normal blood cells. Diagnosis is typically made by blood tests or bone marrow biopsy.

The exact cause of leukemia is unknown. A combination of genetic factors and environmental (non-inherited) factors are believed to play a role. Risk factors include smoking, ionizing radiation, some chemicals (such as benzene), prior chemotherapy, and Down syndrome. People with a family history of leukemia are also at higher risk. There are four main types of leukemia—acute lymphoblastic leukemia (ALL), acute myeloid leukemia (AML), chronic lymphocytic leukemia (CLL) and chronic myeloid leukemia (CML)—as well as a number of less common types. Leukemias and lymphomas both belong to a broader group of tumors that affect the blood, bone marrow, and lymphoid system, known as tumors of the hematopoietic and lymphoid tissues.

Treatment may involve some combination of chemotherapy, radiation therapy, targeted therapy, and bone marrow transplant, in addition to supportive care and palliative care as needed. Certain types of leukemia may be managed with watchful waiting. The success of treatment depends on the type of leukemia and the age of the person. Outcomes have improved in the developed world. Five-year survival rate is 57% in the United States. In children under 15, the five-year survival rate is greater than 60% or even 90%, depending on the type of

leukemia. In children with acute leukemia who are cancer-free after five years, the cancer is unlikely to return.

In 2015, leukemia was present in 2.3 million people worldwide and caused 353,500 deaths. In 2012 it newly developed in 352,000 people. It is the most common type of cancer in children, with three-quarters of leukemia cases in children being the acute lymphoblastic type.[3] However, over 90% of all leukemias are diagnosed in adults, with CLL and AML being most common in adults. It occurs more commonly in the developed world.

Clinically and pathologically, leukemia is subdivided into a variety of large groups. The first division is between its acute and chronic forms.

Acute leukemia is characterized by a rapid increase in the number of immature blood cells. The crowding that results from such cells makes the bone marrow unable to produce healthy blood cells resulting in low hemoglobin and low platelets. Immediate treatment is required in acute leukemia because of the rapid progression and accumulation of the malignant cells, which then spill over into the bloodstream and spread to other organs of the body. Acute forms of leukemia are the most common forms of leukemia in children.

Chronic leukemia is characterized by the excessive buildup of relatively mature, but still abnormal, white blood cells. Typically taking months or years to progress, the cells are produced at a much higher rate than normal, resulting in many abnormal white blood cells. Whereas acute leukemia must be treated immediately, chronic forms are sometimes monitored for some time before treatment to ensure maximum effectiveness of therapy. Chronic leukemia mostly occurs in older people, but can occur in any age group.