

# Leukemia

Leukemia is a cancer that starts in the bone marrow, the soft tissue inside the bone where blood cells develop. Abnormal blood cells are generated within the bone marrow, multiply, and can spread throughout the body, crowding out platelets and healthy white and red blood cells. These abnormal cells make it difficult for normal white blood cells, red blood cells, and platelets to function properly within the body, making a person prone to infection, anemia, bruising, and bleeding. The four most common types of leukemia are: acute lymphocytic leukemia (ALL); acute myeloid leukemia (AML); chronic lymphocytic leukemia (CLL); and chronic myeloid leukemia (CML). Acute leukemia is characterized by rapidly growing cells and quickly diminishes a person's health, and chronic leukemia develops and progresses slowly over time.

## Statistics

- In 2024, it is estimated that **62,770 Americans** will be diagnosed with new cases of leukemia and **23,670 will die** from the disease.
- In 2024, approximately **4,940 Texans** will be diagnosed with leukemia, resulting in an estimated **1,630 deaths**.
- Leukemia accounts for about **1 in every 3 cancer cases** in children, making it the **most common childhood cancer**.
- Most leukemias are diagnosed in adults **age 55 and older**.
- ALL accounts for **76%** of leukemias in people age 20 and under. ALL risk is highest in children **younger than 5** and rises again after age 50.
- AML is the most common type of acute leukemia in adults. The average age at diagnosis is **68**.
- CLL, which is rare in children, is the **most diagnosed leukemia** type in adults. The average age at diagnosis is **70**.
- CML, also rare in children, accounts for about **15%** of all leukemias. The average age at diagnosis is **64**.

## Risk Factors

- **Radiation and chemotherapy:** People exposed to high levels of ionizing radiation, like cancer patients, are at a greater risk for developing leukemia. Leukemia can be a complication of chemotherapy treatments.
- **Exposure to certain chemicals and workplace environments:** Exposure to benzene, a chemical found in cigarette smoke, solvents, gasoline, rubber production, chemical plants, oil refineries, shoe manufacturing, and some glues, art supplies, cleaning products, and paints, can increase acute myeloid leukemia risk.
- **Smoking:** Cigarette smoking is a direct risk for contracting AML as cancer agents in tobacco smoke enter the bloodstream and can be transported through the body.
- **Blood disorders:** People with certain blood disorders including polycythemia vera, essential thrombocythemia, idiopathic myelofibrosis, and myelodysplastic syndrome are at an increased risk.
- **Genetic diseases:** People with congenital syndromes such as Down syndrome, Trisomy 8, Fanconi anemia, Bloom syndrome, ataxia-telangiectasia, Diamond-Blackfan anemia, Schwachman-Diamond syndrome, Li-Fraumeni syndrome, neurofibromatosis type 1, Klinefelter syndrome, Wiskott-Aldrich syndrome, familial platelet disorder syndrome, and Kostmann syndrome are at a greater risk.
- **Family history:** Having first-degree relatives with CLL more than doubles risk for developing CLL.

## Symptoms

- Swollen lymph nodes
- Frequent fevers or sweating at night
- Feelings of weakness or tiredness
- Shortness of breath
- Reoccurring infections
- Pain or fullness in upper abdomen

- Enlargement of liver or spleen
- Bleeding and bruising easily
- Unexplained weight loss
- Appetite loss
- Bone or back pain
- Pinpoint flat spots on the skin, called petechiae

### Treatment Options

Treating leukemia varies depending on the type and stage of the disease, as well as the patient's age, medical history, general health, and treatment goals. However, patients with acute leukemia must be treated immediately due to the rapid progression of the disease. Treatment options for leukemia include:

- Watchful waiting (for those with chronic leukemia)
- Chemotherapy
- Targeted therapy
- Radiation therapy
- Surgery
- Stem cell transplant
- Immunotherapy
- Monoclonal antibodies
- Palliative medicine

### About Texas Oncology

With more than 530 physicians and 280 locations, Texas Oncology is an independent private practice, a member of The US Oncology Network, that sees more than 71,000 new cancer patients each year. Founded in 1986, Texas Oncology provides comprehensive, multi-disciplinary care, and includes Texas Center for Proton Therapy, Texas Breast Specialists, Texas Colon & Rectal Specialists, Texas Oncology Surgical Specialists, Texas Urology Specialists and Texas Infusion and Imaging Center. Texas Oncology's robust community-based clinical trials and research program has contributed to the development of more than 100 FDA-approved cancer therapies. Learn more at [TexasOncology.com](https://www.texasoncology.com).

*Sources: American Cancer Society, National Cancer Institute, and Leukemia & Lymphoma Society*



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