

# Acute Myeloid Leukemia Condition in Adult and Childhood

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## Editorial

Leukemias are cancers which start in cells that would normally develop into various types of blood cells. Most often, leukemia starts in early forms of white blood cells, but some leukemias start in other blood cell types. There are several types of leukemia, which are divided based mainly on whether the leukemia is acute fast growing or chronic, and whether it starts in myeloid cells or lymphoid cells.

Acute Myeloid Leukemia (AML) starts in the bone marrow, but most often it quickly moves into the blood, as well. It can sometimes spread to other parts of the body including the lymph nodes, liver, spleen, central nervous system, and testicles.

Acute myelogenous leukemia occurs when a bone marrow cell develops changes in its genetic material or DNA. A cell's DNA contains the instructions that tell a cell what to do. The DNA tells the cell to grow at a set rate and to die at a set time. In acute myelogenous leukemia, the mutations tell the bone marrow cell to continue growing and dividing.

The outlook for patients with acute myeloid leukaemia has improved in the past 30 years. Unlike other cancers, much of this progress is attributable to refinement of supportive treatment, rather than the introduction of new drugs. Antibacterial and antifungal agents, antiemetics, and improved transfusion support have decreased the rate of early death, and morbidity and mortality from allogeneic stem cell transplantation has been substantially reduced. More than half of young adult patients and about 90% of older patients still die from their disease.

Childhood acute myeloid leukemia is the second most common form of leukemia, after acute lymphoblastic leukemia. It is also called acute nonlymphocytic leukemia. It is a type of cancer affecting the blood. The precise cause of this disorder is not fully understood, exposure to radiation and certain chemicals are considered risk factors for this condition. Childhood acute myeloid leukemia may cause various symptoms such as excessive bleeding, fatigue, bruises and fever. A physician will typically diagnose this condition with a physical exam and blood tests, although certain imaging studies such as an x-ray or CT scan might also be necessary. Treatment for cancers of the blood, including childhood acute myeloid leukemia, is progressing with advances in medical research. Currently, treatment for childhood acute myeloid leukemia often involves chemotherapy, radiation therapy and stem cell transplant.

Acute myeloid leukemia risk factors include smoking, coming into contact with certain chemicals such as benzene, pesticides, ionizing radiation, some chemotherapy drugs used to treat other cancers such as cyclophosphamide, melphalan, doxorubicin, and mitoxantrone, some cleaning products, detergents, and paint strippers, exposure to high doses of radiation, certain blood conditions such as myeloproliferative disorders.

Radiation therapy is a cancer treatment which uses high-energy x-rays or other types of radiation to kill cancer cells or keep them from growing. External radiation therapy uses a machine outside the body to send radiation towards the area of the body with cancer. It is a type of external radiation which may be used to prepare the body for a stem cell transplant when the leukemia has recurred.

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