

## An Overview of Childhood Leukemia

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### DESCRIPTION

A type of childhood cancer in which a child develops leukemia is known as pediatric leukemia. In 2018, the most common malignancy in children aged 0-14 was juvenile leukemia, which accounted for 29 percent of malignancies in this age range. There are various forms of leukemia in children, with Acute Lymphoblastic Leukemia (ALL) being the most common, followed by Acute Myeloid Leukemia (AML). The survival percentage varies depending on the kind of leukemia, although it can be as high as 90% in ALL. Leukemia is a type of blood cancer known as a hematological malignancy. It all begins in the bone marrow, the soft internal part of the bone where new blood cells are generated. A youngster with leukemia's bone marrow produces white blood cells that do not mature normally. Normal, healthy cells can only proliferate if there is enough space available.

Cell production will be controlled by the body, which will give out signals when it is time to stop. The cells of a child with leukemia do not respond to the signals that tell them when to stop making cells and when to start again. It becomes harder to manufacture other blood cells when the bone marrow becomes overloaded. Excessive tiredness, easy bruising or bleeding, bone pain, and paleness are all signs and symptoms of juvenile leukemia. Leukemia is divided into two types: "acute," which progresses quickly, and "chronic," which progresses more slowly. The great majority of childhood leukemias are acute, and adults have a higher risk of developing chronic leukemias than children. The quick onset and course of acute leukemias distinguishes them from other types of leukemia (over periods of days to weeks). Chronic leukemias are more difficult to treat than acute leukemias because they develop more slowly

(months). Here are some of the most frequent types of leukemia in children. The cause of childhood leukemia is unknown in the vast majority of instances.

The majority of leukemia patients have no known risk factors. A two-step process, beginning with a prenatal genetic change and continuing with virus exposure, is thought to be the etiology of childhood Acute Lymphoblastic Leukemia (ALL). While this theory is feasible, there is currently inadequate patient data to support or refute the link between infection and ALL development. Alcohol consumption by mothers has been associated to the development of AML in children. Indoor pesticide exposure has also been linked to the development of childhood leukemia. Coffee consumption during pregnancy (at least 2 cups per day) has also been linked to infantile leukemia. Although allergies have been linked to the development of juvenile leukemia, current evidence contradicts this idea.

The type of leukemia, its characteristics, prognosis qualities (children with worse prognostic characteristics undergo more aggressive therapy; see the Prognosis section), response to therapy, and the degree of the disease at the time of diagnosis all influence treatment. Treatment is frequently overseen by a group of health care professionals that includes pediatric oncologists, social workers, pediatric nurse specialists, and doctors. While the type of leukemia and the circumstances described above determine the specific treatment strategy, all juvenile leukemias are treated with the same five categories of drugs. One is now being examined in a clinical trial, while the other four are well-established medicines. Chemotherapy, stem cell transplant, radiation therapy, and targeted therapy have all been used in the past. Immunotherapy is a medicine that is currently being studied in clinical trials.

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