

Leukemia

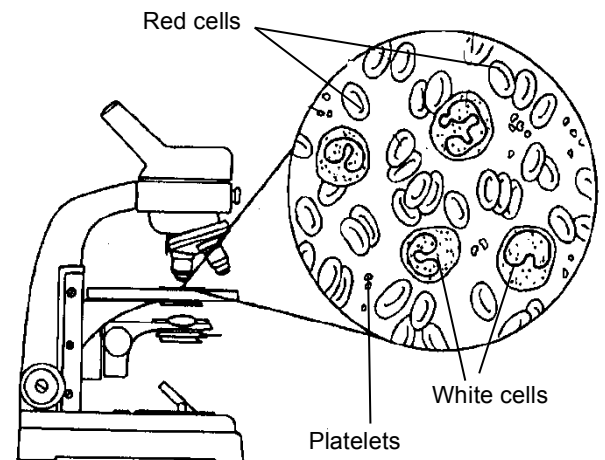
Although childhood cancer is rare, leukemia is the most common form. The cause of leukemia is not known, but we do know it is not contagious (“catching”). It is not thought to be hereditary (inherited from your parents). Some research suggests that things in the environment may play a role in developing this type of cancer.

Leukemia is a cancer of the bone marrow. Bone marrow is the tissue found inside many of the bones of the body. Bone marrow is where blood is made. With leukemia there is an overgrowth of immature cells called blasts or "leukemic cells" in the bone marrow.

When so many blasts are produced, the bone marrow spaces become crowded. This crowding prevents normal blood cells (red cells, white cells, and platelets) from being produced (Picture 1).

Because of the disease process, fewer normal blood cells and more leukemic cells circulate in the blood. There are two main types of childhood leukemia:

- Acute lymphocytic leukemia (ALL) – this type accounts for 80 percent of all leukemia in children.
- Acute myeloid leukemia (AML) – this type accounts for 20 percent.



Picture 1 How blood cells look under a microscope.

Signs and Symptoms of Leukemia

- A decrease in normal blood cells causes the symptoms of leukemia.
- When the number of **red blood cells** is low, a child is anemic and may become pale, listless and easily tired.
- When the number of **white cells** is low, the child is more likely to get infections and may have a fever.
- When the number of **platelets** is low, there may be bleeding problems such as nosebleeds and increased bruising.
- The child may also have bone pain.
- Spleen and abdomen may be enlarged and are tender to the touch.

Diagnosis

- The diagnosis of leukemia is made after a bone marrow aspirate and possibly a bone marrow biopsy. Bone marrow tissue is examined by a pathologist under a microscope. The results of this procedure will show the doctor what type of leukemia the child has. (Refer to Helping Hand HH-III-16, *Bone Marrow Test*.)
- A lumbar puncture test (LP) or spinal tap, in which a small amount (1/2 to 1 teaspoon) of spinal fluid is removed for examination, is also done. This shows if the leukemia involves the central nervous system. (Refer to Helping Hand HH-III-21, *Spinal Tap*.)

Treatment

- Treatment of acute leukemia involves the use of chemotherapy and possibly radiation therapy. Both radiation and chemotherapy destroy the leukemia cells that are crowding out normal blood cells. Many treatments are done on an outpatient basis.
- With prompt treatment, a cure or long-term, disease-free response is possible for many children with ALL or AML. If acute leukemias are not treated, they are all fatal within weeks or months.
- A **complete remission** is achieved when there are no detectable leukemic cells in the bone marrow.
- A bone marrow transplant may also be considered as a possible treatment. If bone marrow transplant is a possibility for your child, your doctors and nurses will give you more information.
- Sometimes your child will receive blood transfusions during treatment for leukemia.
- Treatment usually takes about 2 years for girls and 3 years for boys.

Follow-Up Appointments

- Your child will have follow-up appointments with an oncologist who will monitor the child's response to the treatment.
- At certain times, bone marrow tests will be done to see how well the treatment is working.
- Your child will have blood drawn at each appointment.

When you have any questions or concerns, be sure to talk with your doctor or nurse.