

Acute Lymphocytic Leukemia (ALL): Introduction



What is cancer?

Cancer starts when cells in the body change and grow out of control. Your body is made up of tiny building blocks called cells. Normal cells grow when your body needs them, and die when your body doesn't need them any longer. Cancer is made up of abnormal cells that grow even though your body doesn't need them. In most types of cancer, the abnormal cells grow to form a lump or mass called a tumor.

What is leukemia?

Leukemia is different from most other types of cancer. Leukemia is a blood cancer that starts in the bone marrow, which is where new blood cells are made. The bone marrow is a thick, sponge-like tissue in the center of certain bones.

Leukemia cells are early or premature forms of blood cells, most often white blood cells. When a person has leukemia, the body makes too many of these premature, abnormal cells. They don't work the way they should and don't mature into functional cells. Leukemia cells often don't form tumors. They travel in the blood all over the body. This means leukemia can affect organs anywhere in the body.

Two types of white blood cells can turn into leukemia:

- **Lymphoid cells (lymphocytes).** This is called lymphocytic or lymphoblastic leukemia.
- **Myeloid cells (myelocytes).** This is called myeloid or myelogenous leukemia.

Leukemia can also be either acute or chronic. Acute leukemia tends to grow very quickly and needs to be treated right away. Chronic leukemia often grows much more slowly.

What is acute lymphocytic leukemia (ALL)?

Acute lymphocytic leukemia (ALL) is a type of leukemia that starts in very early or premature forms of white blood cells called lymphocytes. These immature cells are called lymphoblasts, or just blasts. This cancer is also known as acute lymphoblastic leukemia. As the blasts grow, they can crowd out the normal cells in the bone marrow. This can lead to not having enough of the different types of blood cells.

People with ALL have too many lymphocytes in their blood, but these cells aren't normal and don't help fight infection. In fact, people with ALL are more likely to get infections because they don't have enough working white blood cells. They can also have low levels of red blood cells (anemia), which can cause severe tiredness (fatigue). And they can have not enough platelets, which can lead to excess bleeding or bruising.

ALL is a type of acute leukemia. This means it tends to grow quickly and needs to be treated right away.

Subtypes of ALL

ALL can be grouped into different subtypes. These are based on the type of lymphocyte the leukemia starts in, how mature the cells are, and other details. The subtype of ALL can affect both your treatment and your prognosis (outlook).

Another aspect of typing that's done for ALL is looking for a certain genetic change called the Philadelphia chromosome. This change is found only in leukemia cells. It's a key part of deciding on the best treatment plan.

Ask your healthcare provider about your subtype of ALL and what it means in your case. The subtypes include:

B-cell ALL

This subtype of ALL starts in B lymphocytes (B cells). It's the most common subtype. It can be further grouped into one of the below:

- Mature B-cell ALL (also known as Burkitt leukemia or Bur)
- Groups based on:
 - Certain genes that switch places (called translocations)
 - Changes in the number of chromosomes seen in the ALL cells

T-cell ALL

This subtype of ALL starts in T lymphocytes (T cells). It can be one of the below:

- Precursor T-cell ALL
- Mature T-cell ALL

Talk with your healthcare provider

If you have questions about your ALL, talk with your healthcare provider. Your provider can help you understand more about this type of leukemia.

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