

[Home](#) > [Types of Cancer](#) > [Leukemia - Acute Lymphocytic - ALL](#) > [Leukemia - Acute Lymphocytic - ALL - Subtypes and Classification](#)

PDF generated on July 24, 2016 from
<http://www.cancer.net/cancer-types/leukemia-acute-lymphocytic-all/subtypes-and-classification>

[Leukemia - Acute Lymphocytic - ALL - Subtypes and Classification](#) [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 01/2016

ON THIS PAGE: You will learn about how doctors describe ALL. This is called subtype and classification. To see other pages, use the menu.

To help plan treatment and predict prognosis, doctors divide ALL into subtypes and classify the disease based on the type of lymphocytes that are affected. For example, flow cytometry (see [Diagnosis](#) [3]) distinguishes between ALL involving T cells or B cells. Specific chromosomal or genetic changes in the cancer cells are used to help predict how well treatment is likely to work and may guide the treatment choices.

Subtypes include:

- Precursor B-cell ALL
- Precursor T-cell ALL
- Burkitt-type ALL
- Philadelphia chromosome positive (*BCR-ABL* fusion) ALL (see below)

Some patients have a type of leukemia called biphenotypic acute leukemia, also called acute leukemia or ambiguous lineage leukemia, which means the disease has characteristics of both ALL and [acute myeloid leukemia \(AML\)](#) [4]. This type of leukemia is often treated with the treatments used for ALL.

As described in [Diagnosis](#) [3], about 20% to 30% of adults with ALL have a genetic change or mutation called the Philadelphia chromosome, causing 2 genes, *BCR* and *ABL*, to become 1 fusion gene called *BCR-ABL*. This mutation is found only in the cancerous blood-forming cells, not in other organs of the body, and is not inherited. Therefore, there is no concern about an increased risk of ALL for other family members.

The *BCR-ABL* gene causes specific types of white blood cells called B lymphoblasts to grow out of control. It is important to test for the Philadelphia chromosome because it helps the doctor predict a patient's prognosis and recommend treatment.

ALL classification and status of disease

In other types of cancer where a solid tumor forms, doctors agree on a set of stages that describe how big the tumor is and where it has spread. Because leukemia usually does not form a solid tumor and is found throughout the body when diagnosed, there is no formal staging system for ALL. Instead, there are general classifications used to describe ALL:

- **Newly diagnosed and untreated.** The bone marrow contains abnormal lymphoblasts, and the person does not have any symptoms. A patient often has decreased numbers of healthy white blood cells, red blood cells, and platelets. Some patients may have an overall increased number of white blood cells, but many of these may be abnormal lymphoblasts.
- **In remission.** A patient has received treatment for ALL. The bone marrow contains less than 5% blasts, and the patient has no symptoms. The numbers of healthy white blood cells, red blood cells, and platelets are normal.
- **Refractory.** Refractory leukemia means that the disease has not responded to treatment.
- **Recurrent.** Recurrent leukemia has come back after being in remission. If the leukemia does return, there will be another round of tests to learn about the extent of the recurrence. These tests and scans are often similar to those done at the time of the original [diagnosis](#) [3].

The subtype and classification of ALL will help the doctor recommend a specific treatment plan. The [next section in this guide is Treatment Options](#) [5]. Or, use the menu to choose another section to continue reading this guide.

Links

[1] <http://www.cancer.net/cancer-types/leukemia-acute-lymphocytic-all/subtypes-and-classification>

[2] <http://www.cancer.net/about-us>

[3] <http://www.cancer.net/node/19042>

[4] <http://www.cancer.net/node/31280>

[5] <http://www.cancer.net/node/19044>