

[Home](#) > [Types of Cancer](#) > [Leukemia - B-cell Prolymphocytic Leukemia and Hairy Cell Leukemia](#) > [Leukemia - B-cell Prolymphocytic Leukemia and Hairy Cell Leukemia - Diagnosis](#)

PDF generated on July 20, 2016 from

<http://www.cancer.net/cancer-types/leukemia-b-cell-prolymphocytic-leukemia-and-hairy-cell-leukemia/diagnosis>

[Leukemia - B-cell Prolymphocytic Leukemia and Hairy Cell Leukemia - Diagnosis \[1\]](#)

This section has been reviewed and approved by the [Cancer.Net Editorial Board \[2\]](#), 03/2016

ON THIS PAGE: You will find a list of common tests, procedures, and scans that doctors use to find the cause of a medical problem. To see other pages, use the menu.

Doctors use many blood and bone marrow tests to diagnose HCL and PLL. They also use these tests to find out how much the disease has spread. Doctors may also do tests to learn which treatments could work best.

Your doctor may suspect that you have HCL or PLL based on your symptoms. But, blood and bone marrow tests are the only sure way for the doctor to know if you have HCL or PLL.

This list describes options for diagnosing HCL and PLL, and not all tests listed will be used for every person. Your doctor may consider these factors when choosing a diagnostic test:

- The type of leukemia suspected
- Your signs and symptoms
- Your age and medical condition

- The results of earlier medical tests

The following tests may be used to diagnose PLL and HCL:

- **Blood tests.** The diagnosis of PLL or HCL begins with a blood test, called a [complete blood count \(CBC\)](#) [3]. A CBC measures the numbers of different types of cells in a person's blood. If the blood contains many white blood cells, a type of B-cell leukemia may be suspected. However, patients with HCL often have very low levels of white blood cells.
- **Bone marrow aspiration and biopsy.** These [2 procedures](#) [4] are similar and often done at the same time to examine the bone marrow. Bone marrow has both a solid and a liquid part. A bone marrow aspiration removes a sample of fluid with a needle. A bone marrow biopsy is the removal of a small amount of solid tissue using a needle.

A pathologist then analyzes the sample(s) to determine the number and type of abnormal cells. A pathologist is a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease. A common site for the bone marrow aspiration and biopsy is the pelvic bone, which is located in the lower back by the hip. The skin in that area is usually numbed with medication beforehand, and other types of anesthesia (medication to block the awareness of pain) may be used.

- **Molecular testing.** Your doctor may recommend running laboratory tests on a bone marrow sample to identify specific genes, proteins, and other factors unique to the leukemia.
 - Immunophenotyping is the examination of antigens, a specific type of protein, on the surface of the leukemia cells. Immunophenotyping allows the doctor to confirm the exact type of leukemia.
 - Cytogenetics is the examination of the leukemia cells for abnormalities in the long strands of genes called chromosomes. It helps the doctor confirm the diagnosis and may help to determine the person's chance of recovery.

Results of these tests will also help your doctor decide if your treatment options include targeted therapy (see [Treatment Options](#) [5]).

- **Computed tomography (CT or CAT) scan.** A [CT scan](#) [6] creates a 3-dimensional picture of the inside of the body using x-rays taken from different angles. A computer then

combines these images into a detailed, cross-sectional view that shows any abnormalities or tumors. A CT scan also shows enlarged lymph nodes or a swollen spleen and can be used to measure the size of a swollen lymph node. Sometimes, a special dye called a contrast medium is given before the scan to provide better detail on the image. This dye can be injected into a patient's vein or given as a pill to swallow.

- **Positron emission tomography (PET) or PET-CT scan.** A PET scan is usually combined with a CT scan (see above), called a [PET-CT scan](#) [7]. However, you may hear your doctor refer to this procedure just as a PET scan. A PET scan is a way to create pictures of organs and tissues inside the body. A small amount of a radioactive sugar substance is injected into the patient's body. This sugar substance is taken up by cells that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. A scanner then detects this substance to produce images of the inside of the body. A PET scan is sometimes used to help diagnose and evaluate PLL and HCL.

After diagnostic tests are done, your doctor will review all of the results with you. If the diagnosis is HCL or PLL, these results also help the doctor describe the leukemia.

The [next section in this guide is Stages](#) [8]. It explains the system doctors use to describe the extent of the disease. Or, use the menu to choose another section to continue reading this guide.

Links

[1] <http://www.cancer.net/cancer-types/leukemia-b-cell-prolymphocytic-leukemia-and-hairy-cell-leukemia/diagnosis>

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

[3] <http://www.cancer.net/node/24716>

[4] <http://www.cancer.net/node/24409>

[5] <http://www.cancer.net/node/19085>

[6] <http://www.cancer.net/node/24486>

[7] <http://www.cancer.net/node/24565>

[8] <http://www.cancer.net/node/19084>