# Leukemia - Chronic T-Cell Lymphocytic - Diagnosis [1]

**This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 09/2015**

**ON THIS PAGE**: You will find a list of the common tests, procedures, and scans that doctors can use to find out what's wrong and identify the cause of the problem. To see other pages, use the menu on the side of your screen.

Doctors use many blood and bone marrow tests to diagnose leukemia and to find out how much it may have spread. Although a patient's signs and symptoms may cause a doctor to suspect leukemia, it is diagnosed only by blood and/or bone marrow tests. Some tests may also determine which treatments may be the most effective.

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

- Age and medical condition
- Type of cancer suspected
- Signs and symptoms
- Previous test results

In addition to a physical examination, the following tests may be used to diagnose T-cell leukemia:

- **Blood tests.** The diagnosis of T-cell leukemia begins with a blood test called a complete blood count (CBC) [3]. A CBC measures the numbers of different types of cells in the blood. If the blood contains many white blood cells, T-cell leukemia may be suspected.

- **Bone marrow aspiration and biopsy.** A bone marrow biopsy and aspiration [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). A pathologist is a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease. A common site for a 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 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 disease.

    - 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 abnormal changes to the long strands of genes called chromosomes. It helps doctors confirm the diagnosis and may help determine the person's chance of recovery.

  Results of these tests will also help decide whether your treatment options include a type of treatment called targeted therapy (see Treatment Options [5]).

- **Skin biopsy.** A skin biopsy [6] is a procedure in which a sample of skin tissue is removed and examined under a microscope to look for T cells in the skin.

- **Computed tomography (CT or CAT) scan.** A CT scan [7] creates a three-dimensional picture of the inside of the body with an x-ray machine. A computer then combines these

images into a detailed, cross-sectional view that shows any abnormalities, including swollen lymph nodes or a swollen spleen. A CT scan can also 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.

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

*The next section in this guide is Stages* [8]*, and it explains how doctors describe the growth or spread of most types of cancer, called stage, and how this differs for T-cell leukemia. Or, use the menu on the side of your screen to choose another section to continue reading this guide.*

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**Links**
[1] http://www.cancer.net/cancer-types/leukemia-chronic-t-cell-lymphocytic/diagnosis
[2] http://www.cancer.net/about-us
[3] http://www.cancer.net/node/24716
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