

## [Leukemia - Acute Myeloid - AML - Diagnosis](#) [1]

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

**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.

Doctors use many tests to find, or diagnose leukemia. They also do tests to find out the subtype (see [Subtypes](#) [3]). Doctors may also do tests to learn which treatments could work best. For example, imaging tests can show more information about the cause of your symptoms. Imaging tests show pictures of the inside of the body.

For most types of cancer, a biopsy is the only sure way for the doctor to know whether an area of the body has cancer. In a biopsy, the doctor takes a small sample of tissue for testing in a laboratory. If a biopsy is not possible, the doctor may suggest other tests that will help make a diagnosis.

This list describes options for diagnosing AML, 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 AML:

- **Blood tests.** To diagnose AML, a doctor will do [blood tests](#) [4] to count the number of white blood cells and to see if they look abnormal under the microscope. Special tests called flow cytometry, or immunophenotyping, and cytochemistry are sometimes used to distinguish AML from other types of leukemia and to determine the exact subtype of AML.
- **Bone marrow aspiration and biopsy.** These [2 procedures](#) [5] 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 the 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 numbed with medication beforehand, and other types of anesthesia (medication to block the awareness of pain) may be used. If blood tests (see above) indicate AML, it is better to have the bone marrow aspiration and biopsy at the hospital where treatment will be given so the test does not need to be repeated.
- **Genomic testing.** Your doctor may recommend running laboratory tests on the leukemia cells to identify specific genes, proteins, chromosome changes, and other factors unique to the leukemia. Chromosome studies called cytogenetics are used to find genetic changes in the AML blasts. In addition, several specific genetic mutations in the AML cells have been found that can help determine a person's prognosis, or chance of recovery. These molecular analyses are now being done more often when AML is first diagnosed. Results of these tests will help decide your treatment options (see the [Treatment Options](#) [6] section).
- **Imaging tests.** A [computed tomography \(CT or CAT\) scan](#) [7] is a test that creates a 3-dimensional picture of the inside of the body using x-rays taken from different angles. A [magnetic resonance imaging](#) [8] (MRI) is a test that uses magnetic fields, not x-rays, to produce detailed images of the body. A special dye called a contrast medium is given before these scans to create a clearer picture. This dye can be injected into a patient's vein or given as a pill to swallow. These tests may be used to learn more about the cause of symptoms or to help diagnose infections in patients with AML. They are not regularly used to find out how widespread the AML is because the disease has often spread throughout the bone marrow when it is first diagnosed.

- **Lumbar puncture, also called a spinal tap.** A lumbar puncture is a procedure in which a doctor uses a needle to take a sample of cerebral spinal fluid (CSF) to look at the make up of the fluid and to find out if it contains leukemia cells or blood. CSF is the fluid that flows around the brain and spinal cord. Doctors generally give an anesthetic to numb the lower back before the procedure. The CSF is then examined under the microscope to look for AML cells.

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

The [next section in this guide is Subtypes](#) [3]. It explains the way that doctors describe AML. Or, use the menu to choose another section to continue reading this guide.

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#### **Links**

[1] <http://www.cancer.net/cancer-types/leukemia-acute-myeloid-aml/diagnosis>

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

[3] <http://www.cancer.net/node/19071>

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

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

[6] <http://www.cancer.net/node/19072>

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

[8] <http://www.cancer.net/node/24578>