Chronic Myeloid Leukemia (CML): Tests After Diagnosis

What tests might I have after being diagnosed?

After a diagnosis of CML, you'll likely need other tests. These tests help your healthcare providers learn more about the cancer and how to treat it. Some of them can also be used to see how well treatment is working, or to look for signs that CML might be coming back. If you have any questions about these or other tests, be sure to talk with your healthcare team.

The tests you might have include:

- Imaging tests
- Blood tests
- Bone marrow biopsy

Imaging tests

Imaging tests might be done if the healthcare provider suspects CML is causing a problem in another part of your body. For instance, they may be used to help see the extent of the leukemia, check the size of your spleen, or to look for other problems like an infection. These tests may include:

CT scan

This test uses a series of X-rays and a computer to make detailed images of tissues inside the body. A CT scan can show enlarged lymph nodes, a swollen spleen, or pockets of infection in your organs.

During the test, you lie still on a table as it slides through the center of the ring-shaped CT scanner. You may be asked to hold your breath once or more during the scan. You may be asked to drink a contrast dye after the first set of pictures is taken. This dye can help show abnormal areas in your body. The contrast dye will pass out of your body over the next day or so through your bowel movements. If you get the dye through an IV in your arm, it may cause a flush of warmth in your body for a few minutes. In rare cases, it can also cause hives or other allergic reactions. Tell the test technician if you don’t feel well during the test.

MRI

This test uses large magnets, radio waves, and a computer to create detailed images of tissues inside the body. This test may be used to see if leukemia has spread to the brain. You may be injected with a contrast dye before the scan. For this test, you lie still on a table as it passes through a long, tube-like scanner. This test may last an hour or more. Tell the technician if you have a fear of closed-in spaces (claustrophobia). You can be given medicine to help you relax or make you sleepy before the test.

Ultrasound

This test uses sound waves and a computer to create images of tissues inside the body. The test can help show if organs, such as your spleen, are swollen. The test is painless and takes only a few minutes. You lie on a table. A gel is put on your skin in the area to be examined. A wand called a transducer is rubbed over the skin. The images show up on a computer screen.

Blood tests

Blood may be taken to test in a lab. Blood tests can measure the numbers of the different types of cells in your blood, such as white blood cells and platelets. The levels of these should return to normal if your treatment is working.

Bone marrow biopsy

A biopsy is a small amount of tissue that’s taken and checked in a lab. This procedure is done by taking small amounts of bone marrow for testing. Bone marrow samples are usually taken from the back of the hip (pelvic) bone. For the bone marrow aspiration, the area over the hip is numbed. A thin, hollow needle is then put into the hip bone. A syringe is used to pull out a small amount of liquid bone marrow. You may have some brief pain when the marrow is removed. A bone marrow biopsy is usually done just after the aspiration. A small piece of bone and marrow is removed with a slightly larger needle that's pushed down into the bone. The biopsy may also cause some brief pain.

Bone marrow biopsy samples can be tested to see if there are still leukemia cells in the bone marrow. This can help see how well treatment is working. The tests done may include:

- **Cytogenetics.** For this test, cells are grown in a lab for a week or more. The chromosomes inside the cells are then stained with special dyes and viewed with a microscope. Major problems in the chromosomes can often be seen with this test. But smaller changes may not be visible.
- **Fluorescence in situ hybridization (FISH).** This test looks for changes in chromosomes. The cells in the sample are stained with fluorescent dyes that will only attach to certain parts of chromosomes. The cells are then viewed with a microscope using a special light. This test can find some chromosome changes that can't be seen with standard cytogenetic testing. It's also a faster test.
- **Polymerase chain reaction (PCR).** This is a very sensitive test that can find even very low levels of the BCR-ABL gene in a test sample. It works by increasing the amount of genetic material in a sample so that it can be detected.

Working with your healthcare provider

Your healthcare provider will talk with you about which tests you'll have and why they're needed. Make sure to get ready for the tests as instructed. Ask questions and talk about any concerns you have.