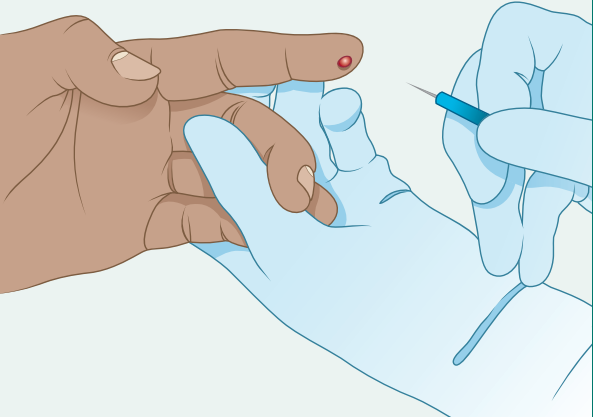


# MONITORING TREATMENT RESPONSE AND BLOOD COUNTS

## »» Why are monitoring tests done?

These tests help the medical team see how well chemotherapy or radiation therapy is working. They also show how treatment is affecting healthy cells and organs. And they can tell if the bone marrow is making new blood cells. Be sure to talk with the doctor if you have questions about any tests or what the results may mean.

## Complete blood count (CBC)

Why it is done and what it shows	How it is done
<p>Blood cell counts often drop after starting chemotherapy. The CBC measures changes in the number and types of cells (red blood cells (RBCs), white blood cells (WBCs), and platelets) in the blood, to show:</p> <ul style="list-style-type: none"><li>• How treatment affects both healthy and abnormal blood cells</li><li>• If the bone marrow is making new blood cells</li></ul> <p><b>The CBC measures 3 types of cells:</b></p> <ul style="list-style-type: none"><li>• <b>RBCs</b> carry oxygen from the lungs to the rest of the body. A low RBC count may be a sign of anemia. Anemia can make a person very tired, pale, and short of breath</li><li>• <b>WBCs</b> fight infection. A low WBC count makes it hard for the body to fight infections<ul style="list-style-type: none"><li>– One important WBC count is called an <b>absolute neutrophil count</b> (ANC). An ANC below 1000 means that the patient is at risk for getting an infection. The lower the ANC, the greater the chance for infection</li></ul></li><li>• <b>Platelets</b> help control bleeding. A low platelet count means bruising or bleeding may happen more easily</li></ul>	<p>A small amount of blood is taken from a vein in the arm, through a central intravenous catheter, or by a finger prick.</p> <p>A machine counts each type of blood cell and compares the count with normal ranges (or values) in healthy people.</p> <p>Normal ranges differ for men, women, and children.</p>  An illustration showing a person's hand with a finger being pricked by a lancet. A small drop of blood is visible on the fingertip. A gloved hand is holding the lancet.

## Where to learn more

**Candlelighters Childhood Cancer Foundation**  
www.candlelighters.org  
800-366-2223

**National Cancer Institute**  
www.cancer.gov  
800-4-CANCER  
(422-6237)

**The Leukemia & Lymphoma Society**  
www.lls.org  
800-955-4572

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## Bone marrow aspiration (BMA) or bone marrow biopsy (BMx)

What the test can show	How it is done
<ul style="list-style-type: none"><li>• There is no sign of cancer in the marrow (remission)</li><li>• The bone marrow is making new blood cells</li></ul>	<p>For a bone marrow aspiration, blood cells are removed from bone marrow fluid with a needle. Bone marrow is most often taken from the hip bone.</p> <p>A local anesthetic, sedative, or anesthesia may be given to lessen discomfort during the test. For a bone marrow biopsy, a small piece of bone marrow (with blood cells inside it) is removed.</p>

## Imaging studies (CT scan, PET scan, MRI)

What the test can show	How it is done
<ul style="list-style-type: none"><li>• If the cancer has spread to other organs, or if there are changes in the lymph nodes</li><li>• If there are solid tumors or masses, or if any organs are enlarged</li></ul>	<p>Different machines may be used to take pictures of the body.</p> <ul style="list-style-type: none"><li>• A <b>CT scan</b> uses x-rays and takes 3-D pictures</li><li>• An <b>MRI</b> uses radio waves and strong magnets to take pictures</li><li>• A <b>PET scan</b> uses a radioactive chemical to view healthy and cancerous tissue and organs</li></ul>

## Lumbar puncture (LP) or spinal tap

What the test can show	How it is done
<ul style="list-style-type: none"><li>• If there are cancer cells in the spinal fluid or near the brain</li><li>• If there is infection or bleeding around the spinal cord</li></ul>	<p>The lower back is numbed with a local anesthetic. A thin needle goes through the space between the bones in the spine. A small amount of fluid is removed.</p> <p>Sometimes medicine, such as chemotherapy, may be injected into the space instead.</p>

## Other monitoring tests for CML (chronic myelogenous leukemia):

In CML, a genetic defect, called the **Philadelphia (Ph) chromosome**, leads to the buildup of abnormal leukemic WBCs. The test can check the response to treatment and show whether the Ph chromosome is still present. If the test is negative for Ph, doctors do more sensitive blood tests called **PCR** or **FISH** to make sure treatment is working.

