

[Home](#) > [Types of Cancer](#) > [Bone Cancer](#) > Bone Cancer - Diagnosis

PDF generated on July 20, 2016 from <http://www.cancer.net/cancer-types/bone-cancer/diagnosis>

Bone Cancer - Diagnosis [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board \[2\]](#), 05/2016

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 tests to find, or diagnose, cancer. They also do tests to learn if cancer has spread to another part of the body from where it started. If this happens, it is called metastasis. For example, imaging tests, such as an x-ray, may be used to diagnose bone cancer and to find out whether the cancer has spread. Imaging tests show pictures of the inside of the body. Benign and cancerous tumors usually look different on imaging tests, which are described below. A benign tumor has round, smooth, well-defined borders. A cancerous tumor has irregular, poorly defined borders because of aggressive growth. There may also be evidence of bone destruction on an image of a cancerous tumor.

Although imaging tests may suggest a diagnosis of bone cancer, a biopsy will be performed whenever possible to confirm the diagnosis and to find out the subtype. For most types of cancer, a biopsy is the only way to make a definitive diagnosis of cancer. If a biopsy is not possible, the doctor may suggest other tests that will help make a diagnosis. It is extremely important for a patient to be seen by a sarcoma specialist before any surgery or a biopsy is performed.

This list describes options for diagnosing this type of cancer. Not all tests listed below will be used for every person. Your doctor may consider these factors when choosing a diagnostic test:

- The type of cancer suspected

- Your signs and symptoms
- Your age and medical condition
- The results of earlier medical tests

In addition to a physical examination, the following tests may be used to diagnose bone cancer:

- **Blood tests.** Some laboratory [blood tests](#) [3] may help find bone cancer. Patients with osteosarcoma or Ewing sarcoma may have higher alkaline phosphatase and lactate dehydrogenase levels in the blood. However, it is important to note that high levels do not always mean cancer. Alkaline phosphatase is normally high when cells that form bone tissue are very active, such as when children are growing or a broken bone is healing.
- **X-ray.** An x-ray is a way to create a picture of the structures inside of the body using a small amount of radiation.
- **Bone scan.** A [bone scan](#) [4] uses a radioactive tracer to look at the inside of the bones. The tracer is injected into a patient's vein. It collects in areas of the bone and is detected by a special camera. Healthy bone appears gray to the camera, and areas of injury, such as those caused by cancerous cells, appear dark.
- **Computed tomography (CT or CAT) scan.** A [CT scan](#) [5] creates a 3-dimensional picture 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 can also be used to measure the tumor's size. 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.
- **Magnetic resonance imaging (MRI).** An [MRI](#) [6] uses magnetic fields, not x-rays, to produce detailed images of the body. MRI can also be used to measure the tumor's size. A special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient's vein or given as a pill to swallow. MRI scans are used to check for any tumors in nearby soft tissue.
- **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 picture 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.

- **Biopsy.** A [biopsy](#) [8] is the removal of a small amount of tissue for examination under a microscope. Other tests can suggest that cancer is present, but only a biopsy can make a definite diagnosis. 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. Whether a needle biopsy or incisional biopsy is performed depends on where the cancer is located. During a needle biopsy, a small hole is made in the bone, and a tissue sample is removed from the tumor with a needle-like instrument. During an incisional biopsy, the tissue sample is removed after a small cut is made in the tumor. Sometimes it may not be possible to do a biopsy.

After diagnostic tests are done, your doctor will review all of the results with you. If the diagnosis is cancer, these results also help the doctor describe the cancer. This is called staging and grading.

The [next section in this guide is Stages and Grades](#) [9]. 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/bone-cancer/diagnosis>

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

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

[4] <http://www.cancer.net/node/24410>

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

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

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

[8] <http://www.cancer.net/node/24406>

[9] <http://www.cancer.net/node/18540>