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Bone Cancer - Diagnosis [1]

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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 tests to diagnose cancer and find out if it has metastasized (spread). Some tests may also determine which treatments may be the most effective.

Imaging tests, such as an x-ray, may be used to diagnose bone cancer and find out whether the cancer has spread. Benign and cancerous tumors usually look different on imaging tests (see below). A benign tumor has round, smooth, well-defined borders. A cancerous tumor has irregular, poorly defined border 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 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, 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 bone cancer:

Blood tests [3]. Some laboratory tests may help detect bone cancer. Alkaline phosphatase and lactate dehydrogenase levels in the blood may be higher in patients with osteosarcoma or Ewing?s sarcoma. However, it is important to note that alkaline phosphatase is normally high when cells that form bone tissue are very active (for example, when children are growing or a broken bone is healing), so high levels do not always mean cancer. Abnormal glucose tolerance

may be found in people with chondrosarcoma.

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 [4]. A bone scan 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 [5]. A CT scan creates a three-dimensional picture of the body with an x-ray machine. 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 contrast medium (a special dye) is injected into a vein or given orally (by mouth) to provide better detail.

Magnetic resonance imaging (MRI) [6]. An MRI uses magnetic fields, not x-rays, to produce detailed images of the body. A contrast medium may be injected into a patient?s vein or given orally to create a clearer picture. MRI scans are used to check for any tumors in nearby soft tissue.

Positron emission tomography (PET) scan [7]. A PET scan is a way to create picture of organs and tissues inside the body. A small amount of a radioactive substance is injected into a patient?s body. This substance is absorbed mainly by organs and tissues 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.

Integrated PET-CT scan [8]. This scanning method collects images from both a CT and a PET scan at the same time and then combines the images. This technique helps the doctor look at both the structure and how energy is used by the tumor and healthy tissue. This information can help doctors plan treatment and determine the benefits of different treatments.

Biopsy [9]. A biopsy 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. The sample removed during the biopsy is analyzed by a pathologist (a doctor who specializes in interpreting laboratory tests and evaluating cells, tissues, and organs to diagnose disease). The type of biopsy (needle or incisional) 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. However, sometimes a biopsy may not be able to be performed.

After these 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.

The next section helps explain the different stages for this type of cancer. Use the menu on the side of your screen to select Stages, or you can select another section, to continue reading this guide.

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