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**EASY READING**

# If You Have Bone Cancer

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## What is bone cancer?

Cancer starts when cells begin to grow out of control. Cells in nearly any part of the body can become cancer, and can then spread to other parts of the body. To learn more about cancer and how it starts and spreads, see [What Is Cancer?](#)<sup>1</sup>

[Primary bone cancers](#)<sup>2</sup> start when the cells in the bone start to grow out of control.

## Primary bone cancer versus bone metastasis

Primary bone cancers start in bones. Most bone cancers in children and teens are primary bone cancers.

But in adults, most cancers in the bones started in a different organ and then spread to the bones. This is known as [bone metastasis](#)<sup>3</sup>, and it can happen with some common cancers like breast, prostate, or lung cancer. For example, breast cancer that spreads to the bones is not bone cancer, it's metastatic breast cancer. The cancer cells in the bone look like the cancer cells in the breast, and they're treated the same way.

## Types of bone cancer

There are many types of bone cancer. Your doctor can tell you more about the type you have.

[Osteosarcoma](#)<sup>4</sup> and [Ewing tumors](#)<sup>5</sup> (Ewing sarcomas) are the most common bone cancers in children and teens. For more on these cancers, click on their links.

The most common [types of bone cancer](#)<sup>6</sup> in adults include:

- Chondrosarcoma
- Undifferentiated pleomorphic sarcoma (UPS) of bone (formerly known as malignant fibrous histiocytoma [MFH] of bone)
- Fibrosarcoma of bone
- Malignant giant cell tumor of bone
- Chordoma

## Other cancers that can start in the bones

Some cancers start in the bone marrow (the center of the bones, where new blood cells are made). These cancers include [multiple myeloma](#)<sup>7</sup>, [leukemias](#)<sup>8</sup>, and some [non-Hodgkin lymphomas](#)<sup>9</sup>. These are not thought of as bone cancers. For more on these cancers, click on the links above.

## Questions to ask the doctor

- Why do you think I have bone cancer?
- Is there a chance I don't have bone cancer?
- Would you please write down the kind of bone cancer you think I might have?
- Where is the cancer? Which bone is it in?
- What will happen next?

## How does the doctor know I have bone cancer?

These cancers may not be found until they cause pain that makes a person go to the doctor. Other [signs or symptoms of bone cancer](#)<sup>10</sup> can include swelling, a lump, and/or the bone breaking.

The doctor will ask you questions about your health and do a physical exam. If signs are pointing to bone cancer, tests will be needed to find out for sure. Here are some of the [tests<sup>11</sup>](#) you may need:

**X-rays:** Most bone cancers can be seen on x-rays, so this is often the first test done if a person might have bone cancer.

**MRI scan:** MRIs use radio waves and strong magnets instead of x-rays to make detailed pictures of the body. MRIs can be used to learn more about the size and shape of a tumor in a bone.

**CT scan (CAT scan):** This test combines many x-rays to make detailed pictures. It can be used to see if the cancer has spread to the liver, lungs, or other organs.

**Bone scan:** This test may be done to see if the cancer has spread to other bones. A small amount of low-level radioactive substance is put into your blood. It settles in damaged areas of bone all over the body. A special camera shows the radioactivity and makes a picture of your bones.

**PET scan:** A PET scan is like a bone scan, but it uses a type of sugar that can be seen inside your body with a special camera. Where there is cancer, this sugar shows up as a “hot spot.” This test is useful when your doctor thinks the cancer might have spread, but doesn’t know where. Some machines can do both a PET and a CT scan at the same time (known as a PET/CT scan).

**Biopsy:** For this test, the doctor takes out small pieces of the tumor. These are checked for cancer cells. This is the only way to know for sure if you have bone cancer (and what type it is). Biopsies can be done with a hollow needle or with surgery. Ask the doctor what kind of biopsy you need and how it’s done.

**If the tumor is in a bone, it’s very important that a surgeon who treats a lot of bone tumors does the biopsy.** This might affect treatment later on.

### Questions to ask the doctor

- What tests will I need?
- Who will do these tests?
- Where will they be done?
- Who can explain them to me?
- How and when will I get the results?
- Who will explain the results to me?

- What do we need to do next?

## How serious is my cancer?

If you have bone cancer, the doctor will want to find out how far it has spread. This is called [staging](#)<sup>12</sup>. Your doctor will want to find out the stage of your cancer to help decide what type of treatment is best for you.

The stage describes how much the cancer grew in the place it started. It also tells if the cancer has spread to other parts of your body.

Your cancer can be stage 1, 2, 3, or 4. The lower the number, the less the cancer has spread. A higher number means a more serious cancer. Be sure to ask the doctor about the cancer stage and what it means for you.

## Questions to ask the doctor

- Do you know the stage of my cancer?
- If not, how and when will you find out the stage?
- Would you explain what the stage means for me?
- How might the stage of the cancer affect my treatment?
- What will happen next?

## What kind of treatment will I need?

There are many ways to [treat bone cancer](#)<sup>13</sup>:

**Surgery** and **radiation** treat only the cancer in the bone. They do not affect the rest of the body.

**Chemo**, **targeted drugs**, and **other types of drugs** go through the whole body. They can reach cancer cells almost anywhere in the body.

Doctors often use both types of treatments for bone cancers. The treatment plan that's best for you will depend on:

- The type of bone cancer

- Where the cancer is
- The stage of the cancer
- The chance that a type of treatment will cure the cancer or help in some way
- Your age and overall health
- Your feelings about the treatment and the side effects that come with it

## **Surgery**

[Surgery](#)<sup>14</sup> is an important part of treatment for most kinds of bone cancer. The goal of surgery is to take out all of the cancer. Often some of the normal tissue around it needs to be removed as well. In rare cases, the arm or leg with cancer needs to be amputated to get all the cancer. If the cancer has spread, those tumors need to be taken out, too.

Surgery can also be used to help rebuild or repair the changes caused by taking out the bone with cancer.

Ask your doctor what kind of surgery you need and how the surgery will be done.

### **Side effects of surgery**

Any type of surgery can have risks and side effects, such as bleeding, blood clots, and infections. And surgery on different parts of the body can have different side effects. Ask the doctor what you can expect. If you have problems, let your doctors know. Doctors who treat people with bone cancer should be able to help you with any problems that come up.

## **Radiation**

[Radiation](#)<sup>15</sup> uses high-energy rays (like x-rays) to kill cancer cells. Most bone cancer cells are not easily killed with radiation, so this type of treatment isn't used for all bone cancers. It may be used if surgery can't take out a tumor. It also may be used after surgery to kill cancer cells that may have been left behind.

Radiation is aimed at the cancer from a machine outside the body. This is called externalbeam radiation.

### **Side effects of radiation treatments**

If your doctor suggests radiation treatment, talk about what side effects might happen. Side effects depend on the part of your body that's treated. The most common side

effects of radiation are:

- Skin changes where the radiation is given
- Feeling very tired
- Low blood cell counts

Most side effects get better after treatment ends, but some might last longer. Talk to your cancer care team about what you can expect.

## **Chemotherapy (chemo)**

[Chemotherapy](#)<sup>16</sup> is the use of drugs to fight cancer. The drugs are often given through a needle into a vein. These drugs go into the blood and spread through the body.

Chemo is given in cycles or rounds. Each round of treatment is followed by a rest break. Most of the time, 2 or more chemo drugs are given. Treatment often lasts for many months.

### **Side effects of chemo**

Chemo can make you feel very tired, sick to your stomach, or cause your hair to fall out. But these problems go away after treatment ends. Some chemo drugs might cause other side effects, some of which might last a long time.

There are ways to treat most chemo side effects. If you have side effects, talk to your cancer care team so they can help.

## **Targeted and other drugs**

[Targeted drugs](#)<sup>17</sup> work mostly on the changes in cells that make them cancer. These drugs work differently from chemo drugs. They may work even if other treatment doesn't.

Some other types of drugs might affect only bone cells, or they might help the body's immune system fight the cancer. These types of drugs can be helpful in treating some types of bone cancer.

### **Side effects of targeted drugs**

Side effects depend on which drug is used. These drugs might make you feel sick to your stomach or cause chills, fever, rashes, and headaches. Side effects often go away

after treatment ends.

There are ways to treat most of the side effects caused by targeted or other types of drugs. If you have side effects, tell your cancer care team so they can help.

## Clinical trials

[Clinical trials](#)<sup>18</sup> are research studies that test new drugs or other treatments in people. They compare standard treatments with others that may be better.

If you would like to learn more about clinical trials that might be right for you, start by asking your doctor about them.

Clinical trials are one way to get state-of-the-art cancer treatment. They are often the best way for doctors to find better ways to treat cancer. But they might not be right for everyone. If your doctor can find one that's studying the kind of cancer you have, it's up to you whether to take part. And if you do sign up for a clinical trial, you can always stop at any time.

## What about other treatments I hear about?

When you have cancer you might hear about [other ways to treat](#)<sup>19</sup> it or treat your symptoms. These might not always be standard medical treatments. These treatments could be vitamins, herbs, diets, and other things.

Some of these treatments might be helpful, but many have not been tested. Some have been shown not to help. A few have even been found to be harmful. Talk to your doctor about anything you're thinking about using, whether it's a vitamin, a diet, or anything else.

## Questions to ask the doctor

- What treatment do you think is best for me?
- What's the goal of treatment? Do you think it could cure the cancer?
- Will treatment include surgery? If so, who will do the surgery?
- What will the surgery be like?
- Will surgery change the way my body looks and works?
- Will I need rehab after surgery?
- Will I need other types of treatment, too?
- What will these treatments be like?

- What side effects could I have from these treatments?
- What can I do about side effects that I might have?
- Is there a clinical trial that might be right for me?
- What about vitamins or diets that friends tell me about? How will I know if they are safe?
- How soon do I need to start treatment?
- What should I do to be ready for treatment?
- Is there anything I can do to help the treatment work better?
- What's the next step?

## What will happen after treatment?

You'll be glad [once treatment is over](#)<sup>20</sup>. But it can be hard not to worry about cancer coming back. Even when cancer never comes back, people still worry about it. For years after treatment ends, you will need to see your cancer doctor. Be sure to go to all of these follow-up visits. You might have exams, blood tests, scans, x-rays, and maybe other tests to see if the cancer has come back.

At first, your visits may be every few months. Then, the longer you're cancer-free, the less often the visits are needed. Your doctor will tell you which tests should be done and how often based on the type and stage of your cancer and what treatments you've had.

Having cancer and dealing with treatment can be hard, but it can also be a time to [look at your life in new ways](#)<sup>21</sup>. You might be thinking about how to [improve your health](#)<sup>22</sup>. Call us or talk to your doctor to find out what you can do to feel better.

## Hyperlinks

1. [www.cancer.org/cancer/cancer-basics/what-is-cancer.html](http://www.cancer.org/cancer/cancer-basics/what-is-cancer.html)
2. [www.cancer.org/cancer/bone-cancer/about.html](http://www.cancer.org/cancer/bone-cancer/about.html)
3. [www.cancer.org/treatment/understanding-your-diagnosis/advanced-cancer/bone-metastases.html](http://www.cancer.org/treatment/understanding-your-diagnosis/advanced-cancer/bone-metastases.html)
4. [www.cancer.org/cancer/osteosarcoma.html](http://www.cancer.org/cancer/osteosarcoma.html)
5. [www.cancer.org/cancer/ewing-tumor.html](http://www.cancer.org/cancer/ewing-tumor.html)
6. [www.cancer.org/cancer/bone-cancer/about/what-is-bone-cancer.html](http://www.cancer.org/cancer/bone-cancer/about/what-is-bone-cancer.html)
7. [www.cancer.org/cancer/multiple-myeloma.html](http://www.cancer.org/cancer/multiple-myeloma.html)
8. [www.cancer.org/cancer/leukemia.html](http://www.cancer.org/cancer/leukemia.html)
9. [www.cancer.org/cancer/non-hodgkin-lymphoma.html](http://www.cancer.org/cancer/non-hodgkin-lymphoma.html)

10. [www.cancer.org/cancer/bone-cancer/detection-diagnosis-staging/signs-symptoms.html](http://www.cancer.org/cancer/bone-cancer/detection-diagnosis-staging/signs-symptoms.html)
11. [www.cancer.org/cancer/bone-cancer/detection-diagnosis-staging/how-diagnosed.html](http://www.cancer.org/cancer/bone-cancer/detection-diagnosis-staging/how-diagnosed.html)
12. [www.cancer.org/treatment/understanding-your-diagnosis/staging.html](http://www.cancer.org/treatment/understanding-your-diagnosis/staging.html)
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14. [www.cancer.org/treatment/treatments-and-side-effects/treatment-types/surgery.html](http://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/surgery.html)
15. [www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html](http://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html)
16. [www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html](http://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html)
17. [www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html](http://www.cancer.org/treatment/treatments-and-side-effects/treatment-types/targeted-therapy.html)
18. [www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html](http://www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html)
19. [www.cancer.org/treatment/treatments-and-side-effects/complementary-and-alternative-medicine.html](http://www.cancer.org/treatment/treatments-and-side-effects/complementary-and-alternative-medicine.html)
20. [www.cancer.org/cancer/bone-cancer/after-treatment/follow-up.html](http://www.cancer.org/cancer/bone-cancer/after-treatment/follow-up.html)
21. [www.cancer.org/treatment/survivorship-during-and-after-treatment.html](http://www.cancer.org/treatment/survivorship-during-and-after-treatment.html)
22. [www.cancer.org/treatment/survivorship-during-and-after-treatment/be-healthy-after-treatment.html](http://www.cancer.org/treatment/survivorship-during-and-after-treatment/be-healthy-after-treatment.html)
23. <http://www.cancer.org>

## Words to know

**Amputation** (am-pyoo-TAY-shun): Surgery to remove part or all of a limb (an arm or leg)

**Biopsy** (BY-op-see): The removal of small pieces of tissue to see if they contain cancer cells

**Metastasis** (muh-TAS-tuh-sis): The spread of cancer from where it started to other places in the body

**Orthopedic surgeon** (or-thuh-PEE-dik SUR-jun): A doctor who uses surgery to treat bone and joint problems

**Orthopedic oncologist** (or-thuh-PEE-dik on-KAHL-uh-jist): An orthopedic surgeon who

specializes in treating cancer of the bones and joints

### **How can I learn more?**

We have a lot more information for you. You can find it online at [www.cancer.org](http://www.cancer.org) (<http://www.cancer.org>)<sup>23</sup>. Or, you can call our toll-free number at 1-800-227-2345 to talk to one of our cancer information specialists.

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