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Advanced Cancer, Metastatic Cancer, and Bone Metastasis

Advanced cancers have usually spread from where they started to other parts of the body. This is known as metastatic cancer. But not all advanced cancers are metastatic. Bone metastasis is cancer that has spread to the bone.

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Understanding Advanced Cancer, Metastatic Cancer, and Bone Metastasis

What is advanced cancer?

Different health care providers may not mean the exact same thing when they use the term advanced cancer. **Here, when we refer to advanced cancer, we're talking**

about cancers that cannot be cured. This means cancers that won't go away and stay away completely with treatment.

Advanced cancers can be locally advanced or metastatic. (Metastatic cancers have spread from where they started to other parts of the body and are covered in the next section.) Cancers that have spread are often considered advanced when they can't be cured or controlled with treatment. But not all advanced cancers have spread to other parts of the body. For example, some cancers that start in the brain may be considered advanced because of their large size or closeness to important organs or blood vessels. This can make them life-threatening even though they haven't spread to other parts of the body. In the same way, not all metastatic cancers are advanced cancers. Some cancers, such as testicular cancer, can spread to other parts of the body and still be very curable.

Locally advanced cancer is used to describe cancer that has grown outside the organ it started in but has not yet spread to distant parts of the body. For example, locally advanced pancreatic cancer is often not curable. But other locally advanced cancers, such as some prostate cancers, may be cured.

If you or a loved one is told that you have advanced cancer, it's very important to find out exactly what the doctor means. Some may use the term to describe metastatic cancer, while others might use it in other situations. Be sure you understand what the doctor is talking about and what it means for you.

Advanced cancer can often be treated. Even if the cancer can't be cured, treatment can sometimes:

- Shrink the cancer
- Slow its growth
- Help relieve symptoms
- Help you live longer

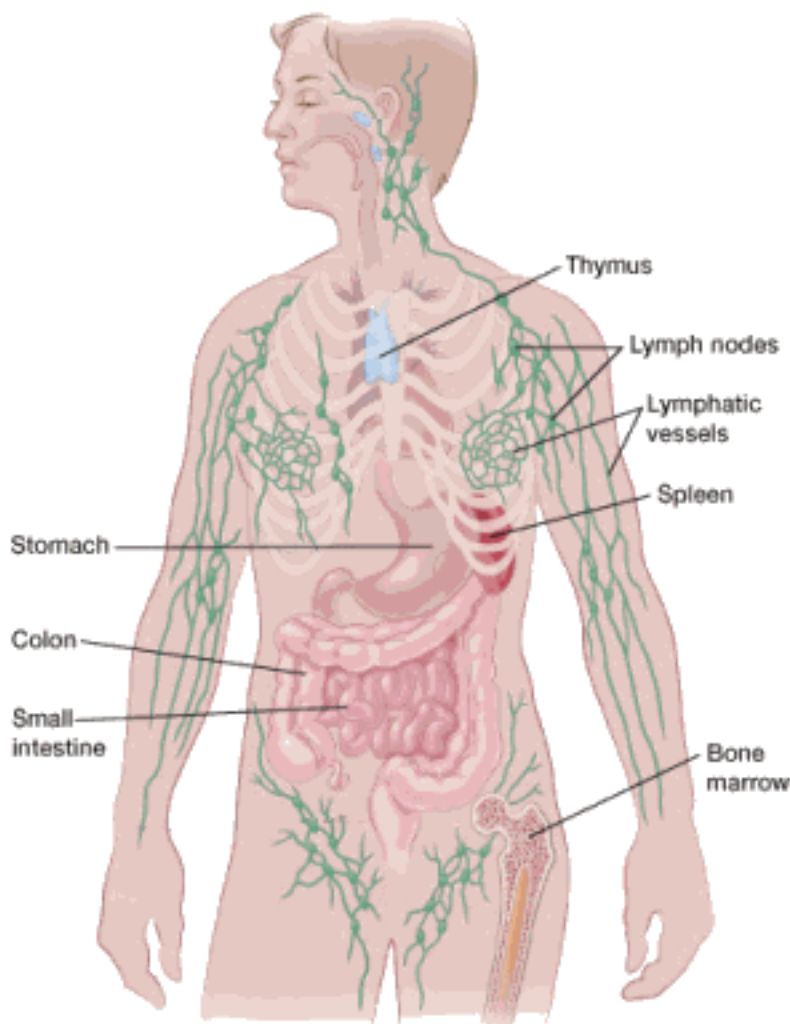
For some people, the cancer may already be advanced when they first learn they have the disease. For others, the cancer may not become advanced until years after it was first diagnosed.

As advanced cancer grows, it can cause symptoms that may need to be treated to help control them. These symptoms can almost always be treated, even when the cancer itself no longer responds to treatment.

What is metastatic cancer?

Metastatic cancer is a cancer that has spread from the part of the body where it started (the primary site) to other parts of the body. When cancer cells break away from a tumor, they can travel to other parts of the body through the bloodstream or the lymph system. (Lymph vessels are much like blood vessels, except they carry a clear fluid and immune system cells.)

This image shows some parts of the lymph system, like lymph nodes and lymph vessels, as well as organs and tissues that contain many lymphocytes (immune cells).



If the cells travel through the lymph system, they could end up in nearby lymph nodes (small, bean-sized collections of immune cells) or they could spread to other organs. More often, cancer cells that break off from the main tumor travel through the bloodstream. Once in the blood, they can go to any part of the body. Many of these cells

die, but some may settle in a new area, start to grow, and form new tumors. **This spread of cancer to a new part of the body is called metastasis.**

Cancer cells have to go through several steps to spread to new parts of the body:

- They have to be able to break away from the original tumor and enter the bloodstream or lymph system, which can carry them to another part of the body.
- They need to attach to the wall of a blood or lymph vessel and move through it into a new organ.
- They need to be able to grow and thrive in their new location.
- They need to be able to avoid attacks from the body's immune system.

Going through all these steps means the cells that start new tumors may no longer be exactly the same as the ones in the tumor they started in. This might make them harder to treat.

Even when cancer has spread to a new area, it's still named after the part of the body where it started. For instance, breast cancer that has spread to the lungs is called "metastatic breast cancer to the lungs" – it's not lung cancer. Treatment is also based on where the cancer started. If prostate cancer spreads to the bones, it's still prostate cancer (not bone cancer), and the doctor will recommend treatments that have been shown to help against metastatic prostate cancer. Likewise, colon cancer that has spread to the liver is treated as metastatic colon cancer, not liver cancer.

Sometimes the metastatic tumors have already begun to grow when the cancer is first found and diagnosed. And in some cases, a metastasis may be found before the original (primary) tumor is found. If a cancer has already spread to many places when it's found, it may be very hard to figure out where it started. If this happens the cancer is called **cancer of unknown primary**.

Why cancer cells tend to spread to certain parts of the body

Where a cancer starts is linked to where it will spread. Most cancer cells that break free from the original tumor are carried in the blood or lymph system until they get trapped in the next "downstream" organ or set of lymph nodes. Once the cells are there, they can start to grow and form new tumors. This explains why breast cancer often spreads to underarm lymph nodes, but rarely to lymph nodes in the groin. Likewise, there are many cancers that commonly spread to the lungs. This is because the heart pumps blood from the rest of the body through the lungs' blood vessels before sending it elsewhere.

What is bone metastasis?

A bone metastasis is an area of bone that contains cancer that spread there from somewhere else.

Cancer can spread to any bone in the body, but metastases are most often found in bones near the center of the body. The spine is the most common site. Other common sites are the hip bone (pelvis), upper leg bone (femur), upper arm bone (humerus), ribs, and the skull.

Once cancer has spread to the bones or to other parts of the body it's rarely able to be cured. Still, it often can be treated to shrink, stop, or slow its growth. Even if a cure is no longer possible, treating the cancer may be able to help you live longer and feel better.

How does bone metastasis cause bone changes and other problems?

Bone is the supporting framework of the body. Bones are made of a network of fibrous tissue called *matrix*, minerals such as calcium that attach to the matrix and give the bone its strength and hardness, and 2 main kinds of bone cells are *osteoblasts* and *osteoclasts*.

Knowing a little about these 2 kinds of cells can help you understand how bone metastases grow, and how some medicines work to treat bone metastases. The **osteoblast is the cell that forms new bone**, and the **osteoclast is the cell that dissolves old bone**. When these cells are both working right, new bone is always forming while old bone is dissolving. This helps keep the bones strong.

Cancer cells can affect the bones by interfering with osteoblasts and osteoclasts:

- **Often, the cancer cells make substances that turn on the osteoclasts.** This leads to bone being broken down without new bone being made. This weakens the bones. The holes that develop when parts of bones dissolve are called *osteolytic* or *lytic* lesions. Lytic lesions are so weak that they can cause the bone to easily break.
- **Sometimes, the cancer cells release substances that turn on the osteoblasts.** This leads to new bone being made without breaking down the old bone broken down first. This makes areas of the bones harder, a condition called *sclerosis*. The areas of bone where this occurs are called *osteoblastic* or *blastic* lesions. Although these blastic areas are harder, the structure of the bone is not normal and these areas actually break more easily than normal bone.

Bone metastasis can cause other problems as well:

- When cancer spreads to the bones of the spine, it can press on the spinal cord. This can cause nerve damage that may even lead to paralysis if not treated.
- As cancer cells damage the bones, calcium from the bones is released into the blood. This can lead to problems caused by high blood calcium levels (hypercalcemia).

Why do cancers metastasize to bones?

For cancer cells to spread to other parts of the body, they have to go through many changes:

- They have to be able to break away from the original (primary) tumor and get into the bloodstream or lymph system, which can carry them to another part of the body.
- At some point they need to attach to the wall of a blood or lymph vessel and move through it, out into a new organ.
- They then need to be able to grow and thrive in their new location.

All the while, the cancer cells need to be able to avoid attacks from the body's immune system. Going through all these steps means the cells that start new tumors may no longer be exactly the same as the ones in the tumor where they started, but they will still be called the same name. For instance, breast cancer that spreads to the bone is called metastatic breast cancer, not bone cancer.

What's the difference between primary bone cancer and bone metastasis?

Some cancers start in the bone, rather than spreading to the bones from somewhere else. Cancers that start in the bone are called *primary bone cancers*. These cancers are very different from bone metastases. **Bone metastasis is much more common than primary bone cancers, especially in adults.**

Information on different types of primary bone cancers can be found in [Bone Cancer](#)¹, [Osteosarcoma](#)², and [Ewing Family of Tumors](#)³.

Hyperlinks

1. www.cancer.org/cancer/bone-cancer.html

2. www.cancer.org/cancer/osteosarcoma.html
3. www.cancer.org/cancer/ewing-tumor.html

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Finding Advanced Cancer

Some cancers are more likely to spread than others. But it's hard to know who will develop advanced cancer. Advanced cancers are those that have spread from where they first started and are no longer responding to treatment. Here are some of the ways that advanced cancer may be found.

Signs and symptoms of advanced cancer

General signs and symptoms of advanced cancer can include:

- Loss of energy and feeling tired and/or weak: This can get so bad that you may have a hard time doing everyday tasks like bathing or getting dressed. People with advanced cancer often need help with these things. At some point, they may need to spend most of their time in bed. (It's important to note that some cancer treatments can cause this symptom, too.)
- Weight loss (without trying)
- Pain

- Shortness of breath or trouble breathing

Advanced cancers can also cause many other symptoms, depending on the type of cancer and where it has spread.

Physical exam

Along with asking about your symptoms, a lot can be learned by examining you. Your health care provider may find signs of problems caused by advanced cancer, such as:

- Fluid in your lungs
- Fluid in your belly (abdominal cavity)
- Lumps (tumors) on or within your body
- An enlarged liver
- Weakness or numbness in your legs

Tests to find advanced cancer

Blood tests

Certain blood tests can point to advanced cancer. For instance, liver function tests are often abnormal if cancer has spread to the liver. High blood calcium levels can mean that the cancer has spread to bones.

Tumor markers: Some types of cancer cause substances in the blood called tumor markers to rise. Examples of tumor markers are PSA (prostate-specific antigen) for prostate cancer and CEA (carcinoembryonic antigen) for colon cancer. The level of these substances in the blood can sometimes be very high in advanced cancer. High levels of tumor markers can lead your doctor to suspect that cancer has come back or spread, but more testing will be needed to confirm this.

There are other tumor markers for other cancers. See our information on the specific type of cancer to learn what tumor markers may be used for it.

Imaging tests

Imaging tests take pictures of the inside of your body. Many of the tests used to find advanced cancer may have also been done when you were first diagnosed with cancer.

You can learn more about these and other imaging tests your provider may want you to have by calling us or visiting our web page on imaging tests.

Some of the [imaging tests](#)¹ used might include:

- Regular (plain) x-rays
- Ultrasound
- CT (computed tomography) scan
- MRI (magnetic resonance imaging)
- PET (positron emission tomography) scan
- Bone scan

Looking for cancer cells in body tissues and/or fluids

Biopsy

When an imaging test finds something that isn't normal, [more tests](#)² will be needed to make sure that it's cancer. This can often be done by taking out a small piece of the changed area and looking at it under the microscope to see if there are cancer cells in it. This is called a biopsy.

Bone marrow aspiration and biopsy

Bone marrow is the spongy tissue inside bone that makes new blood cells. If it is suspected that your cancer has spread to the bone marrow, samples of the bone marrow will need to be taken for testing.

Most often, the samples are taken from the back of the pelvic (hip) bone while you lie on a table (either on your side or on your belly). Your provider will clean the skin over your hip and then numb the area and the surface of the bone with a local anesthetic (numbing medicine). This may cause a brief stinging or burning sensation.

For aspiration, a long, hollow needle is then pushed into the bone and a syringe is used to suck out a small amount of liquid bone marrow (about 1 teaspoon). Even with an anesthetic, most patients still have some pain when this is done.

A small piece of bone and marrow (about 1/16th inch in diameter and ½ inch long) is also taken out with a slightly larger needle. This causes a feeling of pressure, and may also cause some brief pain. Once the biopsy is done, pressure will be applied to the site to help prevent bleeding.

Lumbar puncture (spinal tap)

If your provider suspects that cancer has spread to the fluid that surrounds the brain and spinal cord, they'll need to take out some of the fluid to check it for cancer cells. Most often this is done with a test called a lumbar puncture (spinal tap). (The fluid around the brain and spinal cord is called cerebrospinal fluid or CSF.)

Most often for this test, you lie on your side with your knees pulled up to your chest. (Less often this test is done with the patient sitting up and bent over a table.) A small needle is used to numb an area in your lower back at your spine. A thin, hollow needle is then placed between the bones of the spine and into the area around the spinal cord. Some of this fluid is then collected as it drips out through the needle. The fluid is sent to a lab to be checked for cancer cells. Other tests may be done on the fluid as well.

Paracentesis and thoracentesis

If fluid has built up in the belly or abdominal cavity (called ascites) or the space around the lungs (called pleural effusion), it can be removed using a needle and sent to the lab to look for cancer cells. A local anesthetic (numbing medicine) is given to numb the area before the needle is put in. Sometimes ultrasound (an imaging test) is used to help place the needle into the area of fluid. Only a small amount of fluid is needed to test for cancer cells, but much larger amounts can be removed to help the patient feel better. Paracentesis is the test used to collect fluid in the abdomen and thoracentesis is used to collect fluid around the lungs.

What should you ask your doctor about advanced cancer?

It's important to have [open and honest talks with your doctor](#)³. Your doctor and the rest of your cancer care team want to answer all of your questions and help you make decisions that are best for you. It may help to have a family member and or a friend with you during these talks. Take notes or ask if you can record the conversation.

Here are some questions you may want to ask:

- Why do you think I have advanced cancer?
- How do you know that this is the same cancer I had before and not a new cancer?
- Which [treatments](#) do you recommend, and why?
- What's the goal of treatment? To cure the cancer? Help me live longer? Relieve or prevent some of the symptoms of the cancer?
- What are the chances the treatment will work?
- Are there any problems I might notice that you need to know about right away?

- How would treatment affect my daily activities?
- What treatment options do I have for [relieving bone pain or other symptoms](#)?
- Are there [clinical trials](#)⁴ that may be right for me?
- Will my insurance cover treatment? How much will I have to pay?
- What will happen next?
- How do I get help after hours or on weekends?

Hyperlinks

1. www.cancer.org/treatment/understanding-your-diagnosis/tests/imaging-radiology-tests-for-cancer.html
2. www.cancer.org/treatment/understanding-your-diagnosis/tests.html
3. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/the-doctor-patient-relationship.html
4. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html

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Finding Bone Metastases

Signs and symptoms of bone metastasis

Many of the symptoms listed here can also be caused by something other than the spread of cancer to the bones. Still, it's very important for you to tell your cancer care team about any new symptoms you have. Finding and treating bone metastases early can help prevent problems later on.

Pain

Bone pain is often the first symptom of cancer that has spread to the bone. The pain may come and go at first. It tends to be worse at night and may get better with movement. Later on, it can become constant and may be worse during activity.

It's important to tell your cancer care team about any new pain right away. If it's coming from a bone, the bone might be so weakened that it will break. This can often be

prevented if the bone metastasis is found early.

Fractures

Bones weakened from metastatic cancer can break or fracture. The fracture might happen with a fall or injury, but a weak bone can also break during everyday activities. These fractures often cause sudden, severe pain. The pain may keep you from moving.

The most common fractures are in the long bones of the arms and legs and the bones of the spine. Sudden pain in the middle of the back, for instance, is a common symptom of a bone in the spine breaking and collapsing from cancer.

Spinal cord compression

Cancer growth in the bones of the spine can press on the spinal cord. This is called spinal cord compression and is very serious. The spinal cord has nerves that allow you to move and feel what happens to your body. Some of these nerves also control other functions such as bowel and bladder control.

One of the very earliest symptoms of spinal cord compression is pain in the back or neck. Pressure on the spinal cord can also damage the nerves in the spinal cord, leading to symptoms like numbness and weakness in the area of the body below the tumor.

If a spinal cord compression isn't treated right away, the person can become paralyzed. Most often this affects the legs (so that the person can't walk) but if the tumor is pressing on the spinal cord in the neck, both the arms and the legs can be affected.

Sometimes the first symptom you may have of spinal cord pressure is trouble urinating because nerves from the spinal cord control the bladder. You may also feel more constipated (because nerves from the spine help you move your bowels).

High blood calcium levels

When cancer spreads to the bones, calcium from the bones can be released into the bloodstream. This can lead to high levels of calcium in the blood called *hypercalcemia*. This can cause problems such as constipation, nausea, loss of appetite, and extreme thirst. The high calcium also causes you to make more urine, leading to dehydration. It can make you feel very tired and weak, too. You may be sleepy or even confused. If hypercalcemia is not treated, you can even go into a coma.

Tests to find bone metastases

Bone metastases are sometimes found because they cause problems, but in some cases, they're found before you have any symptoms. Lab tests and imaging tests (like x-rays or bone scans) are often used to see if and/or how far the cancer has spread. These tests may show bone metastases.

Imaging tests

Imaging tests create pictures of the inside of your body. They may be done before, during, and after cancer treatment for a number of reasons, including to help find out if cancer has spread (to the bones or any other part of the body).

X-rays

X-rays are often the first tests done if a person with cancer is having bone pain or other symptoms.

In **osteolytic** or lytic metastases, the cancer cells dissolve the bone, making part of it less dense. If the cancer has destroyed enough of the bone, these changes look like a darker hole in the gray-white bone seen on the x-ray.

Osteoblastic or blastic metastases cause an area of the bone to look denser or sclerotic. On x-rays, these changes show up as spots that are whiter than the bone around them.

Often, bone metastases have both lytic and blastic features.

X-rays can also show fractures (breaks) in bones that have been weakened by metastases.

Other imaging tests

Some of the other imaging tests that might be used include:

- Bone scan
- CT (computed tomography) scan
- MRI (magnetic resonance imaging)
- PET (positron emission tomography) scan

Many of the tests used to find bone metastases may have also been done when you were first diagnosed with cancer. You can learn more about these and other imaging tests your provider may want you to have in [Imaging Tests](#)¹.

Blood tests

When cancer spreads to the bones, certain substances that can be found by routine lab tests might be released into the blood. For example:

- **Calcium:** Bone metastases can dissolve the bones, leading to a high blood calcium level (called *hypercalcemia*). Problems other than bone metastases can cause high calcium levels, but if a person with cancer has a high blood calcium level, tests are often done to look for bone metastases.
- **Alkaline phosphatase:** When the bones dissolve, the levels of alkaline phosphatase or ALP may increase. Alkaline phosphatase is also made by the liver, so high ALP levels can mean liver problems. (They don't always mean bone metastases.)

Urine tests

Several substances can be released into urine when bone is damaged. One substance that can be measured is called N-telopeptide.

Biopsies used to find bone metastases

In most cases, cancer is diagnosed by removing a small piece of body tissue and looking at it under a microscope. This procedure is called a biopsy.

If you've been diagnosed with cancer or have had cancer in the past, your doctor may be able to tell if you have bone metastasis based on the results of imaging tests such as a bone scan.

If any of your blood test results also suggest bone metastasis, this makes the diagnosis even more certain. In this case, your doctor might not need to do a biopsy. But if it's not clear from tests if the cancer has spread to the bones, your doctor might take a sample from the changed bone to find out if it's cancer.

CT scans may be used to guide a biopsy needle into a suspected area of bone metastasis deep in the body. You stay on the CT scanning table while a doctor guides

the needle through your skin and toward the changed area. CT scans are repeated until the needle has reached the right place. A tiny piece of tissue is then taken out and checked in the lab to see if there are cancer cells in it.

What should you ask your doctor about bone metastasis?

It's important to have [open and honest talks with your doctor](#)². Your doctor and the rest of your cancer care team want to answer all of your questions and help you make decisions that are best for you. It may help to have a family member and or a friend with you during these talks. Take notes or ask if you can record the conversation.

Here are some questions you might want to ask:

- How do you know that this is the same cancer I had before and not a new cancer?
- Which bones has the cancer spread to?
- Which [treatments](#) do you recommend, and why?
- What's the goal of treatment? To cure the cancer? Help me live longer? Relieve or prevent some of the symptoms of the cancer?
- What are my chances of treatment working?
- Are there any problems I might notice that you need to know about right away?
- How would treatment affect my daily activities?
- What treatment options do I have for [relieving bone pain or other symptoms](#)?
- What can I do to help prevent broken bones?
- What would we do if a bone breaks?
- Are there [clinical trials](#)³ that may be right for me?
- Will my insurance cover treatment? How much will I have to pay?
- What will happen next?
- How do I get help after hours or on weekends?

Hyperlinks

1. www.cancer.org/treatment/understanding-your-diagnosis/tests/imaging-radiology-tests-for-cancer.html
2. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/the-doctor-patient-relationship.html
3. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html

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Treating Advanced Cancer

Advanced cancer that can't be cured, often still can be treated. The physical symptoms it causes almost always can be managed. At any stage of cancer, the treatment goal should be clear. You should know if the goal is to cure the cancer, slow its growth and help you live longer, or relieve symptoms. This can sometimes be confusing because some treatments used to cure cancer are also used to slow its growth or relieve symptoms.

This is a review of common treatments used for advanced cancer. More details on treating certain types of advanced cancer can be found in our information on that [specific cancer type](#)¹.

Making treatment choices

Treatment choices for advanced cancer depend on where the cancer started and how much it has spread. As a general rule, cancer that has spread will need systemic therapy like chemotherapy or hormone therapy. Systemic therapy is treatment that's taken by mouth or put into the blood to reach cancer cells throughout the entire body. Local therapies such as surgery or radiation, only affect a certain part of the body. Still, they might also be needed to help prevent or relieve certain symptoms.

Some people believe that nothing more can be done if the cancer can't be cured, so they stop all treatment. But radiation, chemotherapy (and other drugs), surgery, and other treatments can often slow cancer growth and help control symptoms. And relieving symptoms like pain, constipation, upset stomach, and vomiting can help you feel better. **Something can almost always be done to help maintain or improve your quality of life.**

The goal of any cancer care is to give you the best possible quality of life. You want to feel as good as possible for as long as possible. This is a very personal issue. Talk to your cancer care team about what's important to you. Tell them what you want to be able to continue to do. You have the right to be the decision-maker in planning your treatment.

Some people might want to continue cancer treatments as long as there's a chance they may help. Others might decide that the side effects or other burdens of aggressive cancer treatments outweigh the possible benefits, so they may no longer want this type of treatment. This may be hard for some of your loved ones to accept, but you have the right to make this decision. It often helps to include your loved ones in these tough choices. Either way, you should make the decisions that are best and most realistic for you and your situation.

Surgery for advanced cancer

Surgery isn't often used to treat advanced cancer, but can help in some cases.

Surgery to relieve symptoms and improve your life

Surgery can help you feel better and do more. It may help you live longer, even when cancer has spread too far to be cured. For instance, cancer can sometimes block the bowel (intestine). This can be very painful and can be dangerous if the bowel is blocked completely. Surgery may be done to bypass the blockage or put a tube through it so the bowel can work again. Another option is surgery to let the bowel drain outside the belly into a bag (called a [*colostomy*](#)²).

Sometimes, simple surgery is used to [put in feeding tubes or to put small tubes into blood vessels](#)³ for giving medicines to relieve pain.

Surgery to stop bleeding

Surgery may be done if the cancer is causing bleeding from the stomach, bowel, or airways. Often, the doctor will first look for the source of bleeding with an endoscope (a

thin flexible tube that has a camera inside). The scope can be put in through the mouth or the rectum. (The patient is given drugs to sleep while this is done.) The doctor may be able to stop bleeding by burning the bleeding vessel closed with a tool passed through the scope. If this can't be done, surgery to stop the bleeding may be an option.

Another way to find out where the bleeding is coming from is to use angiography. For this test, a long, thin tube called a catheter is put into a large artery (such as the one in the groin) and threaded up to the arteries of the intestines or lungs. A dye is put in through the tube. It allows the doctor to pinpoint the blood vessel that is bleeding. Often, substances can be put in through the catheter and to stop the bleeding.

Surgery to stop pain

Sometimes a tumor may be pressing on a nerve and causing pain. Either injecting something into the nerve to kill it, cutting the nerve, or taking out the tumor may relieve the pain.

Surgery to prevent or treat broken bones

Cancer that spreads to the bones may weaken them, causing breaks (fractures) that tend to heal very poorly. If a bone looks weak on an imaging test, surgery may be done to put in a metal rod to support it and help keep it from breaking. This is most often done in the thigh bone. If the bone is already broken, surgery can relieve pain and help the person be more active.

Surgery to treat cancer that's pressing on the spinal cord

If a tumor is pressing on the spinal cord, it can lead to a loss of muscle control and function below the level of the tumor and sometimes paralysis. Surgery may be needed to remove the tumor and stabilize the bones in the spine so that a person can continue to walk and function.

Ablative techniques for advanced cancer

Putting a needle or probe right into a tumor and using heat, cold, or a chemical to destroy it is called ablation. It's used most often for cancer that has spread to the bone or liver, but may be used in other areas, too. It's most often used when only a few tumors are causing problems.

A common type of ablation called **radiofrequency ablation** (RFA) uses a needle that

carries an electric current. The tip of the needle is put into the tumor. Ultrasound or CT scans may be used to be sure the needle is in the right place. An electric current passed through the needle heats the tumor to destroy it. RFA is usually done while the patient is under general anesthesia (deeply asleep and not able to feel pain).

In another type of ablation, called **cryoablation**, a probe put into the tumor is used to freeze it, killing the cancer cells. Other methods may use alcohol to kill the cells or other ways to heat the tumor (such as laser-induced interstitial thermotherapy).

Radiation therapy for advanced cancer

Radiation therapy uses high-energy x-rays or particles to kill cancer cells and shrink tumors. In advanced cancer, radiation therapy is often used to shrink tumors to reduce pain or other symptoms. This is called **palliative radiation**.

Different types of radiation therapy are sometimes used together.

Radiopharmaceuticals

Radiopharmaceuticals are a group of drugs that contain radioactive materials (like radium-223 or strontium-89) that have been dissolved into liquids and can be put into a vein. They travel through blood and are drawn to areas of bones that have cancer. The radiation given off by the drug kills cancer cells and relieves bone pain, but it does not cure the cancer.

If the cancer has spread to many bones, this type of treatment may work better than using external beam radiation, which only treats a small area. For more on this, see [Treating Bone Metastasis](#).

Other radiopharmaceuticals aren't only attracted to bones, but can be used to treat certain types of cancer, even when it has spread to other places. For instance, radioactive iodine (I-131) can be used to treat most types of advanced thyroid cancer.

Drugs used to treat advanced cancer

This is general information about the types of drugs that can be used to treat advanced cancer. To learn more about drugs used to treat your type of cancer, see our information on that specific type of cancer.

Chemotherapy

Chemotherapy (chemo) uses drugs to kill cancer cells. Usually the drugs are put into a vein or taken by mouth. Once the drugs get into the bloodstream, they go throughout the body. This treatment is often useful for cancer that's widespread. By shrinking the cancer, it can relieve symptoms. It can even prolong life for some people with advanced cancer.

To learn more about chemo and dealing with side effects, see [Chemotherapy](#)⁴.

Targeted therapy

Targeted therapy drugs attack specific parts of cancer cells or other cells or proteins that help cancer cells grow. These drugs work differently from standard chemo drugs. They can be used alone or along with other treatments.

To see what targeted drugs can be used to treat your cancer, see our information about that [specific type of cancer](#)⁵.

Hormone therapy

Hormone therapy drugs block the actions of certain hormones or reduce how much hormone is made. This treatment is most often used for breast and prostate cancer, but it can be used for some other cancers as well.

For instance, estrogen is a hormone that causes many breast cancers to grow. Drugs can lower estrogen levels or block the effect that estrogen has on breast cancer cells. This may stop growth and even make tumors shrink. Likewise, male sex hormones, called androgens, make most prostate cancers grow. Drugs that lower androgen levels or block their effect can help stop or slow growth of these cancers.

Immunotherapy

Immunotherapy boosts the body's immune system or uses man-made versions of immune system proteins to kill cancer cells. Many types of immunotherapy are used to treat patients with advanced cancer.

To see if immunotherapy is used to treat the cancer you have, see our information about that [kind of cancer](#)⁶.

Drugs to treat cancer that has spread to the bones

Some types of drugs can be especially helpful if cancer has spread to the bones. For

more on these drugs, see [Treating Bone Metastasis](#).

Clinical trials

Clinical trials are carefully controlled research studies that are done with patients who volunteer for them. If you would like to take part in a clinical trial, you should start by asking your doctor if your clinic or hospital conducts clinical trials.

Clinical trials are one way to get state-of-the-art cancer treatment. In some cases they may be the only way to get access to newer treatments. They are also the only way for doctors to learn better methods to treat cancer. Still, they're not right for everyone.

For more information see [Clinical Trials](#)⁷.

Hyperlinks

1. www.cancer.org/cancer/all-cancer-types.html
2. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/surgery/ostomies/colostomy.html
3. www.cancer.org/treatment/treatments-and-side-effects/tubes-and-iv-lines.html
4. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html
5. www.cancer.org/cancer/all-cancer-types.html
6. www.cancer.org/cancer/all-cancer-types.html
7. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html

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Treating Bone Metastases

Treatments can often shrink or slow the growth of bone metastases and can help with any symptoms they cause. But they usually do not make the metastases go away completely. Some people believe that nothing more can be done if the cancer can't be cured, so they stop all treatment. But radiation, chemotherapy (and other drugs), surgery, and other treatments can often slow cancer growth and help control symptoms. And relieving symptoms like pain and constipation can help you feel better. **Something**

can almost always be done to help maintain or improve your quality of life.

At any stage of cancer, the goal of treatment should be clear. You should know if the goal is to cure the cancer, slow its growth and help you live longer, or relieve symptoms. This can sometimes be confusing because some treatments used to cure cancer are also used to slow its growth or relieve symptoms.

Treatment options for people with bone metastases depend on many things:

- What kind of primary cancer you have
- Which bones (and how many) the cancer has spread to
- Whether any bones have been weakened or broken
- Which treatments you have already had
- Your symptoms
- Your general state of health

Systemic treatments (which go through the whole body) and local treatments (which treat only the cancer in the bone) are the 2 main types of treatment for bone metastases. Depending on the extent and location of the metastases, one or both of these types of treatment may be used.

Systemic treatments for bone metastases

Systemic treatments affect the whole body. In many cases, especially if the cancer has spread to many bones, systemic treatments are used because they can reach cancer cells all through the body.

Systemic therapies include chemotherapy, hormone therapy, or other medicines that are taken by mouth or injected into the blood. These treatments are not aimed specifically at bone metastases, but they often help treat them.

Other systemic treatments, such as radiopharmaceuticals and bisphosphonates (see sections below), are aimed more specifically at cancer that has reached the bones. Sometimes both of these types of treatments are used at the same time.

Chemotherapy

Chemotherapy (chemo) uses drugs that are injected into a vein or taken by mouth to kill cancer cells. These drugs enter the bloodstream and go throughout the body. Chemo is used as the main treatment for many types of metastatic cancer. It can often help shrink

tumors, which can reduce pain and help you feel better, but it doesn't make them go away and stay away. It's sometimes used with local treatments such as radiation.

Visit the [Chemotherapy](#)¹ section to learn more about chemo and dealing with side effects, or contact us (1-800-227-2345).

Hormone therapy

Hormone therapy drugs block the actions of certain hormones or reduce how much is made. This therapy is most often used to treat breast and prostate cancer, and it can be used when these cancers spread to the bone as well.

For instance, estrogen is a hormone that causes many breast cancers to grow. Drugs can lower estrogen levels or block the effect that estrogen has on breast cancer cells. When breast cancer has spread to the bones, this may stop cell growth and even cause tumors to shrink.

Likewise, male sex hormones, called androgens, make most prostate cancers grow. Drugs that lower androgen levels or block their effect can help stop or slow growth of these cancers.

Targeted therapy

Targeted therapy drugs attack specific parts of cancer cells or other cells or proteins that help cancer cells grow. These drugs work differently from standard chemo drugs. They can be used alone or along with other treatments to treat bone metastases.

To see what targeted drugs can be used to treat your cancer, see information about that [specific type of cancer](#)².

Immunotherapy

Immunotherapy is a systemic therapy that boosts the body's immune system or uses man-made versions of immune system proteins to kill cancer cells. Immunotherapy may be used to treat bone metastases.

To see if immunotherapy is used to treat the cancer you have, see information about that [type of cancer](#)³.

Radiopharmaceuticals

Radiopharmaceuticals are a group of drugs that carry radioactive elements. These drugs are injected into a vein and settle in areas of bone with active turnover (like those containing cancer spread). Once there, the radiation they give off kills cancer cells.

If cancer has spread to many bones, radiopharmaceuticals work better than trying to aim external beam radiation at each affected bone. (External beam radiation is discussed below as a local treatment.) In some cases, radiopharmaceuticals may be used along with external beam radiation that's aimed at the most painful bone metastases.

Some of the radiopharmaceuticals approved for use in the United States include:

- Strontium-89 (Metastron[®])
- Samarium-153 (Quadramet[®])
- Radium-223 (Xofigo[®])

Treatment with a radiopharmaceutical can often reduce pain from bone metastases for several months. Re-treatment is possible when the pain returns, but the pain might not be reduced for as long as it was with the first treatment.

These drugs work best when the metastases are blastic, meaning the cancer has stimulated certain bone cells (osteoblasts) to form new areas of bone.

See [Radiation Therapy](#)⁴ to learn more about this type of treatment.

Other drugs for bone metastases

Bisphosphonates

Bisphosphonates are a group of drugs that may be used to treat cancer that has spread to the bones. These drugs work by slowing down the action of osteoclasts. These bone cells normally dissolve small bits of bones to help remodel them and keep them strong. But osteoclasts are often overactive when cancer spreads to the bones, which can cause problems. Bisphosphonates often used to treat bone metastases include pamidronate (Aredia) and zoledronic acid (Zometa).

Bisphosphonates can help with cancer that has spread to the bones by:

- Reducing bone pain
- Slowing down bone damage caused by the cancer

- Reducing high blood calcium levels (hypercalcemia)
- Lowering the risk of broken bones

Bisphosphonates tend to work better when x-rays show the metastatic cancer is thinning and weakening the bone (lytic metastases). They don't work as well for treating blastic metastases, where the bones become denser.

The most common side effects of bisphosphonates are fatigue, fever, nausea, vomiting, anemia (a low red blood cell count), and bone or joint pain. But other drugs or the cancer itself can cause many of these effects, too. These drugs can lower calcium levels, so they can't be given to someone whose calcium levels are already low. Bisphosphonates can cause kidney damage and often can't be given to people with poor kidney function.

Medication-related osteonecrosis of the jaw

A rare but very serious side effect of bisphosphonates is osteonecrosis (OS-tee-o-nuh-**CROW**-sis) of the jaw or ONJ. In ONJ, part of the jaw bone loses its blood supply and dies. This can lead to tooth loss and infections or open sores of the jaw bone that won't heal and are hard to treat.

ONJ is very hard to treat and prevention is very important. ONJ sometimes seems to be triggered by having a tooth pulled while taking bisphosphonates. Many cancer doctors advise patients to get a dental check-up and have any tooth or jaw problems treated before they start taking a bisphosphonate. Maintaining good oral hygiene by flossing and brushing, making sure that dentures fit properly, and having regular dental check-ups might also help prevent ONJ.

Denosumab

Denosumab is another drug that can help when cancer spreads to bone. Like the bisphosphonates, this drug keeps osteoclasts from being turned on, but it does so in a different way, by blocking a substance called *RANKL*.

Common side effects include nausea, diarrhea, and feeling weak or tired. Like the bisphosphonates, denosumab can cause osteonecrosis of the jaw (ONJ), so doctors recommend taking the same precautions (such as having tooth and jaw problems treated before starting the drug). Unlike the bisphosphonates, this drug is safe to give to patients with kidney problems.

Local treatments for bone metastases

Local treatments, including radiation therapy, surgery and other techniques, are directed at one part instead of the entire body.

Local treatments can be useful if the cancer has spread to only one bone, or if there are areas of cancer spread that are worse than others and need to be treated right away. These treatments can help relieve pain or other symptoms caused by one or a few bone metastases.

Sometimes, local treatments such as surgery are used to stabilize a bone that's in danger of breaking because it's been weakened by cancer. It's much easier to keep a damaged bone from breaking than to try and fix it after it has broken.

External radiation therapy

Radiation therapy uses high-energy rays or particles to destroy cancer cells or slow their growth. When a cancer has spread to a small number of spots in bones, radiation can be used to help relieve symptoms such as pain. If the bone is treated with radiation before it gets too weak, it may also help prevent a later fracture.

The most common way to give radiation for bone metastasis is to focus a beam of radiation from a machine outside the body. This is called external beam radiation.

Radiation therapy for bone metastasis can be given as 1 or 2 large doses or in smaller amounts over 5 to 10 treatments that result in a somewhat larger total dose. Both schedules give the same degree of pain relief. The major advantage of the 1- or 2-dose treatment is that fewer trips are needed for treatment. The advantage of more treatments is that patients are less likely to need re-treatment because of the pain coming back.

See our [Radiation Therapy](#)⁵ section to learn more about different kinds of external beam radiation, what it's like to get radiation, and treatment side effects.

Ablation techniques

Putting a needle or probe right into a tumor and using heat, cold, or a chemical to destroy it is called ablation. It may be used if only 1 or 2 bone tumors are causing problems.

Radiofrequency ablation (RFA) is a common type. It uses a needle that carries an

electric current. The tip of the needle is put into the bone tumor. CT scans may be used to be sure the needle is in the right place. An electric current is then sent through the needle to heat the tumor to destroy it. RFA is usually done while the patient is under general anesthesia (deeply asleep and not able to feel pain).

In another type of ablation, called **cryoablation**, a very cold probe is put into the tumor to freeze it, killing the cancer cells. Other methods use alcohol to kill the cells or other ways to heat the tumor (such as laser-induced interstitial thermotherapy). After the cancer tissue is destroyed, the space left behind may be filled with bone cement. (See below.)

Bone cement

Another option to strengthen and/or stabilize a bone is to use injections of quick-setting bone cement or glue called PMMA.

When PMMA is injected into a spinal bone it's called **vertebroplasty** or **kyphoplasty**. This helps stabilize the bone and relieves pain in most people. Vertebroplasty often reduces pain right away and can be done in an outpatient setting.

When the bone cement is injected to strengthen bones other than the spine, it's called **cementoplasty**. Sometimes, it's used along with surgery, radiation, radiofrequency ablation, or other treatments.

Surgery

Surgery used to treat a bone metastasis is done to relieve symptoms and/or stabilize the bone to prevent fractures (breaks).

Bone metastases can weaken bones, leading to fractures that tend to heal very poorly. Surgery can be done to put in screws, rods, pins, plates, cages, or other devices to make the bone more stable and help prevent fractures. If the bone is already broken, surgery can often relieve pain quickly and help the patient return to their usual activities.

Sometimes a person can't have surgery because of poor general health, other complications of the cancer, or side effects of other treatments. If doctors can't surgically reinforce a bone that has metastasis, a cast or splint may help stabilize it to reduce pain so the person can move around.

Clinical trials

Clinical trials are carefully controlled research studies that are done with patients who volunteer for them. If you would like to take part in a clinical trial, you should start by asking your doctor if your clinic or hospital conducts clinical trials.

Clinical trials are one way to get state-of-the-art cancer treatment. In some cases they may be the only way to get access to newer treatments. They are also the only way for doctors to learn better methods to treat cancer. Still, they're not right for everyone.

For more information, see [Clinical Trials](#)⁶.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/chemotherapy.html
2. www.cancer.org/cancer/all-cancer-types.html
3. www.cancer.org/cancer/all-cancer-types.html
4. www.cancer.org/treatment/treatments-and-side-effects/treatment-types/radiation.html
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Managing Symptoms of Advanced Cancer

Advanced cancer no longer responds to treatment. But there are still things that can be done to help you feel as good as possible for as long as possible. This care, aimed at relieving suffering and improving the quality of life, is called *palliative care*.

[Palliative care](#)¹ focuses on the patient and family rather than the disease. It treats **symptoms** caused by the cancer. It does not treat the cancer itself. Some health care providers call this supportive care.

Common symptoms that are treated and controlled or relieved by palliative care can include:

- Pain
- Breathing problems
- Appetite loss
- Weight loss
- Tiredness (fatigue)

- Depression and anxiety
- Confusion
- Nausea and vomiting
- Constipation
- Bowel blockage (obstruction)

Again, the goal of palliative care is to prevent and relieve suffering, and support the best possible quality of life for patients and their families, regardless of the stage of the disease.

Here are some of the symptoms you might have when advanced cancer is in different parts of your body. Not everyone will get all these symptoms, and some of the information here might not apply to you. In many cases, these symptoms are not caused directly by the cancer or can have more than one cause. Your cancer care team can tell you the most about where the cancer is and what symptoms it might cause.

If cancer is in the abdomen (belly)

Fluid in the abdomen (ascites)

Some cancers cause fluid to build up in the abdomen. (This is called *ascites* [ah-site-eez].) This can make your belly swollen and feel uncomfortable. The fluid can also push on your lungs and make it hard to breathe.

Treatment

The fluid can be removed with a long, hollow needle. This relieves the problem for a while, but the fluid often comes back. If the fluid keeps coming back, sometimes a thin, flexible tube called a catheter can be put through the skin and left in place. A valve at the end of the catheter sticks out of the belly and can be opened to let the fluid drain out.

Bowel obstruction

Cancer in the abdomen sometimes blocks the intestines. This is called bowel obstruction. The blockage keeps food and stool from moving through. This leads to severe cramping, belly pain, and vomiting. If the blockage in the intestine isn't opened, the pressure that builds up can create a hole (a perforation) that lets the contents of the intestine spill into the abdominal cavity. When this happens, bacteria from the intestine

get into the abdominal cavity, leading to a severe infection. This can cause even worse pain with nausea and vomiting. An obstruction is very serious and can be fatal.

Treatment

It's often very hard to solve this problem with surgery, because many patients are too sick to have an operation. Others may have cancers that are so advanced that even if they can have surgery, it may not help for long. The decision to have surgery should be weighed against the chances of returning to a comfortable life.

An operation called a *colostomy* may help if only the colon (large intestine) is blocked. In this operation the surgeon cuts the colon above the blockage. The cut end is then connected to an opening (stoma) on the skin of the abdomen (belly). Stool then comes out into a bag that's put around the opening.

If the bowel is blocked in only one area, a small, stiff tube called a stent may be put through the blocked area to help keep it open. This can be done without surgery, and may be an option for some blockages of the colon and the small intestine.

If surgery or stents to relieve the blockage aren't practical, treatment of the symptoms is often a good choice for many patients. For instance, the stomach's contents can be removed through a tube placed through the nose, down the throat, and into the stomach. (This called a *nasogastric* or *NG tube*.) The NG tube is attached to a suction device to gently take out the contents of the stomach. This often relieves nausea and vomiting and may help keep pressure from building up and causing a perforation.

If an NG tube is helping, it sometimes can be replaced by a tube that goes right into the stomach through the skin on the belly. (This is called a *G tube*.)

If needed, you can get a shot (injection) or a patch for pain and nausea. There are drugs that can help stop the production of digestive juices and improve some of the symptoms that go along with a blocked bowel.

Kidney blockage

Cancer in the abdomen can sometimes block the thin tubes (ureters) that carry urine from the kidneys to the bladder. If this happens, you may stop peeing. Urine then backs up in the kidneys, and they stop working. This often makes you feel very tired and sick to your stomach.

Treatment

In many cases, a small, stiff tube called a stent can be threaded up from the bladder and through the ureters to keep them open and allow urine to flow again. Another option is to put a tube through the skin and right into the kidney to allow the urine to drain into a bag outside the body. This is called a *nephrostomy*.

If cancer has spread to bones

This topic is covered in detail in [Managing Symptoms of Bone Metastases](#).

If cancer has spread to the brain

The most common symptoms of cancer in the brain are headache or not being able to move part of your body, like an arm or leg. Other symptoms can include sleepiness or problems hearing, seeing, and even urinating. Seizures are another possible symptom of cancer in the brain. They aren't common, but they can be very upsetting and scary for you and those around you.

Treatment

Steroid drugs, such as dexamethasone, reduce the swelling around the tumors and often help with symptoms right away. If the patient had a seizure, medicine will be given to help prevent more of them. If there are only 1 or 2 areas of cancer spread in the brain, they may be removed with surgery or treated with stereotactic radiosurgery (a type of radiation therapy). Some patients, especially those with many tumors in the brain, are treated with regular external beam radiation to the whole brain.

If cancer has spread to the meninges

Some cancers can spread to the meninges – the tissues that cover the brain and spinal cord. This can cause weakness in the arms and legs, slurred speech, trouble swallowing, vision problems, and weakness of the facial muscles.

Symptoms might suggest the cancer has spread to the meninges, but this isn't seen well on imaging tests like MRI. To diagnose it, a lumbar puncture (spinal tap) must be done to remove some of the fluid that surrounds the brain and spinal cord (called *cerebrospinal fluid* or *CSF*). The fluid is looked at under a microscope to see if it contains cancer cells.

Treatment

Most chemotherapy (chemo) drugs enter the bloodstream but can't cross into the CSF, meninges, brain, or spinal cord. Because of this, the most common treatment for leptomeningeal spread is to inject chemotherapy right into the cerebrospinal fluid. (This is called *intrathecal chemotherapy*). This can be done during a lumbar puncture or through a device called an Ommaya reservoir.

An Ommaya reservoir is a dome-like device attached to a thin catheter. The dome part is put under the skin of the scalp, with the catheter going through a hole in the skull and into one of the cavities of the brain (called a *ventricle*). Intrathecal chemo can be given by putting a needle through the skin and into the dome. The chemo goes through the catheter and into the CSF in the ventricle. The CSF in the ventricle circulates through the other ventricles and into the area around the brain and spinal cord. With an Ommaya reservoir, the patient can get intrathecal chemo without having to get repeated lumbar punctures.

Radiation to the brain and spinal cord can also be used to treat cancer that has spread to the meninges.

If cancer has spread to the liver

Cancer in the liver can make you lose your appetite and feel tired. Some patients feel pain in the upper right part of the abdomen (belly), where the liver is. Usually the pain isn't bad and is less of a problem than the tiredness and appetite loss.

If there's a lot of cancer in the liver, it can't work well. The liver normally keeps levels of a substance called bilirubin in check, but if it isn't working well, this substance builds up. This build up can lead to a problem called jaundice, which turns your eyes and skin yellow. The liver also removes a number of toxic substances from the blood. When the liver isn't working well, these substances can build up and lead to the brain not working well, either. This is called *hepatic encephalopathy*. It can cause confusion, sleepiness, and even coma.

Cancer in the liver can also lead to fluid build-up in your belly, which is described in "If cancer is in the abdomen (belly)."

Treatment

- If there are fewer than 5 tumors in the liver, they can sometimes be treated with surgery or ablative treatments (See Treating Advanced Cancer for more on ablative techniques.)
- If there are more tumors, chemo may help. This may be given into a vein in your

- arm or right into a blood vessel leading to the liver.
- Sometimes a procedure can be done to block the blood supply to the cancer (this is called *embolization*).
 - Hepatic encephalopathy may be treated with a drug called lactulose or certain antibiotics. Patients are also put on a low-protein diet.

If cancer has spread to the chest or lungs

Shortness of breath

Shortness of breath can have a number of causes related to cancer. It can be caused by a tumor blocking the airway so that it's hard to get air in and out of the lungs. Cancer cells in the lungs can make it hard for oxygen to get into the blood from the lungs. Fluid build-up around the lungs (called a *pleural effusion*) can also cause shortness of breath (discussed earlier and also below). A tumor blocking blood flow to the heart (called superior vena cava syndrome) or fluid around the heart (a pericardial effusion) are also possible causes. (These are also discussed below.)

Low red blood cell counts (anemia) can also make someone feel short of breath. Anemia is common in people with cancer. (See *Anemia in People With Cancer* for more on this.)

Symptoms of lung diseases, such as asthma, emphysema, and other diseases not related to cancer can become worse due to cancer.

All of these problems either prevent the lungs from breathing in enough air, or keep them from getting enough oxygen into the blood.

Treatment

Getting extra oxygen can often be very helpful. It's in a tank connected to a tube. The end of a little tube goes under your nose or connects to a mask that goes over your mouth and nose so you can breathe in the oxygen.

When possible, treating the cause will help relieve shortness of breath. Treating the cancer with chemotherapy or targeted therapy may help. If there is a single tumor blocking an airway, treatment with radiation may help. Another option is using a flexible tube that is passed down your throat and into the lungs (a bronchoscope) to use laser treatment to shrink a tumor.

Sometimes fluid builds up in the lungs. (This is called *pulmonary edema*.) This is more common in people with heart problems. The fluid build-up can be treated with diuretics (water pills) and heart medicines.

Anemia can be treated with blood transfusions to help you feel less short of breath.

Morphine-like drugs (opioids) can be used to help relieve the feeling of shortness of breath. Anti-anxiety medicines, like diazepam (Valium[®]), can also help to reduce cough and ease the distress caused by shortness of breath. Sometimes medicines that help dry up mucus can help, too.

Having trouble breathing can make you feel anxious, worried, and even like you are in a panic. Some patients find these complementary methods helpful to ease the anxiety that can come with breathing problems:

- Relaxation methods
- Distraction (watching television, reading, etc.)
- A fan blowing air on you

Fluid around the lungs (pleural effusion)

Cancer in the chest or lungs may cause fluid to build up in the chest around the lungs. This is called a *pleural effusion*. The fluid can keep the lungs from filling with air and make you short of breath.

Treatment

- Removing the fluid with a hollow needle (This is called *thoracentesis*.)
- If the fluid keeps coming back, a small, flexible tube (a catheter) can be put through the skin and left in place so the fluid can drain into a bag.
- To remove the fluid and keep it from coming back, sometimes a procedure called *pleurodesis* is done. This procedure works to seal the space around the lung to help limit further fluid build-up. A tube is often left in for a couple of days to drain any new fluid that might collect.
- Treating the cancer with drugs, such as chemotherapy, hormone therapy, targeted therapy, or radiation therapy will lower the amount of fluid being made so that it doesn't build up

Fluid around the heart (pericardial effusion)

The heart is surrounded by tissue that makes a sac (called the *pericardium*). It isn't common, but cancer can spread to this tissue and cause fluid build-up around the heart. (This is called a *pericardial effusion*.) The fluid can press on the heart, so that it can't pump blood well. Symptoms can include shortness of breath, low blood pressure, body swelling, and feeling tired.

Treatment

- Removing the fluid with a long, hollow needle. This procedure, called a *pericardiocentesis*, is usually done in the hospital because the heartbeat needs to be monitored.
- To keep the fluid from building up again, a piece of the pericardium may be removed. This is called a *pericardial window*.

Superior vena cava syndrome

The main vein that returns blood to the heart from the upper body is called the superior vena cava. It runs through the upper middle chest. Tumors in the chest or lung can sometimes press on this vein, blocking the blood flow to the heart. This will make blood back up in the lungs, face, and arms.

Symptoms can include:

- Shortness of breath
- A feeling of fullness or pressure in the head
- Swelling in the face, neck, and arms
- Coughing
- Chest pain
- Facial redness
- Swollen neck veins

If not treated, this can affect blood flow to the brain, which can cause confusion, changes in consciousness, or even coma.

Treatment

Superior vena cava syndrome needs to be treated right away. Radiation therapy and/or chemo are often used to shrink the tumor. If this isn't possible, you may have a small metal tube called a stent put in the vein to keep it open. This tube is put in through a large vein in your arm or neck and then threaded through the blockage. Medicines can also be used to help reduce swelling and remove extra fluid in the body.

If cancer has spread to the skin

Advanced cancer that has spread to the skin can cause lumps or even sores on the skin. These can be painful and may smell bad if they get infected.

Treatment

- Radiation treatment to lumps or sores on the skin can shrink them and dry them out.
- Certain chemo drugs can be put right on the sores and may help dry them up.
- Antibiotics can help with infections. The antibiotics may either be pills or a cream or powder that is put right on the sores.

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Managing Symptoms of Bone Metastases

When cancer spreads to your bones from where it started, it's called bone metastasis. It may not be possible to cure bone metastases, but there are still things that can be done to help you feel as good as possible for as long as possible. This care, aimed at relieving suffering and improving the quality of life, is called palliative care. The focus is on the patient and family rather than the disease. [Palliative care](#)¹ treats the symptoms caused by bone metastases. It does not treat the cancer itself. Some health care providers call this supportive care.

Here are some of the common problems caused by bone metastases. Not everyone will get all of these symptoms, and some of the information here may not apply to you. In some cases, these symptoms are not caused directly by the cancer in the bones or can have more than one cause. Your cancer care team can tell you the most about where the bone metastasis is and what symptoms it might cause.

Pain

There are many ways to treat pain caused by bone metastases. Almost any of the local or systemic treatments commonly used for bone metastases can be helpful in treating pain.

Pain medicines are also very helpful. There are many different kinds of pain medicines used to treat cancer pain. There are also a lot of ways the medicines can be taken, such as pills, patches, sprays, and pumps that let you put the medicine into your body when you need it.

You should never accept pain as a normal part of having cancer. All pain can be treated, and most pain can be controlled or relieved. Talk to your cancer care team or see [Cancer Pain](#)² to learn more.

High calcium levels (hypercalcemia)

As cancer cells damage the bones, calcium from the bones is released into the blood. This can lead to problems caused by high blood calcium levels. The medical word for high calcium levels is *hypercalcemia*.

Early symptoms of having too much calcium in the blood include:

- Constipation
- Passing urine very often
- Feeling sluggish or sleepy
- Feeling thirsty all the time and drinking lots of liquids

Late signs and symptoms can include muscle weakness, muscle and joint aches, confusion, coma, and kidney failure.

High calcium levels affect the kidneys, which can cause you to pass too much urine and become dehydrated. The dehydration gets worse as the calcium level goes up. Because of this, giving large amounts of intravenous (IV) fluids is a main part of the treatment for hypercalcemia.

Bisphosphonate drugs are also used to bring blood calcium levels down quickly. These drugs are given into the vein by IV infusion and may be repeated monthly. Other drugs can be used if these don't work.

Once the calcium level is back to normal, treating the cancer can help keep the calcium level from getting too high again.

Broken bones

When cancer spreads into bones, it can make them weak and more likely to break (fracture). The leg bones near the hip often fracture because these bones support most of your weight, but other bones can fracture too.

Cancer in the bone may cause severe pain for a while before the bone actually breaks. When possible, your doctor will try to prevent the fracture.

- If an x-ray shows an arm or leg bone is likely to break, surgery may be done to put a metal rod may be put through the weak part of the bone to help support it.
- If the bone has already broken, then something else will be done to support the bone. Usually surgery is done to put a steel support over the fractured area of the bone.
- Bones of the spine (the vertebrae) can also fracture. If this happens, vertebroplasty may be used to support them. In this procedure a type of bone cement is injected into the damaged bones.

Radiation treatments may be given after surgery to try to prevent any more damage.

The radiation won't make the bone stronger, but it may stop further damage.

Medicines you take or the cancer itself may make you confused, dizzy, or weak. This can lead to falls and accidents. Falls can cause fractures, especially in bones weakened by cancer. Talk with your cancer care team about safety equipment you can use at home, such as shower chairs, walkers, or handrails.

Spinal cord compression: When cancer threatens to paralyze, it's an emergency

If the cancer spreads to a bone in the spine, sometimes it can grow large enough to press against and squeeze (compress) the spinal cord. This can show up in different ways:

- Back pain (sometimes with pain going down one or both legs)
- Numbness of the legs or belly
- Leg weakness or trouble moving the legs
- Loss of control of urine or stool (incontinence) or problems passing urine

If you notice symptoms like these, call your doctor right away or go to the emergency room. If not treated right away, spinal cord compression can lead to life-long paralysis (inability to walk or even move).

If the cancer is just starting to press on the spinal cord, treatment can help prevent paralysis and help relieve the pain. Radiation is often used as part of the treatment, sometimes along with a type of drug called a steroid or corticosteroid. The radiation often is started within the first 12 to 24 hours.

If the spinal cord is already showing signs of damage (such as weakness in the legs), immediate surgery followed by radiation may be the best treatment. This may allow a patient to walk and function better than if they get radiation alone. People with very advanced cancer or other serious medical problems may not be able to have this kind of surgery.

Hyperlinks

1. www.cancer.org/treatment/treatments-and-side-effects/palliative-care.html
2. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/pain.html

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Coping With Advanced Cancer

Advanced cancer may very well be the hardest thing you and your loved ones will ever have to face. Still, some people with advanced cancer live longer than expected and you still have choices about how you live each day.

If you have ongoing concerns that interfere with your life, or if you just want to communicate and cope the best you can, consider talking with a mental health professional. It can often be very comforting to talk with an expert. Social workers, psychologists, and psychiatrists are all licensed mental health professionals. You can find one by asking your cancer care team or through the nearest large hospital in your area. Even one session with a licensed mental health provider may help you and your family focus on what matters most. Your cancer care team can work with you to find [the right provider for you](#)¹.

Dealing with worry and the unknown

Learning that you have advanced cancer may make you feel lost and afraid. This is normal. Knowing what to expect may help. You may want to ask questions such as:

- What's going to happen to me?
- Have I done everything I should have done?
- What are my treatment options?
- What's the goal of this treatment?
- Am I going to die soon?
- How much control will I have over my life? Over my death?
- Will my wishes be followed?
- How much pain and suffering might I have?
- What if I feel like I can't take any more treatment?
- Am I a burden to my family?
- Will this be too much for my family to bear?
- What am I going to do about money?
- How long am I going to have to go through this?
- What happens when I die?

The list of concerns and fears may be overwhelming to think about. Worrying could make it hard for you to focus. Other signs of worrying are restlessness, shortness of breath, trembling, heart racing, sweating, dry mouth, and grouchiness. But few people have all of these symptoms.

There are professionals who can help you manage these concerns. Along with your doctor and nurse, there are social workers, psychologists, psychiatrists, and pastoral counselors who are specially trained to help you talk about your concerns, control your fears, and find meaning in what you're going through. They can also support your family. Your cancer care team will know the local mental health experts in your area.

Managing worry

- Sometimes just talking about feelings helps to relieve worry. Choosing the right person to talk with can be important. For some, that person will be a minister or a good friend. For others, it will be a family member.
- Trying to relax with deep breathing and other techniques can help. It works best if you practice and do it regularly.
- It's important to let yourself feel sad and frustrated, without feeling guilty about it.
- Spiritual support is helpful for many people.

If your worry lasts for long periods of time and is upsetting to you or your family, it's important that you ask to see a mental health professional who is specially trained to

work with people with cancer. A professional may be able to suggest medicines to treat [anxiety or depression](#)². Short-term use of these drugs is often helpful and is rarely a problem. It could be just what you need to regroup and go forward.

Finding hope

Hope is an important part of everyday life. Hope gets many of us out of bed in the morning and keeps us going throughout the day.

If you have advanced cancer, you can still have hopes and dreams, even though some of these may have changed. Your hope may be to have a pain-free day, or to do something special with a family member. Just sharing and talking openly can be a hope for people with cancer and their families. There may also be real hope for relief of symptoms and slowing down the growth of the cancer.

And there's always hope to make the most of the time you have left – for good times with family and friends, times that can be filled with happiness and meaning. For many people, this is a good time to refocus on the most important things in life. Now is the time to do things you've always wanted to do and stop doing the things you no longer want to do.

Managing feelings of guilt

Both people with cancer and those who support them often have feelings of guilt.

If you have cancer, you might feel guilty about being ill. These feelings can last even though you know it isn't your fault. Making others aware of your discomfort or telling loved ones that you need their help can make you feel guilty, too.

Those who care about someone with cancer might also struggle with feeling guilty. They might feel guilty about their good health. They often feel bad about not doing enough for their loved one. Sometimes they even feel bad about the resentment that they feel for what they are doing.

Here are some things that may help with feelings of guilt:

- Sometimes just talking about these feelings can help. It can clear the air and help ease everyone's conscience. Sharing this common feeling can bring you closer together.
- Letting each other off the hook is helpful. You can tell each other that you know

everyone is trying to do their best.

- For caregivers, sharing the work is important. Friends and family who want to help should be given specific tasks to lighten the main caregiver's load.
- If the guilty feelings don't go away, you might need help working through them. Talk to your doctor about meeting with a trained mental health professional who can help you better understand and manage your feelings.

Facing family issues

Illness that goes on for months or even years can put huge stress on the family. The longer the stress lasts, the more at risk the family is for mental distress. Family members may become exhausted in body and mind. Fatigue added to worry and fear can take a toll.

Advanced cancer changes the way family members relate to one another. Families that are able to solve conflicts well and family members who support each other tend to do best in dealing with a loved one's cancer. Families who found problem-solving hard in the past are likely to have more trouble dealing with this stressful situation. You might want to meet with a counselor and work together to plan how best to support each other and plan for problems that may come up.

Roles within the family may change, too. How family members take on new tasks and fill in for the person with cancer affects how they will adjust to losing that person.

For the person with cancer, the changes in family roles can trigger the grief that comes with loss. For instance, a woman who's too sick to get out of bed may feel the loss of her role as a wife and/or mother. Understanding this and finding ways for her to still be involved in her family's day-to-day life may help both her and her family.

People with cancer often say that lack of communication in their families is a problem. Changes in responsibilities can cause resentment and anxiety. Family counseling may help family members learn to deal with the changes that are taking place. It can also help members learn to discuss their feelings more comfortably. Counseling is especially helpful in families where some members don't feel comfortable openly talking about their feelings.

The needs of family members and caregivers are important, too. See our information for caregivers and family or call us to learn more.

Maintaining sexual feelings and closeness

During advanced illness, [sexual relationships will change](#)³. This can be because of physical symptoms such as tiredness, trouble moving, or pain. It can also come from holding back emotions. In most cases sexual desire may decrease, but this doesn't mean the need for physical closeness and touching will change. In fact, the need to be held and touched may increase. Talking about feelings and continuing to touch and be close to each other can help with feelings of isolation. Still, if you have any doubt about whether it's OK to have sex or to simply touch, ask your cancer care team. Don't assume one way or the other.

Support from friends and community

People with life-threatening illnesses have a strong need for other people in their lives. They need others to help them deal with their illness and its emotional effects. Support can come from family and friends; members of a church, synagogue, or other place of worship; mental health professionals; support groups; or community members. Asking for support is one way you can take some control of your situation.

If you don't get enough support from friends and family, look for it elsewhere. There are others in your community who need your companionship as much as you need theirs. The mutual support of others with cancer might also be a source of comfort. Check with your cancer care team for resources in your community.

Support programs

Support programs come in all kinds of forms and include one-on-one or group counseling and support groups. A support group can be a powerful tool for patients and families. Talking with others who are in situations like yours can help ease loneliness. You can speak without feeling judged. And you can often get useful ideas from others that might help you. The American Cancer Society can help you find [many different support programs in your community](#)⁴.

Some groups are formal and focus on learning about cancer or dealing with feelings. Others are informal and social. Some groups involve only people with cancer or only caregivers, while others include spouses, family members, or friends. Some groups focus on specific types of cancer or stages of disease. The length of time groups meet can range from a certain number of weeks to an ongoing program. Some programs have closed membership and others are open to new, drop-in members. For those who cannot attend meetings or appointments, phone counseling is offered by some organizations.

[Online groups](#)⁵ are another option. Some people find online support groups helpful because they like the privacy it can offer. It may be comforting to chat with other people in situations much like yours, without having to share any more than you want to. But it's important to remember that chat rooms and message boards are not the best source of medical information, especially if they are not monitored by trained professionals or experts. Each person's situation is unique, and what helps one person might not be right for someone else.

Support in any form allows you to discuss your feelings and develop coping skills. Studies have found that people who take part in support programs often have an improved quality of life, including better sleep and appetite.

Facing death

Anyone with advanced cancer faces the reality that he or she may die soon. Family members must recognize this, too. Even if the person with advanced cancer is doing well at the moment, death is a likely part of the near future. Thinking about death is frightening and painful for many people. Patients and families also may worry about suffering before death and being alone in death.

Many people with cancer want to be at home until the end. Dealing with a long illness and dying at home can be easier with the support of family and medical staff.

The main goal for a death that cannot be avoided is that it be a "good death." A good death is one with the least possible amount of pain, discomfort, or suffering for the patient, and the least possible suffering for the family and caregivers. A good death is one that's in line with the patient's and loved ones' wishes, including their culture, values, and ethics. Loved ones are also supported and are with the patient as much as they and the patient want, especially as death nears. Ideally, this allows goodbyes to be said and problems resolved before death. It also lets loved ones to be with the patient at the end.

[Nearing the End of Life](#)⁶ addresses questions that patients and loved ones ask about what to expect during the last 6 months of life. It can help you know what might happen and how to prepare for this difficult time.

Home care

[Home health care](#)⁷ is professional health care given in your home. Home care may be right for you if you need care but don't need to be in a hospital. A wide range of health and social services can be given at home to people with advanced cancer.

Even with home care, your family will be responsible for most of your care. It's important to talk with your cancer care team so that you understand what types of care you'll need and how this will affect your family. It's also important to check with your health insurance company to find out if they will pay for home care.

Hospice care

[Hospice](#)⁸ is a program designed to give palliative or supportive care near the end of life. The right time for hospice care is when treatment aimed at a cure is no longer helping and the patient is thought to have about 6 months or less to live (but hospice patients can live longer). Together, the patient, family, and doctor decide when hospice care should begin.

Paying for end of life care

It's important not to forget about money when deciding what type of palliative care you'll get and where you'll get it. Insurance policies differ widely. Check with your insurance company to find out which services are covered. Many insurance companies have a case coordinator who will act as your main contact. This person decides what your benefits cover in your specific case. Most health insurance plans cover hospice care. Many states mandate this.

Medicare has a special hospice benefit that not only covers care, but also pays for all medicines. For Medicare information, call the Medicare Helpline at 1-800-MEDICARE (1-800-633-4227); TTY: 1-877-486-2048. They can explain what Medicare covers and how to qualify. You can also get information on their website at www.cms.hhs.gov⁹.

Hyperlinks

1. www.cancer.org/treatment/survivorship-during-and-after-treatment/coping/understanding-psychosocial-support-services.html
2. www.cancer.org/treatment/survivorship-during-and-after-treatment/coping/anxiety-fear-depression.html
3. www.cancer.org/treatment/treatments-and-side-effects/physical-side-effects/fertility-and-sexual-side-effects.html
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