



Metastatic Cancer



Cancer that has spread to other parts of the body is called metastatic cancer. Breast and prostate cancer most commonly spread — or “metastasize” — to the bones. Nearly all types of cancer can spread to the bones, including lung, kidney, and thyroid cancers.

When cancer spreads to the bones, it is called bone metastases, or “bone mets.” The most common bones for bone metastases are the spine, skull, ribs, pelvis, and long bones in the arms and legs.

Metastatic cancer that has spread to the bones is not bone cancer. For example, breast cancer that has spread to the bones is still breast cancer, and it is treated with breast cancer medicines.

You might find out you have bone metastasis years after starting cancer treatment. On the other hand, if you have certain types of cancer, bone metastasis might be the first sign you have cancer.

Lesions and skeletal-related events

When cancer cells spread to the bones, they can form lesions. These lesions cause complications in the bones called “skeletal-related events,” or SREs. Here are some types of skeletal-related events:

- Broken bones or fractures
- Bone pain
- Spinal cord compression

There are two types of lesions that affect the bones. People can have one or both types of lesions:

Osteolytic, or lytic: These lesions break down bone without replacing it. That weakens the bones and causes them to break easily.

Osteoblastic, or blastic: These lesions make bone thick and rigid. These areas of the bone break more easily than normal bone.

People with metastatic cancer are living longer, so it’s important to prevent skeletal-related events.

Symptoms

Sometimes, bone metastasis causes no signs or symptoms. When signs and symptoms do occur, they include:

- bone pain
- broken bones
- urinary incontinence
- bowel incontinence
- weakness in the legs or arms
- high levels of calcium in the blood (hypercalcemia)

The bone complications from metastatic cancer can lead to severe pain, loss of mobility, and poor quality of life.

Diagnosis

See your health care provider if you experience signs or symptoms that worry you. Imaging tests are used to investigate symptoms that may indicate bone metastasis. Your individual situation will determine which tests you get. Tests may include:

- X-ray
- bone scan (bone scintigraphy)
- computerized tomography (CT)
- magnetic resonance imaging (MRI)

- positron emission tomography (PET)

Your health care provider also might take a sample of tissue to examine. This is called a biopsy.

Treatment

Health care providers may prescribe bone-strengthening medicines to protect your bones and reduce skeletal-related events. You take these medicines by infusion in a doctor's office or clinic.

Benefits

Using these bone-strengthening medicines can:

- Lower the risk of bone fractures caused by bone metastases.
- Help reduce pain caused by bone metastases.
- Prevent or treat hypercalcemia.
- Reduce the need for radiation therapy or surgery to treat bone pain and bone fractures.

Risks

Acute phase reaction: This is the most common risk after an infusion of zoledronic acid. You might have a [fever, muscle and joint pain, and fatigue](#). It usually starts about six hours after the first dose and lasts two or three days. Taking acetaminophen before and after your infusion can reduce the risk of this side effect.

You might also get side effects after a denosumab injection, including [fatigue and joint pain](#). They will go away after a few days.

Osteonecrosis of the jaw: ONJ is a rare dental condition found mostly among cancer patients taking bone-strengthening medicines. ONJ occurs most often after a major dental procedure in which the bone in the jaw does not heal after eight weeks of appropriate dental care.

Atypical femoral fracture (AFF): Taking high doses of bisphosphonates for more than four years increases your risk of AFF. This is a rare but serious break of the thigh bone. It is like a stress fracture. It develops slowly from everyday activities. Tell your health care provider if you feel an ache in your groin or thigh. They can schedule an MRI or CT scan to see if the bone is in danger of breaking.

According to clinical studies, the benefits of taking high doses of bisphosphonates or denosumab to reduce skeletal-related events are much greater than the risk of these side effects.

Radiation therapy

You might be sent to a radiation oncologist for radiation treatment. Targeted doses of radiation can relieve pain where you have bone mets and help prevent bone fractures. Even short courses of radiation treatment can help with the pain. These courses last from one to five days. Radiation therapy also can lead to bone loss and fracture risk.

Surgery

Surgical procedures can help stabilize a bone that is at risk of breaking or repair a bone that has broken.

How to protect your bone health

You should get your bone density checked before you start cancer treatments that will weaken the bones. The standard test for bone density is called a DXA, which is a type of X-ray performed while you lie, fully clothed, on an open table. This test will establish your baseline bone density. That way, your health care provider can check your bone density again a few years later to see whether you are losing bone during your treatment.

You should also find out your family bone health history. Tell your health care provider if anyone in your family had osteoporosis or broken bones.

Nutrition

A balanced diet of whole foods, including protein, fats and carbohydrates, is important for bone health. Try to include a variety of foods on your plate to get your essential nutrients. You should be able to get most of the nutrients your body needs from your diet rather than from supplements.

Good nutrition will not only keep your bones strong but also help you keep up your weight, which is important for preventing fractures.

There are three nutrients that are especially important for bone health. You need to pay special attention to make sure you get enough of these nutrients.

1. **Calcium:** Many foods contain calcium, but dairy products contain the most calcium per serving size. The amount of calcium you need [changes with age](#). Try to consume one calcium-rich food per meal. If you don't consume dairy products, you will need to work hard to get enough calcium in your diet. You might need to take a calcium supplement to make up the difference.
2. **Vitamin D:** Although vitamin D can be made in the skin when it is exposed to sunshine, the sun is not a reliable source of vitamin D for most people. To maintain a good level of vitamin D, people need anywhere from 15 mcg to 50 mcg (600 to 2,000 international units) a day. For healthy adults, the National Academy of Medicine suggests 15–20 mcg (600–800 IU). However, if you have a metabolic bone disease such as osteoporosis, the Endocrine Society suggests a

higher level — up to 50 mcg (2,000 IU) per day. There are not many foods that are rich in vitamin D. You will probably need to take a supplement to get enough vitamin D.

3. **Magnesium:** This mineral helps your body regulate calcium and vitamin D. It is found in green vegetables, nuts and seeds, legumes, whole grains and avocados. The RDA — Recommended Dietary Allowance — for adult men is 420 mg and 320 mg for women.

You should consume protein with every meal. Protein helps build and repair muscles. Keeping your muscles strong will support your bones as you age. Good muscles help prevent falls and injuries.

How much protein you need depends on your age and weight. The USDA recommends .36 gram per pound of body weight. A person who weighs 150 pounds needs about 54 grams of protein a day, according to that formula. People who are more active need more protein.

How much protein?

- 4 oz. turkey - 33 g
- 4 oz. grilled salmon - 25 g
- 2 scrambled eggs - 12 g
- 1/2 cup cooked beans - 7 g

Protein from lean meats and dairy products is higher quality than protein from plants. Animal proteins contain all the necessary amino acids. To get complete proteins from a plant-based diet, you need to combine foods to get all your amino acids. For example, pair black beans with brown rice or whole-grain bread.

Quit smoking and vaping. Limit alcohol to no more than one drink per day.

Exercise

Weight-bearing exercise can help preserve your bone health. Some examples are running, tennis or pickleball, and weight training (such as calisthenics or weightlifting). When you do weight-bearing exercise, you put stress on the bones. That triggers the bone cells to build more bones, which can lead to increased bone strength. This process is called "[osteogenic loading.](#)"

Bicycling and swimming are good cardiovascular activities, but they don't put weight on the bones, so they don't build bone strength.

Start exercising at a level that is right for you, and then work up from there. If you're walking, pick up the pace. If you're running, try adding higher-impact activities.

Exercises can improve your balance and leg strength. Consider tai chi or yoga. Some instructors offer courses designed specifically to be safe on the bones.

Avoid exercises that increase your risk of falls. Extension exercises are better at protecting your spine from vertebral fractures than flexion exercises where your back is curved forward.

Check your balance. If you can't stand on your dominant leg for 11 seconds, that means you are at risk of falling and getting injured.

Fall prevention

Falling is a key risk factor for breaking a bone. Someone who falls often is more likely to break a bone than someone who doesn't fall, even if the person who doesn't fall has more risk factors.

Here are some things you can do at home to reduce your risk of falling:

- Keep walkways well lit. Use handrails on stairs.
- Secure carpets to the floor. Watch out for pets!
- Use grab bars in the bathtub and shower. Use non-slip mats. Put a seat riser on the toilet.
- Clean up kitchen spills immediately. Don't use floor polish. Keep commonly used items close by.

Why this is important

As metastatic cancer survivors live longer, good bone health remains a vital part of maintaining quality of life. Reducing skeletal-related events will help survivors stay mobile and independent and able to enjoy the life they fought so hard to save.

View this content on our website here - <https://americanbonehealth.org/cancer-survivors-guide-to-bone-health/>

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