

Osteoporosis in Women with Cancer



What is osteoporosis?

If you have osteoporosis, your bones become porous and weak. As they lose strength, they are more likely to break. People with osteoporosis are particularly at risk for breaking these bones:

- Spine
- Hip
- Wrist
- Pelvis
- Upper arm

If you have osteopenia, you also have bone loss, but not as much as with osteoporosis. People with osteopenia are more likely to develop osteoporosis if something isn't done to stop the bone loss.

Cancer and some of its treatments can increase your risk for osteoporosis.

Gender words are used here to talk about anatomy and health risk. Please use this information in a way that works best for you and your provider as you talk about your care.

How does osteoporosis develop?

Bone is made of calcium and other minerals, which make it hard. Bone density refers to the mineral content of the bones. It is related to how hard and strong bones are. Low bone density is a trait of osteoporosis.

Like other tissues in the body, bone constantly repairs and renews itself. This process is called remodeling. Two kinds of cells carry out remodeling in bone:

- **Osteoclasts.** Cells that break down (resorb) bone. They also release calcium into the blood.
- **Osteoblasts.** Cells that create new bone. They also draw calcium from the blood.

A balance between the bone-building osteoblasts and the bone-dissolving osteoclasts keeps bones healthy.

In young people, bones lengthen and increase in density. But after about age 35, your bones start to lose density and strength. Most cases of osteoporosis result from the quicker bone loss. This can happen for any of these reasons:

- Lower levels of the hormones estrogen and testosterone in the body
- Lack of physical activity
- Too little calcium, vitamin D, or both
- Smoking
- Excessive alcohol use
- Certain medicines, such as steroids, or those used to treat breast cancer

Osteoporosis is more common in women than in men. During menopause, the amount of estrogen made in a woman's ovaries greatly slows down. This hormone keeps the bone-dissolving activity of the osteoclasts in

check. After menopause, the osteoblasts continue to build bone. But they can't keep up with the speed at which the osteoclasts break it down. If you don't take measures to prevent or slow bone loss, osteoporosis can occur.

In men, bone loss generally starts later and usually advances more slowly than it does in women. Men tend to have larger and stronger bones than women do. They also don't go through the sudden hormonal changes that occur with menopause. Still, as men age, they do lose bone density. In part, this is because of a natural decrease in testosterone. By age 65 or 70, men and women lose bone mass at similar rates. Calcium absorption, which is needed to keep bones healthy, also decreases in men and women.

How does cancer treatment affect bone loss?

Certain cancer treatments can increase the risk for osteoporosis for both men and women. Some chemotherapy medicines used for breast cancer can cause a loss of bone density. So can certain hormone therapies for breast and prostate cancer. A number of strategies can help prevent and treat osteoporosis. Talk about these options with your healthcare team.

What causes osteoporosis in women with breast cancer?

If you have breast cancer, you may be at higher risk for osteoporosis than other women. Here are some of the reasons why:

Early menopause

Certain chemotherapy treatments used for breast cancer can cause the ovaries to stop making estrogen. That brings on menopause. Early menopause may also result when the ovaries are removed (oophorectomy). Or it can occur if you have radiation to your ovaries. These procedures are done to slow breast cancer growth because estrogen can cause some breast tumors to grow. But the sudden lowering of estrogen levels also causes rapid bone loss.

Chemotherapy

Some chemotherapy medicines may cause a loss of bone density.

Hormone therapies

In some breast cancers, the hormones estrogen and progesterone can speed up tumor growth. Hormone therapies are used to prevent this from happening but, at the same time, may speed up bone loss. Hormone therapy may include ovary ablation or taking medicines, such as aromatase inhibitors:

- **Ovarian ablation.** The inactivation of the ovaries can occur with surgery to take out the ovaries. Or it can occur when the ovaries are treated with radiation. Ovarian ablation can also be done with medicines called luteinizing hormone-releasing hormone (LHRH) analogs, such as goserelin or leuprolide. For women who haven't reached menopause, this can bring about menopause and rapid bone loss right away. This is sometimes done in premenopausal women to decrease their risk of recurrent breast cancer risk or to treat more advanced disease.
- **Aromatase inhibitors.** These include anastrozole, exemestane, and letrozole. These medicines are used to treat postmenopausal women with breast cancer. These medicines are known to lead to a loss of bone density.

Can osteoporosis be prevented or treated in women with breast cancer?

Have you had breast cancer and gone through menopause, either naturally or as a result of treatment? If so, you should think about having routine screenings for bone loss. A type of X-ray called the bone mineral density test is safe and noninvasive. It is also called DEXA (dual energy X-ray absorptiometry). It can:

- Diagnose osteoporosis
- Find low bone density

- Monitor how well treatments are working
- Predict the risk for future fractures

Once bone is lost, it can't be completely replaced using current types of treatment. Although it can't be cured, osteoporosis can be slowed down. A number of approaches are available for preventing and treating osteoporosis in women.

Lifestyle changes you can make

Here are some lifestyle approaches you can take to prevent bone loss:

- **Get plenty of calcium and vitamin D.** Calcium comes from the food we eat. Good sources include dairy products, such as milk, yogurt, and cheese. Some nondairy foods are also good sources, such as salmon, fortified orange juice, spinach, and tofu. Vitamin D comes from diet and the sun. Salmon, milk, and other fortified foods are good sources of vitamin D. The recommended daily intake of calcium is 1,000 mg for young to middle-aged adults and 1,200 mg for women older than age 50. The recommended daily dose of vitamin D is 600 international units (IU) daily and 800 IUs for women older than 70.
- **Exercise.** Regular physical activity can help prevent bone loss. Weight-bearing exercises are particularly helpful. These include jogging, dancing, and stair-climbing.
- **Stop smoking.** Smoking causes a loss of bone density. Ask your healthcare provider for help quitting.
- **Limit alcohol intake.** If you use alcohol, have no more than 1 drink a day for women. (Men should have no more than 2 drinks a day.)

Prescription medicines that may help

Here are some medical approaches you can use for preventing and treating bone loss:

- **Bisphosphonates.** These medicines prevent the breakdown of bone. The FDA has approved risedronate, ibandronate, zoledronic acid, and alendronate for preventing and treating osteoporosis.
- **Calcitonin.** This is a naturally occurring hormone important for calcium regulation and bone metabolism. Calcitonin is often taken as a nasal spray.
- **RANKL (receptor activator of nuclear factor kappa-B ligand) inhibitors.** These medicines act in a very similar way to bisphosphonates. Denosumab is approved by the FDA for treating osteoporosis. It is also approved to prevent bone loss caused by hormonal therapy given for the treatment of cancer, if used in combination with calcium and a vitamin D supplement.
- **Selective estrogen receptor modulators.** The FDA has approved raloxifene for the prevention and treatment of osteoporosis. It can also be used to reduce the risk for breast cancer in women who are at higher risk. If you've had breast cancer, discuss the use of raloxifene carefully with your medical oncologist. Researchers are continuing to learn about its effects on cancer and its interactions with other cancer treatments.

Talk with your healthcare provider to see if there are other treatments you should think about.

© 2000-2027 The StayWell Company, LLC. All rights reserved. This information is not intended as a substitute for professional medical care. Always follow your healthcare professional's instructions. This information is not intended as a substitute for professional medical care. Always follow your Healthcare professional's instructions. Copyright Krames LLC.