

Bone Health During Cancer Treatment

Healthy bones are essential to our well-being. They provide structure and support for our bodies through the skeleton network, protect vital organs from injury, and store necessary minerals. Since strong, healthy bones allow us to participate in activities of daily life without pain and loss of function, attention to bone health is important at any stage of life. It is an especially important consideration for people living with cancer because cancer and cancer treatments can increase the risk of bone problems.

Osteoporosis

As we age our body loses the ability to replace the cells needed to repair and rebuild bone mass, and bones become thin and more porous. This condition is called osteoporosis, the most common kind of bone disease. When bones become weak and fragile, they are more likely to fracture (break) and cause pain and disability that can interfere with a person's daily life.

In addition to age, other factors that can contribute to loss of bone mass include:

- Cancer metastasis (spread) to the bone, which causes bones to weaken in certain places. This can include breast cancer, prostate cancer, multiple myeloma, and lung cancer.
- Some types of chemotherapy
- Radiation therapy, especially to the pelvis, which may increase the risk of pelvic and hip fractures for women age 65 and older. This risk may be greater for women who had osteoporosis before treatment.
- Being a woman, since women have a higher risk of osteoporosis than men. For instance, more than 80% of people diagnosed with osteoporosis are women. The risk of osteoporosis is especially high for women after menopause, when the levels of estrogen (a hormone that helps maintain bone density) in a woman's body drop significantly.
- Hormone therapy for breast and prostate cancers. These treatments reduce levels of either estrogen or the male hormone testosterone and contribute to loss of bone mass and density.
- Heavy smoking and excessive alcohol consumption
- A family history of osteoporosis
- Other medications, including steroid therapy (such as prednisone) and synthetic thyroid hormone therapy
- Long-term bed rest and inactivity
- Poor nutrition and not getting enough calcium and vitamin D

Promoting bone health

There are steps that can help reduce your risk of bone loss while living with cancer.

Early detection and prevention. Loss of bone mass doesn't happen overnight, but it often goes unnoticed until a person experiences pain, loss of function, or a fracture. The most common test used to measure bone mass is called a DEXA scan or bone density scan, and it may be done before, during, and after cancer treatment.

Calcium and vitamin D. Calcium is an important mineral stored by your bones that keeps them strong and healthy. It is important to replace calcium your body loses, especially as you get older. Certain drugs used to treat cancer can cause calcium loss. Foods high in calcium include green, leafy vegetables, such as spinach; cheese; yogurt; and calcium-fortified foods, such as orange juice, pasta, and milk. It is equally important to make sure you get enough vitamin D in your diet since vitamin D helps your body absorb and store calcium. Vitamin D is made in the skin by using energy from sunlight, and it is also found in vitamin D fortified food, such as milk. Before you take any vitamin or mineral supplement, talk with your doctor.

Exercise. Weight-bearing physical activity (walking, dancing, stair climbing, and jumping rope) places stress on your bones, which triggers the body to make cells that form bone. Regular weight-bearing exercise also builds strong muscles, which can help your balance when walking and doing other activities. Your doctor can help you create an appropriate exercise plan based on your needs, physical abilities, and fitness level.

Healthy weight maintenance. Eating a well-balanced diet is important to good bone health. Being underweight can contribute to bone loss and fractures.

Fall prevention. Falling is the main cause of fractures for people with osteoporosis. Poor vision, shoes that don't fit well, a cluttered living space, mental impairment, drowsiness related to pain medication, and poor concentration can increase your risk of falling. Exercises that improve balance can lessen the chances of falling.

Bisphosphonates. Treatment with bisphosphonates, medications that slow the rate of bone thinning, may reduce new bone damage and promote bone healing. They are also given to patients who experience bone pain related to the spread of cancer. Learn more about [bisphosphonates for breast cancer](#) [1] and [bisphosphonates for multiple myeloma](#) [2].

Awareness of symptoms. If you have painful joints, back pain, or stiffness, tell your doctor as soon as possible. Warning signs of more severe bone problems are often mistaken for arthritis-like symptoms.

[Bone Scan - What to Expect](#) [3]

[Physical Activity](#) [4]

[ASCO Expert Corner: Vitamin D and Cancer Risk](#) [5]

Additional Resources

[National Osteoporosis Foundation](#) [6]

[LIVESTRONG: Osteoporosis](#) [7]

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Links:

[1] <http://www.cancer.net/node/25625>

[2] <http://www.cancer.net/node/24831>

[3] <http://www.cancer.net/node/24410>

[4] <http://www.cancer.net/node/24995>

[5] <http://www.cancer.net/node/24397>

[6] <http://www.nof.org/>

[7] <http://www.livestrong.org/Get-Help/Learn-About-Cancer/Cancer-Support-Topics/Physical-Effects-of-Cancer/Osteoporosis>