



**National Institutes of Health
Osteoporosis and Related
Bone Diseases ~
National Resource Center**

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What Prostate Cancer Survivors Need to Know About Osteoporosis

The Impact of Prostate Cancer

The National Cancer Institute reports that, next to skin cancer, prostate cancer is the most common type of cancer among American men. It is so common, in fact, that one-half to three-quarters of men age 75 and older will have some cancerous changes in their prostate glands. The cancer usually grows very slowly, however, and most men who are diagnosed with prostate cancer live for many years. Still, prostate cancer can be serious and, in some cases, life-threatening.

All men are at risk for prostate cancer, but most men diagnosed with it are age 65 or older. And as men get older, their risk for developing another disease, osteoporosis, increases. Osteoporosis is of particular concern for men with prostate cancer. Recent research has found a strong link between hormone deprivation therapy, which is one of the treatments for prostate cancer, and osteoporosis. Hormone deprivation therapy is also called androgen deprivation therapy because it deprives cancer cells of the male hormones (called androgens) that the cancer needs to grow.

Facts About Osteoporosis

Osteoporosis is a condition in which bones become weaker, less dense, and more likely to break. Many people—even some doctors—think of osteoporosis as a women's disease, but millions of men develop it, too. Men who break bones are less likely than women to be treated for bone disease, even though treatment can help prevent broken bones in the future.

Besides taking hormone deprivation therapy for prostate cancer, other risk factors for developing osteoporosis include:

- being thin or having a small frame
- having a family history of the disease
- using certain medications, such as glucocorticoids
- not getting enough calcium
- not getting enough physical activity
- smoking
- drinking too much alcohol.

Osteoporosis is a silent disease because it can weaken bones over the years without causing symptoms. For men coping with prostate cancer, weak bones may not seem very important. But weak bones can cause problems because they break easily, and broken bones often initiate a downward health spiral. Twenty percent of seniors who break a hip die within 1 year, and survival rates are lower for men than for women. But it is never too late to improve your bone health: osteoporosis can be treated and prevented.

The Link Between Prostate Cancer and Osteoporosis

Studies show that men who receive hormone deprivation therapy for prostate cancer have an increased risk of developing osteoporosis and broken bones. Hormones such as testosterone protect against bone loss. So, once these hormones are blocked, bone becomes less dense and breaks more easily.

Hormone deprivation therapy is one of several treatment options available to men with prostate cancer. Traditionally, it has been used mainly to treat prostate cancer that has spread to other parts of the body. But because men are more likely today to be diagnosed in the early stages of prostate cancer, more of them are opting to be treated with hormone deprivation therapy earlier in the course of the disease.

Osteoporosis Management Strategies

Several strategies can reduce a man's risk for osteoporosis, or lessen its effects if he already has it.

Nutrition. Some studies have suggested a link between a high-fat diet and prostate cancer. However, it is not yet clear which foods or supplements may play a role in reducing the risk of prostate cancer. As far as bone health is concerned, a well-balanced diet rich in calcium and vitamin D is important. Good sources of calcium include low-fat dairy products; dark green, leafy vegetables; and calcium-fortified foods and beverages. Taking dietary supplements or multivitamins also can help ensure that you meet your body's daily calcium requirement.

However, some evidence suggests that high calcium intake might be associated with the development of prostate cancer. But the studies that produced these findings are not definitive. In fact, other studies have shown a weak relationship, no relationship at all, or the opposite relationship between calcium and prostate cancer. At this point, researchers can only say that the relationship between calcium and prostate cancer risk remains unclear.

Currently, it is recommended that men age 19 and older consume between 1,000 mg (milligrams) and 1,200 mg of calcium per day, which is well below the 2,500 mg per day considered to be the upper tolerable limit.

Vitamin D plays an important role in calcium absorption and bone health. It is synthesized in the skin through exposure to sunlight. Some individuals may require vitamin D supplements to achieve the recommended intake of 400 to 600 IU (International Units) each day.

Exercise. Like muscle, bone is living tissue that responds to exercise by becoming stronger. The best exercise for bones is weight-bearing exercise that forces you to work against gravity. Some examples include walking, climbing stairs, dancing, and weight training. Regular exercise, such as walking, may help prevent bone loss and provide many other health benefits, such as reducing pain, relieving stress, and making cancer treatment easier to handle.

Healthy lifestyle. Smoking is toxic to bones as well as the heart and lungs. In addition, smokers may absorb less calcium from their diets. Studies also have found that heavy drinking hurts your overall health, weakens your bones, and increases your risk of broken bones. Moderate drinking—for most men, this means not more than two alcoholic drinks per day—has not been shown to hurt your bones.

Bone mineral density test. A bone mineral density (BMD) test is the best way to determine your bone health. BMD tests can identify osteoporosis, determine your risk for fractures (broken bones), and measure your response to osteoporosis treatment. The most widely recognized BMD test is called a dual-energy x-ray absorptiometry (DXA) test. The test is painless—a bit like having an x ray, but with much less exposure to radiation—and can measure bone density at your hip and spine.

Men being treated for prostate cancer with hormone deprivation therapy should discuss with their doctor whether BMD testing is a good idea. Don't wait for your doctor to bring up your bone health with you. A new study shows that many men on hormone deprivation therapy for prostate cancer are not being screened or treated for osteoporosis, even when they have other risk factors for the condition.

Medication. There is no cure for osteoporosis, but medications are approved by the Food and Drug Administration for men with the disease. Although no medications have been approved specifically to treat men with bone problems caused by hormone deprivation therapy for prostate cancer, studies of several medications are underway for this purpose.

Resources

For more information on osteoporosis, visit the National Institutes of Health Osteoporosis and Related Bone Diseases ~ National Resource Center Web site at www.niams.nih.gov/bone or call 800–624–2663.

For more information on prostate cancer, visit the National Cancer Institute Web site at www.cancer.gov or call 800–4–CANCER (800–422–6237).

For information on studies sponsored by the National Institutes of Health, visit the following Web sites:

- **ClinicalTrials.gov:** www.clinicaltrials.gov
- **RePORTER (NIH Research Portfolio Online Reporting Tool—Expenditures and Results):** projectreporter.nih.gov/reporter.cfm

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For Your Information

This fact sheet contains information about medications used to treat the health condition discussed here. When this fact sheet was printed, we included the most up-to-date (accurate) information available. Occasionally, new information on medication is released.

For updates and for any questions about any medications you are taking, please contact the U.S. Food and Drug Administration at 888–INFO–FDA (888–463–6332, a toll-free call) or visit its Web site at www.fda.gov.

For updates and questions about statistics, please contact the Centers for Disease Control and Prevention’s National Center for Health Statistics toll free at 800–232–4636 or visit its Web site at www.cdc.gov/nchs.

Recognizing the National Bone and Joint Decade: 2002–2011