



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

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What Breast Cancer Survivors Need to Know About Osteoporosis

The Impact of Breast Cancer

The National Cancer Institute reports that one in eight women in the United States (approximately 13 percent) will develop breast cancer in her lifetime. In fact, next to skin cancer, breast cancer is the most common type of cancer among U.S. women.

Although the exact cause is not known, the risk of developing breast cancer increases with age. The risk is particularly high in women age 60 and older. Because of their age, these women are already at increased risk for osteoporosis. Given the rising incidence of breast cancer and the improvement of long-term survival rates, bone health and fracture prevention have become important health issues among breast cancer survivors.

Facts About Osteoporosis

Osteoporosis is a condition in which the bones become less dense and more likely to fracture. Fractures from osteoporosis can result in significant pain and disability. Osteoporosis is a major health threat for an estimated 44 million Americans, 68 percent of whom are women.

Risk factors for developing osteoporosis include:

- thinness or small frame
- family history of the disease
- being postmenopausal and particularly having had early menopause
- abnormal absence of menstrual periods (amenorrhea)

- prolonged use of certain medications, such as those used to treat lupus, asthma, thyroid deficiencies, and seizures
- low calcium intake
- lack of physical activity
- smoking
- excessive alcohol intake.

Osteoporosis often can be prevented. It is known as a silent disease because, if undetected, bone loss can progress for many years without symptoms until a fracture occurs. Osteoporosis has been called a childhood disease with old age consequences because building healthy bones in youth helps prevent osteoporosis and fractures later in life. However, it is never too late to adopt new habits for healthy bones.

The Link Between Breast Cancer and Osteoporosis

Women who have had breast cancer treatment may be at increased risk for osteoporosis and fracture for several reasons. First, estrogen has a protective effect on bone, and reduced levels of the hormone trigger bone loss. Because of chemotherapy or surgery, many breast cancer survivors experience a loss of ovarian function and, consequently, a drop in estrogen levels. Women who were premenopausal before their cancer treatment tend to go through menopause earlier than those who have not had breast cancer.

Studies suggest that chemotherapy also may have a direct negative effect on bone. In addition, the breast cancer itself may stimulate the production of osteoclasts, the cells that break down bone.

Osteoporosis Management Strategies

Several strategies can reduce one's risk for osteoporosis or lessen the effects of the disease in women who have already been diagnosed.

Nutrition: Some studies have found a link between diet and breast cancer. However, it is not yet clear which foods or supplements may play a role in reducing breast cancer risk. 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. Supplements can help ensure that the calcium requirement is met each day, especially in people with a proven milk allergy. The Institute of Medicine recommends a daily calcium intake of 1,000 mg (milligrams) for men and women, increasing to 1,200 mg for those age 50 and older.

Vitamin D plays an important role in calcium absorption and bone health. It is synthesized in the skin through exposure to sunlight. Food sources of vitamin D include egg yolks, saltwater fish, and liver. Many people obtain enough vitamin D by getting about 15 minutes of sunlight each day; others, especially those who are older or housebound, may need 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 activity for your bones is weight-bearing exercise that forces you to work against gravity. Some examples include walking, climbing stairs, weight training, and dancing. Regular exercise, such as walking, may help prevent bone loss and will provide many other health benefits. Recent research suggests that exercise also may reduce breast cancer risk in younger women.

Healthy lifestyle: Smoking is bad for bones as well as the heart and lungs. Women who smoke tend to go through menopause earlier, resulting in earlier reduction in levels of the bone-preserving hormone estrogen and triggering earlier bone loss. In addition, smokers may absorb less calcium from their diets. Some studies have found a slightly higher risk of breast cancer in women who drink alcohol, and evidence suggests that alcohol can have a negative effect on bone health. Those who drink heavily are more prone to bone loss and fracture, because of both poor nutrition and an increased risk of falling.

Bone density test: A bone mineral density (BMD) test measures bone density in various parts of the body. This safe and painless test can detect osteoporosis before a fracture occurs and can predict one's chances of fracturing in the future. The BMD test can help determine whether medication should be considered. A woman recovering from breast cancer should ask her doctor whether she might be a candidate for a bone density test.

Medication: There is no cure for osteoporosis. However, medications are available to prevent and treat this disease. Bisphosphonates, a class of osteoporosis treatment medications, are being studied and have demonstrated some success in their ability to treat breast cancers that have spread to bone.

Another osteoporosis treatment medication, raloxifene, is currently being evaluated for its ability to decrease breast cancer risk. Raloxifene is a selective estrogen receptor modulator (SERM) that has been shown to reduce the risk of breast cancer in women with osteoporosis. The National Institutes of Health is currently sponsoring the Study of Tamoxifen and Raloxifene, known by the acronym STAR. The study compares the effectiveness of raloxifene with that of tamoxifen in preventing breast cancer in postmenopausal women who have a high risk of developing the disease.

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 breast cancer, visit the National Cancer Institute Web site at www.cancer.gov or call 800–4–CANCER.

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 publication 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 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