



Senior Series

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Osteoporosis

Osteoporosis is a disease characterized by structural deterioration of bone tissue, leading to fragile bones and low bone mass. Osteoporosis can weaken bones and cause them to break easily, especially those in the wrist, spine, or hip. It is often called "the silent disease" because bone loss occurs without symptoms. Many people may not know that they have osteoporosis until they experience a fracture due to weak bones.

Osteoporosis is a major public health threat in the United States. It is estimated that approximately 10 million Americans have osteoporosis and 34 million have low bone mass, putting them at increased risk for developing the disease. One out of every two women and one in four men over the age of 50 will have an osteoporosis-related fracture in their lifetime. Each year, osteoporosis is responsible for 300,000 hip fractures, 700,000 verte-

bral fractures, 250,000 wrist fractures, and more than 300,000 other types of fractures. Expenses for these fractures are estimated to be approximately \$14 billion each year.

While osteoporosis is thought of as an older person's disease, it can happen at any age. Bone is a living tissue that is constantly changing. Throughout your lifetime, new bone is added to the skeleton and old bone is removed. New bone is added faster during childhood and teenage years, resulting in larger, heavier, and denser bones. Bone continues to be added until around age 30, when peak bone mass is reached. After age 30, bone loss slowly begins to exceed bone formation. Osteoporosis develops when bone loss exceeds bone replacement.

An individual's chances of developing osteoporosis depend on certain risk factors, some that can be changed

and others that cannot. They are as follows:

Risk factors that you cannot change:

- **Age**—The older you are, the greater your risk of developing osteoporosis.
- **Gender**—You have a greater chance of developing osteoporosis if you are female. Women do not have as much bone tissue as men and lose it more rapidly because of menopause.
- **Body size**—Small, thin-boned women are at greater risk for developing osteoporosis.
- **Family History**—If you have a family history of fractures, you have a greater risk. Osteoporosis may be hereditary.
- **Ethnicity**—Caucasian and Asian women have the highest risk for developing osteoporosis. African-American and Latino women have a risk, but not as significant.

Risk factors that you can change:

- **Diet**—People with a lifetime diet that is low in calcium and vitamin D have a higher risk for developing osteoporosis.
- **Alcohol**—Excessive use of alcohol puts you at higher risk for osteoporosis.
- **Cigarette smoking**—Smoking increases your risk.

- **Physical activity**—An inactive lifestyle increases your risk of developing osteoporosis.

- **Hormones**—Low estrogen levels in women and low testosterone levels in men have been linked to an increased risk for osteoporosis.

- **Medications**—Certain medications, such as glucocorticoids or some anticonvulsants, increase the risk of osteoporosis.

Your doctor can diagnose osteoporosis through a bone mineral density (BMD) test. BMD tests measure bone density in the wrist, hip, and spine, the most common sites of fractures from osteoporosis. This test can measure low bone density, predict your chances of having a fracture in the future, detect if you have already had a fracture, and determine your rate of bone loss and monitor the effects of treatment at yearly intervals.

Treatment of osteoporosis focuses on diet, physical activity, fall prevention, medication, and changing behaviors that are linked to the development of the disease.

- **Diet**—Calcium and vitamin D are necessary for developing strong bones. Calcium is also important for regulating heart, muscle, and nerve functioning. As you age, your body becomes less efficient at absorbing

calcium and other nutrients; therefore, older men and women need to consume more calcium.

The recommended daily intake of calcium for adults age 51 and older is 1,200 mg. Dietary calcium is found in low-fat dairy products, such as cheese, yogurt, and milk. Non-dairy sources of calcium include canned salmon and sardines with bones, dark-green leafy vegetables, such as kale, collards, and broccoli, orange juice, and breads made with fortified calcium.

Vitamin D is necessary for calcium absorption. Our bodies manufacture vitamin D when exposed to sunlight. Vitamin D production decreases in the winter for those who are house-bound and not able to get enough light. Vitamin D supplements may be necessary to ensure daily intake of 400 to 800 IUs.

■ **Physical Activity**—Bones respond to physical activity that involves weight-bearing exercise, such as walking or jogging. These activities help improve bone health and increase muscle strength, resulting in fewer fractures from falls. Tennis, stair-climbing, weight training, and dancing are all activities that can help improve bone health.

■ **Fall Prevention**—Falls increase the chance of a bone fracture in the wrist, hip, or spine and other parts

of the skeleton. Preventing falls is of special concern for men and women with osteoporosis. It is important that individuals with osteoporosis discuss with their physician physical changes that may affect their sense of balance and ability to walk.

■ **Medication**—Your physician may prescribe medication to stop or slow bone loss and increase bone density, resulting in reduced risk of fractures. There is a class of drugs called *bisphosphonates* that can help in the prevention and treatment of osteoporosis. In postmenopausal women with osteoporosis, this medication reduces bone loss and increases bone density in both the spine and the hip.

Calcitonin is a naturally occurring non-sex hormone involved in calcium regulation and bone metabolism. It reduces the risk of fractures and is currently available as an injection or nasal spray. Estrogen/Hormone Replacement therapy has been shown to reduce bone loss and increase bone density in the hip and spine. It is most commonly administered in the form of a pill or skin patch.

The best way to prevent osteoporosis is to live a healthy lifestyle and practice behaviors that promote positive bone health. As we age, it is important to be aware of the risks associated with osteoporosis and to talk with

a physician if you think you might be at risk for osteoporosis to determine if testing is necessary.

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