

Osteoporosis



Osteoporosis is a disease of progressive bone loss associated with an increased risk of fractures. The term osteoporosis literally means porous bone. The disease often develops unnoticed over many years, with no symptoms or discomfort until a fracture occurs. Osteoporosis often causes a loss of height and dowager's hump (a severely rounded upper back).

Why should I be concerned about osteoporosis?

Osteoporosis is a major health problem, affecting more than 44 million Americans and contributing to an estimated 1.5 million bone fractures per year, including:

- About 300,000 hip fractures
- About 700,000 vertebral (spine) fractures
- About 250,000 wrist fractures
- About 300,000 fractures at other sites

According to the National Osteoporosis Foundation, the number of fractures due to osteoporosis may rise to over 3 million by the year 2025. Vertebrae showing signs of osteoporosis. Normal vertebrae (left), vertebrae with mild osteoporosis (center), and vertebrae with severe osteoporosis (right). A fracture can be more than a just a broken bone. It may be a warning sign that you have osteoporosis. The risk of a serious fracture can double after a first fracture in certain high-risk groups. One in two women and one in four men older than 50 years will sustain bone fractures caused by osteoporosis. Many of these are painful fractures of the hip, spine, wrist, arm, and leg, which often occur as a result of a fall. However, performing

even simple household tasks can result in a fracture of the spine if the bones have been weakened by osteoporosis.

The most serious and debilitating osteoporotic fracture is a hip fracture. Most patients who experience a hip fracture and previously lived independently will require help from their family or nursing home care. All patients who experience a hip fracture will require walking aids for several months, and nearly half will permanently need canes or walkers to move around their house or outdoors. Those who experience the trauma of an osteoporotic hip fracture have a 24% increased risk of dying within one year following the fracture. Health care costs from hip fractures total more than \$11 billion annually, or about \$37,000 per patient.

Men should also be concerned about osteoporosis. Approximately one in eight men will have an osteoporotic fracture. Men with a history of hypogonadism, thyroid dysfunction, long-term steroid therapy, high alcohol consumption or low physical activity are especially at risk. One-third of all hip fractures experienced by men are related to osteoporosis, and one-third of these men will die within the first year after the fracture.

A fracture in adulthood does not always mean an individual has osteoporosis. However, every adult who suffers a fracture should discuss the need for bone density testing with their primary physician. If your bone density is low, you may need additional medical tests. Medical conditions other than osteoporosis can cause low bone density.

What causes osteoporosis?

Doctors do not know the exact medical causes of osteoporosis, but they have identified many of the major factors that can lead to the disease.

OAM+ Orthopaedic
Associates
of Muskegon

**West Michigan
Spine Center**

□ 1400 Mercy Drive, Ste 100
Muskegon, MI 49444
231-733-1326

□ 1445 Sheldon Rd, Suite 200
Grand Haven MI 49417
616-296-9100

www.oamkg.com
www.wmspinescenter.com

Aging: Everyone loses bone with age. After 35 years of age, the body builds less new bone to replace the loss of old bone. In general, the older you are, the lower your total bone mass and the greater your risk for osteoporosis.

Heredity: A family history of fractures; a small, slender body build; fair skin; and Caucasian or Asian ethnicity can increase the risk for osteoporosis. Heredity also may help explain why some people develop osteoporosis early in life.

Nutrition and Lifestyle: Poor nutrition, including a low calcium diet, low body weight, and a sedentary lifestyle have been linked to osteoporosis, as have smoking and excessive alcohol.

Medications and Other Illnesses: Osteoporosis has been linked to the use of some medications, including steroids, and to other illnesses, including some thyroid problems.

What can I do to prevent osteoporosis or keep it from getting worse?

To prevent osteoporosis, slow its progression, and protect yourself from fractures you should include adequate amounts of calcium and Vitamin D in your diet and exercise regularly.

Calcium: During the growing years, your body needs calcium to build strong bones and to create a supply of calcium reserves. Building bone mass when you are young is a good investment for your future. Inadequate calcium during growth can contribute to the development of osteoporosis later in life.

Although calcium cannot prevent gradual bone loss after menopause, it continues to play an essential role in maintaining bone quality. Even if women have gone through menopause or already have osteoporosis, increasing intake of calcium and Vitamin D can decrease the risk of fracture.

How much calcium you need will vary depending on your age and other factors. The National Academy of Sciences makes the following recommendations regarding daily intake of calcium:

- Males and females 9 to 18 years: 1,300 mg per day
- Women and men 19 to 50 years: 1,000 mg per day
- Pregnant or nursing women up to age 18: 1,300 mg per day

- Pregnant or nursing women 19 to 50 years: 1,000 mg per day
- Women and men over 50: 1,200 mg per day

Vitamin D: Vitamin D helps your body absorb calcium. The recommendation for Vitamin D is 200-600 IU (international units) daily. Supplemented dairy products are an excellent source of Vitamin D. Vitamin supplements can be taken if your diet does not contain enough of this nutrient.

Exercise Regularly: Like muscles, bones need exercise to stay strong. No matter what your age, exercise can help minimize bone loss while providing many additional health benefits. Doctors believe that a program of moderate, regular exercise (3 to 4 times a week) is effective for the prevention and management of osteoporosis. Weight-bearing exercises such as walking, jogging, hiking, climbing stairs, dancing, treadmill exercises, and weight lifting are probably best. Programs that emphasize balance training such as tai chi should be emphasized.

Bone densitometry is a safe, painless x-ray technique that compares your bone density to the peak bone density that someone of your same sex and ethnicity should have reached at 20 to 25 years of age.

Bone densitometry is often performed in women at the time of menopause. Several types of bone densitometry are used today to detect bone loss in different areas of the body. Dual-energy x-ray absorptiometry (DEXA) is one of the most accurate methods.

How is osteoporosis treated?

Because lost bone cannot be replaced, treatment for osteoporosis focuses on the prevention of further bone loss. Treatment is often a team effort involving a primary physician or intern-ist, an orthopaedist, a gynecologist, and an endocrinologist.

Although exercise and nutrition therapy are often key components of a treatment plan for osteoporosis, there are other treatments as well. Specific medical management should be discussed further with your primary physician.

Adapted from American Academy of Orthopaedic Surgeons. For more information, see orthoinfo.aaos.org

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