

A Guide to Osteoporosis

What is Osteoporosis?

Osteoporosis is a disease that causes bones to lose bone mass and become brittle, which can lead to back pain, loss of height and painful fractures. It is the major underlying cause of bone fractures in postmenopausal women and the elderly. After menopause, women lose bone mass rapidly due to a drop in their estrogen level. Over the next 5 to 10 years women can lose up to one-third of their bone mass because bone breaks down faster than it can be replaced.

Common Risk Factors Associated With Osteoporosis

- Women who are postmenopausal
- People with thin or small frames
- Those with a family history of osteoporosis
- People on medications such as glucocorticosteroids, seizure medications or heparin
- People who eat a diet low in calcium-rich foods
- Cigarette smokers
- Excessive alcohol intake (> than 2 alcoholic beverages/day)
- Lack of regular physical exercise

How to Prevent Osteoporosis

The keys to preventing osteoporosis are building strong bones and preventing bone loss. If your bones are strong to start with, both through genetics and lifestyle choices, you will be less likely to have problems when bone loss occurs. Although you have no control over genetics, you can prevent or slow down osteoporosis by making wise lifestyle choices that include:

1. Increase your calcium intake—most adults need 1000-1500 mg of calcium per day from food and/or calcium supplements; in addition to dairy products, other foods rich in calcium include: green leafy vegetables, shellfish, sardines, oysters, brazil nuts and almonds, soy foods, calcium-fortified foods
2. Adequate vitamin D intake—most adults need 800-1200 IU/day; vitamin D increases the amount of calcium your body absorbs from your intestines and your body produces vitamin D in response to exposure to sunlight; good sources of vitamin D include: liver, fish oil, vitamin D-fortified milk and supplements
3. Avoid smoking—people who smoke have a greater risk of fracture because calcium absorption is reduced in smokers and smoking lowers the estrogen level in women
4. Avoid heavy alcohol use—the loss of bone mass may be the direct result of alcohol's effect on bone; heavy drinking also increases the chances of falling and breaking a bone

5. Regular physical exercise—exercise or physical activity that place weight on your bones or increase the force of gravity against them can help you maintain bone mass; weight-bearing activities include: aerobics, dancing, jogging, cross-country skiing, stair climbing, tennis and walking; a reasonable goal to gain the health benefits of exercise is to do some type of weight-bearing exercise for 30 minutes most days of the week (consult your health care provider).

Types of Activity		
Aerobic, Cardiovascular	Uses large muscles in a rhythmic, repetitive way	Walking, running, biking swimming, and dance aerobics
Resistance	Provided by bands, weights, machines, or your own body	Working with free weights, resistance bands, and weight machines
Stretching	Activities that bend, flex, or elongate muscles	Yoga, ballet, some martial arts, and stretching exercises

How to diagnose Osteoporosis

If you are at risk for developing osteoporosis, or already show signs of the disease, your health care provider will probably order a bone mineral density test. Getting an accurate measure of bone mineral density can help you and your health care provider evaluate the need for preventive measures and treatment. Bone measurement is a quick, painless and inexpensive test. The most accurate of these tests is done with a bone densitometer using dual-energy X-ray absorptiometry (DXA). The DXA scan is very accurate and can measure as little as 1% to 2% loss of bone. The DXA scan is used not only to diagnose bone loss, but also to document the bone density over time and with treatment.

What is the treatment for Osteoporosis?

Many of the steps you can take to prevent osteoporosis such as increasing calcium intake, exercising regularly, and maintaining a healthy lifestyle, can also be used to help treat it. Health care providers may choose to treat with medications. *Hormone-replacement therapy* (HRT) is designed to prevent or treat bone loss by making up for the drop in estrogen levels after menopause. HRT can slow the spread of osteoporosis once it has developed and reduce the risk of fracture. *Selective estrogen receptor modulators* (SERMS) are drugs that work similarly to estrogen, but with fewer side effects. Raloxifene (*Evista*) appears to prevent bone loss in the spine, hip and total body; it also produces small increases in bone mass. *Bisphosphonates* are medications that inhibit bone resorption by bone cells stopping the breakdown of bone and include such drugs as Alendronate (*Fosamax*), Risendronate (*Actonel*) and Ibandronate (*Boniva*). They help to reduce bone loss, increase bone density and reduce the risk of spine, wrist and hip fractures. *Calcitonin* is a naturally occurring hormone for people unable to take HRT. It controls bone breakdown and may relieve pain in patients with spine fractures or compression of the spine. Teriparatide (*Forteo*), a form of parathyroid hormone, is a self-administered injection that stimulates new bone formation reducing the risk of fracture. When fractures occur, treatment may include casts, braces, and surgery. Physical therapy, exercise, pain relievers and appropriate rest are important for proper recovery from a fracture.

For Further Information

Contact the National Osteoporosis Foundation website at: www.nof.org

A Gonzaga graduate nursing student, Laurie Asaro, created this informational material. It should be used in consultation with a health care provider

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