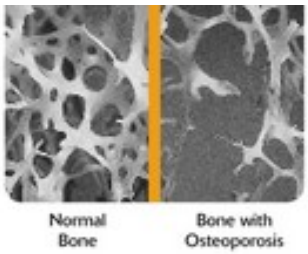
EMPIRE PHYSICIANS MEDICAL GROUP

Osteoporosis

What is Osteoporosis?

Osteoporosis is a disease that thins and weakens the bones to the point that they become fragile and break easily. Women and men with osteoporosis most often break bones in the hip, spine, and wrist.

Bone is living tissue. Throughout our lives, the body breaks down old bone and replaces it with new bone. But as people age, more bone is broken down than is replaced.



The inside of a bone normally looks like a honeycomb, but when a person has osteoporosis, the spaces inside this honeycomb become larger, reflecting the loss of bone density and strength. The outside of long bones -- called the cortex -- also thins, further weakening the bone. In fact, the word "osteoporosis" means "porous bone."

Osteoporosis is often called "silent" because bone loss occurs without symptoms. People may not know that they have osteoporosis until a sudden strain, bump, or fall causes a bone to break.

In the United States, 10 million people already have osteoporosis. Millions more have low bone mass, or osteopenia, placing them at increased risk for more serious bone loss and subsequent fractures.

Osteoporosis can strike at any age, but it is most common among older people, especially older women. Of the 10 million Americans with osteoporosis, 80 percent are women.

Sometime around the age of 30, bone mass stops increasing, and the goal for bone health is to keep as much bone as possible for as long as you can. In most women, the rate of bone loss increases for several years after menopause, then slows down again, but continues. In men, the bone loss occurs more slowly. But by age 65 or 70, most men and women are losing bone at the same rate.

When bones are weakened by osteoporosis, a sudden strain, bump, or simple fall can cause a fracture or a break. This can result in a trip to the hospital, surgery, and possibly a long-term disabling condition. One out of every two women and one out of every four men will have an osteoporosis-related fracture in their lifetime.

The good news is that many osteoporotic fractures can be prevented and treated. Healthy lifestyle choices such as proper diet, exercise, and treatment medications can help prevent further bone loss and reduce the risk of fractures.

Risk Factors and Prevention

There are no symptoms of osteoporosis until a fracture occurs. That is why it is often called "silent." Certain factors can put you at risk for developing osteoporosis, but there are also steps you can take to prevent it.

Risk Factors

Risk Factors You Can't Change

***Gender*. Women are at higher risk for osteoporosis than men. They have smaller bones and lose bone more rapidly than men do because of hormone changes that occur after menopause. Therefore, if you are a woman, you are at higher risk for osteoporosis.**

***Age*. Because bones become thinner with age, the older you are, the greater your risk of osteoporosis.**

***Ethnicity*. Caucasian and Asian women are at the highest risk for osteoporosis. This is mainly due to differences in bone mass and density compared with other ethnic groups. African-American and Hispanic women are also at risk, but less so.**

***Family History*. Osteoporosis tends to run in families. If a family member has osteoporosis or breaks a bone, there is a greater chance that you will too.**

***History of Previous Fracture*. People who have had a fracture are at high risk of having another.**

Risk Factors You Can Change

***Diet*. Getting too little calcium over your lifetime can increase your risk for osteoporosis. Not getting enough vitamin D -- either from your diet or from sunlight -- can also increase your risk for osteoporosis. Vitamin D is important**

because it helps the body absorb calcium. An overall diet adequate in protein and other vitamins and minerals is also essential for bone health.

***Physical activity*. Not exercising and being inactive or staying in bed for long periods can increase your risk of developing osteoporosis. Like muscles, bones become stronger with exercise.**

***Smoking*. Smokers may absorb less calcium from their diets. In addition, women who smoke have lower levels of estrogen in their bodies.**

***Medications*. Some commonly used medicines can cause loss of bone mass. These include a type of steroid called glucocorticoids, which are used to control diseases such as arthritis and asthma; some antiseizure drugs; some medicines that treat endometriosis; and some cancer drugs. Using too much thyroid hormone for an underactive thyroid can also be a problem. If you are taking these medicines, talk to your doctor about what can be done to protect your bones.**

***Low body weight*. Women who are small-boned and thin are at greater risk for osteoporosis.**

Prevention

Fortunately, in your older years, you can still take steps to protect your bones. You'll need a balanced diet, rich in calcium and vitamin D, a regular exercise program, and, in some cases, medication. These steps can help you slow bone loss. In addition, you'll want to learn how to fall-proof your home and change your lifestyle to avoid fracturing fragile bones.

Nutrition

Bone is made up of calcium, protein, and other minerals. Getting enough calcium helps protect bones by slowing bone loss. People over 50 should get 1,200 milligrams of calcium daily. To do this, make foods that are high in calcium part of your diet. The most concentrated food sources of calcium include:

Dairy products such as low-fat milk, yogurt, and cheeses, and calcium-fortified orange juice

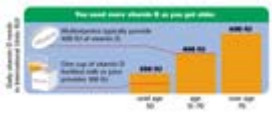
Non-dairy foods containing variable amounts of calcium include:

dark green, leafy vegetables such as broccoli, collard greens, and bok choy, sardines and salmon with bones, tofu, almonds, foods fortified with calcium, such as cereals and orange juice.

Although foods rich in calcium are believed to be the best source of calcium, most Americans choose diets that do not contain enough calcium. Fortunately, calcium-fortified foods and calcium supplements can help fill the gap, ensuring that you meet your daily calcium requirement. The most common calcium supplements are calcium carbonate and calcium citrate.

Vitamin D helps your body absorb calcium. Exposure to sunlight causes your body to make vitamin D. Some people get all the vitamin D they need this way. However, many older people, especially those who are indoors most of the time and/or live in northern areas, are not getting enough vitamin D. Many people also have trouble getting enough vitamin D during the winter months when sunlight is limited.

According to current recommendations, certain kinds of fish -- herring, salmon, tuna -- and milk fortified with vitamin D are good sources of vitamin D. A vitamin D supplement may also be necessary to meet the daily requirement of 400 to 600 IU, or International Units.



The Institute of Medicine recommends people aged 51 to 70 should have 400 IU of vitamin D daily. People over 70 should have 600 IU. But many doctors are recommending higher doses for older people deficient in vitamin D.

Exercise

Exercise can make bones and muscles stronger and help slow the rate of bone loss. It is also a way to stay active and mobile. Weight-bearing exercises done three to four times a week are recommended for bone health. Walking, jogging, playing tennis, and dancing are examples of weight-bearing exercises. Strengthening and balance exercises, such as Tai Chi, may help you avoid falls and reduce your chance of breaking a bone.

Proper posture and body mechanics are important when doing exercises. You should avoid activities that involve twisting your spine or bending forward from the waist, such as conventional sit-ups and toe touches.

Fall and Fracture Prevention

Some ways to reduce falls and fractures include:

- **Keeping rooms free of clutter**
- **Anchoring carpets and area rugs**
- **Wearing rubber-soled shoes for traction**
- **Having regular eye exams.**

Warning Signs and Diagnosis

Osteoporosis does not have any symptoms until a fracture occurs. Women and men with osteoporosis most often break bones in the hip, spine, and wrist. But any fracture in an older person could be a warning sign that the bone is weaker than optimal.

Some people may be unaware that they have already experienced one or more spine fractures. Height loss of one inch or more may be the first sign that someone has experienced spine fractures due to osteoporosis. Multiple spine fractures can cause a curved spine, stooped posture, back pain, and back fatigue.

Women and men who have had a fracture are at high risk of experiencing another one. A fracture over the age of 45 or several fractures before that age may be a warning sign that a person has already developed osteoporosis. People over the age of 45 who have experienced a fracture should talk to their doctor about getting evaluated for osteoporosis.

The test used to diagnose osteoporosis is called a bone density test. This test is a measure of how strong -- or dense -- your bones are and can help your doctor predict your risk for having a fracture. Bone density tests are painless, safe, and require no preparation on your part.

Bone density tests compare your bone density to the bones of an average healthy young adult. The test result, known as a T-score, tells you how strong your bones are, whether you have osteoporosis or osteopenia -- low bone mass -- and your risk for having a fracture.

Some bone density tests measure the strength of the hip, spine, and/or wrist, which are the bones that break most often in people with osteoporosis. Other tests measure bone in the heel or hand. Although no bone density test is 100 percent accurate, it is the single most important diagnostic test to predict whether a person will have a fracture in the future.

The preferred bone density test is a DXA scan of the hip and spine. This test shows if you have normal bone density, low bone mass, or osteoporosis. It is the only bone density test that can be used to diagnose osteoporosis and monitor bone density changes over time in response to treatment.

The United States Preventive Service Task Force recommends women aged 65 and older be screened for osteoporosis, as well as women aged 60 and older who are at increased risk for an osteoporosis-related fracture. The decision to have a bone density test is best made by a patient and his or her physician.

Medicare will usually cover the cost of a bone density test in women over the age of 65. Under certain conditions, such as significant risk factors for osteoporosis, Medicare will cover women under age 65, men, and a followup bone density test every 2 years for certain individuals.

Treatment and Research

Although there is no cure for osteoporosis, it can be treated. If your doctor does not specialize in osteoporosis, he or she can refer you to a specialist. There is not one type of doctor who cares for people with osteoporosis.

Many family doctors have been learning about osteoporosis and can treat people who have it. Endocrinologists, rheumatologists, geriatricians, and internists are just a few of the specialists who can provide care to people with osteoporosis.

The goal of treatment is to prevent fractures. A balanced diet rich in calcium, adequate vitamin D, a regular exercise program, and fall prevention are all important for maintaining bone health.

Osteoporosis Treatment Medications

Several medications are approved by the Food and Drug Administration for the treatment of osteoporosis. Since all medications have side effects, it is important to talk to your doctor about which medication is right for you.

Research

Research is currently underway to identify new and combination treatments for osteoporosis. Studies are also underway to learn new ways to achieve the best possible bone health.

Scientists are also studying the impact of electromagnetic therapy and nutrients like vitamin K and phytoestrogens on bone health. The role of genetics and the environment in the development of osteoporosis is also being explored.