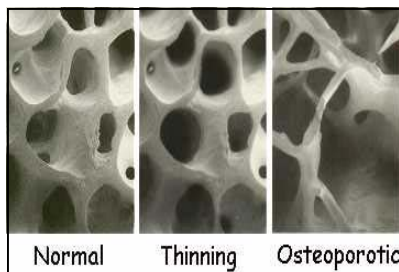


Osteoporosis

Osteoporosis, or porous bone, is a disease characterized by low bone mass and structural deterioration of bone tissue, leading to bone fragility and an increased susceptibility to fractures, especially of the hip, spine, and wrist, although any bone can be affected.

- Each year 1.5 million older people in this country suffer fractures because their bones have become weak. For older people, weak bones can be deadly.
- One in five people with a hip fracture ends up in a nursing home within a year.
- The most common breaks in weak bones are in the wrist, spine, and hip.
- Hip fractures are by far the most devastating type of broken bone. They account for about 300,000 hospitalizations every year.



Bones may begin to weaken early in life if the diet is not adequate and physical activity is limited. With osteoporosis, bones begin to lose the mineral calcium. They become fragile and break easily. The body's frame becomes like the frame of a house damaged by termites. Termites weaken the house much like osteoporosis weakens the bones.

What can be done?

There are many things which weaken bones. Some are outside of our control. Having a family member with osteoporosis is a risk factor. Other medical conditions may also increase the risk of osteoporosis.

Here are some factors that can be controlled:

- **Get enough calcium and vitamin D.** Your body needs vitamin D to absorb calcium. And calcium is essential for strong bones and teeth.
- **Be physically active.** All exercise helps strengthen bones. However, weight bearing exercises and resistance training are particularly helpful.
- **Reduce hazards in the home.** This helps to decrease the risk of falling and breaking bones.
- **Talk with the doctor about current medicines.** This way he can be made aware of all medications, particularly ones that can weaken the bones, like medication for thyroid problems or arthritis.
- **Maintain a healthy weight.** Being underweight raises the risk of fracture and bone loss.
- **Don't smoke.** Smoking can reduce bone mass and increase the risk for a broken bone.
- **Limit alcohol use.** Heavy alcohol use reduces bone mass and increases the risk for broken bones.

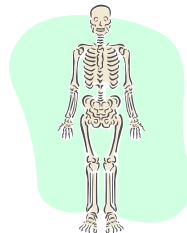




The amount of calcium that makes up the bones is a measure of how strong they are. Our muscles and nerves also require calcium and phosphorus to work. Therefore, if these are in short supply in the diet, the body simply takes them from the bones. Each day, calcium is deposited and withdrawn from the bones. If we are not getting enough calcium from the diet, then it is likely that more is being withdrawn than is deposited. This is why it is very important for children and teens to build up their bones early so that they can have a "savings account" of calcium for later life. Once we reach the age of 30, our bodies stop adding new bone. However, healthy habits can help us keep the bone that we do have!

Tips for keeping bones strong:

- Calcium is found in foods like milk, leafy green vegetables, and soybeans. Snacks of yogurt and cheese are helpful ways to increase calcium intake. Calcium supplements are also available, as are foods fortified with calcium.
- Vitamin D is necessary for our body to absorb calcium. Most people have adequate vitamin D stores. It can be obtained from the diet, from sunlight, or from supplements.
- Simple activities such as walking or stair climbing will strengthen the bones. For adults, at least 30 minutes of physical activity a day, even if its only 10 minutes at a time is recommended. Children are recommended to get at least 60 minutes a day.



Risk Factors

- ◆ Low lifetime calcium intake
- ◆ Vitamin D deficiency
- ◆ An inactive lifestyle
- ◆ Current cigarette smoking
- ◆ Excessive use of alcohol
- ◆ Current low bone mass
- ◆ History of fracture in a 1st degree relative
- ◆ A family history of osteoporosis
- ◆ Being female
- ◆ Being thin and/or having a small frame
- ◆ Personal history of fracture after age 50
- ◆ Advanced age
- ◆ Estrogen deficiency as a result of menopause, especially early or surgically induced
- ◆ Anorexia nervosa
- ◆ Abnormal absence of menstrual periods (amenorrhea)
- ◆ Use of certain medications, such as corticosteroids and anticonvulsants
- ◆ Presence of certain chronic medical conditions
- ◆ Low testosterone levels in men
- ◆ Being Caucasian or Asian, although African Americans and Hispanic Americans are at significant risk as well

How is osteoporosis diagnosed?

A simple test that measures the bone mineral density (BMD) at different parts of the body, such as the spine and hip, can help determine the presence of osteoporosis. Currently, the best test to measure BMD is the Dual energy x-ray absorptiometry (DEXA). The test is quick and painless; it is similar to having an x-ray taken, but uses far less radiation. The results from the DEXA test are scored in comparison to the BMD of young, healthy individuals, resulting in a measurement called the T-score. A T-score of -2.5 or lower indicates osteoporosis. An individual with this score would be at high risk for fracture. An individual with a T-score between -1.0 and -2.5 would generally be considered to have "osteopenia." These individuals are also at risk for fracture, although by not as much as those considered to already have osteoporosis. With time, if bone mass is not maintained properly, osteopenia leads to osteoporosis.



DEXA

Lack of calcium has been singled out as a major public health concern. It is critically important to bone health. The average American consumes far less than the amount recommended.

If someone in your family has osteoporosis, you have a 60 to 80% chance of getting the condition.

If you smoke, you double your risk of suffering an osteoporotic fracture. This is because researchers have found that smoking reduces your ability to absorb calcium. Cigarette smoke is thought to damage bone cells and prevent new bone growth.

To maintain bone health:

- ◆ Make sure there is enough calcium in your diet.
 - 1000 mg of calcium per day for women prior to menopause
 - 1500 mg of calcium per day for women who are post-menopausal and are not taking estrogen replacement therapy
 - 1000 mg of calcium can be obtained from about 3-4 servings of dairy per day
- ◆ Get adequate vitamin D intake, which is important for calcium absorption and muscle strength.
 - 400 IU per day until age 60
 - 600-800 IU per day after age 60
- ◆ Get regular exercise, especially weight bearing exercise



Talk to your doctor about bone health. Important things to discuss include your current health, your diet and physical activity levels, and your family background. Your doctor can look at your age, weight, height, and medical history. From this information, conclusions can be made on whether or not you need a bone density test.



- ◆ If you break a bone after the age of 50, talk to your doctor about measuring your bone density. Even if it was purely broken by accident, you could still have weak bones. It's worth checking.
- ◆ All women over 65 should have a bone density test.

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