

Osteoporosis

Osteoporosis is a disease that thins and weakens bones to the point where they break easily — especially bones in the hip, backbone (spine), and wrist.

Osteoporosis is called the “silent disease” — you may not notice any changes until a bone breaks. But your bones have been losing strength over many years. Bone is living tissue. To keep bones strong, the body is always breaking down old bone and replacing it with new tissue. As people enter their forties and fifties, more bone is broken down than is replaced. A close look at the inside of bone would show something that looks like a honeycomb. When you have osteoporosis, the spaces in this honeycomb grow larger. The outer shell of your bones also gets thinner. All this makes your bones weaker.



Who Gets Osteoporosis?

Ten million Americans have osteoporosis, and 8 million of them are women. About 34 million more have **osteopenia**. This means they don't have osteoporosis yet, but have lost enough bone to make them more likely to get it. One in two women and one in eight men over age 50 will have an osteoporosis-related fracture during their lives. White and Asian women are most likely to get osteoporosis. Other women at great risk include those who:

- ◆ have a family history of the disease,
- ◆ have not gotten enough calcium throughout their lives,
- ◆ had an early menopause,
- ◆ had surgery to remove their ovaries,
- ◆ had extended bed rest,
- ◆ used certain medicines for a long time, or
- ◆ have small body frames.

The risk of osteoporosis grows as you get older. Bone loss may begin slowly in some people when they are in their late thirties. At the time of menopause women may lose bone quickly for several years. Then the loss may continue but more slowly. As men age, they do not have the same kinds of striking hormone changes as women do in mid-life because they do not have a menopause. In men the loss of bone mass occurs more slowly. But, by age 65 or 70 men and women are losing bone at the same rate.

How Do I Know If I Am Losing Bone?

Losing height or having a bone break easily is often the first sign of osteoporosis.

But it doesn't need to be. Bone density is a term that describes how solid your bones are. Ordinary x-rays do not show bone loss until a large amount of bone mass is gone. The best way to measure bone density is by a DEXA-scan (dual-energy x-ray absorptiometry). Ask your doctor about this test if you think you are at risk for osteoporosis or if you are a woman around the age of menopause or older. The DEXA-scan tells what your risk for a fracture is. It could show that you have normal bone density. Or, it could show that you have osteopenia or even osteoporosis.



Can I Prevent Bone Loss?

Osteoporosis is preventable. A diet that is rich in calcium and vitamin D and a lifestyle that includes regular weight-bearing exercise are the best ways to prevent weakened bones in later life.

Calcium. Getting enough calcium all through your life helps to build and keep strong bones. Since 1997 the National Academy of Sciences (NAS) has suggested that people over age 50 should get 1200 mg of calcium daily. To do this, make foods that are high in calcium part of your diet. These include low fat dairy foods, canned fish with soft bones such as salmon, dark green leafy vegetables, and calcium-fortified foods like orange juice, breads, and cereals.



If you think you need to take a supplement to get enough calcium, check with your doctor first. Calcium carbonate and calcium citrate are two common forms of calcium supplement. Be careful not to get more than 2500 mg of calcium a day very often. More than that amount can increase your chance of developing kidney problems.

Vitamin D. Your body uses vitamin D to absorb calcium. Being out in the sun for a total of 20 minutes every day helps most people's bodies make enough vitamin D. You can also get vitamin D from eggs, fatty fish, and cereal and milk fortified with vitamin D. If you think you need to take a supplement, check with your doctor. The NAS says people age 51 to 70 should have 400 IU (international unit) each day. People over 70 should have 600 IU. More than 2000 IU of vitamin D each day may cause harm to your liver and even lower bone mass.



Exercise. Exercise makes bones and muscles stronger and helps prevent bone loss. It is also a way to stay active and mobile. Weight-bearing exercises, done three to four times a week, are best for preventing osteoporosis. Walking, jogging, playing tennis, and dancing are examples of weight-bearing exercises. Strengthening and balance exercises may help you avoid falls and lessen your chance of breaking a bone.



Your Health. Some commonly used medicines can cause loss of bone mass. These include glucocorticoids (a type of steroids) which are used to control diseases such as arthritis and asthma, some antiseizure drugs, certain sleeping pills, some hormones that treat endometriosis, and some cancer drugs. An overactive thyroid gland or 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.



Other Lifestyle Changes. Avoid smoking. Also limit how much alcohol you drink. Too much alcohol can put you at risk for falling and breaking a bone.



Limit alcohol intake

How Is Osteoporosis Treated?

Prevention and treatment of osteoporosis aims to stop bone loss and rebuild bone

to prevent fractures. Along with making life-style changes, there are several medication choices. Some will slow your rate of bone loss, and others can help rebuild bone.



Talk with your doctor to see if one of these is good for you:

Alendronate and risedronate. These medicines are bisphosphonates, drugs that slow the breakdown of bone and increase bone density. They can lessen your chance of breaks in the spine, hip, and other bones. Side effects may include nausea, heartburn, and stomach pain. A few people have muscle, bone, or joint pain while using these medicines. These drugs must be taken in a certain way — when you first get up, before you have eaten, and with a full glass of water. You should not lie down or eat for at least one-half hour after taking the drug. They can cause serious digestive problems. These are available in both once-daily and once-a week versions.

Calcitonin. This is a naturally occurring hormone that increases bone mass in the spine and may lessen the pain of fractures already there. It comes in two forms — injection or nasal spray. The injection may cause an allergic reaction and has some unpleasant side effects. The only side effect of the nasal spray is a runny nose in some people. Although it is not prescribed often, calcitonin is most useful for women who are 5 years past menopause.

Raloxifene. This drug is approved to prevent osteoporosis. It is a SERM (selective estrogen receptor modulator). It prevents bone loss and spine fractures, but may cause hot flashes or increase the risk of blood clots in some women.

Estrogen. Doctors sometimes prescribe estrogen at the time of menopause to slow the rate of bone loss and to increase bone mass in the spine and hip. Estrogen alone, called estrogen replacement therapy (ERT), is used in postmenopausal women who have had the uterus removed (hysterectomy). Postmenopausal women who still have a uterus and choose to take estrogen also receive a progestin to protect the lining of the uterus. This is called hormone replacement therapy (HRT). There are risks with long-term use of these hormones. HRT increases the risk of breast cancer, heart disease, stroke, and blood clots, but lowers the risk of hip and other fractures and colorectal cancer. Estrogen increases the risk of uterine cancer in a woman with a uterus who does not take a progestin and also the risk of blood clots. Each woman thinking about ERT or HRT should discuss benefits, risks, side effects, and other possible treatments with her doctor.

In the future. Other SERMs and bisphosphonates are being studied as improved prevention or treatments for osteoporosis. Also promising as a possible therapy is parathyroid hormone (PTH).

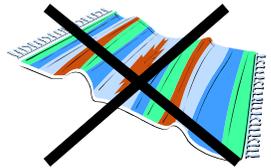
What About Falls?

When bones are weakened by osteoporosis, a simple fall can cause a fracture or break. This can result in a trip to the hospital, surgery, and possibly a long-lasting disabling condition in the case of a hip fracture. Osteoporosis is the cause of 1.5 million fractures each year.



It is important to prevent falls. Some things you can do include:

- ◆ Make sure you can see and hear well. Use your glasses or a hearing aid if needed.
- ◆ Ask your doctor if any of the drugs you are taking can make you dizzy or unsteady on your feet.
- ◆ Use a cane or walker if your walking is unsteady.
- ◆ Wear rubber-soled and low-heeled shoes.
- ◆ Make sure all the rugs and carpeting in your house are firmly attached to the floor, or remove them.
- ◆ Keep your rooms well lit and the floor free of clutter.
- ◆ Use nightlights.



What About Osteoporosis in Men?

Osteoporosis is not just a woman's disease. Men have it also, although not as often as women do. This may be because most men start with more bone mass than women and lose it more slowly as they age. The disease has not been as well studied in men as in women. Most prevention and treatment recommendations are

based on studies in women. However, many of the risk factors for men are the same as those for women — smoking, not enough calcium or vitamin D, too much alcohol, family history, too little exercise, and taking certain drugs.



Low levels of testosterone in older men may increase their loss of bone and chance of hip fracture. Older men who fracture a bone easily or have risk factors for osteoporosis should get a DEXA-scan. If the scan shows osteoporosis, a man should talk with his doctor about which treatment is best for him. Choices are much like those suggested for older women except for estrogen and raloxifene. These drugs have not been well studied in men and are not presently prescribed for osteoporosis prevention or treatment in men. Testosterone supplements may help some men with low levels of testosterone.

Resources

National Osteoporosis Foundation
1232 22nd Street, NW
Washington, DC 20037
202-223-2226
Website: www.nof.org

NIH Osteoporosis and Related Bone Diseases
National Resource Center
1232 22nd Street, NW
Washington, DC 20037
1-800-624-BONE
Website: www.osteo.org/

Material from:
National Institute on Aging
U. S. Department of Health and Human Services
National Institutes of Health
August 2002