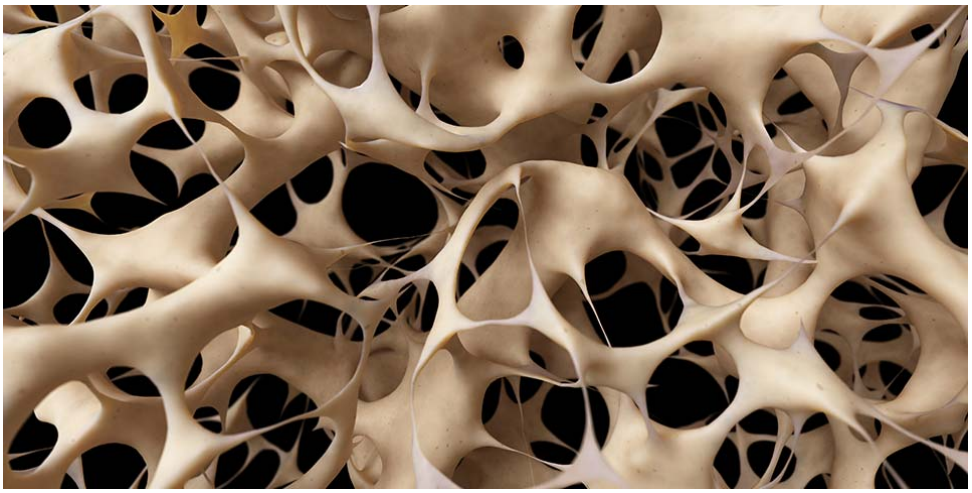
What is Osteoporosis and What Causes It?



Bone is living, growing tissue that changes throughout the lifespan. Osteoporosis is a bone disease that occurs when the body loses too much bone, makes too little bone, or both. As a result, bones become weak and may break from a fall or, in serious cases, from sneezing or minor bumps.

Osteoporosis means “porous bone.” Viewed under a microscope, healthy bone looks like a honeycomb. When osteoporosis occurs, the holes and spaces in the honeycomb are much larger than in healthy bone. Osteoporotic bones have lost density or mass and contain abnormal tissue structure. As bones become less dense, they weaken and are more likely to break. If you’re 50 or older and have broken a bone, ask your doctor or healthcare provider about a bone density test.

Osteoporosis is Common

About 54 million Americans have osteoporosis and low bone mass, placing them at increased risk for osteoporosis. Studies suggest that approximately one in two women and up to one in four men age 50 and older will break a bone due to osteoporosis.

Osteoporosis is Serious

Breaking a bone is a serious complication of osteoporosis, especially with older patients. Osteoporotic bone breaks are most likely to occur in the hip, spine or wrist, but other bones can break too. In addition to causing permanent pain, osteoporosis causes some patients to lose height. When osteoporosis affects vertebrae, or the bones of the spine, it often leads to a stooped or hunched posture.

Osteoporosis may limit mobility, which often leads to feelings of isolation or depression. Additionally, twenty percent of seniors who break a hip die within one year from either complications related to the broken bone itself or the surgery to repair it. Many patients require long-term nursing home care.

Osteoporosis is Costly

Osteoporosis is responsible for two million broken bones and $19 billion in related costs every year. By 2025, experts predict that osteoporosis will be responsible for approximately three million fractures and $25.3 billion in costs annually.

Osteoporosis Can Sneak up on You

Osteoporosis is often called a silent disease because one can't feel bones weakening. Breaking a bone is often the first sign of osteoporosis or a patient may notice that he or she is getting shorter or their upper back is curving forward. If you are experiencing height loss or your spine is curving, be sure to consult your doctor or healthcare professional immediately.

Diseases, Conditions and Medical Procedures That May Cause Bone Loss

There are many health problems and a few medical procedures that increase the likelihood of osteoporosis. If you have any of the following diseases or conditions, talk to your doctor or health care provider about what you can do to keep your bones healthy.

Autoimmune Disorders

- Rheumatoid arthritis (RA)
- Lupus
- Multiple Sclerosis
- Ankylosing spondylitis

Hematologic/Blood Disorders

- Leukemia and lymphoma
- Multiple myeloma
- Sickle cell disease

Cancer

- Breast Cancer
- Prostate Cancer

Medical Procedures

- Gastrectomy
- Gastrointestinal bypass procedures

Endocrine/Hormonal Disorders

- Diabetes
- Hyperparathyroidism
- Hyperthyroidism
- Cushing's syndrome
- Thyrotoxicosis
- Irregular periods
- Premature menopause

Neurological/Nervous Disorders

- Stroke
- Multiple Sclerosis (MS)
- Parkinson's Disease
- Spinal cord injuries

Digestive and Gastrointestinal Disorders

- Celiac disease
- Inflammatory bowel disease (IBD)
- Weight loss surgery

Mental Illness

- Depression
- Eating Disorders

Blood and Bone Marrow Disorders

- Thalassemia

Blood and Bone Marrow Di

- AIDS/HIV
- Chronic obstructive pulmonary disease (COPD), including emphysema
- Female athlete triad (includes loss of menstrual periods, an eating disorder and excessive exercise)
- Chronic kidney disease
- Liver disease, including biliary cirrhosis

- Low levels of testosterone and estrogen in men
- Organ transplants
- Polio and post-polio syndrome
- Poor diet, including malnutrition
- Scoliosis
- Weight loss

Note: This list may not include all of the diseases and conditions that may cause bone loss. Talk to your doctor and ask if any of the conditions you have may be causing bone loss.

Medicines that May Cause Bone Loss

Some medicines can be harmful to your bones, even if you need to take them for another condition. Bone loss is usually greater if you take the medication in high doses or for a long time.

It's important to talk with your healthcare provider about the risks and benefits of any medicines you take and about how they may affect your bones, but do not stop any treatment or change the dose of your medicines unless your healthcare provider says it's safe to do so. If you need to take a medicine that causes bone loss, work with your healthcare provider to determine the lowest possible dose you can take to control your symptoms.

The following medicines may cause bone loss:

- Aluminum-containing antacids
- Antiseizure medicines (only some) such as Dilantin® or Phenobarbital
- Aromatase inhibitors such as Arimidex®, Aromasin® and Femara®
- Cancer chemotherapeutic drugs
- Cyclosporine A and FK506 (Tacrolimus)
- Gonadotropin releasing hormone (GnRH) such as Lupron® and Zoladex®
- Heparin
- Lithium
- Medroxyprogesterone acetate for contraception (Depo-Provera®)
- Medroxyprogesterone acetate for contraception (Depo-Provera®)
- Methotrexate
- Proton pump inhibitors (PPIs) such as Nexium®, Prevacid® and Prilosec®
- Selective serotonin reuptake inhibitors (SSRIs) such as Lexapro®, Prozac® and Zoloft®
- Steroids (glucocorticoids) such as cortisone and prednisone
- Tamoxifen® (premenopausal use)
- Thiazolidinediones such as Actos® and Avandia®
- Thyroid hormones in excess

Note: The above list may not include all medicines that may cause bone loss.

Osteoporosis and Steroid Medicines

While steroid medicines can be lifesaving treatments for some conditions, they can also cause bone loss and osteoporosis. These medicines are often referred to as steroids, glucocorticoids or corticosteroids. They should not be confused with anabolic steroids, which are male hormones that some athletes use to build muscle.

Steroids are much like certain hormones made by your own body. Healthcare providers prescribe them for many conditions, including rheumatoid arthritis (but not osteoarthritis), asthma, Crohn's disease, lupus and allergies. They are often prescribed to relieve inflammation. They are also used along with other medicines to treat cancer and autoimmune conditions and to support organ transplants. Common steroid medicines are cortisone, dexamethasone (Decadron®), methylprednisolone (Medrol®) and prednisone. Intravenous forms include methylprednisolone sodium succinate (Solu-Medrol®).

Taking steroid medicines as pills in a dose of 5 mg or more for three or more months can increase the chance of bone loss and developing osteoporosis. Talk with your healthcare provider about taking the lowest dose for the shortest period of time for your condition. If you need to take steroid medicines for longer than this, you should take steps to prevent bone loss. While taking steroids, it is especially important to get enough calcium and vitamin D. It's also important to exercise and not smoke. You may also want to ask your healthcare provider if you need a bone density test.

Diagnosis Information

People can have osteoporosis without any signs or symptoms. When you have osteoporosis, your bones become weak and are more likely to break. Because it is a disease that can be prevented and treated, an early diagnosis can make a difference. At any age, it is never too late to take steps to protect your bones and prevent fractures (broken bones).

You can find out whether you have osteoporosis or if you should be concerned about your bones by getting a bone mineral density (BMD) test. A BMD test uses a special machine to measure bone density. Some people also call it a bone mass measurement test. This test lets you know the amount of bone mineral you have in a certain area of bone. Bone density testing can be done on different bones of your body, including your hip, spine, forearm (between the wrist and elbow), wrist, finger or heel. A BMD test is safe and painless, and it provides important information about your bone health. Your healthcare provider uses this information to make recommendations to help you protect your bones.

If you are diagnosed with osteoporosis, your healthcare provider may order laboratory and other tests. These tests can help your healthcare provider find out if you have another medical condition causing bone loss.

A medical evaluation to diagnose osteoporosis and estimate your risk of breaking a bone may involve one or more of the following steps:

- Clinical Exams such as
- Medical history
- Physical examination
- Laboratory tests
- Bone density test
- FRAX® score

Other tests that may be used to evaluate bone health but are not used to diagnose osteoporosis include biochemical marker tests, x-rays, vertebral fracture assessments (VFAs), and bone scans.

10 Myths About Osteoporosis

Myth #1: Most people don't need to worry about osteoporosis.

Millions of Americans – 54 million to be exact – have low bone density or osteoporosis. In fact, about one in two women and up to one in four men over the age of 50 will break a bone due to osteoporosis. The disease causes an estimated two million broken bones every year.

Myth #2: Osteoporosis is only a problem for older Caucasian women.

While osteoporosis is common among white women, men and women of all races can have the disease. Also, while the disease is more common in older people, it can strike at any age.

Myth #3: You don't need to worry about osteoporosis if you just trip and break a bone.

Any broken bones in people over the age of 50 from standing height that are not caused by a serious accident (car crash, falling off a ladder, etc.) can be the first sign of low bone density or osteoporosis. Broken bones from tripping on the sidewalk or falling over something on the floor at home are often related to osteoporosis, yet frequently undiagnosed.

Myth #4: People with osteoporosis can feel their bones getting weaker.

Osteoporosis is commonly called a "silent disease." Often, breaking a bone is the first clue you have osteoporosis. Some people learn that they have osteoporosis after they lose height from one or more broken bones in the spine. These broken bones can even occur without any noticeable pain.

Myth #5: An osteoporosis test is painful and exposes you to a lot of radiation.

Experts recommend a bone mineral density test using a central DXA (dual energy x-ray absorptiometry) machine. It is simple, painless, takes 5-10 minutes and uses very little radiation. You are exposed to 10-15 times more radiation from flying in a plane roundtrip between New York and San Francisco.

Myth #6: Children and teens do not need to worry about their bone health.

Children and teens can build strong bones and prevent osteoporosis by being physically active and getting enough calcium and vitamin D.

Myth #7: If you drink a lot of milk and exercise, you are not at risk for osteoporosis.

Even if you drink plenty of milk and exercise, you still may be at risk for osteoporosis. There are many risk factors for osteoporosis – some you can control and some you can't.

Myth #8: Osteoporosis isn't serious.

Broken bones from osteoporosis can be very painful and serious. Broken bones can affect physical, mental and emotional health, and in some cases, result in death. It is important to take steps throughout your life to protect your bones.

Myth #9: Taking extra calcium supplements can help prevent osteoporosis.

Taking more calcium than you need does not provide any extra benefits. Estimate the amount of calcium you get from foods on a typical day to determine whether a supplement is right for you. Find out how much calcium you need.

Myth #10: Most people do not need to take a vitamin D supplement.

Vitamin D helps your body use calcium. If you don't get enough vitamin D, or if your body doesn't absorb it well, you are at greater risk for osteoporosis. Your skin makes vitamin D when it is exposed to the sun and is also available in a few foods. However, many people need a vitamin D supplement. Find out how much vitamin D you need and if a supplement is right for you.

25 Ways to Prevent Falls

1. Remove all loose wires, cords and throw rugs.
2. Keep floors free of clutter.
3. Be sure all carpets and area rugs have skid-proof backing or are tacked to the floor.
4. Do not use slippery wax on bare floors.
5. Keep furniture in its accustomed place.
6. Install grab bars on the bathroom walls beside the tub, shower and toilet.
7. Use a non-skid rubber mat in the shower or tub.
8. If you are unsteady on your feet, consider using a plastic chair with a back and non-skid legs in the shower or tub, and use a hand-held showerhead to bathe.
9. Use non-skid mats or rugs on the floor near the stove and sink.
10. Clean up spills as soon as they happen (in the kitchen and anywhere in the home).
11. Place light switches within reach of your bed and a night light between the bedroom and bathroom.
12. Keep a flashlight with fresh batteries beside your bed.
13. Keep stairwells well lit, with light switches at the top and the bottom.
14. Install sturdy handrails on both sides of stairs.
15. Mark the top and bottom steps of stairs with bright tape.
16. Make sure carpeting is secure on steps of stairs and throughout your home.
17. Cover porch steps with gritty, weatherproof paint.
18. Install handrails on both sides of porch steps.
19. Place items you use most often within easy reach. Avoid stooping or bending.
20. Use assistive devices to help avoid strain or injury. Use a long-handled grasping device to pick up items and use a pushcart to transfer hot or heavy items.
21. If you must use a stepstool, use a sturdy one with a handrail and wide steps.
22. Consider wearing a personal emergency response system (PERS) or keeping a portable telephone with you so you can call for help immediately if you fall.
23. Don't get up too quickly after eating, sitting or lying flat.
24. Talk to your healthcare professional or pharmacist about the side effects of drugs you take. Some can make you feel dizzy or drowsy.
25. If you are unsteady on your feet, use a cane or walker at all times.

251 18th Street S, #630 • Arlington, VA 22202 • (703) 647-3000/(800) 231-4222 • www.NOF.org