

## Who Gets Osteoporosis: Factors That Put You At Risk

Certain people are more likely to develop osteoporosis than others. While you have no control over some risk factors for osteoporosis, there are others you can change. By making healthier choices you can help reduce your risk of osteoporosis as well as the broken bones it can cause. In this handout, we will discuss the many risk factors for osteoporosis and broken bones. It's important to discuss your risk factors with your healthcare provider. Together, you can develop a plan to protect your bones.

### Risk Factors That Are Difficult to Change

**Age.** Osteoporosis can affect people of all ages, but it is far more common in older people than younger people. All of us lose some bone density as we age, but some of us lose more bone or lose it faster. It is not true that every older person gets osteoporosis, but it does become more common with age.

**Sex.** About one in two women over age of 50 will break a bone from osteoporosis. A woman's risk of breaking a hip due to osteoporosis is equal to her risk of breast, ovarian and uterine cancer combined. Women have lighter, thinner bones than men. Women can also lose bone quickly after menopause. However, osteoporosis isn't just a woman's disease. Up to one in four men over the age of 50 will break a bone because of osteoporosis. A man older than age 50 is more likely to break a bone due to osteoporosis than he is to get prostate cancer.

**Menopause.** In women, the sex hormone estrogen protects bones. For many women, bone loss increases after menopause when estrogen levels drop sharply. If you go through menopause early, your risk of osteoporosis increases. The same is true if you have your ovaries removed. That's because your ovaries produce most of your body's estrogen. In either of these cases, it's important to speak with your healthcare provider about steps to improve bone health.

**Family History.** Research suggests that heredity and genetics play a major role in osteoporosis and broken bones. If either of your parents had osteoporosis or a history of broken bones, you are more likely to break a bone. Also, if one of your parents had a noticeable amount of height loss or a spine that curved forward, they may have had broken bones in the spine.

**Low Body Weight/Being Small and Thin.** Women and men with small bones are more likely than larger people to have osteoporosis. But that doesn't mean heavier or larger people can't get it.

**Broken Bones or Height Loss.** People who have broken one or more bones during their adult years may already have osteoporosis and not know it. Broken bones in the spine can occur with no noticeable pain. These breaks can cause height loss. They can also cause the spine to curve forward. This curvature of the spine is sometimes called a dowager's hump or kyphosis. Breaks in the spine often go unnoticed until a person becomes aware that a significant loss of height of an inch or more has occurred.

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### Lifestyle Factors That Affect Bone Health

**Not Getting Enough Calcium and Vitamin D.** Calcium is a mineral that is important for healthy bones. It is a building block of bone. Vitamin D is important because it helps your body use calcium. If you don't get enough vitamin D or if your body does not absorb it well, you are at much greater risk for bone loss and osteoporosis. See Table 1 below to learn how much calcium and vitamin D you need to get each day for bone health.

**Table 1: NOF's Recommendations for Calcium and Vitamin D**

<b>Women</b>		
Age 50 and younger	1,000 mg of calcium from all sources daily	400-800 international units (IU) of vitamin D daily*
Age 51 and older	1,200 mg from all sources daily	800-1,000 IU of vitamin D daily*
<b>Men</b>		
Age 50 and younger	1,000 mg from all sources daily	400-800 IU of vitamin D daily*
Age 50 – 70	1,000 mg from all sources daily	800-1,000 IU of vitamin D daily*
Age 71 and older	1,200 mg from all sources daily	800-1,000 IU of vitamin D daily*

\*Some individuals may need more vitamin D.

**Not Eating Enough Fruits and Vegetables.** Eating a well-balanced diet, rich in fruits and vegetables, is important for healthy bones. In addition to calcium and vitamin D, magnesium, potassium and vitamin K are a few of the many minerals and vitamins that are important for bone health. If you eat a well-balanced diet, experts believe that you should be able to get enough of the nutrients needed for healthy bones. Most experts recommend multivitamins or supplements for people who do not get enough minerals and vitamins from foods. This may include people with gastrointestinal disorders that can interfere with the absorption of vitamins and minerals.

**Getting Too Much Protein, Sodium and Caffeine.** Diets that are extremely high in non-dairy sources of animal protein, sodium and caffeine may cause the body to lose calcium. Eating enough protein, however, is important for bone health. Bone loss may occur in people who eat special "high protein" diets. Having moderate amounts of caffeine each day from coffee and tea should not harm bone health. Studies, however, suggest that people who regularly drink cola drinks may be at greater risk of bone loss. Other non-cola carbonated soft drinks do not appear to have these same risks. You can help make up for the potential loss of calcium from sodium, excessive protein, too much caffeine and cola drinks by making sure you get enough calcium every day.

**Having an Inactive Lifestyle.** People who are bedridden, inactive or do not exercise are at high risk of osteoporosis. Certain types of regular exercise can help keep your bones strong. These include weight-bearing exercises such as fast walking and muscle-strengthening exercises such as lifting weights.

**Smoking.** Smoking is harmful to your bones in many ways. The chemicals in cigarettes are bad for your bone cells. Smoking also might make it harder to absorb calcium. For women, smoking can prevent estrogen from protecting the bones.

## Who Gets Osteoporosis: Factors That Put You At Risk

**Drinking too much alcohol.** Drinking heavily can reduce bone formation and harm the body's calcium supply. Heavy drinkers also tend not to consume enough calcium. Drinking too much is bad for your overall health and can make you more likely to fall and break bones. Alcohol in smaller amounts, however, does not harm bone health. This usually means no more than two to three drinks a day.

**Losing Weight.** While losing weight can help prevent other health conditions like heart disease and diabetes, it can also cause bone loss. You can protect your bones while losing weight by exercising and eating a healthy diet that provides enough calcium and vitamin D.

### Medical Conditions That May Cause Bone Loss

There are many health problems that can harm your bones and increase your risk of osteoporosis. Some of these conditions are discussed below. For a more complete list, see Table 1 on page 4.

#### Autoimmune Disorders

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**Rheumatoid Arthritis (RA).** RA is a form of arthritis that is associated with an increased risk for osteoporosis. Steroid medicines used to treat it, as well as the condition on its own, can increase the risk of osteoporosis. Many people confuse osteoporosis and osteoarthritis (OA). Osteoarthritis is just one of many diseases that affect the joints and surrounding tissues, but it doesn't cause bone loss.

**Lupus.** People with lupus may need to take medicines, including steroids, to control their symptoms. These medicines can lead to bone loss and osteoporosis.

#### Digestive and Gastrointestinal Disorders

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**Celiac Disease.** People with celiac disease have trouble digesting foods with gluten. Gluten is found in grains such as wheat, rye and barley. People with celiac disease also have problems absorbing nutrients, including calcium and vitamin D. Celiac disease doesn't always cause noticeable symptoms. Ask your doctor if you should have a test for celiac disease.

**Inflammatory Bowel Disease (IBD).** Different forms of IBD, such as Crohn's disease and ulcerative colitis, can cause bone loss. People with IBD often take steroid medicines to treat these conditions. People with IBD may also have trouble absorbing the calcium and vitamin D needed for healthy bones.

**Weight Loss Surgery.** Weight loss procedures such as gastric bypass surgery can help people lose a large amount of weight in a short period of time. This weight loss may lead to bone loss. These procedures can also interfere with the body's ability to properly absorb the vitamins and minerals needed for bone health.

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### Endocrine/Hormonal Disorders

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**Diabetes.** People with diabetes are at risk of osteoporosis. While type 1 diabetes seems to cause the greatest amount of bone loss, people with both type 1 and type 2 diabetes have an increased risk of breaking bones.

**Hyperparathyroidism.** With this condition the parathyroid glands (two pairs of small glands located behind the thyroid in the neck) produce too much parathyroid hormone (PTH). Having too much PTH causes bone loss. This condition is more common in women after menopause.

**Hyperthyroidism.** In people with this condition the thyroid gland produces too much thyroid hormone. This can lead to weak muscles and fragile bones. Bone loss can also occur if a person takes too much thyroid hormone medicine for an underactive thyroid.

**Missing Periods.** If you are a young woman and don't have regular periods, this could mean low estrogen levels. There could be many reasons for this, such as exercising too much or eating so little that you become too thin. Other causes of irregular periods could include disorders of the ovaries or pituitary. Loss of estrogen and extreme thinness can harm bones and affect other body systems. Young women who don't have regular periods should talk to their healthcare provider about their bone health.

**Testosterone and Estrogen Levels (men).** In men, testosterone protects bone. Very low levels of testosterone suggest that there is an underlying disorder that needs to be evaluated. Low levels of estrogen in men can also lead to bone loss. A number of factors can cause levels to be low, such as an eating disorder or drinking too much alcohol. A blood test can tell you if your hormone levels are normal.

### Hematologic/Blood Disorders

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**Leukemia and Lymphoma.** Many of the medicines, including chemotherapy, used to treat these two forms of cancer can lead to bone loss and osteoporosis.

**Multiple Myeloma.** Multiple myeloma is a cancer of the bone marrow. Its first symptoms may be back pain and broken bones in the spine. Blood and urine tests can detect the problem. Other forms of cancer that affect bones or bone marrow can also cause broken bones.

**Sickle Cell Disease.** People with sickle cell disease may need to take medicines, including steroids, to control their symptoms. These medicines can lead to bone loss and osteoporosis.

### Neurological/Nervous System Disorders

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**Stroke, Parkinson's disease and multiple sclerosis (MS) reduce mobility.** People with these conditions are more likely to be inactive, fall and have low vitamin D levels. Stroke and MS can also cause bone loss and muscle weakness.

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### Other Diseases and Medical Conditions

Many health problems including genetic disorders and diseases of the kidneys, lungs and digestive system can cause osteoporosis and broken bones. Below are some other common causes of bone loss. For a more complete list, see Table 1.

**Breast Cancer.** Aromatase inhibitors are commonly used to treat women with estrogen sensitive breast cancer. These medicines reduce the amount of estrogen in the body which can lead to bone loss and broken bones.

**Depression.** Research shows that people with depression are more likely to have low bone density or osteoporosis. This link is probably due to multiple factors, including the use of SSRI medicines (see Table 3).

**Eating Disorders.** In women with anorexia nervosa, estrogen levels decrease to such an extent that menstrual periods either become irregular or stop. This drop in estrogen can cause bone loss and osteoporosis. In addition to causing low estrogen levels, anorexia nervosa and other eating disorders can lead to bone loss in females and males for other complex reasons.

**Organ Transplants.** People who have organ transplants must take medicines to prevent their bodies from rejecting their new organs. Some of these drugs can weaken bones.

**Prostate Cancer.** Androgen deprivation therapy is commonly used to treat men with prostate cancer. These medicines reduce the male sex hormones in the body which can cause to bone loss and broken bones.

See table 2 for many of the diseases and medical conditions that can cause bone loss and osteoporosis. If you have a medical condition that is associated with bone loss, work with your healthcare provider to decide whether you should have a bone density test. With proper treatment, most people can live well with these diseases. Living well also involves taking good care of your bones.

Ankylosing spondylitis	Kidney disease
Anorexia nervosa	Lupus
Blood and bone marrow disorders	Leukemia and lymphoma
Breast cancer	Multiple myeloma
Celiac disease	Multiple sclerosis
Chronic lung disease	Organ transplants
Crohn's disease and ulcerative colitis	Parkinson's disease
Cushing's syndrome	Poor diet
Diabetes	Post-polio syndrome
Emphysema	Premature (early) menopause
Female athlete triad	Prostate cancer
Gastrectomy	Rheumatoid arthritis
Gastrointestinal bypass procedures	Severe liver disease
HIV/AIDs	Sickle cell disease
Hyperparathyroidism	Spinal cord injuries
Hyperthyroidism	Stroke (CVA)
Idiopathic scoliosis	Thalassemia
Inflammatory bowel disease	Thyrotoxicosis
Diabetes mellitus	Weight loss

\*\*This list may not include all conditions that can cause bone loss.

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### Medicines That May Cause Bone Loss

Some medicines can be harmful to your bones, even if you need to take these medicines for another condition. One of the riskiest types of medicines for bones is steroid medicines. Many people take these medicines to ease inflammation in conditions like arthritis or asthma.

If you take steroid medicines for three or more months, you should take steps to prevent bone loss. Talk with your healthcare provider about prescribing the smallest dose of medicine for the shortest period of time to control your symptoms. While taking steroids, it is especially important to get enough calcium and vitamin D everyday.

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.

Do not stop any treatment or change the dose of your medicines unless your healthcare provider says it's safe to do so. Table 3 lists many of the medicines that can increase your chance of osteoporosis.

If you take a medicine that can cause bone loss, work with your healthcare provider to develop a plan to protect your bones. Your pharmacist may also be a good resource.

Note: For additional information, visit the NOF Web site at [www.nof.org](http://www.nof.org).

**Table 3: Medicines That May Cause Bone Loss\*\*\***

Aluminum-containing antacids
Anti-seizure medicines (only some) such as Dilantin® or Phenobarbital
Aromatase inhibitors such as Arimidex®, Aromasin® and Femara®
Cancer chemotherapeutic drugs
Cyclosporine A and FK506 (Tacrolimus)
Glucocorticoids (steroids) such as cortisone and prednisone
Gonadotropin releasing hormone (GnRH) such as Lupron® and Zoladex®
Heparin
Lithium
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®
Tamoxifen® (premenopausal use)
Thiazolidinediones such as Actos® and Avandia®
Thyroid hormones in excess

\*\*\*This list may not include all medicines that can cause bone loss.