

Hormone Health Network's Patient Guide to Osteoporosis in Men

In osteoporosis, bones become weak and are more likely to fracture (break). It is a “silent” condition, causing no symptoms (what you feel) unless you break a bone. About 20% of the 44 million Americans who have osteoporosis or osteopenia (mildly low bone mass) are men.

The lifetime risk of having a fracture due to osteoporosis for men ages 50 and older is 13% to 30%. Fractures occur most often at the hip, spine, and wrist. These fractures—above all, hip fractures—can greatly reduce the quality of life and even lead to early death. Though osteoporosis affects men less often than women, men are two to three times more likely than women to die after breaking a hip.

Fortunately, osteoporosis can be prevented. However, many men are unaware that they are at risk for this dangerous disorder. This guide is based on The Endocrine Society's practice guidelines for physicians about testing for, treating, and preventing osteoporosis in men.

Osteoporosis Risk Factors

Personal and family history:

- White race
- Age 70 and older
- Thinness
- Prior fracture as an adult, mainly after age 50
- History of delayed puberty
- Family history of osteoporosis or a parent who had a fracture

Lifestyle:

- Cigarette smoking
- Excess alcohol use
- Low calcium and vitamin D intake
- Lack of physical activity

Health problems and medicines:

- Low testosterone (hypogonadism), including low testosterone caused by treatment for prostate cancer
- High calcium levels in the blood (hypercalcemia) or urine (hypercalciuria)
- Vitamin D deficiency
- Disorders that affect many parts of the body including hyperthyroidism (overactive thyroid), hyperprolactinemia, kidney failure, liver failure, celiac disease, and certain cancers
- Use of steroid medications such as prednisone and cortisone for more than 3 months—called *glucocorticoid-induced osteoporosis*

What causes osteoporosis in men?

Osteoporosis occurs when your body cannot replace bone as quickly as it breaks down old bone (a natural process called “bone turnover”). Certain factors raise a man's risk of developing osteoporosis.



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How is osteoporosis in men diagnosed?

Your doctor may suspect osteoporosis based on your medical history, risk factors, and physical exam, including your height, balance, and mobility.

The most common way to detect osteoporosis is with a bone density test such as a dual-energy x-ray absorptiometry (DXA or DEXA) scan. This test measures bone mineral density (BMD) at your lower spine and hip, and gives a score called a T-score. A T-score of -2.5 or lower indicates osteoporosis, and a T-score between -1.0 and -2.5 shows osteopenia. A score above -1.0 is normal.

DXA can also show vertebral fractures (breaks in the bones that make up your spine). People who have had a vertebral fracture are more likely to have more fractures, so vertebral fracture assessment can have important clinical implications.

You may need other lab tests, such as blood or urine tests, if your DXA scan finds osteoporosis. These tests look for chronic health problems that may be the cause of your poor bone health. Blood tests also can check for abnormal levels of calcium or vitamin D that may cause bones to become weak.



To find an endocrinologist and obtain free publications, visit www.hormone.org or call 1-800-HORMONE.

Who should get a DXA test?

Men at increased risk of osteoporosis should consider having their BMD measured. This includes men ages 50 to 69 who have any other osteoporosis risk factors (see box on page one). Doctors may suggest that men ages 70 and older, even those who have no other risk factors, have a BMD test.

If your doctor orders a BMD test, you should get a central DXA of the spine and hip. However, spine DXA may be hard to interpret in older men. In this case, your doctor may consider measuring BMD at the forearm.

Depending on your bone density results, other risk factors for fracture, and any treatment you are receiving, you may need another DXA in one to three years to check for further bone loss or response to treatment.



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Who should receive treatment?

Whether you need treatment for osteoporosis depends partly on your future chance of breaking a bone.

Fracture risk calculators can help predict your risk of fracture. These Web-based tools compute your estimated risk after you input information such as your age, body weight, past fractures, and BMD. They include the World Health Organization Fracture Risk Assessment Tool (FRAX) and one from the Garvan Institute of Medical Research (Garvan Fracture Risk Calculator).

Doctors will consider prescription drug treatment for adult men who:

- Have had a hip or spine fracture without having major trauma
- Have a DXA T-score at the spine or hip of -2.5 or worse
- Have a DXA T-score between -1 and -2.5 along with high fracture risk
- Are receiving long-term glucocorticoid therapy
- Are receiving androgen deprivation therapy (ADT) for prostate cancer along with high fracture risk

What is the treatment for osteoporosis?

The best type of medication to treat osteoporosis depends on the individual. Your doctor will consider your DXA T-scores, your future fracture risk, any fractures you had in the past, and other health problems you may have. The cost of the medicine and other factors also may affect your choice.

In the United States, four medications are approved for treatment of osteoporosis in men. They are

- *Alendronate* (tablets taken daily or weekly)
- *Risedronate* (tablets daily, weekly, or monthly)
- *Zoledronic acid* (intravenous, or IV, once a year)
- *Teriparatide* (once daily injection under the skin)

The first three drugs are in the class of drugs called bisphosphonates. These drugs slow bone loss and slightly increase bone mass. Both risedronate and zoledronic acid also have approval from the Food and Drug Administration (FDA) to prevent osteoporosis in men taking glucocorticoid medicine.

In contrast, *teriparatide* stimulates new bone formation. Because it requires daily injections and is expensive, doctors usually prescribe it only for men with severe osteoporosis.

Men at high fracture risk who are receiving ADT for prostate cancer also have the choice of a new medication named *denosumab*. Given as an injection under the skin, this drug increases bone density.

Testosterone therapy appears to increase BMD in men with low levels of this male hormone (below 200 nanograms per deciliter, or ng/dL), but its effect on fractures has not been studied. So, unless men have a clear need for testosterone therapy other than for bone health, an FDA-approved osteoporosis medicine is usually the first choice for these men. This is especially true if they have a high fracture risk.

Ask your doctor which treatment is best for you and about its benefits and risks.

What can you do to prevent and treat osteoporosis?

You can help prevent osteoporosis by making changes in your diet and lifestyle. If you are a man at risk of osteoporosis, you should

- Consume 1,000 to 1,200 mg of calcium daily from foods (including calcium-fortified foods and drinks) and, if needed, calcium supplements.
- Take daily vitamin D supplements (1,000 to 2,000 International Units [IU] or more if your doctor prescribes it) if your blood level of vitamin D is low (less than 20 to 30 ng/mL).
- Do weight-bearing activities, such as walking, running, and weight lifting, three or four times a week for 30 to 40 minutes each.
- Drink no more than 10 alcoholic drinks a week (1 drink in the U.S. = 12 ounces of beer, 5 ounces of wine, or 1.5 ounces of hard liquor; in the U.K. or Australia = 1/2 pint of beer, 1 small glass of wine, or a single measure of spirits)
- Quit smoking.

If you already have osteoporosis, you should take 1,000 to 1,200 mg per day of calcium, plus as much vitamin D as your doctor suggests. Also, take your prescribed dose of other medications, keep appointments with your doctor, and get DXA scans as advised. This will help ensure the success of your treatment and healthy bones.

EDITORS

Robert A. Adler, MD
Joel Finkelstein, MD

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