

What is fracture risk?

Why is it important to me?

The bone densitometry test provides information about your own risk of bone fracture in the same way a cholesterol test indicates risk of a heart attack. A diagnosis of osteoporosis cannot predict a bone fracture, just as high cholesterol cannot predict a heart attack. Instead, it means that the risk of having a fracture is higher than that for normal bones. Your test results combined with other factors sum up your overall risk of fracture.

Are there other tests?

Ultrasound can also be used to measure the status of the bone. Biochemical tests may be used for additional information in some cases.

Where can I get more information about bone measurements and osteoporosis?

The National Osteoporosis Foundation (NOF) is one of the leading sources of information about osteoporosis and bone measurements. The NOF recommends a bone density test for women who are:

- Over 65 years old
- Postmenopausal
 - with more than one risk factor
 - with a fracture
- Considering osteoporosis therapy
- On prolonged hormone replacement therapy

The NOF recommends treatment for women with:

- A T-score < -1.5 with risk factors
- A T-score < -2.0 with no risk factors
- A fracture and who are postmenopausal

Are you at risk for osteoporosis?

“By 2020 half of all Americans over 50 will have weak bones unless we make changes to our diet and lifestyle. People who have weak bones are at higher risk for fractures. Americans are living longer, and this means that our bones need to stay strong so we can be active and enjoy life. Strong bones begin in childhood. With good habits and medical attention when needed, we can have strong bones throughout our lives.”

- 2004 Surgeon General's Report on Bone Health & Osteoporosis

5 Simple Steps to Good Bone Health

- Take daily calcium and Vitamin D.
- Do regular weight-bearing exercise.
- Avoid smoking and excessive alcohol.
- Talk to your doctor about bone health.
- Have a bone density test and take medication when appropriate.



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Bones are constantly changing.

Throughout childhood and as young adults, bones grow in strength and in size. Around the age of 30, bones reach their peak strength and then naturally become weaker with age. Osteoporosis is a condition where bones become weak to the point of breaking. Important risk factors for osteoporosis include:

- Female
- Caucasian
- Advanced age
- History of bone fracture
- A small thin frame
- A family history of osteoporosis
- Removal of the ovaries
- Early menopause
- A low calcium diet
- Lack of exercise
- Eating disorders
- Certain medicines (such as steroids or anticonvulsants)
- Alcohol and tobacco use

How do I know if I have Osteoporosis?

Osteoporosis is often called the “silent disease.” There are rarely signs until a lot of bone has been lost. Visible symptoms may include loss of height along with curvature of the upper back. Osteoporosis also can result in a crippling and painful fracture, occurring most often in the hip, back or wrist.

How does the densitometer work?

A bone densitometer measures bone mineral density (BMD). The amount of bone mineral relates directly to bone strength. The bone densitometer uses small amounts of x-ray to measure BMD and to produce images of the spine, hip or whole body. The technical term for the method is “dual energy x-ray absorptiometry” or DXA. The spine and hip are measured because that is where most osteoporotic fractures occur.

What can I expect during my bone densitometry test?

The bone densitometer is a large, padded and comfortable examination table. You will be asked to lie on your back, remaining in your normal clothing in most cases. Belt buckles, metal or thick plastic buttons, and metal jewelry will need to be removed from the region being examined. The operator will position your arms and legs for the test, which is painless and typically takes one to 10 minutes. You just need to lie still and breathe normally.

Is the test safe?

Even though x-rays are used, the amount absorbed by the patient is only about 1/10th of that received from a chest x-ray. Other x-ray procedures have even higher x-ray doses. The x-ray dose from the bone densitometry test is comparable to the naturally occurring radiation you are exposed to in one week.

***Caution:** Even though the x-ray dose from the bone densitometry test is very low, please inform the operator if you are pregnant or might be pregnant before your test!*

What information will the test give my doctor?

A bone densitometry test helps doctors diagnose osteoporosis. The test compares your BMD to that of a young adult at peak bone strength. It also compares your results to people of your same age, called age-match. This information, along with other factors, helps doctors gauge your risk of osteoporotic fracture. The difference between your result and that of a “young adult” is given as a T-score. A panel of experts at the World Health Organization (WHO) developed categories that define the amount of bone loss:

- Normal: a T-score that is above -1
- Osteopenic: a T-score between -1 and -2.5 (Low bone density)
- Osteoporosis: a T-score below -2.5

Your T-score is one factor that your doctor will consider in making a diagnosis.

The bone densitometry test is also useful in following bone changes. The bone densitometer can monitor the effects of age, diet or treatments on your bone status. Your doctor may suggest follow-up tests to detect change over time.