Bone Densitometry

What is bone mineral density testing?

Bone mineral density testing is a way to see if your bones are healthy and strong. A bone mineral density test is used to measure the density (strength) of your bones. It is different from a bone scan, which is used to look for fractures or areas of bone inflammation.

Why is this test done?

Your healthcare provider orders a bone mineral density test to check your bone health. It may be done for several possible reasons:

- as a routine screening test
- when your risk for having weak bones is high
- after you have broken a bone to see if weak bones were a cause of the break

Your bones naturally lose some density as you get older. The loss of density weakens the bones. If your bones are somewhat less dense than normal, you have osteopenia. If your bones have lost a lot of density, you have osteoporosis.

Bone mineral density tests are much more sensitive than normal X-rays. Normal X-rays do not detect bone loss until at least 30% of the bone mass has been lost. Bone mineral density tests allow healthcare providers to diagnose weakening bones at earlier stages. The test helps your healthcare provider decide if you need treatment for osteoporosis.

How do I prepare for this test?

- Don't wear clothing with buttons, snaps, or zippers from the waist down on the day of the test. If you wear pants with an elastic waistband or cloth tie, you won't need to get undressed for the test. A sports bra is also better to wear than an underwire bra.
- If you have recently had X-ray tests using barium or any nuclear medicine tests, you should have your bone density test at least a week after those tests.
- Tell your healthcare provider if you are or might be pregnant.

Source: MD Consult

How is the test done?

Dual energy X-ray absorptiometry (DXA or DEXA) is the most commonly test that is done. During the test you lie down on a padded table. It is best not to move while the test is being done, but you can breathe normally. It takes just a few of minutes to check the bone density of your spine and hip. (The hip and spine are the most common areas checked because they are most prone to fracture if your bones are weakened.)

What does the test result mean?

The test results are expressed as 2 types of scores:

- The T-score compares your bone mineral density (BMD) to the expected bone density value of a healthy young adult (about age 30) of the same sex and ethnicity.
- The Z-score compares your BMD to the BMD of a healthy person who is about the same age and body size as you.

The T score is used to make treatment decisions using a statistical measure called a standard deviation (SD). The SD measures the difference between your BMD and that of a healthy young adult (the reference value). Every -1 SD ("minus 1 standard deviation") equals a 10 to 12% decrease in bone density. T score results are classified as follows:

T Score (SD)	Bone Density Classification
Above -1	Normal
-1 to -2.5	Osteopenia (low bone mass)
Below -2.5	Osteoporosis (very low bone mass)

The Z score is used to interpret the test results if you are outside the normal testing range (very young or very old). It is the number of standard deviations (SD) above or below the reference value for your age.

Source: MD Consult