

BONE DENSITY (DEXA SCAN)

A bone density, also known as a DEXA SCAN, uses low dose x-ray to measure bone density at various sites of the body. A Bone Density exam can detect osteoporosis before a fracture occurs, predict your chances of fracturing in the future, and determine the rate of bone loss and/or monitor the effects of treatment if the test is conducted at the intervals of a year or more.

Why is it done?

Doctors use bone density testing to:

- Identify decreases in bone density before you break a bone
- Determine your risk of broken bones (fractures)
- Confirm a diagnosis of osteoporosis
- Monitor osteoporosis treatment

The higher your bone mineral content, the denser your bones are and the denser your bones, the stronger they generally are and the less likely they are to break.

Bone density tests differ from bone scans. Bone scans require an injection beforehand and are usually used to detect fractures, cancer infections and other abnormalities in the bone.

Osteoporosis or porous bone is a disease characterize by low bone mass and structural deterioration of bone tissue, leading to bone fragility and any increased susceptibility to fractures of the hip, spine, and wrist. This disease effects men and women alike, but women are at greater risk. Regardless of your sex or age, your doctor may recommend a bone density test if you've:

- **Fractured a bone.**
- **Loss of Height.** If you have lost at least 1.5 inches in height may have compression fractures in their spines, for which osteoporosis is one of the main causes.
- **Taken certain medication.** Long term use of steroid medications, such as prednisone, interferes with the bone-rebuilding process- which can lead to osteoporosis.
- **Drop of hormone levels.** In addition to the natural drop in hormones that occurs after menopause, women's estrogen may also drop during certain cancer treatments. Some treatments for prostate cancer reduce testosterone levels in men. Lowered sex hormone levels weaken bone.

Limitations of bone density testing include:

- **Differences in testing methods.** Devices that measure density of the bones in the spine and hip are more accurate but cost more than devices that measure density of the peripheral bones of the forearm, finger or heel.
- **Previous spinal problems.** Test results may not be accurate in people who have structural abnormalities in their spines, such as severe arthritis, previous spinal surgeries or scoliosis.
- **Radiation exposure.** Bone density testing uses x-rays, but the amount of radiation exposure is usually very small. Even so, pregnant women should avoid these tests.

- **Lack of information about the cause.** A bone density test can confirm that you have low bone density, but it can't tell you why. To answer that question, you need a more complete medical evaluation.
- **Lack insurance coverage.** Not all health insurance plans pay for bone density tests, so ask your insurance provider beforehand if this test is covered.

How you prepare:

Bone density tests are easy, fast and painless. Virtually no preparation is needed.

Be sure to tell your doctor beforehand if you've recently had a barium exam or had contrast material injected for a CT scan or Nuclear medicine test. Contrast materials might interfere with your bone density test.

Avoid taking calcium supplements for at least 24 hours before your bone density test.

Wear loose, comfortable clothing and avoid wearing clothes with zippers, belts or buttons. Leave your jewelry at home and remove all metal objects from your pockets, such as keys, money clips or change.

What to expect during the test:

Once the technologist will have you answer some questions so they are sure what parts of the body needs to be scanned. You will lay on a table on your back. The technologist will position you to align your spine as straight as possible. A scanner will slowly move over top of your spine. Once that is completed the technologist will rotate your leg inward slightly to open the neck of the hip bone. Again the scanner will slowly move over top of your body. If for any reason the spine or hip cannot be scanned due to surgery, the technologist will scan your forearm. The machine will calculate the density in your bones. If you have prior bone density studies, both studies will compare each other to give your doctors a percentage of changes if any. This test will take about 30 minutes.

What to expect after the test:

Your bone density test results are reported in two number: T-score and Z-score.

T-score: is your bone density compared with what is normally expected in healthy young adult of your sex. Your T-score is the number of units- called standard deviations- that your bone is above and below the average.

- -1 and above: your bone density is considered normal.
- Between -1 and -2.5: Your score is a sign of osteopenia, a condition in which bone density is below normal and may lead to osteoporosis.
- -2.5 and below: Your bone density indicates you likely to have osteoporosis.

Z-score: is the number of standard deviations above or below what's normally expected for someone of our age, sex, weight, and ethnic or racial origin. If your Z-score is significantly higher or lower than the average, you may need additional tests to determine the cause of the problem.