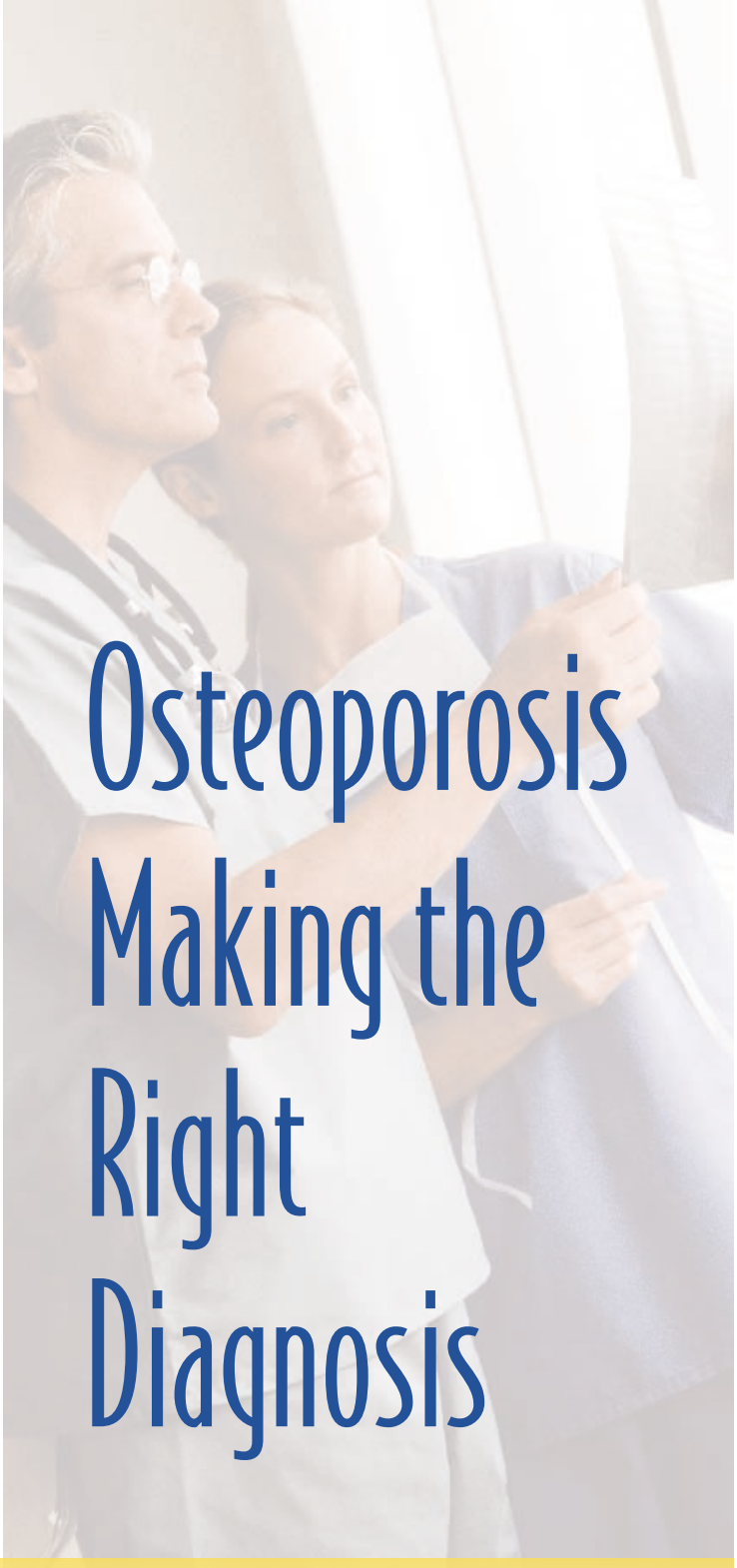


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Summary

- Osteoporosis can be diagnosed by doing a bone mineral density test. The DXA is the most accurate of the bone mineral density tests, in part, because it measures the sites where fracture is most likely to occur.
- Bone fractures are diagnosed by x-rays. X-rays alone are not sensitive enough to diagnose osteoporosis until it has reached advanced stages.
- Height measurement can be a clue that an osteoporotic fracture has occurred. Spinal compression fractures cause a loss of height.
- Laboratory tests are used to eliminate the possibility of another cause of bone loss. They can also be used to monitor the effectiveness of the treatment you may be receiving.

Work with your healthcare provider to decide on the best way to make the right diagnosis for you.



Osteoporosis Making the Right Diagnosis

Brochure Developed by
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Osteoporosis

Osteoporosis is called a "silent" disease because often there are no symptoms until late in the disease process. The most obvious symptoms of osteoporosis include hip or back pain and kyphosis, a curving of the spine resulting in loss of height after fracture.

While osteoporosis is associated with fracture, early diagnosis and treatment can prevent fractures from ever occurring. This brochure is intended to help you understand the process of diagnosing osteoporosis.

Bone Density Testing

One of the best ways to know if you have osteoporosis is through bone mineral density testing. Bone mineral density testing measures the strength of your bones.

There are several ways of measuring bone density. Some of these include:

- Single energy x-ray absorptiometry (measures the forearm and sometimes the heel)
- Dual energy x-ray absorptiometry or DXA (lumbar spine, hip, and wrist)
- Quantitative computed tomography or QT (spine and forearm)
- Radiographic absorptiometry or RA (hand/fingers, tibia, patella)
- Ultrasonography (heel, fingers, tibia, patella)

The DXA is considered to be the "gold standard" technique of measuring bone density. It is the most accurate means of diagnosis and of following your bone loss or gain once it has been established that you have osteoporosis. However, all of the above tests are considered good predictors of future fracture risk.

Bone density testing is painless, quick and safe because it delivers a fraction of the radiation of a chest x-ray. In fact, the ultrasonography test uses ultrasound instead of radiation. The bone density test result is a comparison of your bone density now to the average optimum peak bone density expected of young women. If you are below the average, your risk of fracture increases. The further below average you are, the greater your risk of fracture. Your healthcare provider can explain your test results to you.

X-Rays

Regular x-rays like a chest x-ray or a spine x-ray are used to determine if a fracture has occurred. They are not, however, very helpful at diagnosing osteoporosis. Before bone loss becomes evident on x-ray, you must lose about 30% of your bone mass or thickness. This would indicate advanced osteoporosis. It is preferable to diagnose osteoporosis before it has had a chance to progress that far. Usually, your healthcare provider will order an x-ray if a fracture is suspected. Many fractures are painful. However, spinal fractures do occur without pain and may go undetected without an x-ray. It is important to know if fractures have occurred since your risk of future fracture increases with each fracture you sustain.

Height Measurement

Measuring your height is another way to detect spinal fracture. We all lose some height as we get older due to flattening of the cushions between the spinal bones. About an inch of height loss is normal, depending on your age. However, another way to lose height is to crush or compress the spinal vertebral bone itself. This is called a compression fracture. When the spinal bones or vertebrae are compressed through fracture, they lose height and so do you. Some spinal fractures go unrecognized. By measuring your height and comparing it to the tallest height you have ever been, your healthcare provider has another clue that osteoporosis may be present.

Blood and Urine Tests

Once it is known that you have osteoporosis, your healthcare provider will probably want to order some additional tests to make certain that you do not have a secondary cause of osteoporosis. There are some medical conditions that can cause increased bone loss such as hyperparathyroidism, hyperthyroidism and diseases that lead to intestinal malabsorption of vitamins, minerals and other nutrients. If you have one of these disorders, it is important to know it and treat it. Otherwise, your bone loss may continue to get worse.

A simple blood test may be ordered to measure levels of calcium, vitamin D and several hormones. You may be requested to collect a urine sample over a 24-hour period which is used to determine how well you absorb the calcium you get in your diet.

There are other blood and urine tests called biochemical markers that can determine how effectively your bone is responding to the medicine you are taking to prevent bone loss. These tests cannot be used to diagnose osteoporosis or determine its cause.

