

## Bone Mineral Density Testing

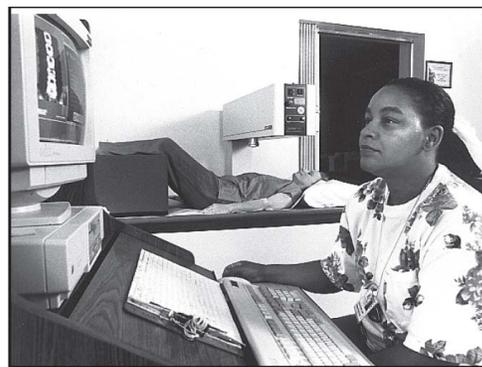
### What is a Bone Mineral Density (BMD) Test?

Osteoporosis is a silent disease. You cannot see or feel your bones getting thinner. A bone mineral density test, also called a BMD test, is an easy reliable test that measures the density, or thickness, of your bones. Dual x-ray absorptiometry (DXA) of the hip and spine is the preferred method to diagnosis osteoporosis. A BMD test is the only way to accurately find out if you have osteoporosis before a bone breaks.

### Who should have a BMD test?

The decision to have a BMD test should be made in collaboration with your healthcare provider. The first and most important step is to determine if you are at risk for osteoporosis. (See NYSOPEP Consumer Fact Sheet 3-Risk Factors for Osteoporosis.) Guidelines have been established to determine who should have a BMD test. BMD testing is generally recommended for the following individuals:

- All women aged 65 or older
- All men aged 70 or older
- Women under age 65 who have reached menopause and have risk factors for osteoporosis (such as family history of osteoporosis, being small and thin, and/or smoking)
- Adults who break a bone after age 50 or have lost more than 1 ½ inches of height
- Adults over age 50 with a disease or medical condition associated with low bone mass or bone loss
- Adults over age 50 taking medications associated with low bone mass or bone loss
- Premenopausal women and men under age 50, only in rare cases



*A bone mineral density test measures the density of your bones.*

### What do my BMD test results mean?

At first, you may find it difficult to understand your BMD test results. The following information should help you understand what your test results mean but you should always discuss your results with your healthcare provider. Your first bone density test tells you the density of your bones at that time. It cannot tell if you have lost bone or are currently losing bone. The only way to diagnose bone loss is to have a repeat bone density test, usually two years later. Your healthcare provider can determine whether you are losing bone by comparing the initial and repeat bone density test results. There are two scores used by experts to interpret your bone density test results, the T-score and the Z-score.

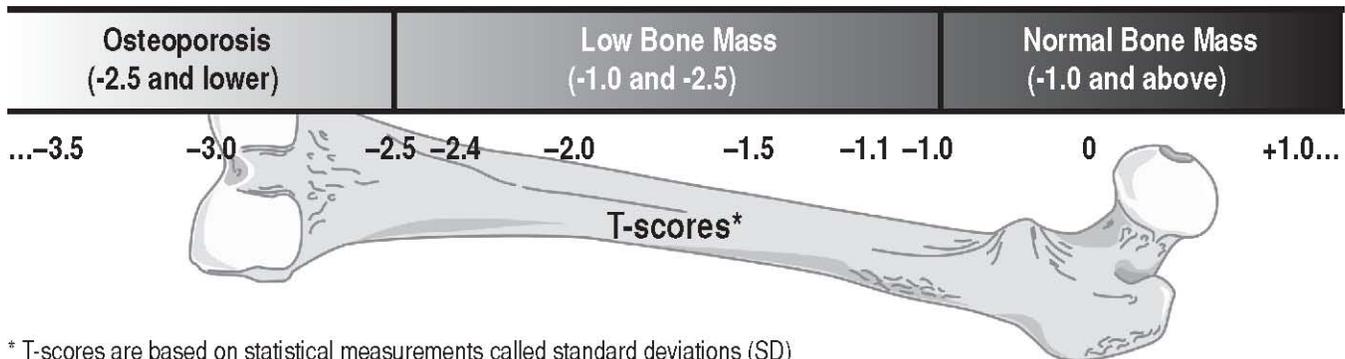
### What is a Z-score and what does it mean?

A Z-score compares your bone density to the average values for a person of your same age and gender. For example, if you are a 65 year old woman, a Z-score compares your bone density to that of other 65 year old

women. A low Z-score (below -2.0) is a warning sign that you have less bone mass (and/or may be losing bone more rapidly) than expected for someone your age. If your Z-score is low, your healthcare provider may recommend additional tests to better understand why your bone mass is so low or she/he may refer you to an osteoporosis specialist.

## What is a T-score and what does it mean?

T-scores are used to help diagnose normal bone mass, low bone mass (or osteopenia), or osteoporosis. The T-score compares your bone density to the average bone density of young healthy adults of your same gender and is expressed in standard deviations above and below the average. As the figure below shows the lower the T-score, the lower the bone density.



## What is low bone mass and how is it diagnosed?

Low bone mass, often called osteopenia, is not a disease but a condition in which your bone density is lower than the average bone density of young healthy adults of your same gender. Low bone mass is diagnosed when your T-score is between -1.0 and -2.5. If you have low bone mass, your healthcare provider will monitor your bone health and discuss the steps you need to take to protect your bones.

## What is osteoporosis and how is it diagnosed?

Osteoporosis is a disease that causes bones to become thin and weak, increasing your risk for fractures (broken bones). A bone density test diagnoses osteoporosis when your T-score is -2.5 or lower. The lower your bone mass, the greater your risk for breaking a bone. Osteoporosis can also be diagnosed if you have a history of a broken bone occurring without trauma or as a result of a minor event such as a fall from standing height.

## Will a BMD test alone tell me my risk for breaking a bone?

A BMD test measures the amount of mineral you have in your bones. It will tell you if you have normal bone mass, low bone mass, or osteoporosis. Your BMD is one of the best predictors of your risk for breaking a bone. In addition to your BMD results, your healthcare provider will also consider several other factors. There is a computer program (FRAX) that can be used by your healthcare provider to help determine your risk for fracture in the next ten years if you meet the following criteria: you have low bone density, you are a postmenopausal woman or a man age 50 or older, and you have not taken osteoporosis medications. The risk factors used in FRAX include:

- Personal history of fracture (you are more likely to break a bone if you have already broken one)
- Family history of hip fracture (if your parent broke their hip, you are at greater risk for a hip fracture)
- Low body weight for height
- Current cigarette smoking
- Diagnosis with certain diseases or use of certain medications