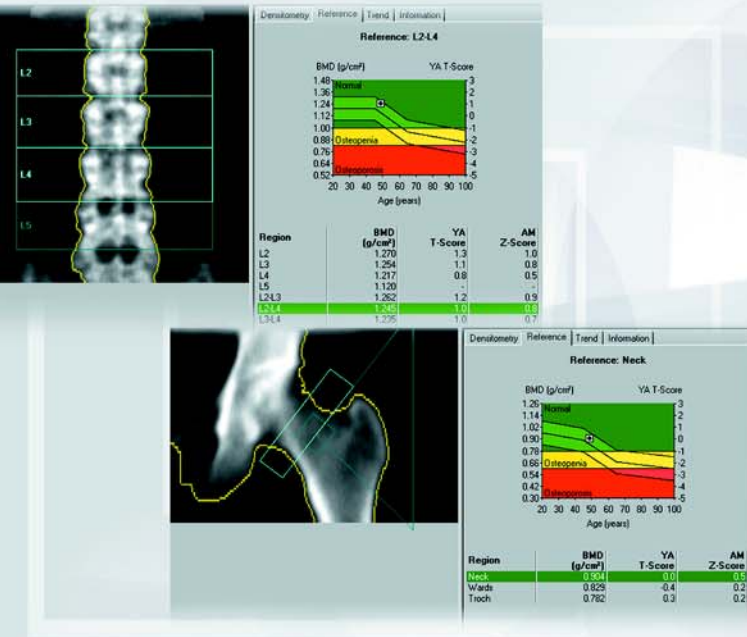




# Bone Densitometry Test



Department of Diagnostic Radiology

## Who Needs a Bone Densitometry Test?

Osteoporosis is often called the “silent disease” since there are rarely signs and symptoms for this disease. People only get to know they have this disease when they have a crippling and painful fracture shown by an abnormal X-ray. At this point over 30% of the bone mass has already gone, and damage becomes difficult to reverse.

The bone mass of a normal adult will start to decrease at the age of 35. Women are born with a smaller bone frame and less bone mass. In addition the amount of estrogen production drops dramatically after menopause. Therefore women have a higher risk for osteoporosis than men. However, osteoporosis affects both men and women. According to a recent study, 50% of the senior women and 30% of senior men in HK suffer from this disease. And each year, over 4000 elderly experience bone fracture as a result of osteoporosis.

The following categories of people are at higher risk of having osteoporosis. If you are one of them, you should start early prevention and have bone densitometry test regularly.

- women after menopause
- advanced age
- having endocrine system disorder
- a family history of osteoporosis
- unbalanced diet, alcohol and tobacco use
- lack of exercise
- having joint disease

## What is a bone densitometry test?

Our hospital has installed the DEXA bone densitometer. It is the DEXA machine that was the least amount of radiation in Hong Kong. It uses small amounts of x-ray to produce images of the spine, hip, or the whole body. The x-ray is composed of 2 energy levels which are differently absorbed by the bones in the body. In this way, the bone density can be determined. The spine and hip are measured because that is where osteoporotic fractures occur most.

Even though x-rays are used, the amount of radiation absorbed by the patient is minimal, and is approximately equal to 1/10<sup>th</sup> of that received from a chest x-ray. Therefore this is a very safe test. However, you should also inform the operator if you are pregnant or might be pregnant before your test.

The test takes about 5-6 minutes during which you will be asked to lie still and breathe normally on a padded examination table. The operator will need to position your arms and legs for the test, which is painless. No special preparation is needed for the exam.

## What information will the test give my doctor?

A bone densitometry test is an aid to doctors in the diagnosis of osteoporosis. The test compares your bone mineral density (BMD) to that of a “young adult” at the peak bone strength. It also compares your results to people of your same age, called “age-matched”. This information, along with other factors (such as height, weight and ethnicity) will help doctors gauge your risk of osteoporotic fracture. A panel of experts at the World Health Organization (WHO) has developed categories that define the amount of bone loss:

**Normal** : A T-score that is above -1

**Osteopenic (Low bone density)** : A T-score between -1 and -2.5

**Osteoporosis** : A T-score below -2.5

Your T-score is one factor that your doctor will consider when making a diagnosis. 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, it simply means the risk of having a fracture is higher than that for normal bones. With the diagnosis, your doctor may suggest a number of steps including exercise, changes in diet, hormone therapy, or other medicines known to build bone strength such that the risk of fracture would be reduced.