

## DEXA Bone Densitometry

**DEXA stands for Dual-Energy X-ray Absorptiometry.** It is a non-invasive assessment of the skeleton and has become a widely accepted and sensitive method for the assessment of bone mineral density. It is also used to assess fracture risk and has become a universally employed diagnostic procedure.

Standard x-rays may detect weakened bones. However, at the point where bone weakness is obvious on standard x-rays, it may be too far advanced for treatment to be effective. Bone densitometry testing can determine decreasing bone density and strength at a much earlier stage when treatment of the bone weakness can be beneficial. A DEXA scan can indicate osteoporosis, a condition in which bones are more brittle and more prone to break or fracture easily.

A DEXA scan uses x-rays but radiation doses are extremely low; at least 100 times less than those of conventional imaging. It is also the only available technique that can readily measure the femoral neck, where the most devastating osteoporotic fractures can occur.

Even though a DEXA scan uses minimal radiation, please let us know if you are pregnant or suspect you may be pregnant.

### REASONS FOR THE PROCEDURE

Bone densitometry testing is primarily performed to identify persons with osteoporosis and osteopenia (decreased bone mass) so that the appropriate medical treatment can be implemented. Early treatment helps to prevent future bone fractures. It may also be recommended for persons who have already had a fracture and are considered at risk for osteoporosis.

The complications of broken bones resulting from osteoporosis are often severe, particularly in the elderly. The earlier osteoporosis can be identified, the sooner effective treatment can be implemented, thus most likely lessening the severity of the condition.

### WHAT ARE THE CAUSES OF OSTEOPOROSIS AND OSTEOPENIA?

Osteoporosis is most commonly found in postmenopausal women, where the absence of the hormone oestrogen is related to the loss of bone mass. Other conditions that may cause osteoporosis or osteopenia include:

- Renal (kidney) failure.
- Hyperparathyroidism (overactive parathyroid gland).
- Prolonged immobility.
- Long-term corticosteroid therapy.
- Long-term hormone replacement therapy.
- GI (gastro-intestinal) malabsorption disorder.
- Cushing's syndrome

These conditions affect bone formation due to problems with absorption of certain substances, such as Vitamin D and calcium, which are needed to form strong bones.

### DURING THE PROCEDURE

DEXA scanning focuses on two main areas: the lumbar spine and hip. Our new scanner provides high quality images in less than 60 seconds.

- You will be asked to change into a gown.
- You will be positioned on the DEXA table, lying flat. Your legs will be supported on a padded box that helps to flatten out the pelvis and lumbar spine.

## DEXA Bone Densitometry CONTINUED

- Under the table, a photon generator will pass beneath you, while an x-ray detector camera will pass above the table parallel to the photon generator beneath, projecting images of the lumbar and hip bones onto a computer.
- After the scan of the lumbar spine is complete, your feet will be turned into an internally-rotated position, and the hip is scanned. This is generally the left hip, unless you have had a hip replacement.
- Measurements are made of the spine and hip and the results are analysed in conjunction with a patient questionnaire.

### THE RESULTS

The information from your scan is then analysed by the computer. Two results will be produced - a 'T-score' and a 'Z-score'.

The **T-score** shows how much higher or lower your bone density is than that of a healthy 30-year-old, the age when bones are at their strongest.

The **Z-score** compares your bone density to a normal score for a person of your same age and body size.

A report and recommendation is made by a specialist endocrinologist and these will be sent to your referring doctor.