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2 Simei Street 3 Singapore 529889 Tel: (65) 6788 8833 Fax: (65) 6788 0933 Reg No 198904226R

#### **CGH Appointment Centre**

For appointments and enquiries, please call: (65) 6850 3333

**Operating hours:** 8.30 am to 5.30 pm (Monday to Friday) 8.30 am to 12.30 pm (Saturday) Closed on Sunday & Public Holiday

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# **Bone Mineral** Density (BMD) Scan



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

BMD scan is a type of x-ray examination that measures a person's bone density. This type of scan is also known as DEXA or "dual energy x-ray absorptiometry".



By measuring your bone mineral density through the BMD scan, the doctor will be able to:

- diagnose reduced bone densities (osteopenia or osteoporosis) and predict fracture risk.
- monitor treatment response of patients who are on treatment for osteoporosis.
- measure body composition (amount of bone, fat and muscle in the body) as part of clinical evaluation for patients who are obese or suffer from muscle loss.



**Osteopenia** occurs when the bones are weaker than normal, but not weak enough to constitute osteoporosis. A person with osteopenia is at risk of developing osteoporosis.



**Osteoporosis** is a condition where the bone becomes weak and brittle. This happens when the body loses bone faster than it can replace. A person with osteoporosis becomes more prone to fractures, especially in the hip, spine and wrist.

# Is it a safe procedure?



While it is a safe procedure, the BMD scan is not recommended for pregnant women.

Unborn babies are more sensitive to the effects of radiation compared to adults. This is especially so during the early stages of pregnancy where any radiation damage can potentially cause birth defects or even death. Hence, it is important to inform the doctor or radiographer, before the test, if you are pregnant or suspect that you may be pregnant, so that they can take the necessary precaution.

### What do I need to prepare?

You will be asked to change into the hospital gown if your clothing has **zippers**, **metallic buttons**, **metal hooks or wires** (**bra**) or a **belt**. These items can affect the results of the scan. We will also be taking your height and weight before the scan.



BMD scan is a quick and painless procedure with no preparation required (if you are on calcium-based medication, your doctor will advise you to stop taking them on the day of the scan, as it may affect the scan result). The duration of the test is estimated to take less than 20 minutes. If you have had a recent imaging study with oral contrast (e.g. barium studies, Computered Tomography (CT) scans with oral contrast or Magnetic Resonance Imaging (MRI) enterography), you may have to wait for at least two weeks before going for the BMD scan.

If you are scheduled for a nuclear medicine appointment on the same day, the BMD scan should be done first. If not, it has to be at least one day after the nuclear medicine examination. These precautions are taken to avoid erroneous results.

# What happens during the scan?



The scan will be carried out by a radiographer.

As the scanner moves, small doses of x-ray will be passed through your hip or lumbar spine to measure your bone density. An x-ray detector measures the amount of x-ray beams that have passed through your body. Less amount of x-rays would be detected when passing through stronger bones. This information will then be used to calculate your bone mineral density.

## What happens during the scan?

To get a full scan of your spine, we will need to straighten your lumbar arch. To do this, you will need to raise your legs by placing them on a box cushion.



I must keep still when the scanner is moving and keep my arms at the side of my body so that it will not block my spine during the scan.



The machine will move slowly during the scan. You are required to keep still during the entire process.

There may be pauses during the scan, as the radiographer will have to do post-processing after capturing each image.

# What happens after the scan?

The images will go through a software to generate numbers indicating your bone mineral densities. These would then be measured against a reference database (i.e. population group that you belong to) to arrive at a conclusion.





Based on your results, there may be a follow up scan (in one or two years time), where you would undergo another BMD scan (BMD, Rate of Change) to assess whether your condition has improved or deteriorated.

Your test results will be reviewed by the radiologist and the formal report will be sent to your referring doctor who will discuss the result with you during your follow-up appointment.