

Nuclear Medicine Bone Scan

Consumer Information

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What is a Bone Scan?

A Nuclear Medicine Bone Scan is a procedure which shows the effects of diseases such as cancer or infection of the bones. A Bone Scan also allows assessment of whether there has been any improvement or deterioration in a bone abnormality following treatment. A radioactive material (radiopharmaceutical) is injected into a vein, attaches to the bones and is detected by a special camera (gamma camera) that takes images which show how the bones are working. See [Nuclear Medicine](#) for more details.

How do I prepare for a Bone Scan?

There is no preparation for a Bone Scan. You should continue to take your prescribed medications. It is important to drink normally or more than usual as the radiopharmaceutical is eliminated from your body in your urine. Drinking more liquid reduces the [radiation dose](#).

It is important that you let staff at the hospital or radiology practice where you are having the scan done know if you are (or think you could be) **pregnant** or are **breast feeding**.

This study may not be suitable for pregnant women because of the radiation dose to the growing foetus. Please discuss this with your doctor.

Women who are breastfeeding and people who are the primary or sole carer for small children may need to make special preparations for after the test, to stop breastfeeding for a short time, and to avoid close contact with young children. This is due to the small amount of radioactivity your body may release for a while after the test. Talk to your referring doctor or the nuclear medicine practice where you will have the test for details. The Australian Radiation Protection and Nuclear Safety Agency has [recommendations](#) about breastfeeding and close contact with children after nuclear medicine tests.

What happens during a Bone Scan?

There are 2 parts to a Bone Scan – an injection into your veins (sometimes accompanied by “early imaging”) and then “delayed” imaging. .

1. You will receive a small injection of a radiopharmaceutical into a vein. Sometimes, the injection may be followed immediately by images being taken with a gamma camera to look at the blood flow to the area being

scanned. This series of images is referred to as “early (blood flow or blood pool) imaging”. However, this is not always the case and will depend upon why your doctor has requested the test. See [Nuclear Medicine](#) for more details.

2. Two to four hours for adults and 1-3 hours for children after having the injection you return to have the “delayed images”. These images show the functioning of the bones. The reason for the length of time between the injection and the “delayed” images is to give the radiopharmaceutical a chance to be absorbed into the bones.

The radiation you received for the Bone Scan is eliminated from your body through the urine. For that reason, you should drink plenty of fluids and urinate frequently following the injection. How much fluid will depend on each individual, but you should be well hydrated and for an adult this could be 3-4 glasses of water. Your urine will not change colour. However, as it contains the radioactive tracer it is recommended that you wash your hands well after going to the toilet.

In the case of babies and youngsters in nappies who are having a Bone Scan, there will be a small amount of radioactivity in the urine and therefore on the child’s nappy. The radiotracer will not affect the baby’s skin but carers should wash the babies bottom as is normal practice and wash their hands thoroughly. Cloth nappies need to be washed thoroughly and disposable nappies put in a plastic bag and sealed before binning.

Are there any after effects of a Bone Scan?

There are no after effects of a Bone Scan. The radiopharmaceutical used in a Bone Scan is not known to cause any side effects or adverse interaction with food or medication you may have been prescribed. You will feel no effect from the injection of radiopharmaceutical and can maintain normal activities between the early and delayed images.

How long does a Bone Scan take?

There are 2 parts to a Bone Scan. In the first part you will receive a small injection into a vein in your arm which usually takes 15-30 minutes. This includes time to explain the procedure, give the injection and take any “early” images required to look at the blood flow to the area of interest.

Some time after the injection you return to have “delayed” images taken. This can take between 15 and 60 minutes, depending on the area/s of interest and any specific images that may have been requested, e.g. SPECT (images taken in 3D – showing the height, width and depth of the area of the body being scanned) or [SPECT-CT](#) (a combination of SPECT and computed tomography) to make the images easier to interpret and/or more accurate.

What are the risks of a Bone Scan?

There are no risks involved in the Bone Scan procedure itself.

The test involves a small dose of radiation from the radiopharmaceutical injected into your vein. See *Radiation Risk of Medical Imaging for Adults and Children*. The dose is similar to other CT and fluoroscopy procedures.

What are the benefits of a Bone Scan?

A Bone Scan is a test that helps your doctor to evaluate how your bones are working. It can demonstrate injury to the bones, the effects of disease such as a tumour or infection on the bones that affect the functioning of the bones more generally, as well as any improvement or deterioration in a bone abnormality following any treatment you may be having.

Possible reasons for having a Bone Scan are listed in the further information section below.

Who does the Bone Scan?

The Bone Scan is performed by specialised nuclear medicine technologists who are trained specifically to perform this type of test. The images generated by the technologist are analysed by a nuclear medicine specialist doctor who specialises in this type of procedure. This doctor also directs the technologist to take the best images for an accurate diagnosis and provides a written report to the doctor who referred you for the Bone Scan.

Where is a Bone Scan done?

Most large public and private hospitals and private radiology practices have nuclear medicine facilities where Bone Scan studies are performed.

When can I expect the results of my Bone Scan?

The time that it takes your doctor to receive a written report on the test or procedure you have had will vary, depending on:

- the urgency with which the result is needed
- the complexity of the examination
- whether more information is needed from your doctor before the examination can be interpreted by the radiologist
- whether you have had previous X-rays or other medical imaging that needs to be compared with this new test or procedure (this is commonly the case if you have a disease or condition that is being followed to assess your progress)
- how the report is conveyed from the practice or hospital to your doctor (in other words, email, fax or mail)

Please feel free to ask the private practice, clinic, or hospital where you are having your test or procedure when your doctor is likely to have the written report.

It is important that you discuss the results with the doctor who referred you, either in person or on the telephone, so that they can explain what the results mean for you.

Further information about Bone Scan

Bone Scans are performed for many different reasons. They work by imaging both the structure and the active cell growth of the bones, so are often used in conjunction with other imaging e.g. CT (computed tomography) or MRI (magnetic resonance imaging).

Listed below are the major reasons why you may require a Bone Scan:

- Sports medicine – stress fracture, shin splints
- Infection – osteomyelitis (infection of the bone), cellulitis (infection of the skin), or to assess a response to treatment you may be having
- Disease processes – arthritis, Paget's disease, fractures from osteoporosis (where bones become fragile and are more likely to break)
- Cancer – to assess the presence or spread of bone cancer, then to follow up on the bone's response to treatment
- Orthopaedic – reflex sympathetic dystrophy, avascular necrosis, prosthesis loosening or infection, occult (difficult to find) fractures, to evaluate bone graft viability
- To evaluate the source of bone pain
- To evaluate the findings from other diagnostic images or abnormal laboratory results
- To localise or pinpoint the exact site for a biopsy (where tissue is removed to test for disease)

Please note:

This information is of a general nature only and is not intended as a substitute for medical advice. It is designed to support, not replace, the relationship that exists between a patient and his/her doctor. It is recommended that any specific questions regarding your procedure be discussed with your family doctor or medical specialist

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