

# Patient Information

## Nuclear Medicine

Nuclear medicine is a subdivision of medical imaging that uses small amounts of radioactive material to diagnose and determine the severity of or treat a variety of diseases, including many types of cancers, heart disease, gastrointestinal, endocrine, neurological disorders and other abnormalities within the body. Because nuclear medicine procedures are able to pinpoint molecular activity within the body, they offer the potential to identify disease in its earliest stages as well as a patient's immediate response to therapeutic interventions.

A nuclear medicine procedure uses radiopharmaceuticals "tracers" (a chemical) that contain a small amount of radioactivity. This tracer is usually given to you by an injection, however, some tests require you to swallow or inhale the tracer.

The tracer is used in small amounts. There are no commonly documented side effects from any nuclear medicine procedures. These tracers are different to the contrast used when having a CT scan. The various radioactive tracers used emit gamma rays (a type of radiation similar to an x-ray). A gamma camera is then used to detect the gamma rays as it is distributed to the targeted organs or areas of the body.

Nuclear medicine tests are very sensitive, often showing up abnormalities before an x-ray or ultrasound would. They are used to assess the physiology or function of targeted parts of your body. Other types of tests do not necessarily provide this information. An organ structure may look quite normal under x-ray or ultrasound but may not be functioning normally.

### **What preparation is required?**

The various radioactive tracers used emit gamma rays (a type of radiation similar to an x-ray). A gamma camera is then used to detect the gamma rays as it is distributed to the targeted organs or areas of the body. Some nuclear medicine procedures require special preparation. Qscan staff will inform you of the required preparation for your procedure at the time of booking. Please inform us if you are a diabetic and have been instructed to fast so we can make your booking for early in the day.

Most nuclear medicine studies should not be performed during pregnancy. In serious cases, where the benefits of a diagnosis outweigh the risks of a disease, urgent scans may be modified for pregnant women to reduce the radiation dose to the fetus, to an absolute minimum. Such an example would be performing a VQ lung scan to diagnose a potential Pulmonary Embolism. Most radiotracers are passed through breast milk. If you are breastfeeding, please notify our technical staff, who will advise you of any necessary precautions. These precautions usually involve expressing and discarding breastmilk for 24-48 hours after your scan.

### **What happens during the Nuclear Medicine procedure?**

Nuclear medicine imaging procedures are noninvasive and, with the exception of intravenous injections, are usually painless. These imaging scans use radioactive materials called radiopharmaceuticals or radiotracers.

Depending on the type of nuclear medicine exam, the radiotracer is either injected into the body, swallowed or inhaled as a gas and eventually accumulates in the organ or area of the body being examined. Radioactive emissions from the radiotracer are detected by a special camera or imaging device that produces pictures and provides molecular information.

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### **How long will the procedure take?**

There are many different nuclear medicine scans and procedures. Some tests take as little as 30 minutes, some require several appointments over 6 hours, others require a 30 minute visit for 5 days.

The more commonly performed types of nuclear medicine scans including bone scans and myocardial perfusion stress (MPS) tests require a visit in the morning, followed by another visit several hours later in the day. More often than not, you are free to leave the department between appointments. Qscan staff will give you an approximate duration of your procedure at the time of booking.

### **What is the radiation dose?**

The radioactive tracer that we use begins to disappear as soon as it is administered. Most are undetectable within 24-48 hours. The total radiation dose to the body is approximately the same as having a CT scan.

### **How much will the examination cost?**

The cost for your nuclear medicine procedure will vary according to your medical requirements. For further clarification on expected costs associated with your examination, please call one of our friendly Qscan staff.

### **When can I get my results?**

Images obtained from your scan are digitally recorded. At Qscan, a subspecialty trained Radiologist interprets the images obtained and provides a report for your doctor within 24 hours. Reports and images will be available electronically via the patient app and web portal after your examination. If required, films are available for collection or delivery to your referring practitioner. You may need to make a follow up appointment to discuss the results with your referring practitioner.

### **Where can I go for a Nuclear Medicine procedure?**

Qscan Radiology Clinics have a range of convenient clinics located throughout South-East Queensland including: Annerley, Mater Private Clinic, Redcliffe, Robina Town Shopping Centre, Southport and Windsor.

For further details please call one of our friendly Qscan staff on **1300 177 226** or visit us at: [www.qscan.com.au](http://www.qscan.com.au)