

**Patient
Information**

Nuclear Medicine Scan

Introduction

This leaflet gives you information about having a nuclear medicine scan including any preparation and the equipment used.

What is a nuclear medicine scan?

There are lots of different types of nuclear medicine scans (sometimes called radioisotope scans). They all involve taking pictures which show the function of different parts of the body. They are different to X-ray pictures which show any abnormalities.

Preparation for your scan

Some nuclear medicine scans may require you to stop taking certain medicines, or to avoid caffeine or not to eat anything for a while before the scan. Therefore it is very important that you follow any instructions that you are given by the department that will be doing your scan. If you do not receive any instructions about preparation then you can eat and drink normally before your appointment.

Your injection

For any nuclear medicine scan it is necessary to give you a small amount of radioactive tracer, called a radiopharmaceutical. This radioactive tracer is taken up within your body which allows us to take the pictures. The small risk from this radiation exposure is outweighed by the information that will be gained by taking the scan.

A doctor will have checked the request to make sure this is the appropriate test for you.

The radioactive tracer is usually be injected into a vein in your arm or hand. You may have had a blood test in the past. This is much the same. The 'pinprick' of the needle may hurt a bit, but that is all.

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**Nuclear
Medicine**

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For some types of scan you may be asked to swallow a small amount of the radioactive tracer or have it mixed it with food.

For some scans the pictures will be taken straight way after your injection. However for other scans you may be asked to wait before the pictures can be taken. The length of waiting time is different for each type of scan and it can be up to 3 hours, so please read the information given for your test. If the waiting time is long you may be allowed to leave the department during this time.

Your scan

Before the scan you may be asked to go to the toilet to empty your bladder.

For most scans you will not have to get undressed, but you will be asked to remove any metal objects such as trouser braces, jewellery and belts that are within the area of your body where the pictures are to be taken.

The scan pictures are taken by a special machine called a gamma camera.

A member of the clinical staff will be monitoring you during the scan.

The gamma camera

The gamma camera has 2 large radiation detectors that are used to measure the radioactive tracer that is inside your body. The camera detector will move close to you while the images are being taken. There are sensors in the camera which stop it moving if it touches your body, so it cannot hurt you.

For most scans you will be asked to lie flat on your back on a special couch. For other scans you may be asked to stand in front of the camera. The scans usually take about 30 minutes and it is very important that you keep still during this time. If you think that you will find this difficult please speak to a member of staff in the Nuclear Medicine Department before your appointment. The contact details are at the end of this leaflet.

For some types of scan some other pictures may be taken with an X-ray CT scanner. This will give extra information. These extra pictures will only take a few minutes.

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After your scan

Side effects of having a nuclear medicine scan are rare.

You may continue with your normal activities after the scan, unless you have been advised otherwise.

There will be some radioactivity left in your body but this will not harm you or the people around you.

However, after some nuclear medicine scans you may be advised to keep any contact with pregnant women, babies and small children as short as possible; but there is no need to stop giving children essential love and care.

The radioactivity in your body will soon disappear, but after some scans you may be advised to drink plenty of liquids to help clear the radioactivity more quickly.

For female patients

If you know that you are pregnant, or there is any chance that you may be pregnant then please contact the department as soon as possible. The scan may be postponed if it is not urgent. You should also contact the department if you are breast-feeding, as you may give you special instructions.

Travelling abroad

It is perfectly safe for you to travel abroad after your scan, but many airports and sea ports are now equipped with very sensitive radiation detectors. So it is possible that the very small amount of radioactivity left in your body could set off a detector as you pass through security. Therefore, if you intend to travel abroad within a week following your scan, it may be helpful to take with you something to explain that you have recently had a nuclear medicine scan. This could be your appointment letter or a letter describing the nuclear medicine study.

Your results

Your scan pictures will be looked at by a specialist doctor, who will issue a report. The report will be sent to the doctor who requested your scan.

**Patient
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As part of your care, information will be shared between clinical staff, some of whom you may not meet. It may also at a later time to help the department improve their quality of care, plan services or to research into new developments.

The pictures from your scan may be used to teach other healthcare workers, but your name and all other identification will be removed. It will not be possible to identify you from the scan pictures.

All information will be treated as confidential and is not given to anyone who does not need it. If you have any concerns about this then please contact a member of staff at the Nuclear Medicine Department to discuss.

Is it safe for me to have the scan?

When talking about radiation exposure we tend to use comparisons, such as how long it would take to get the same dose from everyday sources, such as flying or everyday background radiation. A possible result of radiation exposure is an increased risk of developing cancer later in life, so we also talk about radiation exposure in terms of how much this has increased your chances of developing a fatal cancer.

It is important to be aware that there is a greater than 1 in 3 chance of this happening with no radiation exposure.

Some typical doses received as a result of nuclear medicine procedures are displayed in the table on the following page.

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Scan	Flight time equivalent	Days of background radiation	Increased cancer risk	Equivalent scan approximate
Myocardial perfusion	1150 hours	1825	1/1500	Whole body CT scan
Bone Scan	390 hours	619	1/5000	Chest CT
Parathyroid Imaging	600 hours	952	1/3000	Chest CT
Kidney Study	70 hours	111	1/3000	Half head CT
DaTSCAN	460 hours	730	1/4000	Chest CT
SPECT-CT bone	800 hours	1200	1/2000	Chest CT
SPECT-CT parathyroid	390 hours	619	1/5000	Chest CT
SPECT-CT myocardial perfusion	70 hours	111 days	1/25000	5 chest x-rays

It is possible that along with a nuclear medicine bone scan you may also be required to have a further scan which combines nuclear medicine with CT, called a SPECT-CT. This may need to be performed on a separate machine to your first scan.

The dose of radiation from the CT part of this varies greatly from patient to patient, as it depends on how much the body requires for the further imaging.

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The dose is very similar to what you would get from a normal CT of the same areas, and may save you needing to return for further imaging tests, or may give extra useful information that could not be obtained with any other test.

If you have any concerns or would like further information, please contact the department where you are having your scan.

If you do not understand why you need to have this scan please speak to the doctor who referred you.

We would like to make your visit as pleasant as possible. If you have any concerns please talk to a member of the nuclear medicine staff.

Contact information

Isotope Department

Radiology 2

College Road Wing

Cheltenham General Hospital

Tel: 0300 422 3011

Monday to Friday, 8:30am to 4:30pm

Nuclear Medicine Department

Imaging 1

Gloucestershire Royal Hospital

Tel: 0300 422 6824

Monday to Friday, 8:30am to 4:30pm

Further information

More information about nuclear medicine scans can be found on the following websites:

Patient info

Website: www.patient.info/treatment-medication/radionuclide-scan-isotope-scan

British Nuclear Medicine Society

Website: www.bnms.org.uk/page/PatientsCarers

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