

Your Stress Cardiac MRI Scan

(Magnetic Resonance Imaging)

MRI (Magnetic Resonance Imaging)

MRI stands for Magnetic Resonance Imaging.

It is a way to look inside the body without using x-rays. MRI can produce two or three dimensional images of what is going on inside a patient's body.

It uses:

- a large magnet (large enough to surround the whole patient);
- radio waves;
- a computer.

What is a stress cardiac MRI?

Your doctor has referred you for this scan to obtain accurate information regarding the function of your heart. The scan will answer questions about the blood supply to the heart and its overall structure and function.

Some implants are contraindicated for MRI. Please contact us if you have a:

- Pacemaker,
- Heart valve replacement or repair,
- Cerebral aneurysm clip in place following brain surgery,
- A stapes or cochlear implant,
- A gastric band,

- An endovascular stent or a muscular or neuro stimulator device

If you have any of the above or a history of metallic foreign body in the eye please contact **01392 402861** prior to your appointment.

Failure to do this may mean that we have to postpone your scan. Some pacemakers are compatible so please check with us if you have a pacemaker fitted.

Preparing for a stress cardiac MRI scan

At home

Relax and go about your normal routine.

There are two types of drug we can use to 'stress' the heart – adenosine or dobutamine.

ADENOSINE

This is the most commonly used drug.

- If you are taking any tablets containing a nitrate (e.g Isosorbide mononitrate, Monomax, etc) stop this for 24hours prior to the scan. Continue to take all other medications as prescribed.
- Stop taking any products which contain caffeine for 24 hours (e.g tea, coffee, chocolate – this includes 'decaffeinated' products).

- During the administration of adenosine you may experience facial flushing, shortness of breath, chest discomfort or nausea. The administration time is 4 minutes. Any symptoms you experience are very short-lived.

DOBUTAMINE

- If you have asthma or are a 'renal' patient we will use Dobutamine.
- The administration of this drug is slightly longer, up to 12 minutes. This drug works by increasing the heart rate or pulse.
- If you are taking a beta blocker (e.g. bisoprolol, atenolol, metoprolol) stop this tablet for 24 hours before the scan. Continue to take all other medications as prescribed.
- We may need to give you an additional drug called atropine if your target heart rate is not achieved. If we administer atropine this can lead to blurred vision for several hours after the scan. For this reason please do not drive yourself to the scan if you are to have dobutamine.

On the day of the scan

- Please attend the department 30 minutes prior to your appointment.
- You will be asked to change into a gown.
- An ECG (tracing of the heart) will be performed by a Cardiac Nurse.
- Bring something to read or do while you wait for the scan.
- You will have 2 cannulae (drip needles) inserted – one in each arm.
- You will be asked about your medical history, especially whether you have a pacemaker or metallic object or implants inside your body. Some implants are contraindicated for MRI. Please contact us if you have a pacemaker, heart valve replacement or repair, cerebral aneurysm clip in place following brain surgery, a stapes or cochlear implant, a gastric band, endovascular stent, a muscular or neuro stimulator device. If you have any of the above or a history of metallic foreign body in the eye please contact **01392 402861** prior

to your appointment. **Failure to do this may mean that we have to postpone your scan.**

- You will be asked to remove **ALL METAL**, any jewellery, hair clips, hearing aids, removable metal dentures, body piercings, artificial limbs, coins, keys, mobile phones, wallets prior to entering the scan room. A locker will be provided.

The scan

The equipment may look intimidating, but there is no need to be frightened at all. It is important to lie still and relax.

Before the scan

- The radiographer or cardiac nurse will help you onto the scanning table. They can address any questions or concerns you may have.
- You will be positioned comfortably, generally with your arms at your sides and your head on a pillow. You will be asked to remain still during the scan, but will be required to repeatedly hold your breath when we take the images.
- You will be attached to a monitor to record your heart rate.
- A blood pressure cuff will also be applied.

As the scan begins

The scanning table will slide into the scanner. Your whole body will be in the machine. You will not be totally enclosed and you will be able to communicate with the radiographer through an intercom or bell.

The advantage of MRI is that many pictures can be taken without repositioning the patient.

During the scan

An MRI scan is a painless procedure, but you will hear some loud knocking noises. Ear protection will be provided to minimise this. After the first pictures are taken the drug will be administered through one of the cannulas in your arm to 'stress or exercise' the heart.

Some common questions and answers

Can pregnant women have MR scans?

It is not usually advisable. There is no evidence that a hazard exists, however, as with any diagnostic procedure, tell your doctor you are pregnant if considering an MR scan. Be sure to discuss any concerns you have.

How long does a scan take?

A scan of the heart will take around 60 minutes.

Can people with cardiac pacemakers be scanned?

People with cardiac pacemakers and/or other implanted stimulatory devices may not be able to have an MR scan. Your referring Doctor will check with the pacing department to see if your device is MRI compatible.

How long has MR been used?

Approved MRI systems became available to patients in the early 1980s, although chemists and physicists have been using the basic principles of MRI since the 1940s.

Evaluation of the scan

Your scan will be analysed by a Cardiologist/Radiologist. Your doctor will suggest treatment based on the results of the scans as well as your history, symptoms and other test results.

Contact us

If you found reading your leaflet difficult, you do not understand what it means for you, if you have any queries or concerns you can contact us on: **01392 402336** and we can talk it through.

How to get to the Royal Devon & Exeter Hospital at Wonford

Please refer to the enclosed “**Welcome to the Medical Imaging Department**” leaflet or use the Trusts website for the latest information:

www.royaldevon.nhs.uk/our-sites

For more information on the Medical Imaging Department, please visit our website:

www.royaldevon.nhs.uk/services/medical-imaging-radiology-x-ray/medical-imaging-eastern-services

The Trust cannot accept any responsibility for the accuracy of the information given if the leaflet is not used by Royal Devon staff undertaking procedures at the Royal Devon hospitals.

© Royal Devon University Healthcare NHS Foundation Trust

Designed by Graphics (Print & Design), RD&E (Heavitree)