

## Patient information factsheet

# Magnetic resonance imaging (MRI) cardiac stress scan (adenosine)

We have given you this factsheet because you have an appointment for an MRI cardiac stress scan with adenosine. It explains what an MRI cardiac stress scan with adenosine is and what to expect at your appointment.

Your appointment letter will also give you details of your appointment date and other useful information. Please check the date and let us know if you will not be able to attend, so that another appointment can be made for you.

We hope this factsheet will help to answer your questions about the scan and prepare you for your appointment. If you have any further questions, please contact us using the details at the end of the factsheet. If you are unsure why you need to have this scan, please speak to the doctor who referred you.

### What is an MRI scan?

MRI is a type of scan that uses strong magnetic fields and radio waves to produce detailed images of the inside of the body. It is a painless and safe procedure. The results of an MRI scan can be used to help diagnose conditions, plan treatments, and assess how effective previous treatment has been.

### What is a cardiac stress scan with adenosine?

A cardiac stress MRI is a scan of your heart during which you will be given a drug called adenosine. This mimics the effect of exercise on your heart while you are lying down in the scanner.

### Adenosine interactions

Please contact the department if any of the following apply to you:

- you have asthma or use any type of inhaler
- you currently have any kidney function impairment
- you are currently taking aminophylline or theophylline

We may need to modify the test.

If you are unsure if you are currently taking aminophylline or theophylline, you can ask your general practitioner (GP) or pharmacist.

## Preparing for your cardiac MRI stress scan with adenosine

### 24 hours before the scan

For 24 hours before the scan, **you must not** have any caffeinated or decaffeinated food or drink. These include:

- tea (including decaffeinated versions)
- coffee
- hot chocolate
- fizzy (carbonated) drinks
- chocolate
- sweets

You must not:

- smoke or vape
- take medication containing nitrates (these are commonly prescribed for people with angina), including:
  - nicorandil
  - isosorbide mononitrate
  - isosorbide dinitrate

If you are unsure if your medication contains nitrates, you can ask your GP or pharmacist.

You can continue to use glyceryl nitrate (GTN) spray, but please let us know about this when you attend your appointment.

### Eating and drinking

You may eat a normal diet and drink fruit juice, squash, milk and water up until the time of your appointment. However, you should avoid caffeine.

### At the appointment

If you use an inhaler for asthma or another breathing condition, please bring it with you to your appointment.

On the day, please arrive 15 minutes before your appointment time.

Check in using the self-service monitors. We will be available to help if needed. Alternatively, knock on the double doors to Cardiac MRI.

We will greet you, explain the procedure, and go through a safety questionnaire.

We will ask you to change into a hospital gown and put your belongings into a locker before your scan. You will need to remove all jewellery, piercings, drug patches, metallic denture plates and hearing aids.

We will measure your height and weight. We will also need to insert a cannula (a thin, plastic tube) into a vein in each arm. During the scan, we will inject adenosine through one of the cannulas. This will increase the blood flow to your heart. We will also inject a contrast dye through the other cannula. Contrast dye helps certain tissues and blood vessels show up more clearly on the images.

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## During the scan

An MRI scanner is a short cylinder that is open at both ends.

You will enter the scanner head-first, lying on your back on the motorised bed. We will try to make you as comfortable as possible, using pads and supports as needed.

We will rest a light frame (called a coil) on top of your chest. The coil contains receivers that pick up the signals sent out by your body during the scan, which helps to create a better-quality image.

We will also attach an ECG monitor to your chest. We will use this to scan in time with your heartbeat.

You will need to lie very still during the scan to achieve the best-quality images. You will also need to hold your breath for a few seconds at a time during the scan. We will instruct you when to hold your breath and when you can return to breathing normally again. We will give you these instructions through headphones.

We will operate the MRI scanner using a computer in a separate room. You will be able to talk to the radiographer between scans, via a built-in microphone system.

During the scan, you may feel your body temperature increase and you may experience tingling in your hands and feet. These are normal sensations. Please tell us if you feel uncomfortable at any point. We will give you an emergency buzzer to hold during the scan.

At certain times during the scan, the scanner will make loud tapping noises. This is the electric current in the scanner coils being turned on and off. We will give you ear plugs to protect your hearing from the noise.

During the scan, we will inject adenosine through one of the cannulas in your arm. Adenosine is given slowly for approximately three minutes. It is normal to:

- feel short of breath
- experience some chest tightness
- feel hot or flushed

Once we have given you the adenosine, we will take some images. At the same time, we will inject a contrast dye through the other cannula. We will then stop the adenosine. You will notice that the effects of the medication quickly wear off. We will monitor you carefully throughout the scan. Please let us know if you feel uncomfortable at any point.

After we have stopped the adenosine, we will take some more images. We will instruct you to hold your breath for a few seconds for these.

Your scan will take approximately **one hour**.

## After your scan

After your scan, we will remove the cannulas. You will then be able to dress and leave the department.

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You will be able to eat and drink normally and restart any medication that was stopped for the scan.

## Your results

The radiographer will review your images to check their quality. Your doctor will then discuss your results with you at your next follow-up appointment.

## MRI safety information

Please read the information below carefully.

### Implants and devices

Due to the powerful magnetic field created by the scanner, even when not in use, it may not be safe for some people with implants and devices to have an MRI scan. We will need to investigate the safety of these before your appointment.

### You must contact us if you have:

- a cardiac pacemaker or defibrillator
- had a heart valve replacement
- ever had surgery on your head
- ever had metal in your eyes from welding or metal-work accidents (an eye x-ray may be needed before your scan)
- any metallic or electronic implants
- had any surgery within the past six weeks
- any auditory implants (such as cochlear implants)
- ever swallowed a capsule camera

If you do not let us know in advance, we may have to postpone your scan.

### If you have asthma

You will need to complete our 'Asthma cardiac MRI adenosine stress' questionnaire before your MRI scan appointment.

Please scan the QR code below to complete the questionnaire.



Alternatively, you can complete and return the questionnaire enclosed with your appointment letter to: **CardiacMRIadenosineappts@uhs.nhs.uk**

## Pregnancy

Please call us when you receive your appointment letter if:

- you are pregnant
- you think you might be pregnant
- you are currently breastfeeding

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## Bringing someone with you for support

If you wish to have someone in the scanner room with you for support, they will need to complete a safety questionnaire and comply with safety regulations.

We do not have crèche facilities at the hospital. We would advise that you do not bring young children with you for this scan. If you do bring young children with you, you will need to arrange for someone you know to look after them while you are having the scan.

## Further information

If you are arriving by car, please remember that our car parks can get very busy, so it's a good idea to allow plenty of time to find a space. You may wish to consider getting a lift or coming by public transport.

If you have a medical condition that means you need help getting to hospital, please contact your GP surgery so they can arrange transportation for you.

## Contact us

If you have any concerns or would like further information, please contact us.

### Cardiothoracic radiology appointment team

Telephone: **023 8120 4833** (Monday to Friday, 8.30am to 4.30pm)  
**023 8120 4499** (Saturday and Sunday, 8am to 6pm)

Email: [CardioRadApts@uhs.nhs.uk](mailto:CardioRadApts@uhs.nhs.uk)

## Useful links

[www.nhs.uk/conditions/mri-scan](http://www.nhs.uk/conditions/mri-scan)

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For help preparing for your visit, arranging an interpreter or accessing the hospital, please visit [www.uhs.nhs.uk/additionalsupport](http://www.uhs.nhs.uk/additionalsupport)

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