

# MRI\* and your pacemaker

An easy guide for patients with pacemakers, defibrillators or implantable cardiac monitors

## What is an MRI machine?

Magnetic Resonance Imaging (MRI) machines are used to diagnose a wide range of illnesses. They do this by using the power of magnets to create images which allow us to examine your body in detail. Find out more by searching [www.nhs.uk/conditions/mri-scan/](http://www.nhs.uk/conditions/mri-scan/)

Like everyone, most people with cardiac devices (pacemakers, defibrillators or implantable cardiac monitors) may benefit from an MRI scan at some point so it's important to know how you can access them safely.

## Can I have an MRI with my cardiac device?

Yes! Most people can have an MRI scan nowadays. MRI scans are safe and painless. If you have a device\* it will likely need to be temporarily programmed to a 'safe' mode during the scan.

Your clinician will not necessarily know you have a device.

**You must tell your clinician booking the scan AND the MRI department organising the appointment if you have a device.**

This includes if you have an implanted heart monitor, even though the MRI process is usually simpler.

The MRI unit makes special preparations and needs extra people to help. If you don't tell them beforehand your scan will probably be delayed. Your device will need to be checked and programmed before and after your scan. This is similar to your routine pacing check.

\* We say 'device' to mean pacemakers, defibrillators or implantable cardiac monitors

## Does it matter what kind of device I have?

Yes. Both **MR Conditional** and **MR Unlabelled** devices can be scanned, but the referral process and the device adjustments depend on which kind you have. If you have an implanted heart monitor, you should also let the MRI team know.

## What are the risks of having an MRI scan?

**MR Conditional devices:** safe

**MR Unlabelled devices:** low risk of complications, occurring in less than 1 in 2000 patients. Risks include:

- Damage to your device
- Abnormal heart rhythms
- Unexpected shocks from your device

## How can I check if my device is MR Conditional?

1. Check your device identification card – some cards will state if your device is MR-Conditional (see example below)
2. Contact the cardiology team that looks after your device
3. Call the manufacturer directly

Your lead and generator combination will always be carefully checked before the scan to confirm the type of device you have.

### Hospital Heart Centre, UK

DEVICE DATE	01/01/10
MFG	St Jude Medical
TYPE	PM1272
S/N	1234567

MRI CONDITIONAL SYSTEM? Yes

## Getting a scan – step by step

### Before your scan

1



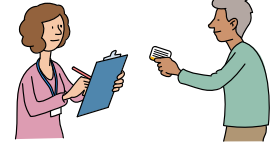
The decision to have an MRI scan is made with your doctor.

2



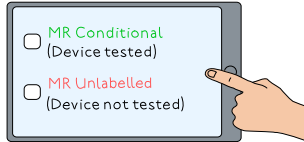
**⚠ Important:** Tell your doctor and the MRI staff that you have a heart device.

3



Give your device details or name of your pacing clinic so they can liaise with the MRI centre.

4



The team will check if your device has been tested by the manufacturer to undergo MRI.

5



If your device has not been tested for MRI, your doctor will explain the benefits, risks and alternatives.

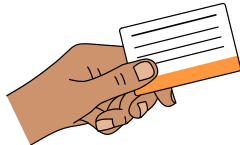
6



Ask one of our team if you have any concerns.

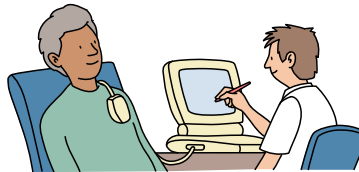
### On the day of your scan

7



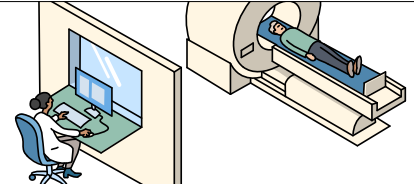
Remind staff that you have a device, and bring along your device identification card.

8



Your device will be checked and reprogrammed so it's ready for your scan.

9



During the scan we will monitor your heart rhythm.

10



We will talk to you to check you are okay. Squeeze a buzzer if you are worried.

11



After the scan we'll check your device and set it back to normal.

### Why have I previously been told I can't have a scan?

People with **MR Unlabelled** devices couldn't have MRI scans until recently. We now know that with careful planning the risks are lower than previously thought. These scans usually take place at specialised MRI centres. They need an important reason for being done, with no alternative test available.

### What if my hospital cannot scan patients with cardiac devices?

For more information, referral centres or support visit [mrimypacemaker.com](http://mrimypacemaker.com)

### We have a team to support you if you have a problem



[hearhythmalliance.org](http://hearhythmalliance.org)  
[info@hearhythmalliance.org](mailto:info@hearhythmalliance.org)

**CardiomyopathyUK**  
the heart muscle charity

[cardiomyopathy.org](http://cardiomyopathy.org)  
[contact@cardiomyopathy.org](mailto:contact@cardiomyopathy.org)

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Arrhythmia Alliance, British Association of MRI Radiographers, British Cardiovascular Society, British Heart Rhythm Society, British Institute of Radiology, British Society for Heart Failure, British Society of Cardiovascular Magnetic Resonance, Cardiomyopathy UK, Institute of Physics and Engineering in Medicine, Royal College of Radiologists, The Society of Radiographers

