

## MRI and cochlear implants

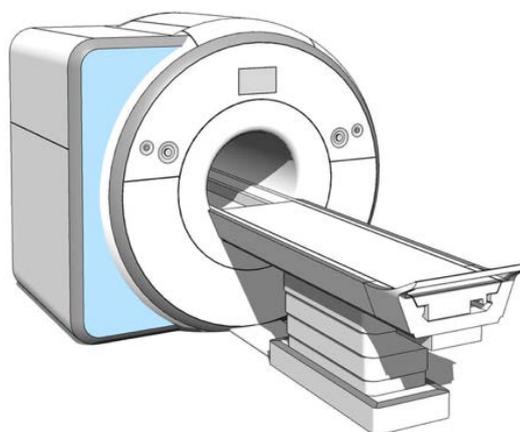
### Patient information sheet

This information sheet is for people with cochlear implants who have been sent for an MRI (magnetic resonance imaging) scan.

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#### Things to know before the scan

An MRI scan uses a powerful magnet to make images of your body. As your cochlear implant contains metal and uses a magnet to attach the external part of the device to the internal part, the internal magnet of your cochlear implant can be pulled towards the powerful magnet in the MRI scanner. There are different designs of internal magnets used in cochlear implants. It is important to know which type your implant has. For some internal magnets, it is safe to have an MRI scan as normal. For some types, additional safety precautions may be needed to have the scan safely. For other types it is not possible to have an MRI scan at all.



#### *A typical MRI scan machine*

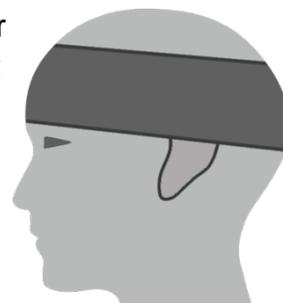
Please make sure you know what type of implant you have – check with your cochlear implant centre if you are not sure.

This information applies to having an MRI scan of **any part of your body**.

**It is important to tell your cochlear implant centre that you are having an MRI scan. Also, tell the doctor who refers you for an MRI scan that you have a cochlear implant.**

## Procedure

- You may be asked to attend the MRI department up to one hour before your appointment to prepare for the scan.
- You will be asked some safety questions and then asked to remove your cochlear implant sound processor before entering the scanning area.
- Before the scan begins, a clinician may place a splint over the implant magnet. The splint may be made of putty, or it may have a plastic or magnetic cover. Next, the clinician will wrap a bandage around your head over the splint. This bandage needs to be tight but if it becomes uncomfortable, please tell the clinician. The splint and bandage are used to stop the magnet moving.



*Head splint and bandage*

- You will then be asked to lie on the MRI table. This might be in the same room as the scanner or a different room. The clinicians will move you into the scanner while you are lying on the table.
- The process is reversed at the end of the scan. You will be taken out of the scanner while you are lying down on the table. You can get off the table once you are outside the scanner, or out of the room, depending on the scanner.
- Everyone having an MRI scan is given an emergency button to hold. If you experience pain or discomfort, you can push the button to stop the scan. Radiology staff will explain this to you too.
- You will be given your sound processor to put back on when the bandage and splint are removed.

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## Possible risks and complications

Complication	Information	Frequency (estimated)
Discomfort or pain	Even if you are given a splint, the scanner can cause some pulling on the internal implant. If you feel significant pain or discomfort during the scan, please tell your radiographer immediately.	Occasionally
Sensation of heat or warmth	Some people feel heat or warmth around the implant site, which can be uncomfortable. If	Occasionally

<b>around the implant site</b>	this happens, please tell your radiographer immediately.	
<b>Inability to complete scan</b>	Some people find the scan too uncomfortable to carry on. The images may then be incomplete, or the radiographer may not be able to get any images.	Occasionally
<b>Magnet displacement</b>	Even with a splint the internal magnet may move. If this happens, you will have an X-ray to confirm the position of the magnet. If the magnet has moved, you may need a minor operation under local anaesthetic to replace it. You may feel discomfort or pain until the magnet is in the correct position.	Occasionally
<b>Demagnetisation</b>	The strong magnetic fields in the scanner could make your implant magnet weaker. If this happens, either the external magnet could be changed, or the internal magnet could be replaced under local anaesthetic. Your implant would work as it did before.	Rare
<b>Electronic failure</b>	If the magnetic field strength of the MRI is incorrect this could damage your implant.  It is very important that you and the radiology team know the model of your device before you have your scan. Please contact your CI centre to get this information if necessary.	Very rare
<b>Poor-quality images (MRI brain scan only)</b>	The implant and internal magnet will cause some distortion of the images close to the implant (within about 10cm). This may mean the scan does not give useful information in this area. Scans of other parts of your body will not be affected.	All cases
<b>Needing to remove the internal magnet before the scan</b>	If your doctor needs to look at an area of your head close to your implant clearly, they may recommend that your internal magnet is temporarily removed immediately before your scan. It would then be put back immediately afterwards. Your ENT surgeon can do this under local anaesthetic. They will discuss the risks and benefits of this with you beforehand.	Depends on the area to be scanned

Although there are some risks of having an MRI scan with a cochlear implant, it is very important that an MRI is done to provide essential information for medical professionals about health issues you may have.

In the unlikely event that you have any problems when you return home after the scan, please contact your local cochlear implant centre as soon as possible. They will also send you an online link to fill in a questionnaire to find out how your MRI scan went.

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I have read and understood the information above.

**Signed:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Print name:** \_\_\_\_\_

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