Magnetic resonance imaging (MRI) and epilepsy

What is an MRI scan used for?
Some people have epilepsy because they have some damage in their brain. This may have been caused by scar tissue from an illness or a brain injury. An MRI scan is used to find out if you have any type of damage to your brain.

How does an MRI scan show the damage?
The MRI scan uses a strong magnetic field and radio waves to create pictures on a computer of tissues, organs and other structures inside your body. These pictures can show up any damage in your brain.¹

What does it involve?
The MRI scanner is like a tunnel. It’s about 1.5 metres (5 feet) long and is surrounded by a large circular magnet. You lie on a bed, which then slides into the open-ended scanner. During the scan, the MRI will send images of your brain to a computer, which shows different types of brain tissue in different colours.

The MRI scan doesn’t hurt. The radiographer who does the scan might need to inject you in your hand or arm, with a harmless dye. This is to make the tissue show up as clearly as possible. A few people have had allergies to the dye, so the radiographer will ask if you have any allergies first.

The MRI scan can last between 15 and 90 minutes.

How will I feel during my MRI scan?
The MRI is noisy when it is scanning, but you will be given earplugs or headphones to protect your hearing. The inside of the scanner is like a hollow open-ended tube. You might find this worrying if you are uncomfortable in confined spaces. You might be given a buzzer to hold,

so that you can let the radiographer know if you feel uncomfortable while the scan is being done.

You might be able to listen to music, or watch a DVD while the scan is done, to help you to relax. A relative or friend might be able to go into the room with you.

If you feel nervous, or can’t keep still while the scan is being done, you could be offered medicine to help you relax or sleep. Young children and people with learning disabilities may need a very light general anaesthetic to make sure that they keep completely still during the scan. This is to avoid the scan pictures being blurred.

**What will happen after my scan?**

After your scan, a radiologist will read the pictures taken by the MRI. They will then send your results to the doctor who arranged your scan. This will usually be your epilepsy specialist.

**Will I be offered an MRI scan?**

You might be offered an MRI scan when you are first being investigated for epilepsy, or if your seizures are difficult to control. The National Institute for Care and Health Excellence (NICE) recommends that you should have an MRI scan if you are in one of the following groups:

- You developed epilepsy before you were 2 years old
- You developed epilepsy when you were a child or an adult and there’s a chance it is caused by some damage to your brain
- You are still having seizures even though you are taking epilepsy medicines

**Is an MRI scan safe?**

If you are being considered for an MRI scan, your doctor will ask whether you have a pacemaker, vagal nerve stimulator, or any other metal parts in your body. This is because the MRI scanner uses an extremely strong magnet, which can move, or damage metal objects, or affect the way they work.

Metal objects can also affect the quality of the pictures from the scan. So, if you have metal in your body, an MRI scan is not suitable for you. However, if you can’t have an MRI scan, your epilepsy specialist, nurse

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or doctor may be able to arrange for you to have a different type of scan.

**Is an MRI scan useful for everyone?**

An MRI is not always useful for people who have generalised seizures (when seizures affect both halves of their brain) or benign rolandic epilepsy. This is because these types of epilepsy aren’t likely to be caused by damage to a single part of the brain. So, an MRI scan isn’t likely to find anything that could help with your diagnosis.

**How can I get an MRI scan?**

If you believe an MRI scan would help get the best treatment for your epilepsy, ask your GP, epilepsy nurse or specialist to arrange one for you. If they agree, NICE recommends an MRI scan should be done within 4 weeks of the doctor requesting it.

**Further Information**

More information about MRI scans on nhs.uk

**About this information**

This information is written by Epilepsy Action’s advice and information team, with guidance and input from people living with epilepsy, and medical experts. If you would like to know where our information is from, or there is anything you would like to say about the information, please contact us at epilepsy.org.uk/feedback

Epilepsy Action makes every effort to ensure the accuracy of information but cannot be held liable for any actions taken based on this information.

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Epilepsy Action would like to thank Dr Amanda Freeman, Consultant Paediatrician at Queen Alexandra Hospital, Portsmouth, UK for her contribution to this information. Amanda Freeman has no conflict of interest.

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