



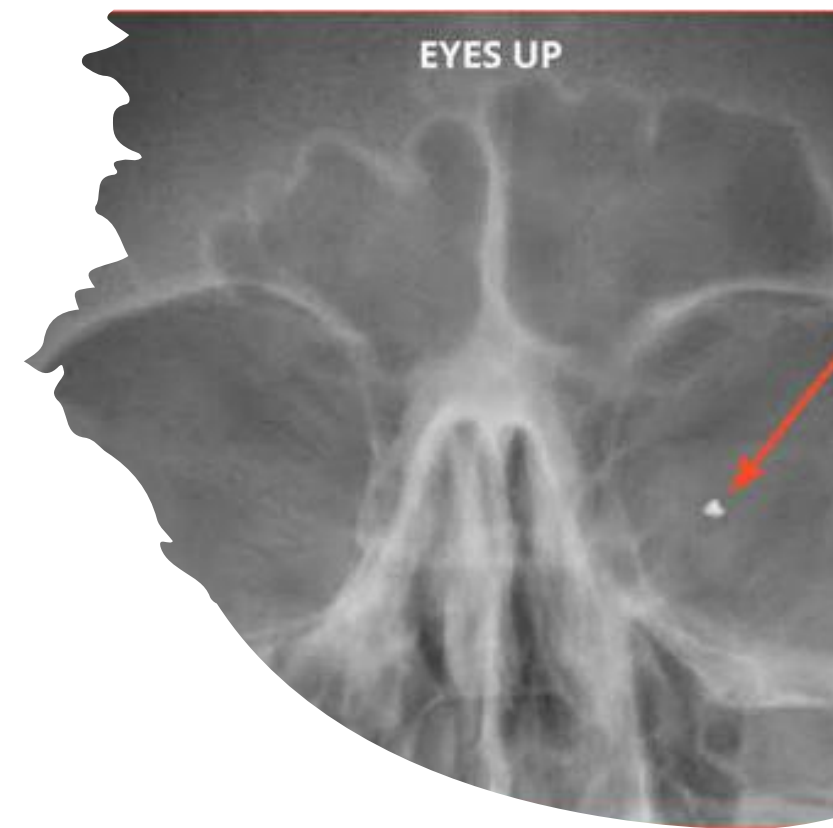
Before requesting
an MRI
Consider Patient
Safety...

MRI Safety

The risks associated with the magnetic field and RF pulses, in particular with implanted devices or metallic foreign bodies, are:

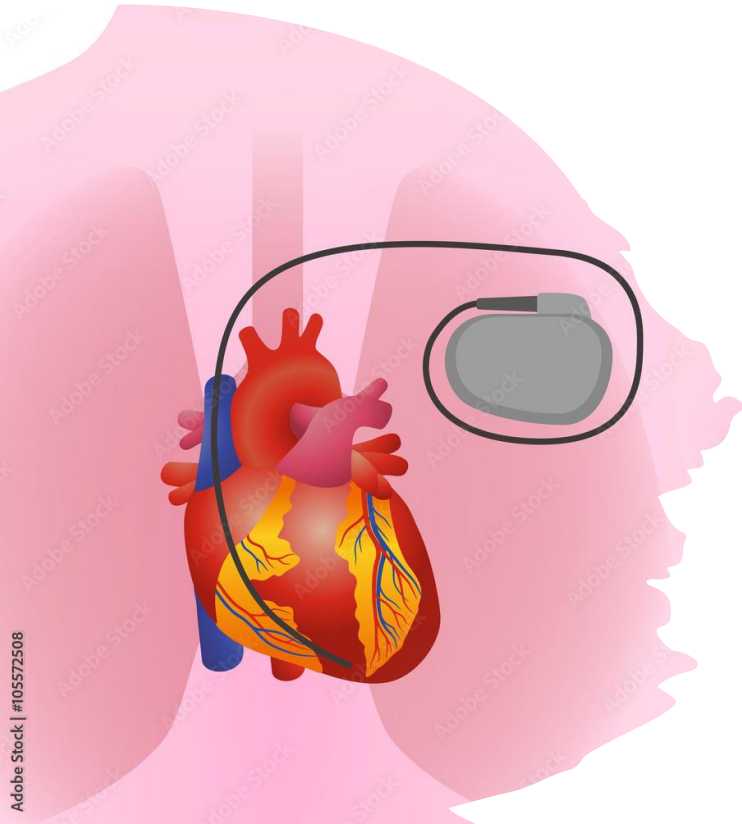
- **Displacement** (*e.g. metal fragments in tissue*)
- **Malfunction** (*active implants e.g. pacemaker, ICD, infusion pump, nerve stimulators etc.*)
- **Heating and possibility of burns** (*any implant with a metallic component; Some patients find tattoos heat up and become uncomfortable in the scanner especially very new ones and those done years ago when metallic and copper-based pigment was used in the coloured ink.*)

You must inform the MRI team if implanted medical devices or patient has a history of metal foreign bodies



Ask your patient:

- Has he/she ever had:
 - A cardiac pacemaker, implanted cardioverter/defibrillator (ICD) or any type of active implants e.g. cochlear implant, spinal stimulator, deep brain stimulator
 - Brain surgery involving clips or implants
 - A metal fragment enter their eyes, shrapnel, bullets in any body part
 - History of surgery involving any implants



If they answered yes to any question

Please provide as many
details as possible e.g. date,
body part, manufacturer of
the implant.

Surgeons and other medical practitioners should provide patients with accurate documentation and information about the medical devices implanted into them, for example, providing them with an implant card and patient information provided by the implant manufacturer.

https://assets.publishing.service.gov.uk/media/6a6b4c390ddb7e4831c62a4a/MHRA_MRI_Guidance_v5-0-1.pdf



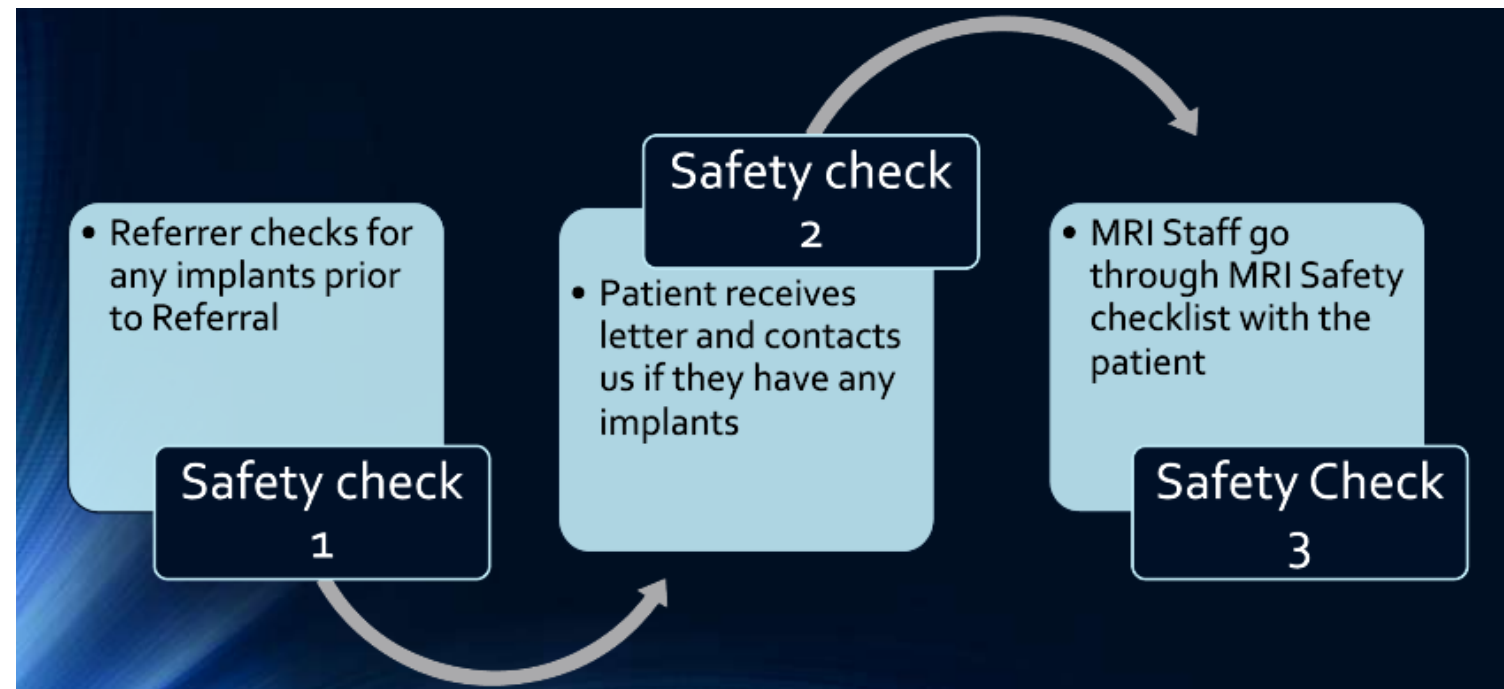
WHEN

WHERE

NAME OF THE IMPLANT

Implants with conductive, metallic or magnetic components are either **MR CONDITIONAL** or **MR UNSAFE**

Increasingly implants are manufactured with MRI safety in mind and are **MR CONDITIONAL**





What we need to know...

Detailed documentation is needed for these

Implantable medical devices fall into two main categories:

- **Active implantable medical devices (AIMDs) and active body-worn medical devices.** These have a functionality which is dependent upon an energy source such as electrical, mechanical, magnetic or pneumatic power. For example: cardiac implantable electrical devices (CIEDs), deep brain stimulators (DBS), spinal cord stimulators (SCS) and other stimulators, cochlear implants, intracranial pressure (ICP) monitors, drug infusion pumps and continuous glucose monitors.
- **Non-active/passive implantable medical devices.** These require no power source for their function. For example: hip/knee joint replacements, heart valves, aneurysm clips, shunts, coronary stents and breast implants.

https://assets.publishing.service.gov.uk/media/6a6b4c390ddb7e4831c62a4a/MHRA_MRI_Guidance_v5-0-1.pdf

Basic details needed:
body part, date

Symbol	Term	Definition
	MRI safe	Presents no known hazards in any MR environment such as non-ferromagnetic materials.
	MRI conditional	Presents no known hazards in a specific MR environment under specific device and MR scanner conditions such as MRI conditional pacemakers.
	MRI unsafe	Presents hazards in all MR environments such as strongly ferromagnetic materials.

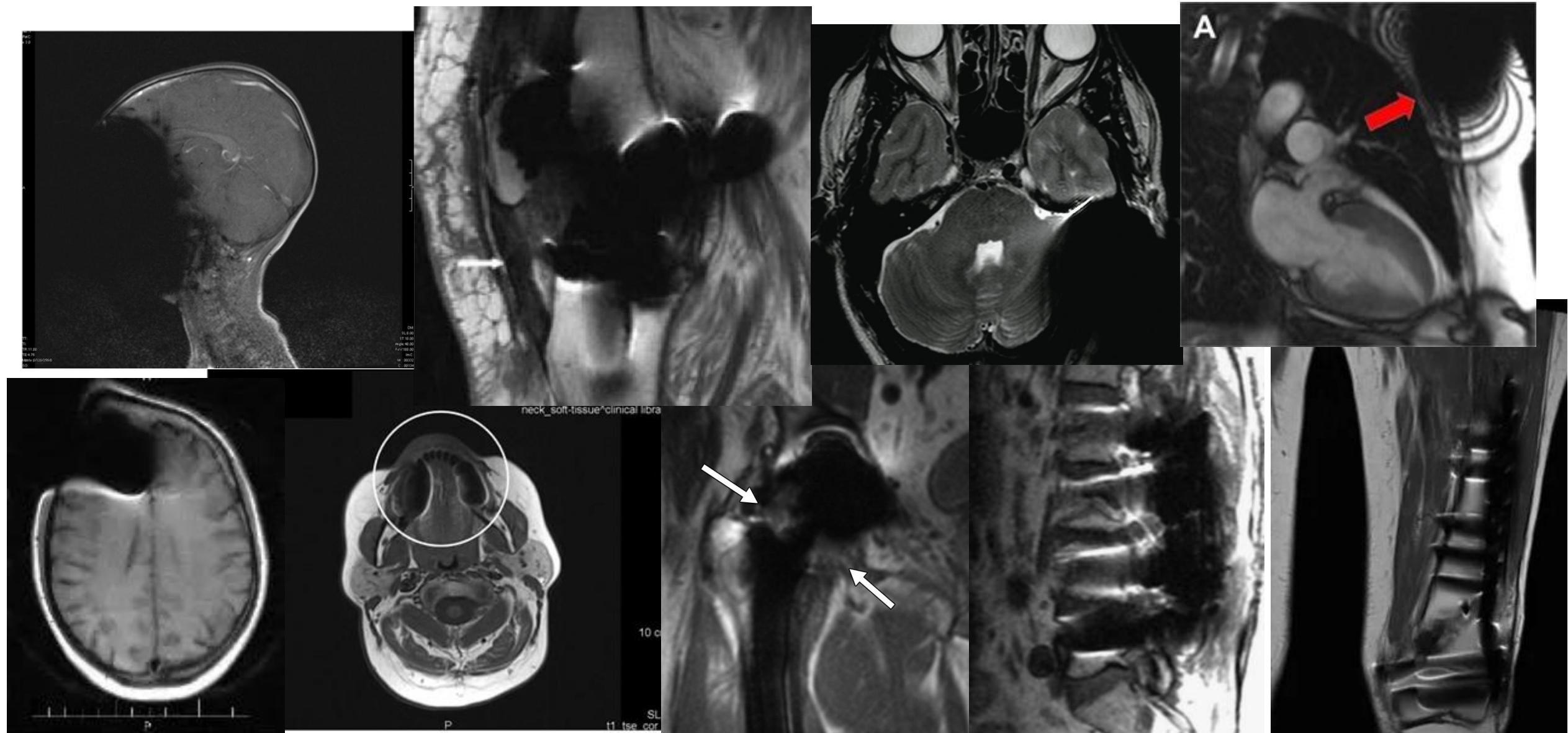
We're not just being nosy

The MRI team **NEED TO**
KNOW the make and model

Providing complete
details allows us to
evaluate the implant
prior the scan,
preventing delays in
diagnostic pathway



How implants look on MRI images?



Things for the Referrer to consider before referring a patient for MRI:

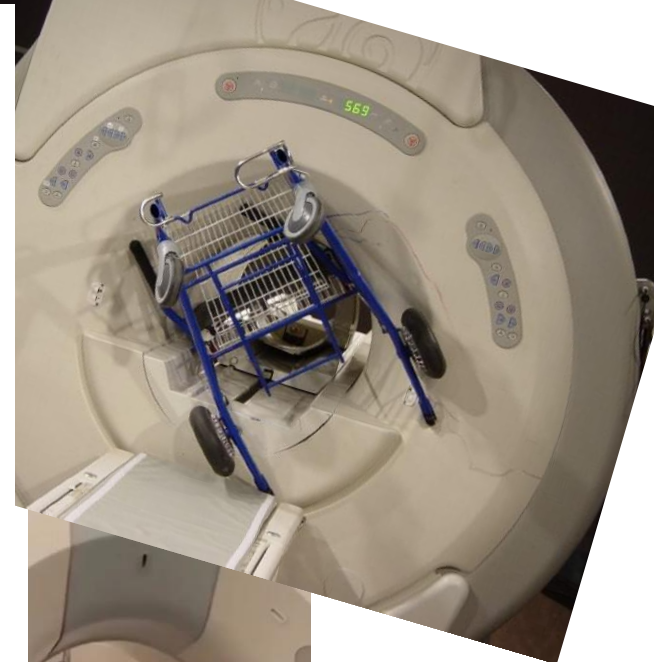
- **Metallic implants or implants that have been identified as MRI conditional**
- **Claustrophobia** – Not all patients can tolerate MRI, those that suffer from claustrophobia can find the confined space in the scanner intolerable.
- **Pregnancy** - It is not advisable for pregnant patients to have MRI in the first 3 months of pregnancy as it is not known whether the strong magnetic fields and high noise levels can have long-term effects upon the developing foetus. Patients can be scanned during pregnancy but a risk/benefit analysis to ensure the scan is necessary during pregnancy should be discussed with a Radiology consultant.
- **Patient Habitus** – Not all patients will physically fit into the scanner before the weight limit for the scanner is exceeded. The bore of the scanner can be as small as 60cms in Diameter and so it is advisable to check with the MRI team if your patient is of increased habitus. The area of the body being scanned needs to be in the centre of the bore tunnel.
- **Capacity** - Patients must be cooperative, have capacity to complete the MRI safety checklist, or answer the questions asked about their medical history, and be able to lie flat and keep still.

If you have any concerns that your patient does not comply with the above or may not tolerate MRI well, please contact the MRI radiographers at your Trust prior to referral

Also consider external metal!



Provided courtesy of Simply Physics at www.simplyphysics.com





Thank you for your cooperation

If you have any questions, please
contact us on ext. 4445, 3498, 5881

