

# MRI Safety Questionnaire Explanation for Operators

Version 3

Revised: October 2019

## Document History

Version	Comments	Author(s)	Date
3.0	Updated to reflect v3 of the session safety form	L Welbourne & R Aveyard	October 2019
2.0	Updated to reflect new definitions of Level 1, 2 and 3 operators	A Gouws	October 2016
1.0	Initial Release	R Devlin / M Hymers	May 2014

## Referenced Documents

Title	Type
Safety Questionnaire and Consent for Participants: Modality - MRI	Form

# MR Safety Questionnaire Explanation for Operators

Detailed below are questions from the safety questionnaire along with a brief explanation of their relevance and subsequent action to be taken dependent upon participant answer.

It is the responsibility of investigators to screen participants prior to scheduling their scan session. Where indicated, prior approval will be necessary from a Level 3 operator before scanning can proceed. In some instances, participants will be ineligible for scanning and must not enter the inner controlled area. If in any doubt, consult a Level 3 operator.

## **1. Do you have a cardiac (heart) pacemaker or pacing wires?**

Pacemakers are an absolute contra-indication. Participants who answer yes to this question are NOT permitted to enter the inner controlled area and must not be scanned.

## **2. Have you ever had any operations on your heart, head or spine?**

Certain operations will result in the placement of haemostatic clips or other metal objects or devices which may be affected by the magnetic or RF fields. Unless the operation was superficial and the participant can be 100% certain nothing was implanted during the operation then they should not be permitted to enter the inner controlled area. If participants answer yes to this question, a Level 3 signature must be obtained before scanning can be performed.

## **3. Do you have or have ever had a spinal or other neuro stimulator?**

Spinal or other neurostimulators are an absolute contra indication. If participants answer yes to this question, a Level 3 signature must be obtained before scanning can be performed.

## **4. Have you had any surgery which involved the use of metal implants?**

**E.g. Hip or knee replacements, breast or penile implants or any procedure involving metal stents; e.g. coronary arteries.**

Heating and to a lesser extent movement are potential side effects of the MR system. Where ever possible persons with any metallic implant should be excluded from research examinations. If participants answer yes to this question, a Level 3 signature must be obtained before scanning can be performed.

## **5. Do you have a programmable hydrocephalus shunt?**

Programmable hydrocephalus shunts can have their settings altered by strong magnetic fields. Participants who answer yes to this question are NOT permitted to enter the inner controlled area and must not be scanned.

## **6. Do you have a cochlear (ear) implant?**

Cochlear implants are contra-indicated in MR and persons with such a device should not be permitted in the inner controlled area. Participants who answer yes to this question are NOT permitted to enter the inner controlled area and must not be scanned.

## **7. Do you have a fixed dental brace?**

Dental braces which cannot be removed might not be permitted in the scanner. They represent an unknown length of wire which could potentially heat up (resonant length) very rapidly. If participants answer yes to this question, a Level 3 signature must be obtained before scanning can be performed.

## **8. Have you had any surgery in the last 3 months?**

Further detail will be required. 3 months is generally accepted as the time taken for fibrosis of any implanted clips or sutures to be completed rendering movement/displacement unlikely. If participants answer yes to

this question, a Level 3 signature must be obtained before scanning can be performed.

**9. Have you ever, at any time, had an injury to your eye involving metal fragments?**

Metallic intra orbital foreign bodies can inflict serious injury to the eye. At least one person has been blinded as a result of an MR scan. Unless the participant can be 100% sure that any metallic fragments have been removed they should not be permitted to enter the inner controlled area. If participants answer yes to this question, a Level 3 signature must be obtained before scanning can be performed.

**10. Do you have any shrapnel in your body?**

Participants with shrapnel injuries should be excluded from MR examinations. There is a significant risk that shrapnel could rotate in the magnetic field and cause localised tissue or blood vessel damage. If participants answer yes to this question, a Level 3 signature must be obtained before scanning can be performed.

**11. Are you currently wearing any jewellery? – e.g. piercings, watches, bracelets, necklaces, hair clips, rings**

All jewellery must be removed. They represent a risk of heating and burns. Investigators should screen participants before scheduling their scan to determine if any jewellery *cannot* be removed. If participants answer yes to this question, a Level 3 signature must be obtained before scanning can be performed.

**12. Do you have any tattoos?**

Although there is documentary evidence that a subject can receive a burn associated with a tattoo this is extremely rare. If participants answer yes to this question, you must draw their attention to the heating warning sign and read it aloud to the participant, and instruct them to press the emergency button should they experience any discomfort in the area that is tattooed. Operators do not need to obtain a Level 3 signature in this case.

**13. Do you have any medicinal patches? Including nicotine, hormone.**

Some medical patches have a metallic backing which can cause a burn. For this reason all patches should be removed prior to scanning. If participants answer yes to this question, a Level 3 signature must be obtained before scanning can be performed.

**14. Are you a close relative of any of the investigators? ie; spouse, sibling, parent, grandparent, child or grandchild?**

No operator or investigator who is a close relative of the participant should be present in the scan control room during scanning.

**15. Do you have epilepsy? Have you ever had a fit or seizure?**

If the participant answers yes to this question appropriate safeguards must be put in place to ensure their safety during the scan. A Level 3 signature must be obtained before scanning can be performed.

**16. Do you have an Intra-Uterine Contraceptive Device?**

Certain types of IUD are not MR-compatible. If participants answer yes to this question, a Level 3 signature must be obtained before scanning can be performed.

**17. Are you, or could you be pregnant?**

Participants who are pregnant are not to be scanned. Participants who answer yes to this question are NOT permitted to enter the inner controlled area and must not be scanned.