



# MCW MRI Safety Standard Operating Procedures

Access Control to the Magnetic Environment

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Category: Magnetic Resonance Imaging (MRI) Safety

Procedure #: MR.SOP. 01

Applies to: Investigators, study personnel, Medical College of Wisconsin (MCW) staff

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## **PURPOSE:**

The purpose of controlling access to the magnetic environment is to prevent injury, which could be fatal, to individuals entering the area. Access control also prevents damage to equipment due to the ever present and uncontrollable attraction of objects within the magnetic field of the scanner.

## **DEFINITIONS:**

Magnetic Environment: The area where the magnetic field is greater than 5 gauss resulting in the potential for objects to become missiles or projectiles as they are attracted into the magnetic field of the scanner. Individuals who may have cardiac pacemakers or other implants and devices may be at risk to enter the magnetic environment. The magnetic field is always present and is three dimensional around the scanner.

Tesla: The unit of measurement for magnetic field strength. 1 Tesla equals 10,000 gauss.

MRI: Magnetic Resonance Imaging which uses a strong static or main magnetic field, radio frequency pulses and time varying magnetic fields or gradients to produce anatomic images, spectroscopy, angiography, and functional data (fMRI).

MRI Safety Training: The required procedure that must be completed prior to working within the magnetic environment.

Safety Screening: The process of inquiring about the safety of individuals, including research subjects prior to entering the magnetic environment. Safety screening also applies to checking equipment for safety prior to being used in the magnet room.

## **PROCEDURES:**

### A. Access Points

1. The door to the scanner magnet room must be closed and locked when no one is within the immediate control room.
2. The door to the control room must be closed and locked when no one is within the immediate line of sight.
3. The door to the MRI hallway must be closed when no one is within the immediate line of sight.
4. Failed access points (magnet room door left unlocked and unattended) should be reported to the MRI Safety Committee. [mrifafety@mcw.edu](mailto:mrifafety@mcw.edu)
5. Key access to the scanner magnet room is limited to designated MCW staff.

6. Questions and concerns about safe access to the MRI areas should be directed to the MRI Safety Committee. [mrissafety@mcw.edu](mailto:mrissafety@mcw.edu)

B. Personnel

1. MRI Safety Training must be completed before an individual is granted badge access to the MRI area or hallway.
2. MRI Safety Training must be completed before an individual is allowed unescorted into the scanner magnet room.
3. Training is verified on the eBridge program.
4. Individuals who have not completed MRI Safety Training must be escorted while in the MRI area.

C. Subjects, equipment and others in the magnetic environment

1. Individuals must undergo MRI Safety screening BEFORE entering the scanner magnet room. (See *Safe MR Scanning*, MR.SOP.011)
2. Equipment must be approved by the MRI Safety Committee prior to use for a research study, or entry into the magnetic environment.(See *Equipment and Materials*, MR.SOP. 02)

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