



Research MRI Safety Committee Standard

GENERAL SCANNER USAGE

Category: Magnetic Resonance Imaging (MRI) Safety

Standard #: MR.012

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

PURPOSE:

The Research MRI Safety Committee at the Medical College of Wisconsin (MCW) is responsible in part for monitoring the safe use of the MCW MRI scanners. The purpose of this document is to describe the established procedures for Principal Investigators and others to gain access to those scanners.

DEFINITIONS:

Accompanying parents, spouses, or others: Individuals who, after thorough safety screening, would be allowed to enter the magnetic environment to provide company and or comfort for the research subject.

Equipment: Machines that may be used for MRI studies to monitor physiological processes or provide the stimulus or physical task for the study.

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.

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.

Materials: Pads, cushions or other objects that are not mechanical in nature but are used with or near the research subject during the MRI procedure.

Principal Investigator: A Principal Investigator (PI) is the individual who is ultimately responsible for the procedures, study team personnel and research subjects involved in the study. The PI has an IRB- or IACUC-approved protocol and utilizes one or more of the MRI scanners at MCW for research purposes.

Research Study Personnel: Study personnel are individuals including a student, staff member or laboratory assistant for whom the PI of the study is responsible, and who are at the MR scanner site during the study or may be recruiting subjects for the study.

PROCEDURE:

- A. Applicants seeking IRB, IACUC, or other approval for research studies utilizing MRI within the Froedtert and MCW Milwaukee network must obtain approval from the Research MRI Safety Committee prior to approval by the IRB or IACUC. In addition, the Principal Investigator needs to provide information to the Center for Imaging Research (CIR) <http://www.mcw.edu/CIR.htm> to schedule use of an Medical College of Wisconsin MR scanner.
- B. Individuals (i.e. Principal Investigators and Study Staff) entering the magnetic environment or responsible for screening research participants must complete the required MRI Safety Training or be granted an exemption by the Research MRI Safety Committee prior to conducting or participating in studies in the magnetic environment. (See MR.SOP.08 *MRI Safety Training*).
- C. The Research MRI Safety Committee authorizes the Medical College of Wisconsin research scanner operators to prohibit or stop a procedure that they deem exceeds safe practices.
- D. 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).
- E. If there is a problem with specific equipment, study personnel must report to the MR scanner operator so that the problem is documented in the daily log, as to what the problem was or what went wrong during the study so that corrections and / or repairs can be made (See MR.SOP.10 *Reporting Requirements*).
- F. Study personnel will ensure that coils, shim files, configuration files, and all computers are returned to standard usage or as directed for each specific system.
- G. All accessories and / or devices are to be turned off properly, cords and cables wound, and returned to their designated storage area.
- H. Study personnel should report to the MR scanner operator if a supply item is becoming low in quantity especially if the last, or near last of an item is used.
- I. Principal Investigators may contact the Research MRI Safety Committee or the Center for Imaging Research for information about using Medical College MR scanners. (See the following SOPs for more information: *MRI Safety Committee*, MR.SOP.07; *MRI Safety Training*, MR.SOP.08; and *Study Personnel Responsibility* MR.SOP.013).
- J. Post scanning cleaning should follow the Infection and Allergy Control, MR.SOP.06.
- K. Upon completion of the MRI study the study personnel must ensure that all equipment is restored to normal operation

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