



SOP Number:	220.12	
Title:	Safety and Operator Training Procedure	
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Directors Signature: _____ *Jim Skoep* _____ Date: 2023/SEP/01

1. SCOPE

This SOP describes the procedure for training personnel who will be given security access to the 3T MRI facility and/or operate the 3T MRI system.

2. PROCEDURES

a. MRI Safety Guidelines in Ontario

- The Government of Ontario's document: *Report of The Diagnostic Imaging Safety Committee for Magnetic Resonance Imaging (MRI), Feb 2007* (http://www.health.gov.on.ca/en/common/ministry/publications/reports/disc_ct_mri/mri_report.pdf) provides recommendations on the safe operation of MRI facilities in Ontario, and standards and best practice guidelines for Magnetic Resonance Imaging.
- This document recommends that the province of Ontario put in place regulations and/or legislation, including:
 - "MRI facilities in Ontario will be operated, maintained and inspected in a manner that will reduce the risk of safety hazards to MR personnel, other health care workers, patients, and the general public."
 - "MR scans of human patients and human research subjects shall be performed only by CMRTO (College of Medical Radiation Technologist of Ontario) registered MRI technologists or by medical doctors with specific training in MR. If the latter, the medical doctor shall have training in MR safety that is at least equal to the MR safety training received by Level 2 MR personnel. MR scans of animals and/or inanimate objects may be performed by CMRTO registered MR technologists or by other appropriate medical, scientific, or service personnel, provided they have been adequately trained in MR safety."
 - **Only** MR technologists and MRI-trained physicians can perform the final safety screen of patients and of those entering the magnet room."
- While these are currently only recommendations and not yet law, TIRF supports these safety principles. Facility policies have been established to minimize potential risks and ensure safe operation of the MRI scanners.

b. Safety and Operator Training: Level 1 MRI Personnel

- Level 1 MRI personnel may include, but are not limited to, investigators and associated research students/staff who utilize the 3T MRI facility on a regular basis, and who require security access to zone III of the 3T MRI facility.
- Individuals requiring security access to the 3T MRI facility as level 1 MRI personnel must apply for security access as set out in SOP #105 *Facility Access Approval Procedures*.

- It is mandatory that all Level 1 MRI personnel participate in and complete the initial 3T MRI facility safety orientation before gaining security access to the 3T MRI facility. Orientation will be held onsite on a regular basis with content determined by the facility staff.
- MRI safety orientation will include:
 - Review of 3T MRI facility SOP's (see Appendix 1: "SOP Compliance Form")
 - An "MRI Screening Form" must be completed, signed, and reviewed by the MRI facility manager (see Appendix 5)
 - Tour of the MRI suite/magnet room
 - On-site safety instruction/training (see Appendix 2: Safety Training Checklist")
 - Completion and signature of the "Security Access Request Letter" (see Appendix 6)
- Individuals wishing to obtain security access to the 3T MRI facility are required to read and sign off on all SOP's as indicated on the "SOP Compliance Form" (see Appendix 1) declaring that they have read, understood, and plan to follow all of the guidelines set in place by the SOP's. Upon completion, the signature form must be passed along to the MRI facility manager prior to orientation.
- Level 1 MRI personnel have security access to Zone III of the 3T MRI facility and are permitted to access Zone III as required. However, they are **NOT** permitted to enter Zone IV (magnet room) without permission and supervision of Level 2 MRI personnel. All access to the magnet room is subject to the approval and discretion of level 2 MRI personnel.
 - Level 1 MRI personnel may bring visitors into Zone III of the 3T MRI facility as per the regulations set out in SOP #105 *Facility Access Approval Procedure* and SOP #110 *Visitor Access Approval Procedure*. It is the responsibility of the level 1 MRI personnel to always supervise the visitor(s) to ensure they do not enter zone IV (magnet room).
- Safety review is to be completed **yearly** by all Level 1 MRI Personnel. Review will include but are not limited to; MRI safety instruction, emergency procedures, orientation of new policies and safety protocols, and signature of completion of review. Level 1 MRI personnel will be notified in advance of upcoming safety review sessions.

c. Safety and Operator Training: Level 2 MRI Personnel

- Level 2 MRI personnel may include, but are not limited to, the facility director, MRI facility manager, and MRI operators. Level 2 MRI personnel are those who require both security access to Zone III of the 3T MRI facility, and unsupervised access to Zone IV (magnet room).
- All level 2 MRI personnel require and must apply for security access as outlined in SOP #105 *Facility Access Approval Procedure*.
- It is mandatory that all Level 2 MRI personnel complete 3T MRI operator training provided by the 3T MRI facility manager. Operator training will be held onsite on a regular basis, for a maximum of two trainees per session. Please note that the **assisted human imaging rate** applies to this training.

- Upon completion of the 3T MRI operator training, the “Operator Training Checklist” (see Appendix 4) must be signed by both the MRI facility manager and trainee.
- Level 2 MRI personnel may bring visitors into Zone III of the 3T MRI facility as per the regulations set in SOP #105 *Facility Access Approval Procedure*, and SOP #110 *Visitor Access Approval Procedure*, or may be present while others host visitors. It is the responsibility of all Level 2 MRI personnel to always supervise visitors and ensure that they do not enter Zone IV (magnet room), unless prior safety screening and approval has been obtained as outlined in SOP #110 *Visitor Access Approval Procedure*.

d. All Personnel

- Granting 3T MRI facility access to anyone other than level 1, or 2 MRI personnel is at the discretion of facility staff.
- Individuals who have safety contraindications, medical devices, or implants incompatible with the MR environment as outlined in SOP # 200 *General MRI Safety*, will **NOT** be granted level 1, or 2 MRI personnel status. They will also **NOT** be permitted to enter Zone IV (magnet room) of the 3T MRI facility at any time.
- All personnel, including level 1, and 2 MRI personnel must complete and sign an “MRI Screening Form” (see Appendix 5), and have it reviewed, signed, and approved by the MRI facility manager. Completed screening forms will be kept on file with the facility staff.
 - New screening forms do not need to be completed before each entry into Zone IV (magnet room). However, it is the responsibility of these individuals to inform the MRI facility manager of any change in status (e.g., surgeries involving implanted devices, or metal in the eyes). After any change in status, individuals must complete a new screening form, and obtain approval from the facility manager before entering zone IV (magnet room).

e. Essential Building Services Personnel

- Essential building services personnel must **NOT** enter zone III of the 3T MRI facility without the approval and supervision of a Level 1 MRI personnel.
- Essential building services personnel must **NOT** enter Zone IV (magnet room) without the approval, accompaniment, and direct supervision of a level 2 MRI personnel.
- Essential building services personnel are not permitted to bring visitors into the 3T MRI facility.
- Building services is responsible for instructing the cleaning staff of the restrictions set in place by the 3T MRI facility.