
Limited MRI Operator Training for Non-Human Scans

I. PURPOSE

- A. This Limited MRI Operator Training for Non-Human Scans policy has been established to provide guidelines for providing a safe atmosphere for the non-MRI technologist to become trained as a Limited MRI Operator and to ensure proper care of the MRI Equipment.

II. SCOPE

- A. This policy covers all IIBIS MRI equipment and the independent scanning related to phantoms and animals.

III. EXCEPTIONS

- A. Any exception to this policy requires the approval of the MRI Safety Committee and the Chairman of the Department of Radiology and Imaging Sciences or his/her designee.

IV. DEFINITIONS

- A. CPR: Cardio Pulmonary Resuscitation
- B. IIBIS: Indiana Institute for Biomedical Imaging Sciences
- C. MR: Magnetic Resonance

V. POLICY STATEMENTS

- A. All non-MRI Technologist must complete the following list of action items as a prerequisite for initiating the authorized operator training process for IIBIS MRI instruments:
 1. Complete MR Safety Screening Form (Appendix A) and have the form reviewed and signed by a MRI Technologist.
 2. View the MR safety video and pass the MR Safety Quiz.
 3. Provide proof of current CPR certification.
 4. Read and provide documentation acknowledging the MRI Facility Rules and Guidelines. (Appendix B)
 5. Possess basic MR physics knowledge verified by an MR experienced mentor or MR Physicist in the form of a written letter or email message.
 6. Submit all documentation above to the Research Operations Manager to be maintained in the MRI Safety Section of the U Drive.

B. Training under the following guidelines will be required for operation of an IIBIS MRI scanner once the above information is received and reviewed by a member of the Research Operations Manager:

1. Schedule a mandatory in-service with the Lead MRI Technologist to receive instruction of use on each MRI coil available to scan with. The In-Service Documentation (Appendix C) must be signed by the MRI Technologist and the trainee acknowledging the in-service was conducted and adequate information was provided.
2. MRI operator trainees undergo intensive personal training with the Lead MRI Technologist and MR Experienced Mentor or Physicist. Training progresses through three phases:

Observer phase: The trainee observe the training Operator for a minimum of 4 hours of imaging. This phase of training is meant to familiarize the trainee with operating procedures. The trainee may not conduct safety screening during this phase. The trainee moves on to the next phase at the discretion of the training Operator.

Assistant phase: The trainee assists the training Operator for a minimum of 16 hours of imaging, with the training Operator taking the lead. This phase of training is meant to give the trainee hands-on experience with the operating procedures, and allow them to gradually begin to perform the duties of a certified Operator. Trainees may conduct safety screening at this phase, but only under the supervision of the training Operator. The trainee moves on to the next phase at the discretion of the training Operator and the Safety Committee.

Probation phase: The trainee operates the MRI device under the supervision of the training Operator for a minimum of 20 hours of imaging. This phase allows the trainee to build confidence in their ability to perform operating procedures, and develops the level of skill and responsibility necessary to be certified Operators. The trainee performs all operating procedures during imaging, using the training Operator as an information resource, only. The trainee may conduct safety screening, but still must have the form inspected and signed by the training Operator. Once the probation phase is completed the trainee should request the MRI Technologist and MR Experienced Mentor or Physicist complete the Limited MRI Operator Recommendation Document. (Appendix D)

C. The trainee may apply for certification from the IIBIS Director at the joint discretion of the training Operator and the MRI Safety Committee. Limited MRI Operator Certification will be initiated by completing the following process:

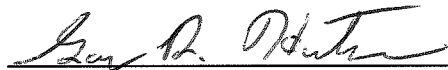
1. Obtain signed In-Service Documentation. (Appendix C)

2. Obtain statements from the MRI Technologist and MR Experienced Mentor or Physicist that the trainee satisfactorily completing all three phases of scan time. (Appendix D)
3. Send the above documentation to the Research Operations Manager via email. Information will be reviewed and forwarded for Limited MRI Operator Certification approval from the Imaging Director.
4. A decision will be returned to the trainee via email and certification approval or denial will be kept on file.

VI. REFERENCES

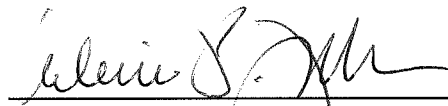
- A. Indiana University-Bloomington, Imaging Research Facility

VII. APPROVAL SIGNATURES



Gary D. Hutchins, PhD.
Director of IIBIS
Indiana University School of Medicine

2/21/13
Date



Valerie P. Jackson, MD, FACR
Eugene C. Klatt Professor and Chair
Department of Radiology and Imaging Sciences

2/21/13
Date

Indiana Institute for Biomedical Imaging Sciences
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Appendix A
MRI Safety Form

Name: _____
 Date of Birth: _____ Patient Weight: _____ Height: _____

ATTENTION: MRI PATIENTS AND ACCOMPANYING FAMILY MEMBERS
 Patient safety is our primary concern. The MRI room contains a very strong magnet and it is ALWAYS ON. Before you are allowed to enter, you must remove all metallic objects, including hearing aids, keys, beepers, cell phones, watches, pins, hair barrettes, pocket knives, lighters, bank cards, purses, wallets and jewelry. We must know if you have any metal in your body. Some metal objects can interfere with your scan or even be dangerous, so please answer the following questions *carefully*. Please check with one of our MR technologists if you are not sure.

Patient Identification

Please Indicate If You Have the Following:

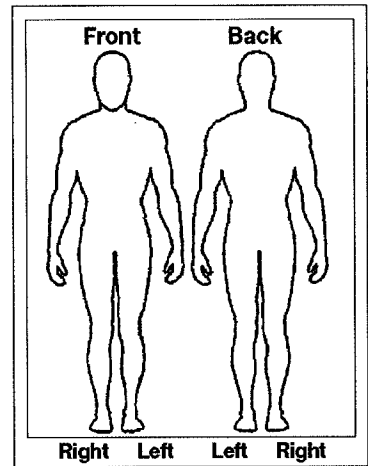
- Yes No 1. Have you had an MRI before?
When: _____ Where: _____
- Yes No 2. Have you had previous back surgery?
- Yes No 3. Drug or latex allergies: _____
- Yes No 4. Do you have a Cardiac pacemaker, defibrillator or ICD?
- Yes No 5. Do you have a history of decreased kidney function?
- Yes No 6. Are you currently undergoing dialysis?
- Yes No 7. Do you have a history of metal shavings, specks of metal in your eye or had metal removed from your eye?
- Yes No 8. Allergic to contrast dyes: _____
- Yes No 9. Brain aneurysm clip?
- Yes No 10. Electronic implant, mechanical or magnetic implant?
Type: _____
- Yes No 11. Electrical stimulator for nerves or bone?
- Yes No 12. Internal electrodes or pacer wires?
- Yes No 13. Cochlear, hearing aids or other ear implant?
- Yes No 14. Insulin or other drug infusion pump?
Type: _____
- Yes No 15. Any type of prosthesis or implant (eye, ocular, penile, etc.): _____
- Yes No 16. Heart valve? Type: _____
- Yes No 17. Eyelid spring, wire or gold eyelid weight?
- Yes No 18. Artificial or prosthetic limb?
- Yes No 19. Cardiac stent, IVC filter or any other intravascular devices?
Type: _____ Date of Implant: _____
- Yes No 20. Shunt (spinal or intraventricular) or Programmable shunt?
- Yes No 21. ICP, Intracranial Monitoring Pressure Catheter?
- Yes No 22. Radiation seeds or implants?
- Yes No 23. Swan-Ganz or thermodilution catheter?
- Yes No 24. Any metallic fragment or foreign body, bullets, shrapnel or BB's?
- Yes No 25. Tissue expander (e.g., breast)?

- Yes No 26. Surgical staples, clips, metallic sutures or wire mesh?
- Yes No 27. Joint replacement (hip, knee, etc.)?
Bone/Joint pin, screw, wire, plate, etc.?
Date of Surgery: _____
- Yes No 28. Any dressing or patch which may contain metal, such as silver based wound dressings?
- Yes No 29. PillCam Video Capsule?
- Yes No 30. Medication patch (Nicotine, Nitroglycerine, Hormone)?
- Yes No 31. Dentures or partial plate?
- Yes No 32. Tattoo or permanent makeup?
- Yes No 33. Body piercing jewelry? (*Must be removed*).

For Female Patients:

- Yes No 34. Are you pregnant, possibly pregnant or breast-feeding?
Date of last menstrual period (LMP): _____
- Yes No 35. IUD or diaphragm?

Spine MRI Patients: please indicate on the figure below the location of your pain/symptoms.



This list is not inclusive; please indicate other surgical implants not mentioned on this Safety Screening form:

I attest that the above information is correct to the best of my knowledge. I have read and understand the contents of this form and had the opportunity to ask questions regarding the information on this form and regarding the MR procedure that I am about to undergo.

Signature (Patient or Guardian): _____ Date: _____
 Technologist Signature: _____

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Appendix B
MRI Facility Rules and Guidelines

1. NO human subject can be scanned by trainee operators without the presence of a MRI Technologist even once certification is complete.
2. Must pass all required training described in the Limited MRI Operator Policy prior to operating any IIBIS MRI scanner independently.
3. Must always have a minimum of 2 people present, who have both completed MRI Safety Training, when scanning.
4. Everyone involved in the scan must have MRI Safety Screening form signed by a MRI technologist and on file before scanning begins.
5. All equipment being brought in to the MRI Scan room must be approved by the MRI Safety Committee prior to the day of the scan.
6. All scan information (IIBIS Number, Principal Investigator and Amount of time used) should be logged in MRI Log Book located at the MRI Console.
7. The MRI Control room and Scan room must be returned to the state in which they were found.
8. Doors to the MRI Control room and the MRI Scan room must be locked when leaving the imaging area whether you are complete with your imaging session or just stepping away.
9. All coils should be unplugged and placed on a shelf at the end of the imaging session.
10. Notify MRI Tech immediately if any system issues remain unsolved.
11. All cadaver scans require IRB approval.
12. All animal scans require IACUC approval.
13. All scans require IIBIS Study ID number.

By signing I agree I have read and acknowledge understanding of the above MRI Facility Rules and Guidelines.

Printed Name of Trainee

Signature of Trainee

Date

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Appendix C

MRI Facility In-Service Documentation

Information was provided regarding the following topics:

- Coil Instruction Provided for Siemens TIM Trio at R2
- Coil Instruction Provided for Siemens Skyra at Goodman Hall
- Intercom and Scanner Table Instruction Provided
- Emergency Procedures Reviewed
- MRI Facility Rules Reviewed
- Scanner Boot-up Procedure
- Scanner Shut-down Procedure
- Conductive Loop Precaution Reviewed
- _____
- _____
- _____
- _____
- _____

Comments:

Technologist Signature

Trainee Signature

Date

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Appendix D
Limited MRI Operator Recommendation

Trainee Name: _____

MRI Technologist Recommendation:

MRI Technologist Signature

Date

MR Experienced Mentor or Physicist Recommendation:

MR Experienced Mentor or Physicist Signature

Date