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

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

2/21/13
Date

2/21/13
Date
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 MRI technologists if you are not sure.

Please Indicate If You Have the Following:

☐ Yes ☐ No 1. Have you had an MRI before? When: __________________________

☐ 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?

Sple 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: __________________________
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
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
Appendix D

Limited MRI Operator Recommendation

Trainee Name: ____________________________________________

MRI Technologist Recommendation:

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<th>MRI Technologist Signature</th>
<th>Date</th>
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MR Experienced Mentor or Physicist Recommendation:

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<th>MR Experienced Mentor or Physicist Signature</th>
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