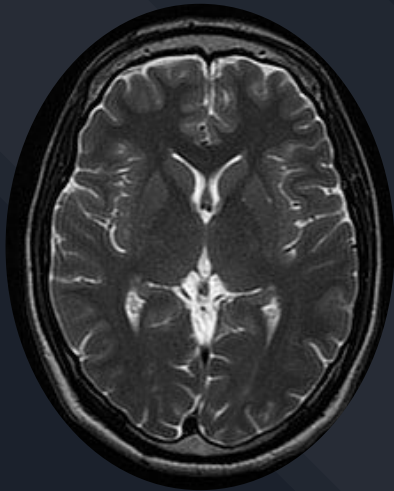


# MRI Safety



MRI Research Safety Training

# MRI Magnetom Prisma

The Prisma is a superconducting magnet.  
What does this mean?  
The magnet is ALWAYS on!!! Even with no power!!!

3T magnet about 60,000 times stronger than the Earth's magnetic field.

The Prisma's bore is 60 cm in diameter, so some individuals may not fit as comfortably as others.

The table detaches from the magnet for transfers, emergencies, etc.



# MRI Zones

<b>MRI</b>	
<b>MRI ZONE I</b>	MRI Access Area

Example: MRI waiting area

<b>NOTICE</b>	
<b>MRI ZONE II</b>	MRI Patient Screening and Preparation

Example: interview rooms

<b>⚠ CAUTION</b>	
<b>MRI ZONE III</b>	<b>Restricted Access</b> Screened MRI Patients and MRI Personnel Only

Example: console area

<b>⚠ DANGER</b>	
<b>MRI ZONE IV</b>	<b>Restricted Access</b> Screened MRI Patients Under Direct Supervision of Trained MRI Personnel Only

Example: scan room

# Safety Precautions

Screening is the most effective way to prevent MRI hazards while working in the MRI environment.

Always visually and verbally monitor the individual being scanned, and make sure they have the squeeze ball to signal an emergency.

It is highly encouraged to have the participant change into scrubs for safety purposes. These scrubs should never leave the facility.

CINL requires there to be two people present while scanning. One Level 2 trained person and one Level 1 trained person.



# MR Hazards



Burns are the most common injury that occurs in MRI. MR personnel should always check cables to ensure there are no loops or bare wires.

Acoustic noise can be a hazard to the individual in the scanner and should always be accounted for by using provided earplugs.



Metal objects, such as paper clips, scissors, stethoscopes, hemostats, pens, keys, and jewelry can become dangerous projectiles if taken into the MRI scan room.

# MR Hazards: Implanted Devices

If an individual has an implanted device, the implant must be approved by usage of the implant approval process found on the SharePoint site.



MR safe means the object is safe in any MR environment

MR conditional means the object is proven to only be safe under certain conditions.

MR unsafe means the object is unsafe in any MR environment.



## Equipment Safety

- ★ *Do not enter MRI environment with metal objects, such as* (paperclips, scissors, stethoscopes, hemostats, pens, keys, jewelry) **these can become dangerous projectiles if taken into the MRI scan room.**

- ★ **The wheelchair and stretcher are located in the back of the console area.**

- ★ **If you are NOT sure if an object is MRI safe... do NOT take it into the room. Instead, ask a MRI Technologist!!!**

# WHAT TO DO IN AN EMERGENCY!!!

If there's an emergency during an MRI scan...

- Get the person out of the scan room
- No code or code-like procedure should ever be carried out inside the scan room.

Examples:

- CODE MET: medical emergency
- CODE BLUE: person stops breathing
- **CODE RED: Fire**
- QUENCH: magnet releases Helium



# Code Red: Fire

**MRI compatible  
Fire Extinguishers  
are always marked**



- **Made of non Ferrous metal**
- **Electrically non-conductive**
- **Location: Within the MRI Zoned area**



POWER OFF

QUENCH



VS.

- This button should be pressed if there is fire, sparks, or water in the scan room or console room.
- Remember, the magnet is still on even without power.

- The only way to completely demagnetize the magnet is to quench the magnet.
- When a quench occurs the liquid helium inside the MRI will be released through vents into the designated area outside.



# Scanning Pregnant Individuals

- Research does not scan pregnant participants due to unnecessary risk.
- Pregnant MR personnel are encouraged not to stay in the room during the scanning process.
- Why?
  - ◆ MRI has unknown effects.
  - ◆ Also, it is unnecessary for personnel to stay within the MRI environment during the exam.



PLEASE PRINT AND FILL OUT QUIZ SHEET AND  
BRING WITH YOU TO YOUR MR SAFETY  
TRAINING, EMAIL [EKINGRAM@UABMC.EDU](mailto:EKINGRAM@UABMC.EDU) TO  
SCHEDULE IF NOT ALREADY DONE.





1. Which MR zones require individuals to be screened before they can enter?

A

I, II, III, IV

B

I & II only

C

III & IV only

D

II, III, & IV



2. T/F: MR conditional means the object is safe in any magnetic field.

A TRUE

B FALSE




3. Which of the following regarding implants is true?

A A participant with an implanted device can be scanned, as long as their doctor says it's MR safe.

B CINL must approve all implanted devices before they are safe to be scanned.

C If two participants have the same device, you only need to get information from one of them to make sure they're both safe.

D A, B, & C



4. T/F: It is fine to leave to go to the restroom while a participant is being scanned.

A TRUE

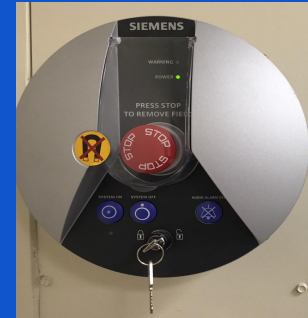
B FALSE




5. Which button should be pressed if sparks are seen inside the scan room?



A



B



6. Which of the following is true about running a code in the MRI suite?

A The participant should be removed from the scanner immediately.

B The code should be performed in the scan room.

C The equipment used to assist with codes is allowed inside the scan room.

D A & C only



7. T/F: Hearing protection is not optional for participants.

A TRUE

B FALSE




8. Which of the following is true if the power-off button is pressed?

A The magnet is still on

B The magnet is no longer magnetized

C It is safe to bring tools into the scan room

D B & C only



9. T/F: Participants are allowed to bring their cane into the scan room.

A TRUE

B FALSE



10. Which of the following is true regarding scrubs:

A Participants are allowed to take them home

B They must stay at the facility at all times

C It is highly encouraged for all participants to change into scrubs for safety

D B & C only



# THE END

PLEASE PRINT AND FILL OUT  
PAGE ON NEXT SLIDE

Name: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

1. A B C D

6. A B C D

2. A B

7. A B

3. A B C D

8. A B C D

4. A B

9. A B

5. A B

10. A B C D