

MRI Safety for MR Staff and Professionals

1. When compared to the earth's magnetic field, a clinical MRI scanner has a magnetic field that is
 - a. much higher
 - b. slightly higher
 - c. about the same
 - d. lower
2. What is the unit for measurement of magnetic field strength?
 - a. Gauss
 - b. Tesla
 - c. Both (a) and (b)
 - d. None of the above
3. What is the magnitude of earth's magnetic field strength?
 - a. 0.5 Gauss
 - b. 5 Gauss
 - c. 5000 Gauss
4. Which objects will be subjected to 'missile effect' when brought into an MRI scan room?
 - a. Loose ferromagnetic objects
 - b. Any loose metal
 - c. All of the above
 - d. None of the above
5. What kind of force may be experienced by a ferromagnetic object implanted in a patient brought into an MRI scanner?
 - a. Translational force
 - b. Torque
 - c. Neither (a) or (b)
 - d. (a) and (b)
6. What did the ACR recommend to use in testing whether an object can be brought into an MRI scan room?
 - a. Metal detector
 - b. Any magnet
 - c. Hand-held magnet > 1000 Gauss
7. In the zoning scheme recommended by ACR, who can have independent access to zone 4 (MRI scanner room)?
 - a. Any engineer
 - b. Trained MR staff
 - c. Police and Firefighters
 - d. All of the above
 - e. Anybody

8. During quenching of the magnet, who should stay in the MRI scanner room?
 - a. MR staff
 - b. MR engineer
 - c. Nobody

9. Patients with what type of implants does the ACR recommend as 'inadvisable' for routine MRI?
 - a. Cardiac pacemaker
 - b. Cardioverter defibrillator
 - c. Both (a) and (b)
 - d. None of the above

10. How severe is the effect of nerve stimulation caused by the time-varying magnetic field of modern MRI scanners?
 - a. Very severe
 - b. Small
 - c. Not existent

11. What is the biological effect of radiofrequency field in an MRI scanner?
 - a. Itching
 - b. Dizziness
 - c. Heat deposition in the body

12. What may possibly cause a skin burn for a patient in an MRI scanner?
 - a. Conductive loop of wire on the body surface
 - b. Crossing arms or legs
 - c. Body of patient touching the body coil (the inside of the gantry)
 - d. All of the above
 - e. None of the above

13. What is the proper space between the patient and the body coil?
 - a. Greater than ½ inch
 - b. Greater than 1 inch
 - c. It is not a concern

14. What type of metallic implant may be a concern of safety for MRI scanning?
 - a. stent
 - b. cerebral aneurysm clip
 - c. pacemaker
 - d. All of the above
 - e. None of the above

15. If an object is considered safe to be used in a 1.5Tesla MR scanner, but has not been tested in a 3Tesla scanner, it should be labeled as:
 - a. MR Safe
 - b. MR Conditional
 - c. MR Unsafe

16. Fire-fighters or medical personnel can enter the MRI scan room at any time during an emergency.
 - a. True
 - b. False

17. Thus far, there is no evidence of adverse effects on pregnancy outcome in women subject to MRI scanning during pregnancy.
 - a. True
 - b. False

18. ACR recommends that MRI contrast agents should not be routinely administered to pregnant patients.
 - a. True
 - b. False

19. International Non-ionizing Radiation Committee of IRPA does not recommend elective MRI scanning for patients in which stage of pregnancy?
 - a. First trimester
 - b. Second trimester
 - c. Third trimester

20. Ice packs should be used to cover tattooed areas or drug-delivery patches during MRI scanning to avoid thermal injury.
 - a. True
 - b. False