

SPINE SAFETY CAUTIONARY NOTICE:

Information for Healthcare Professionals: Preventing Accidents and Injuries in the MRI Suite

According to the February 14, 2008 issue of The Joint Commission's Sentinel Event Alerts, hospitals and ambulatory care centers are being urged to pay special attention to preventing accidents and injuries that can occur during MRI scans.

Today, more than 10 million MRI, or MR, scans are done in the United States each year. While the capabilities of the MRI scanner are well-recognized, its inherent dangers may not be as well known. The most common types of injuries are burns, while some of the more devastating accidents are caused by common objects that become missiles when brought into the MRI scanner's magnetic field. The Sentinel Event Alert brings the reality of risks associated with MRIs to the attention of the nation's accredited health care organizations, and offers practical solutions to avoiding injuries or deaths.

Joint Commission Recommendations

The Joint Commission offers the following recommendations and strategies to health care organizations for reducing MRI accidents and injuries:

1. Restrict access to all MRI sites by implementing the four zone concept as defined in the ACR Guidance Document for Safe MR Practices: 2007. The four zone concept provides for progressive restrictions in access to the MRI scanner:
 - Zone I: General public
 - Zone II: Unscreened MRI patients
 - Zone III: Screened MRI patients and personnel
 - Zone IV: Screened MRI patients under constant direct supervision of trained MR personnel
2. Use trained personnel to screen all non-emergent patients twice, providing two separate opportunities for them to answer questions about any metal objects they may have on them, any implanted devices, drug delivery patches, tattoos, and any electrically, magnetically, or mechanically activated devices they may have. If the patient is unconscious or unable to answer questions, question the patient's family member or surrogate decision maker. If this person is unsure, use other means to determine if the patient has implants or other devices that could be negatively affected by the MRI scan (e.g., look for scars or deformities, scrutinize the patient's history, use plain-film radiography, use ferromagnetic detectors to assist in the screening process, etc.).
3. Ensure that the MRI technologist has the patient's complete and accurate medical history to ensure that the patient can be safely scanned. All

- implants should be checked against product labeling or manufacturer literature specific to that implant, or peer-reviewed published data regarding the device or implant in question. Technologists should be provided with ready access to this information.
4. Have a specially trained staff person who is knowledgeable about the MRI environment accompany any patients, visitors and other staff who are not familiar with the MRI environment inside the MRI suite at all times.
 5. Annually, provide all medical and ancillary staff who may be expected to accompany patients to the MRI suite with safety education about the MRI environment and provide all staff and patients and their families with appropriate materials (e.g., guidelines, brochure, poster) that explain the potential for accidents and adverse events in the MRI environment.
 6. Take precautions to prevent patient burns during scanning, including:
 - o Ensure that no items (such as leads) are formed into a loop, since magnetic induction can occur and cause burns.
 - o If the patient's body touches the bore of the MRI scanner, use non-conductive foam padding to insulate the patient's skin and tissues.
 - o Place a cold compress or ice pack on EKG leads, surgical staples, and tattoos that will be exposed to radiofrequency irradiation during the MR imaging process.
 7. Only use equipment (e.g., fire extinguishers, oxygen tanks, physiologic monitors, and aneurysm clips) that has been tested and approved for use during MRI scans.
 8. Proactively plan for managing critically ill patients who require physiologic monitoring and continuous infusion of life sustaining drugs while in the MRI suite.
 9. Provide all MRI patients with hearing protection (i.e., ear plugs).
 10. Never attempt to run a cardio-pulmonary arrest code or resuscitation within the MR magnet room itself.

Additional information regarding the Joint Commission's recommendations can be found at:

http://www.jointcommission.org/SentinelEvents/SentinelEventAlert/sea_38.htm

The North American Spine Society is committed to quality patient care through promotion of patient safety and prevention of medical errors. NASS monitors a variety of government and other resources for patient safety related notices that may be useful to our members. Information from these notices is also archived on the NASS Web site at

<http://www.spine.org/Pages/PracticePolicy/ClinicalCare/SpineSafetyAlerts/Default.aspx>. This information is provided as a service for information and education only.