

Patient Safety Tip of the Week

June 11, 2024

Nursing in the MRI Suite

We’ve done many columns before on MRI safety (see list below). Because seriously ill or critically ill patients may need MRI scan, it’s imperative that those taking care of such patients are fully aware of the dangers lurking in the MRI suite. Our November 21, 2023 Patient Safety Tip of the Week “[Another Terrifying MRI Accident](#)” and several other columns noted projectile accidents when nursing staff inadvertently placed ferromagnetic items in Zone IV.

So, it’s very timely that a guidance with some checklists was published to help perioperative staff that must take a patient to the MRI suite ([Pogozelski 2024](#)). Moreover, Pogozelski and Stengel note that intraoperative MRI has become more common, so additional considerations apply to OR’s configured for MRI.

The authors discuss the importance of multidisciplinary team planning, including the MR director, MR safety officer, MR safety expert, and perioperative RN leaders. Very astutely, they recommend the planning team also have several non-clinical representatives:

- security personnel (for access to the MR scanner)
- emergency management personnel (for determining access to and the size of a resuscitation area)
- sterile processing personnel (for instrument concerns)
- environmental services personnel (for cleaning concerns).

The MR safety plan should include establishing a safe staffing plan; identifying, labeling, and managing safe, conditionally safe, and unsafe equipment; and marking magnetic fringe fields in the OR with the MR scanner.

It notes that personnel should design checklists to ensure that items such as IV poles, carts, oxygen tanks, cell phones, identification badges, and body piercing jewelry are removed before moving the patient into zone IV. Staff must make sure that MR-

compatible equipment is available, such as an MR-compatible IV poles and anesthesia monitors.

The patient care team, together with the MRI staff, must verify that the patient does not have non-MRI-compatible ferromagnetic items like instruments and needles, and also pay attention to things like electrodes that, particularly when coiled, can overheat and cause thermal injuries to the patient. Of course, the care personnel also need to be screened for ferromagnetic items. In addition, there should be a plan in place for what to do if that patient encounters an emergency during the scan.

It's also critically important that staff anticipate that some personnel caring for the surgical patient may not have had formal training or orientation on MRI safety. For example, you might have a surgical resident rotating from another hospital that does not have an MRI.

An excellent suggestion is to assign a nurse to focus on MR safety concerns during complex MR procedures. That “safety nurse” should not have either RN circulator or scrub person responsibilities and is responsible for overseeing and ensuring that personnel are adhering to all safety guidelines and protocols.

Since it can be anticipated some of the patients will be under anesthesia or sedation, careful attention must be given to positioning to avoid pressure sores while facilitating scanning. Another consideration, often overlooked in the unconscious patient, is the need for hearing protection.

The article provides examples of 3 valuable checklists:

- Magnetic Resonance Procedure Checklist: Patient Arrival and Preinduction
- Magnetic Resonance Procedure Checklist: Predrapping
- Magnetic Resonance Procedure Checklist: Patient Transfer

It has several other practical recommendations. Scheduling should take into account that procedures with perioperative MR typically take longer. Having staff consistency also is a patient safety recommendation.

If your facility performs procedures that require intraoperative or perioperative MRI scanning, this article is a must-read.

Some of our prior columns on patient safety issues related to MRI:

- February 19, 2008 “[MRI Safety](#)”
- March 17, 2009 “[More on MRI Safety](#)”
- October 2008 “[Preventing Infection in MRI](#)”
- March 2009 “[Risk of Burns during MRI Scans from Transdermal Drug Patches](#)”
- January 25, 2011 “[Procedural Sedation in Children](#)”
- February 1, 2011 “[MRI Safety Audit](#)”

- October 25, 2011 “[Renewed Focus on MRI Safety](#)”
- August 2012 “[Newest MRI Hazard: Ingested Magnets](#)”
- October 22, 2013 “[How Safe Is Your Radiology Suite?](#)”
- October 21, 2014 “[The Fire Department and Your Hospital](#)”
- August 25, 2015 “[Checklist for Intrahospital Transport](#)”
- August 2016 “[Guideline Update for Pediatric Sedation](#)”
- October 2016 “[MRI Safety: There’s an App for That!](#)”
- January 17, 2017 “[Pediatric MRI Safety](#)”
- August 8, 2017 “[Sedation for Pediatric MRI Rising](#)”
- March 2018 “[MRI Death a Reminder of Dangers](#)”
- March 2018 “[Cardiac Devices Safe During MRI But Spinners!?](#)”
- November 2018 “[OMG! Not My iPhone!](#)”
- April 2, 2019 “[Unexpected Events During MRI](#)”
- September 2019 “[New MRI Hazard: Magnetic Eyelashes](#)”
- October 15, 2019 “[Lots More on MRI Safety](#)”
- November 5, 2019 “[A Near-Fatal MRI Incident](#)”
- November 2019 “[ECRI Institute’s Top 10 Health Technology Hazards for 2020](#)”
- January 7, 2020 “[Even More Concerns About MRI Safety](#)”
- March 2020 “[Airway Emergencies in the MRI Suite](#)”
- October 2020 “[New Warnings on Implants and MRI](#)”
- January 2021 “[New MRI Risk: Face Masks](#)”
- June 1, 2021 “[Stronger Magnets, More MRI Safety Concerns](#)”
- November 2021 “[Yet Another Risk During MRI](#)”
- January 2022 “[MRI Safety Issues](#)”
- July 26, 2022 “[More Risks in the Radiology Suite](#)”
- October 24, 2012 “[Serious MRI Accident at Unregulated MRI Center](#)”
- November 21, 2023 “[Another Terrifying MRI Accident](#)”
- January 2024 “[Guns and MRI Don’t Mix](#)”
- February 20, 2024 “[What is a “Safety Case”?](#)”

References:

Pogozelski A. Stengel J. Caring for Patients in a Perioperative Magnetic Resonance Area. AORN J 2024; 119: 446-451
<https://aornjournal.onlinelibrary.wiley.com/doi/10.1002/aorn.14151>



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