

FerroGuard® a new level of safety for MRI rooms

MRI Risk Assessment - Reported Incidents On the Rise

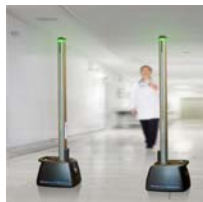
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Ferroguard - Ferromagnetic Screening Solutions



Incorporation of Ferromagnetic Screening Technology is becoming the industry standard of care for Magnetic Resonance Imaging

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Dear Joseph,

Despite over 30 years of familiarity with magnetic resonance imaging technology, the frequency of reported accidents continues to rise at an alarming rate. Increased usage, shorter scan times, complex procedures and the presence of mixed hospital staff have all played a role in these increases. It is hardly surprising that existing methods of screening and protection have proven inadequate due to their passive nature and heavy reliance on the human element. In addition, many of the unique safety tools available to radiology departments have not received proper classification as health, safety and welfare tools, meaning the already reduced radiology budgets must bear the burden of these costs and in most cases, safety is compromised.

In this newsletter, we provide an analysis of the rate of increase for MRI reported incidents as well as some recent real-life incidents that have gained quite a bit of visibility. Changes must be made to address this dangerous trend, including the incorporation of diligent screening practices, the adoption of ferromagnetic screening tools and an overall acknowledgement of the issue. While the American College of Radiology, the Joint Commission and the Food and Drug Administration have recently begun to highlight the importance of the issue, it is safe to say that further guidance/direction, if not regulation, is most likely on the horizon.

Reported MRI Incidents on the Rise

Since 2004 (the last year in which the FDA recorded a decline in the number of MRI accidents), the rate of reported accidents has grown almost 300 percent to 2008. This means that a person receiving an MRI today has nearly a four-times-greater risk of an adverse event than they would



have in 2004. Why?

The Search for a Culprit

In this four-year time period, MRI utilization has grown at only about 3 percent per year, so only about 13 percent "natural" growth in accident rates might be expected as a direct result of increases in the number of MRI exams. Increased reporting, another potential explanation for the dramatic growth, is not thought to be a factor as there has not been a single governmental or professional body working to increase awareness of reporting criteria. The most logical explanation for the increase in reported accidents is that we are actually harming more MRI patients. The FDA data is too incomplete to implicate any single risk factor. Additionally, it is believed that a single cause wouldn't be likely even if the Medwatch data were more comprehensive. Multiple changes in MR technology, clinical application, and operations have each produced sources of greater hazard. These subtle risk-factor changes may be working together, compounding, to increase the total risks to patients and caregivers. These likely include:

- Increasing use of MR image-guided biopsy
- Burgeoning use of MR for emergent/trauma care
- Demographic shifts in patient co-morbidities
- Staff cuts in response to reduced reimbursement
- Growth in clinical applications for higher-acuity patients
- More powerful magnetic fields and time-varying gradients
- Greater attractive effects from improved activeshielding

Any one risk factor, alone, may verge on statistical insignificance, but rarely do these risk factors act alone, particularly in the in-patient setting.

Compounded risk factors multiply the risk for any single patient. And with an estimated 28 million MRI exams performed in the U.S. alone last year, even modest increases in risk produce significant numbers of adverse outcomes. While not the only source of MRI injury, take projectile accidents as an example. These events, resulting from the introduction of ferromagnetic materials into the MRI scanner room, are likely the most frequent accident in the MRI environment. If each MRI's annual chance of a projectile accident grew by only 0.1 percent, we would expect to see approximately 28,000 additional projectile accidents per year! (A 2005 ECRI Institute poll of its members found that MRI projectile incidents were greater than all other types of MRI accidents, combined.)

[Continue reading this article at RT-Image.com](#)

Officer Hurt When MRI Pulls Gun

Police Say Off-Duty Officer Was At Beaches Open MRI With Her Mom

POSTED: Thursday, October 1, 2009

JACKSONVILLE, Fla. -- An off-duty Jacksonville Sheriff's

Office deputy was hurt Wednesday when her hand was trapped between her police-issued Glock handgun and the powerful magnet inside an MRI machine. Police said Joy Smith was in the MRI room with her mother



when she apparently forgot about her gun, which was pulled by the magnetic force of the machine, trapping her hand between the gun and the MRI. Smith was able to free herself, but the gun remained stuck for hours while the machine was powered down, which takes 24 hours. Jacksonville Beach police said Smith's hand was injured and she had difficulty bending her thumb, but it was not known if she sought medical treatment. "It's a huge magnet. The whole thing just has a plastic case around it," said Beth Ratliff, who operates the MRI machines at Shands.

Beaches MRI had to close for the rest of the day and a MRI technician had to be flown in to fix the machine. Channel 4's Adam Landau was told that between repairs and lost revenue, the incident cost the center \$150,000.

[Read the article or view the video at news4jax.com](http://news4jax.com)

FDA Notification

Recent Incident Published by the FDA

Device:
Type: Mri, 1. 5t
Manufacturer: Philips Medical Systems
Brand: Philips Achieva

Problem:

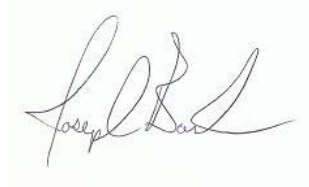
IV nurse entered MRI suite and brought her metal IV cart halfway in doorway of MRI suite. The force of the MRI magnet caused the IV cart to lift up and it flew through the air, on to the MRI machine. Patient was lying outside of the MRI, on the MRI table at the time. The cart did not hit him. Another Nurse was on right side of patient and was looking for venous access in his right arm at the time of the incident. She was not injured. No injury for any individual - lots of potential for injury!



The IV nurse had been called to access the patient located in MRI. She did not realize the power of the MRI magnet especially when the patient was not in the MRI. She intended to leave the cart at the door, but should not have entered the room.

This is being reported not because of a device malfunction but as an alert of an incident regarding an MRI and need for better vigilance and perhaps education regarding the fact that MRI magnets are ALWAYS on and the need for better safety.

For more information on Metrasens, our Ferromagnetic Detection Technology or how we can assist you in raising the safety level of your facility, please visit our website at <http://www.metrasens.com>
Sincerely,



Joseph Barwick
Vice-President - North America
Metrasens

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