

What's New in the Patient Safety World

July 2014

New MRI Risks: for Staff!

We've done lots of columns on adverse effects on patients in the Radiology suite and MRI suite (see the list at the end of today's column). But we've never before done one on adverse effects on MRI staff! And it turns out that there are symptoms that staff may develop after exposure to MRI.

A pilot study done on Swedish nurses exposed to MRI ([Wilén 2011](#)) showed that 15% of nurses responding to a survey reported regularly experiencing at least one health complaint attributed to arise or be aggravated by their presence in the MRI scanning room.

Now researchers in The Netherlands ([Schaap 2014](#)) reviewed diaries from 361 employees of 14 clinical and research MRI facilities and attempted to correlate reported symptoms with exposure and scanner strength. Symptoms were reported in 16-39% of MRI shifts worked. They found a positive association between scanner strength and reported symptoms among healthcare and research staff working with closed-bore MRI scanners of 1.5 Tesla(T) and higher. This finding was mainly driven by reporting of vertigo and a metallic taste. Other symptoms included nausea, tinnitus, seeing light spots or light flashes, tingling sensations, and a host of more general symptoms. They conclude that there is an exposure-response association between exposure to strong static magnetic fields and reporting of transient symptoms on the same day of exposure. But the authors do postulate that there may be a possible underlying trait of personal sensitivity that may influence whether a person develops symptoms on exposure to a static magnetic field.

While the study does not report on any permanent sequelae to exposure to MRI fields and the transient symptoms do not appear to be particularly debilitating, we suspect it may lead to further research on the effects of working in MRI suites. It is a reminder that we need to consider staff as well as patients in our patient safety efforts.

Some of our prior columns on patient safety issues in the radiology suite:

- October 16, 2007 "[Radiology as a Site at High-Risk for Medication Errors](#)"
- September 16, 2008 "[More on Radiology as a High Risk Area](#)"
- October 7, 2008 "[Lessons from Falls....from Rehab Medicine](#)"
- January 2010 "[Falls in the Radiology Suite](#)"

- August 2010 “[Sedation Costs for Pediatric MRI](#)”
- January 25, 2011 “[Procedural Sedation in Children](#)”
- 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](#)”
- February 1, 2011 “[MRI Safety Audit](#)”
- October 25, 2011 “[Renewed Focus on MRI Safety](#)”
- March 13, 2012 “[Medical Emergency Team Calls to Radiology](#)”
- August 2012 “[Newest MRI Hazard: Ingested Magnets](#)”
- October 22, 2013 “[How Safe Is Your Radiology Suite?](#)”
- February 25, 2014 “[Joint Commission Revised Diagnostic Imaging Requirements](#)”

Some of our prior columns on the “Ticket to Ride” concept:

- April 8, 2008 “[Oxygen as a Medication](#)”
- November 18, 2008 “[Ticket to Ride: Checklist, Form, or Decision Scorecard?](#)”

Some of our previous columns on the issue of radiation risk:

- February 2, 2010 “[The Hazards of Radiation](#)”
- November 23, 2010 “[Focus on Cumulative Radiation Exposure](#)”
- March 2010 “[More on Radiation Safety](#)”
- June 2011 “[Progress in Reducing Radiation from CT Scans](#)”
- April 2013 “[Radiation Risk of CT Scans: Debate Continues](#)”
- June 4, 2013 “[Reducing Unnecessary CT Scans](#)”
- July 2013 “[More on the CT/Cancer Debate](#)”

References:

Wilén J, De Vocht F. Health complaints among nurses working near MRI Scanners - a descriptive pilot study. Eur J Radiol 2011; 80: 510-513
<http://www.ejradiology.com/article/S0720-048X%2810%2900478-X/abstract>

Schaap K, Christopher-de Vries Y, Mason CK, et al. Occupational exposure of healthcare and research staff to static magnetic stray fields from 1.5–7 Tesla MRI scanners is associated with reporting of transient symptoms. Occup Environ Med 2014; published online April 8, 2014 doi:10.1136/oemed-2013-101890
<http://oem.bmj.com/content/early/2014/04/08/oemed-2013-101890.full.pdf+html>

<http://www.patientsafetysolutions.com/>

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