

MRI Safety in Siting And Facility Design

By Tobias Gilk, M.Arch., MRSO (MRSC™),
MRSE (MRSC™)

In-Kind Support from GRC, Metrasens, and RAD-Planning

Tobias Gilk, M.Arch, MRSO (MRSC™),
MRSE (MRSC™)

- Architect by training, principal with RAD-Planning
- Founding Board member ABMRS, Past-Chair
- Former member ACR MR Safety Committee. Current Consultant to.
- Founder GRC



Disclosures

- Employer: RAD-Planning
- Ongoing Consultant to Metrasens

Rules of the Road

- If you have a question, ask.
- If you disagree, say so.
- If you want to share any of this, do.



© Copyright 2018, GRC Holdings Company, all rights reserved

ACR MR Accreditation Renewals...

- How Many of You Oversee Annual Renewals for ACR MR Accreditation?
- How Many have Seen Sites That Couldn't Pass for Image Quality Reasons?
- How Many have Seen Sites That Couldn't Pass for MRI Safety Reasons?



© Copyright 2018, GRC Holdings Company, all rights reserved

MRI... The Safe Modality



© Copyright 2018, GRC Holdings Company, all rights reserved

MRI... The Safe Modality



MRI Site Planning (Why Site Planning Is Important)

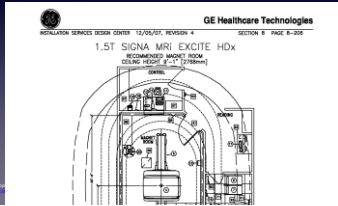


MRI Site Planning (What Information Exists?)

MRI Site Planning

(What Information Exists?)

- OEM



MRI Site Planning

(What Information Exists?)

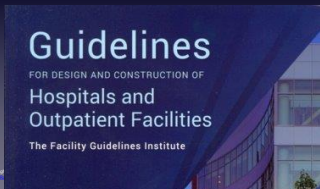
- State Licensure



MRI Site Planning

(What Information Exists?)

- Design Codes / Standards



MRI Site Planning (What Information Exists?)

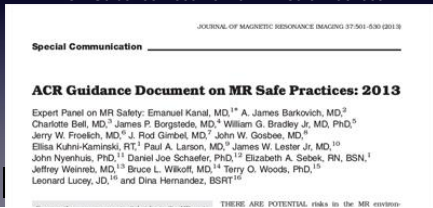
- Accreditation Requirements



© Copyright 2018, GRC Publishing Company, all rights reserved

MRI Site Planning (What Information Exists?)

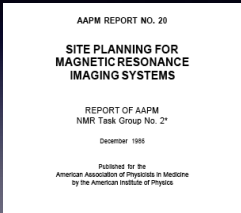
- ACR Guidance Document on MR Safe Practices



THESE ARE POTENTIAL risks in the MR revision

MRI Site Planning (What Information Exists?)

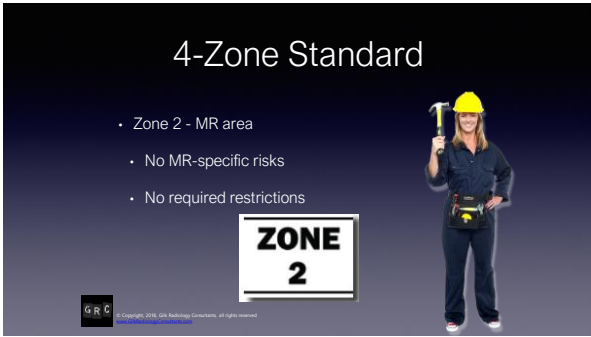
- AAPM



© Copyright 2018, GRC Publishing Company, all rights reserved







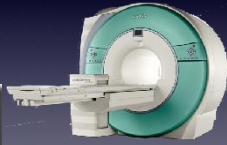
4-Zone Standard

- Zone 3 - Controlled Access MR area
- Potential MR Risks (or access to risks)
- Access Restricted
- Individuals Screened



4-Zone Standard

- Zone 4 - MRI Scanner Room
- Persistent Static Field Risks



How To Prevent MRI Accidents

REDUCING MRI ACCIDENTS
9 BEST PRACTICES THAT COULD HAVE PREVENTED 74% OF REPORTED INJURIES*

Metrasens analyzed all of the MRI injury accidents reported to the FDA in the MedWatch program in 2015 and 2016 and found safety governance needs for most effective in order to protect patients and staff.

1,314 accidents (1,218 injuries) were reported in 2015 and 2016. 95% of these were categorized as being preventable. Many safety incidents were caused by equipment, the patient, staff, and/or the environment. The most common safety incidents were:

- **HOW MANY INCIDENTS WERE REPORTED TO THE FDA?**
The graph on the left shows the number of safety incidents reported to the FDA from 2010 to 2016. The number of safety incidents reported to the FDA has increased significantly since 2010.
- **95% OF REPORTED INJURIES WE ANALYZED WERE RELATED TO VIOLATION OF SAFETY PROCEDURES OR BEARING DAMAGE**
The pie chart on the right shows the distribution of safety incidents. 95% of the incidents were related to violations of safety procedures or bearing damage.

74% OF REPORTED INJURIES COULD HAVE BEEN PREVENTED BY IMPLEMENTING 9 BEST PRACTICES*

<https://www.metrasens.com/mri-safety/mri-safety-infographic>

How To Prevent MRI Accidents

80% OF THESE INCIDENTS COULD HAVE BEEN PREVENTED BY FOLLOWING THE 9 BEST PRACTICES DETAILED BELOW

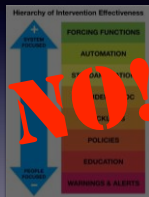


<https://www.metrans.com/mri-safety/mri-safety-infographic/>



© Copyright 2018, GRC Holdings Company, all rights reserved

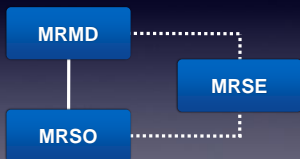
Is The Problem That We're Not Reminding People Often Enough?



© Copyright 2018, GRC Holdings Company, all rights reserved

The Problem Is Absence Of MRI Safety Structures / Processes.

Org Chart



© Copyright 2018, GRC Holdings Company, all rights reserved

Making MRI Safer Is Within Your Grasp.

- Identify Specific Causes of Injury
- Physicists Engage in Practices to Reduce Risk & Harm
- Renew AAPM Report 20 to Address Contemporary Situation

MRI Safety in Siting And Facility Design

TGilk@MRIpatientsafety.com



twitter: @tobiasgilk



<https://www.facebook.com/groups/MRIsafety/>



+1 913 515 8449

In-Kind Support from GRC, Metrasens, and RAD-Planning

Thank You!
