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.

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?

MRI… The Safe Modality
MRI Site Planning
(What Information Exists?)

- OEM

MRI Site Planning
(What Information Exists?)

- State Licensure

MRI Site Planning
(What Information Exists?)

- Design Codes / Standards

Guidelines
FOR DESIGN AND CONSTRUCTION OF
Hospitals and
Outpatient Facilities
The Facility Guidelines Institute
MRI Site Planning

(What Information Exists?)

- Accreditation Requirements

- ACR Guidance Document on MR Safe Practices

- AAPM
4-Zone Standard

- Zone 1 - Everywhere that isn't MR

- Zone 2 - MR area
  - No MR-specific risks
  - No required restrictions

- Zone III

- Zone IV
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

95% of MRI incidents can be prevented through proper education and management.

[Infographic details about preventive measures and statistics]
How To Prevent MRI Accidents

**BURNS**

Three steps that could have prevented 94% of MRI burn injuries:

1. Prevent hot air pocketing around body and the active coil element.
3. Prevent burn-on burn coupling, e.g., metal transfer, tumor-high DC.

How To Prevent MRI Accidents

**HEARING**

One ACR guidance document step that could have prevented 11% of MRI hearing damage injuries:

1. Wear or provide ear protection for everyone in the imaging room during imaging.

How To Prevent MRI Accidents

**PROJECTILES**

Three steps that could have prevented 69% of MRI projectile injuries:

1. Import all A-to-Z model, lining access to machine orientation.
2. Visualize metallic objects, direction, alignment of metallic objects, metallic objects, label objects within the MRI data for MRI conditions, safety.
How To Prevent MRI Accidents

80% of these incidents could have been prevented by following the 8 best practices outlined below.


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

The Problem Is Absence Of MRI Safety Structures / Processes.

Org Chart

MRMD

MRSE

MRSO
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

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TGilk@MRIpatientsafety.com

Twitter: @tobiasgilk
Facebook: https://www.facebook.com/groups/MRIpatientsafety/
WhatsApp: +1 913 515 8449

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Thank You!