



10 March 2021

RANZCR MRI Safety Guidelines Consultation

The Australian Society of Medical Imaging and Radiation Therapy (ASMIRT) is the peak body representing medical radiation practitioners in Australia. Our aims are to promote, encourage, cultivate and maintain the highest principles of practice and proficiency of medical radiation science, always mindful that the welfare of the patient should be at the centre of everything we do. ASMIRT would like to extend its support to The Royal Australian and New Zealand College of Radiologists (RANZCR) document on MRI Safety Guidelines.

This paper details MRI Safety Guidelines thoroughly.

ASMIRT would like to provide the following comments:

1.1 Purpose and Scope – p.5, lines 83-84. "*other individuals involved in the Magnetic Resonance imaging team (radiographers, technologists and scientists)*". ASMIRT suggests the addition of Radiation Therapist given the introduction of MR Linacs and MR simulators into Australia.

ASMIRT also would like clarity on whom the word scientists refer? Are physicists defined under the 'scientist' label?

2 Definitions and Abbreviations – page 5, line 95.

ASMIRT suggests adding in the words radiation therapist and nuclear medicine scientist as these are AHPRA registered practitioners that operate hybrid MRI equipment (radiographers, **radiation therapist, nuclear medicine scientist**, technologists and scientists)".

ASMIRT suggests including a definition of the word "technologists and scientists" and who they include. ie MRI Technologists can be used to describe individuals that are not radiographers nor AHPRA registered but hold qualifications in MRI only.

Typo: p.6, line 163 = the word "attended", in "Records of training provided and attended must be maintained." Should this read attendees, or those in attendance?

Section 4.1 Static Field – p. 8, lines 216 - 218 "*The main or static magnetic field (referred to as B0) produced by the system is of sufficient magnitude to establish a detectable net magnetisation within the patient. Current clinical systems range from 0.2 Tesla (T) to 3 T (up to 7 T in research) in field strength.*"

It is ASMIRT's understanding 7T MRI is now approved clinically, and as such would like to see that the clinical systems range reflects the range from 0.2 Tesla (T) to 7 T in field strength.

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Section 5.1 Interventional and Intraoperative MRI – p. 10/11, lines 313 – 327

This document only discusses interventional MRI, however ASMIRT suggests the addition of Intraoperative MRI into the document as an MRI equipment special case and discussed.

p.13, line 389 – “Strong recommendation for two MRI personnel at all times during scanning”

ASMIRT seeks clarity on the definition of “MRI personnel”. Does this include the PSA or nurse or MRI Assistant? The training status definitions of junior and senior MRI personnel p.15, lines 492-496, do not describe the level of MRI training required.

ASMIRT strongly recommends that the two MRI personnel are two MRI trained radiographers.

Section 6.6 - Patient Management – p.15, 485 – 486, “Any area designated as an anaesthesia/sedation preparation area must lie outside Zone IV.”

ASMIRT seeks clarification on whether this need to be included. Some sites anaesthetise patients within Zone IV. There are MR-Conditional laryngoscopes to help facilitate this process.

7.2.1 Target Populations lines 514 - 515. “MRI unit staff—clinical radiologists, anaesthetists, technologists/radiographers, nurses, orderlies and site secretarial staff.”

ASMIRT suggests the addition of Radiation Therapists and Nuclear Medicine Scientists into this sentence.

p.18, line 582 – “Anyone who intends entering Zone IV must be fully screened by MRI personnel. If orbit radiography is necessary for a person other than a patient, informed consent for this may be required/appropriate.”

As this is a non-medical exposure, ASMIRT would like to see that the informed consent is “written” informed consent.

9.2 Documentation of Implant/Foreign Body MRI Compatibility Status – p.20, line 667

ASMIRT suggests rewording the word “Compatible”, as this term is outdated and not contemporary in terms of MR safety.

P 21, Line 690 – 691, “Objects without written documentation of their MRI safety status should be presume unsafe, especially if there is an obvious metallic component”

ASMIRT suggests the following; if there is no written documentation of the MRI safety status of an implant or object, a risk vs. benefit decision should be made by the supervising radiologist or MR Medical Director.

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15.2.1. Pregnant Patients – p.29. line 1017 *“It may be appropriate to formally obtain informed consent from the patient in these circumstances”* –

ASMIRT strongly recommends that “written” informed consent is appropriate (not may be) in this circumstance with expansion on this section for clarification, as it is unclear what risks the patient is being consented for.

Section 15.3 Lactating mothers, p.30, line 1055 – *“Temporary cessation of breast feeding may be adopted as an additional precaution of uncertain (probably minimal) value for 12-24 hours. The issues should be discussed with the patient, to allow her to make an informed choice; it may be appropriate to record this in a formal informed consent document.”*

ASMIRT believes that a consistent approach throughout the document to “recording in a formal informed consent document” would be beneficial to both patient and practitioner.

Again on p.33, line 1129 *“specific informed consent (including risk of death)”* and

135-36 – *If clip cannot be adequately characterised, proceed only on risk-benefit basis, after discussion between patient, neurosurgeon, and MRI unit director, **with informed consent** specifically including risk of death. The MRI radiologist must authorise examination of the patient in writing.*

ASMIRT recommends that all informed consent as described in this document be **written** informed consent.

There does not appear to be any consideration for MRI safety with regards to MR Simulators and MR Linacs which are now being utilised across Australia. Although ASMIRT recognises that MRI safety and training are critical to patient management and safety in medical imaging, hybrid machines such as MR Linacs and MRI/PET machines come with a different level of complexity, uniqueness and degree of hazards encountered. Consideration for expansion of this document to include the radiation oncology and nuclear medicine environments utilising this hybrid imaging and treatment purposes would be useful.

This could include information such as MRI Equipment Used for Radiotherapy Treatment. This would include immobilisation equipment, apparatus used for quality assurance, sitting and zoning requirements and the requirement for MR-safe trolleys to allow rapid removal of a patient in case of medical emergencies.

ASMIRT notes that in the last iteration of the MRI Safety Guidelines document the cover of the still includes a high-resolution CT image rather than an MRI image.

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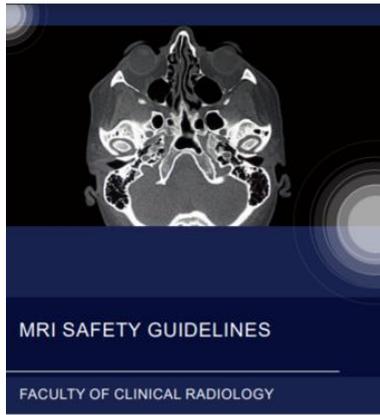
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