

The role of the MP in MRI safety

MR Safety Working Group - document on Safety Responsibilities

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Summary

Magnetic Resonance Imaging (MRI) is the method of choice for imaging; it offers not only high resolution images of tissues but also metabolic and functional information non-invasively and without the risks associated with imaging techniques using ionizing radiations.

Several professional groups contribute to the success and development of MRI, including radiologists, radiographers, physicists and engineers.

There is a wide variation in procedures within Europe, ranging from compliance with national legislation that is more restrictive than international guidelines to reports of no regulation.

The responsibilities and competences of MPE in MRI are understanding the physics of MRI, understanding the effects on the human body, measuring those effects, identifying and quantifying issues of quality, ensuring patient safety (energy absorption), balancing risk and benefit (optimization), advising the clinical users, training and education, research

It is essential to ensure the safety of staff, patients, volunteers, and visitors within the MR environment.

EFOMP published a POLICY STATEMENT n.14; it can help eliminate or at least minimize accidents or incidents in the magnetic resonance environment and is recommended as a step towards harmonisation of safety of workers, patients, and the general public regarding the use of magnetic resonance imaging systems in diagnostic and interventional procedures.

EFOMP suggests that a 2-level approach to the management of MRI Safety which distinguishes between the roles of the person responsible for MR safety on a day-to-day basis and those of an expert level professional with a higher degree of scientific and technical expertise in MRI is adopted.

The first of these, the MR Safety Officer (MRSO), must

- _ be competent to assess and manage dangers caused by the MR equipment
- _ be responsible for monitoring the measures taken to protect against such dangers
- _ ensure that appropriate measures for minimizing risks to health that arise from the use of the MR equipment are implemented and monitored

The second role of the MR Safety Expert (MRSE) requires the skill, knowledge and competence to provide high level advice on the engineering, scientific and administrative aspects of the safe clinical use of MR devices. In particular the MRSE should be responsible for:

- _ the development and continuing evaluation of a safety framework for the MR environment
- _ the development of local rules and procedures to ensure the safe use of MR equipment
- _ advice regarding non-routine MR procedures for individual patients and specific patient groups (including competence regarding safety related to implanted devices and tattoos).

As reported into the MRI EFOMP POLICY STATEMENT n.14:

- _ a 2-level approach to management of safety within MR units through the MR Safety Officer (MRSO) and the MR Safety Expert (MRSE).
- _ that the MRSO should undergo formal recorded training to achieve the appropriate skill, knowledge and competence to be responsible for day-to-day safety within the MR unit.
- _ that the MRSE should have knowledge, skills and competence and qualifications outlined above
- _ that accreditation of MRSEs should be provided by a competent authority and reviewed periodically at 5 year intervals.
- _ that the professional appointed as the Magnetic Resonance Safety Expert (MRSE) should preferably be a Medical Physicist as defined in the International Standard Classification of Occupations (ISCO-08) under group 2111.

The MRSE roles include, but are not limited to, the following: provide high-level advice on the engineering, scientific, and administrative aspects of the safe use of MR equipment; provide advice on the development and continuing evaluation of a safety framework for the MR environment; provide advice for the development of local rules and procedures to ensure the safe use of MR equipment; provide safety (including diagnostic effectiveness linked to safety) advice on the modification of MR protocols; provide safety (including diagnostic effectiveness linked to safety) advice regarding nonroutine MR procedures for individual subjects and specific subjects groups. This includes advice regarding safety related to implanted devices, metallic foreign bodies, tattoos, and other similar issues; provide advice on the choice of MR Safety programs and MR Quality Assurance programs, and evaluations and audits thereof.