



MRI SAFETY COURSE: RE-SHAPE YOUR SKILLS

Bolzano, Italy

January, 15-18th 2025

Course rationale

Magnetic resonance (MR) is a powerful and reliable diagnostic imaging tool for clinical use and human research. The imaging technique implies the use of 3 different magnetic fields: the static magnetic field, the time-variable magnetic fields and energy transfer in the radiofrequency domain. Each type poses specific hazards which can potentially be life-threatening for both patients and staff. In general, the safety level of the MR facility is considered to be very high, as the policies and procedures that each facility provides based on international standards are designed to mitigate the potential hazards. However, the risk of injury depends not only on the hardware, but also on many human factors, clinical scenarios and unexpected real-life accidents. Reducing the risk requires not only personal theoretical knowledge, but also experience-acquired personal skills, attitude and promptness to work as a team in the MR suite.

A recent European survey conducted by The ESR MR Quality and Safety Working Group across 44 different European countries has shown that regulations and scanning practices, as well as the need for specific MR safety training, are very heterogeneous.

The same work suggested that MR-related accidents in which patients or staff are injured are not as rare as assumed. Therefore, this course aims to help bridge the gap to an MR safety training curriculum to standardize and improve MR safety as proposed by the ESR. Special focus will be placed on the role of the MR-team.

Target Audience

Radiologists, physicists, radiographers, nurses, fellows and residents working in Magnetic Resonance sites and interested in a first-time training or a re-training to improve safety in the MR environment, inside and outside the scanner room.

The participation of 2 or 3 people from the same institution and from different professional profiles is particularly encouraged in order to train the team aspect.

Objectives

As a result of attending the course, participants will be able to:

- Describe the current international standards on MRI Safety
- Identify most of the complex scenarios that can challenge MRI staff
- Define the standards for a MR site infrastructure planning
- Discuss the MR safety aspects of implantable devices
- Integrate knowledge about MR safety into the clinical workflow
- Recognize opportunities to improve environmental sustainability of MRI

Course Description

The course comprises 2 parts:

Part A: Live online lectures will refresh basic MR physics specifically from the safety perspective. These lectures will be recorded and will be also available on demand.

Part B: The on-site training course will dig into MR safety principles and challenge MR operators by simulating various and unexpected scenarios that may affect safety in the MR environment, inside and outside the examination room, before, during and after a scanning session. More than 27 hours of the on-site course will include 12 hours of practical hands-on sessions simulating potential hazards and correct behaviour as a single staff member and as a team.

A final exam will certify the experience gained.