

[SY28] MR Safety

SY28-01

# RF Safety

Hyungsuk Yoo<sup>1</sup>, Sukhoon Oh<sup>2</sup>

<sup>1</sup>Department of Biomedical Engineering, Hanyang University, Seoul, Korea, <sup>2</sup>Bio-Imaging Research Team, Korea Basic Science Institute, Cheongju, Korea

## Overview

This presentation provides a comprehensive introduction into RF safety at human MRI scans. It is dedicated for people who scan patients or design MRI experiments for scientific and/or clinical purpose. It reviews basic principles, relationship between SAR and temperature, scientific efforts to manage SAR, effects of implantable medical devices during MRI scans. It also describes MRI scan parameters which affect SAR level changes.

## Target Audience

MR physicists/engineers, physicians, technologists

**Educational Objectives are,-** Recall the basic physical principles of RF safety,- Describe relationship between SAR and temperature,- Understand scientific efforts to manage global and local SAR- Recognize impacts of implantable medical devices on RF safety concern, and- Be able to adjust clinical scan protocols not to exceed safety regulation.

Keywords : RF safety, SAR, Temperature, Implantable medical device, MRI

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# Magnet Safety

Myoung Soo Kang

Service, GE Healthcare Korea, Seoul, Korea

Safety Consideration at Strong Magnetic Field

Keywords : Safety, Magnet

# Contrast media safety

Young Hun Choi

Radiology, Seoul National University Hospital, Seoul, Korea

Contrast media are increasingly used in clinical imaging to provide vital information that is often unclear on unenhanced images. Contrast media, however, can cause side effects just like in other drugs. As an expert in clinical MR imaging, we need to be aware of these side effects and take as much precautions as possible. In this presentation, I would like to cover various safety issues related to the most widely used gadolinium-based contrast media (GBCA) in clinical MR imaging.

## Main Contents

1. Acute hypersensitivity reaction to GBCA and its prevention
2. Nephrogenic systemic fibrosis (NSF) and recent trends
3. Gadolinium deposition in the brain

Keywords : Gadolinium, Contrast media, Contrast agent, MRI