

***Sample* 1 Day MRI Safety and MSK Imaging Course Agenda**

8 Hour Program / 1 Day

MRI Safety

* Static Magnetic Field
* 5 Gauss Line
* Translational Forces (projectile effect)
* Rotational Forces (implants and equipment)
* Ferromagnetic Detectors and Hand Held Magnets
* Times Varying Magnetic Fields
* Acoustic Noise
* Peripheral Nerve Stimulation

Thermal Injuries

* RF Coils
* 1.5 T vs. 3T differences
* Specific Absorption Rate
* MRI Modes of Operations
* Thermal Burns
  + Proximity, Reflective, Resonant Circuitry, Focal

Implant Clearances

* MRI Screening
* Implants Labeling
* Active Implants
* B1 + rms
* Spatial Gradients
* MRI Safety Officer and MRI Medical Director
* Implants Clearances

Contrast Safety

* Gadolinium Properties
* Types of Gadolinium Contrast
* Nephrogenic Systemic Fibrosis (NSF)
* Blood Laboratory
* Gadolinium Retention
* Contrast Adverse Events
* Policies and Procedures

MR MSK Procedures

* SNR, Spatial Resolution and CNR
* Protocol Optimization
* Upper Extremity MSK Procedures
  + Shoulder, scapula, sternum, clavicle, humerus, elbow, forearm, wrist, hands, fingers
* Lower Extremity MSK Procedures
  + Pelvis, piriformis muscle, hip, sacrum, Sl joints, femur, knee, Tib/Fib, ankle, foot, toes
* Artifacts Recognition

Sports Medicine Imaging

* Patient Preparation and Coil
* Sports Medicine Upper Extremity Protocols
  + Boxers knuckle, Mallet finger, Skier thumbs, Golf wrist, Bicep muscle, Pectoralis muscle
* Sports Medicine Lower Extremity Protocols
  + Hip pointer, Hamstring, Quadricep, Sports hernia, Gastronemius, Achilles tendon, Turf toes

MSK Tumor Imaging

* Tumors – classification, stages grades
* Overview of protocol and pulse sequences
* Gadolinium and metal imaging
* MRI for tissue characterization and treatment response
* Functional imaging – “New Techniques”
  + DWI, In/Out phase and DCE
* Interventional MSK MRI
* Tips and Pitfalls in MSK Tumor Imaging

**~ Agenda Subject to Change ~**

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