

UMass Emergency Department MRI Protocols

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BRAIN: Hydrocephalus Fast

<i>Sequences:</i>	Localizer ssFSE in axial, sagittal and coronal planes (15 to 25 sec each)
<i>Indications:</i>	To rule of hydrocephalus For shunt follow up
<i>Advantages:</i>	Quick No need for sedation in uncooperative and pediatric patients No radiation
<i>Limitations:</i>	Brain parenchyma evaluation is extremely limited Actual shunt may not be well seen.

BRAIN: Diffusion Weighted MRI for stroke

<i>Sequences:</i>	Localizer 15 direction DTI with traceons & average DC maps – 2 min 16 sec
<i>Indications:</i>	To rule out stroke
<i>Advantages:</i>	Quick
<i>Limitations:</i>	Pathology other than stroke is not well evaluated

BRAIN: Hyperacute Stroke

<i>Sequences:</i>	Localizer 15 direction DTI – 2 min 16 sec SWAN – 5 to 6 min FLAIR – 3 min
<i>Indications:</i>	Prior to intervention Hyperacute stroke evaluation, also to rule out hemorrhage
<i>Advantages:</i>	Quick
<i>Limitations:</i>	Doesn't evaluate for vessel occlusion - Presumably the patient already has a CTA. Doesn't evaluate penumbra. - CT or MRI Perfusion can be done for Penumbra

SPINE: Cord Compression

<i>Sequences:</i>	2 FOVs covering the entire spine STIR Sagittal – 4 to 5 min x 2 Axial T2 – 5 min x 2
<i>Indications:</i>	To rule out cord compression
<i>Advantages:</i>	Quick
<i>Limitations:</i>	

MSK: Sacral Fracture

<i>Sequences:</i>	Localizer Oblique coronal T1 – 4 to 5 min Oblique coronal STIR – 5 min 45 sec Oblique axial fat-sat T2 - <i>Comments: Oblique to the plane of the sacrum</i>
<i>Indications:</i>	Evaluate radiographically occult sacral fracture
<i>Advantages:</i>	Fast exam. More sensitive and specific than XR or CT (especially in osteopenic patients).
<i>Limitations:</i>	Small masses and fluid collections can be difficult to characterize.

MSK: Occult hip fracture

<i>Sequences:</i>	Localizer Coronal T1 Coronal STIR Axial fat-sat T2
<i>Indications:</i>	Evaluate radiographically occult pelvic or femur fracture
<i>Advantages:</i>	Fast exam. More sensitive than XR or CT (especially in osteopenic patients). Can detect joint effusions and other gross musculoskeletal pathologies.
<i>Limitations:</i>	Intra-abdominal, pelvic pathologies are not well evaluated.

MSK: Osteomyelitis

<i>Sequences:</i>	Localizer
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	<p>Axial (short axis) T1 Coronal (long axis) T1 Axial (short axis) STIR Sagittal STIR</p> <ul style="list-style-type: none"> - Long axis and short axis for forefoot. - Straight axial, coronal, sagittal for hindfoot/calcaneus.
<i>Indications:</i>	<p>Early or radiographically occult osteomyelitis. Dedicated radiographs required to MRI.</p>
<i>Advantages:</i>	<p>Fast exam. More sensitive than XR or CT.</p>
<i>Limitations:</i>	<p>Small soft tissue lesions and fluid collections are not well characterized. Patient cooperation (i.e., pain/motion control) required.</p>