



CLINICAL INDICATIONS MR vs. CT

To schedule an appointment call: **352-671-4300**
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Clinical Problem: Brain	Preferred Study	Contrast	Comments
Headache, acute	CT	No	Bone windows replace skull series
Headache, chronic	MR	Yes	
CVA	MR/CT	No	CT if patient uncooperative
Acute Bleed	CT > MR	No	MR may show source such as AVM or aneurysm
Brain Tumor	MR	Yes	CT better for tumor calcification
Seizure	MR	Yes	
CNS infection, abscess, meningitis	MR	Yes	
AIDS	MR	Yes	
Dementia	MR > CT	No	MR superior evaluation of white matter changes
Neurodegenerative disorder	MR	No	Parkinson's disease, etc.
Subdural hematoma	CT	No	MR detects smaller nonsurgical SDH
MS	MR	Yes	
Posterior fossa, brainstem lesion	MR	Yes	MR far superior in this region
Acoustic neuroma	MR	Yes	CT not sufficiently accurate
Pituitary tumor	MR	Yes	MR far superior in this region
Aneurysm	MR & MRA	No	
Sinus venous thrombosis	MR & MRV	No	
Trauma	CT	No	

Clinical Problem: Neck, Skull Base, Orbit	Preferred Study	Contrast	Comments
Sinuses	CT	No	
Neck mass	CT >> MR	Yes	MR only in special situations
Skull base	CT	No	
Nasopharynx	CT	Yes	
Optic nerves/orbits	MR >> CT	Yes	CT - for calcification
Cavernous sinus	MR	Yes	
Cranial nerve dysfunction	MR	Yes	
Trauma	CT	No	Maxillofacial CT replaces plain films
Brachial Plexus	MR	Yes	

***Above studies read by neuroradiologists**



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Clinical Problem: Musculoskeletal	Preferred Study	Contrast	Comments
Avascular necrosis	MR	No	Bone scan if MRI contraindicated
Hip pain-negative x-rays	MR	No	Best to look for occult hip fracture if x-rays are negative
Metastasis/Myeloma	MR	Yes	
Osteomyelitis/Cellulitis	MR	Yes	
Knee: Meniscal tear/cysts; ligamentous injury; tendon injury; bone contusion; fracture; osteochondritis dissecans; chondromalacia	MR	No	
Shoulder: rotator cuff tear; tendinitis; labral abnormality; bone injury; contusion	MR	No	MR arthrogram if labral tear suspected
Soft tissue mass	MR	Yes	Specific for lipoma-Detects extent/neurovascular involvement of non-lipomatous masses
Bone tumor	MR	Yes	Evaluates extent/neurovascular involvement. CT can be good for evaluating matrix type.
Fracture	MR or CT see comments	No	MRI if radiographically occult fracture is suspected. CT if fracture is seen on x-ray and position or alignment is to be addressed. CT for avulsion or small cortical fracture.
Bone bruise	MR	No	
Loose bodies	MR or CT	No	Patient may need arthrography followed by CT or MRI. MRI can detect loose bodies in the presence of effusion. CT can detect ossified loose bodies.

***Above studies read by musculoskeletal fellowship trained radiologists**

Clinical Problem: Spine	Preferred Study	Contrast	Comments
Herniated disc, cervical or thoracic	MR	NO	Value of contrast not well known
Lumbar herniated disc	MR >> CT	Yes, if previous surgery	Contrast distinguishes between scar and disc after surgery
Stenosis	MR >>> CT	No	
Discitis	MR	Yes	
Metastasis, epidural tumor	MR	Yes	MR also superior to myelography
Compression fracture, possible tumor	MR	Yes	MR allows evaluation of bone marrow
Cord disease	MR	Yes	Demyelination - syrinx
Cord tumor	MR	Yes	