

Radiology of Indiana

Protocols	.7/ 1.2/ 1.5T	3.0 T	Special Instructions/Comments
	** All Sagittals, please scan from patients Left to Right **		
Brachial Plexus (bilateral)	Coronal T1 TSE (3sk1) Axial T1 TSE (3sk1) Axial STIR (3sk1) Sagittal T1 TSE (3s1) Sagittal STIR (3sk1) Coronal STIR (3sk1) Axial C+T1 fat sat Coronal C+T1 fat sat	SAME	For Bilateral Brachial Plexus scan shoulder to shoulder FOV= 25cm preferred: 32cm as needed
Brachial Plexus (unilateral)	Coronal T1 TSE (3sk1) Axial T1 TSE (3sk1) Coronal STIR (3sk1) Sagittal T1 TSE (3sk1) Sagittal STIR (3sk1) Axial STIR (3sk1) Axial C+T1 fat sat Coronal C+T1 fat sat	SAME	For unilateral Brachial Plexus, Scan far transverse process through shoulder (i.e. for LEFT brachial Plexus, Start at RIGHT C7 transverse process) FOV=25cm
Brain Cancer	Sagittal T1 TSE (4sk1) Axial T1 TSE (4sk1) Axial T2 GRE (4sk1) Axial DWI/ADC (3 Direction if possible), reconstruct at 5sk0 Axial FLAIR FAT SAT (4sk1) Axial C+ T2 TSE (4sk1) Axial C+ T1 TSE (4sk1) Coronal C+ TSE (4sk1) Sagittal C+ T1 TSE (4sk1) Axial C+ T1 MPRAGE volumetric Sagittal and coronal reformats Possible Perfusion/Spectroscopy? Should be done on 3T if possible	Sagittal T1 FLAIR (3sk1) Axial T1 FLAIR (3sk1) SWI (3sk1) with Mis Resolve or 6-Direction DWI/ADC, reconstruct at 4sk0 Axial FLAIR FAT SAT (3sk1) Axial C+ T2 TSE (3sk1) Axial C+T1 FLAIR (3sk1) Coronal C+FLAIR (3sk1) Sagittal C+ T1 FLAIR (3sk1) Axial Volumetric (MPRAGE or equivalent) with 3-plane reformat See if Perfusion/Spectroscopy needed	Remove eADC from all protocols, should only do ADC Inject contrast , followed immediately by Axial T2 Axial and coronal contrast enhanced T1s to follow T2 to allow contrast circulation time Scan through whole brain (skull to skull) on sagittal images FOV=23cm
	** Brain Cancer protocol used for patients that have/had a known brain lesion (including post surgical/post treatment lesions), lesion seen on another study (i.e. CT Head), or any patient with a current dx of cancer, suspected cancer, or history of cancer for which metastatic disease to the brain is being evaluated		
MRI Brain (Contrast Clearance Analysis)	3D T1-weighted (MPRAGE, FSPGR, VIBE, SPACE, etc.) 3D T1-weighted C+ (MPRAGE, FSPGR, VIBE, SPACE, etc.) 3D T1-weighted C+ (MPRAGE, FSPGR, VIBE, SPACE, etc.)	: 5 minutes post Gad 60 - 105 minutes post Gad (patient can leave between both scans)	* It is important that the early time point is at a fixed time post-Gd injection, therefore, it is best to acquire it after a fixed protocol, e.g., after DSCMRI and 2D spin-echo or after DCE-MRI. The timing of the late time point is flexible and can change from one follow-up to the next as long as it is acquired between 60-105 min post Gad.
		FOV = 23 all sequences	* IV bolus injection of a Gd-based contrast agent (standard dose, 0.1mmol/kg) is required.
			* T1-weighting of the MRI sequence does not change between the two acquisitions; thus the exact same protocol should be used for both scans (same FOV, slab size, etc.).
			* Poor image quality or metal-induced artifacts may affect the interpretation s
Brain With	Sagittal T1 TSE (4sk1) Axial T1 TSE (4sk1) Axial T2 TSE (4sk1) Axial T2 GRE (4sk1) Axial DWI/ADC (3 Direction if possible), reconstruct at 5sk0 Axial FLAIR FAT SAT (4sk1) Axial C+ T2 TSE (4sk1) Axial C+ T1 TSE (4sk1) Coronal C+ TSE (4sk1)	Sagittal T1 FLAIR (3sk1) Axial T1 FLAIR (3sk1) Axial T2 TSE (3sk1) SWI (3sk1) with MIPS Resolve or 6-Direction DWI/ADC, reconstruct at 4sk0 Axial FLAIR FAT SAT (3sk1) Axial C+ T2 TSE (3sk1) Axial C+T1 FLAIR (3sk1) Coronal C+FLAIR (3sk1)	Remove eADC from all protocols, should only do ADC Inject contrast , followed immediately by Axial T2 Scan Through whole brain (skull to skull) on sagittal images Axial and coronal contrast enhanced T1s to follow T2 to allow contrast circulation time Scan through whole brain (skull to skull) on sagittal images FOV=23cm
Brain Without	Sagittal T1 TSE (4sk1) Axial T1 TSE (4sk1) Axial T2 TSE (4sk1) Axial T2 GRE (4sk1) Axial DWI/ADC (3 direction if possible), reconstruct at 5sk0 Axial FLAIR FAT SAT (4sk1) Coronal T2 TSE (4sk1)	Sagittal T1 FLAIR (3sk1) Axial T1 FLAIR (3sk1) Axial T2 TSE (3sk1) SWI (3sk1) with MIPS Resolve or 16-direction DWI/ADC reconstruct at 4sk0 Axial FLAIR FAT SAT (3sk1) Coronal T2 TSE (3sk1)	Remove eADC from all protocols Scan Through whole brain (skull to skull) on sagittal images FOV=23cm
Anyloid Therapy Brain Without	Sagittal T1 TSE (4sk1) Axial T1 TSE (4sk1) Axial T2 TSE (4sk1) Axial DWI/ADC (3 direction if possible), reconstruct at 5sk0 Axial FLAIR FAT SAT (4sk1) Coronal T2 TSE (4sk1) SWI (Susceptibility Weighted Imaging)	Sagittal T1 FLAIR (3sk1) Axial T1 FLAIR (3sk1) Axial T2 TSE (3sk1) Resolve or 16-direction DWI/ADC reconstruct at 4sk0 Axial FLAIR FAT SAT (3sk1) Coronal T2 TSE (3sk1) SWI (Susceptibility Weighted Imaging)	Remove eADC from all protocols Scan Through whole brain (skull to skull) on sagittal images FOV=23cm

Cervical With	Coronal T1 TSE (3sk 0.5)	Coronal T1 TSE (3sk 0.5)	FOV= skull base through upper T-spine on sagittal
	Sagittal T1 TSE (3sk0)	Sagittal T1 TSE (3sk0)	FOV=12cm on Axials: FOV = 20cm on Sagittal
	Sagittal T2 TSE (3sk0)	Sagittal T2 TSE (3sk0)	Scan from C2 through T1
	Sagittal STIR (3sk0)	Sagittal STIR (3sk0)	
	Sagittal T2 oblique (2sk0)	Sagittal T2 oblique (2sk0)	Sagittal oblique T2 = Align perpendicular to the neural foramen
	Axial T2 TSE (2sk0)	Axial T2 TSE (2sk0)	
	Axial GRE (3sk0)	Axial GRE (3sk0)	
	Sagittal DWI (3sk0.3)	Sagittal DWI (3sk0.3)	
	Precontrast Axial T1 TSE (3sk0)	Precontrast Axial T1 FLAIR (3sk0.3)	
	Axial C+ T1 fat sat (3sk0)	Axial C+ T1 fat sat (3sk0)	
	Sagittal C+ T1 TSE (3sk0)	Sagittal C+ T1 FLAIR (3sk0)	
Cervical Without			
	Coronal T1 TSE (3sk 0.5)	Coronal T1 TSE (3sk 0.5)	Could do foraminal oblique reformats off axial T2
	Sagittal T1 TSE (3sk0)	Sagittal T1 FLAIR (3sk0)	FOV=12cm on Axials: FOV = 20cm on Sagittal
	Sagittal T2 TSE (3sk0)	Sagittal T2 TSE(3sk0)	Axial images should be from C2 through T1
	Sagittal STIR (3sk0)	Sagittal STIR (3sk0)	
	Sagittal T2 oblique (2sk0)	Sagittal T2 oblique (2sk0)	Sagittal oblique T2 = Align perpendicular to the neural foramen
	Axial T2 TSE (2sk0)	Axial T2 TSE (2sk0)	
	Axial GRE (3sk0)	Axial GRE (3sk0)	
	Sagittal DWI (3sk0.3)	Sagittal DWI (3sk0.3)	
Face			
	Cor T1 (3/1)	SAME	FOV= 16 for Cor and Sag
	Cor STIR (3/1)		FOV= 14 Axial
	Ax T1 (3/1)		
	Ax T2 Fat Sat (3/1)		
	Sag T1 SE (3/1)		
	Ax DWI (3/1)		
IAC			
	Preferably with Brain WITH	SAME	FOV= 15-18cm
	Posterior fossa :		
	Axial T1 (2sk0)		Scan from tip of the dorsum Sella through C1 on axials
	Axial FIESTA 1mm		
	Coronal HASTE Diffusion		
	Coronal reformats		Scan from posterior skull through orbital apex on coronals
	Sagittal reformats along IAC		
	Axial T2 (2sk0)		
	Axial C+ T1 fat sat (2sk0)		
	Coronal C+ T1 fat sat (2sk0)		
Kyphoplasty			
	Localizer including cervical and upper thoracic spine	Localizer including cervical and upper thoracic spine	
	Sagittal T1 TSE- thoracic (3sk0.5)	Sagittal T1 FLAIR- thoracic (3sk0.5)	
	Sagittal T2 TSE- thoracic (3sk0.5)	Sagittal T2 TSE- thoracic (3sk0.5)	
	Sagittal T1 TSE -Lumbar (3sk0.5)	Sagittal T1 FLAIR -Lumbar (3sk0.5)	
	Sagittal T2 TSE-Lumbar (3sk0.5)	Sagittal T2 TSE-Lumbar (3sk0.5)	
	Sagittal STIR -thoracolumbar (3sk0.5)	Sagittal STIR -thoracolumbar (3sk0.5)	
	Coronal T1 TSE- thoracolumbar (3sk0.5)	Coronal T1 TSE- thoracolumbar (3sk0.5)	
Lumbar With			
	Sagittal T1 TSE (3sk0.5)	Sagittal T1 TSE (3sk0.5)	No fat saturation if excessive artifact from metal hardware
	Sagittal T2 TSE (3sk0.5)	Sagittal T2 TSE (3sk0.5)	FOV: 15cm Axials
	Sagittal STIR (3sk0.5)	Sagittal STIR (3sk0.5)	
	Axial T2 TSE (4sk1)	Axial T2 TSE (4sk1)	
	Axial T1 TSE (4sk1)	Axial T1 TSE (4sk1)	
	Coronal T1 TSE (3sk0.5)	Coronal T1 TSE (3sk0.5)	
	Sagittal DWI (3/0.5)	Sagittal DWI (3/0.5)	
	Axial C+T1 fat sat (4sk1)	Axial C+ T1 fat sat (3sk0.5)	
	Sagittal C+T1 TSE (3sk0.5)	Sagittal C+ T1 FLAIR (3sk0.5)	
Lumbar Without			
	Sagittal T1 TSE (3sk0.5)	Sagittal T1 FLAIR (3sk0.5)	Axial Images from L1-S1
	Sagittal T2 TSE (3sk0.5)	Sagittal T2 TSE (3sk0.5)	FOV=15cm Axials
	Sagittal STIR (3sk0.5)	Sagittal STIR (3sk0.5)	
	Axial T2 TSE (4sk1)	Axial T2 TSE (3sk0.5)	
	Axial T1 TSE (4sk1)	Axial T1 FLAIR (3sk0.5)	
	Coronal T1 TSE (3sk0.5)	Coronal T1 TSE (3sk0.5)	
	Sagittal DWI (3/0.5)	Sagittal DWI (3/0.5)	
Lumbosacral Plexus			
	Obl Axial T1 TSE (3sk1)	Obl Axial T1 TSE (3sk1)	FOV = 25 cm
	Obl Axial T2 TSE mid TE fat sat (3sk1)	Obl Axial T2 TSE mid TE fat sat (3sk1)	Planes should be relative to long axis of the sacrum
	Obl Coronal T1 TSE (3sk1)	Obl Coronal T1 TSE (3sk1)	Axial images L5 - bottom of sacrum
	Obl Coronal STIR (3sk1)	Obl Coronal STIR (3sk1)	
	Obl Cor T1 TSE Fat Sat +C (3sk1)	Obl Cor T1 TSE Fat Sat +C (3sk1)	
	Obl Ax T1 TSE Fat Sat +C (3sk1)	Obl Ax T1 TSE Fat Sat +C (3sk1)	

Thoracic With			
	Sagittal T1 TSE (3sk0.5)	Sagittal T1FLAIR (3sk0.5)	Axial images from C7-L1
	Sagittal T2 TSE (3sk0.5)	Sagittal T2 TSE (3sk0.5)	
	Sagittal STIR (3sk0.5)	Sagittal STIR (3sk0.5)	
	Axial T1 TSE (4sk1)	Axial T1 FLAIR (4sk1)	3 slices per disc
	Axial T2 TSE (4sk1)	Axial T2 TSE (3sk0.5)	3 slices per disc
	Coronal T1 TSE (3sk0.5)	Coronal T1 TSE (3sk0.5)	
	Sagittal DWI (3sk0.3)	DWI sagittal (3sk0.3)	
	Axial C+ T1 fat sat (4sk1)	Axial C+ T1 fat sat (4sk1)	3 slices per disc
	Sagittal C+ T1 FSE (3sk0.5)	Sagittal C+ T1 FLAIR (3sk0.5)	
Thoracic Without			
	Sagittal T1 TSE (3sk0.5)	Sagittal T1FLAIR (3sk0.5)	Axial images from C7-L1
	Sagittal T2 TSE (3sk0.5)	Sagittal T2 TSE (3sk0.5)	
	Sagittal STIR (3sk0.5)	Sagittal STIR (3sk0.5)	
	Axial T1 TSE (4sk1)	Axial T1 FLAIR (4sk1)	3 slices per disc
	Axial T2 TSE (4sk1)	Axial T2 TSE (3sk0.5)	3 slices per disc
	Coronal T1 TSE (3sk0.5)	Coronal T1 TSE (3sk0.5)	
	Sagittal DWI (3sk0.3)	DWI sagittal (3sk0.3)	
TMJ			
	Localizer (coronal and sagittal)	SAME	FOV=12cm
	Sagittal PD oblique Right Closed (2sk0)		
	Sagittal PD oblique Left Closed (2sk0)		Could do axial or coronal T1 of head (4sk1) instead of localizer
	Sagittal T2 oblique Right Closed (2sk0)		
	Sagittal T2 oblique Left Closed (2sk0)		
	Coronal T1 Right Closed (2sk0)		
	Coronal T1 Left Closed (2sk0)		
	Sagittal PD oblique Right Open (2sk0)		
	Sagittal PD oblique Left Open (2sk0)		
	Sagittal T2 oblique Right Open (2sk0)		
	Sagittal T2 oblique Left Open (2sk0)		
Trigeminal			
	Complete Brain MRI protocol	SAME	Whole brain FOV= 22cm
	Posterior fossa :		Posterior fossa FOV=18cm
	Axial T1 (3sk0.5)		
	Axial T2 fat sat (3sk0.5)		Scan from the suprasellar cistern to the C1 level on axials, cover through posterior fossa
	Coronal T1 (3sk0.5)		and orbital apex on coronals
	Axial Fiesta w/coronal reformats		
	Axial C+T1 FS (3sk0.5)		
	Coronal C+T1 FS (3sk0.5)		
	Coronal C+ T1 whole head (4sk1)		
Spine SBRT Treatment Planning			
	Coronal T1 TSE (3sk 0.5)	Coronal T1 TSE (3sk 0.5)	Axial coverage to be specified on order. Axial images only acquired through areas to be treated
	Sagittal T1 TSE (3sk0)	Sagittal T1 TSE (3sk0)	Sagittal coverage = Typical FOV for region of spine to be treated (i.e. If treatment to cervical spine cover skull base to T1)
	Sagittal T2 TSE (3sk0)	Sagittal T2 TSE (3sk0)	FOV = 12cm on Axials
	Sagittal STIR (3sk0)	Sagittal STIR (3sk0)	
	Axial T2 TSE (2sk0)	Axial T2 TSE (2sk0)	Axial Plane = Perpendicular to vertebral body. If vertebral body is fractured image perpendicular to bed
	Precontrast Axial T1 FLAIR (2sk0)	Precontrast Axial T1 TSE (2sk0)	
	Axial C+ T1 fat sat (2sk0)	Axial C+ T1 fat sat (2sk0)	
		Sagittal C+T1 TSE (3sk0)	