

## NEUROLOGY PROTOCOLS

### PAEDIATRIC BRAIN TUMOUR (Posterior Fossa/Pineal)

<b>CLINICAL INDICATIONS</b>	Diagnostic assessment or follow up of suspected medulloblastoma, ependymoma, astrocytoma, pineal region tumour. Likely biology is risk for dural spread or drop metastases.	
<b>PATIENT PREPARATION</b>	MRI safety checklist completed and checked. Changed into patient gown/pyjamas. NBM at least 2 hours unless requiring general anaesthetic. Contrast consent performed and IV line inserted if not done. Hearing protection with headphones and/or earplugs. <b>Emergency buzzer is essential if non GA.</b>	
<b>PATIENT SET-UP</b>	<b>POSITION</b>	Supine, head first. Immobilise using foam pads around the head and over ears.
	<b>COIL/S</b>	12Ch Head Coil and 4 Ch Neck Coil with spinal mat
<b>IMAGING PROTOCOL</b>	<b>SEQUENCES</b>	<b>RANGE AND ORIENTATION</b>
	<b>3 Plane Localiser</b>	Localiser through Head
	<b>3 Plane Localiser Whole Spine</b>	Localiser through spine-step and go protocol as set out on scanner
	<b>t1_mpr_sag_p2_iso_pre</b>	Sagittal to the midline to cover the whole head
	<b>t2_tse_tra_512_</b>	Inferior to superior, to cover whole head, parallel to ACPC line and perpendicular to midline/base of temp lobes on the coronal
	<b>t2_tirm_tra_dark-fluid_fs</b>	Inferior to superior, to cover whole head, parallel to ACPC line and perpendicular to midline/base of temp lobes on the coronal
	<b>ep2d_diff_3scan_trace</b>	As per the t2_tse_tra
	<b>t2_tse_cor_512</b>	Angled perpendicular to the AC-PC on sagittal plane and perpendicular to midline on axial.
	<b>t2_fl3d_tra_p2_swi_fast</b>	Angle as per axial T2-ensure whole of head covered.
	<b>t2_tse_sag_3mm</b>	True sagittal to the midline, to cover right to left of the whole brain and upper C spine
		<b><i>Contrast-please scan in this order</i></b>
<b>t1_tse_sag_Whole Spine+C</b>	True sagittal to the spinal canal, to cover right to left, entire spine down to Sacrum	
<b>t1_mpr_sag_p2_iso_+C</b>	Sagittal to the midline to cover the whole head	

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	<b>t1_tse_vibe_upper spine +C</b>	Axial to the spinal canal and vertebral bodies to cover from C1 to mid-spine.
	<b>t1_tse_vibe_lower spine +C</b>	Axial to the spinal canal and vertebral bodies to cover from mid spine to at least S2. Ensure at least 1 slice overlap with upper spine

<b>CONTRAST MEDIA</b>	Type	Dotarem
	Volume	0.2ml/kg on 3T
	Administration	IV slow hand injection or injector for perfusion
	Test Bolus	N/A
	Flow Rate	3mls per second for perfusion
	Timing	As per perfusion protocol
	Delayed Imaging	N/A

<b>OPTIONAL SEQUENCES</b>	<p>ep2d_perfusion-new tumours should have perfusion imaging performed. Check with radiologist. <b>No pre-loading</b> required. Perform before sagittal spine imaging.</p> <p>Some follow ups after 12 months may not require spine imaging-if not, please refer to Tumour Brain protocol.</p> <p>Single voxel spectroscopy Short TE may be required to help grade tumour</p>
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<b>POST PROCESSING</b>	<p>Reformat mprage sequence into 2 other planes at a slice thickness dependant on acquisition thickness.</p> <p>Reformat the post contrast mprage into a true axial as per Stealth protocol.</p>
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<b>SPECIAL CONSIDERATIONS</b>	<p>Slice thickness, FOV and slice number are dependent on the age of the child. Different protocols for different ages are set up on the scanner.</p> <p>Smaller children may benefit from having the brain scan in the 32Ch Head coil for signal. In these instances, please do the Axial T2/Cor T2 Post Contrast then the mprage, then move the patient to do the Post Gad Spine imaging.</p> <p>Younger children not being scanned under general anaesthetic may require a parent or guardian in the room. All accompanying people must complete a separate safety questionnaire and go through all safety checks as per the patient.</p> <p>Small children may require to be scanned under General Anaesthetic</p>
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