PEDIATRIC SPINE OPTIONAL ADD-ON 3T

INSTRUCTIONS AND PATIENT PREPARATION

Instructions	Optional spine sequences added based on clinical indication. Radiologist to prescribe levels of coverage.
Position	Head first supine
Coil	Head coil, Spine coil, and Body 18 (anterior)
Patient Preparation	Landmark per department pediatric protocol — pending sign-off.
Add-On Sequence Indications and Coverage	• **Embryonal Tumor or High-Grade Glioma** — SAG RESOLVE DWI C SPINE, MID AND LOWER. • **Osseous/Paravertebral/Vertebral Tumor** — Pre contrast TRAN T1 FLAIR, TRAN T2 TSE FS and post contrast TRAN T1 FLAIR FS. 3mm slices used for Cervical Spine and 4mm used for Thoracic and Lumbar Spine. Radiologist to prescribe levels of coverage.

CONTRAST AGENT PARAMETERS

Contrast Agent	Dose	Injection Rate	Dose Timing Method and Scan Delay
Gadopiclenol (VUEWAY)	Per department pediatric contrast protocol — pending sign-off	Hand Bolus or Power Injection	Per department pediatric contrast protocol — pending technologist/radiologist sign-off.
Comments	• These are optional sequences added per clinical indication. • Use minimal dose for patients with a GFR <60 mL/sec • Report agent administered and dose		

IMAGING PARAMETERS

Scan Description	SAG c-SPINE rDWI	SAG rDWI MID	SAG rDWI LOWER	TRAN T1 FLAIR 3mm	Post TRAN T1 FLAIR FS 3mm	TRAN T2 TSE FS 3MM	TRAN T1 FLAIR 4mm	Post TRAN T1 FLAIR FS 4mm	TRAN T2 TSE FS 4MM
Clinical Indication	Embryonal Tumor or High-Grade Glioma	Embryonal Tumor or High-Grade Glioma	Embryonal Tumor or High-Grade Glioma	Osseous/Paravertebral/Vertebral Tumor	Osseous/Paravertebral/Vertebral Tumor	Osseous/Paravertebral/Vertebral Tumor	Osseous/Paravertebral/Vertebral Tumor	Osseous/Paravertebral/Vertebral Tumor	Osseous/Paravertebral/Vertebral Tumor
Sequence Name	resolve	resolve	resolve	tir	tir	tseR_rs	tir	tir	tseR_rs
Mode	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved	Interleaved
PAT Mode	—	—	—	None	None	None	GRAPPA	GRAPPA	None
Dimension	2D	2D	2D	2D	2D	2D	2D	2D	2D
Acceleration Factor PE	2	2	2	—	—	—	2	2	—
Acceleration Factor 3D	—	—	—	—	—	—	—	—	—

SCAN PARAMETERS

Scan Description	SAG c-SPINE rDWI	SAG rDWI MID	SAG rDWI LOWER	TRAN T1 FLAIR 3mm	Post TRAN T1 FLAIR FS 3mm	TRAN T2 TSE FS 3MM	TRAN T1 FLAIR 4mm	Post TRAN T1 FLAIR FS 4mm	TRAN T2 TSE FS 4MM
TR	1930.0 ms	2390.0 ms	2390.0 ms	2650.0 ms	2840.0 ms	4640.0 ms	3610.0 ms	3250.0 ms	4640.0 ms
TE	48 ms / 78 ms	66 ms / 117 ms	66 ms / 117 ms	9.40 ms	9.40 ms	93.00 ms	9.40 ms	9.40 ms	93.00 ms
TI	—	—	—	1000 ms	1000 ms	—	1000 ms	1000 ms	—
Flip Angle	180 deg	180 deg	180 deg	140 deg	140 deg	150 deg	140 deg	140 deg	150 deg
Turbo Factor	—	—	—	8	8	19	8	8	19
Bandwidth	788 Hz/Px	820 Hz/Px	820 Hz/Px	252 Hz/Px	252 Hz/Px	170 Hz/Px	252 Hz/Px	252 Hz/Px	170 Hz/Px
EPI Factor	68	128	128	—	—	—	—	—	—
Fat Saturation Mode	Strong	Strong	Strong	—	Strong	Weak	—	Strong	Weak
Fat Suppression	Fat Saturation	Fat Saturation	Fat Saturation	Standard	Fat Saturation	Fat Saturation	Standard	Fat Saturation	Fat Saturation
Gradient Mode	Fast	Fast	Fast	Fast	Fast	Fast	Fast	Fast	Fast
RF Pulse Type	Normal	Normal	Normal	Low SAR	Low SAR	Low SAR	Low SAR	Low SAR	Low SAR
Asymmetric Echo	—	—	—	—	—	—	—	—	—

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MR Gadopiclenol (VUEWAY®) Protocol for Siemens MRI Scanners
Pediatric

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ACQUISITION PARAMETERS

Scan Description	SAG c-SPINE rDWI	SAG rDWI MID	SAG rDWI LOWER	TRAN T1 FLAIR 3mm	Post TRAN T1 FLAIR FS 3mm	TRAN T2 TSE FS 3MM	TRAN T1 FLAIR 4mm	Post TRAN T1 FLAIR FS 4mm	TRAN T2 TSE FS 4MM
Base Resolution	122	254	254	128	128	320	128	128	320
Phase Resolution	100 %	100 %	100 %	85 %	85 %	70 %	85 %	85 %	70 %
Slice Resolution	—	—	—	—	—	—	—	—	—
Averages	—	—	—	1	1	2	1	1	2
Concatenations	1	1	1	3	3	2	3	4	2
b-value	0 s/mm²/800 s/mm²	0 s/mm²/800 s/mm²	0 s/mm²/800 s/mm²	—	—	—	—	—	—
FoV Read	150 mm	300 mm	300 mm	120 mm	120 mm	190 mm	120 mm	120 mm	190 mm
FoV Phase	55.7 %	50.4 %	50.4 %	200.0 %	200.0 %	81.3 %	200.0 %	200.0 %	81.3 %
Phase Encoding Dir.	A >> P	A >> P	A >> P	R >> L	R >> L	A >> P	R >> L	R >> L	A >> P
Phase Oversampling	100 %	100 %	100 %	50 %	50 %	40 %	50 %	50 %	40 %
Slice Oversampling	—	—	—	—	—	—	—	—	—
Phase Partial Fourier	Off	Off	Off	Off	Off	Off	Off	Off	Off
Slice Partial Fourier	—	—	—	—	—	—	—	—	—
Flow Compensation	—	—	—	None	None	Slice	None	None	Slice

SCANNING RANGE

Scan Description	SAG c-SPINE rDWI	SAG rDWI MID	SAG rDWI LOWER	TRAN T1 FLAIR 3mm	Post TRAN T1 FLAIR FS 3mm	TRAN T2 TSE FS 3MM	TRAN T1 FLAIR 4mm	Post TRAN T1 FLAIR FS 4mm	TRAN T2 TSE FS 4MM
Elliptical Filter	—	—	—	On	On	On	On	On	On
Normalize	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan
Distortion Correction	2D	2D	2D	2D	2D	2D	2D	2D	2D
Slice Thickness	3.0 mm	3.0 mm	3.0 mm	3.0 mm	3.0 mm	3.0 mm	4.0 mm	4.0 mm	4.0 mm
Distance Factor	0%	0%	0%	0%	0%	0%	0%	0%	0%
Slices	15	15	15	41	41	31	65	65	31
Acquisition Time	1:40 min	1:35 min	1:35 min	5:35 min	6:08 min	4:40 min	4:11 min	5:14 min	4:40 min

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