PEDIATRIC TOTAL SPINE 6-12 3T

INSTRUCTIONS AND PATIENT PREPARATION

Anatomical Region	Total Spine 6-12
Field Strength	3.0T
Coil	See the Coil Configuration row in the first parameters table below (varies by sequence).
Position & Landmark	Head first, supine. Landmark: center of the coil in use (typically central to the ROI).
Contrast	Weight-based gadolinium contrast per your institution's protocol, supervising radiologist, and the agent's FDA prescribing information. Postcontrast sequences are marked **+C**.

PATIENT POSITION

PATIENT POSITION — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
Coil Configuration	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA
Plane	3-PLANE	3-PLANE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE

PATIENT POSITION — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
Coil Configuration	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA	GE19chGEMHNUFace, GE40chGEMPA
Plane	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE	OBLIQUE

IMAGING PARAMETERS

IMAGING PARAMETERS — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
Imaging Mode	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D
Imaging Options	Seq, EDR, Fast, SS, ARC	Seq, EDR, Fast, SS, ARC	Seq, EDR, TRF, Fast, T1flair	FC, Seq, EDR, TRF, Fast, T1flair	FC, Seq, EDR, TRF, Fast, T1flair	FC, EDR, TRF, Fast, FR	FC, EDR, TRF, Fast, FR	FC, EDR, TRF, Fast, FR	FC, EDR, Fast	EDR, TRF, Fast, ZIP512, ARC
Pulse Sequence	Spin Echo	Spin Echo	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	MERGE	FSE-XL
ARC Phase	2	2	—	—	—	—	—	—	—	1.5

IMAGING PARAMETERS — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
Imaging Mode	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D
Imaging Options	EDR, Fast	EDR, TRF, Fast, ZIP512	FC, EDR, TRF, Fast, ZIP512	EDR, TRF, Fast, ZIP512, ARC	EDR, TRF, Fast	EDR, TRF, Fast, ZIP512, ARC	EDR, TRF, Fast	EDR, TRF, Fast, ZIP512	EDR, TRF, Fast	EDR, TRF, Fast, ZIP512, ARC
Pulse Sequence	Gradient Echo	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL	FSE-XL
ARC Phase	—	—	—	1.5	—	1.5	—	—	—	1.5

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Pediatric

IMAGING FORUMS, INC.

IMAGE RECON

IMAGE RECON — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
Recon DL Strength	Off	—	Medium	Medium	Medium	Medium	Medium	Medium	Off	High
Intensity Correction	NONE	NONE	SCENIC	SCENIC	SCENIC	SCENIC	SCENIC	PURE	SCENIC	SCENIC
Intensity Filter	None	None	None	None	None	None	None	None	None	None
Save Original	Off	Off	On	On	On	On	On	On	On	Off

IMAGE RECON — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
Recon DL Strength	Off	High	Medium	High	Medium	Medium	Medium	Medium	Medium	Medium
Intensity Correction	SCENIC	SCENIC	SCENIC	SCENIC	SCENIC	SCENIC	PURE	SCENIC	SCENIC	SCENIC
Intensity Filter	None	None	None	None	None	None	None	None	None	None
Save Original	On	Off	Off	Off	On	Off	Off	Off	On	Off

SCAN RANGE

SCAN RANGE — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
FOV	35	35	20	28	22	20	28	22	16	16
Slice Thickness	5	5	4	4	4	4	4	4	4	4
Slice Spacing	5	5	0.2	0.2	0.2	0.2	0.2	0.2	0	0.4
Overlap Locations	0	—	0	0	0	0	0	0	0	0
No Phase Wrap	1	1	1.5	1.5	1.5	1.5	1.5	1.5	2	2
Number of Slices	—	—	12	14	17	12	14	17	—	21

SCAN RANGE — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
FOV	18	16	16	16	20	16	28	16	22	16
Slice Thickness	5	4	4	4	4	4	4	4	4	4
Slice Spacing	0.5	0.4	0.4	0.4	0.2	0.4	0.2	0.4	0.2	0.4
Overlap Locations	0	0	0	0	0	0	0	0	0	0
No Phase Wrap	2	2	2	1.9	1.5	2	1.5	2	1.5	1.9
Number of Slices	—	21	1	1	14	21	14	21	14	1

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Pediatric

IMAGING FORUMS, INC.

ACQUISITION TIMING

ACQUISITION TIMING — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
Acq Voxel Size	0.9 X 2.2 X 5.0	0.9 X 2.2 X 5.0	0.6 X 0.8 X 4.0	0.7 X 0.9 X 4.0	0.7 X 0.9 X 4.0	0.5 X 0.8 X 4.0	0.6 X 0.9 X 4.0	0.7 X 0.9 X 4.0	0.6 X 0.8 X 4.0	0.7 X 0.9 X 4.0
Freq	384	384	320	384	320	384	448	320	288	220
Phase	160	160	256	320	256	256	320	256	192	180
Freq DIR	Unswap	Unswap	A/P	A/P	A/P	A/P	A/P	A/P	Swap	R/L
# of Acq. Before Pause	0	0	0	—	—	0	—	—	—	0
Phase FOV	1	1	1	1	1	1	1	1	0.7	0.7
Auto Shim	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto
Phase Correct	Off	Off	On	On	Off	Off	Off	Off	Off	Off
RF Drive Mode	Quadrature (CP)	Quadrature	Quadrature (CP)	Quadrature (CP)	Quadrature (CP)	Quadrature (CP)	Preset	Preset	Quadrature (CP)	Preset
Excitation Mode	Selective	Selective	Selective	Selective	Selective	Selective	Selective	Selective	Selective	Selective
NEX	—	—	1	1	1	1	1	1.5	1	1
Fat Shift DIR	—	—	Normal (P)	Normal (P)	Normal (P)	Normal (P)	Normal (P)	Normal (P)	—	Normal (L)
Flow Comp Direction	—	—	—	Freq	Freq	Freq	Freq	Freq	—	—

ACQUISITION TIMING — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
Acq Voxel Size	0.6 X 0.9 X 5.0	0.7 X 0.9 X 4.0	0.5 X 0.7 X 4.0	0.8 X 1.0 X 4.0	0.6 X 1.0 X 4.0	0.7 X 0.9 X 4.0	0.9 X 1.1 X 4.0	0.7 X 0.9 X 4.0	0.7 X 1.1 X 4.0	0.8 X 1.0 X 4.0
Freq	288	220	320	200	320	220	320	220	320	200
Phase	192	180	224	160	192	180	256	180	192	160
Freq DIR	Swap	R/L	R/L	R/L	A/P	R/L	A/P	R/L	A/P	R/L
# of Acq. Before Pause	—	0	—	—	0	0	0	0	0	—
Phase FOV	1	0.6	0.7	0.7	1	0.7	1	0.6	1	0.7
Auto Shim	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto	Auto
Phase Correct	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
RF Drive Mode	Preset	Preset	Preset	Preset	Preset	Preset	Preset	Preset	Preset	Preset
Excitation Mode	Selective	Selective	Selective	Selective	Selective	Selective	Selective	Selective	Selective	Selective
NEX	1	1	1	1	1	1	1	1	1	1
Fat Shift DIR	—	Normal (L)	Normal (L)	Normal (L)	Normal (P)	Normal (L)	Normal (P)	Normal (L)	Normal (P)	Normal (L)
Flow Comp Direction	—	—	Slice	—	—	—	—	—	—	—

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Pediatric

IMAGING FORUMS, INC.

SCAN TIMING

SCAN TIMING — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
TE	80	80	24	24	24	102	102	85	—	18
Number of Echoes	1	1	1	1	1	1	1	1	3	1
TR	1000	1000	2100	2600	2600	3300	3947	5997	850	687
Receiver Bandwidth	83.33	83.33	35.71	62.5	50	41.67	62.5	62.5	41.67	35.71
Flip Angle	—	—	142	142	142	142	142	142	20	111
TI	—	—	710	809	808	—	—	—	—	—
Echo Train Length	—	—	8	8	8	21	18	25	—	3

SCAN TIMING — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
TE	Min Full	18	140	18	18	18	18	18	18	18
Number of Echoes	1	1	1	1	1	1	1	1	1	1
TR	675	594	3000	500	700	687	600	688	800	500
Receiver Bandwidth	41.67	35.71	41.67	31.25	41.67	35.71	62.5	35.71	31.25	31.25
Flip Angle	20	111	150	111	120	111	120	111	120	111
TI	—	—	—	—	—	—	—	—	—	—
Echo Train Length	—	2	17	3	3	3	4	3	4	3

CONTRAST

CONTRAST — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
Contrast Yes/No	No	No	No	No	No	No	No	No	No	No

CONTRAST — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
Contrast Yes/No	No	No	No	No	+C	No	+C	No	+C	+C

OTHERS

OTHERS — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
3D Geometry Correction	Off	Off	—	—	—	—	—	—	—	—
Anatomical Region	Cervico-thoracic spine	Thoraco-lumbar spine	Cervical spine	Lumbar spine	Lumbar spine	Cervical spine	Thoracic spine	Lumbar spine	Cervical spine	Cervical spine

OTHERS — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
3D Geometry Correction	—	—	—	—	—	—	—	—	—	—
Anatomical Region	Thoracic spine	Thoracic spine	Lumbar spine	Lumbar spine	Cervical spine	Cervical spine	Thoracic spine	Thoracic spine	Spine	Lumbar spine

GATING / TRIGGER

GATING / TRIGGER — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
Auto Trigger Type	—	Off	—	—	—	—	—	—	—	—
Pause After Navigator Prescan	—	—	—	—	—	—	—	—	0	—

GATING / TRIGGER — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
Auto Trigger Type	—	—	—	—	—	—	—	—	—	—
Pause After Navigator Prescan	0	—	—	—	—	—	—	—	—	—

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Pediatric

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SATURATION

SATURATION — SEQUENCES 1-10 OF 20

Scan Description	TOP-3Plane Loc	BOT-3Plane Loc	C-Sag T1 FLAIR DL	T-Sag T1 FLAIR DL	L-Sag T1 FLAIR DL	C-Sag T2 Fat DL	T-Sag T2 Fat DL	L-Sag T2 FAT DL	C-Ax 2D MERGE	C-Ax T1 DL
SAT Location A	—	—	A76.7	A5.2	A0.0	A95.4	A5.2	A0.0	—	A14.7
SAT Location P	—	—	—	—	A43.8	—	—	A43.8	—	—
Fat/Water Saturation	—	—	—	—	—	Fat	Fat	Fat	—	—
SAT Location S	—	—	—	—	—	—	—	—	—	—
SAT Location I	—	—	—	—	—	—	—	—	—	—

SATURATION — SEQUENCES 11-20 OF 20

Scan Description	T-Ax T2* GRE PEDS	T-Ax T1 DL	L-Ax T2 DL	L-Ax T1 DL	C +C Sag T1 Fat DL	C +C Ax T1 DL	T+C Sag T1 Fat DL	T +C Ax T1 DL	L+C Sag T1 Fat DL	L +C Ax T1 DL
SAT Location A	—	P41.1	A5.0	A5.0	A17.8	A14.7	A17.8	P41.1	A17.8	A5.0
SAT Location P	—	—	—	—	—	—	—	—	—	—
Fat/Water Saturation	—	—	—	—	Fat	—	Fat	—	Fat	—
SAT Location S	—	—	Default	Default	—	—	—	—	—	Default
SAT Location I	—	—	Default	Default	—	—	—	—	—	Default

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