PEDIATRIC MR ENTEROGRAPHY (SMALLER PATIENTS) 3T

INSTRUCTIONS AND PATIENT PREPARATION

Instructions	Patients should fast for at least six hours Give oral contrast 60 mins before first sequence An intravenous line must be placed with extension tubing extending out of the magnetic bore Position the patient in supine position with head pointing towards the magnet Position the patient over the spine coil and place the body coil over the pelvis Securely tighten the body coil using straps to prevent respiratory artifacts Give a pillow under the patient's head for extra comfort Instruct the patient to hold his or her breath for the breath-hold scans. It's better to coach the patient two to three times before starting the scan. Sedation vs bundle and feed is the ordering provider's decision
Common Indications	Small bowel obstruction Small bowel mass Crohns disease
Position	Head First Supine
Coil	Body Coil Spine Coil
Landmark	Iliac Crest
Patient Population	These protocols are intended for smaller patients and serve as starting points. If a smaller FOV is needed, the parameters are modified accordingly.

CONTRAST AGENT PARAMETERS

Contrast Agent	Dose	Injection Rate	Dose Timing Method and Scan Delay
Gadopiclenol (VUEWAY)	0.1 mL/kg	2 mL/sec for older patients; injection rate slowed for smaller kids depending on size and age	Post-contrast series acquired after gadolinium administration

IMAGING PARAMETERS

Scan Description	localizer_Free breathing	localizer_bh	COR T2 HASTE FS	COR T2 TRUFI CINE flat_breathing	AX T2 FS HASTE BH	AX T2 TRUFI BH	AX DWI B50_800	PRE COR T1 VIBE FS	POST 30SEC COR T1 VIBE FS	POST COR T1 VIBE FS	POST AX T1 VIBE FS
Sequence Name	fl	fl	h_rr	tfi	h	tfi	epse	fl	fl	fl	fl
Dimension	2D	2D	2D	2D	2D	2D	2D	3D	3D	3D	3D
Acceleration mode	GRAPPA	GRAPPA	GRAPPA	GRAPPA	GRAPPA	GRAPPA	SMS	CAIPIRINHA	CAIPIRINHA	CAIPIRINHA	CAIPIRINHA
CAIPIRINHA Mode	—	—	—	—	—	—	—	Body Cor	Body Cor	Body Cor	Body Tra
Total Factor	—	—	—	—	—	—	—	4	4	4	4
Acceleration Factor PE	2	2	3	3	2	2	2	2	2	2	2
Acceleration Factor 3D	—	—	—	—	—	—	—	2	2	2	2
Reference Lines PE	24	24	42	24	40	24	50	24	24	24	24
Reference Scans	Integrated	Integrated	TSE/Separate	Integrated	TSE/Separate	Integrated	GRE/Separate	GRE/Separate	GRE/Separate	GRE/Separate	GRE/Separate
Deep Resolve	Off	Off	Off	—	Off	—	Off	—	—	—	—

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Supported by an educational grant from Bracco Diagnostics Inc.

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

IMAGING FORUMS, INC.

SCAN PARAMETERS

Scan Description	localizer_Free breathing	localizer_bh	COR T2 HASTE FS	COR T2 TRUFI CINE flat_breathing	AX T2 FS HASTE BH	AX T2 TRUFI BH	AX DWI B50_800	PRE COR T1 VIBE FS	POST 30SEC COR T1 VIBE FS	POST COR T1 VIBE FS	POST AX T1 VIBE FS
TR	7.8 ms	7.8 ms	1400.0 ms	425.45 ms	1400.0 ms	377.04 ms	3800.0 ms	4.23 ms	4.23 ms	4.23 ms	3.31 ms
TE	3.69 ms	3.69 ms	94.00 ms	1.68 ms	94.00 ms	1.64 ms	59.00 ms	1.01 ms	1.01 ms	1.08 ms	1.30 ms
Flip Angle	20 deg	20 deg	160 deg	54 deg	136 deg	51 deg	—	9 deg	9 deg	9 deg	9 deg
Bandwidth	320 Hz/Px	320 Hz/Px	411 Hz/Px	1302 Hz/Px	411 Hz/Px	1502 Hz/Px	2170 Hz/Px	740 Hz/Px	740 Hz/Px	740 Hz/Px	450 Hz/Px
Turbo Factor	—	—	224	—	208	—	—	—	—	—	—
Echo Spacing	—	—	5.20 ms	3.35 ms	5.20 ms	3.27 ms	0.53 ms	—	—	—	—
EPI Factor	—	—	—	—	—	—	104	—	—	—	—
Gradient Mode	Normal	Normal	Fast	Fast	Fast	Fast	Fast	Fast	Fast	Fast	Fast
RF Pulse Type	Normal	Normal	Fast	Normal	Fast	Normal	Low SAR	Fast	Fast	Fast	Fast
RF Spoiling	On	On	—	—	—	—	—	On	On	On	On
Asymmetric Echo	Allowed	Allowed	—	Off	—	Off	—	Weak	Weak	Weak	Weak
Flow Compensation	None	None	Read	—	None	—	—	—	—	—	—
Phase Correction	—	—	—	—	—	—	External	—	—	—	—

CONTRAST & MAGNETIZATION

Scan Description	localizer_Free breathing	localizer_bh	COR T2 HASTE FS	COR T2 TRUFI CINE flat_breathing	AX T2 FS HASTE BH	AX T2 TRUFI BH	AX DWI B50_800	PRE COR T1 VIBE FS	POST 30SEC COR T1 VIBE FS	POST COR T1 VIBE FS	POST AX T1 VIBE FS
Fat-Water Contrast	Standard	Standard	SPAIR	Standard	SPAIR	Standard	SPAIR	SPAIR	SPAIR	SPAIR	SPAIR
Fat Saturation	—	—	Strong	—	Strong	—	Strong	—	—	—	—
Magn. Preparation	None	None	None	None	None	None	None	—	—	—	—
MTC	Off	Off	Off	—	Off	—	Off	—	—	—	—
Dark Blood	Off	Off	Off	Off	Off	Off	—	—	—	—	—
Contrasts	1	1	1	1	1	1	—	1	1	1	1
Reconstruction	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude	Magnitude
Wrap-up Magn.	—	—	None	Restore	None	Restore	—	—	—	—	—

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Pediatric

NW IMAGING FORUMS, INC.

ACQUISITION PARAMETERS

Scan Description	localizer_Free breathing	localizer_bh	COR T2 HASTE FS	COR T2 TRUFI CINE flat_breathing	AX T2 FS HASTE BH	AX T2 TRUFI BH	AX DWI B50_800	PRE COR T1 VIBE FS	POST 30SEC COR T1 VIBE FS	POST COR T1 VIBE FS	POST AX T1 VIBE FS
Base Resolution	256	256	320	256	320	256	128	320	320	320	320
Phase Resolution	70 %	70 %	70 %	100 %	80 %	100 %	100 %	60 %	60 %	60 %	75 %
Slice Resolution	—	—	—	—	—	—	—	50 %	50 %	50 %	50 %
Averages	1	1	1	1	1	1	—	1	1	1	1
Concatenations	23	23	4	14	4	—	1	1	1	1	1
FoV Read	430 mm	430 mm	368 mm	450 mm	400 mm	400 mm	400 mm	450 mm	450 mm	380 mm	380 mm
FoV Phase	100.0 %	100.0 %	100.0 %	100.0 %	81.3 %	81.3 %	81.3 %	100.0 %	100.0 %	100.0 %	81.3 %
Phase Encoding Dir.	A >> P	A >> P	R >> L	R >> L	A >> P	A >> P	A >> P	R >> L	R >> L	R >> L	A >> P
Phase Oversampling	25 %	25 %	50 %	30 %	0 %	0 %	0 %	20 %	20 %	20 %	0 %
Slice Oversampling	—	—	—	—	—	—	—	38.5 %	38.5 %	33.3 %	30.0 %
Phase Partial Fourier	6/8	6/8	5/8	Off	5/8	7/8	Off	6/8	6/8	6/8	Off
Slice Partial Fourier	—	—	—	—	—	—	—	5/8	5/8	5/8	7/8
Interpolation	On	On	1.00	On	1.00	On	On	Off	Off	Off	Off
Trajectory	—	—	—	Cartesian	—	Cartesian	—	Cartesian	Cartesian	Cartesian	Cartesian
Multi-Slice Mode	Sequential	Sequential	Single Shot	Sequential	Single Shot	Sequential	Interleaved	—	—	—	—

SCANNING RANGE

Scan Description	localizer_Free breathing	localizer_bh	COR T2 HASTE FS	COR T2 TRUFI CINE flat_breathing	AX T2 FS HASTE BH	AX T2 TRUFI BH	AX DWI B50_800	PRE COR T1 VIBE FS	POST 30SEC COR T1 VIBE FS	POST COR T1 VIBE FS	POST AX T1 VIBE FS
Slice Thickness	7.0 mm	7.0 mm	4.0 mm	10.0 mm	4.0 mm	4.0 mm	4.0 mm	2.5 mm	2.5 mm	1.5 mm	3.0 mm
Slices	5 Slices	5 Slices	48 Slices	14 Slices	48 Slices	48 Slices	48 Slices	104 Slices per Slab	104 Slices per Slab	144 Slices per Slab	80 Slices per Slab
Distance Factor	150 %	150 %	20 %	20 %	20 %	20 %	20 %	20 %	20 %	20 %	20 %
Special Saturation	None	None	None	None	Parallel F/H	None	None	None	None	None	None
Raw Filter	Off	Off	Off	Off	Off	Off	On	Off	Off	Off	Off
Elliptical Filter	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off	Off
Image Filter	Off	Off	On	On	On	On	—	On	On	On	Off
Distortion Correction	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D	2D
Normalize	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan	Prescan
Noise Masking	—	—	—	—	—	—	Off	Off	Off	Off	Off
Time of Acquisition	19 sec	19 sec	1:37 min	5:00 min	1:37 min	18 sec	2:17 min	13 sec	13 sec	16 sec	14 sec

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NW IMAGING FORUMS, INC.

DIFFUSION

Scan Description	localizer_Free breathing	localizer_bh	COR T2 HASTE FS	COR T2 TRUFI CINE flat_breathing	AX T2 FS HASTE BH	AX T2 TRUFI BH	AX DWI B50_800	PRE COR T1 VIBE FS	POST 30SEC COR T1 VIBE FS	POST COR T1 VIBE FS	POST AX T1 VIBE FS
Diffusion Mode	—	—	—	—	—	—	3D Diagonal	—	—	—	—
Diffusion Scheme	—	—	—	—	—	—	Monopolar	—	—	—	—
Diff. Directions	—	—	—	—	—	—	1	—	—	—	—
b-value 1	—	—	—	—	—	—	50 s/mm²	—	—	—	—
b-value 2	—	—	—	—	—	—	800 s/mm²	—	—	—	—
Averages b-value 1	—	—	—	—	—	—	5	—	—	—	—
Averages b-value 2	—	—	—	—	—	—	20	—	—	—	—
Diff. Weightings	—	—	—	—	—	—	2	—	—	—	—
Diff. Weighted Images	—	—	—	—	—	—	On	—	—	—	—
Trace Weighted Images	—	—	—	—	—	—	Off	—	—	—	—
ADC Maps	—	—	—	—	—	—	On	—	—	—	—
Exponential ADC Maps	—	—	—	—	—	—	Off	—	—	—	—
FA Maps	—	—	—	—	—	—	Off	—	—	—	—
Calculated Image	—	—	—	—	—	—	Off	—	—	—	—

PHYSIO / GATING

Scan Description	localizer_Free breathing	localizer_bh	COR T2 HASTE FS	COR T2 TRUFI CINE flat_breathing	AX T2 FS HASTE BH	AX T2 TRUFI BH	AX DWI B50_800	PRE COR T1 VIBE FS	POST 30SEC COR T1 VIBE FS	POST COR T1 VIBE FS	POST AX T1 VIBE FS
1st Signal/Mode	None	None	None	None	None	None	None	—	—	—	—
Resp. Control	Off	Off	Breath-hold	Off	Breath-hold	Breath-hold	Off	Breath-hold	Breath-hold	Breath-hold	Breath-hold

POST-PROCESSING / INLINE

Scan Description	localizer_Free breathing	localizer_bh	COR T2 HASTE FS	COR T2 TRUFI CINE flat_breathing	AX T2 FS HASTE BH	AX T2 TRUFI BH	AX DWI B50_800	PRE COR T1 VIBE FS	POST 30SEC COR T1 VIBE FS	POST COR T1 VIBE FS	POST AX T1 VIBE FS
Subtract	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
Subtract Measurements	1	1	1	1	1	1	—	1	1	1	1
StdDev	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
MIP Sagittal	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
MIP Coronal	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
MIP Transversal	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
MIP Time	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
Radial MIP	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
MPR Sagittal	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
MPR Coronal	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
MPR Transversal	Off	Off	Off	Off	Off	Off	—	Off	Off	Off	Off
Inline Composing	On	On	On	Off	On	On	—	Off	Off	On	On

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