PEDIATRIC ABDOMEN ENTEROGRAPHY 3T

INSTRUCTIONS AND PATIENT PREPARATION

Instructions	Non-sedated patients only. NPO 4 hours. Oral contrast (Breeza) given with age-based dosing (roughly 20 mL/kg), consumed over a 30-minute period per dose; scan the patient immediately after drinking (Breeza may be given via NG/NJ tube if necessary). Glucagon 0.5 mg administered intravenously while the patient is on the table, immediately prior to the exam. Inspiration breath-hold required; practice breath-holds with the patient prior to MRI. Cover top of bowel through pubic symphysis.
Position	Supine, head first
Coil	dStream Torso coil
Landmark	Center at mid abdomen

CONTRAST AGENT PARAMETERS

Contrast Agent	Dose	Injection Rate	Dose Timing Method and Scan Delay
Gadopiclenol (VUEWAY)	0.1 mL/kg (weight-based)	2 mL/sec (power injector)	Contrast bolus tracker; start scan after contrast visualized in lungs (lung blush)
Saline Flush	15 mL	2 mL/sec	Following contrast
Comments	Dynamic contrast injection with power injector: 0.1 mL/kg by weight at 2 mL/sec, followed by 15 mL normal saline at 2 mL/sec. If the volume is too small for the power injector (typically less than 1 mL), place extension tubing and hand inject. Contrast bolus tracker used for timing.		

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

IMAGING FORUMS, INC.

INFO PAGE

Scan Description	Survey	AX DWI RT LOWER	AX DWI RT UPPER	AX T2 FS SS	CO T2 FS SS	CO T2 TSE	CO T1 FS DYNAMIC CONTRAST INJECTION	AX T1 FS POST CONTRAST
Total scan duration	00:10.2	03:12.0	03:12.0	00:55.7	00:43.2	00:45.0	00:58.5	00:25.9
Rel. SNR	1.76241052	2.9945848	2.99458718	0.456241518	0.665789068	0.576083004	1	1.36099136
Act. TR(ms)	—	1368	1368	581	1199	1250	—	—
Act. TE(ms)	—	59	59	70	80	80	—	—
Act. TR/TE(ms)	6.9 / 4.6	—	—	—	—	—	—	—
Act. TR/TI(ms)	—	—	—	—	—	—	—	—
Act. TR/TE1/delta TE(ms)	—	—	—	—	—	—	—	—
ACQ matrix M x P	256 x 128	92 x 58	92 x 58	200 x 143	256 x 185	320 x 200	284 x 217	172 x 149
ACQ voxel MPS (mm)	1.76 / 3.52 / 15.0	3.04 / 2.96 / 6.00	3.04 / 2.96 / 6.00	1.50 / 1.82 / 5.00	1.76 / 1.74 / 4.00	1.41 / 1.60 / 5.00	1.58 / 1.53 / 4.00	1.74 / 1.76 / 3.50
REC voxel MPS (mm)	1.76 / 1.76 / 15.0	1.59 / 1.59 / 6.00	1.59 / 1.59 / 6.00	1.25 / 1.25 / 5.00	1.34 / 1.34 / 4.00	0.88 / 0.88 / 5.00	1.04 / 1.04 / 2.00	0.94 / 0.94 / 1.75
Scan percentage (%)	50	102.380951	102.380951	82.7586212	100.925926	87.8787842	103.311256	98.6842117
Packages	—	2	2	—	—	—	—	2
TFE shots	—	—	—	—	—	—	—	—
TFE dur. shot / acq (ms)	925.8 / 879.6	—	—	—	—	—	—	—
TFE shot interval (ms)	—	—	—	—	—	—	—	—
Min. TI delay	474.358093	—	—	—	—	—	—	—
Min. slice gap (mm)	—	-0	-0	—	—	—	—	—
EPIfactor	—	43	43	—	—	—	—	—
Act.slicegap (mm)	—	—	—	—	—	—	-2	-1.75
Act. WFS (pix) / BW (Hz)	0.601 / 723.4	—	—	—	—	—	0.355 / 1222.5	0.293 / 1483.0
Min. WFS (pix) / Max. BW (Hz)	0.587 / 739.8	—	—	—	—	—	0.286 / 1517.7	0.293 / 1483.0
Min. TR/TE(ms)	6.9 / 3.1	—	—	—	—	—	—	—
Min. TR/TE1/delta TE(ms)	—	—	—	—	—	—	—	—
WFS (pix) / BW (Hz)	—	10.956 / 39.6	10.956 / 39.6	0.883 / 492.1	0.819 / 530.7	0.945 / 459.6	—	—
TSE es / shot(ms)	—	—	—	4.8 / 238	4.4 / 316	4.8 / 216	—	—
TEeff / TEequiv(ms)	—	—	—	70 / 62	80 / 75	80 / 72	—	—
Min. TR(ms)	—	—	—	—	—	626	—	—
Min. TR/TI(ms)	—	—	—	—	—	—	—	—
BW in EPI freq. dir. (Hz)	—	2197.1	2197.1	—	—	—	—	—
SPIR offset act./default (Hz)	—	—	—	—	—	—	—	—
Local torso SAR	< 35 %	< 57 %	< 57 %	< 100 %	< 100 %	< 50 %	< 28 %	< 25 %
Whole body SAR / level	< 1.1 W/kg / normal	< 1.5 W/kg / normal	< 1.5 W/kg / normal	< 3.2 W/kg / 1st level	< 2.7 W/kg / 1st level	< 1.3 W/kg / normal	< 0.8 W/kg / normal	< 0.8 W/kg / normal
SED	0.0 kJ/kg	< 0.3 kJ/kg	< 0.3 kJ/kg	< 0.2 kJ/kg	< 0.1 kJ/kg	< 0.1 kJ/kg	0.0 kJ/kg	0.0 kJ/kg
Coil Power	—	45 %	45 %	96 %	80 %	40 %	23 %	24 %
Max B1+rms	1.35 uT	1.58 uT	1.58 uT	2.29 uT	2.15 uT	1.48 uT	1.11 uT	1.14 uT
PNS / level	17 % / normal	77 % / normal	77 % / normal	59 % / normal	67 % / normal	58 % / normal	61 % / normal	76 % / normal
dB/dt	16.1 T/s	121.7 T/s	121.6 T/s	81.6 T/s	108.5 T/s	99.3 T/s	113.4 T/s	101.3 T/s
Sound Pressure Level (dB)	0.118939735	10.7022247	10.700799	8.3959341	17.3612576	12.3386784	12.9358244	16.3594475
Boil-off (hPa/h)	—	—	—	—	—	—	—	—
Max Boil-off (hPa/h)	—	—	—	—	—	—	—	—
Boil-off (hPa)	—	—	—	—	—	—	—	—

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

IMAGING FORUMS, INC.

GEOMETRY

Scan Description	Survey	AX DWI RT LOWER	AX DWI RT UPPER	AX T2 FS SS	CO T2 FS SS	CO T2 TSE	CO T1 FS DYNAMIC CONTRAST INJECTION	AX T1 FS POST CONTRAST
Nucleus	—	—	—	—	—	—	—	—
SmartSelect	yes	yes	yes	yes	yes	yes	yes	yes
Coil 1 (exclude)	—	None	None	—	None	None	None	—
Uniformity	—	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
FOV AP (mm)	—	171.818176	171.818176	260	179	197.5	200	262.5
FOV FH (mm)	450	223	223	—	450	450	450	—
FOV RL (mm)	450	280	280	300	321.428558	319.921875	333.333344	300
stack RL (mm)	—	—	—	—	—	—	—	—
ACQ voxel size AP (mm)	—	2.98669624	2.98669624	1.79999995	—	—	4	1.75
ACQ voxel size FH (mm)	1.7578125	—	—	—	1.75	1.39999998	1.58000004	3.5
ACQ voxel size RL (mm)	3.515625	3	3	1.5	1.75	1.60000002	1.53030849	1.75
Slice thickness (mm)	15	6	6	5	4	5	—	—
Recon voxel size AP (mm)	—	1.59090912	1.59090912	1.25	—	—	2	0.9375
Recon voxel size FH (mm)	1.7578125	—	—	—	1.33928573	0.87890625	1.04166663	1.75
Recon voxel size RL (mm)	1.7578125	1.59090912	1.59090912	1.25	1.33928573	0.87890625	1.04166663	0.9375
Fold-over suppression	no	oversampling	oversampling	no	oversampling	oversampling	oversampling	no
Slice oversampling	—	—	—	—	—	—	default	default
oversample factor	—	—	—	—	—	—	—	—
ENCASE enable	—	—	—	—	—	—	no	no
RF select. FOS	—	—	—	—	—	—	—	—
Reconstruction matrix	256	176	176	240	336	512	432	320
SENSE	no	yes	yes	yes	yes	yes	yes	yes
Preduction (AP)	—	2	2	2	—	—	—	2
MB SENSE	—	no	no	—	—	—	—	—
CS-SENSE	no	no	no	no	no	no	no	no
reduction	—	—	—	—	—	—	—	—
denoising	—	—	—	—	—	—	—	—
k-t Acceleration	no	no	no	no	no	no	no	no
Stacks	3	1	1	2	1	1	1	2
current	—	—	—	—	—	—	—	—
type	parallel	parallel	parallel	parallel	parallel	parallel	—	parallel
slices	1	32	32	42	36	36	100	131
slice gap	user defined	user defined	user defined	user defined	user defined	user defined	—	—
gap (mm)	10	1	1	0.5	1	0.5	—	10
slice orientation	coronal	transverse	transverse	transverse	coronal	coronal	coronal	transverse
fold-over direction	RL	AP	AP	AP	RL	RL	RL	AP
fat shift direction	P	A	A	L	F	F	F	L
Minimum number of packages	—	2	2	—	—	—	—	—
Multi-chunk	—	—	—	—	—	—	no	no
Slice scan order	default	interleaved	interleaved	interleaved	interleaved	interleaved	—	—
Stack scan order	ascend	—	—	FH	—	—	—	FH

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Stack sort order	no	—	—	—	—	—	—	—
O-MAR	—	—	—	no	no	no	—	—
Large table movement	no	yes	yes	no	no	no	no	no
Plan Align	no	no	no	no	no	no	no	no
REST slabs	0	0	0	0	0	0	0	0
type	—	—	—	—	—	—	—	—
thickness (mm)	—	—	—	—	—	—	—	—
position	—	—	—	—	—	—	—	—
gap	—	—	—	—	—	—	—	—
power	—	—	—	1	1	—	—	—
Interactive positioning	no	no	no	no	no	no	no	no
Allow table movement	—	—	—	—	—	—	—	—
Patient position	head first	head first	head first	head first	head first	head first	head first	head first
Patient body position	head first	head first	head first	head first	head first	head first	head first	head first
Patient orientation	supine	supine	supine	supine	supine	supine	supine	supine
Patient body orientation	supine	supine	supine	supine	supine	supine	supine	supine

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Pediatric

IMAGING FORUMS, INC.

CONTRAST

Scan Description	Survey	AX DWI RT LOWER	AX DWI RT UPPER	AX T2 FS SS	CO T2 FS SS	CO T2 TSE	CO T1 FS DYNAMIC CONTRAST INJECTION	AX T1 FS POST CONTRAST
Scan type	Imaging	Imaging	Imaging	Imaging	Imaging	Imaging	Imaging	Imaging
Scan mode	M2D	MS	MS	M2D	M2D	M2D	3D	3D
technique	FFE	SE	SE	SE	SE	SE	FFE	FFE
Modified SE	—	no	no	no	no	no	—	—
3D non-selective	—	—	—	—	—	—	—	—
loop order	—	—	—	—	—	—	zy_order	zy_order
Contrast enhancement	T1	—	—	—	—	—	T1	T1
Acquisition mode	cartesian	cartesian	cartesian	cartesian	cartesian	cartesian	cartesian	cartesian
Fast Imaging mode	TFE	EPI	EPI	TSE	TSE	TSE	none	none
3D VIEW	—	—	—	—	—	—	—	—
shot mode	single-shot	single-shot	single-shot	single-shot	single-shot	single-shot	—	—
TFE factor	128	—	—	—	—	—	—	—
TSE factor	—	—	—	50	72	45	—	—
startup echoes	default	—	—	0	0	0	—	—
shot interval	—	—	—	—	—	—	—	—
profile order	linear	—	—	linear	linear	linear	—	—
turbo direction	—	—	—	—	—	—	—	—
DRIVE	—	—	—	no	no	no	—	—
ultrashort	—	—	—	yes	yes	yes	—	—
shift	—	—	—	—	—	—	—	—
fid reduction	—	—	—	strong	strong	strong	—	—
Echoes	1	1	1	1	1	1	2	2
partial echo	no	no	no	no	no	no	no	no
shifted echo	no	—	—	—	—	—	no	no
TE	in-phase	shortest	shortest	user defined	user defined	user defined	shortest	shortest
(ms)	4.60384226	—	—	70	80	80	—	—
echospacing	—	—	—	—	—	—	—	—
(ms)	—	—	—	—	—	—	—	—
flyback	—	—	—	—	—	—	no	no
Flip angle (deg)	25	90	90	90	90	90	10	10
Refocusing control	—	—	—	constant	constant	constant	—	—
angle (deg)	—	—	—	120	135	125	—	—
bright fat reduction	—	—	—	no	no	no	—	—
TR	shortest	shortest	shortest	shortest	shortest	user defined	shortest	shortest
(ms)	—	—	—	—	—	1250	—	—
minimum (ms)	—	—	—	—	—	—	—	—
maximum (ms)	—	—	—	—	—	—	—	—
Halfscan	no	yes	yes	default	default	default	yes	yes
factor	—	0.698113024	0.698113024	—	—	—	—	—
factor Y	—	—	—	—	—	—	0.725000024	0.850000024
factor Z	—	—	—	—	—	—	0.800000012	0.850000024

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Water-fat shift	user defined	minimum	minimum	maximum	maximum	maximum	user defined	minimum
(pixels)	0.600000024	—	—	—	—	—	0.349999994	—
IR delay (ms)	—	—	—	—	—	—	—	—
dual	—	—	—	—	—	—	—	—
power	—	—	—	—	—	—	—	—
RF Shims	—	adaptive	adaptive	fixed	adaptive	adaptive	adaptive	fixed
Shim	—	auto	auto	default	default	default	auto	default
mDIXON	no	no	no	no	no	no	yes	yes
Fat suppression	no	SPIR	SPIR	SPAIR	SPAIR	no	no	no
strength	—	strong	strong	—	—	—	—	—
power	—	—	—	1	1	—	—	—
inversion delay	—	—	—	auto	auto	—	—	—
suppr. level	—	—	—	strong	strong	—	—	—
frequency offset	—	default	default	user defined	default	—	—	—
offset (Hz)	—	—	—	220	—	—	—	—
Grad Rev Fat suppr	—	yes	yes	no	no	no	—	—
Water suppression	no	no	no	no	no	no	no	no
TFE prepulse	invert	—	—	—	—	—	—	—
slice selection	no	—	—	—	—	—	—	—
delay	shortest	—	—	—	—	—	—	—
(ms)	—	—	—	—	—	—	—	—
BB pulse	—	no	no	no	no	no	—	—
MTC	no	no	no	no	no	no	no	no
T2prep	no	—	—	—	—	—	—	—
echo time(ms)	—	—	—	—	—	—	—	—
refocusing pulses	—	—	—	—	—	—	—	—
APT	—	no	no	no	no	no	—	—
Custom prepulse	no	no	no	no	no	no	no	no
MDME	no	no	no	no	no	no	no	no
Diffusion mode	no	DWI	DWI	no	no	no	no	no
sequence	—	—	—	—	—	—	—	—
gradient expert mode	—	—	—	—	—	—	—	—
gradient overplus	—	yes	yes	—	—	—	—	—
direction	—	—	—	—	—	—	—	—
nr of b-factors	—	3	3	—	—	—	—	—
b-factor order	—	user defined	user defined	—	—	—	—	—
max b-factor	—	—	—	—	—	—	—	—
average high b	—	yes	yes	—	—	—	—	—
T1 mapping	no	no	no	no	no	no	no	no
Transmit channels	—	both	both	both	both	both	both	both
SAR mode	low	high	high	high	high	high	high	high
B1 mode	default	default	default	default	default	default	default	default
SAR allow first level	yes	yes	yes	yes	yes	yes	yes	yes

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Patient pregnancy	no	no	no	no	no	no	no	no
Patient WB SAR [W/kg]	0	0	0	0	0	0	0	0
Patient Head SAR [W/kg]	0	0	0	0	0	0	0	0
Patient max. dB/dt [T/s]	0	0	0	0	0	0	0	0
Max slewrate [T/m/s]	0	0	0	0	0	0	0	0
Max. B1+rms [uT]	0	0	0	0	0	0	0	0
PNS mode	low	high	high	high	high	moderate	high	high
Gradient mode	regular	maximum	maximum	maximum	maximum	maximum	maximum	maximum
SofTone mode	no	no	no	no	no	no	no	no

MOTION

Scan Description	Survey	AX DWI RT LOWER	AX DWI RT UPPER	AX T2 FS SS	CO T2 FS SS	CO T2 TSE	CO T1 FS DYNAMIC CONTRAST INJECTION	AX T1 FS POST CONTRAST
Cardiac synchronization	no	no	no	no	no	no	no	no
Heart rate > 250 bpm	no	no	no	no	no	no	no	no
Respiratory compensation	no	trigger	trigger	breath hold	breath hold	breath hold	breath hold	breath hold
Navigator respiratory comp	no	no	no	no	no	no	no	no
Flow compensation	no	no	no	no	no	no	no	no
Temporal slice spacing	—	default	default	—	—	—	—	—
Motion smoothing	no	—	—	no	no	no	—	—
fMRI echo stabilisation	no	—	—	—	—	—	no	no
NSA	1	3	3	1	1	1	1	1
MRE enable	no	no	no	no	no	no	no	no

DYNAMIC ANGIO

Scan Description	Survey	AX DWI RT LOWER	AX DWI RT UPPER	AX T2 FS SS	CO T2 FS SS	CO T2 TSE	CO T1 FS DYNAMIC CONTRAST INJECTION	AX T1 FS POST CONTRAST
Angio / Contrast enh.	no	—	—	—	—	—	contrast enh.	contrast enh.
Quantitative flow	no	—	—	—	—	—	no	no
CENTRA	—	—	—	—	—	—	—	—
Manual start	no	no	no	no	no	no	—	no
Dynamic study	no	no	no	no	no	no	individual	no
Arterial Spin labeling	no	no	no	no	no	no	no	no

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Pediatric

IMAGING FORUMS, INC.

POST PROCESSING

Scan Description	Survey	AX DWI RT LOWER	AX DWI RT UPPER	AX T2 FS SS	CO T2 FS SS	CO T2 TSE	CO T1 FS DYNAMIC CONTRAST INJECTION	AX T1 FS POST CONTRAST
Preparation phases	—	auto	auto	auto	auto	auto	auto	full
Interactive F0	no	no	no	no	no	no	no	no
Quick Survey	default	default	default	default	default	default	default	default
SmartPlan survey	no	no	no	no	no	no	no	no
B0 field map	no	no	no	no	no	no	no	no
B1 field map	no	no	no	no	no	no	no	no
MIP/MPR	no	no	no	no	no	no	no	no
SWIp	no	—	—	—	—	—	no	no
Images	no	no	no	no	no	no	—	—
Autoview image	M	M	M	M	M	M	—	—
Calculated images	no	no	no	no	no	no	—	—
Reference tissue	Liver	Liver	Liver	Liver	Liver	Liver	Lung	Liver
Recon compression	No	No	No	No	No	No	No	Default
Preset window contrast	soft	soft	soft	soft	soft	soft	soft	no
Reconstruction mode	real time	immediate	immediate	real time	real time	real time	real time	real time
Save raw data	no	no	no	no	no	no	no	no
Hardcopy protocol	no	no	no	no	no	no	no	no
Image filter	system default	system default	system default	system default	system default	system default	system default	system default
Uniformity correction	no	no	no	no	no	no	no	no
Geometry correction	default	default	default	default	default	default	default	default
EPI geometry correction	—	no	no	—	—	—	—	—
ADC correction	—	no	no	—	—	—	—	—
Elliptical k-space shutter	—	—	—	—	—	—	default	default
Free rotatable	no	no	no	no	no	no	no	no

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