PEDIATRIC SPINE 3T

INSTRUCTIONS AND PATIENT PREPARATION

Instructions	No NPO requirements. Free-breathing.
Position	Supine, head first
Coil	dStream Posterior coil
Landmark	Center at area of interest

CONTRAST AGENT PARAMETERS

Contrast Agent	Dose	Injection Rate	Dose Timing Method and Scan Delay
Gadopiclenol (VUEWAY)	0.1 mL/kg (single dose, weight-based)	Hand injection	IV placed prior to start of MRI
Saline Flush	5-10 mL	Hand injection	Following contrast
Comments	Single dose of VUEWAY 0.1 mL/kg based on patient weight; hand inject followed by 5-10 mL saline flush. Report agent administered and dose.		

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

NW IMAGING FORUMS, INC.

INFO PAGE

Scan Description	Survey	SG T1 DIXON	SG T2 DIXON	AX T1 3D	AX T2	CO T2 mDIXON	SG T1 DIXON POST CONTRAST	AX T1 3D POST CONTRAST	CO T1 mDIXON POST CONTRAST
Total scan duration	00:43.0	04:08.8	04:54.0	01:36.6	03:40.9	03:49.6	04:08.8	01:04.9	04:09.0
Rel. SNR	5.4462347	6.63062191	2.38801455	2.22599983	1.17035472	3.38538837	6.63062191	1.8175211	5.74215841
Act. TR(ms)	—	457	3000	—	4248	2800	457	—	652
Act. TE(ms)	—	11	100	—	95	80	11	—	12
Act. TR/TE(ms)	24 / 4.0	—	—	4.2 / 2.3	—	—	—	4.2 / 2.3	—
Act. TR/TI(ms)	—	—	—	—	—	—	—	—	—
Act. TR/TE1/delta TE(ms)	—	—	—	—	—	—	—	—	—
ACQ matrix M x P	152 x 150	200 x 267	228 x 273	188 x 187	252 x 176	216 x 191	200 x 267	188 x 187	200 x 300
ACQ voxel MPS (mm)	1.97 / 2.00 / 4.00	0.80 / 0.90 / 3.00	0.70 / 0.88 / 3.00	0.80 / 0.80 / 3.00	0.60 / 0.85 / 3.00	0.65 / 0.92 / 3.00	0.80 / 0.90 / 3.00	0.80 / 0.80 / 3.00	0.70 / 0.80 / 3.00
REC voxel MPS (mm)	1.34 / 1.34 / 4.00	0.50 / 0.50 / 3.00	0.42 / 0.42 / 3.00	0.52 / 0.52 / 3.00	0.43 / 0.43 / 3.00	0.44 / 0.44 / 3.00	0.50 / 0.50 / 3.00	0.52 / 0.52 / 3.00	0.42 / 0.42 / 3.00
Scan percentage (%)	98.6842117	88.8888855	79.7202835	99.408287	69.8412704	70.6319733	88.8888855	99.408287	87.441864
Packages	3	2	2	—	4	2	2	—	2
TFE shots	—	—	—	—	—	—	—	—	—
TFE dur. shot / acq (ms)	—	—	—	268.4 / 262.9	—	—	—	268.4 / 262.9	—
TFE shot interval (ms)	—	—	—	268.382111	—	—	—	268.382111	—
Min. TI delay	—	—	—	—	—	—	—	—	—
Min. slice gap (mm)	-0	3	3	—	3	3	3	—	3
EPIfactor	—	—	—	—	—	—	—	—	—
Act.slicegap (mm)	—	0.300000012	—	0	0.300000012	—	0.300000012	0	0.300000012
Act. WFS (pix) / BW (Hz)	1.149 / 378.1	—	—	0.601 / 722.7	—	—	—	0.601 / 722.7	—
Min. WFS (pix) / Max. BW (Hz)	0.518 / 839.1	—	—	0.568 / 764.2	—	—	—	0.568 / 764.2	—
Min. TR/TE(ms)	—	—	—	4.2 / 1.90	—	—	—	4.2 / 1.90	—
Min. TR/TE1/delta TE(ms)	—	—	—	—	—	—	—	—	—
WFS (pix) / BW (Hz)	—	1.856 / 234.1	1.506 / 288.6	—	1.222 / 355.6	1.802 / 241.1	1.856 / 234.1	—	1.762 / 246.5
TSE es / shot(ms)	—	11.0 / 44	10.0 / 190	—	8.3 / 190	10.0 / 190	11.0 / 44	—	11.5 / 46
TEeff / TEequiv(ms)	—	11 / 11	100 / 89	—	95 / 84	80 / 70	11 / 11	—	12 / 12
Min. TR(ms)	—	457	2073	—	4248	1741	457	—	652
Min. TR/TI(ms)	—	—	—	—	—	—	—	—	—
BW in EPI freq. dir. (Hz)	—	—	—	—	—	—	—	—	—
SPIR offset act./default (Hz)	—	—	—	—	—	—	—	—	—
Local torso SAR	< 24 %	< 100 %	< 69 %	< 33 %	< 100 %	< 62 %	< 100 %	< 33 %	< 68 %
Whole body SAR / level	< 0.8 W/kg / normal	< 2.9 W/kg / 1st level	< 2.0 W/kg / normal	< 1.1 W/kg / normal	< 2.9 W/kg / 1st level	< 1.8 W/kg / normal	< 2.9 W/kg / 1st level	< 1.1 W/kg / normal	< 2.0 W/kg / normal
SED	0.0 kJ/kg	< 0.7 kJ/kg	< 0.6 kJ/kg	< 0.1 kJ/kg	< 0.6 kJ/kg	< 0.4 kJ/kg	< 0.7 kJ/kg	< 0.1 kJ/kg	< 0.5 kJ/kg
Coil Power	—	87 %	60 %	31 %	87 %	54 %	87 %	31 %	59 %
Max B1+rms	1.11 uT	2.18 uT	1.82 uT	1.31 uT	2.18 uT	1.72 uT	2.18 uT	1.31 uT	1.80 uT
PNS / level	17 % / normal	45 % / normal	59 % / normal	76 % / normal	60 % / normal	46 % / normal	45 % / normal	76 % / normal	35 % / normal
dB/dt	16.1 T/s	82.2 T/s	58.8 T/s	107.4 T/s	76.7 T/s	76.3 T/s	82.2 T/s	107.4 T/s	68.4 T/s
Sound Pressure Level (dB)	-2.40879846	9.97241497	9.130023	16.8201542	6.88784981	9.24331474	9.97241497	16.8201542	3.91724324
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	SG T1 DIXON	SG T2 DIXON	AX T1 3D	AX T2	CO T2 mDIXON	SG T1 DIXON POST CONTRAST	AX T1 3D POST CONTRAST	CO T1 mDIXON POST CONTRAST
Nucleus	—	—	—	—	—	—	—	—	—
SmartSelect	yes	yes	yes	yes	yes	yes	yes	yes	yes
Coil 1 (exclude)	—	None	None	None	None	None	None	None	None
Uniformity	—	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
FOV AP (mm)	—	160	160	150	150	49.2000008	160	150	49.2000008
FOV FH (mm)	300	240	240	171	171.300003	140	240	171	240
FOV RL (mm)	300	49.2000008	49.2000008	150	150	175	49.2000008	150	140
stack RL (mm)	—	—	—	—	—	—	—	—	—
ACQ voxel size AP (mm)	—	0.800000012	0.699999988	0.800000012	0.800000012	—	0.800000012	0.800000012	—
ACQ voxel size FH (mm)	2	0.899999976	0.850000024	3	—	0.649999976	0.899999976	3	0.800000012
ACQ voxel size RL (mm)	2	—	—	0.800000012	0.600000024	0.800000012	—	0.800000012	0.699999988
Slice thickness (mm)	4	3	3	—	3	3	3	—	3
Recon voxel size AP (mm)	—	0.5	0.416666657	0.520833313	0.426136374	—	0.5	0.520833313	—
Recon voxel size FH (mm)	1.33928573	0.5	0.416666657	3	—	0.4375	0.5	3	0.416666657
Recon voxel size RL (mm)	1.33928573	—	—	0.520833313	0.426136374	0.4375	—	0.520833313	0.416666657
Fold-over suppression	oversampling	oversampling	oversampling	oversampling	oversampling	oversampling	oversampling	oversampling	oversampling
Slice oversampling	—	—	—	default	—	—	—	default	—
oversample factor	—	—	—	—	—	—	—	—	—
ENCASE enable	—	—	—	no	—	—	—	no	—
RF select. FOS	—	—	—	—	—	—	—	—	—
Reconstruction matrix	224	480	576	288	352	400	480	288	576
SENSE	no	no	yes	yes	yes	yes	no	yes	yes
Preduction (AP)	—	—	—	1.5	1.79999995	—	—	1.5	—
MB SENSE	—	—	—	—	—	—	—	—	—
CS-SENSE	no	no	no	no	no	no	no	no	no
reduction	—	—	—	—	—	—	—	—	—
denoising	—	—	—	—	—	—	—	—	—
k-t Acceleration	no	no	no	no	no	no	no	no	no
Stacks	3	1	1	1	1	1	1	1	1
current	—	—	—	—	—	—	—	—	—
type	parallel	parallel	parallel	—	parallel	parallel	parallel	—	parallel
slices	3	15	15	57	52	15	15	57	15
slice gap	user defined	default	user defined	—	default	user defined	default	—	default
gap (mm)	5	—	0.299999952	—	—	0.299999952	—	—	—
slice orientation	coronal	sagittal	sagittal	transverse	transverse	coronal	sagittal	transverse	coronal
fold-over direction	FH	FH	FH	AP	AP	RL	FH	AP	FH
fat shift direction	P	P	P	L	L	F	P	L	L
Minimum number of packages	1	1	1	—	1	1	1	—	1
Multi-chunk	—	—	—	no	—	—	—	no	—
Slice scan order	default	default	default	—	default	default	default	—	default
Stack scan order	ascend	—	—	—	—	—	—	—	—

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Stack sort order	no	—	—	—	—	—	—	—	—
O-MAR	—	no	no	—	no	no	no	—	no
Large table movement	no	no	no	no	no	no	no	no	no
Plan Align	yes	no	no	no	no	no	no	no	no
REST slabs	0	0	1	1	1	0	0	1	0
type	—	—	free	free	free	—	—	free	—
thickness (mm)	—	—	60	60	60	—	—	60	—
position	—	—	—	—	—	—	—	—	—
gap	—	—	—	—	—	—	—	—	—
power	—	—	1	1	1	—	—	1	—
Interactive positioning	no	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	head first
Patient body position	head first	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	supine
Patient body orientation	supine	supine	supine	supine	supine	supine	supine	supine	supine

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Pediatric

IMAGING FORUMS, INC.

CONTRAST

Scan Description	Survey	SG T1 DIXON	SG T2 DIXON	AX T1 3D	AX T2	CO T2 mDIXON	SG T1 DIXON POST CONTRAST	AX T1 3D POST CONTRAST	CO T1 mDIXON POST CONTRAST
Scan type	Imaging	Imaging	Imaging	Imaging	Imaging	Imaging	Imaging	Imaging	Imaging
Scan mode	MS	MS	MS	3D	MS	MS	MS	3D	MS
technique	FFE	SE	SE	FFE	SE	SE	SE	FFE	SE
Modified SE	—	no	no	—	no	no	no	—	no
3D non-selective	—	—	—	—	—	—	—	—	—
loop order	—	—	—	—	—	—	—	—	—
Contrast enhancement	no	—	—	T1	—	—	—	T1	—
Acquisition mode	cartesian	cartesian	cartesian	cartesian	cartesian	cartesian	cartesian	cartesian	cartesian
Fast Imaging mode	none	TSE	TSE	TFE	TSE	TSE	TSE	TFE	TSE
3D VIEW	—	—	—	—	—	—	—	—	—
shot mode	—	multishot	multishot	single-shot	multishot	multishot	multishot	single-shot	multishot
TFE factor	—	—	—	62	—	—	—	62	—
TSE factor	—	4	19	—	22	19	4	—	4
startup echoes	—	0	0	user defined	0	0	0	user defined	0
shot interval	—	—	—	shortest	—	—	—	shortest	—
profile order	—	asymmetric	asymmetric	linear	linear	asymmetric	asymmetric	linear	asymmetric
turbo direction	—	—	—	Z	—	—	—	Z	—
DRIVE	—	no	no	—	yes	no	no	—	no
ultrashort	—	yes	yes	—	no	yes	yes	—	yes
shift	—	—	—	—	—	—	—	—	—
fid reduction	—	default	default	—	default	default	default	—	default
Echoes	1	1	1	1	1	1	1	1	1
partial echo	no	no	no	no	no	no	no	no	no
shifted echo	no	—	—	no	—	—	—	no	—
TE	shortest	shortest	user defined	in-phase	user defined	user defined	shortest	in-phase	shortest
(ms)	—	—	100	2.30192113	95	80	—	2.30192113	—
echospacing	—	user defined	user defined	—	—	user defined	user defined	—	user defined
(ms)	—	11	10	—	—	10	11	—	11.5
flyback	—	—	—	—	—	—	—	—	—
Flip angle (deg)	45	100	90	10	90	90	100	10	90
Refocusing control	—	constant	constant	—	constant	constant	constant	—	constant
angle (deg)	—	100	120	—	120	115	100	—	100
bright fat reduction	—	no	no	—	no	no	no	—	no
TR	shortest	range	range	shortest	range	range	range	shortest	range
(ms)	—	—	—	—	—	—	—	—	—
minimum (ms)	—	400	3000	—	2000	2800	400	—	400
maximum (ms)	—	775	6000	—	4500	6000	775	—	750
Halfscan	no	no	no	yes	no	no	no	yes	no
factor	—	—	—	—	—	—	—	—	—
factor Y	—	—	—	0.699999988	—	—	—	0.699999988	—
factor Z	—	—	—	0.850000024	—	—	—	0.850000024	—

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

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

MOTION

Scan Description	Survey	SG T1 DIXON	SG T2 DIXON	AX T1 3D	AX T2	CO T2 mDIXON	SG T1 DIXON POST CONTRAST	AX T1 3D POST CONTRAST	CO T1 mDIXON POST CONTRAST
Cardiac synchronization	no	no	no	no	no	no	no	no	no
Heart rate > 250 bpm	no	no	no	no	no	no	no	no	no
Respiratory compensation	no	no	no	no	no	no	no	no	no
Navigator respiratory comp	no	no	no	no	no	no	no	no	no
Flow compensation	no	sensitized	yes	no	yes	no	sensitized	no	sensitized
Temporal slice spacing	default	default	default	—	default	default	default	—	default
Motion smoothing	—	yes	yes	no	yes	yes	yes	no	yes
fMRI echo stabilisation	no	—	—	no	—	—	—	no	—
NSA	2	1	1	3	2	2	1	2	1
MRE enable	no	no	no	no	no	no	no	no	no

DYNAMIC ANGIO

Scan Description	Survey	SG T1 DIXON	SG T2 DIXON	AX T1 3D	AX T2	CO T2 mDIXON	SG T1 DIXON POST CONTRAST	AX T1 3D POST CONTRAST	CO T1 mDIXON 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	no	no
Dynamic study	no	no	no	no	no	no	no	no	no
Arterial Spin labeling	no	no	no	no	no	no	no	no	no

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IMAGING FORUMS, INC.

POST PROCESSING

Scan Description	Survey	SG T1 DIXON	SG T2 DIXON	AX T1 3D	AX T2	CO T2 mDIXON	SG T1 DIXON POST CONTRAST	AX T1 3D POST CONTRAST	CO T1 mDIXON POST CONTRAST
Preparation phases	—	auto	auto	full	auto	auto	auto	full	auto
Interactive F0	no	no	no	no	no	no	no	no	no
Quick Survey	default	default	default	default	default	default	default	default	default
SmartPlan survey	no	no	no	no	no	no	no	no	no
B0 field map	no	no	no	no	no	no	no	no	no
B1 field map	no	no	no	no	no	no	no	no	no
MIP/MPR	no	no	no	no	no	no	no	no	no
SWIp	no	—	—	no	—	—	—	no	—
Images	no	—	—	no	no	—	—	no	—
Autoview image	M	—	—	M	M	—	—	M	—
Calculated images	no	—	—	no	no	—	—	no	—
Reference tissue	Skeletal muscle	Skeletal muscle	Skeletal muscle	Lung	Skeletal muscle	Skeletal muscle	Skeletal muscle	Lung	Skeletal muscle
Recon compression	No	No	No	No	No	No	No	No	No
Preset window contrast	hard	intermediate	intermediate	soft	intermediate	intermediate	intermediate	soft	intermediate
Reconstruction mode	real time	real time	real time	real time	real time	real time	real time	real time	real time
Save raw data	no	no	no	no	no	no	no	no	no
Hardcopy protocol	no	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	system default
Uniformity correction	no	no	no	no	no	no	no	no	no
Geometry correction	default	default	default	default	default	default	default	default	default
EPI geometry correction	—	—	—	—	—	—	—	—	—
ADC correction	—	—	—	—	—	—	—	—	—
Elliptical k-space shutter	—	—	—	default	—	—	—	default	—
Free rotatable	no	no	no	no	no	no	no	no	no

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

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