NW
IMAGING FORUMS, INC.

CEREBROSPINAL FLUID (CSF) FLOW 1.5T

INSTRUCTIONS AND PATIENT PREPARATION

Instructions	• Cine PC (phase-contrast) are cardiac or peripheral gated • Contrast is not usually used for this study but the 3D postcontrast images can be useful to look at the anatomy
Indications	To be used for CSF Flow studies for Aqueduct, 3rd Ventricle evaluation and Chiari malformations
Position	Head first, supine
Coil	Head, HNU (Head 24 selected if possible)
Landmark	Nasion
Special Instructions	— | Aqueduct & 3rd Ventricle/ Foramen SAGITTAL | Chiari-Center Foramen Aqueduct-Center 3rd Ventricle | Chiari-Center Foramen Aqueduct-Center 3rd Ventricle | Chiari-Center Foramen Aqueduct-Center 3rd Ventricle

IMAGING PARAMETERS

Scan Description	SAGITTAL 3D T2 CUBE	Head: Aqueduct & 3rd Ventricle: SAGITTAL T2 CUBE Non-gated	Head: Aqueduct AXIAL CINE PC Flow Directions	Head: Aqueduct AXIAL FAST PC Flow Analysis	Head: Midline Aqueduct SAGITTAL CINE PC Flow Directions
Primary Sequence	Yes	Yes	Yes	Yes	Yes
Mode	3D	3D	CINE	2D	CINE
Pulse Sequence	CUBE	CUBE T2	VASC PC	VASC PC	VASC PC
Imaging Options	EDR, FAST, FR, ZIP2, ARC	EDR, FAST, FR, ZIP2, ARC	FC, SEQ	FC, SEQ, GATE, FR	FC, SEQ

SCAN PARAMETERS

Scan Description	SAGITTAL 3D T2 CUBE	Head: Aqueduct & 3rd Ventricle: SAGITTAL T2 CUBE Non-gated	Head: Aqueduct AXIAL CINE PC Flow Directions	Head: Aqueduct AXIAL FAST PC Flow Analysis	Head: Midline Aqueduct SAGITTAL CINE PC Flow Directions
TE	90	90	Def	Min	Def
TR	2400	2500	30	Def	30
Flip Angle	—	—	15	15	—
ETL	120	100	—	—	—
Bandwidth	41	62	15	31	20
Sat	—	—	14 Phases	—	—

ACQUISITION PARAMETERS

Scan Description	SAGITTAL 3D T2 CUBE	Head: Aqueduct & 3rd Ventricle: SAGITTAL T2 CUBE Non-gated	Head: Aqueduct AXIAL CINE PC Flow Directions	Head: Aqueduct AXIAL FAST PC Flow Analysis	Head: Midline Aqueduct SAGITTAL CINE PC Flow Directions
MATRIX freq	288	256	256	256	256
MATRIX phase	288	256	192	192	192
NEX	1	1	1	1	1
Phase FOV	0.9	0.9	—	—	—
FC Direction	S/I	—	Slice	Slice	Slice
User CV	ACC=2 OPT HS 1.2	—	Venc 20 Fl Anlys On	Venc 20 Fl Anlys On VPS 4 Trig delay-Min	Venc 10 Fl Anlys On Phase-14 Loc/acq-1

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.

Supported by an educational grant from Bracco Diagnostics Inc.

MR Protocol for GE HealthCare Systems
Central Nervous System

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SCANNING RANGE

Scan Description	SAGITTAL 3D T2 CUBE	Head: Aqueduct & 3rd Ventricle: SAGITTAL T2 CUBE Non-gated	Head: Aqueduct AXIAL CINE PC Flow Directions	Head: Aqueduct AXIAL FAST PC Flow Analysis	Head: Midline Aqueduct SAGITTAL CINE PC Flow Directions
FOV	25	25	24	24	24
Slice Thickness	1.2	1.2	10 mm-1 Slice	10 mm-1 Slice	10 mm-1 Slice
Spacing	—	0	0	0	0
Vascular card instructions	112	Phase 2 Slice 2	Phase=14 I locRecon Phase Dir and Magnitude	Recon Phase Dir -#Phase Recon-14	Recon Phase Dir
Scan Time	3-5 min	3-5 min	2-4 min	4-5 min	3-5 min
Total Scan Time Head: Aqueduct & 3rd Ventricle	14-23 min				

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