

**PROTOCOL: CRANIAL VESSEL WALL IMAGING (MRA+VWI) WWO**

**CLINICAL INDICATIONS/ HISTORY:** Vasculitis, Vasospasm, Moyamoya.  
Only to be ordered by a neurologist. \*Call a neuroradiologist before scanning\*

SCAN ORDER	PLANE	IMAGE CONTRAST/WEIGHTING	MODE	PULSE SEQ	COVERAGE	TR RANGE	TE RANGE	TI	FLIP ANGLE	THICKNESS/ GAP (mm)	FOV (cm)	Max Pixel (mm) Fr x Ph	PHASE AXIS	SEND TO PACS	Max scan time (target)
1	SAG	PC LOC	2D	PC	2 SLICES TO COVER CIRCLE OF WILLIS- VENC=60CM/S	MIN	MIN		20-30	60/0	24	1.25X1.25	PA	COLLAPSE	3:00
2	COR	PC LOC	2D	PC	1-2 SLICES TO COVER CIRCLE OF WILLIS VENC=60CM/S	MIN	MIN		20-30	60/0	24	1.25X1.25	RL	COLLAPSE	3:00
3	AX-AVOID ANGLE	TOF MRA (FATSAT IF POSSIBLE ON GE)	3D	TOF-MULTI	BELOW VERTEBRO-BASILAR JUNCTION REGION OF CORPUS CALLOSUM	MIN	6.9 IF FLOW COMP, MIN IF NO FC	SUPERIOR TRACKING SAT	20-30	.9-1.0/OVLP (5 SLABS OF 24-32 SLICES WITH 10-12 DISCARDS/OVERLAPS)	16-20	.9X.9	RL	FULL SERIES + BELOW	8:00
4	AX	T1	3D	SPACE / CUBE / VISTA / VIRT	CALL RADIOLOGIST TO GUIDE: CENTRAL ANT / POS CIRC (MCA BIFUR TO MCA BIFUR); OR WHOLE BRAIN	MIN	INPH		8-15 (130-180 FOR SPACE)	2-3/OVLP	16-20	.75X.9	RL	FULL SERIES	3:45
5	SAG	T2	3D	SPACE / CUBE / VISTA / VIRT	FULL HEAD	1300-1800	SYSTEM OPTIMIZED		>130	1/OVLP	25	1.0X1.0	PA	FULL SERIES + AX / COR 1 MM	5:00
CONTRAST															
6+C	AX	T1	3D	SPACE / CUBE / VISTA / VIRT	CALL RADIOLOGIST TO GUIDE: CENTRAL ANT / POS CIRC (MCA BIFUR TO MCA BIFUR); OR WHOLE BRAIN	MIN	INPH		8-15 (130-180 FOR SPACE)	2-3/OVLP	16-20	.75X.9	RL	FULL SERIES	3:45
*POST PROCESSING*: IF NOT AUTOGENERATED (SIEMENS) 3 PLANES OF FULL-VOLUME PROJECTED MIP: AP, LATERAL, CAUDOCRANIAL, AND 3 PLANES OF THICK (2D) SLIDING-SLAB MIPs (OBL. AX-PARALLEL TO ORBITAL ROOF/OBL. COR-PARALLEL TO BASILAR ARTERY/SAG) USING MIP RENDERING ALGORITHM (NEVER AVERAGE, MPR, OR SSD). SEE BELOW FOR DETAILS.															
USE SERIES 3 AS SOURCE DATA FOR THESE MPRs & MIPs	AP	VOLUME MIP	3D												
	LAT	VOLUME MIP	3D												
	CAUDO-CRANIAL	VOLUME MIP	3D												
	OBL AX	THICK MIP	2D		COVER ENTIRE SKULL					5-7/OVLP 3-5	20				
	OBL COR	THICK MIP	2D		COVER ENTIRE SKULL					5-7/OVLP 3-5	18				
	SAG	THICK MIP	2D		COVER ENTIRE SKULL					5-7/OVLP 3-5	22				