

Protocol: adult_neck_MRA NECK LIBRARY

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	2D
Patient Position	Supine	Pulse Sequence	Gradient Echo
Coil Configuration	GEM Head;GEM Neck	Imaging Options	Seq, Fast
Plane	3-PLANE	SCAN RANGE	
Series Description	3-Plane Localizer	FOV	40.0
SCAN TIMING		Slice Thickness	10.0
Number of Echoes	1	Slice Spacing	5.0
IMAGE ENHANCE		ACQ TIMING	
Filter Choice	None	Freq	256
GATING/TRIGGER		Phase	128
Auto Trigger Type	Off	Freq DIR	Unswap
MULTI-PHASE		NEX	1.00
Seperate Series	0	Phase FOV	1.00
Mask Phase	0	Auto Shim	Auto
Mask Pause	0	Phase Correction	No
DIFFUSION		FMRI	
Recon All Images	On	PSD Trigger	Internal
CONTRAST		Slice Order	Interleaved
Contrast Yes/No	No	View Order	Bottom/Up
		# of Repetitions REST	0
		# of Repetitions ACTIVE	0
		SAT	
		Tag Type	None
		TRICKS	
		Pause On/Off	On
		Auto Subtract	0
		Auto SCIC	Off

3-Plane Localizer

3-Plane Localizer

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PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	2D
Patient Position	Supine	Pulse Sequence	Vasc TOF SPGR
Coil Configuration	GEM Head;GEM Neck	Imaging Options	FC, Seq, EDR, Fast
Plane	AXIAL	SCAN RANGE	
Series Description	Ax 2D TOF FSPGR	FOV	22.0
SCAN TIMING		Slice Thickness	1.5
Flip Angle	80	Slice Spacing	-0.5
TE	Minimum	ACQ TIMING	
Number of Echoes	1	Freq	256
TR	Minimum	Phase	160
Receiver Bandwidth	31.25	Freq DIR	R/L
IMAGE ENHANCE		NEX	1.00
Filter Choice	None	# of Acq. Before Pause	0
GATING/TRIGGER		Phase FOV	0.75
Auto Trigger Type	Off	Auto Shim	Auto
FMRI		Phase Correction	No
PSD Trigger	Internal	USER CVS	
View Order	Bottom/Up	User CV4	10.00
# of Repetitions REST	0	MULTI-PHASE	
# of Repetitions ACTIVE	0	Seperate Series	0
SAT		Mask Phase	0
SAT Location	S	Mask Pause	0
Concat SAT	1	VASCULAR	
Tag Type	None	# of Collapse Images	Off
DIFFUSION		# of Projection Images	19
Recon All Images	On	TRICKS	
CONTRAST		Pause On/Off	On
Contrast Yes/No	No	Auto Subtract	0
		Auto SCIC	2

Ax 2D TOF FSPGR

Ax 2D TOF FSPGR

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Ax 3D TOF SPGR	PATIENT POSITION		IMAGING PARAMETERS	
	Patient Entry	Head First	Imaging Mode	3D
	Patient Position	Supine	Pulse Sequence	Vasc TOF SPGR
	Coil Configuration	GEM Head;GEM Neck	Imaging Options	FC, EDR, ZIP512, ZIP2
	Plane	AXIAL	SCAN RANGE	
	Series Description	Ax 3D TOF SPGR	FOV	22.0
	SCAN TIMING		Slice Thickness	2.4
	Flip Angle	20	Location per Slab	20
	TE	Minimum	Overlap Locations	6
	Number of Echoes	1	ACQ TIMING	
	TR	23.0	Freq	320
	Receiver Bandwidth	20.83	Phase	192
	IMAGE ENHANCE		Freq DIR	R/L
	Filter Choice	None	NEX	0.85
	GATING/TRIGGER		Phase FOV	0.88
	Auto Trigger Type	Off	Auto Shim	Auto
	FMRI		Phase Correction	No
	PSD Trigger	Internal	USER CVS	
	View Order	Bottom/Up	User CV5	1.00
	# of Repetitions REST	0	User CV9	1.00
	# of Repetitions ACTIVE	0	MULTI-PHASE	
	SAT		Seperate Series	0
	SAT Location	S	Mask Phase	0
	Concat SAT	1	Mask Pause	0
	Tag Type	None	VASCULAR	
Fat/Water Saturation	Fat	# of Collapse Images	Off	
DIFFUSION		# of Projection Images	19	
Recon All Images	On	Ramp Pulse	I->S	
CONTRAST		TRICKS		
Contrast Yes/No	No	Pause On/Off	On	
		Auto Subtract	0	
		Auto SCIC	2	

Ax 3D TOF SPGR

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3D Cor CEMRA FT	PATIENT POSITION		IMAGING PARAMETERS	
	Patient Entry	Head First	Imaging Mode	3D
	Patient Position	Supine	Pulse Sequence	Vasc TOF SPGR
	Coil Configuration	GEM Head;GEM Neck	Imaging Options	EDR, Fast, ZIP512, ZIP2, Fluoro
	Plane	OBLIQUE	SCAN RANGE	
	Series Description	3D Cor CEMRA FT	FOV	32.0
	SCAN TIMING		Slice Thickness	1.4
	Flip Angle	25	Location per Slab	44
	TE	Minimum	Overlap Locations	0
	Number of Echoes	1	ACQ TIMING	
	Receiver Bandwidth	31.25	Freq	384
	IMAGE ENHANCE		Phase	224
	Filter Choice	None	Freq DIR	S/I
	GATING/TRIGGER		NEX	1.00
	Auto Trigger Type	Off	Phase FOV	0.90
	FMRI		Auto Shim	Auto
	PSD Trigger	Internal	Phase Correction	No
	View Order	Bottom/Up	USER CVS	
	# of Repetitions REST	0	User CV5	1.00
	# of Repetitions ACTIVE	0	User CV12	1.00
	SAT		User CV19	1.00
	Tag Type	None	User CV23	100.00
	DIFFUSION		MULTI-PHASE	
	Recon All Images	On	Seperate Series	0
	CONTRAST		Trigger Delay without AV	0
	Contrast Yes/No	No	Mask Phase	0
			Mask Pause	0
			VASCULAR	
		# of Collapse Images	On	
		# of Projection Images	0	
		TRICKS		
		Pause On/Off	On	
		Auto Subtract	0	
		Auto SCIC	Off	
		OTHERS		
		Protocol Notes	Fluoro Trigger Click here to launch a video example	

3D Cor CEMRA FT

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3D Ax LAVA Flex	PATIENT POSITION		IMAGING PARAMETERS	
	Patient Entry	Head First	Imaging Mode	3D
	Patient Position	Supine	Pulse Sequence	LAVA
	Coil Configuration	GEM Head;GEM Neck;GEM Spine	Imaging Options	EDR, Fast, ZIP2, Nav, Flex
	Plane	AXIAL	IDEAL	7
	Series Description	3D Ax LAVA Flex	SCAN RANGE	
	SCAN TIMING		FOV	22.0
	Flip Angle	12	Slice Thickness	2.0
	TE	Min Full	Location per Slab	82
	Number of Echoes	2	Overlap Locations	0
	Receiver Bandwidth	62.50	ACQ TIMING	
	IMAGE ENHANCE		Freq	288
	Filter Choice	A	Phase	224
	GATING/TRIGGER		Freq DIR	R/L
	Auto Trigger Type	Off	Phase FOV	1.00
	FMRI		Auto Shim	Auto
	PSD Trigger	Internal	Phase Correction	No
	View Order	Bottom/Up	USER CVS	
	# of Repetitions REST	0	User CV6	1.00
	# of Repetitions ACTIVE	0	User CV16	1.00
	SAT		MULTI-PHASE	
	Tag Type	None	Seperate Series	0
	TRICKS		Trigger Delay without AV	0
	Pause On/Off	On	Mask Phase	0
	Auto Subtract	0	Mask Pause	0
	Auto SCIC	2	DIFFUSION	
	CONTRAST		Recon All Images	On
	Contrast Yes/No	No	TRACKER	
		Tracker Length	100.0	
		Tracker Thickness	20.0	

3D Ax LAVA Flex

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PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	2D
Patient Position	Supine	Pulse Sequence	PROPELLER
Coil Configuration	GEM Spine	Imaging Options	EDR, TRF, Fast, ARC
Plane	OBLIQUE	SCAN RANGE	
Series Description	Ax T1 FS PROP	FOV	22.0
SCAN TIMING		Slice Thickness	4.0
Flip Angle	110	Slice Spacing	1.0
Number of Echoes	1	ACQ TIMING	
TR	545.0	Freq	260
Echo Train Length	5	Freq DIR	A/P
Receiver Bandwidth	41.67	Fat Shift DIR	Normal (A)
IMAGE ENHANCE		NEX	2.00
Filter Choice	None	# of Acq. Before Pause	0
GATING/TRIGGER		Auto Shim	Auto
Auto Trigger Type	Off	Phase Correction	No
FMRI		USER CVS	
PSD Trigger	Internal	User CV5	1.00
View Order	Bottom/Up	User CV15	2.00
# of Repetitions REST	0	User CV16	1.00
# of Repetitions ACTIVE	0	User CV19	1.00
SAT		TR Min	500.0
Tag Type	None	TR Max	1000.0
Fat/Water Saturation	Fat	MULTI-PHASE	
TRICKS		Seperate Series	0
Pause On/Off	On	Mask Phase	0
Auto Subtract	0	Mask Pause	0
Auto SCIC	2	DIFFUSION	
		Recon All Images	On
		CONTRAST	
		Contrast Yes/No	No

Ax T1 FS PROP

Ax T1 FS PROP

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PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	3D
Patient Position	Supine	Pulse Sequence	LAVA
Coil Configuration	GEM Head;GEM Neck;GEM Spine	Imaging Options	EDR, Fast, ZIP2, Flex
Plane	AXIAL	IDEAL	7
Series Description	3D Ax LAVA Flex	SCAN RANGE	
SCAN TIMING		FOV	22.0
Flip Angle	12	Slice Thickness	2.0
TE	Min Full	Location per Slab	82
Number of Echoes	2	Overlap Locations	0
Receiver Bandwidth	62.50	ACQ TIMING	
IMAGE ENHANCE		Freq	224
Filter Choice	A	Phase	224
GATING/TRIGGER		Freq DIR	R/L
Auto Trigger Type	Off	NEX	1.00
FMRI		Phase FOV	1.00
PSD Trigger	Internal	Auto Shim	Auto
View Order	Bottom/Up	Phase Correction	No
# of Repetitions REST	0	USER CVS	
# of Repetitions ACTIVE	0	User CV6	1.00
SAT		User CV16	1.00
Tag Type	None	MULTI-PHASE	
TRICKS		Seperate Series	0
Pause On/Off	On	Trigger Delay without AV	0
Auto Subtract	0	Mask Phase	0
Auto SCIC	2	Mask Pause	0
CONTRAST		DIFFUSION	
Contrast Yes/No	No	Recon All Images	On
		TRACKER	
		Tracker Length	120.0
		Tracker Thickness	20.0

3D Ax LAVA Flex

3D Ax LAVA Flex

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3D AX T1 Cube FLEX	PATIENT POSITION		IMAGING PARAMETERS	
	Patient Entry	Head First	Imaging Mode	3D
	Patient Position	Supine	Pulse Sequence	Cube
	Coil Configuration	GEM Neck	Imaging Options	EDR, Fast, ZIP2, FR, ARC, Flex
	Plane	AXIAL	IDEAL	3
	Series Description	3D AX T1 Cube FLEX	SCAN RANGE	
	SCAN TIMING		FOV	30.0
	TE	12.0	Slice Thickness	1.2
	Number of Echoes	1	Location per Slab	130
	TR	882.0	Overlap Locations	0
	Echo Train Length	100	ACQ TIMING	
	Receiver Bandwidth	62.50	Freq	192
	IMAGE ENHANCE		Phase	192
	Filter Choice	G	Freq DIR	A/P
	GATING/TRIGGER		NEX	2.00
	Auto Trigger Type	Off	Phase FOV	1.00
	FMRI		Auto Shim	Auto
	PSD Trigger	Internal	Phase Correction	No
	View Order	Bottom/Up	USER CVS	
	# of Repetitions REST	0	User CV21	1.00
	# of Repetitions ACTIVE	0	User CV22	3.00
	SAT		MULTI-PHASE	
	SAT Location	A	Seperate Series	0
	SAT Location	I	Mask Phase	0
Tag Type	None	Mask Pause	0	
TRICKS		DIFFUSION		
Pause On/Off	On	Recon All Images	On	
Auto Subtract	0	CONTRAST		
Auto SCIC	Off	Contrast Yes/No	No	
OTHERS				
Protocol Notes	Place anterior and posterior sat bands over surface fat.			

3D AX T1 Cube FLEX

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3D Cor Velocity	PATIENT POSITION		IMAGING PARAMETERS	
	Patient Entry	Head First	Imaging Mode	3D
	Patient Position	Supine	Pulse Sequence	Inhance Velocity
	Coil Configuration	GEM Head;GEM Neck	Imaging Options	EDR, ZIP512, ZIP2
	Plane	CORONAL	SCAN RANGE	
	Series Description	3D Cor Velocity	FOV	28.0
	SCAN TIMING		Slice Thickness	2.0
	Flip Angle	10	ACQ TIMING	
	TE	Minimum	Freq	320
	Number of Echoes	1	Phase	192
	TR	Minimum	Freq DIR	S/I
	Receiver Bandwidth	31.25	Phase FOV	0.90
	IMAGE ENHANCE		Auto Shim	Auto
	Filter Choice	None	Phase Correction	No
	GATING/TRIGGER		USER CVS	
	Auto Trigger Type	Off	User CV23	80.00
	FMRI		MULTI-PHASE	
	PSD Trigger	Internal	Seperate Series	0
	View Order	Bottom/Up	Mask Phase	0
	# of Repetitions REST	0	Mask Pause	0
	# of Repetitions ACTIVE	0	VASCULAR	
	SAT		# of Collapse Images	On
	Tag Type	None	# of Projection Images	0
	DIFFUSION		Flow Analysis	All
	Recon All Images	On	Additional Flow Images	8
	CONTRAST		Flow Recon Type	Complex Diff.
	Contrast Yes/No	No	Velocity Encoding	50.0
			TRICKS	
		Pause On/Off	On	
		Auto Subtract	0	
		Auto SCIC	Off	

3D Cor Velocity

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3D Cor IFIR RT	PATIENT POSITION		IMAGING PARAMETERS	
	Patient Entry	Head First	Imaging Mode	3D
	Patient Position	Supine	Pulse Sequence	Inhance IFIR
	Coil Configuration	GEM Neck	Imaging Options	Fast, RT, ZIP512, ZIP2, Asset, IrP
	Plane	CORONAL	SCAN RANGE	
	Series Description	3D Cor IFIR RT	FOV	30.0
	SCAN TIMING		Slice Thickness	2.0
	Flip Angle	70	ACQ TIMING	
	Number of Echoes	1	Freq	224
	TI	209	Phase	288
	Blood Suppression TI	1200	Freq DIR	S/I
	Receiver Bandwidth	125.00	Phase FOV	1.00
	IMAGE ENHANCE		Auto Shim	Auto
	Filter Choice	None	Phase Correction	No
	GATING/TRIGGER		FMRI	
Auto Trigger Type	Off	PSD Trigger	Internal	
Resp. Trigger Point	10	View Order	Bottom/Up	
MULTI-PHASE		# of Repetitions REST	0	
Seperate Series	0	# of Repetitions ACTIVE	0	
Mask Phase	0	SAT		
Mask Pause	0	Tag Type	None	
DIFFUSION		Fat/Water Saturation	Fat Special	
Recon All Images	On	TRICKS		
CONTRAST		Pause On/Off	On	
Contrast Yes/No	No	Auto Subtract	0	
		Auto SCIC	Off	
		OTHERS		
		Protocol Notes	<p>Tips:</p> <ul style="list-style-type: none"> - When scanning IFIR in any plane outside of axial, the Auto IR Bands must be defaulted OFF. - When scanning a coronal portal vein, place IR A, found in the GRx Toolbar, as an oblique to cover the liver, down to the pancreas. - To maximize the in-flow effect, the IR Bands should be placed over the organ or vessel you want to visualize, such as the renal arteries or the portal vein. The IR Bands are placed over the background anatomy you want suppressed and the vessels you want to be bright. - For optimal image quality, use a 1200 - 1500 BSP TI for the portal vein. 	

3D Cor IFIR RT

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PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	3D
Patient Position	Supine	Pulse Sequence	LAVA
Coil Configuration	GEM Neck	Imaging Options	EDR, Fast, ZIP2, Flex
Plane	AXIAL	IDEAL	7
Series Description	3D Ax LAVA Flex	SCAN RANGE	
SCAN TIMING		FOV	22.0
Flip Angle	12	Slice Thickness	2.0
TE	Min Full	Location per Slab	82
Number of Echoes	2	Overlap Locations	0
Receiver Bandwidth	62.50	ACQ TIMING	
IMAGE ENHANCE		Freq	224
Filter Choice	A	Phase	224
GATING/TRIGGER		Freq DIR	R/L
Auto Trigger Type	Off	NEX	1.00
FMRI		Phase FOV	1.00
PSD Trigger	Internal	Auto Shim	Auto
View Order	Bottom/Up	Phase Correction	No
# of Repetitions REST	0	USER CVS	
# of Repetitions ACTIVE	0	User CV6	1.00
SAT		User CV16	1.00
Tag Type	None	MULTI-PHASE	
TRICKS		Seperate Series	0
Pause On/Off	On	Trigger Delay without AV	0
Auto Subtract	0	Mask Phase	0
Auto SCIC	2	Mask Pause	0
CONTRAST		DIFFUSION	
Contrast Yes/No	No	Recon All Images	On
		TRACKER	
		Tracker Length	120.0
		Tracker Thickness	20.0

3D Ax LAVA Flex

3D Ax LAVA Flex

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T1 Double IR	PATIENT POSITION		IMAGING PARAMETERS	
	Patient Entry	Head First	Imaging Mode	2D
	Patient Position	Supine	Pulse Sequence	FSE-XL
	Coil Configuration	GEM Neck	Imaging Options	Gat, Seq, EDR, Fast, ZIP512, BSP, Asset
	Plane	OBLIQUE	SCAN RANGE	
	Series Description	T1 Double IR	FOV	36.0
	SCAN TIMING		Slice Thickness	8.0
	Flip Angle	155	Slice Spacing	0.0
	TE	21.0	ACQ TIMING	
	Number of Echoes	1	Freq	224
	Echo Train Length	9	Phase	224
	Blood Suppression TI	398	Freq DIR	Unswap
	Receiver Bandwidth	62.50	Fat Shift DIR	Normal
	IMAGE ENHANCE		NEX	1.00
	Filter Choice	A	Phase FOV	1.00
	GATING/TRIGGER		Auto Shim	Auto
	Auto Trigger Type	On	Phase Correction	No
	Trigger Type	0	USER CVS	
	Minimum Trigger Delay	4	User CV14	3.33
	Cardiac Phase	1	User CV22	1.00
	Cardiac Slices	1	MULTI-PHASE	
	FMRI		Seperate Series	0
	PSD Trigger	Internal	Mask Phase	0
	Slice Order	Interleaved	Mask Pause	0
	View Order	Bottom/Up	DIFFUSION	
# of Repetitions REST	0	Recon All Images	On	
# of Repetitions ACTIVE	0	CONTRAST		
SAT		Contrast Yes/No	No	
Tag Type	None	TRICKS		
TRICKS		# of RR Intervals	1	
# of RR Intervals	1	Trigger Delay	674	
Trigger Delay	674	Pause On/Off	On	
Pause On/Off	On	Auto Subtract	0	
Auto Subtract	0	Auto SCIC	2	
Auto SCIC	2			

T1 Double IR

OTHERS

Protocol Notes

IMPORTANT TIPS:
-Make sure that Trigger Delay is set to Diastolic from the pull down menu, as cardiac motion is reduced.
- change CV14 from 3.33 (default) to 1.25-1.5 if blood signal is not properly nulled.
- if Black Blood imaging is performed after contrast injection, BSP TI needs to be adjusted manually.
- Use always Shim Volume box to cover only the heart.
- Use Localized TG under Shim Volume to improve IQ.

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3D Ax LAVA Flex	PATIENT POSITION		IMAGING PARAMETERS		3D Ax LAVA Flex
	Patient Entry	Head First	Imaging Mode	3D	
	Patient Position	Supine	Pulse Sequence	LAVA	
	Coil Configuration	GEM Neck	Imaging Options	EDR, Fast, ZIP2, Flex	
	Plane	AXIAL	IDEAL	7	
	Series Description	3D Ax LAVA Flex	SCAN RANGE		
	SCAN TIMING		FOV	22.0	
	Flip Angle	12	Slice Thickness	2.0	
	TE	Min Full	Location per Slab	82	
	Number of Echoes	2	Overlap Locations	0	
	Receiver Bandwidth	62.50	ACQ TIMING		
	IMAGE ENHANCE		Freq	288	
	Filter Choice	A	Phase	224	
	GATING/TRIGGER		Freq DIR	R/L	
	Auto Trigger Type	Off	NEX	1.00	
	FMRI		Phase FOV	1.00	
	PSD Trigger	Internal	Auto Shim	Auto	
	View Order	Bottom/Up	Phase Correction	No	
	# of Repetitions REST	0	USER CVS		
	# of Repetitions ACTIVE	0	User CV6	1.00	
	SAT		User CV16	1.00	
	Tag Type	None	MULTI-PHASE		
	TRICKS		Seperate Series	0	
	Pause On/Off	On	Trigger Delay without AV	0	
Auto Subtract	0	Mask Phase	0		
Auto SCIC	2	Mask Pause	0		
CONTRAST		DIFFUSION			
Contrast Yes/No	No	Recon All Images	On		
		TRACKER			
		Tracker Length	100.0		
		Tracker Thickness	20.0		