

Protocol: adult\_head\_BRAIN MS W/VO 12-2-19

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	2D
Patient Position	Supine	Pulse Sequence	Spin Echo
Coil Configuration	GEM Head	Imaging Options	Seq, EDR, TRF, Fast, SS, FR, ARC
Plane	3-PLANE		
Series Description	3-Plane Localizer		
SCAN TIMING		SCAN RANGE	
TE	Minimum	FOV	24.0
Number of Echoes	1	Slice Thickness	10.0
TR	Minimum	Slice Spacing	5.0
Receiver Bandwidth	83.33		
IMAGE ENHANCE		ACQ TIMING	
Filter Choice	None	Freq	288
		Phase	128
		Freq DIR	Unswap
		# of Acq. Before Pause	0
		Phase FOV	1.00
		Auto Shim	Auto
		Phase Correction	No
GATING/TRIGGER		USER CVS	
Auto Trigger Type	Off	User CV1	1.00
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		
SAT		DIFFUSION	
Tag Type	None	Recon All Images	On
TRICKS		CONTRAST	
Pause On/Off	On	Contrast Yes/No	No
Auto Subtract	0		
Auto SCIC	Off		

3-Plane Localizer

3-Plane Localizer

Protocol: adult\_head\_BRAIN MS W/WO 12-2-19

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	3D
Patient Position	Supine	Pulse Sequence	Cube T2 FLAIR
Coil Configuration	GEM Head	Imaging Options	EDR, Fast, ZIP512, ZIP2, T2P, ARC, IrP
Plane	OBLIQUE		
Series Description	3D Sag T2 FLAIR		
SCAN TIMING		SCAN RANGE	
TE	90.0	FOV	25.2
Number of Echoes	1	Slice Thickness	1.2
TR	6200.0	Location per Slab	138
TI	1754	Overlap Locations	0
Echo Train Length	160		
Receiver Bandwidth	31.25	ACQ TIMING	
		Freq	256
		Phase	256
		Freq DIR	S/I
		NEX	1.00
		Phase FOV	0.90
		Auto Shim	Auto
		Phase Correction	No
IMAGE ENHANCE		USER CVS	
Filter Choice	None	User CV5	0.85
GATING/TRIGGER		MULTI-PHASE	
Auto Trigger Type	Off	Seperate Series	0
		Mask Phase	0
		Mask Pause	0
FMRI		DIFFUSION	
PSD Trigger	Internal	Recon All Images	On
View Order	Bottom/Up		
# of Repetitions REST	0	CONTRAST	
# of Repetitions ACTIVE	0	Contrast Yes/No	No
SAT			
Tag Type	None		
Fat/Water Saturation	Fat		
TRICKS			
Pause On/Off	On		
Auto Subtract	0		
Auto SCIC	2		

3D Sag T2 FLAIR

3D Sag T2 FLAIR

Protocol: adult\_head\_BRAIN MS W/VO 12-2-19

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	2D
Patient Position	Supine	Pulse Sequence	FSE-XL
Coil Configuration	GEM Head	Imaging Options	FC, NPW, EDR, TRF, Fast, ZIP512
Plane	OBLIQUE		
Series Description	SAG T2W		
SCAN TIMING		SCAN RANGE	
Flip Angle	160	FOV	22.0
TE	105.0	Slice Thickness	3.0
Number of Echoes	1	Slice Spacing	1.0
TR	4864.0		
Echo Train Length	19	ACQ TIMING	
Receiver Bandwidth	41.67	Freq	352
		Phase	256
		Freq DIR	S/I
		Fat Shift DIR	Normal (S)
		NEX	2.00
		Auto Shim	Auto
		Phase Correction	No
		Flow Direction	Slice
		Compensation	
IMAGE ENHANCE		USER CVS	
Filter Choice	None	User CV18	1.00
		TR Min	2500.0
		TR Max	11000.0
GATING/TRIGGER		MULTI-PHASE	
Auto Trigger Type	Off	Seperate Series	0
		Mask Phase	0
		Mask Pause	0
FMRI		DIFFUSION	
PSD Trigger	Internal	Recon All Images	On
View Order	Bottom/Up		
# of Repetitions REST	0	CONTRAST	
# of Repetitions ACTIVE	0	Contrast Yes/No	No
SAT			
SAT Location	I		
Tag Type	None		
TRICKS			
Pause On/Off	On		
Auto Subtract	0		
Auto SCIC	2		

SAG T2W

SAG T2W

Protocol: adult\_head\_BRAIN MS W/VO 12-2-19

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	2D
Patient Position	Supine	Pulse Sequence	FSE-XL
Coil Configuration	GEM Head	Imaging Options	FC, EDR, TRF, Fast, ARC, T2flair
Plane	OBLIQUE		
Series Description	AXIAL T2W FLAIR		
SCAN TIMING		SCAN RANGE	
Flip Angle	160	FOV	22.0
TE	140.0	Slice Thickness	5.0
Number of Echoes	1	Slice Spacing	1.0
TR	8800.0		
TI	2546	ACQ TIMING	
Echo Train Length	20	Freq	320
Receiver Bandwidth	31.25	Phase	192
IMAGE ENHANCE		Freq DIR	A/P
Filter Choice	None	Fat Shift DIR	Normal (A)
GATING/TRIGGER		NEX	1.00
Auto Trigger Type	Off	Phase FOV	1.00
FMRI		Auto Shim	Auto
PSD Trigger	Internal	Phase Correction	No
View Order	Bottom/Up	Flow Direction	Slice
# of Repetitions REST	0	Compensation	
# of Repetitions ACTIVE	0	USER CVS	
SAT		User CV18	1.00
Tag Type	None	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

AXIAL T2W FLAIR

AXIAL T2W FLAIR

Protocol: adult\_head\_BRAIN MS W/WO 12-2-19

AXIAL T2W	<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
	Patient Entry	Head First	Imaging Mode	2D
	Patient Position	Supine	Pulse Sequence	FSE-XL
	Coil Configuration	GEM Head	Imaging Options	FC, EDR, TRF, Fast, ZIP512
	Plane	OBLIQUE	<b>SCAN RANGE</b>	
	Series Description	AXIAL T2W	FOV	22.0
	<b>SCAN TIMING</b>		Slice Thickness	5.0
	Flip Angle	160	Slice Spacing	1.0
	TE	105.0	<b>ACQ TIMING</b>	
	Number of Echoes	1	Freq	352
	TR	4901.0	Phase	256
	Echo Train Length	19	Freq DIR	A/P
	Receiver Bandwidth	41.67	Fat Shift DIR	Normal (A)
	<b>IMAGE ENHANCE</b>		NEX	2.00
	Filter Choice	None	Phase FOV	1.00
	<b>GATING/TRIGGER</b>		Auto Shim	Auto
	Auto Trigger Type	Off	Phase Correction	No
	<b>FMRI</b>		Flow Direction Compensation	Slice
	PSD Trigger	Internal	<b>USER CVS</b>	
	View Order	Bottom/Up	TR Min	2500.0
	# of Repetitions REST	0	TR Max	11000.0
	# of Repetitions ACTIVE	0	<b>MULTI-PHASE</b>	
	<b>SAT</b>		Seperate Series	0
	SAT Location	I	Mask Phase	0
	Tag Type	None	Mask Pause	0
	<b>TRICKS</b>		<b>DIFFUSION</b>	
	Pause On/Off	On	Recon All Images	On
	Auto Subtract	0	<b>CONTRAST</b>	
Auto SCIC	2	Contrast Yes/No	No	

AXIAL T2W

Protocol: adult\_head\_BRAIN MS W/WO 12-2-19

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	3D
Patient Position	Supine	Pulse Sequence	SWAN
Coil Configuration	GEM Head	Imaging Options	FC, Fast, ZIP512, ZIP2, Asset
Plane	OBLIQUE		
Series Description	3D AX SWAN		
SCAN TIMING		SCAN RANGE	
Flip Angle	25	FOV	24.0
TE	50.0	Slice Thickness	2.6
Number of Echoes	8	Location per Slab	56
TR	Minimum	Overlap Locations	0
Receiver Bandwidth	35.71		
IMAGE ENHANCE		ACQ TIMING	
Filter Choice	None	Freq	320
		Phase	192
GATING/TRIGGER		Freq DIR	A/P
Auto Trigger Type	Off	Phase FOV	0.75
		Auto Shim	Auto
FMRI		Phase Correction	No
PSD Trigger	Internal	USER CVS	
View Order	Bottom/Up	User CV22	1.00
# of Repetitions REST	0	MULTI-PHASE	
# of Repetitions ACTIVE	0	Seperate Series	0
SAT		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

3D AX SWAN

3D AX SWAN

Protocol: adult\_head\_BRAIN MS W/VO 12-2-19

<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
Patient Entry	Head First	Imaging Mode	2D
Patient Position	Supine	Pulse Sequence	Spin Echo
Coil Configuration	GEM Head	Imaging Options	EPI, DIFF, Asset
Plane	OBLIQUE	<b>SCAN RANGE</b>	
Series Description	Ax DWI ALL B-1000	FOV	22.0
<b>SCAN TIMING</b>		Slice Thickness	5.0
TE	Minimum	Slice Spacing	1.0
Number of Echoes	1	<b>ACQ TIMING</b>	
TR	9763.0	Freq	160
Number of Shots	1	Phase	192
<b>IMAGE ENHANCE</b>		Freq DIR	R/L
Filter Choice	None	Phase FOV	1.00
<b>GATING/TRIGGER</b>		Auto Shim	Auto
Auto Trigger Type	Off	Phase Correction	Yes
<b>FMRI</b>		<b>USER CVS</b>	
PSD Trigger	Internal	User CV0	1.00
View Order	Bottom/Up	User CV5	1.00
# of Repetitions REST	0	User CV7	1.00
# of Repetitions ACTIVE	0	User CV17	1.00
<b>SAT</b>		TR Min	2000.0
Tag Type	None	TR Max	17000.0
<b>TRICKS</b>		<b>MULTI-PHASE</b>	
Pause On/Off	On	Seperate Series	0
Auto Subtract	0	Mask Phase	0
Auto SCIC	2	Mask Pause	0
		<b>DIFFUSION</b>	
		Optimized TE	Yes
		Diffusion Directions	All
		Number of Diffusion Directions	3
		Number of T2 Images	1
		Dual Spin Echo	Off
		Recon All Images	On
		<b>CONTRAST</b>	
		Contrast Yes/No	No

Ax DWI ALL B-1000

Ax DWI ALL B-1000

Protocol: adult\_head\_BRAIN MS W/VO 12-2-19

3D Sag T1 Cube Pre	<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>	
	Patient Entry	Head First	Imaging Mode	3D
	Patient Position	Supine	Pulse Sequence	Cube
	Coil Configuration	GEM Head	Imaging Options	EDR, Fast, ZIP512, ZIP2, FR, ARC
	Plane	OBLIQUE	<b>SCAN RANGE</b>	
	Series Description	3D Sag T1 Cube Pre	FOV	24.0
	<b>SCAN TIMING</b>		Slice Thickness	1.4
	TE	10.0	Location per Slab	120
	Number of Echoes	1	Overlap Locations	0
	TR	550.0	<b>ACQ TIMING</b>	
	Echo Train Length	22	Freq	240
	Receiver Bandwidth	62.50	Phase	240
	<b>IMAGE ENHANCE</b>		Freq DIR	S/I
	Filter Choice	G	NEX	1.00
	<b>GATING/TRIGGER</b>		Phase FOV	1.00
	Auto Trigger Type	Off	Auto Shim	Auto
	<b>FMRI</b>		Phase Correction	No
	PSD Trigger	Internal	<b>USER CVS</b>	
	View Order	Bottom/Up	User CV22	3.00
	# of Repetitions REST	0	<b>MULTI-PHASE</b>	
# of Repetitions ACTIVE	0	Seperate Series	0	
<b>SAT</b>		Mask Phase	0	
Tag Type	None	Mask Pause	0	
<b>TRICKS</b>		<b>DIFFUSION</b>		
Pause On/Off	On	Recon All Images	On	
Auto Subtract	0	<b>CONTRAST</b>		
Auto SCIC	2	Contrast Yes/No	No	
<b>OTHERS</b>				
Protocol Notes	Axial reformats 1mm x 1mm			

3D Sag T1 Cube Pre



Protocol: adult\_head\_BRAIN MS W/WO 12-2-19

3D Sag T1 FS Cube Post	<b>PATIENT POSITION</b>		<b>IMAGING PARAMETERS</b>		3D Sag T1 FS Cube Post
	Patient Entry	Head First	Imaging Mode	3D	
	Patient Position	Supine	Pulse Sequence	Cube	
	Coil Configuration	GEM Head	Imaging Options	EDR, Fast, ZIP512, ZIP2, FR, ARC	
	Plane	OBLIQUE	<b>SCAN RANGE</b>		
	Series Description	3D Sag T1 FS Cube Post	FOV	24.0	
	<b>SCAN TIMING</b>		Slice Thickness	1.4	
	TE	10.0	Location per Slab	120	
	Number of Echoes	1	Overlap Locations	0	
	TR	550.0	<b>ACQ TIMING</b>		
	Echo Train Length	22	Freq	240	
	Receiver Bandwidth	62.50	Phase	240	
	<b>IMAGE ENHANCE</b>		Freq DIR	S/I	
	Filter Choice	G	NEX	1.00	
	<b>GATING/TRIGGER</b>		Phase FOV	1.00	
	Auto Trigger Type	Off	Auto Shim	Auto	
	<b>FMRI</b>		Phase Correction	No	
	PSD Trigger	Internal	<b>USER CVS</b>		
	View Order	Bottom/Up	User CV5	0.75	
	# of Repetitions REST	0	User CV22	3.00	
# of Repetitions ACTIVE	0	<b>MULTI-PHASE</b>			
<b>SAT</b>		Seperate Series	0		
Tag Type	None	Mask Phase	0		
Fat/Water Saturation	Fat	Mask Pause	0		
<b>TRICKS</b>		<b>DIFFUSION</b>			
Pause On/Off	On	Recon All Images	On		
Auto Subtract	0	<b>CONTRAST</b>			
Auto SCIC	2	Contrast Yes/No	Yes		
<b>OTHERS</b>					
Protocol Notes	Axial reforms 1 mm x 1mm				

Protocol: adult\_head\_BRAIN MS W/VO 12-2-19

PATIENT POSITION		IMAGING PARAMETERS	
Patient Entry	Head First	Imaging Mode	3D
Patient Position	Supine	Pulse Sequence	BRAVO
Coil Configuration	GEM Head	Imaging Options	EDR, Fast, ZIP512, ZIP2, ARC, IrP
Plane	OBLIQUE		
Series Description	CORONAL BRAVO POST GAD		
SCAN TIMING		SCAN RANGE	
Flip Angle	12	FOV	22.0
Number of Echoes	1	Slice Thickness	2.0
TI	450	Location per Slab	96
Receiver Bandwidth	31.25	Overlap Locations	0
IMAGE ENHANCE		ACQ TIMING	
Filter Choice	None	Freq	240
		Phase	240
GATING/TRIGGER		Freq DIR	S/I
Auto Trigger Type	Off	NEX	1.00
MULTI-PHASE		Phase FOV	1.00
Seperate Series	0	Auto Shim	Auto
Trigger Delay without AV	0	Phase Correction	No
Mask Phase	0	FMRI	
Mask Pause	0	PSD Trigger	Internal
DIFFUSION		View Order	Bottom/Up
Recon All Images	On	# of Repetitions REST	0
CONTRAST		# of Repetitions ACTIVE	0
Contrast Yes/No	Yes	SAT	
		Tag Type	None
		TRICKS	
		Pause On/Off	On
		Auto Subtract	0
		Auto SCIC	2

CORONAL BRAVO POST GAD

CORONAL BRAVO POST GAD