

UCSF-QUEST DIAGNOSTICS PARTNERSHIP DEMENTIA CARE PATHWAY

MR PROTOCOL FOR DEMENTIA PATIENTS

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1. NEUROIMAGING OVERVIEW

This section provides a high level overview of the imaging protocol and analysis that has been established for imaging patients that are being assessed for dementia. The critical components to this effort are summarized below.

1.1 Background and Goals of Quest Neuroimaging Initiative

The UCSF/Quest MR protocol is designed to provide consistent and relevant imaging information that will be used in the diagnosis of dementia. A range of image contrasts are prescribed that are suitable for this application and the established imaging protocol is designed for use on a wide range of MR systems operating at field strengths of both 1.5 and 3 Tesla. Improved diagnostic power is expected by utilizing a consistent and standardized MR imaging protocol that is additionally amenable to quantitative analysis. More consistent clinical interpretations, with improved diagnostic sensitivity and specificity, are anticipated through this initiative.

1.2 Components of MR Protocol

The MR protocol is designed to be run in a 30-minute time slot and actual scan time is 20-25 minutes. The protocol includes a volumetric T1-weighted protocol that is based on the Alzheimer's Disease Neuroimaging Initiative (ADNI) protocol. This well established and standardized imaging sequence is well suited to quantitative analysis and has been utilized in a wide range of scientific studies. The protocol further contains multi-slice sequences with T2, T2* and T2-FLAIR contrasts. Each of these multi-slice imaging sequences has matching spatial coverage and can be acquired in a time efficient fashion. The final element of the protocol is diffusion weighted imaging (DWI), which is acquired in both axial and coronal scan planes. DWI is acquired with diffusion sensitization in three orthogonal directions and with a b-value of 1000s/mm2.

2. SITE SET-UP

This section reviews the steps that are necessary for an imaging center to participate in this neuroimaging initiative.

2.1 Site Requirements

Participant sites must have an MR system for which a standardized imaging protocol has been established and tested. To date, standardized imaging protocols have been established for General Electric (GE), Philips, and Siemens scanners operating at field strengths of 1.5T and 3T. The imaging protocol is designed to run on all relatively recent software releases and minimal specialized software packages are required. Once established, the UCSF/Quest imaging protocol must be "locked" and left unaltered. Study coordinators should be notified if a software upgrade or system change result in changes in any protocol parameters.

2.2 Protocol Installation

Protocols can be installed on scanners via one of two different mechanisms. Whenever possible, the protocol should be loaded via the protocol exchange (GE), examcard (Philips), or EDX (Siemens) protocol sharing systems. This assures that all parameter settings are consistent with the Quest imaging protocol. Details on how to upload via this mechanism are provided in Appendix 5.2 and may require the assistance of a service engineer. In some instances software incompatibilities cause this installation approach to fail. In those instances the protocol can be manually entered and parameter file specifications are provided for each manufacturer and field strength in Appendix 5.3. Regardless of installation method, sites are required to scan a phantom and submit the resulting data set for certification that the protocol is properly installed on the system. Once this review has been completed the protocol should be locked and archived so that later modifications at the site do not occur.

3. MRI SUBJECT PRE-SCAN PROCEDURES

3.1 Subject Pre-Screening

All subjects must be screened for MRI contraindications immediately before the MRI scan using your local standard protocol. Contraindications may include, but are not limited to:

- The presence of non-removable ferrous metal objects
- Aneurysm clips
- Metal fragments in the eyes
- Pacemakers
- Other contraindications such as defibrillators, etc.

Subjects must also not be severely claustrophobic and must be capable of remaining still for the 30-minute examination period. Patient fixation devices, straps etc. can be used to minimize patient motion.

3.2 Subject Safety and Monitoring

MR is generally a very safe imaging modality and does not involve ionizing radiation. For best results the scan procedure should be explained to the subject so that they know what to expect during the MRI. Make sure that all loose metal objects are removed from the patient prior to entering the magnet room. If available, ask the subject to change into hospital robes or scrubs to ensure no ferrous objects or materials enter the scan room. Use standard local practice for monitoring the subject during the scan. These may include devices to monitor pulse and O_2 levels.

4. QUEST MRI SCAN PROTOCOL

The scan protocol consists of 20-25 minutes of MR scanning and can be completed within a 30-minute time slot. Patients should be placed in a multi-element head coil such as the 8-channel In Vivo head coil (below). Other variants including manufacturer head and head/neck coils are also acceptable.



In Vivo's Hi-Res Head Coil is available for GE, Philips or Siemens systems.

4.1 Protocol Overview

The protocol consists of the following scans:

UCSF/Quest MRI Scan Protocol:

- 1) Localizer
- 1a) Calibration/Reference Scan (if necessary)
- 2) Sagittal 3D T1 MPRAGE/IR-SPGR (angled to midline)
- 3) Axial 2D T2* GRE (angled to AC/PC)
- 4) Axial 2D T2 turbo-FLAIR (angled to AC/PC; matches scan 3)
- 5) Axial 2D T2 turbo/fast spin echo (angled to AC/PC; matches scan 3)
- 6) Axial 2D Diffusion Weighted Imaging (angled to AC/PC)
- 7) Coronal 2D Diffusion Weighted Imaging (angled to brain stem)

These scans should be run exactly as prescribed in the originally installed protocol and in the indicated order.

4.2 Troubleshooting Protocol: Additional Scans for RPD cases not diagnosed by General Dementia Protocol (e.g., need for contrast or question of prion disease remains)

The standardized dementia protocol is recommended for both chronic and rapidly progressive dementia. Sites should detect many if not most causes for RPD on the initial standardized dementia protocol scans. The additional scans listed below would be used

only for troubleshooting purposes if a diagnosis is unclear or more imaging information is required.

RPD Trouble Shooting Protocol:

General dementia protocol plus the following:

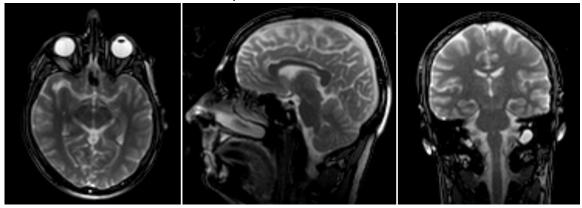
- 8) Coronal 2D T2 turbo/fast spin echo (coronal orientation along hippocampal axis 3 skip 0 mm)
- 9) Coronal 2D T2 turbo-FLAIR (coronal orientation along hippocampal axis 3 skip 0 mm)
- 10) Sagittal 3D T1 MPRAGE/IR-SPGR (angled to midline) post contrast
- 11) Axial spin echo T1 post contrast

Recommended adjustments to **General Dementia Protocol** scans:

- 6) Axial 2D B2000 Diffusion Weighted Imaging (angled to AC/PC) **
- 7) Coronal 2D B2000 Diffusion Weighted Imaging (angled to brainstem) **
- * Should be B2000 DWI either for 1.5 and 3.T
- [¥]On Siemens 3T B2000 should be "Resolve" for coronal.

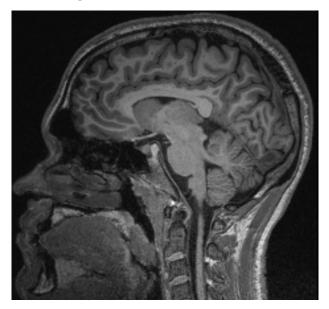
4.3 *Scanning Sequences*

4.3.1 - Localizer + Calibration/Reference Scans



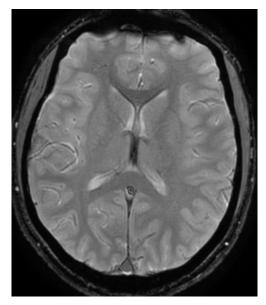
A conventional 3-plane localizer should be used to position subsequent scans. Parallel imaging (ASSET/SENSE/GRAPPA) will be used on the DWI scans so any calibration /reference scans required by your MR system should also be acquired at this time.

4.3.2 - Sagittal 3D T1 MPRAGE/IR-SPGR



Scanning Notes: This sagittal T1 volume should be angled on the axial scout such that the middle slice runs along the midline of the brain and encompasses the full width of the brain. Additional slices can be added to achieve this but slices MUST NOT be removed. Make sure that the scan volume extends SLIGHTLY BEYOND the top of the scalp.

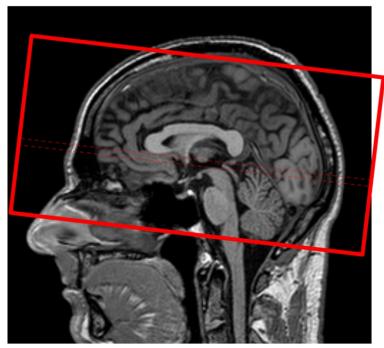
4.3.3 - Axial 2D T2* GRE



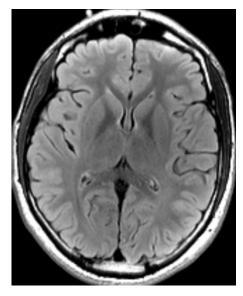
Scanning Notes: This axial stack of 2D slices should be angulated on a midline sagittal scan such that it runs parallel to the Anterior Commissure/Posterior Commissure (AC/PC) of the brain (see below). The volume should extend from the top of the brain and continue as low as

possible WITHOUT changing the number of slices, slice thickness or slice gap.

Scanning Notes: Angulation of the axial scan plane to AC/PC is demonstrated. The previously acquired Sagittal T1 volume can be used to identify AC/PC (dotted area) if it is not clearly seen on the localizer images.

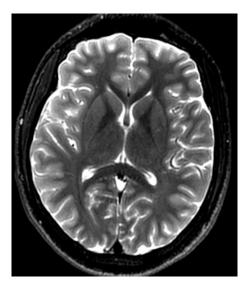


4.3.4 - Axial 2D T2 turbo FLAIR



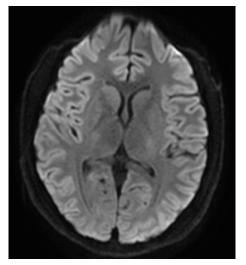
<u>Scanning Notes</u>: The field of view (FOV) and coverage of this scan exactly match that of Scan (3) - Axial 2D T2* GRE. The scan volume for this acquisition should EXACTLY MATCH that of the prior scan.

4.3.5 - Axial 2D T2 turbo/fast Spin Echo



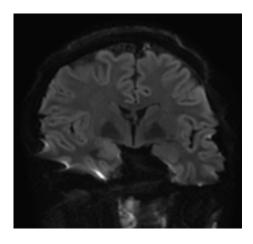
<u>Scanning Notes</u>: The field of view (FOV) and coverage of this scan exactly match that of Scan (3) - Axial 2D T2* GRE. The scan volume for this acquisition should EXACTLY MATCH that of the prior scan.

4.3.6 - Axial Diffusion Weighted Imaging



<u>Scanning Notes</u>: The axial DWI volume should also be angulated to AC/PC, but its coverage is not identical to scans (3) - (5). The axial scan plane should similarly be positioned such that it reaches the top of the brain and extends inferiorly as far as the prescribed slices allow.

4.3.7 - Coronal Diffusion Weighted Imaging



<u>Scanning Notes</u>: The coronal plane should be angulated to be parallel to the brain stem and coverage should extend from the anterior to posterior extremes of the brain. If necessary slices can be added to achieve this coverage (this may prolong the TR, which is acceptable).

4.4 Quality Assurance

It is important for the MR technologist to inspect scans to assure that they are of high quality and have not been degraded by patient motion. This is particularly important for the 3D T1 MPRAGE/IR-SPGR (scan 2), which will be used for quantitative analysis. Scans that are degraded by artifact or patient motion should be repeated.

5. APPENDICES

The following pages contain a series of appendices that contain information on protocol content and uploading. Please refer to the page numbers for the content.

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5.2 Uploading MR protocols	Page 12
5.2 Protocol Parameter Listings	
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5.2.2: 1.5T Philips	Pages 29-39
5.2.3: 1.5T Siemens	Pages 40-52
5.2.4: 3T GE	Pages 53-66
5.2.5: 3T Philips	Pages 67-81
5.2.6: 3T Siemens	Pages 82-95



UCSF/Quest MR Imaging QUICK REFERENCE GUIDE

MR manufacturers have all established methods for sharing scanning protocols between systems. The process typically involves loading the necessary protocol files onto and USB drive, connecting to USB to the MR system, and following a series of commands. It may be necessary to have your service engineer perform this installation if you don't have the necessary privileges on you MR system.

GE ProtocolExchange : Begin by placing the protocol exchange files on a USB drive and plug the drive into the
MR console computer. Under the "Image Management" tab there is a feature called "Protocol Exchange",
which you should click on. A window will pop up and you should then select "Import Mode". Another window
will appear

Philips Examcard: Begin by placing the examcard file on a USB drive and plug the drive into the MR console computer. Select the windows button on the keyboard and select "

Siemens ".edx" file: .



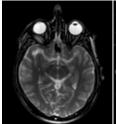
Quest UCSF/Quest MR Imaging Diagnostics QUICK REFERENCE GUIDE

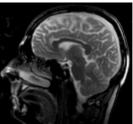
The UCSF/Quest Neuroimaging protocol is a standardized set of MR imaging sequences that have been established for a range of imaging platforms. It is important to run the correct protocol and assure that patient motion has not corrupted a scan before proceeding to the next acquisition. 1*

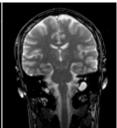
Step 1: Follow your institutions standard MR pre-screening practices.

Step 2: Position the subject in a head coil in a head first supine orientation. Use straps and/or pads to help the subject remain stationary during scanning

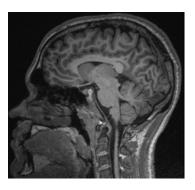
Step 3: Acquire a standard 3-plane localizer and any necessary calibration scans.



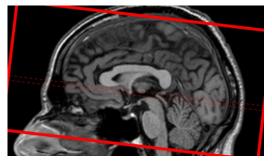




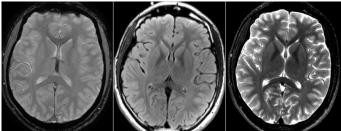
Step 4: Prescribe the ADNI MP-RAGE/IR-FSPGR scan in an oblique sagittal plane that is oriented to midline.



Step 5: Use the mid-sagittal plane of the ADNI MP-RAGE/IR-FSPGR scan to orient oblique axials scans to the anterior and posterior commissures (AC/PC).

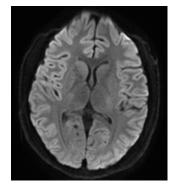


Step 6: Acquire the axial T2* gradient echo, T2-FLAIR and T2 TSE scans in this orientation and with matching coverage. Cover from the top of the brain down with the available slice coverage (do not add or subtract).

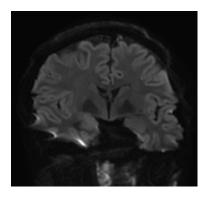


Step 7: Acquire the oblique axial DWI with the same angulations as the prior axial scans (coverage won't

match). Again, Cover from the top of the brain down with the available slice coverage (do not add or subtract)



Step 8: Acquire the oblique coronal DWI such that the scan plane is oriented to the brain stem. Additional slices may be added to achieve full anterior/posterior coverage of the brain.



GE 1.5T
UCSF/Quest Protocol - Survey

	DATIENT DOCUTION		IMAGING PARAMETERS		
	PATIENT POSITION			W#101 F	
	Patient Entry	Head First	Gradient Mode	WHOLE	
	Patient Position	Supine	Imaging Mode	2D	
	Coil Configuration	8 Ch High Res Brain Array by MRI Devices	Pulse Sequence	Spin Echo	
	Plane	3-PLANE	Imaging Options	Seq, EDR, Fast, SS, ARC	
	Series Description	LOCALIZER	n/a	12	
	SCAN TIMING		SCAN RANGE		
	TE	Minimum	FOV	35.0	
	TR	Minimum	Slice Thickness	10.0	
	Receiver Bandwidth	62.50	Slice Spacing	5.0	
			Center Location 1	0.0	
			Center Location 2	A25.0	
			Center Location 3	0.0	
			Slice for 3 Plane	0	
			Localizaion		
			Slice for 3 Plane Localizaion	10	
			Slice for 3 Plane	6	
			Localizaion		
			Slice for 3 Plane Localizaion	6	
			Space per Plane 1	5.0	
~			Space per Plane 2	4.0	~
IZE			Table Delta	0.00	IZE
LOCALIZER	IMAGE ENHANCE		ACQ TIMING		LOCALIZER
ΓO	Filter Choice	None	Freq	256	PO
			Phase	128	
			Freq DIR	Unswap	
			# of Acq. Before Pause	0	
			Phase FOV	1.00	
			Auto Shim	Auto	
			Phase Correction	No	
	GATING/TRIGGER		USER CVS		
	Heart Beat per Minute Mode	e 0	User CV2	240.00	
	Auto Trigger Type	Off	User CV13	1.00	
	Auto Trigger Window	Off	User CV Mask	8262	
	FMRI		MULTI-PHASE		
	PSD Trigger	Internal	# of Acquisition	0	
	Slice Order	Interleaved	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	Contrast Amount 6
Auto SCIC	Off	

UCSF/Quest Protocol – ASSET Calibration

					_
	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Gradient Mode	WHOLE	
	Patient Position	Supine	Imaging Mode	2D	
	Coil Configuration	8 Ch High Res Brain Array by MRI Devices	Pulse Sequence	Gradient Echo	
	Plane	AXIAL	Imaging Options	Fast, Calib	
	Series Description	Calibration	n/a	5	
			IDEAL	3	
	SCAN TIMING		SCAN RANGE		
	Number of Echoes	1	FOV	30.0	
			Slice Thickness	7.0	
			Slice Spacing	0.0	
			GRXOPT	0	
			Start Location 1	<i>l</i> 135.9	
			End Location 1	S130.1	
			End Location 2	L1.7	
			End Location 3	A40.2	
			Center of Location Start	L1.7	
			Center of Location End	A40.2	
			Number of Slices	39	
			Slice for 3 Plane	0	
			Localizaion		
			Slice for 3 Plane Localizaion	0	
Calibration			Slice for 3 Plane Localizaion	0	Calibration
Calib			Slice for 3 Plane Localizaion	0	Calib
			Space per Plane 1	0.0	
			Space per Plane 2	0.0	
			Table Delta	0.00	
	IMAGE ENHANCE		ACQ TIMING		
	Filter Choice	None	Freq DIR	R/L	
			Auto Shim	Auto	
			Phase Correction	No	
	GATING/TRIGGER		USER CVS		
	Heart Beat per Minute Mode	9 0	User CV Mask	0	
	Auto Trigger Type	Off			
	Auto Trigger Window	Off			
	FMRI		MULTI-PHASE		
	PSD Trigger	Internal	# of Acquisition	0	
	Slice Order	Interleaved	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	Contrast Amount	7
Auto SCIC	Off		

UCSF/Quest Protocol – IR-FSPGR

	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Gradient Mode	ZOOM	
	Patient Position	Supine	Imaging Mode	3D	
	Coil Configuration	0	Pulse Sequence	SPGR	
	Plane	OBLIQUE	Imaging Options	EDR, Fast, IrP, Asset	
	Series Description	IR-FSPGR	n/a	6	
	SCAN TIMING		SCAN RANGE		
	Flip Angle	8	FOV	24.0	
	TE	Min Full	Slice Thickness	1.2	
	ті	1000	Location per Slab	170	
	Receiver Bandwidth	15.63	Overlap Locations	0	
			Start Location 1	0.0	
			Start Location 2	0.0	
			Start Location 3	0.0	
			End Location 1	R25.0	
			End Location 2	0.0	
			End Location 3	0.0	
			Number of Slices	1	
			Slice for 3 Plane	0	
			Localizaion		
			Slice for 3 Plane Localizaion	0	
			Slice for 3 Plane	0	
			Localizaion		
			Slice for 3 Plane	0	
<u>بر</u>			Localizaion		<u>κ</u>
IR-FSPGR			Space per Plane 1	0.0	IR-FSPGR
R-F.			Space per Plane 2	0.0	R-F.
_			Table Delta	0.00	=
	IMAGE ENHANCE		ACQ TIMING		
	Filter Choice	None	Freq	192	
			Phase	192	
			Freq DIR	S/I	
			NEX	1.00	
			Phase FOV	1.00	
			Auto Shim	Auto	
			Phase Correction	No	
	GATING/TRIGGER		USER CVS		
	Heart Beat per Minute Mode		User CV6	1.00	
	Auto Trigger Type	Off	User CV23	100.00	
	Auto Trigger Window	Off	User CV Mask	8388688	
	FMRI		MULTI-PHASE		
	PSD Trigger	Internal	# of Acquisition	0	

Protocol: adult_head_QUEST11112015_20151112135614257_1

Slice Order	Interleaved	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	Contrast Amount	6
Auto SCIC	2		

UCSF/Quest Protocol – Axial T2*

	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Gradient Mode	ZOOM	
	Patient Position	Supine	Imaging Mode	2D	
	Coil Configuration	HD 8Ch High Res Brain Array by Invivo	Pulse Sequence	Gradient Echo	
	Plane	OBLIQUE	Imaging Options	FC, EDR, ZIP512	
	Series Description	Ax T2* GRE	n/a	0	
	SCAN TIMING		SCAN RANGE		
	Flip Angle	20	FOV	25.6	
	TE	20.0	Slice Thickness	4.0	
	Number of Echoes	1	Slice Spacing	0.0	
	TR	650.0	Start Location 1	L5.0	
	Receiver Bandwidth	25.00	Start Location 2	A6.4	
			Start Location 3	172.7	
			End Location 1	L5.0	
			End Location 2	P0.5	
			End Location 3	S99.0	
			Number of Slices	44	
			Slice for 3 Plane Localizaion	0	
			Slice for 3 Plane Localizaion	0	
			Slice for 3 Plane Localizaion	0	
			Slice for 3 Plane Localizaion	0	
RE			Space per Plane 1	0.0	R
.* G			Space per Plane 2	0.0	(O)
Ax T2* GRE			Table Delta	0.00	Ax T2* GRE
A	IMAGE ENHANCE		ACQ TIMING		⋖
	Filter Choice	None	Freq	192	
			Phase	192	
			Freq DIR	A/P	
			NEX	1.00	
			# of Acq. Before Pause	0	
			Phase FOV	1.00	
			Auto Shim	Auto	
			Phase Correction	No	
	GATING/TRIGGER		USER CVS		
	Heart Beat per Minute Mode	0	User CV Mask	0	
	Auto Trigger Type	Off			
	Auto Trigger Window	Off			
	FMRI		MULTI-PHASE		

Protocol: adult_head_QUEST11112015_20151112135614257_1

PSD Trigger	Internal	# of Acquisition	0
Slice Order	Interleaved	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	Contrast Amount	6
Auto SCIC	2		

UCSF/Quest Protocol – Axial T2 FLAIR

	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Gradient Mode	ZOOM	
	Patient Position	Supine	Imaging Mode	2D	
	Coil Configuration	HD 8Ch High Res Brain Array by Invivo	Pulse Sequence	T2flair	
	Plane	OBLIQUE	Imaging Options	EDR, Fast	
	Series Description	AX T2 FLAIR	PSD Name	enhflair	
			n/a	25	
	SCAN TIMING		SCAN RANGE		
	TE	90.0	FOV	25.6	
	TR	9000.0	Slice Thickness	4.0	
	ті	2200	Slice Spacing	0.0	
	Echo Train Length	16	Start Location 1	L5.0	
	Receiver Bandwidth	20.83	Start Location 2	A6.4	
			Start Location 3	172.7	
			End Location 1	L5.0	
			End Location 2	P0.5	
			End Location 3	S53.6	
			Number of Slices	44	
			Slice for 3 Plane Localizaion	0	
			Slice for 3 Plane Localizaion	0	
			Slice for 3 Plane Localizaion	0	
~			Slice for 3 Plane Localizaion	0	~
AIF			Space per Plane 1	0.0	AF
X T2 FLAIR			Space per Plane 2	0.0	X T2 FLAIR
			Table Delta	0.00	×
A	IMAGE ENHANCE		ACQ TIMING		⋖
	Filter Choice	None	Freq	256	
			Phase	256	
			Freq DIR	A/P	
			NEX	1.00	
			# of Acq. Before Pause	0	
			Phase FOV	0.88	
			Auto Shim	Auto	
			Phase Correction	No	
	GATING/TRIGGER		USER CVS		
	Heart Beat per Minute Mode	0	User CV12	1.00	
	Auto Trigger Type	Off	User CV17	1.00	
	Auto Trigger Window	Off	User CV Mask	10639616	

Protocol: adult_head_QUEST11112015_20151112135614257_1

FMRI		MULTI-PHASE	
PSD Trigger	Internal	# of Acquisition	0
Slice Order	Interleaved	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	Contrast Amount	6
Auto SCIC	2		

UCSF/Quest Protocol – Axial T2

	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Gradient Mode	ZOOM	
	Patient Position	Supine	Imaging Mode	2D	
	Coil Configuration	HD 8Ch High Res Brain Array by Invivo	Pulse Sequence	FRFSE-XL	
	Plane	OBLIQUE	Imaging Options	FC, EDR, TRF, Fast, ZIP512, FR, ARC	
	Series Description	AX T2 4MM	n/a	23	
	SCAN TIMING		SCAN RANGE		
	TE	90.0	FOV	25.6	
	Number of Echoes	1	Slice Thickness	4.0	
	TR	3000.0	Slice Spacing	0.0	
	Echo Train Length	16	Start Location 1	0.0	
	Receiver Bandwidth	19.23	Start Location 2	0.0	
			Start Location 3	160.0	
			End Location 1	0.0	
			End Location 2	0.0	
			End Location 3	S120.0	
			Number of Slices	44	
			Slice for 3 Plane Localizaion	0	
			Slice for 3 Plane Localizaion	0	
			Slice for 3 Plane Localizaion	0	
			Slice for 3 Plane Localizaion	0	
			Space per Plane 1	0.0	
			Space per Plane 2	0.0	
4MM			Table Delta	0.00	4MM
T2 4	IMAGE ENHANCE		ACQ TIMING		
AX	Filter Choice	None	Freq	256	AX T2
			Phase	256	
			Freq DIR	A/P	
			NEX	1.00	
			# of Acq. Before Pause	0	
			Phase FOV	0.88	
			Auto Shim	Auto	
			Phase Correction	No	
			Flow Direction Compensation	Slice	
	GATING/TRIGGER		USER CVS		
	Heart Beat per Minute Mode	e 0	User CV7	1.00	
	-				

Protocol: adult_head_QUEST11112015_20151112135614257_1

Auto Trigger Type	Off	User CV17	1.00
Auto Trigger Window	Off	User CV19	1.00
		User CV Mask	2769344
FMRI		MULTI-PHASE	
PSD Trigger	Internal	# of Acquisition	0
Slice Order	Interleaved	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
Fat/Water Saturation	Fat		
TRICKS		CONTRAST	
Pause On/Off	On	Contrast Yes/No	No
Auto Subtract	0	Contrast Amount	6
Auto SCIC	2		

UCSF/Quest Protocol – Axial DWI

Patient Entry		PATIENT POSITION		IMAGING PARAMETERS		
Patient Position Supine Imaging Mode 2D			Head First		ZOOM	
Coli Configuration		· ·	Supine			
Series Description			8 Ch High Res Brain Array by			
SCAN TIMING TE		Plane	OBLIQUE	Imaging Options	EPI, DIFF, Asset	
SCAN TIMING TE		Series Description	Ax DWI 4MM B=1000	n/a	8	
TR 8000.0 Silice Thickness 4.0				SCAN RANGE		
Number of Shots 1 Silice Spacing 0.8		TE	Minimum	FOV	25.6	
Start Location 1		TR	8000.0	Slice Thickness	4.0	
Start Location 2		Number of Shots	1	Slice Spacing	0.8	
Start Location 3				Start Location 1	0.0	
End Location 1				Start Location 2	0.0	
Page				Start Location 3	0.0	
End Location 3 S148.0				End Location 1	0.0	
Number of Slices 32				End Location 2	0.0	
Silice for 3 Plane Docalization Continue Continue Docalization Continue Contin				End Location 3	S148.0	
Cocalization Slice for 3 Plane Localization Space per Plane D.O. D.O. Space per Plane D.O. D.O. D.O. Space per Plane D.O. D.O. Space per Plane D.O.				Number of Slices	32	
Coalization Slice for 3 Plane Decadization Coalization Coaliza					0	
Cocalization Slice for 3 Plane 0 Cocalization Slice for 3 Plane 0 Cocalization Space per Plane 1 0.0 Space per Plane 2 0.0 Table Delta 0.000 MAGE ENHANCE ACQ TIMING Filter Choice None Freq 160 Phase 160 Phase 160 Phase Freq DIR R/L Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 User CV0 1.00 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0					0	
Cocalization Space per Plane 1 0.0 Space per Plane 2 0.0 Table Delta 0.00 MAGE ENHANCE Filter Choice None Freq 160 Phase 160 Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER Heart Beat per Minute Mode 0 User CV5 1.00 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0					0	
Space per Plane 2					0	
MAGE ENHANCE Filter Choice None Freq 160 Phase 160 Freq DIR R/L Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal ACQ TIMING Freq 160 Phase 160 Phase COV 1.00 Auto Shim Auto Phase Correction Yes USER CVS USER CVS USER CVS 1.00 Auto Trigger Window Off User CV Mask 262689 MULTI-PHASE PSD Trigger Internal # of Acquisition 0				Space per Plane 1	0.0	
MAGE ENHANCE Filter Choice None Freq 160 Phase 160 Freq DIR R/L Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal ACQ TIMING Freq 160 Phase 160 Phase COV 1.00 Auto Shim Auto Phase Correction Yes USER CVS USER CVS USER CVS 1.00 Auto Trigger Window Off User CV Mask 262689 MULTI-PHASE PSD Trigger Internal # of Acquisition 0	1000			Space per Plane 2	0.0	1000
Filter Choice None Freq 160 Phase 160 Phase 160 Freq DIR R/L Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI PSD Trigger Internal # of Acquisition 0	B=,			Table Delta	0.00	B=,
Freq DIR R/L Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	MM	IMAGE ENHANCE		ACQ TIMING		Σ
Freq DIR R/L Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 User CV0 1.00 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	N 4	Filter Choice	None	Freq	160	N 4
Freq DIR R/L Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 User CV0 1.00 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	×			Phase	160	×
Auto Shim Auto Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	A			Freq DIR	R/L	A
Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0				Phase FOV	1.00	
GATING/TRIGGER Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0				Auto Shim	Auto	
Heart Beat per Minute Mode 0 User CV0 1.00 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0				Phase Correction	Yes	
Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0		GATING/TRIGGER		USER CVS		
Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0		Heart Beat per Minute Mode	0	User CV0	1.00	
FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0		Auto Trigger Type	Off	User CV5	1.00	
PSD Trigger Internal # of Acquisition 0		Auto Trigger Window	Off	User CV Mask	262689	
		FMRI		MULTI-PHASE		
Slice Order Interleaved Seperate Series 0		PSD Trigger	Internal	# of Acquisition	0	
		Slice Order	Interleaved	Seperate Series	0	

Protocol: adult_head_QUEST11112015_20151112135614257_1

View Order	Bottom/Up	Mask Phase	0
# of Repetitions REST	0	Mask Pause	0
# of Repetitions ACTIVE	0		
SAT		DIFFUSION	
Tag Type	None	Optimized TE	Yes
Fat/Water Saturation	Fat	Diffusion Directions	All
		Number of Diffusion	3
		Directions	
		Dual Spin Echo	Off
		Recon All Images	On
TRICKS		CONTRAST	
Pause On/Off	On	Contrast Yes/No	No
Auto Subtract	0	Contrast Amount	6
Auto SCIC	Off		

UCSF/Quest Protocol – Coronal DWI

PATIENT POSITION						
Patient Position Supine Imaging Mode 2D		PATIENT POSITION		IMAGING PARAMETERS		
Coli Configuration 8 Ch High Res Brain Airay by MRI Devices MRI Devices		Patient Entry	Head First	Gradient Mode	ZOOM	
Plane OBLOUE Imaging Options EPI, DIFF, Asset		Patient Position	Supine	Imaging Mode	2D	
Series Description Cor DWI 4MM B=1000		Coil Configuration		Pulse Sequence	Spin Echo	
SCAN TAINING TE		Plane	OBLIQUE	Imaging Options	EPI, DIFF, Asset	
TE		Series Description	Cor DWI 4MM B=1000	n/a	8	
TR 9000.0 Slice Thickness 4.0		SCAN TIMING		SCAN RANGE		
Number of Shots 1 Silce Spacing 0.8 Start Location 1 0.0 O.0 Start Location 2 0.0 Start Location 3 0.0 End Location 1 0.0 O.0 End Location 1 0.0 End Location 3 0.0 End Location 3 0.0 Number of Slices 36 Slice for 3 Plane 0 Localization Space per Plane 1 0.0 Space per Plane 1 0.0 Space per Plane 2 0.0 Table Delta 0.00 MAGE ENHANCE Fitter Choice None Freq 160 Phase 160 Phase 160 Phase 160 Phase Freq DIR S/I Phase FOV 1.00 Auto Shim Auto Phase Correction Yes USER CVS Location User CVS 1.00 Auto Trigger Window Off User CV5 1.00 Auto Trigger Window Off User CV5 1.00 Auto Trigger Window Off User CV5 Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition O		TE	Minimum	FOV	25.6	
Start Location 1		TR	9000.0	Slice Thickness	4.0	
Start Location 2		Number of Shots	1	Slice Spacing	0.8	
Start Location 3				Start Location 1	0.0	
Page				Start Location 2	0.0	
Page				Start Location 3	0.0	
Find Location 3 0.0				End Location 1	0.0	
Number of Slices 36				End Location 2	A168.0	
Slice for 3 Plane Docadization Space per Plane Docadization Space per Plane Docadization Space per Plane Docadization Space per Plane Docadization Docadization Docadization Docadization Space per Plane Docadization Doca				End Location 3	0.0	
				Number of Slices	36	
DOTESTICATION Continue Cont					0	
					0	
Cocalization Space per Plane 1 0.0 Space per Plane 2 0.0 Table Delta 0.00					0	
Space per Plane 2					0	
Filter Choice None Freq 160 Phase 160 Freq DIR S/I Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	0			Space per Plane 1	0.0	0
Filter Choice None Freq 160 Phase 160 Freq DIR S/I Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	100			Space per Plane 2	0.0	100
Filter Choice None Freq 160 Phase 160 Freq DIR S/I Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV5 MULTI-PHASE PSD Trigger Internal ACCT IMMNG ACCUTIMING Freq 160 Phase 160 Phase S/I Phase FOV 1.00 Auto Auto Phase Correction Yes USER CVS 1.00 User CVO 1.00 Auto Trigger Window Off User CV Mask 262689 MULTI-PHASE PSD Trigger Internal # of Acquisition 0	B=			Table Delta	0.00	- B
Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 User CV0 1.00 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	MM	IMAGE ENHANCE		ACQ TIMING		₽¥
Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 User CV0 1.00 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	N N	Filter Choice	None	Freq	160	7 M
Phase FOV 1.00 Auto Shim Auto Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 User CV0 1.00 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	or D			Phase	160	or D
Auto Shim Auto Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0	ŏ			Freq DIR	S/I	ŏ
Phase Correction Yes GATING/TRIGGER USER CVS Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0				Phase FOV	1.00	
GATING/TRIGGER Heart Beat per Minute Mode 0 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0				Auto Shim	Auto	
Heart Beat per Minute Mode 0 User CV0 1.00 Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0				Phase Correction	Yes	
Auto Trigger Type Off User CV5 1.00 Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0		GATING/TRIGGER		USER CVS		
Auto Trigger Window Off User CV Mask 262689 FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0		Heart Beat per Minute Mode	0	User CV0	1.00	
FMRI MULTI-PHASE PSD Trigger Internal # of Acquisition 0		Auto Trigger Type	Off	User CV5	1.00	
PSD Trigger Internal # of Acquisition 0		Auto Trigger Window	Off	User CV Mask	262689	
		FMRI		MULTI-PHASE		
Slice Order Interleaved Seperate Series 0		PSD Trigger	Internal	# of Acquisition	0	
		Slice Order	Interleaved	Seperate Series	0	

Protocol: adult_head_QUEST11112015_20151112135614257_1

View Order	Bottom/Up	Mask Phase	0
# of Repetitions REST	0	Mask Pause	0
# of Repetitions ACTIVE	0		
SAT		DIFFUSION	
Tag Type	None	Optimized TE	Yes
Fat/Water Saturation	Fat	Diffusion Directions	All
		Number of Diffusion	3
		Directions	
		Dual Spin Echo	Off
		Recon All Images	On
TRICKS		CONTRAST	
Pause On/Off	On	Contrast Yes/No	No
Auto Subtract	0	Contrast Amount	6
Auto SCIC	Off		

	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	Spin Echo	
	Coil Configuration	-1	Imaging Options	Seg, EDR, Fast, SS, ARC	
	Plane	3-PLANE	n/a	12	
	Series Description	LOCALIZER			
		200,12,22,1	SCAN RANGE		
	SCAN TIMING		FOV	34.0	
	TE	Minimum	Slice Thickness	10.0	
	TR	Minimum	Slice Spacing	0.0	
	Receiver Bandwidth	62.50	Center Location 1	0.0	
	IMAGE ENHANCE		Center Location 2	A30.0	
	Filter Choice	None	Center Location 3	0.0	
	GATING/TRIGGER		Slice for 3 Plane Localizaion	0	
	Heart Beat per Minute Mode	0	Slice for 3 Plane Localizaion	9	
	Auto Trigger Type	Off	Slice for 3 Plane Localizaion	9	
	Auto Trigger Window	Off	Slice for 3 Plane Localizaion	9	
	PSD Trigger	Internal	Space per Plane 1	0.0	
	Slice Order	Interleaved	Space per Plane 2	0.0	
œ	View Order	Bottom/Up	Table Delta	0.00	œ
ZE	# of Repetitions REST	0	ACQ TIMING		呂
, AL	# of Repetitions ACTIVE	0	Freq	256	Ä
LOCALIZER	SAT		Phase	192	LOCALIZER
	Tag Type	None	Freq DIR	Unswap	-
		740776	# of Acq. Before Pause	0	
	TRICKS		Phase FOV	1.00	
	Pause On/Off	On	Auto Shim	Auto	
	Auto Subtract	0	Phase Correction	No	
	Auto SCIC	Off	USER CVS		
	OTHERS		User CV2	184.00	
	Protocol Notes	S/I	User CV13	1.00	
		fat sat on asset	In-range AutoTR Control	0	
			User CV Mask	57414	
			MULTI-PHASE		
			Seperate Series	0	
			Mask Phase	0	
			Mask Pause	0	
			DIFFUSION		
			Recon All Images	On	
			CONTRAST		
			Contrast Yes/No	No	
			Contrast Amount	Yes	

UCSF/Quest Protocol – ASSET Calibration

	PATIENT POSITION	
	Patient Entry	Head First
	Patient Position	Supine
	Coil Configuration	-1
	Plane	AXIAL
	Series Description	ASSET calibration
	SCAN TIMING	
	Number of Echoes	1
	IMAGE ENHANCE	
	Filter Choice	None
	GATING/TRIGGER	
	Heart Beat per Minute Mode	0
	Auto Trigger Type	Off
	Auto Trigger Window	Off
	FMRI	
	PSD Trigger	Internal
	Slice Order	Interleaved
	View Order	Bottom/Up
	# of Repetitions REST	0
	# of Repetitions ACTIVE	0
	SAT	
	Tag Type	None
ion	TRICKS	
Sa	Pause On/Off	On
ğ	Auto Subtract	0
SEI calibration	Auto SCIC	Off

IMAGING PARAMETERS In	naging
Mode	3D
Pulse Sequence	SPGR
Imaging Options	EDR, Fast, ZIP2, Calib
n/a	6
SCAN RANGE	
FOV	30.0
Slice Thickness	9.4
GRXOPT	0
Start Location 1	<i>I133.7</i>
End Location 1	S157.7
End Location 2	R8.0
End Location 3	A38.6
Center of Location Start	R8.0
Center of Location End	A38.6
Scan Locations	32
Number of Slices	1
Slice for 3 Plane Localizaion	0
Space per Plane 1	0.0
Space per Plane 2	0.0
Table Delta	0.00
ACQ TIMING	
Freq DIR	R/L
Auto Shim	Auto
Phase Correction	No
USER CVS	
In-range AutoTR Control	0
User CV Mask	8388672
MULTI-PHASE	
Seperate Series	0
Mask Phase	0
Mask Pause	0
DIFFUSION	
Recon All Images	On
-	
CONTRAST	No
Contrast Yes/No	No
Contrast Amount	Yes

UCSF/Quest Protocol – IR-FSPGR

PATIENT POSITION Patient Entry Patient Position Coil Configuration Plane Series Description PATIENT POSITION IMAGING PARAMETERS Imaging Mode 3D Pulse Sequence BRAVO Imaging Options EDR, Fast, IrP n/a 41 SCAN RANGE	
Patient Position Supine Pulse Sequence BRAVO Coil Configuration -1 Imaging Options EDR, Fast, IrP Plane SAGITTAL n/a Series Description 3D SAG ADNI IR-SPGR SCAN RANGE	
Coil Configuration -1 Imaging Options EDR, Fast, IrP Plane SAGITTAL n/a 41 Series Description 3D SAG ADNI IR-SPGR SCAN RANGE	
Plane SAGITTAL n/a 41 Series Description 3D SAG ADNI IR-SPGR SCAN RANGE	
Series Description 3D SAG ADNI IR-SPGR SCAN RANGE	
SCAN RANGE	
SCAN TIMING FOV 25.6	
Flip Angle 11 Slice Thickness 1.2	
Number of Echoes 1 Location per Slab 200	
TI 400 Overlap Locations 0	
Receiver Bandwidth 31.25 GRXOPT 0	
IMAGE ENHANCE Start Location 1 L110.8	
Filter Choice None End Location 1 R128.0	
GATING/TRIGGER End Location 2 A37.2	
Heart Beat per Minute 0 Contain of Location 3 S7.3	
Mode Center of Location Start A37.2 Center of Location End S7.3	
Auto Trigger Type Off Number of Slices 1	
Auto Trigger Window Off Slices 7 Slice for 3 Plane 0	
FMRI Localization	
PSD Trigger Internal Slice for 3 Plane 0	
Slice Order Interleaved Localization	
View Order Bottom/Up Slice for 3 Plane Localization	GR
# of Repetitions REST 0 Slice for 3 Plane 0	SP
# of Repetitions ACTIVE 0 Localization	堂
Space per Plane 1 0.0	Z
Tag Type None Space per Plane 2 0.0	AD
View Order # of Repetitions REST # of Repetitions ACTIVE Slice for 3 Plane Localization Slice for 3 Plane Localization Slice for 3 Plane Localization Space per Plane 1 Space per Plane 2 Tag Type TRICKS ACO TIMBIC	AG
Pause On/Off On ACQ TIMING	3D SAG ADNI IR-SPGR
Pause On/Off On Act of Timing Auto Subtract 0 Freq 256	3
Auto SCIC 2 Phase 256	
Freq DIR S/I	
NEX 1.00	
Phase FOV 1.00	
Auto Shim Auto	
Phase Correction No	
USER CVS	
In-range AutoTR Control 0	
User CV Mask 16	
MULTI-PHASE	
Seperate Series 0	
Mask Phase 0	
Mask Pause 0	
DIFFUSION Page 11 All Images On	
Recon All Images On	
CONTRAST	
Contrast Yes/No No	
Contrast Amount Yes	

UCSF/Quest Protocol – Axial T2*

	PATIENT POSITION		IMAGING PARAMETERS	0.0	
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	Gradient Echo	
	Coil Configuration	HD 8Ch High Res Brain Array by Invivo	lmaging Options n/a	FC, EDR, SqP, ZIP512 0	
	Plane	OBLIQUE		<u> </u>	
	Series Description	Ax T2*	SCAN RANGE		
	SCAN TIMING		FOV	25.6	
	Flip Angle	20	Slice Thickness	4.0	
	TE	20.0	Slice Spacing	0.0	
	Number of Echoes	1	Start Location 1	R8.0	
	TR	, 650.0	Start Location 2	A26.4	
	Receiver Bandwidth	25.00	Start Location 3	161.2	
	IMAGE ENHANCE		End Location 1	R8.0	
	IMAGE ENHANCE Filter Choice	None	End Location 2 End Location 3	A50.9 S109.0	
	Filter Choice	None	Number of Slices	\$109.0 44	
	GATING/TRIGGER		Slice for 3 Plane	0	
	Heart Beat per Minute Mode	0	Localizaion		
	Auto Trigger Type	Off	Slice for 3 Plane Localizaion	0	ſ
	Auto Trigger Window	Off	Slice for 3 Plane Localizaion	0	
	PSD Trigger	Internal	Slice for 3 Plane Localizaion	0	
	Slice Order	Interleaved	Space per Plane 1	0.0	
T2*	View Order	Bottom/Up	Space per Plane 2	0.0	L 2*
Ax T2*	# of Repetitions REST	0	Table Delta	0.00	Ax T2*
	# of Repetitions ACTIVE	0	ACQ TIMING		
	SAT		Freq	256	
	Tag Type	None	Phase	224	
	TRICKS		Freq DIR	A/P	
	Pause On/Off	On	NEX	1.00	
	Auto Subtract	0	# of Acq. Before Pause	0	
	Auto SCIC	2	Auto Shim	Auto	
			Phase Correction	No	
			USER CVS		
			In-range AutoTR Control	0	
			TR Min	200.0	
			TR Max	11000.0	
			User CV Mask	0	
			MULTI-PHASE	^	
			Seperate Series	0	
			Mask Phase Mask Pause	0	
				0	
			DIFFUSION		
			Recon All Images	On	
			CONTRAST		
			Contrast Yes/No	No	
			Contrast Amount	Yes	

UCSF/Quest Protocol – Axial T2 FLAIR

	PATIENT POSITION		IMAGING PARAMETERS I		
	Patient Entry	Head First	Mode	2D	
	Patient Position	Supine	Pulse Sequence	T2flair	
	Coil Configuration	HD 8Ch High Res Brain Array by Invivo	lmaging Options n/a	EDR, TRF, Fast, ARC 25	
	Plane	OBLIQUE			
	Series Description	T2 FLAIR ARC	SCAN RANGE		
	SCAN TIMING		FOV	25.6	
	Flip Angle	160	Slice Thickness	4.0	
	TE	90.0	Slice Spacing	0.0	
	Number of Echoes	1	GRXOPT	0	
	TR	9000.0	Start Location 1	R8.0	
	TI	2474	Start Location 2	A26.4	
	Echo Train Length	16	Start Location 3	I61.2	
	Receiver Bandwidth	31.25	End Location 1	R8.0	
	IMAGE ENHANCE		End Location 2	A50.9	
			End Location 3	S109.0	
	Filter Choice	В	Number of Slices	44	
	GATING/TRIGGER		Slice for 3 Plane Localizaion	0	
	Auto Trigger Type Auto Trigger Window	Off Off	Slice for 3 Plane Localizaion	0	
	FMRI		Slice for 3 Plane Localizaion	0	
	PSD Trigger	Internal	Slice for 3 Plane	0	
O	Slice Order	Interleaved	Localizaion		Q
AR	View Order	Bottom/Up	Space per Plane 1	0.0	FLAIR ARC
띰	# of Repetitions REST	0	Space per Plane 2	0.0	프
₌٦⊿	# of Repetitions ACTIVE	0	Table Delta	0.00	7
T2 FLAIR ARC	SAT		ACQ TIMING		T2 F
	SAT Location	1	Freq	256	
	SAT Thickness	40.0	Phase	256	
	Tag Type	None	Freq DIR	A/P	
	TRICKS		NEX	1.00	
	Pause On/Off	On	Phase FOV	0.88	
	Auto Subtract	0	Auto Shim	Auto	
	Auto SCIC	2	Phase Correction	No	
			USER CVS		
			User CV5	1.00	
			User CV22	1.00	
			In-range AutoTR Control	0	
			User CV Mask	6325024	
			MULTI-PHASE		
			Seperate Series	0	
			Mask Phase	0	
			Mask Pause	0	
			DIFFUSION		
			Recon All Images	On	
			CONTRAST		
			Contrast Yes/No	No	
			Contrast Amount	Yes	

UCSF/Quest Protocol – Axial T2

	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	FRFSE-XL	
	Coil Configuration	HD 8Ch High Res Brain Array by Invivo	Imaging Options	FC, EDR, TRF, Fast, ZIP512, FR	
	Plane	OBLIQUE	n/a	23	
	Series Description	Ax T2 FSE	SCAN RANGE		
	SCAN TIMING		FOV	25.6	
	Flip Angle	142	Slice Thickness	4.0	
	TE	80.0	Slice Spacing	0.0	
	Number of Echoes	1	Start Location 1	R8.0	
	TR	3000.0	Start Location 2	A26.4	
	Echo Train Length	16	Start Location 3	<i>I61.2</i>	
	Receiver Bandwidth	31.25	End Location 1	R8.0	
	IMAGE ENHANCE		End Location 2	A50.9	
	Filter Choice	None	End Location 3	S109.0	
		TVOTE	Number of Slices	44	
	GATING/TRIGGER	0	Slice for 3 Plane	0	
	Heart Beat per Minute Mode	0	Localizaion Slice for 3 Plane	0	
	Auto Trigger Type	Off	Localizaion	U	
	Auto Trigger Window	Off	Slice for 3 Plane	0	
	FMRI		Localizaion		
	PSD Trigger	Internal	Slice for 3 Plane Localizaion	0	
	Slice Order	Interleaved	Space per Plane 1	0.0	
	View Order	Bottom/Up	Space per Plane 2	0.0	
FSE	# of Repetitions REST	0	Table Delta	0.00	FSE
T2 F	# of Repetitions ACTIVE	0	ACQ TIMING		T2 F
Ax	SAT		Freq	256	Ax
1	Tag Type	None	Phase	256	1
	Fat/Water Saturation	Fat	Freq DIR	A/P	
	TRICKS		NEX	1.00	
	Pause On/Off	On	# of Acq. Before Pause	0	
	Auto Subtract	0	Phase FOV	0.88	
	Auto SCIC	2	Auto Shim	Auto	
		_	Phase Correction	Yes	
			Flow Direction Compensation	Freq	
			·		
			USER CVS		
			User CV19	1.00	
			User CV22	1.00	
			In-range AutoTR Control TR Min	0 2500.0	
			TR Max	11000.0	
			User CV Mask	6848960	
				0040900	
			MULTI-PHASE	•	
			Seperate Series	0	
			Mask Phase	0	
			Mask Pause	0	
			DIFFUSION		
			Recon All Images	On	

CONTRAST				
Contrast Yes/No	No			

Contrast Amount Yes

UCSF/Quest Protocol – Axial DWI

	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	Spin Echo	
	Coil Configuration	HD 8Ch High Res Brain Array by Invivo	Imaging Options	EDR, EPI, DIFF, Asset	
	Plane	AXIAL	n/a	8	
	Series Description	Ax DWI	SCAN RANGE		
	·	70.277	FOV	25.6	
	SCAN TIMING	• • •	Slice Thickness	4.0	
	TE	Minimum	Slice Spacing	0.8	
	Number of Echoes	1	GRXOPT	0	
	TR	6000.0	Start Location 1	<i>I</i> 41.6	
	Number of Shots	1	End Location 1	S107.2	
	IMAGE ENHANCE		End Location 2	R8.6	
	Filter Choice	None	End Location 3	A40.6	
	GATING/TRIGGER		Center of Location Start	R8.6	
	Heart Beat per Minute	0	Center of Location End	A40.6	
	Mode		Number of Slices	32	
	Auto Trigger Type	Off	Slice for 3 Plane Localizaion	0	
	Auto Trigger Window	Off	Slice for 3 Plane	0	
	FMRI		Localizaion		
	PSD Trigger	Internal	Slice for 3 Plane Localizaion	0	
	Slice Order	Interleaved	Slice for 3 Plane	0	
	View Order	Bottom/Up	Localizaion	•	
	# of Repetitions REST	0	Space per Plane 1	0.0	
-	# of Repetitions ACTIVE	0	Space per Plane 2	0.0	=
Ax DWI	SAT		Table Delta	0.00	Ax DWI
Ax	Tag Type	None	ACQ TIMING		¥
	Fat/Water Saturation	Fat	Freq	192	
			·	·	
	TRICKS		Phase	192	
	TRICKS Pause On/Off	On	•		
		On O	Phase	192	
	Pause On/Off		Phase Freq DIR	192 R/L	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV	192 R/L 1.00	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim	192 R/L 1.00 Auto	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction	192 R/L 1.00 Auto	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS	192 R/L 1.00 Auto Yes	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0	192 R/L 1.00 Auto Yes	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5	192 R/L 1.00 Auto Yes 1.00 1.00	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17	192 R/L 1.00 Auto Yes 1.00 1.00	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask	192 R/L 1.00 Auto Yes 1.00 1.00 1.00	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE	192 R/L 1.00 Auto Yes 1.00 1.00 1.00	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 0 131745	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE Seperate Series	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 0 131745	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE Seperate Series Mask Phase	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 0 131745	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE Seperate Series Mask Phase Mask Pause	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 0 131745	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE Seperate Series Mask Phase Mask Pause DIFFUSION	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 0 131745	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE Seperate Series Mask Phase Mask Pause DIFFUSION Optimized TE Diffusion Directions Number of Diffusion	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 1.00 0 131745	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE Seperate Series Mask Phase Mask Pause DIFFUSION Optimized TE Diffusion Directions Number of Diffusion Directions	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 0 131745 0 0 0 Ves All 3	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE Seperate Series Mask Phase Mask Pause DIFFUSION Optimized TE Diffusion Directions Number of Diffusion Directions Number of T2 Images	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 0 1.31745 0 0 0 Yes All 3 1	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE Seperate Series Mask Phase Mask Pause DIFFUSION Optimized TE Diffusion Directions Number of Diffusion Directions Number of T2 Images Dual Spin Echo	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 0 1.31745 0 0 0 Yes All 3 1 Off	
	Pause On/Off Auto Subtract	0	Phase Freq DIR Phase FOV Auto Shim Phase Correction USER CVS User CV0 User CV5 User CV17 In-range AutoTR Control User CV Mask MULTI-PHASE Seperate Series Mask Phase Mask Pause DIFFUSION Optimized TE Diffusion Directions Number of Diffusion Directions Number of T2 Images	192 R/L 1.00 Auto Yes 1.00 1.00 1.00 0 1.31745 0 0 0 Yes All 3 1	

CONTRAST	
Contrast Yes/No	No

Contrast Amount Yes

UCSF/Quest Protocol – Coronal DWI

	PATIENT POSITION		IMAGING PARAMETERS		
	Patient Entry	Head First	Imaging Mode	2D	
	Patient Position	Supine	Pulse Sequence	Spin Echo	
	Coil Configuration	HD 8Ch High Res Brain	Imaging Options	EDR, EPI, DIFF, Asset	
		Array by Invivo	n/a	8	
	Plane	CORONAL	SCAN RANGE		
	Series Description	Cor DWI	FOV	25.6	
	SCAN TIMING		Slice Thickness	4.0	
	TE	Minimum	Slice Spacing	0.8	
	TR	7500.0	Start Location 1	P50.7	
	Number of Shots	1	End Location 1	A117.3	
	IMAGE ENHANCE		End Location 2	S21.3	
	Filter Choice	None	End Location 3	R9.3	
	CATINOTRICOER		Center of Location Start	S21.3	
	GATING/TRIGGER	0	Center of Location End	R9.3	
	Heart Beat per Minute Mode	0	Number of Slices	36	
	Auto Trigger Type	Off	Slice for 3 Plane	0	
	Auto Trigger Window	Off	Localizaion		
	FMRI		Slice for 3 Plane Localizaion	0	
	PSD Trigger	Internal	Slice for 3 Plane Localizaion	0	
	Slice Order	Interleaved	Slice for 3 Plane	0	
	View Order	Bottom/Up	Localizaion		
	# of Repetitions REST # of Repetitions ACTIVE	0 0	Space per Plane 1	0.0	
		0	Space per Plane 2	0.0	
⋝	SAT		Table Delta	0.00	=
Cor DWI	Tag Type	None	ACQ TIMING		Cor DWI
Sor	Fat/Water Saturation	Fat	Freq	192	Sor
	TRICKS		Phase	192	
	Pause On/Off	On	Freq DIR	S/I	
	Auto Subtract	0	Phase FOV	1.00	
	Auto SCIC	2	Auto Shim	Auto	
			Phase Correction	Yes	
			USER CVS		
			User CV0	1.00	
			User CV5	1.00	
			User CV17	1.00	
			In-range AutoTR Control	0	
			User CV Mask	393889	
			MULTI-PHASE		
			Seperate Series	0	
			Mask Phase	0	
			Mask Pause	0	
			DIFFUSION		
			Optimized TE	Yes	
			Diffusion Directions	All	
			Number of Diffusion Directions	3	
			Number of T2 Images	1	
			Dual Spin Echo	Off	
			Recon All Images	On	

9	O	N	Ц	R/	45	T		

Contrast Yes/No No
Contrast Amount Yes

Philips 1.5T

UCSF/Quest Survey

Philips 1.5T		Stack alignment = Stack display order =	" no"; " no";
		PlanAlign =	"no";
UCSF/Quest Survey		REST slabs =	0;
ocoi /quest oui vey		Catheter tracking =	"no";
		Interactive positioning =	"no";
Coil selection =	"Head";	Patient position =	"head first";
element selection =	"123456";	orientation =	"supine";
connection =	"d";	Scan type =	"Imaging";
Dual coil =	"no";	Scan mode =	"M2D";
Multi coil =	"no";	technique =	"FFE";
CLEAR =	"no";	Contrast enhancement =	"T1";
FOV FH (mm) =	250;	Acquisition mode =	"cartesian";
AP (mm) =	250;	Fast Imaging mode =	"TFE";
FOV (mm) =	(3) 50, (17) 250;	shot mode =	"multishot";
Voxel size FH (mm) =	0.9765625;	TFE factor =	42;
AP (mm) =	1.953125;	startup echoes =	"default";
Slice thickness (mm) =	10;	shot interval =	"shortest";
Bar orientation =	"RL";	profile order =	"linear";
VOI orientation =	"transverse";	Echoes =	1;
VOI size AP (mm) =	30;	partial echo =	"no";
RL (mm) =	30;	shifted echo =	"no";
FH (mm) =	30;	TE =	"shortest";
Recon voxel size (mm) =	0.9765625;	Flip angle (deg) =	20;
Fold-over suppression =	"no";	TR =	"user defined";
Reconstruction matrix =	256;	(ms) =	15;
SENSE =	"no";	Halfscan =	"no";
k-t BLAST =	"no";	Water-fat shift =	"maximum";
Stacks =	3;	Shim =	"default";
type =	(20) "parallel";	Fat suppression =	"no";
Slices =	(3) 3, (17) 1;	Water suppression =	"no";
slice gap =	"user defined";	TFE prepulse =	"invert";
gap (mm) =	(20) 10;	slice selection =	"no";
Slice orientation =	"sagittal",	shared =	"no";
	"coronal", (18)	delay =	"shortest";
"transverse";		PSIR =	"no";
Fold-over direction =	"AP", (2) "RL",	MTC =	"no";
	(17) "AP";	T2prep =	"no";
Fat shift direction =	(2) "F",	Diffusion mode =	"no";
	"P", (17) "L";	SAR mode =	"high";
radial axis =	"AP", "RL",	B1 mode =	"default";
	"AP", (17) "RL";	PNS mode =	"moderate";
radial angle (deg) =	(20) 0;	Gradient mode =	"regular";
Slice Offc. AP (P=+mm) =	0, (2) 20,	SofTone mode =	"no";
DI (I	(17) 0;	Cardiac synchronization =	"no";
RL (L=+mm) =	(20) 0;	Heart rate > 250 bpm =	"no";
FH (H=+mm) =	(2) 0,	Respiratory compensation =	"no";
A	-80, (17) 0;	Navigator respiratory comp =	"no";
Ang. AP (deg) =	(20) 0;	Flow compensation =	"no";
RL (deg) =	(20) 0;	fMRI echo stabilisation =	"no";
FH (deg) =	(20) 0;	Motion smoothing =	"no";
VOI offc. AP (P=+mm) =	0;	NSA =	1;
RL (L=+mm) =	0;	Angio / Contrast enh. =	"no";
FH (H=+mm) =	0;	Quantitative flow =	"no";
VOI ang. AP (deg) =	0;	Manual start =	"no";
RL (deg) =	0;	Dynamic study =	"no";
FH (deg) =	0;	Arterial Spin labeling =	"no";
2nd VOI lat. offc. (mm) =	80;	Preparation phases =	"auto";
2nd VOI offc. axis =	"AP";	Interactive F0 =	"no";
Slice scan order =	"default";	B1 field map =	"no";
Stack scan order =	"ascend";	MIP/MPR =	"no";
Move table per stack =	"no"; "no":	Images =	" M", (3) " no";
Large table movement =	"no";		

```
" M";
Autoview image =
                                (4) " no";
Calculated images =
Reference tissue =
                                "White matter";
                                "soft";
Preset window contrast =
Reconstruction mode =
                                "immediate";
Save raw data =
                                "no";
                                "no";
Hardcopy protocol =
Ringing filtering =
                                "default";
Geometry correction =
                                "default";
IF info seperator =
                                0:
Total scan duration =
                                "00:31.4";
Rel. signal level (%) =
                                100;
Act. TR/TE (ms) =
                                "15 / 5.2";
ACQ matrix M x P =
                                "256 x 126";
ACQ voxel MPS (mm) =
                                "0.98 / 1.98 / 10.0";
REC voxel MPS (mm) =
                                "0.98 / 0.98 / 10.0";
Scan percentage (%) =
                                49.21875;
TFE shots =
                                3;
TFE dur. shot / acq (ms) =
                                "697.7 / 630.0";
TFE shot interval (ms) =
                                697.661499;
Min. TI delay =
                                373.136902;
Act. WFS (pix) / BW (Hz) =
                                "1.162 / 186.9";
Min. WFS (pix) / Max. BW (Hz) = "0.522 / 415.8";
                                "10 / 5.2";
Min. TR/TE (ms) =
SAR / whole body =
                                "< 6 %";
Whole body / level =
                                "< 0.2 W/kg / normal";
                                "1.12 uT";
B1 rms =
PNS / level =
                                "16 % / normal";
Sound Pressure Level (dB) =
                                -3.4767971;
```

"no": **UCSF/Quest MP-RAGE** shifted echo = "no"; TE = "user defined"; (ms) =Coil selection = "Head": 8; Flip angle (deg) = element selection = "123456": TR = "shortest"; "d"; connection = "no"; Halfscan = "no"; Dual coil = Water-fat shift = "maximum"; "none"; Homogeneity correction = Shim = "auto": CLEAR = "yes"; Fat suppression = "no": "no"; body tuned = Water suppression = "no"; FOV FH (mm) =240; TFE prepulse = "invert"; AP (mm) =240: slice selection = "no"; RL (mm) =204.000015; delay = "user defined": Voxel size FH (mm) = 1.25; (ms) =1000: AP (mm) =1.25; PSIR = "no": RL (mm) =1.20000005; MTC = "no"; Recon voxel size (mm) = 1: "no": T2prep = "no": Fold-over suppression = Research prepulse = "no"; Slice oversampling = "user defined"; Diffusion mode = "no"; oversample factor = 1.10000002; SAR mode = "hiah": "no"; RF select. FOS = B1 mode = "default": Reconstruction matrix = 240; PNS mode = "moderate"; SENSE = "no": Gradient mode = "default": k-t BLAST = "no"; SofTone mode = "no"; "no"; Overcontiquous slices = Cardiac synchronization = "no"; Stacks = 1; Heart rate > 250 bpm = "no": slices = 170: "no": Respiratory compensation = slice orientation = "sagittal"; "no"; Navigator respiratory comp = fold-over direction = "AP"; Flow compensation = "no"; "F": fat shift direction = "no"; fMRI echo stabilisation = Stack Offc. AP (P=+mm) = -0.496321857; Motion smoothing = "no"; RL (L=+mm) =1.41061175; NSA = 1; FH (H=+mm) =-66.9705124; "no": Angio / Contrast enh. = Ang. AP (deg) =2.82272959; "no"; Quantitative flow = 9.18244553; RL (deg) =CENTRA = "no"; FH (dea) =-0.52383393; Manual start = "no"; Chunks = 1; Dynamic study = "no"; Large table movement = "no": Arterial Spin labeling = "no": PlanAlign = "no"; Preparation phases = "auto"; REST slabs = 0; Interactive F0 = "no"; Catheter tracking = "no"; B0 field map = "no"; "no"; Interactive positioning = B1 field map = "no"; "no"; Allow table movement = MIP/MPR ="no": "head first"; Patient position = " M", (3) " no"; Images = orientation = "supine"; " M"; Autoview image = Scan type = "Imaging"; Calculated images = (4) " no"; "3D": Scan mode = Reference tissue = "Grey matter"; "FFE": technique = Preset window contrast = "soft"; Contrast enhancement = "T1"; "immediate": Reconstruction mode = Acquisition mode = "cartesian"; Save raw data = "no"; Fast Imaging mode = "TFE": "no"; Hardcopy protocol = 3D non-selective = "no"; Ringing filtering = "default": shot mode = "multishot"; Geometry correction = "default": TFE factor = 192; Elliptical k-space shutter = "default"; "no"; 3D free factor = IF info seperator = "default": startup echoes = "07:11.9"; Total scan duration = shot interval = "user defined": Rel. signal level (%) = 100: (ms) =2300: Act. TR/TE (ms) = "8.5 / 4.0"; profile order = "linear": ACQ matrix M x P = "192 x 192"; "Y"; turbo direction = ACQ voxel MPS (mm) = "1.25 / 1.25 / 1.20"; Echoes = 1; REC voxel MPS (mm) = "1.00 / 1.00 / 1.20";

partial echo =

Scan percentage (%) = 100; TFE shots = 187;

TFE dur. shot / acq (ms) = "1826.1 / 1638.6"; Min. TI delay = 856.297791; Act. WFS (pix) / BW (Hz) = "1.270 / 171.0"; Min. WFS (pix) / Max. BW (Hz) ="0.209 / 1041.7"; "8.5 / 3.2";

Min. TR/TE (ms) = **"<** 3 %"; SAR / whole body =

Whole body / level = "< 0.1 W/kg / normal";

"0.75 uT"; B1 rms =

"54 % / normal"; PNS / level = Sound Pressure Level (dB) = 11.7563028;

2.70000005; UCSF/Quest T2* (pixels) =Shim = "default"; Fat suppression = "no"; Water suppression = "no"; Coil selection = "Head": MTC = "no"; element selection = "123456": "no"; Research prepulse = "d"; connection = "no"; Diffusion mode = "no"; Dual coil = SAR mode = "low": Homogeneity correction = "none": B1 mode = "default": CLEAR = "yes"; PNS mode = "low": "no"; body tuned = "default"; Gradient mode = FOV AP (mm) =256; SofTone mode = "no": RL (mm) =224: Cardiac synchronization = "no"; FH (mm) =176; Heart rate > 250 bpm = "no"; Voxel size AP (mm) = 1.33000004; Respiratory compensation = "no"; RL (mm) =1.33333337: Navigator respiratory comp = "no": Slice thickness (mm) = Flow compensation = "yes"; Recon voxel size (mm) = 0.939999998: "default"; Temporal slice spacing = Fold-over suppression = "no"; fMRI echo stabilisation = "no"; Reconstruction matrix = 288; NSA = 1; "no": SENSE = "no": Angio / Contrast enh. = "no"; k-t BLAST = Quantitative flow = "no":

Stacks = 1; "no"; Manual start = "parallel": tvpe = "no": Dvnamic study = slices = 44: Arterial Spin labeling = "no";

"user defined"; slice gap = Preparation phases = "auto": gap (mm) =Interactive F0 = "no": slice orientation = "transverse"; "no": B0 field map = fold-over direction = "RL"; B1 field map = "no"; fat shift direction = "P": MIP/MPR = "no";

-0.496321857; Stack Offc. AP (P=+mm) = " M", (3) " no"; Images = RL (L=+mm) =1.41061175; Autoview image = " M"; FH (H=+mm) =-66.9705124; Calculated images = (4) " no": Ang. AP (deg) =2.82272959; Reference tissue = "White matter"; RL (deq) =9.18244553; Preset window contrast = "soft";

FH (dea) =-0.52383393; Reconstruction mode = "immediate"; Minimum number of packages = 1; Save raw data = "no"; Slice scan order = "default"; Hardcopy protocol = "no"; "no"; Large table movement = Ringing filtering = "default": "no": PlanAlign = "default"; Geometry correction =

REST slabs = 0; IF info seperator = 0; Catheter tracking = "no"; Total scan duration = "05:31.5": "no"; Interactive positioning = Rel. signal level (%) = 100: Allow table movement = "no"; Act. TR/TE (ms) ="650 / 30": "head first"; Patient position = ACQ matrix M x P = "192 x 168":

orientation = "supine"; ACQ voxel MPS (mm) = "1.33 / 1.33 / 4.00"; Scan type = "Imaging"; REC voxel MPS (mm) = "0.89 / 0.89 / 4.00"; "MS": Scan mode = Scan percentage (%) = 100: "FFE": technique = Packages = 3:

Contrast enhancement = "no"; Min. slice gap (mm) = 0; Acquisition mode = "cartesian"; Optimal slices = 16; Fast Imaging mode = "none"; Max. slices = Echoes = 1; "2.695 / 80.6"; Act. WFS (pix) / BW (Hz) =

"user defined";

Water-fat shift =

"no": partial echo = Min. WFS (pix) / Max. BW (Hz) = "0.319 / 681.2"; shifted echo = "no"; Min. TR/TE (ms) ="580 / 6.7": "user defined"; TE = " 0 %": SAR / whole body =

30; (ms) =Whole body / level = "0.0 W/kg / normal"; Flip angle (deg) = 20: B1 rms = "0.23 uT";

"user defined": TR = PNS / level = "9 % / normal"; (ms) =650: Sound Pressure Level (dB) = -9.25968838; "no"; Halfscan =

UCCE/Ouget TO EL AL	В	(ms) =	90;
UCSF/Quest T2 FLAI	ĸ	Refocusing control =	"yes";
		angle (deg) =	90;
		TR =	"user defined";
Coil selection =	"Head";	(ms) =	9000;
element selection =	"123456";	Halfscan =	"no";
connection =	"d";	Water-fat shift =	"maximum";
Dual coil =	"no";	IR delay (ms) =	2200;
CLEAR =	"yes";	acquire during delay =	"yes";
body tuned =	"no";	dual =	"no";
FOV AP (mm) =	256;	power =	"1";
RL (mm) =	224;	Shim =	"default";
FH (mm) =	176;	Fat suppression =	"no";
Voxel size AP (mm) =	1;	Water suppression =	"no";
RL (mm) =	1;	MTC =	"no";
Slice thickness (mm) =	4;	Silicone Only Sequence =	"no";
Recon voxel size (mm) =	0.9375;	T2prep =	"no";
Fold-over suppression =	"no";	Research prepulse =	"no";
Reconstruction matrix =	288;	Zoom imaging =	"no";
SENSE =	"yes";	Diffusion mode =	"no";
P reduction (RL) =	2;	SAR mode =	"moderate";
P os factor =	1;	B1 mode =	"default";
k-t BLAST =	"no";	PNS mode =	"low";
Stacks =	1;	Gradient mode =	"default";
type =	"parallel";	SofTone mode =	"no";
slices =	44;	Cardiac synchronization =	"no";
slice gap =	"user defined";	Heart rate > 250 bpm =	"no";
gap (mm) =	0;	Respiratory compensation =	"no";
slice orientation =	"transverse";	Navigator respiratory comp =	"no";
fold-over direction =	"RL";	Flow compensation =	"no";
fat shift direction =	"P";	Motion smoothing =	"no";
Stack Offc. AP (P=+mm) =	-0.496321857;	NSA =	1;
RL (L=+mm) =	1.41061175;	Manual start =	"no";
FH (H=+mm) =	-66.9705124;	Dynamic study =	"no";
Ang. AP (deg) =	2.82272959;	Arterial Spin labeling =	"no";
RL (deg) =	9.18244553;	Preparation phases =	"auto";
FH (deg) =	-0.52383393;	Interactive F0 =	"no";
Minimum number of packages		B0 field map =	"no";
Slice scan order =	"default";	B1 field map =	"no";
Large table movement =	"no";	MIP/MPR =	"no";
PlanAlign =	"no";	Images =	" M", (3) " no";
REST slabs =	0;	Autoview image =	" M";
Catheter tracking =	"no";	Reference tissue =	"White matter";
Interactive positioning = Allow table movement =	"no"; "no";	Preset window contrast =	"soft";
		Reconstruction mode =	"real time";
Patient position = orientation =	"head first"; "supine";	Save raw data =	"no";
Scan type =	"Imaging";	Hardcopy protocol =	"no";
Scan mode =	"MS";	Ringing filtering =	"default";
technique =	"IR";	Geometry correction =	"default";
Acquisition mode =	"cartesian";	IF_info_seperator =	0;
Fast Imaging mode =	"TSE";	Total scan duration =	"03:36.0";
shot mode =	"multishot";	Rel. signal level (%) =	100;
TSE factor =	16;	Act. TR/TI (ms) =	"9000 / 2200";
startup echoes =	0;	Act. TE (ms) =	"90"; "256 x 218":
profile order =	"linear";	ACQ matrix M x P =	"256 x 218";
DRIVE =	"no";	ACQ voxel MPS (mm) =	"1.00 / 1.03 / 4.00"; "0.89 / 0.89 / 4.00";
ultrashort =	"no";	REC voxel MPS (mm) =	97.391304;
strong FID crushing =	"no";	Scan percentage (%) = Packages =	97.391304, 3;
Echoes =	1;	Min. slice gap (mm) =	0.800000012;
partial echo =	"no";	Optimal slices =	30;
TE =	"user defined";	Max. slices =	30, 45;
	,	Max. Silves –	٠٠,

WFS (pix) / BW (Hz) = "1.157 / 187.8"; TSE es / shot (ms) = "10.6 / 169"; TEeff / TEequiv (ms) = "90 / 69"; Min. TR/TI (ms) = "5162 / 50"; SAR / whole body = "< 13 %";

Whole body / level = "< 0.5 W/kg / normal";

B1 rms = "1.66 uT"; PNS / level = "32 % / normal"; Sound Pressure Level (dB) = 9.06399822;

UCSF/Quest T2 TSE (ms) =Flip angle (deg) = 90; Refocusing control = "yes"; Coil selection = "Head": 100; angle (deg) = element selection = "123456": "user defined"; TR = "d"; connection = 3000: (ms) ="no"; Dual coil = Halfscan = "no"; Homogeneity correction = "none": Water-fat shift = "maximum": CLEAR = "yes"; Shim = "default": "no"; body tuned = "SPIR": Fat suppression = **FOV** AP (mm) =256; strenath = "strong"; RL (mm) =224; frequency offset = "default": FH (mm) =176; Water suppression = "no"; Voxel size AP (mm) = 1; BB pulse = "no"; RL (mm) =1; MTC = "no": 4; Slice thickness (mm) = T2prep = "no"; Recon voxel size (mm) = 1; "no": Research prepulse = Small FOV imaging = "no"; Zoom imaging = "no"; "no": Fold-over suppression = Diffusion mode = "no"; Reconstruction matrix = 256: SAR mode = "high": SENSE = "no"; B1 mode = "default": k-t BLAST = "no"; PNS mode = "low"; Stacks = 1: Gradient mode = "default": type = "parallel"; SofTone mode = "no"; slices = 44: "no"; Cardiac synchronization = slice gap = "user defined"; Heart rate > 250 bpm = "no": gap (mm) =Respiratory compensation = "no": slice orientation = "transverse"; Navigator respiratory comp = "no"; "RL"; fold-over direction = Flow compensation = "no"; "P": fat shift direction = "default"; Temporal slice spacing = Stack Offc. AP (P=+mm) = -0.496321857; Motion smoothing = "no"; RL (L=+mm) = 1.41061175;NSA = 1; FH (H=+mm) = -66.9705124;"no": Manual start = Ang. AP (deg) =2.82272959; "no"; Dynamic study = 9.18244553; RL (deg) =Arterial Spin labeling = "no": FH (deg) =-0.52383393; Preparation phases = "auto": Minimum number of packages = 2; Interactive F0 = "no"; Slice scan order = "default"; "no": B0 field map = Large table movement = "no": "no"; B1 field map = PlanAlign = "no"; MIP/MPR ="no": REST slabs = 0; Images = " M", (3) " no"; "no": Catheter tracking = Autoview image = " M": Interactive positioning = "no": Calculated images = (4) " no"; Allow table movement = "no"; Reference tissue = "White matter"; "head first"; Patient position = Preset window contrast = "soft": "supine"; orientation = Reconstruction mode = "immediate"; Scan type = "Imaging"; Save raw data = "no"; "MS"; Scan mode = Hardcopy protocol = "no"; "SE"; technique = Ringing filtering = "default"; Modified SE = "no"; Geometry correction = "default"; Acquisition mode = "cartesian"; IF info seperator = 1634755923; Fast Imaging mode = "TSE"; Total scan duration = "02:15.0"; shot mode = "multishot"; Rel. signal level (%) = 100: TSE factor = 16; "3000": Act. TR (ms) =startup echoes = 0; Act. TE (ms) ="90": profile order = "linear"; "256 x 224"; ACQ matrix M x P = DRIVE = "no": ACQ voxel MPS (mm) = "1.00 / 1.00 / 4.00": "no": ultrashort = REC voxel MPS (mm) = "1.00 / 1.00 / 4.00"; "no": strong FID crushing = Scan percentage (%) = 100; Echoes = 1; Packages = 3; "no"; partial echo = 0; Min. slice gap (mm) =

TE =

"user defined":

Optimal slices = 15; Max. slices = 45; WFS (pix) / BW (Hz) = "1.193 / 182.1"; TSE es / shot (ms) = "10.6 / 169"; "90 / 73"; TEeff / TEequiv (ms) = "2966"; "< 38 %"; Min. TR (ms) = SAR / whole body = Whole body / level = "< 1.5 W/kg / normal";

B1 rms = "2.81 uT"; PNS / level = "46 % / normal"; Sound Pressure Level (dB) = 9.9265461;

Water-fat shift = "minimum"; **UCSF/Quest Axial DWI** Shim = "auto"; "SPIR": Fat suppression = strength = "strong"; Coil selection = "Head": frequency offset = "default": "123456": element selection = Water suppression = "no"; connection = "d": "no"; BB pulse = Dual coil = "no": MTC = "no"; "yes": CLEAR = Research prepulse = "no": body tuned = "no"; "DWI": Diffusion mode = RL (mm) =256; **FOV** sequence = "SE": AP (mm) =256; gradient duration = "maximum"; FH (mm) =152.800003; gradient overplus = "no"; Voxel size RL (mm) = 1.60000002: direction = "M", "P", "S"; AP (mm) =1.60000002; nr of b-factors = Slice thickness (mm) = 4; b-factor order = "ascending"; Recon voxel size (mm) = 1; max b-factor = 1000; "no": Small FOV imaging = average high b = "no"; Fold-over suppression = "no"; SAR mode = "high"; Reconstruction matrix = 256; B1 mode = "default": "ves": SENSE = PNS mode = "high": 2; P reduction (AP) = Gradient mode = "default": P os factor = 1; "no"; SofTone mode = k-t BLAST = "no": Cardiac synchronization = "no"; Stacks = 1; Heart rate > 250 bpm = "no"; "parallel"; type = "no"; Respiratory compensation = slices = 32: Navigator respiratory comp = "no": "user defined"; slice gap = Flow compensation = "no"; qap (mm) =0.800000191; Temporal slice spacing = "default"; slice orientation = "transverse": NSA = 3; fold-over direction = "AP": SMART = "no"; "P": fat shift direction = Manual start = "no"; Stack Offc. AP (P=+mm) = -0.496321857; Dvnamic study = "no": RL (L=+mm) =1.41061175; Arterial Spin labeling = "no"; FH (H=+mm) =-66.9705124; "auto"; Preparation phases = Ang. AP (deg) =2.82272959: Interactive F0 = "no"; RL (deg) = 9.18244553: B0 field map = "no"; FH (dea) =-0.52383393; B1 field map = "no"; Minimum number of packages = 1; MIP/MPR = "no": Slice scan order = "default"; " M", (3) " no"; Images = Large table movement = "no": " M": Autoview image = PlanAlign = "no"; Calculated images = (4) " no": REST slabs = 0; Reference tissue = "White matter": Catheter tracking = "no": EPI 2D phase correction = "no": "no"; Interactive positioning = Preset window contrast = "soft": "no"; Allow table movement = "immediate"; Reconstruction mode = "head first": Patient position = "no"; Save raw data = "supine"; orientation = Hardcopy protocol = "no"; "Imaging"; Scan type = Ringing filtering = "default"; Scan mode = "MS"; Geometry correction = "default"; "SE"; technique = IF info seperator = 1634755923; Modified SE = "no": Total scan duration = "01:31.2"; Acquisition mode = "cartesian"; Rel. signal level (%) = 100; Fast Imaging mode = "EPI": Act. TR (ms) = "6513": shot mode = "single-shot"; Act. TE (ms) ="100": Echoes = 1; ACQ matrix $M \times P =$ "160 x 160": "no"; partial echo = ACQ voxel MPS (mm) = "1.60 / 1.60 / 4.00"; "shortest": REC voxel MPS (mm) = "1.00 / 1.00 / 4.00"; Flip angle (deg) = 90; Scan percentage (%) = 100; "shortest": TR = Packages =

Halfscan =

factor =

"yes";

0.698795199;

1;

0;

83;

Min. slice gap (mm) =

EPI factor =

WFS (pix) / BW (Hz) = "18.596 / 11.7"; BW in EPI freq. dir. (Hz) = "1249.1"; SAR / whole body = "< 5 %";

Whole body / level = "< 0.2 W/kg / normal";

B1 rms = "0.96 uT"; PNS / level = "66 % / normal"; Sound Pressure Level (dB) = 10.3647041;

UCSF/Quest Coronal	DWI	Water-fat shift =	"minimum";
		Shim =	"auto";
		Fat suppression =	"SPIR";
		strength =	"strong";
Coil selection =	"Head";	frequency offset =	"default";
element selection =	"123456";	Water suppression =	"no";
connection =	"d"; 	BB pulse =	"no";
Dual coil =	"no";	MTC =	"no";
CLEAR =	"yes";	Research prepulse =	"no";
body tuned =	"no";	Diffusion mode =	"DWI";
FOV FH (mm) =	256;	sequence =	"SE";
RL (mm) =	256;	gradient duration =	"maximum";
AP (mm) =	172;	gradient overplus =	"no";
Voxel size FH (mm) =	1.60000002;	direction =	"M", "P", "S";
RL (mm) =	1.60000002;	nr of b-factors =	2;
Slice thickness (mm) =	4;	b-factor order =	"ascending";
Recon voxel size (mm) =	1;	max b-factor =	1000;
Small FOV imaging =	"no";	average high b =	"no";
Fold-over suppression =	"no";	SAR mode =	"high";
Reconstruction matrix =	256;	B1 mode =	"default";
SENSE =	"yes";	PNS mode =	"high";
P reduction (RL) =	2;	Gradient mode =	"default";
P os factor =	1;	SofTone mode =	"no";
k-t BLAST =	"no";	Cardiac synchronization =	"no";
Stacks =	1;	Heart rate > 250 bpm =	"no";
type =	"parallel";	Respiratory compensation =	"no";
slices =	36;	Navigator respiratory comp =	"no";
slice gap =	"user defined";	Flow compensation =	"no";
gap (mm) =	0.800000191;	Temporal slice spacing =	"default";
slice orientation =	"coronal";	NSA =	3;
fold-over direction =	"RL";	SMART =	"no";
fat shift direction =	"L";	Manual start =	"no";
Stack Offc. AP (P=+mm) =	-0.496321857;	Dynamic study =	"no";
RL (L=+mm) =	1.41061175;	Arterial Spin labeling =	"no";
FH (H=+mm) =	-66.9705124;	Preparation phases =	"auto";
Ang. AP (deg) =	2.82272959;	Interactive F0 =	"no";
RL (deg) =	9.18244553;	B0 field map =	"no";
FH (deg) =	-0.52383393;	B1 field map =	"no";
Minimum number of packages		MIP/MPR =	"no";
Slice scan order =	"default";	Images =	" M", (3) " no";
Large table movement =	"no";	Autoview image =	" M";
PlanAlign =	"no";	Calculated images =	(4) " no";
REST slabs =	0;	Reference tissue =	"White matter";
Catheter tracking =	"no";	EPI 2D phase correction =	"no";
Interactive positioning =	"no";	Preset window contrast =	"soft";
Allow table movement =	"no";	Reconstruction mode =	"immediate";
Patient position =	"head first";	Save raw data =	"no";
orientation =	"supine";	Hardcopy protocol =	"no";
Scan type =	"Imaging";	Ringing filtering =	"default";
Scan mode =	"MS";	Geometry correction =	"default";
technique =	"SE";	<pre>IF_info_seperator =</pre>	1634755923;
Modified SE =	"no";	Total scan duration =	"01:39.5";
Acquisition mode =	"cartesian";	Rel. signal level (%) =	100;
Fast Imaging mode =	"EPI";	Act. TR (ms) =	"7104";
shot mode =	"single-shot";	Act. TE (ms) =	"101";
Echoes =	1;	ACQ matrix M x P =	"160 x 160";
partial echo =	"no";	ACQ voxel MPS (mm) =	"1.60 / 1.60 / 4.00";
TE =	"shortest";	REC voxel MPS (mm) =	"1.00 / 1.00 / 4.00";
Flip angle (deg) =	90;	Scan percentage (%) =	100;
TR =	"shortest";	Packages =	1;
Halfscan =	"yes";	Min. slice gap (mm) =	0;
factor =	0.698795199;	Diffusion gradient timing DELT	A / delta (ms) =

"51.0 / 27.5"; EPI factor = 83;

WFS (pix) / BW (Hz) = "18.596 / 11.7"; BW in EPI freq. dir. (Hz) = "1249.1"; SAR / whole body = "< 5 %";

Whole body / level = "< 0.2 W/kg / normal";

B1 rms = "0.98 uT"; PNS / level = "50 % / normal"; Sound Pressure Level (dB) = 9.92135143;

Philips 3T

UCSF/Quest Survey

OCOI /Quest oui vey		snot interval –	Wine a relle
		profile order =	"linear";
		Echoes =	1;
Liniformity -	"Classic";	partial echo =	"no";
Uniformity =		shifted echo =	"no";
FOV FH (mm) =	300;	TE =	"in-phase";
AP (mm) =	300;	(ms) =	4.60383224;
FOV (mm) =	(20) 50;	Flip angle (deg) =	15;
Voxel size FH (mm) =	0.976562977;	TR =	•
AP (mm) = ^	1.953125;		"user defined";
Slice thickness (mm) =	10;	(ms) =	11;
Bar orientation =	"RL";	Halfscan =	"no";
		Water-fat shift =	"user defined";
VOI orientation =	"transverse";	(pixels) =	3.5;
VOI size AP (mm) =	30;	RF Shims =	"fixed";
RL (mm) =	30;	Shim =	"default";
FH (mm) =	30;		
Recon voxel size (mm) =	0.9375;	mDIXON =	"no";
Fold-over suppression =	"no";	Fat suppression =	"no";
		Water suppression =	"no";
P (mm) =	50;	TFE prepulse =	"invert";
A (mm) =	50;	slice selection =	"no";
Reconstruction matrix =	320;	shared =	"no";
SENSE =	"no";	delay =	"user defined";
k-t BLAST =	"no";		
Stacks =	3;	(ms) =	800;
type =	(20) "parallel";	PSIR =	"no";
Slices =		MTC =	"no";
	(20) 3;	T2prep =	"no";
slice gap =	"user defined";	Diffusion mode =	"no";
gap (mm) =	(20) 10;	SAR mode =	"high";
Slice orientation =	"sagittal",	B1 mode =	"default";
	"coronal", (18)	PNS mode =	"low";
	"transverse";		
Fold-over direction =	"AP", (19) "RL";	Gradient mode =	"default";
Fat shift direction =	(2) "F",	SofTone mode =	"no";
r at stillt direction –		Cardiac synchronization =	"no";
P. 1	(18) "P";	Respiratory compensation =	"no";
radial axis =	"AP", "RL",	Navigator respiratory comp =	"no";
	"AP", (17) "RL";	Flow compensation =	"no";
radial angle (deg) =	(20) 0;	fMRI echo stabilisation =	"no";
Slice Offc. AP (P=+mm) =	(20) 0;		
RL (L=+mm) = '	(20) 0;	NSA =	1;
FH (H=+mm) =	(20) 0;	Angio / Contrast enh. =	"no";
,		Quantitative flow =	"no";
Ang. AP (deg) =	(20) 0;	Manual start =	"no";
RL (deg) =	(20) -0;	Dynamic study =	"no";
FH (deg) =	(20) -0;	Arterial Spin labeling =	"no";
Slice scan order =	"default";	Preparation phases =	"auto";
Stack scan order =	"ascend";	Interactive F0 =	"no";
Move table per stack =	"no";		
Large table movement =	"no";	B0 field map =	"no";
Stack alignment =	"no";	MIP/MPR =	"no";
		SWIp =	"no";
Stack display order =	"no";	Images =	"M", (3) "no";
PlanAlign =	"no";	Autoview image =	"M"; ` ´
REST slabs =	0;	Calculated images =	(4) ["] no";
Interactive positioning = "no";		Reference tissue =	"White matter";
Patient position =	"head first";		
orientation =	"supine";	Recon compression =	"No";
Scan type =	"Imaging";	Preset window contrast =	"soft";
		Reconstruction mode =	"immediate";
Scan mode =	"M2D";	Save raw data =	"no";
technique =	"FFE";	Hardcopy protocol =	"no";
Contrast enhancement =	"T1";	Image filter =	"system default"
Acquisition mode =	"cartesian";	Geometry correction =	"default";
Fast Imaging mode =	"TFE";	Geometry Correction -	uciauit,
5 5	,		

"multishot";

"shortest";

64; "default";

shot mode = TFE factor =

startup echoes =

shot interval =

```
IF info seperator =
                               1634755923;
Total scan duration =
                               "00:31.5";
Rel. SNR =
                               1;
                               "11 / 4.6";
Act. TR/TE (ms) =
ACQ matrix M x P =
                               "308 x 128";
ACQ voxel MPS (mm) =
                               "0.97 / 2.34 / 10.0";
                               "0.94 / 0.94 / 10.0";
REC voxel MPS (mm) =
Scan percentage (%) =
                               41.5584412;
TFE shots =
                               2;
                               "1165.5 / 704.0";
TFE dur. shot / acq (ms) =
TFE shot interval (ms) =
                               1165.52527;
Min. TI delay =
                               400.447815;
Act. WFS (pix) / BW (Hz) =
                               "3.099 / 140.2";
Min. WFS (pix) / Max. BW (Hz) = "0.674 / 644.2";
Min. TR/TE (ms) =
                               "9.4 / 3.7";
                               "< 16 %";
SAR / local torso =
Whole body / level =
                               "< 0.5 W/kg / normal";
                               " 0.0 kJ/kg";
SED =
                               "0.92 uT / 16 %";
B1+rms / Coil Power =
Max B1+rms =
                               "0.92 uT";
                               "52 % / normal";
PNS / level =
dB/dt =
                               "43.9 T/s";
Sound Pressure Level (dB) =
                               17.918438;
```

UCSF/Quest MP-RAC	GE	mDIXON =	"no";
		Fat suppression =	"no";
0	Hara a Ha	Water suppression =	"no";
SmartSelect =	"yes";	TFE prepulse =	"invert";
Coil 1 (exclude) =	"None";	slice selection =	"no";
Uniformity =	"CLEAR";	delay =	"user defined";
FOV FH (mm) =	256;	(ms) =	900;
AP (mm) =	240;	PSIR =	"no";
RL (mm) =	204.000015;	MTC =	"no";
Voxel size FH (mm) =	1;	T2prep =	"no";
AP (mm) =	1;	Diffusion mode =	"no";
RL (mm) =	1.20000005;	SAR mode =	"high";
Recon voxel size (mm) =	1;	B1 mode =	"default";
Fold-over suppression =	"no";	PNS mode =	"moderate";
Slice oversampling =	"default";	Gradient mode =	"default";
Reconstruction matrix =	256;	SofTone mode =	"no";
SENSE =	"no";	Cardiac synchronization =	"no";
k-t BLAST =	"no";	Respiratory compensation =	"no";
Overcontiguous slices =	"no";	Navigator respiratory comp =	"no";
Stacks =	1;	Flow compensation =	"no";
slices =	170;	fMRI echo stabilisation =	"no";
slice orientation =	"sagittal";	NSA =	1;
fold-over direction =	"AP";	Angio / Contrast enh. =	"no";
fat shift direction =	"F";	Quantitative flow =	"no";
Stack Offc. AP (P=+mm) =	-20.4408798;	CENTRA =	"no";
RL (L=+mm) =	3.60722065;	Manual start =	"no";
FH (H=+mm) =	4.80962276;	Dynamic study =	"no";
Ang. AP (deg) =	0;	Arterial Spin labeling =	"no";
RL (deg) =	-0;	Preparation phases =	"auto";
FH (deg) =	-0;	Interactive F0 =	"no";
Free rotatable =	"no";	B0 field map =	"no";
Multi-chunk =	"no";	MIP/MPR =	"no";
Large table movement =	"no";	SWIp =	"no";
PlanAlign =	"no";	Images =	"M", (3) "no";
REST slabs =	0;	Autoview image =	"M"; `
Interactive positioning =	"no";	Calculated images =	(4) "no";
Patient position =	"head first";	Reference tissue =	"White matter";
orientation =	"supine";	Recon compression =	"No";
Scan type =	"Imaging";	Preset window contrast =	"soft";
Scan mode =	"3D";	Reconstruction mode =	"immediate";
technique =	"FFE";	Save raw data =	"no";
Contrast enhancement =	"T1";	Hardcopy protocol =	"no";
Acquisition mode =	"cartesian";	Image filter =	"system default";
Fast Imaging mode =	"TFE";	Geometry correction =	"default";
shot mode =	"multishot";	Elliptical k-space shutter =	"default";
TFE factor =	240;	<pre>IF_info_seperator =</pre>	1634755923;
startup echoes =	"default";	Total scan duration =	"09:06.7";
shot interval =	"user defined";	Rel. SNR =	1;
(ms) =	2500;	Act. TR/TE (ms) =	"6.8 / 3.2";
profile order =	"linear";	ACQ matrix M x P =	"256 x 240";
turbo direction =	"Y";	ACQ voxel MPS (mm) =	"1.00 / 1.00 / 1.20";
Echoes =	1;	REC voxel MPS (mm) =	"1.00 / 1.00 / 1.20";
partial echo =	"no";	Scan percentage (%) =	100;
shifted echo =	"no";	TFE shots =	218;
TE =	"shortest";	TFE dur. shot / acq (ms) =	"1725.2 / 1633.8";
Flip angle (deg) =	9;	Min. TI delay =	850.217285;
TR =	"shortest";	Act. WFS $(pix) / BW (Hz) =$	"1.802 / 241.1";
Halfscan =	"no";	Min. WFS (pix) / Max. BW (Hz)	
Water-fat shift =	"user defined";	SAR / local torso =	"< 10 %";
(pixels) =	1.7999995;	Whole body / level =	"< 0.3 W/kg / normal";
RF Shims =	"fixed";	SED =	"< 0.2 kJ/kg";
Shim =	"auto";	B1+rms / Coil Power =	"0.73 uT / 10 %";

Max B1+rms = "0.73 uT"; PNS / level = "59 % / normal"; dB/dt = "56.4 T/s"; Sound Pressure Level (dB) = 13.5690823;

UCSF/Quest T2*

IICSE/Ouget T2*		Halfscan =	"no";
UCSF/Quest T2*		Water-fat shift =	"maximum";
		RF Shims =	"fixed";
SmartSelect =	"yes";	Shim =	"default";
Coil 1 (exclude) =	"None";	mDIXON =	"no";
Uniformity =	"CLEAR";	Fat suppression =	"SPIR";
FOV AP (mm) =	256;	strength =	"strong";
RL (mm) =	224;	frequency offset =	"default";
FH (mm) =	176;	Water suppression =	"no";
Voxel size AP (mm) =	1;	BB pulse =	"no";
RL (mm) =	1;	MTC =	"no";
Slice thickness (mm) =	4;	Zoom imaging =	"no";
Recon voxel size (mm) =	1;	Diffusion mode =	"no";
Fold-over suppression =	"no";	SAR mode =	"high";
Reconstruction matrix =	256;	B1 mode =	"user defined";
SENSE =	"no";	amplitude (uT) =	12;
k-t BLAST =	"no";	PNS mode =	"moderate";
Stacks =	1;	Gradient mode =	"default";
type =	"parallel";	SofTone mode =	"no";
slices =	44;	Cardiac synchronization =	"no";
slice gap =	"user defined";	Respiratory compensation =	"no";
gap (mm) =	0;	Navigator respiratory comp =	"no";
slice orientation =	"transverse";	Flow compensation =	"no";
fold-over direction =	"RL";	Temporal slice spacing =	"default";
fat shift direction =	"P";	Motion smoothing =	"no";
Stack Offc. AP (P=+mm) =	-20.4408798;	NSA =	10,
RL (L=+mm) =	3.60722065;	Manual start =	"no";
FH (H=+mm) =	32.4649353;	Dynamic study =	"no";
Ang. AP (deg) =	0;	Arterial Spin labeling =	"no";
RL (deg) =	-0;	Preparation phases =	"auto";
FH (deg) =	-0;	Interactive F0 =	"no";
Free rotatable =	"no";	B0 field map =	"no";
Minimum number of packages =		MIP/MPR =	"no";
Slice scan order =	"default";	Images =	"M", (3) "no";
Large table movement =	"no";	Autoview image =	"M";
PlanAlign =	"no";	Calculated images =	(4) "no";
REST slabs =	0;	Reference tissue =	
Interactive positioning =	"no";	Recon compression =	"Grey matter"; "No";
Patient position =	"head first";	Preset window contrast =	
orientation =	"supine";	Reconstruction mode =	"soft"; "real time";
Scan type =	"Imaging";	Save raw data =	"no";
Scan mode =	"MS";		
technique =	"SE";	Hardcopy protocol =	"no";
Modified SE =	"no";	Image filter =	"medium";
Acquisition mode =	"cartesian";	Geometry correction =	"default"; 1634755923;
Fast Imaging mode =	"TSE";	IF_info_seperator =	•
shot mode =	"multishot";	Total scan duration =	"02:15.0";
TSE factor =	16;	Rel. SNR =	1; "3000";
startup echoes =	0;	Act. TR (ms) =	
profile order =	"linear";	Act. TE (ms) =	"80";
DRIVE =	"no";	ACQ matrix M x P =	"256 x 224";
ultrashort =	"no";	ACQ voxel MPS (mm) =	"1.00 / 1.00 / 4.00";
fid reduction =	"default";	REC voxel MPS (mm) =	"1.00 / 1.00 / 4.00";
Echoes =	1;	Scan percentage (%) =	100;
partial echo =	"no";	Packages =	3;
TE =	"user defined";	Min. slice gap (mm) =	4;
(ms) =	80;	Optimal slices =	30;
Flip angle (deg) =	90;	Max. slices =	45; "2 552 / 170 1":
Refocusing control =	"yes";	WFS (pix) / BW (Hz) =	"2.553 / 170.1";
angle (deg) =	120;	TSE es / shot (ms) =	"9.4 / 151";
TR =	"user defined";	Min. TR (ms) =	"2578"; "< 95.0/":
(ms) =	3000;	SAR / local torso = Whole body / level =	"< 85 %"; "< 2.7 W/kg / 1st level";
···-/	 ,	vvilole body / level -	- 2.1 VV/NY / ISLIEVEL,

SED = "< 0.4 kJ/kg"; B1+rms / Coil Power = "2.10 uT / 81 %"; Max B1+rms = "2.10 uT"; PNS / level = "47 % / normal"; dB/dt = "38.8 T/s"; Sound Pressure Level (dB) = 14.8630791;

UCSF/Quest T2 FLAIR (ms) =90; Refocusing control = "yes"; angle (deg) = 120; TR = "user defined"; SmartSelect = "yes"; 9000: (ms) =Coil 1 (exclude) = "None": Halfscan = "no"; Uniformity = "CLEAR": "user defined": Water-fat shift = **FOV** AP (mm) =256; (pixels) = 2; RL (mm) =224; IR delay (ms) = 2500: FH (mm) =176; "ves": acquire during delay = Voxel size AP (mm) = 1; "no": dual = RL (mm) =1; "1": power = Slice thickness (mm) = 4; RF Shims = "fixed": 1; Recon voxel size (mm) = Shim = "default"; "no"; Fold-over suppression = mDIXON = "no"; Reconstruction matrix = 256: Fat suppression = "no": SENSE = "yes"; Water suppression = "no"; P reduction (RL) = 2; "no": MTC = "no": k-t BLAST = "no"; Zoom imaging = Stacks = 1; Diffusion mode = "no"; "parallel"; type = SAR mode = "high": slices = 44; B1 mode = "default": slice gap = "user defined"; PNS mode = "high"; gap (mm) ="default"; Gradient mode = slice orientation = "transverse"; SofTone mode = "no"; "RL"; fold-over direction = "no"; Cardiac synchronization = "P"; fat shift direction = Respiratory compensation = "no": Stack Offc. AP (P=+mm) = -20.4408798; Navigator respiratory comp = "no": RL (L=+mm) =3.60722065; "no"; Flow compensation = FH (H=+mm) =32.4649353; Motion smoothing = "no": Ang. AP (deg) = 0; NSA = 1; RL (deg) =-0; "no": Manual start = FH (deg) =-0; "no": Dvnamic study = "no"; Free rotatable = Arterial Spin labeling = "no"; Minimum number of packages = 3; Preparation phases = "auto": Slice scan order = "default": Interactive F0 = "no"; "no"; Large table movement = "no"; B0 field map = PlanAlign = "no": MIP/MPR = "no"; REST slabs = 1; "M", (3) "no"; Images = "parallel"; type = "M"; Autoview image = thickness (mm) = 60; "Grev matter": Reference tissue = "feet"; position = "No": Recon compression = "default"; gap = Preset window contrast = "soft": "1"; power = Reconstruction mode = "real time": Interactive positioning = "no"; "no": Save raw data = "head first"; Patient position = "no": Hardcopy protocol = orientation = "supine"; Image filter = "system default"; "Imaging"; Scan type = Geometry correction = "default"; "MS"; Scan mode = IF info seperator = 1634755923; technique = "IR"; Total scan duration = "03:36.0"; Acquisition mode = "cartesian"; Rel. SNR = 1; Fast Imaging mode = "TSE": "9000 / 2500"; Act. TR/TI (ms) = shot mode = "multishot"; "90"; Act. TE (ms) =TSE factor = 16; "256 x 224": ACQ matrix $M \times P =$ startup echoes = 0: ACQ voxel MPS (mm) = "1.00 / 1.00 / 4.00": "linear"; profile order = "1.00 / 1.00 / 4.00"; REC voxel MPS (mm) = DRIVE = "no"; Scan percentage (%) = 100: "ves": ultrashort = Packages = 3; "default"; fid reduction = Min. slice gap (mm) = 4; Echoes = 1; Optimal slices = 30;

Max. slices =

WFS (pix) / BW (Hz) =

"1.993 / 218.0";

partial echo =

TE =

"no";

"user defined";

TSE es / shot (ms) = "10.6 / 169"; Min. TR/TI (ms) = "7075 / 50"; SAR / local torso = "< 54 %";

Whole body / level = "< 1.7 W/kg / normal";

SED = "< 0.4 kJ/kg"; B1+rms / Coil Power = "1.68 uT / 52 %"; Max B1+rms = "1.70 uT"; PNS / level = "49 % / normal"; dB/dt = "47.1 T/s"; Sound Pressure Level (dB) = 11.7457676;

UCSF/Quest T2 TSE

UCSF/Quest T2 TSE		Halfscan =	"no";
UCSF/Quest 12 13E		Water-fat shift =	"maximum";
		RF Shims =	"fixed";
SmartSelect =	"yes";	Shim =	"default";
Coil 1 (exclude) =	"None";	mDIXON =	"no";
Uniformity =	"CLEAR";	Fat suppression =	"SPIR";
FOV AP (mm) =	256;	strength =	"strong";
RL (mm) =	224;	frequency offset =	"default";
FH (mm) =	176;	Water suppression =	"no";
Voxel size AP (mm) =	1;	BB pulse =	"no";
RL (mm) = ´	1;	MTC =	"no";
Slice thickness (mm) =	4;	Zoom imaging =	"no";
Recon voxel size (mm) =	1;	Diffusion mode =	"no";
Fold-over suppression =	"no";	SAR mode =	"high";
Reconstruction matrix =	256;	B1 mode =	"user defined";
SENSE =	"no";	amplitude (uT) = PNS mode =	12; "moderate";
k-t BLAST =	"no";	Gradient mode =	"default";
Stacks =	1;	SofTone mode =	"no";
type =	"parallel";	Cardiac synchronization =	"no";
slices =	44;	Respiratory compensation =	"no";
slice gap =	"user defined";	Navigator respiratory comp =	"no";
gap (mm) =	0;	Flow compensation =	"no";
slice orientation =	"transverse";	Temporal slice spacing =	"default";
fold-over direction =	"RL";	Motion smoothing =	"no";
fat shift direction =	"P";	NSA =	1;
Stack Offc. AP (P=+mm) =	-20.4408798;	Manual start =	"no";
RL (L=+mm) = FH (H=+mm) =	3.60722065; 32.4649353;	Dynamic study =	"no";
Ang. AP (deg) =	0;	Arterial Spin labeling =	"no";
RL (deg) =	-0;	Preparation phases =	"auto";
FH (deg) =	-0;	Interactive F0 =	"no";
Free rotatable =	"no";	B0 field map =	"no";
Minimum number of packages :		MIP/MPR =	"no";
Slice scan order =	"default";	Images =	"M", (3) "no";
Large table movement =	"no";	Autoview image =	"M";
PlanAlign =	"no";	Calculated images =	(4) "no";
REST slabs =	0;	Reference tissue =	"Grey matter";
Interactive positioning =	"no";	Recon compression =	"No";
Patient position =	"head first";	Preset window contrast =	"soft"; "roal time":
orientation =	"supine";	Reconstruction mode = Save raw data =	"real time"; "no";
Scan type =	"Imaging";	Hardcopy protocol =	"no";
Scan mode =	"MS";	Image filter =	"medium";
technique =	"SE";	Geometry correction =	"default";
Modified SE =	"no";	IF_info_seperator =	1634755923;
Acquisition mode =	"cartesian";	Total scan duration =	"02:15.0";
Fast Imaging mode = shot mode =	"TSE"; "multishot";	Rel. SNR =	1;
TSE factor =	16;	Act. TR (ms) =	"3000";
startup echoes =	0;	Act. TE (ms) =	"80";
profile order =	"linear";	ACQ matrix M x P =	"256 x 224";
DRIVE =	"no";	ACQ voxel MPS (mm) =	"1.00 / 1.00 / 4.00";
ultrashort =	"no";	REC voxel MPS (mm) =	"1.00 / 1.00 / 4.00";
fid reduction =	"default";	Scan percentage (%) =	100;
Echoes =	1;	Packages =	3;
partial echo =	"no";	Min. slice gap (mm) =	4;
TE =	"user defined";	Optimal slices =	30;
(ms) =	80;	Max. slices =	45; "2.552 / 470 4";
Flip angle (deg) =	90;	WFS (pix) / BW (Hz) =	"2.553 / 170.1";
Refocusing control =	"yes";	TSE es / shot (ms) = Min. TR (ms) =	"9.4 / 151"; "2578";
angle (deg) =	120;	SAR / local torso =	2576 ; "< 85 %";
TR =	"user defined";	Whole body / level =	<pre>"< 2.7 W/kg / 1st level";</pre>
(ms) =	3000;	Thiologody / lovoi =	Tring / Tot level ,

SED = "< 0.4 kJ/kg"; B1+rms / Coil Power = "2.10 uT / 81 %"; Max B1+rms = "2.10 uT"; PNS / level = "47 % / normal"; dB/dt = "38.8 T/s"; Sound Pressure Level (dB) = 14.8630791;

UCSF/Quest Axial DWI

		offset (Hz) =	220;
		Grad Rev Fat suppression =	"yes";
Consert Coloret	U U.	Water suppression =	"no";
SmartSelect =	"yes";	BB pulse =	"no";
Coil 1 (exclude) =	"None";	MTC =	"no";
Uniformity =	"CLEAR";		
FOV RL (mm) =	256;	Diffusion mode =	"DWI";
AP (mm) =	256;	gradient overplus =	"no";
FH (mm) =	152.800003;	direction =	"M", "P", "S";
, ,		nr of b-factors =	2;
Voxel size RL (mm) =	1.33000004;	b-factor order =	"ascending";
AP (mm) =	1.33333337;	max b-factor =	1000;
Slice thickness (mm) =	4;		
Recon voxel size (mm) =	1.333333302;	average high b =	"no";
Fold-over suppression =	"no";	SAR mode =	"high";
Reconstruction matrix =	192;	B1 mode =	"default";
		PNS mode =	"high";
SENSE =	"yes";	Gradient mode =	"maximum";
P reduction (AP) =	2;	SofTone mode =	"no";
k-t BLAST =	"no";		
Stacks =	1;	Cardiac synchronization =	"no";
type =	"parallel";	Respiratory compensation =	"no";
slices =	32;	Navigator respiratory comp =	"no";
		Flow compensation =	"no";
slice gap =	"user defined";	Temporal slice spacing =	"default";
gap (mm) =	0.800000191;	NSA =	
slice orientation =	"transverse";		3;
fold-over direction =	"AP";	SMART =	"no";
fat shift direction =	"P";	Manual start =	"no";
		Dynamic study =	"no";
Stack Offc. AP (P=+mm) =	4.63397026;	Arterial Spin labeling =	"no";
RL (L=+mm) =	-18.1911373;	Preparation phases =	"auto";
FH (H=+mm) =	30.1373558;	Interactive F0 =	
Ang. AP (deg) =	0;		"no";
RL (deg) =	-0;	B0 field map =	"no";
FH (deg) =	-0;	MIP/MPR =	"no";
Free rotatable =	"no";	Images =	"M", (3) "no";
		Autoview image =	"M"; ` ´
Minimum number of packages		Calculated images =	(4) "no";
Slice scan order =	"default";	Reference tissue =	"Grey matter";
Large table movement =	"no";		
		Recon compression =	
PlanAlign =	"no";		"No";
PlanAlign = REST slabs =	"no"; 0:	Preset window contrast =	"soft";
REST slabs =	0;		
REST slabs = Interactive positioning =	0; "no";	Preset window contrast =	"soft"; "real time";
REST slabs = Interactive positioning = Patient position =	0; "no"; "head first";	Preset window contrast = Reconstruction mode = Save raw data =	"soft"; "real time"; "no";
REST slabs = Interactive positioning = Patient position = orientation =	0; "no"; "head first"; "supine";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol =	"soft"; "real time"; "no"; "no";
REST slabs = Interactive positioning = Patient position =	0; "no"; "head first"; "supine"; "Imaging";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter =	"soft"; "real time"; "no"; "no"; "system default";
REST slabs = Interactive positioning = Patient position = orientation = Scan type =	0; "no"; "head first"; "supine"; "Imaging";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction =	"soft"; "real time"; "no"; "no"; "system default"; "default";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode =	0; "no"; "head first"; "supine"; "Imaging"; "MS";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923;
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1;
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1;	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo =	O; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE =	O; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.33 / 4.00";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90;	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "8.9583359;
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.33 / 4.00"; 98.9583359; 1;
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90;	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.33 / 4.00"; 98.9583359; 1; -0;
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR = (ms) =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined"; 6000;	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) = EPI factor =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.33 / 4.00"; 98.9583359; 1; -0; 95;
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR = (ms) = Halfscan =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined"; 6000; "yes";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) = EPI factor = WFS (pix) / BW (Hz) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.35 / 4.00"; 98.9583359; 1; -0; 95; "41.446 / 10.5";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR = (ms) = Halfscan = factor =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined"; 6000; "yes"; 0.74683547;	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) = EPI factor =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.33 / 4.00"; 98.9583359; 1; -0; 95;
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR = (ms) = Halfscan = factor = Water-fat shift =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined"; 6000; "yes"; 0.74683547; "minimum";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) = EPI factor = WFS (pix) / BW (Hz) = BW in EPI freq. dir. (Hz) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.35 / 4.00"; 98.9583359; 1; -0; 95; "41.446 / 10.5"; "1141.8";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR = (ms) = Halfscan = factor = Water-fat shift = RF Shims =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined"; 6000; "yes"; 0.74683547; "minimum"; "fixed";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) = EPI factor = WFS (pix) / BW (Hz) = BW in EPI freq. dir. (Hz) = Min. TR (ms) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.35 / 4.00"; 98.9583359; 1; -0; 95; "41.446 / 10.5"; "1141.8"; "5494";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR = (ms) = Halfscan = factor = Water-fat shift = RF Shims = Shim =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined"; 6000; "yes"; 0.74683547; "minimum"; "fixed"; "auto";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) = EPI factor = WFS (pix) / BW (Hz) = BW in EPI freq. dir. (Hz) = Min. TR (ms) = SPIR offset act./default (Hz) =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.35 / 4.00"; 98.9583359; 1; -0; 95; "41.446 / 10.5"; "1141.8"; "5494"; "220 [220]";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR = (ms) = Halfscan = factor = Water-fat shift = RF Shims =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined"; 6000; "yes"; 0.74683547; "minimum"; "fixed";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) = EPI factor = WFS (pix) / BW (Hz) = BW in EPI freq. dir. (Hz) = Min. TR (ms) = SPIR offset act./default (Hz) = SAR / local torso =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.35 / 4.00"; 98.9583359; 1; -0; 95; "41.446 / 10.5"; "1141.8"; "5494"; "220 [220]"; "< 21 %";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR = (ms) = Halfscan = factor = Water-fat shift = RF Shims = Shim = mDIXON =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined"; 6000; "yes"; 0.74683547; "minimum"; "fixed"; "auto"; "no";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) = EPI factor = WFS (pix) / BW (Hz) = BW in EPI freq. dir. (Hz) = Min. TR (ms) = SPIR offset act./default (Hz) = SAR / local torso = Whole body / level =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.35 / 4.00"; 98.9583359; 1; -0; 95; "41.446 / 10.5"; "1141.8"; "5494"; "220 [220]"; "< 21 %"; "< 0.7 W/kg / normal";
REST slabs = Interactive positioning = Patient position = orientation = Scan type = Scan mode = technique = Modified SE = Acquisition mode = Fast Imaging mode = shot mode = Echoes = partial echo = TE = Flip angle (deg) = TR = (ms) = Halfscan = factor = Water-fat shift = RF Shims = Shim =	0; "no"; "head first"; "supine"; "Imaging"; "MS"; "SE"; "no"; "cartesian"; "EPI"; "single-shot"; 1; "no"; "shortest"; 90; "user defined"; 6000; "yes"; 0.74683547; "minimum"; "fixed"; "auto";	Preset window contrast = Reconstruction mode = Save raw data = Hardcopy protocol = Image filter = Geometry correction = IF_info_seperator = Total scan duration = Rel. SNR = Act. TR (ms) = Act. TE (ms) = ACQ matrix M x P = ACQ voxel MPS (mm) = REC voxel MPS (mm) = Scan percentage (%) = Packages = Min. slice gap (mm) = EPI factor = WFS (pix) / BW (Hz) = BW in EPI freq. dir. (Hz) = Min. TR (ms) = SPIR offset act./default (Hz) = SAR / local torso =	"soft"; "real time"; "no"; "no"; "system default"; "default"; 1634755923; "01:24.0"; 1; "6000"; "110"; "192 x 190"; "1.33 / 1.35 / 4.00"; "1.33 / 1.35 / 4.00"; 98.9583359; 1; -0; 95; "41.446 / 10.5"; "1141.8"; "5494"; "220 [220]"; "< 21 %";

frequency offset =

offset (Hz) =

"user defined";

220;

B1+rms / Coil Power = "1.06 uT / 20 %"; Max B1+rms = "1.06 uT"; PNS / level = "82 % / 1st level"; dB/dt = "124.8 T/s"; Sound Pressure Level (dB) = 20.3896351;

UCSF/Quest Corona	I DWI	frequency offset =	"user defined";
		offset (Hz) = Grad Rev Fat suppression =	220; "yes";
		Water suppression =	"no";
SmartSelect =	"yes";	BB pulse =	"no";
Coil 1 (exclude) =	"None";	MTC =	"no";
Uniformity =	"CLEAR";	Diffusion mode =	"DWI";
FOV FH (mm) =	256;	gradient overplus =	"no";
RL (mm) =	256;	direction =	"M", "P", "S";
AP (mm) =	172;	nr of b-factors =	2;
Voxel size FH (mm) =	1.33000004;	b-factor order =	"ascending";
RL (mm) =	1.33333337;	max b-factor =	1000;
Slice thickness (mm) =	4;	average high b =	"no";
Recon voxel size (mm) =	1.14285719;	SAR mode =	"high";
Fold-over suppression =	"no";	B1 mode =	"default";
Reconstruction matrix =	224;	PNS mode =	"high";
SENSE =	"yes";	Gradient mode =	"maximum";
P reduction (RL) =	2; "no";	SofTone mode =	"no";
k-t BLAST =	·	Cardiac synchronization =	"no";
Stacks =	1; "parallol":	Respiratory compensation =	"no";
type =	"parallel";	Navigator respiratory comp =	"no";
slices =	36; "user defined";	Flow compensation =	"no";
slice gap = gap (mm) =	0.800000191;	Temporal slice spacing =	"default";
slice orientation =	"coronal";	NSA =	3;
fold-over direction =	"RL";	SMART =	"no";
fat shift direction =	"L";	Manual start =	"no";
Stack Offc. AP (P=+mm) =	4.63397026;	Dynamic study =	"no";
RL (L=+mm) =	-18.1911373;	Arterial Spin labeling =	"no";
FH (H=+mm) =	30.1373558;	Preparation phases =	"auto";
Ang. AP (deg) =	0;	Interactive F0 =	"no";
RL (deg) =	-0;	B0 field map =	"no";
FH (deg) =	-0;	MIP/MPR =	"no";
Free rotatable =	"no";	Images =	"M", (3) "no";
Minimum number of packages		Autoview image =	"M";
Slice scan order =	"default";	Calculated images =	(4) "no";
Large table movement =	"no";	Reference tissue =	"Grey matter";
PlanAlign =	"no";	Recon compression =	"No";
REST slabs =	0;	Preset window contrast =	"soft";
Interactive positioning =	"no";	Reconstruction mode =	"real time";
Patient position =	"head first";	Save raw data =	"no";
orientation =	"supine";	Hardcopy protocol =	"no";
Scan type =	"Imaging";	Image filter =	"system default";
Scan mode =	"MS";	Geometry correction =	"default";
technique =	"SE";	<pre>IF_info_seperator = Total scan duration =</pre>	1634755923;
Modified SE =	"no";	Rel. SNR =	"01:45.0"; 1;
Acquisition mode =	"cartesian";		"7500";
Fast Imaging mode =	"EPI";	Act. TR (ms) = Act. TE (ms) =	"106";
shot mode =	"single-shot";	ACQ matrix M x P =	"192 x 190";
Echoes =	1;	ACQ voxel MPS (mm) =	"1.33 / 1.35 / 4.00";
partial echo =	"no";	REC voxel MPS (mm) =	"1.14 / 1.14 / 4.00";
TE =	"shortest";	Scan percentage (%) =	98.9583359;
Flip angle (deg) =	90;	Packages =	1;
TR =	"user defined";	Min. slice gap (mm) =	-0;
(ms) =	7500;	EPI factor =	95;
Halfscan =	"yes";	WFS (pix) / BW (Hz) =	"37.751 / 11.5";
factor =	0.748427689;	BW in EPI freq. dir. (Hz) =	"1270.4";
Water-fat shift =	"minimum";	Min. TR (ms) =	"5900";
RF Shims =	"fixed";	SPIR offset act./default (Hz) =	"220 [220]";
Shim =	"auto";	SAR / local torso =	"< 19 %";
mDIXON =	"no"; "SPIR";	Whole body / level =	"< 0.6 W/kg / normal";
Fat suppression = strength =	"strong";	SED =	"< 0.1 kJ/kg";
Sucrigui –	Sublig ,		•

B1+rms / Coil Power = "1.00 uT / 18 %"; Max B1+rms = "1.00 uT"; PNS / level = "82 % / 1st level"; dB/dt = "124.8 T/s"; Sound Pressure Level (dB) = 24.0876598;

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TA: 9.2 s P	AT: Off Voxel size: 1.6×0.8×	10.0 mm Rel. SNR: 1.00	SIEMENS: gre
Proportion		Phase resolution	50 %
Properties	0"	Phase partial Fourier	Off
Prio Recon	Off	Interpolation	On
Before measurement		DAT	Nama
After measurement	0	PAT mode	None
Load to viewer	On O"	Matrix Coil Mode	Auto (CP)
Inline movie	Off	Image Filter	Off
Auto store images	On	Distortion Corr.	On
Load to stamp segments	On O"	Mode	2D
Load images to graphic	Off	Unfiltered images	Off
segments		Prescan Normalize	Off
Auto open inline display	Off	Normalize	Off
Start measurement without	On	B1 filter	Off
further preparation		Raw filter	Off
Wait for user to start	Off	Elliptical filter	On
Start measurements	single	Mode	Inplane
Routine		Mode	inplane
Slice group 1		Geometry	
Slices	1	Multi-slice mode	Sequential
Dist. factor	20 %	Series	Interleaved
Position	Isocenter	Caturation made	
Orientation		Saturation mode	Standard
Phase enc. dir.	Sagittal A >> P	Special sat.	None
Pnase enc. dir. Rotation			
	0.00 deg	Tim CT mode	Off
Slice group 2	4	System	
Slices	1	Body	Off
Dist. factor	20 %	D11	On
Position	L0.0 A27.1 H7.7	D12	On
Orientation	Transversal	D12	On
Phase enc. dir.	A >> P		_
Rotation	0.00 deg	D14	On
Slice group 3		D15	On
Slices	1	D16	On
Dist. factor	20 %	D17	On
Position	L0.0 A50.4 H5.3	D18	On
Orientation	Coronal	Positioning mode	REF
Phase enc. dir.	R >>> L	Table position	H
Rotation	0.00 deg	Table position	0 mm
Phase oversampling	0 %	MSMA	S - C - T
FoV read	200 mm	Sagittal	R>>L
FoV phase	100.0 %	Coronal	P >> A
Slice thickness	10.0 mm	Transversal	H >> F
TR	20.0 ms	Save uncombined	Off
TE	5.00 ms	Coil Combine Mode	Adaptive Combine
Averages	1	Auto Coil Select	Default
Concatenations	3	Auto Coli Select	Delault
Filter	Distortion Corr.(2D), Elliptical	Shim mode	Tune up
 	filter	Adjust with body coil	Off
Coil elements	D11-18	Confirm freq. adjustment	Off
	•	Assume Silicone	Off
Contrast		? Ref. amplitude 1H	0.000 V
TD	0 ms	Adjustment Tolerance	Auto
MTC	Off	Adjust volume	
Magn. preparation	None	Position	Isocenter
Flip angle	40 deg	Orientation	Transversal
Fat suppr.	None	Rotation	0.00 deg
Water suppr.	None	R>>L	350 mm
Averaging made	Chart torm	A >> P	263 mm
Averaging mode	Short term	F>> H	350 mm
Reconstruction	Magnitude		030 11111
Measurements	1	Physio	
Multiple series	Each measurement	1st Signal/Mode	None
Resolution		Segments	1
Base resolution	256		NI
Successful		Tagging	None

Resp. control Off Inline Subtract Off Liver registration Off Std-Dev-Sag Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Time Off MIP-Sag Off MIP-Cor Off MIP-Tra Off
Subtract Off Liver registration Off Std-Dev-Sag Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Time Off MIP-Sag Off MIP-Cor Off
Liver registration Off Std-Dev-Sag Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Time Off MIP-Sag Off MIP-Cor Off
Std-Dev-Sag Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Time Off MIP-Sag Off MIP-Cor Off
Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Time Off MIP-Sag Off MIP-Cor Off
Std-Dev-Tra Off Std-Dev-Time Off MIP-Sag Off MIP-Cor Off
Std-Dev-Time Off MIP-Sag Off MIP-Cor Off
MIP-Sag Off MIP-Cor Off
MIP-Cor Off
MIP-Tra Off
MIP-Time Off
Save original images On
Wash - In Off
Wash - Out Off
TTP Off
PEI Off
MIP - time Off
Sequence
Introduction On
Dimension 2D
Phase stabilisation Off
Asymmetric echo Off
Contrasts 1
Bandwidth 180 Hz/Px
Flow comp. No
RF pulse type Fast
Gradient mode Normal
Excitation Slice-sel.
RF spoiling On

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perties		Elliptical filter	Off
Prio Recon	Off	Geometry	
Before measurement		Multi-slice mode	Single shot
After measurement		Series	Interleaved
Load to viewer	On		
Inline movie	Off	System	
Auto store images	On	Body	Off
Load to stamp segments	Off	HE2	On
Load images to graphic	Off	HE4	On
segments	5	HE1	On
Auto open inline display	Off	HE3	On
Start measurement without	On	SP4	Off
further preparation	OII		
Wait for user to start	Off	SP2	Off Off
		SP8	Off
Start measurements	single	SP6	Off
outine		SP3	Off
Slab group 1		—— SP1	Off
Slabs	1	SP7	Off
Dist. factor	50 %	SP5	Off
Position	L0.8 A22.5 H9.3	Positioning mode	REF
Orientation	Sagittal		
Phase enc. dir.	A >> P	Table position	Н
		Table position	0 mm
Rotation	0.00 deg	MSMA	S - C - T
Phase oversampling	0 %	Sagittal	R >> L
Slice oversampling	20.0 %	Coronal	A >> P
Slices per slab	160	Transversal	F >>> H
FoV read	240 mm	Save uncombined	Off
FoV phase	100.0 %	Coil Combine Mode	Sum of Squares
Slice thickness	1.20 mm	Auto Coil Select	Default
TR	2400 ms	Ole:	Otdd
TE	3.5 ms	Shim mode	Standard
Averages	1	Adjust with body coil	Off
Concatenations	1	Confirm freq. adjustment	Off
Filter	None	Assume Silicone	Off
Coil elements	HE1-4	? Ref. amplitude 1H	0.000 V
		Adjustment Tolerance	Auto
Contrast		Adjust volume	
Magn. preparation	Non-sel. IR	Position	L0.8 A22.5 H9.3
TI	1000 ms	Orientation	Sagittal
Flip angle	8 deg	Rotation	0.00 deg
Fat suppr.	None	F >> H	240 mm
Water suppr.	None	A >> P	240 mm
		R>>L	192 mm
Averaging mode	Long term	I e	
Reconstruction	Magnitude	Physio	
Measurements	1	1st Signal/Mode	None
Multiple series	Off	Dark blood	Off
esolution		Dark blood	Off
	192	Resp. control	Off
Base resolution		· ·	
Phase resolution	100 %	Inline	
Slice resolution	100 %	Subtract	Off
Phase partial Fourier	Off	Std-Dev-Sag	Off
Slice partial Fourier	Off	Std-Dev-Cor	Off
Interpolation	Off	Std-Dev-Tra	Off
DAT mode	None	Std-Dev-Time	Off
PAT mode	None	MIP-Sag	Off
Matrix Coil Mode	Auto (CP)	MIP-Cor	Off
Image Filter	Off	MIP-Tra	Off
Distortion Corr.	Off	MIP-Time	Off
Prescan Normalize	Off		
Normalize		Save original images	On
	Off	Sequence	
B1 filter	Off	Introduction	On
Raw filter	Off	Dimension	3D
		3/+	35

Elliptical scanning Asymmetric echo Bandwidth Flow comp. Echo spacing	Off Off 180 Hz/Px No 7.9 ms
RF pulse type	Fast
Gradient mode	Fast*
Excitation	Non-sel.
RF spoiling	On

\\USER\VIRC_RESEARCH\Quest-v1\Quest\Ax T2star

Rel. SNR: 1.00

SIEMENS: gre

Voxel size: 1.3×1.3×4.0 mm

TA: 5:29

PAT: Off

Properties		Mode	Inplane
Prio Recon	Off	- Geometry	
	Oli	Multi-slice mode	Interlegued
Before measurement			Interleaved
After measurement	_	Series	Interleaved
Load to viewer	On	Saturation mode	Standard
Inline movie	Off		
Auto store images	On	Special sat.	None
Load to stamp segments	On		
		Tim CT mode	Off
Load images to graphic	Off	I	
segments		System	
Auto open inline display	Off	Body	Off
Start measurement without	On	l HE	On
further preparation		DLL	Off
Wait for user to start	Off		
Start measurements	single	Positioning mode	REF
Start measurements	Sirigie	Table position	H
Routine		Table position	0 mm
Slice group 1			
Slices	44	MSMA	T-C-S
		Sagittal	R >> L
Dist. factor	0 %	Coronal	P >> A
Position	Isocenter	Transversal	F >> H
Orientation	Transversal	Save uncombined	Off
Phase enc. dir.	R>>L	Coil Combine Mode	Adaptive Combine
Rotation	90.00 deg	Auto Coil Select	
	0 %	Auto Coll Select	Default
Phase oversampling		Shim mode	Tune up
FoV read	256 mm		•
FoV phase	87.5 %	Adjust with body coil	Off
Slice thickness	4.0 mm	Confirm freq. adjustment	Off
TR	650 ms	Assume Silicone	Off
TE	30.0 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
		Adjust volume	
Concatenations	3	Position	Isocenter
Filter	Prescan Normalize, Elliptical		
	filter	Orientation	Transversal
Coil elements	HE	Rotation	0.00 deg
		R >> L	350 mm
Contrast		A >> P	263 mm
TD	0 ms	F >> H	350 mm
MTC	Off	ļ.	
Magn. preparation	None	Physio	
Flip angle	20 deg	1st Signal/Mode	None
Fat suppr.	None	Segments	1
			•
Water suppr.	None	Tagging	None
Averaging mode	Short term	Dark blood	Off
Reconstruction	Magnitude	Resp. control	Off
Measurements	<u>1</u>	1	
Multiple series	Each measurement	Inline	
Decalution		Subtract	Off
Resolution		Liver registration	Off
Base resolution	192	Std-Dev-Sag	Off
Phase resolution	100 %	Std-Dev-Cor	Off
Phase partial Fourier	Off	Std-Dev-Tra	Off
Interpolation	Off		_
		Std-Dev-Time	Off
PAT mode	None	MIP-Sag	Off
Matrix Coil Mode	Auto (CP)	MIP-Cor	Off
		MIP-Tra	Off
Image Filter	Off	MIP-Time	Off
Distortion Corr.	Off		
Unfiltered images	Off	Save original images	On
_		Wash - In	Off
Prescan Normalize	On		
Normalize	Off	Wash - Out	Off
B1 filter	Off	TTP	Off
Raw filter	Off	PEI	Off
Elliptical filter	On	MIP - time	Off
Emption into	3 11	ı	

Sequence

Dimension Phase stabilisation Asymmetric echo Contrasts Bandwidth Flow comp.	2D Off Off 1 50 Hz/Px Slice/Read
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slice-sel.
RF spoiling	On

\\USER\VIRC_RESEARCH\Quest-v1\Quest\Ax FLAIR

TA: 4:30 P	AT: Off Voxel size: 1.0×1.0:	×4.0 mm Rel. SNR: 1.00	SIEMENS: tse
Properties		Normalize	Off
Prio Recon	Off	B1 filter	Off
Before measurement	Oii	Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off	Geometry	
		Multi-slice mode	Interioryad
Auto store images	On		Interleaved
Load to stamp segments	On Off	Series	Interleaved
Load images to graphic	Oli	Special sat.	Parallel F
segments	0#	Gap	10 mm
Auto open inline display	Off	Thickness	50 mm
Start measurement without	On		
further preparation	0"	Tim CT mode	Off
Wait for user to start	Off	ı	0.11
Start measurements	single	System	
outine		Body	Off
Slice group 1		- HE	On
Slices	44	DLL	Off
Dist. factor	0 %	D-sitiant of the state of the s	FIV
Position	Isocenter	Positioning mode	FIX
		Table position	Н
Orientation	Transversal	Table position	0 mm
Phase enc. dir.	A >> P	MSMA	T - C - S
Rotation	0.00 deg	Sagittal	R >> L
Phase oversampling	0 %	Coronal	P >> A
FoV read	256 mm	Transversal	F >> H
FoV phase	87.5 %	Save uncombined	Off
Slice thickness	4.0 mm	Coil Combine Mode	Adaptive Combine
TR	9000 ms	Auto Coil Select	Default
TE	91 ms		
Averages	1	Shim mode	Standard
Concatenations	2	Adjust with body coil	Off
Filter	Prescan Normalize, Elliptical	Confirm freq. adjustment	Off
	filter	Assume Silicone	Off
Coil elements	HE	? Ref. amplitude 1H	0.000 V
		Adjustment Tolerance	Auto
Contrast		_ Adjust volume	
TD	0.0 ms	Position	Isocenter
MTC	Off	Orientation	Transversal
Magn. preparation	Slice-sel. IR	Rotation	0.00 deg
TI	2250 ms	R >> L	256 mm
Freeze suppressed tissue	Off	A >> P	224 mm
Flip angle	180 deg	F>> H	176 mm
Fat suppr.	None	ļ	
Water suppr.	None	Physio	
Restore magn.	Off	1st Signal/Mode	None
Averaging mode	Short term	Dark blood	Off
Reconstruction	Magnitude	Resp. control	Off
Measurements	1	1 -	
Multiple series	Each measurement	Inline	0"
lesolution		Subtract	Off
Base resolution	256	_ Std-Dev-Sag	Off
Phase resolution	100 %	Std-Dev-Cor	Off
Phase partial Fourier	Off	Std-Dev-Tra	Off
		Std-Dev-Time	Off
Trajectory	Cartesian	MIP-Sag	Off
Interpolation	Off	MIP-Cor	Off
PAT mode	None	MIP-Tra	Off
Matrix Coil Mode	Auto (CP)	MIP-Time	Off
······································	, tato (O1)	Save original images	On
Image Filter	Off	1	
Distortion Corr.	Off	Sequence	
	Off	Introduction	Off
Unfiltered images	Oli	ii iii oadotioii	2D

Compensate T2 decay	Off
Reduce Motion Sens.	Off
Contrasts	1

Bandwidth 120 Hz/Px
Flow comp. No
Allowed delay 30 s
Echo spacing 13 ms

Define Turbo factor

Turbo factor 16
Echo trains per slice 14
RF pulse type Normal
Gradient mode Normal

\\USER\VIRC_RESEARCH\Quest-v1\Quest\Ax T2 TSE

TA: 2:26 PA	AT: Off Voxel size: 1.0×1.0>	4.0 mm Rel. SNR: 1.00	SIEMENS: tse
roperties		Normalize	Off
Prio Recon	Off	B1 filter	Off
Before measurement	5	Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	Off	Mode	Inplane
Inline movie	Off	Geometry	
	On	Multi-slice mode	Interleaved
Auto store images			
Load to stamp segments	On	Series	Interleaved
Load images to graphic	On	Special sat.	None
segments	0.11		
Auto open inline display	Off	Tim CT mode	Off
Start measurement without	On	Tim OT mode	Oli
further preparation		System	
Wait for user to start	Off	Body	Off
Start measurements	single	HE '	On
loutine		DLL	Off
Slice group 1		Positioning mode	ISO
Slices	44	Table position	Н
Dist. factor	0 %	Table position	0 mm
Position	Isocenter	MSMA	T - C - S
Orientation	Transversal	Sagittal	R >> L
Phase enc. dir.	R >> L	Coronal	P >> A
Rotation	90.00 deg	Transversal	F >> H
Phase oversampling	0 %		Off
FoV read	256 mm	Save uncombined	_
FoV phase	87.5 %	Coil Combine Mode	Adaptive Combine
Slice thickness	4.0 mm	Auto Coil Select	Default
	-	Shim mode	Standard
TR	3000 ms	Adjust with body coil	Off
TE	92 ms		Off
Averages	1	Confirm freq. adjustment	_
Concatenations	3	Assume Silicone	Off
Filter	Distortion Corr.(2D), Elliptical	? Ref. amplitude 1H	0.000 V
	filter	Adjustment Tolerance	Auto
Coil elements	HE	Adjust volume	
		Position	Isocenter
ontrast		Orientation	Transversal
TD	0.0 ms	Rotation	90.00 deg
MTC	Off	A >> P	256 mm
Magn. preparation	None	R>>L	224 mm
Flip angle	178 deg	F>> H	176 mm
Fat suppr.	Fat sat.	1 11	17011111
Fat sat. mode	Strong	Physio	
Water suppr.	None	1st Signal/Mode	None
Restore magn.	Off		
	OII	Dark blood	Off
Averaging mode	Short term	Resp. control	Off
Reconstruction	Magnitude	nesp. control	Oli
Measurements	1	Inline	
Multiple series	Each measurement	Subtract	Off
•	_aon moadaromont	Std-Dev-Sag	Off
esolution		Std-Dev-Cor	Off
Base resolution	256	Std-Dev-Tra	Off
Phase resolution	100 %		
Phase partial Fourier	Off	Std-Dev-Time	Off
Trajectory	Cartesian	MIP-Sag	Off
Interpolation	On	MIP-Cor	Off
πτοιροιατίστι	Off	MIP-Tra	Off
PAT mode	None	MIP-Time	Off
PAT mode Matrix Coil Mode	None Auto (CP)	Save original images	Off On
Matrix Coil Mode Image Filter	Auto (CP) Off	Save original images Sequence	On
Matrix Coil Mode	Auto (CP)	Save original images Sequence Introduction	On On
Matrix Coil Mode Image Filter Distortion Corr. Mode	Auto (CP) Off	Save original images Sequence Introduction Dimension	On On 2D
Matrix Coil Mode Image Filter Distortion Corr.	Auto (CP) Off On	Save original images Sequence Introduction	On On

Contrasts	1
Bandwidth	181 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	10.2 ms
Define	Turbo factor
Define Turbo factor	Turbo factor 16
Turbo factor	16
Turbo factor Echo trains per slice	16 14

\\USER\VIRC_RESEARCH\Quest-v1\Quest\DIFFUSION AX

TA: 1:32 PAT: 2 Voxel size: 1.6×1.6×4.0 mm Rel. SNR: 1.00 SIEMENS: ep2d_diff

Properties	0"	Geometry	
Prio Recon Before measurement	Off	Multi-slice mode Series	Interleaved Interleaved
After measurement			
Load to viewer	Off	Special sat.	None
Inline movie	Off	Cyatam	
Auto store images	On	System	Off
Load to stamp segments	On	Body HE2	On
Load images to graphic	On	HE4	On
segments		HE1	On
Auto open inline display	Off	HE3	On
Start measurement without	On	SP4	Off
further preparation Wait for user to start	On	SP2	Off
Start measurements	single	SP8	Off
	Sirigio	SP6	Off
Routine		SP3	Off
Slice group 1		SP1	Off
Slices	32	SP7	Off
Dist. factor	20 %	SP5	Off
Position	R4.4 A21.5 F0.1	Positioning mode	REF
Orientation Phase enc. dir.	Transversal A >> P	Table position	H
		Table position	0 mm
Rotation Phase oversampling	0.00 deg 0 %	MSMA	T - C - S
FoV read	256 mm	Sagittal	R >> L
FoV phase	100.0 %	Coronal	P >> A
Slice thickness	4.0 mm	Transversal	F >> H
TR	6000 ms	Coil Combine Mode	Adaptive Combine
TE	90 ms	Auto Coil Select	Default
Averages	3	Shim mode	Standard
Concatenations	1	Adjust with body coil	Off
Filter	Raw filter, Distortion	Confirm freq. adjustment	Off
	Corr.(2D), Prescan Normalize	Assume Silicone	Off
Coil elements	HE1-4	? Ref. amplitude 1H	0.000 V
Contrast		Adjustment Tolerance	Auto
MTC	Off	Adjust volume	
Magn. preparation	None	Position	R4.4 A21.5 F0.1
Fat suppr.	Fat sat.	Orientation	Transversal
		Rotation	0.00 deg
Averaging mode	Long term	R >> L	256 mm
Reconstruction	Magnitude	A >> P	256 mm
Delay in TR	0 ms	F >> H	153 mm
Resolution		Physio	
Base resolution	160	1st Signal/Mode	None
Phase resolution	100 %	Resp. control	Off
Phase partial Fourier	6/8		OII
Interpolation	Off	Diff	
PAT mode	GRAPPA	Diffusion mode	3-Scan Trace
Accel. factor PE	2	Diff. weightings	2
Ref. lines PE	24	b-value 1	0 s/mm²
Matrix Coil Mode	Auto (Triple)	b-value 2	1000 s/mm²
Reference scan mode	Separate	Diff. weighted images	Off
Distortion Corr.	On	Trace weighted images	On
Mode	2D	Average ADC maps Individual ADC maps	On Off
Unfiltered images	Off	Mosaic	Off
Prescan Normalize	On	Noise level	40
Raw filter	On	Diff. directions	3
Intensity	Weak	I	J
Slope	25	Sequence	
Olobe	-	Indus di cations	On
	Off	Introduction	On
Elliptical filter Hamming	Off Off	Bandwidth Free echo spacing	1250 Hz/Px Off

Echo spacing	0.88 ms	
EPI factor	160	
RF pulse type	Normal	
Gradient mode	Fast*	

\\USER\VIRC_RESEARCH\Quest-v1\Quest\DIFFUSION Cor

TA: 1:32 PAT: 2 Voxel size: 1.6×1.6×4.0 mm Rel. SNR: 1.00 SIEMENS: ep2d_diff

Properties		Geometry	
Prio Recon	Off	Multi-slice mode	Interleaved
Before measurement		Series	Interleaved
After measurement	0"	Special sat.	None
Load to viewer	Off		
Inline movie	Off	System	
Auto store images	On	Body	Off
Load to stamp segments	On	HE2	On
Load images to graphic	On	HE4	On
segments	0"	HE1	On
Auto open inline display	Off	HE3	On
Start measurement without	On	SP4	Off
further preparation	0	SP2	Off
Wait for user to start	On	SP8	Off
Start measurements	single	SP6	Off
Routine		SP3	Off
Slice group 1		SP1	Off
Slices	36	SP7	Off
Dist. factor	20 %	SP5	Off
Position	R4.4 A21.5 F0.1		<u> </u>
Orientation	Coronal	Positioning mode	REF
Phase enc. dir.	R>>L	Table position	Н
Rotation	0.00 deg	Table position	0 mm
Phase oversampling	0 %	MSMA	T-C-S
FoV read	256 mm	Sagittal	R >>> L
FoV phase	100.0 %	Coronal	P >> A
Slice thickness	4.0 mm	Transversal	F >> H
TR	6000 ms	Coil Combine Mode	Adaptive Combine
TE	90 ms	Auto Coil Select	Default
Averages	3	Shim mode	Standard
Concatenations	1		Off
Filter	Raw filter, Distortion	Adjust with body coil	Off
1 11101	Corr.(2D), Prescan Normalize	Confirm freq. adjustment Assume Silicone	Off
Coil elements	HE1-4	? Ref. amplitude 1H	0.000 V
ı		Adjustment Tolerance	Auto
Contrast		Adjust volume	Auto
MTC	Off	Position	R4.4 A21.5 F0.1
Magn. preparation	None	Orientation	Coronal
Fat suppr.	Fat sat.	Rotation	
Averaging mode	Long term	F >> H	0.00 deg 256 mm
Reconstruction	Magnitude	R>>L	256 mm
Delay in TR	0 ms	A >> P	172 mm
Delay III TT	0 1115	A >> P	172 111111
Resolution		Physio	
Base resolution	160	1st Signal/Mode	None
Phase resolution	100 %	Dana andral	O#
Phase partial Fourier	6/8	Resp. control	Off
Interpolation	Off	Diff	
PAT mode	GRAPPA	Diffusion mode	3-Scan Trace
Accel. factor PE	2	Diff. weightings	2
Ref. lines PE	2 24	b-value 1	0 s/mm²
Matrix Coil Mode	Auto (Triple)	b-value 2	1000 s/mm ²
Reference scan mode	` ' '	Diff. weighted images	Off
TIGIGIGING SCALL HIUUG	Separate	Trace weighted images	On
Distortion Corr.	On	Average ADC maps	On
Mode	2D	Individual ADC maps	Off
Unfiltered images	Off	Mosaic	Off
Prescan Normalize	On	Noise level	40
Raw filter	On	Diff. directions	3
Intensity	Weak	ı	
Slope	25	Sequence	
Elliptical filter	Off	Introduction	On
Hamming	Off	Bandwidth	1250 Hz/Px
-		Free echo spacing	Off
		13/⊥	

	Echo spacing	0.88 ms
	EPI factor	160
l	RF pulse type	Normal
l	Gradient mode	Fast*

Table of contents	

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VIRC_RESEARCH	
Quest-v1	
Quest	
	localizer
	Angle Sag to midline
	Sag MPRAGE
	Orient Axials to AC/PC
	Ax T2star
	Ax FLAIR
	Ax T2 TSE
	DIFFUSION AX
	DIFFUSION Cor

\\USER\MAC\Rankin_lab\QUESTv2\localizer
ff Voxel size: 1.9×1.5×8.0 mm Rel. SNR: 1.00

SIEMENS: gre

TA: 0:10

PAT: Off

17.1. 0.1.0	5		
		Phase partial Fourier	Off
Properties		Interpolation	Off
Prio Recon	Off		
Before measurement		PAT mode	None
After measurement	_	Matrix Coil Mode	Auto (CP)
Load to viewer	On	Image Filter	Off
Inline movie	Off	Distortion Corr.	Off
Auto store images	On	Unfiltered images	Off
Load to stamp segments	Off	Prescan Normalize	On
Load images to graphic	Off	Normalize	Off
segments		B1 filter	Off
Auto open inline display	Off	Raw filter	On
Start measurement without	Off	Intensity	Weak
further preparation		Slope	25
Wait for user to start	Off	Elliptical filter	Off
Start measurements	single	Liliptical litter	Oll
Routine		Geometry	
Slice group 1		Multi-slice mode	Sequential
Slices	1	Series	Ascending
Dist. factor	20 %	Saturation mode	Standard
Position	Isocenter	Special sat.	None
Orientation	Sagittal		
Phase enc. dir.	A >> P		Off
Rotation	0.00 deg	Tim CT mode	Off
Slice group 2	0.00 deg	System	
Slices	1	Body	Off
Dist. factor	20 %	HEP	On
Position	Isocenter	HEA	On
Orientation	Coronal		
Phase enc. dir.	R >> L	Positioning mode	REF
Rotation	0.00 deg	Table position	Н
Slice group 3	0.00 deg	Table position	0 mm
Slices	4	MSMA	S - C - T
	1 20 %	Sagittal	R >>> L
Dist. factor		Coronal	A >> P
Position	Isocenter	Transversal	F >> H
Orientation	Transversal	Save uncombined	Off
Phase enc. dir.	R >> L	Coil Combine Mode	Adaptive Combine
Rotation	90.00 deg	AutoAlign	
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	280 mm	Shim mode	Tune up
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	8.0 mm	Confirm freq. adjustment	Off
TR	20.0 ms	Assume Silicone	Off
TE	5.00 ms	? Ref. amplitude 1H	0.000 V
Averages	I	Adjustment Tolerance	Auto
Concatenations	3	Adjust volume	Auto
Filter	Raw filter, Prescan Normalize	Position	Isocenter
Coil elements	HEA;HEP	Orientation	Transversal
Contrast		Rotation	
TD	0 ms	Rotation R >> L	0.00 deg 350 mm
MTC	Off	A >> P	263 mm
Magn. preparation	None		
Flip angle	40 deg	F >> H	350 mm
Fat suppr.	None	Physio	
Water suppr.	None	1st Signal/Mode	None
		Segments	1
Averaging mode	Short term		·
Reconstruction	Magnitude	Dark blood	Off
Measurements	1	Resp. control	Off
Multiple series	Off		J.,
Resolution		Inline	
Base resolution	192	Subtract	Off
Phase resolution	75 %	Liver registration	Off
i nase resolution	15 /0	Std-Dev-Sag	Off
		41.	

Std-Dev-Cor Std-Dev-Tra Std-Dev-Time MIP-Sag MIP-Cor MIP-Tra MIP-Time	Off Off Off Off Off Off Off Off
Save original images	On
Wash - In Wash - Out TTP PEI MIP - time	Off Off Off Off Off

Sequence

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Off
Contrasts	1
Bandwidth	180 Hz/Px
Flow comp.	No
Allowed delay	0 s
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slice-sel.
RF spoiling	On
. •	

\\USER\MAC\Rankin_lab\QUESTv2\MPRAGE

Prio Recon Off Before measurement After measurement Load to viewer On Inline movie Off Auto store images On Load images to graphic Off segments Auto open inline display Off Inther preparation Wait for user to start Start measurements Off Before measurement Multi-slice mode Single shot Series Interleaved Multi-slice mode Off Series Interleaved Multi-slice mode Off Series Interleaved Multi-slice mode Off Series Interleaved MEP On HEP On HEA On Positioning mode REF Table position Table position MSMA S-C-T Sagittal R >> L	TA: 9:14 F	PAT: Off Voxel size: 1.0	×1.0×1.2 mm Rel. SNR: 1.00	SIEMENS: tfl
Pro Necon Dit Before measurement After measurement Dit	Properties	0.0		
After measurement Load to viewer Inline movie On Interespond to the segments of the s		Off	1 .	
Load to viewer			•	Oire also also at
Inline movie		0.5		
Auto store images			Series	Interieaved
Load to stamp segments Off Body Off Load images to graphic segments Off HEP On Auto open inline display Start measurement without further preparation Off HEA On Start measurements Off Table position REF Start measurements Single Sagital S - C - T Slab group 1 Table position No Slab group 1 Sagital RS - C - T Slab group 1 Sagital RS - C - T Position Isocenter As - P Position Socenter Auto Mign Orientation Outed Adaptive Combine Phase enc. dir. A > P Say uncombined Adaptive Combine Slice oversampling 0 % Coli Combine Mode Adaptive Combine Slice oversampling 0 % Coli Combine Mode Adaptive Combine Slice oversampling 0 % Coli Combine Mode Adaptive Combine Slice oversampling 0 % Coli Combine Mode Adaptive Combine Flory case		-	0	
Load images to graphic segments Auto open inline display Off		-		
segments HEA On Auto open inline display Off Positioning mode REF Start measurement without further preparation On Positioning mode REF Table position 0 mm S - C - T Salpha position 0 mm Slab group 1 Slab group 1 Table position S - C - T Sagittal R > L Position Isocenter Coronal A > P A > L Coronal A > P Position Isocenter Auto Milgin		_		
Auto open inline display Start measurement without further preparation Wait for user to start Start measurements Single Start measurements		Oπ		_
Start measurement without On Wait for user to start Off Table position H Table position H Table position H Table position On mm Table position Sagittal R >> L Coronal A >> P Transversal F >> H Save uncombined Off Oil Combine Mode Adaptive Combine Adaptive With Coll Combine Mode Adaptive With Coll Combine Adaptive Wit		0"	HEA	On
Start measurements will be consisted to reserve to start Off			Positioning mode	RFF
Wait for user to start Start measurements Single		On		
Start measurements		0#		
Sagittal File Fi				
Routine Coronal A >> P	Start measurements	single		
Siab group 1	Routine			
Salba	Slab group 1			F>> H
Dist. factor 50 % Coil Combine Mode Adaptive Combine AutoAlign Adaptive Combine AutoAlign ————————————————————————————————————		1		
Position				
Orientation Sagittal Phase enc. dir. A >> P Auto Coil Select Default Phase enc. dir. Rotation 0.00 deg Adjust with body coil Off Standard Slice oversampling Slices per slab 176 Standard Off FoV read 256 mm ? Ref. amplitude 11 0.000 V FoV phase 9.3.8 % Adjust volume Auto FoV phase 1.2 mm Adjust volume Auto FoV phase 1.2 mm Position Iscoenter FoV phase 1.2 mm Position Iscoenter Fall phase 1.2 mm Position Iscoenter For phase persolution None Physio Ist Signal/Mode None Flip and phase persolution				· · · · · · · · · · · · · · · · · · ·
Phase enc. dir. A ≫ P Rotation 0.00 deg Phase oversampling 0.% Slice oversampling 0.0% Slice oversampling 0.0% Slice oversampling 0.0% Slice per slab 176 FoV phase 93.8 % Algustment Tolerance Auto FoV phase 93.8 % Slice thickness 1.20 mm TR 2300 ms Position TE 2.98 ms Averages 1 Postion Averages 1 Prescan Normalize F> H 256 mm Filter Prescan Normalize A >> P Coil elements HEA;HEP Physio Contrast Physio Contrast Physio Magn, preparation Non-sel, IR Till gangle 9 deg Fat suppr. None Water suppr. None Averaging mode Long term Reconstruction Mag				
Phase oversampling 0 % Silice oversampling 0 0 % Confirm freq. adjustment Off	Phase enc. dir.			
Phase oversampling	Rotation	0.00 dea		
Slice oversampling		<u> </u>		
Silce sper slab				Off
FoV read				
FoV phase 93.8 % Adjustment Tolerance Auto	•			0.000 V
Slice thickness 1.20 mm				Auto
TR 2300 ms Position Isocenter TE 2.98 ms Orientation Sagittal Averages 1 Rotation 0.00 deg Concatenations 1 Rotation 0.00 deg F>H 256 mm Physio Footname Resp. Control 212 mm Contrast Physio Magn. preparation Non-sel. IR The sid-park blood None TI 900 ms Dark blood Off Fat suppr. None Resp. control Off Water suppr. None Inline None Averaging mode Long term Subtract Off Reconstruction Magnitude Std-Dev-Sag Off Measurements 1 Std-Dev-Sag Off Multiple series Off Std-Dev-Tra Off Resolution 256 MIP-Cor Off Phase resolution 100 % MIP-Tra Off Phase partial Fourier Off <td></td> <td></td> <td></td> <td></td>				
TE 2.98 ms Orientation Sagittal Averages 1 Rotation 0.00 deg Concatenations 1 F > H 256 mm Filter Prescan Normalize A >> P 240 mm Coll elements HEA;HEP Physio Contract Physio Contract Physio Contract Physio Contract Physio Subgract Dark blood Off Averaging mode Long term Resp. control Off Reconstruction Magnitude Std-Dev-Sag Off Measurements 1 Std-Dev-Sag Off Multiple series Off Std-Dev-Tra Off Resolution 256 MIP-Sag Off Phase resolution 100 % MIP-Tra Off Sice partial Fourier Off Save original images On Slice partial Fourier Off Save origina		-	Position	
Averages 1 Rotation 0.00 deg Concatenations 1 F ≫ H 256 mm Filter Prescan Normalize R ≫ L 212 mm Contrast Physio Magn. preparation Non-sel. IR T 1st Signal/Mode None Flip angle 9 deg Past suppr. Off Off Water suppr. None Inline None Off Averaging mode Long term Subtract Off Reconstruction Magnitude Std-Dev-Sag Off Multiple series Off Std-Dev-Cor Off Multiple series Off Std-Dev-Time Off Std-Dev-Time Off Off Base resolution 256 MIP-Cor Off Phase partial Fourier Off MIP-Tira Off Silce partial Fourier Off Sequence Off Interpolation Off Sequence Introduction On PAT mode None				Sagittal
Concatenations 1			Rotation	•
Filter		1	F >> H	256 mm
Coil elements HEA;HEP R ≫ L 212 mm Contrast Physio Physio Magn. preparation Non-sel. IR 1st Signal/Mode None TI 900 ms Dark blood Off Flip angle 9 deg Pesp. control Off Fat suppr. None Inline Averaging mode Long term Subtract Off Reconstruction Magnitude Std-Dev-Sag Off Measurements 1 Std-Dev-Cor Off Multiple series Off Std-Dev-Tra Off Std-Dev-Time Off Off Phase resolution 256 MIP-Cor Off MIP-Sag Off MIP-Time Off Slice resolution 100 % MIP-Time Off Slice partial Fourier Off Save original images On PAT mode None Introduction On Matrix Coil Mode Auto (CP) Elliptical scanning Off Image Filt		Prescan Normalize	A >>> P	240 mm
Magn. preparation Non-sel. IR 1st Signal/Mode None TI 900 ms Dark blood Off Flip angle 9 deg Flip angle Off Fat suppr. None Resp. control Off Water suppr. None Inline Averaging mode Long term Subtract Off Reconstruction Magnitude Std-Dev-Sag Off Multiple series Off Std-Dev-Cor Off Multiple series Off Std-Dev-Tra Off Resolution 256 MIP-Sag Off Base resolution 100 % MIP-Tra Off Phase partial Fourier Off MIP-Tra Off Slice partial Fourier Off Sequence Interpolation Off Sequence PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Elliptical scanning Off Image Filter Off Asymmetric echo Off D			R >> L	212 mm
Magn. preparation Non-sel. IR 1st Signal/Mode None TI 900 ms Dark blood Off Flip angle 9 deg Flip angle Off Fat suppr. None Resp. control Off Water suppr. None Inline Averaging mode Long term Subtract Off Reconstruction Magnitude Std-Dev-Sag Off Multiple series Off Std-Dev-Cor Off Multiple series Off Std-Dev-Tra Off Resolution 256 MIP-Sag Off Base resolution 100 % MIP-Tra Off Phase partial Fourier Off MIP-Tra Off Slice partial Fourier Off Sequence Interpolation Off Sequence PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Elliptical scanning Off Image Filter Off Asymmetric echo Off D	Contract		Physio	
TI 900 ms Dark blood Off Flip angle 9 deg Fat suppr. None Inline Averaging mode Long term Subtract Off Reconstruction Magnitude Std-Dev-Sag Off Multiple series Off Std-Dev-Tra Off Multiple series Off Std-Dev-Tra Off Phase resolution 100 % MIP-Tra Off Slice resolution 100 % MIP-Tra Off Slice partial Fourier Off Interpolation Off PAT mode None Matrix Coil Mode Auto (CP) Image Filter Off Serone Serone Serone Off Interpolation Off Interpolation Off Image Filter Off Serone Serone Off Interpolation Off Serone Off Interpolation Off Serone Off Interpolation Off Serone Off Image Filter Off Serone Off Interpolation Off Serone Off Interpolation Off Serone Off Image Filter Off Serone Off Interpolation Off Serone Off Interpolation Off Serone Off Image Filter Off Serone Off Image Filter Off Serone Off Interpolation Off Serone Off Image Filter Off Serone Off Interpolation Off Serone Off Interpolation Off Serone Off Image Filter Off Serone Off Image Filter Off Serone Off Image Filter Off Serone Off Interpolation Off Serone Off Image Filter Off Serone Off Interpolation Off Serone Off Image Filter Off Serone Off Image F		Name and ID		None
Flip angle Fat suppr. None None None None None None None None				
Fat suppr. None None Inline Averaging mode Long term Subtract Off Std-Dev-Sag Off Measurements 1 Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Time Off MIP-Sag Off MIP-Sag Off MIP-Cor Off MIP-Time Off MIP-Time Off Stoepastial Fourier Off Save original images On Slice partial Fourier Off Interpolation Off Mayin Corl Mode Auto (CP) Image Filter Off Bandwidth 240 Hz/Px Unfiltered images Off Flow comp. No Normalize Off Sechospacing 7.1 ms Resp. control Off Subtract Off Sequence Off Subtract Off Sequence Off Subtract Off Subtra	I		Dark blood	Off
Water suppr. None Inline Averaging mode Long term Reconstruction Magnitude Std-Dev-Sag Off Std-Dev-Cor Off Multiple series Off Std-Dev-Tra Off Std-Dev-Tra Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Sag Off MIP-Cor Off MIP-Sag Off MIP-Cor Off MIP-Tra Off Slice resolution 100 % MIP-Tra Off Save original images On Slice partial Fourier Off Save original images On Matrix Coil Mode Auto (CP) Elliptical scanning Off Mage Filter Off Saymetric echo Off Saymetric echo Off Distortion Corr. Off Bandwidth 240 Hz/Px Unfiltered images Off Prescan Normalize Off Resolution Off Resolution None None None Saymetric echo Off Saymetric echo Saymetric echo Off Sandwidth 240 Hz/Px Flow comp. No Prescan Normalize On Normalize On RF pulse type Fast		•	Reen control	Off
Averaging mode Long term Reconstruction Magnitude Std-Dev-Sag Off Std-Dev-Cor Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Tra Off Std-Dev-Tra Off Multiple series Off MIP-Sag Off MIP-Sag Off MIP-Cor Off MIP-Sag Off MIP-Tra Off Slice resolution 100 % MIP-Tra Off Save original images On Slice partial Fourier Off Save original images On Matrix Coil Mode Auto (CP) Elliptical scanning Off Magnetic echo Off Sandwidth 240 Hz/Px Unfiltered images Off Prescan Normalize Off Sequence Fast	1		riesp. control	Oll
Reconstruction Magnitude Measurements 1 Multiple series Off Resolution Base resolution 256 Phase resolution 100 % Slice resolution 100 % MiP-Cor Slice partial Fourier Off Interpolation Off PAT mode None Matrix Coil Mode Auto (CP) Image Filter Distortion Corr. Unfiltered images Poff Prescan Normalize Normalize Off Std-Dev-Sag Off Std-Dev-Tra Off MIP-Sag Off MIP-Cor MIP-Tra Off MIP-Tra Off Std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Off MIP-Sag Off MIP-Cor Off MIP-Tra Off Save original images On Sequence Introduction On Dimension 3D Elliptical scanning Off Asymmetric echo Off Bandwidth 240 Hz/Px Flow comp. No Echo spacing 7.1 ms	vvater suppr.	None	Inline	
Reconstruction Magnitude Measurements Multiple series Off Resolution Base resolution Base resolution The std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Std-Dev-Tra Off Std-Dev-Tra Off MIP-Sag Off MIP-Sag Off MIP-Cor MIP-Sag Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Slice resolution Phase partial Fourier Off Interpolation Off PAT mode Matrix Coil Mode Matrix Coil Mode Matrix Corr. Unfiltered images Off Prescan Normalize Off Off Normalize Off Resolution Off Std-Dev-Sag Off Mtd-Dev-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Sequence Introduction On Dimension Bliptical scanning Off Asymmetric echo Off Bandwidth Sequence Introduction On Dimension Sequence Intro	Averaging mode	Long term		_
Measurements Multiple series1Std-Dev-Cor Std-Dev-Tra Std-Dev-Tra OffOffResolution—MIP-Sag MIP-Cor OffOffBase resolution Phase resolution Slice resolution Phase partial Fourier Slice partial Fourier Interpolation100 % OffMIP-Tra MIP-Tra MIP-Tra Save original imagesOffSequenceOffSequencePAT mode Matrix Coil ModeNone Auto (CP)Introduction Dimension Asymmetric echo Bandwidth Flow comp.OffImage Filter Distortion Corr. Unfiltered images Prescan NormalizeOff OffAsymmetric echo Bandwidth Flow comp. Echo spacing7.1 msNormalizeOff Brypulse typeRF pulse typeFast	0 0		•	
Multiple series Off Resolution Base resolution 256 Phase resolution 100 % Slice resolution 100 % MIP-Cor Off MIP-Tra Off MIP-Tra Off MIP-Tra Off MIP-Tra Off Save original images On Sequence Introduction On PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Image Filter Off Distortion Corr. Off Unfiltered images Off Prescan Normalize Off Prescan Normalize Off Normalize Off Resolution Off Stad-Dev-Tra Off MIP-Sag Off MIP-Cor Off MIP-Tra Off Save original images Introduction Off Sequence Introduction On Dimension 3D Elliptical scanning Off Asymmetric echo Off Bandwidth 240 Hz/Px Flow comp. No Echo spacing 7.1 ms Normalize Off RF pulse type Fast		1		
Resolution Base resolution Phase resolution Phase resolution Slice resolution Phase partial Fourier Slice partial Fourier Interpolation Off PAT mode Matrix Coil Mode Auto (CP) Image Filter Distortion Corr. Unfiltered images Normalize Normalize Off Resolution Stid-Dev-Time MIP-Sag Off MIP-Cor MIP-Tra Off MIP-Tra Off Save original images On Sequence Introduction On Dimension Sequence Introduction Off Asymmetric echo Off Bandwidth Sequence Sequence Introduction On Dimension Sequence Introduction Off Asymmetric echo Off Bandwidth Sequence Introduction Off Asymmetric echo Off Sequence Introduction On Dimension Sequence Introduction On Dime		Off		
Base resolution 256 MIP-Cor Off Phase resolution 100 % MIP-Tra Off Slice resolution 100 % MIP-Time Off Phase partial Fourier Off Save original images On Slice partial Fourier Off Interpolation Off Sequence PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Elliptical scanning Off Distortion Corr. Off Bandwidth 240 Hz/Px Unfiltered images Off Prescan Normalize On Normalize Off RF pulse type Fast				
Phase resolution 100 % MIP-Tra Off Slice resolution 100 % MIP-Time Off Phase partial Fourier Off Save original images On Slice partial Fourier Off Interpolation Off PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Elliptical scanning Off Distortion Corr. Off Bandwidth 240 Hz/Px Unfiltered images Off Prescan Normalize On Normalize Off Republic MIP-Tra Off Save original images On MIP-Tra Off Save original images On Sequence Introduction On Dimension 3D Elliptical scanning Off Asymmetric echo Off Bandwidth 240 Hz/Px Flow comp. No Flow comp. To the probability of the probabi				
Slice resolution 100 % MIP-Time Off Phase partial Fourier Off Slice partial Fourier Off Interpolation Off PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Elliptical scanning Off Distortion Corr. Off Unfiltered images Off Prescan Normalize On Normalize Off RF pulse type Fast				Off
Phase partial Fourier Off Slice partial Fourier Off Interpolation Off PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Elliptical scanning Off Distortion Corr. Off Bandwidth 240 Hz/Px Unfiltered images Off Prescan Normalize On Normalize Off Republic Save original images On Save original images On Sequence Introduction On Dimension 3D Elliptical scanning Off Asymmetric echo Off Bandwidth 240 Hz/Px Flow comp. No Echo spacing 7.1 ms Normalize Off Republic type Fast				
Slice partial Fourier Off Interpolation Off Sequence PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Elliptical scanning Off Asymmetric echo Off Bandwidth 240 Hz/Px Unfiltered images Off Frescan Normalize On Normalize Off RF pulse type Fast			MIP-Time	Off
Interpolation Off Sequence Introduction On Dimension Sequence			Save original images	On
Introduction On PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Elliptical scanning Off Image Filter Off Asymmetric echo Off Distortion Corr. Off Bandwidth 240 Hz/Px Unfiltered images Off Flow comp. No Prescan Normalize On Echo spacing 7.1 ms Normalize Off RF pulse type Fast			Seguence	
PAT mode None Dimension 3D Matrix Coil Mode Auto (CP) Elliptical scanning Off Image Filter Off Asymmetric echo Off Distortion Corr. Off Bandwidth 240 Hz/Px Unfiltered images Off Flow comp. No Prescan Normalize On Echo spacing 7.1 ms Normalize Off RF pulse type Fast	Interpolation	Off		On
Matrix Coil Mode Auto (CP) Elliptical scanning Asymmetric echo Off Asymmetric echo Off Bandwidth 240 Hz/Px Unfiltered images Off Prescan Normalize On Normalize Off RF pulse type Fast	PAT mode	None		
Image Filter Off Asymmetric echo Off Distortion Corr. Off Bandwidth 240 Hz/Px Unfiltered images Off Flow comp. No Prescan Normalize On Echo spacing 7.1 ms Normalize Off RF pulse type Fast				
Distortion Corr. Unfiltered images Prescan Normalize Normalize Off RF pulse type Bandwidth 240 Hz/Px Flow comp. No Echo spacing 7.1 ms RF pulse type Fast		, (ato (O))		
Unfiltered images Off Prescan Normalize On Echo spacing 7.1 ms Normalize Off RF pulse type Fast	Image Filter	Off		_
Prescan Normalize On Echo spacing 7.1 ms Normalize Off RF pulse type Fast		Off		
Normalize Off RF pulse type Fast	Unfiltered images	Off	·	
Til pulse type I ast			⊢cno spacing	/.1 ms
			RF pulse type	Fast
	B1 filter	Off		Normal

Excitation Non-sel. RF spoiling On

 $\verb|\USER\MAC\Rankin_lab\QUESTv2\AXIAL_T2_STAR||$

Voxel size: 1.0×1.0×4.0 mm Rel. SNR: 1.00

SIEMENS: gre

PAT: Off

TA: 4:53

Properties		Raw filter	Off
Prio Recon	Off	Elliptical filter	On
	Oii	Mode	Inplane
Before measurement		Coometry	
After measurement	•	Geometry	
Load to viewer	On	Multi-slice mode	Interleaved
Inline movie	Off	Series	Interleaved
Auto store images	On	Caturation made	Ctandard
Load to stamp segments	Off	Saturation mode	Standard
Load images to graphic	Off	Special sat.	None
segments			
Auto open inline display	Off	Tim CT mode	Off
Start measurement without	On	Cyatam	
further preparation	Oll	System	
	Off	Body	Off
Wait for user to start		NE2	Off
Start measurements	single	HEP	On
loutine		HEA	On
Slice group 1		SP4	Off
	4.4	SP2	Off
Slices	44	SP8	Off
Dist. factor	0 %	SP6	Off
Position	Isocenter	SP3	Off
Orientation	Transversal	SP1	Off
Phase enc. dir.	R >> L		_
Rotation	90.00 deg	SP7	Off
Phase oversampling	0 %	SP5	Off
FoV read	256 mm	Positioning mode	REF
FoV phase	87.5 %		H
Slice thickness	4.0 mm	Table position	
TR	650 ms	Table position	0 mm
		MSMA	S - C - T
TE	20.00 ms	Sagittal	R >> L
Averages	1	Coronal	P >> A
Concatenations	2	Transversal	H >> F
Filter	Distortion Corr.(2D), Prescan	Save uncombined	Off
	Normalize, Elliptical filter	Coil Combine Mode	Adaptive Combine
Coil elements	HEA;HEP	AutoAlign	
		Auto Coil Select	Default
Contrast		Auto Con Select	Delault
TD	0 ms	Shim mode	Tune up
MTC	Off	Adjust with body coil	Off
Magn. preparation	None	Confirm freq. adjustment	Off
Flip angle	20 deg	Assume Silicone	Off
Fat suppr.	None		0.000 V
Water suppr.	None	? Ref. amplitude 1H	
••••••••••••••••••••••••••••••••••••••		Adjustment Tolerance	Auto
Averaging mode	Long term	Adjust volume	
Reconstruction	Magnitude	Position	Isocenter
Measurements	1	Orientation	Transversal
Multiple series	Each measurement	Rotation	0.00 deg
Manuple series	Lacii iligasulgiligili	R >> L	350 mm
Resolution		A >> P	263 mm
Base resolution	256	F>> H	350 mm
Phase resolution	100 %	ļ	3001
Phase partial Fourier	Off	Physio	
•	Off	1st Signal/Mode	None
Interpolation	OII	Segments	1
PAT mode	None		·
Matrix Coil Mode	Auto (CP)	Dark blood	Off
······································	, (a.to (O1)	Danie a stati	
Image Filter	Off	Resp. control	Off
Distortion Corr.	On	Inline	
Mode	2D		Off
Unfiltered images	Off	Subtract	_
		Liver registration	Off
	Off	Std-Dev-Sag	Off
Unfiltered images		_	
Prescan Normalize	On	Std-Dev-Cor	Off
		_	

MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On
Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
Sequence	
Introduction Dimension Phase stabilisation Asymmetric echo Contrasts Bandwidth Flow comp. Allowed delay	On 2D Off Off 1 200 Hz/Px Slice/Read 20 s
RF pulse type	Fast
Gradient mode	Fast
Excitation	Slice-sel.
RF spoiling	On

\\USER\MAC\Rankin_lab\QUESTv2\Axial T2-FLAIR

TA: 4:05	PAT: 2 Voxel size: 1.0×1.0×4	4.0 mm Rel. SNR: 1.00	SIEMENS: tse
Droportion		Distortion Corr.	On
Properties		- Mode	2D
Prio Recon	Off	Unfiltered images	Off
Before measurement		Unfiltered images	Off
After measurement		Prescan Normalize	On
Load to viewer	On	Normalize	Off
Inline movie	Off	B1 filter	Off
Auto store images	On		
Load to stamp segments	Off	Raw filter	Off
Load images to graphic	Off	Elliptical filter	On
segments	0	Mode	Inplane
Auto open inline display	Off	Geometry	
Start measurement without	On	Multi-slice mode	Interleaved
	OII	Series	
further preparation	0#	Series	Interleaved
Wait for user to start	Off	Special sat.	None
Start measurements	single		
Routine		Tim CT mode	Off
Slice group 1		_ Tilli CT filode	Oli
Slices	44	System	
		Body	Off
Dist. factor	0 %	NE2	Off
Position	Isocenter	HEP	On
Orientation	Transversal	HEA	On
Phase enc. dir.	R >> L		
Rotation	90.00 deg	SP4	Off
Phase oversampling	0 %	SP2	Off
FoV read	256 mm	SP8	Off
FoV phase	87.5 %	SP6	Off
Slice thickness	4.0 mm	SP3	Off
TR	9000 ms	SP1	Off
		SP7	Off
TE	90.0 ms	SP5	Off
Averages	1		
Concatenations	3	Positioning mode	FIX
Filter	Distortion Corr.(2D), Prescan	Table position	Н
	Normalize, Elliptical filter	Table position	0 mm
Coil elements	HEA;HEP	MSMA	S-C-T
	•	Sagittal	R >> L
Contrast		- Coronal	P>> A
TD	0.0 ms		
MTC	Off	Transversal	H >> F
Magn. preparation	Slice-sel. IR	Save uncombined	Off
TI .	2500 ms	Coil Combine Mode	Adaptive Combine
Freeze suppressed tissue	Off	AutoAlign	
Flip angle	150 deg	Auto Coil Select	Default
Fat suppr.	None	Oleine and a	Ot
		Shim mode	Standard
Water suppr.	None	Adjust with body coil	Off
Restore magn.	Off	Confirm freq. adjustment	Off
Averaging mode	Long term	Assume Silicone	Off
Reconstruction	Magnitude	? Ref. amplitude 1H	0.000 V
Measurements	1	Adjustment Tolerance	Auto
	I Each massurament	Adjust volume	
Multiple series	Each measurement	Position	Isocenter
Resolution		Orientation	Transversal
Base resolution	256	Rotation	90.00 deg
Phase resolution	100 %	A >> P	_
	Off		256 mm
Phase partial Fourier		R >> L	224 mm
Trajectory	Cartesian	F >> H	176 mm
Interpolation	Off	Physio	
PAT mode	GRAPPA		None
Accel. factor PE	2	1st Signal/Mode	INUITE
		Dark blood	Off
Ref. lines PE	31		
Matrix Coil Mode	Auto (Triple)	Resp. control	Off
Reference scan mode	Integrated	1	
Image Filter	Off	Inline	O#
image i illei	Oil	Subtract	Off
		7 /	

Std-Dev-Sag	Off
Std-Dev-Cor	Off
Std-Dev-Tra	Off
Std-Dev-Time	Off
MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On

Sequence

Sequence	
Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	Off
Contrasts	1
Bandwidth	222 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	8.19 ms
Define	Turbo factor
Turbo factor	16
Echo trains per slice	8
RF pulse type	Fast
Gradient mode	Fast

\\USER\MAC\Rankin_lab\QUESTv2\Axial T2 TSE with Fat Sat

TA: 3:02 PA	AT: Off Voxel size: 1.0×1.0×	44.0 mm Rel. SNR: 1.00	SIEMENS: tse
		Prescan Normalize	On
Properties		Normalize	Off
Prio Recon	Off	B1 filter	Off
Before measurement		Raw filter	Off
After measurement		Elliptical filter	On
Load to viewer	On	Mode	Inplane
Inline movie	Off		mpiano
Auto store images	On	Geometry	
Load to stamp segments	Off	Multi-slice mode	Interleaved
Load images to graphic	Off	Series	Interleaved
segments		Special sat.	None
Auto open inline display	Off		
Start measurement without	On	Time OT models	O#
further preparation		Tim CT mode	Off
Wait for user to start	Off	System	
Start measurements	single	Body	Off
Routine		NE2	Off
		HEP	On
Slice group 1	4.4	HEA	On
Slices	44	SP4	Off
Dist. factor	0 %	SP2	Off
Position	Isocenter	SP8	Off
Orientation	Transversal	SP6	Off
Phase enc. dir.	R>>L	SP3	Off
Rotation	90.00 deg	SP1	Off
Phase oversampling	0 %	SP7	Off
FoV read	256 mm	SP5	Off
FoV phase	87.5 %	01 0	
Slice thickness	4.0 mm	Positioning mode	FIX
TR	3000 ms	Table position	Н
TE	78 ms	Table position	0 mm
Averages	1	MSMA	S - C - T
Concatenations	4	Sagittal	R >>> L
Filter	Distortion Corr.(2D), Prescan	Coronal	P >> A
	Normalize, Elliptical filter	Transversal	H >>> F
Coil elements	HEA;HEP	Save uncombined	Off
Contrast		Coil Combine Mode	Adaptive Combine
TD	0.0 ms	- AutoAlign	
MTC	Off	Auto Coil Select	Default
Magn. preparation	None	Obine media	
Flip angle	150 deg	Shim mode	Standard
Fat suppr.	Fat sat.	Adjust with body coil	Off
Fat sat. mode	Strong	Confirm freq. adjustment	Off
Water suppr.	None	Assume Silicone	Off
Restore magn.	Off	? Ref. amplitude 1H	0.000 V
		Adjustment Tolerance	Auto
Averaging mode	Long term	Adjust volume	I I
Reconstruction	Magnitude	Position	Isocenter
Measurements	1	Orientation	Transversal
Multiple series	Off	Rotation	90.00 deg
Resolution		A >> P	256 mm
	050	R >> L	224 mm
Base resolution	256	F >> H	176 mm
Phase resolution	100 %	Physio	
Phase partial Fourier	Off	1st Signal/Mode	None
Trajectory	Cartesian		
Interpolation	Off	Dark blood	Off
PAT mode	None	Resp. control	Off
1	Auto (CP)		
Matrix Coil Mode		Inline	
Image Filter	Off	Subtract	Off
Image Filter Distortion Corr.	Off On	Subtract Std-Dev-Sag	Off
Image Filter Distortion Corr. Mode	Off On 2D	Subtract Std-Dev-Sag Std-Dev-Cor	Off Off
Image Filter Distortion Corr.	Off On	Subtract Std-Dev-Sag	Off

MIP-Sag	Off
MIP-Cor	Off
MIP-Tra	Off
MIP-Time	Off
Save original images	On

Sequence

Sequence	
Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	Off
Contrasts	1
Bandwidth	186 Hz/Px
Flow comp.	No
Allowed delay	30 s
Echo spacing	11.2 ms
Define	Turbo factor
Turbo factor	16
Echo trains per slice	14
RF pulse type	Low SAR
Gradient mode	Normal

\\USER\MAC\Rankin_lab\QUESTv2\Ax DWI b1000

TA: 1:32 PAT: 2 Voxel size: 1.3×1.3×4.0 mm Rel. SNR: 1.00 SIEMENS: ep2d_diff

Properties		Special sat.	None
Prio Recon	Off		
Before measurement		System	
After measurement		Body	Off
Load to viewer	On	HEP	On
Inline movie	Off	HEA	On
Auto store images	On	SP4	Off
Load to stamp segments	Off	SP2	Off
Load images to graphic	Off	SP8	Off
segments		SP6	Off
Auto open inline display	Off	SP3	Off
Start measurement without	On	SP1	Off
further preparation		SP7	Off
Wait for user to start	Off	SP5	Off
Start measurements	single	Desitioning mode	
outine		Positioning mode Table position	REF H
Slice group 1		Table position	0 mm
Slices	32	MSMA	S - C - T
Dist. factor	20 %	Sagittal	8-0-1 R≫L
Position	Isocenter	Coronal	H >> L A >> P
Orientation	Transversal	Transversal	A>> P F>> H
Phase enc. dir.	A >> P		
Rotation	0.00 deg	Coil Combine Mode	Adaptive Combine
	0.00 deg 0 %	Auto Ocil Coloct	Dofoult
Phase oversampling FoV read	0 % 256 mm	Auto Coil Select	Default
		Shim mode	Standard
FoV phase	100.0 %	Adjust with body coil	Off
Slice thickness	4 mm	Confirm freq. adjustment	Off
TR	6000 ms	Assume Silicone	Off
TE	101 ms	? Ref. amplitude 1H	0.000 V
Averages	3	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	Auto
Filter	Raw filter, Prescan Normalize	Position	Isocenter
Coil elements	HEA;HEP		
Contrast		Orientation	Transversal
MTC	Off	Rotation R >> I	0.00 deg
	None	=	256 mm
Magn. preparation	Fat sat.	A >> P	256 mm
Fat suppr.	rai sai.	F >> H	153 mm
Averaging mode	Long term	Physio	
Reconstruction	Magnitude	1st Signal/Mode	None
Delay in TR	0 ms		
lesolution		Resp. control	Off
Base resolution	192	- Diff	
Phase resolution	100 %	Diffusion mode	Orthogonal
Phase partial Fourier	6/8	Diff. weightings	2
Interpolation	Off	b-value 1	0 s/mm²
	OII	b-value 2	1000 s/mm²
PAT mode	GRAPPA	Diff. weighted images	On
Accel. factor PE	2	Trace weighted images	On
Ref. lines PE	40	Average ADC maps	On
Matrix Coil Mode	Auto (Triple)	Individual ADC maps	Off
Reference scan mode	Separate	FA maps	Off
		Mosaic	Off
Distortion Corr.	Off	Tensor	Off
Prescan Normalize	On	Noise level	40
Raw filter	On	Diff. directions	3
Intensity	Weak	Diff. difections	J
Slope	25	Sequence	
Elliptical filter	Off	Introduction	On
Hamming	Off	Bandwidth	1240 Hz/Px
_		Free echo spacing	Off
Geometry	late at a second	Echo spacing	0.89 ms
Multi-slice mode	Interleaved		
Series	Interleaved	EPI factor	192

RF pulse type Gradient mode

Normal Fast

\\USER\MAC\Rankin_lab\QUESTv2\Cor DWI b1000

TA: 2:09 PAT: 2 Voxel size: 1.3×1.3×4.0 mm Rel. SNR: 1.00 SIEMENS: ep2d_diff

Properties		Special sat.	None
Prio Recon	Off		
Before measurement		System	
After measurement		Body	Off
Load to viewer	On	HEP	On
Inline movie	Off	HEA	On
Auto store images	On	SP4	Off
Load to stamp segments	Off	SP2	Off
Load images to graphic	Off	SP8	Off
segments		SP6	Off
Auto open inline display	Off	SP3	Off
Start measurement without	On	SP1	Off
further preparation		SP7	Off
Wait for user to start	Off	SP5	Off
Start measurements	single		
outine		Positioning mode Table position	REF H
Slice group 1		Table position	П 0 mm
Slices	36	MSMA	S - C - T
Dist. factor	20 %		
		Sagittal	R>>L
Position	Isocenter	Coronal	A >> P
Orientation	Coronal	Transversal	F >> H
Phase enc. dir.	R >> L	Coil Combine Mode	Adaptive Combine
Rotation	0.00 deg	AutoAlign	
Phase oversampling	0 %	Auto Coil Select	Default
FoV read	256 mm	Shim mode	Standard
FoV phase	100.0 %		
Slice thickness	4.0 mm	Adjust with body coil	Off
TR	8500 ms	Confirm freq. adjustment	Off
TE	134 ms	Assume Silicone	Off
Averages	3	? Ref. amplitude 1H	0.000 V
Concatenations	1	Adjustment Tolerance	Auto
Filter	Raw filter, Prescan Normalize	Adjust volume	
Coil elements	HEA;HEP	Position	Isocenter
		Orientation	Coronal
Contrast		Rotation	0.00 deg
MTC	Off	F >> H	256 mm
Magn. preparation	None	R >> L	256 mm
Fat suppr.	Fat sat.	A >> P	172 mm
Averaging mode	Long term	Physio	
Reconstruction	Magnitude	1st Signal/Mode	None
Delay in TR	0 ms	·····	
-		Resp. control	Off
Resolution Base resolution	192	- Diff	
Phase resolution	192	Diffusion mode	Orthogonal
	6/8	Diff. weightings	2
Phase partial Fourier	Off	b-value 1	0 s/mm²
Interpolation	OII	b-value 2	1000 s/mm²
PAT mode	GRAPPA	Diff. weighted images	On
Accel. factor PE	2	Trace weighted images	On
Ref. lines PE	24	Average ADC maps	On
Matrix Coil Mode	Auto (Triple)	Individual ADC maps	Off
Reference scan mode	Separate		
		FA maps	Off Off
Distortion Corr.	Off	Mosaic	Off
Prescan Normalize	On	Tensor	Off
Raw filter	On	Noise level	40
Intensity	Weak	Diff. directions	3
Slope	25	Seguence	
Elliptical filter	Off	Sequence	On
		Introduction	On
Hamming	Off	Bandwidth	1184 Hz/Px
Geometry		Free echo spacing	Off
		 Echo spacing 	0.93 ms
Multi-slice mode	Interleaved	Lone opaoing	0.00 1110
Multi-slice mode Series	Interleaved Interleaved	EPI factor	192

RF pulse type Gradient mode

Normal Fast