\\USER\Feinberglab\Tanja\Renzo_Playground\VASO_121

poarties		Prescan Normalize	Off
operties Prio Recon	Off	Raw filter	Off
Before measurement	Oli	Elliptical filter	Off
After measurement		Hamming	Off
Load to viewer	On	Geometry	
Inline movie	Off	Multi-slice mode	Interleaved
Auto store images	On	Series	Ascending
Load to stamp segments	Off	Special set	Parallel F
Load images to graphic	Off	Special sat. Gap	25.0 mm
segments		Thickness	100 mm
Auto open inline display	Off		
Start measurement without	On	Table position	Н
further preparation	0#	Table position	0 mm
Wait for user to start	Off	Inline Composing	Off
Start measurements	single	System	
utine		T1	On
Slab group 1		M2	Off
Slabs	1	B4	Off
Dist. factor	50 %	M3	Off
Position	Isocenter	V32	Off
Orientation	Transversal	Docitioning solds	DEE
Phase enc. dir.	A >> P	Positioning mode MSMA	REF S - C - T
Rotation	0.00 deg	_	8 - C - 1 R >> L
Phase oversampling	0 %	Sagittal Coronal	R >> L A >> P
Slice oversampling	0.0 %	Transversal	F>> H
Slices per slab	32	Save uncombined	Off
FoV read	300.0 mm	Coil Combine Mode	Sum of Squares
FoV phase	200.0 %	AutoAlign	
Slice thickness	1.00 mm	Auto Coil Select	Default
TR	5000.00 ms		
TE A	52 ms	Shim mode	Standard
Averages	1	Adjust with body coil	Off
Concatenations Filter	1 None	Confirm freq. adjustment	Off
Coil elements	None T1	Assume Silicone	Off
Con elements	11	? Ref. amplitude 1H	0.000 V
ntrast		Adjustment Tolerance	Auto
Perfusion mode	SS-SI VASO	Adjust volume Position	Isocenter
TI2	1100 ms	Orientation	Transversal
TI1	50 ms	Rotation	90.00 deg
TI1s	50 ms	A >> P	600 mm
Flip angle	90 deg	R >> L	300 mm
Fat suppr.	None	F>> H	32 mm
Averaging mode	Long term	I	<u></u>
Reconstruction	Magnitude	Physio	
Measurements	2	1st Signal/Mode	None
Delay in TR	0 ms	BOLD	
Multiple series	Off	Motion correction	Off
	DICODE OOT	Spatial filter	Off
Perfusion mode	PICORE Q2T	ı ·	-
Inversion time 1	50 ms 50 ms	Sequence	0.5
Saturation stop time Inversion time 2	1100.0 ms	Introduction	On
Flow limit	100.0 ms	Dimension	3D
	100 011/5	Reordering	Linear
solution		Contrasts	1 750 Hz/Dv
Base resolution	64	Bandwidth	752 Hz/Px
Phase resolution	50 %	Free echo spacing	Off
Slice resolution	100 %	Echo spacing	1.4 ms
Phase partial Fourier	Off	EPI factor	64
Slice partial Fourier	Off	RF pulse type	Normal
Interpolation	Off	Gradient mode	Fast
PAT mode	None	Excitation	Slab-sel.
	1 10110	RF spoiling	On

-	Ampl	100
	BWDTH	150 3.1kHz
	ph.skip 4 Robert (the one)	30
	use Ernst angle	Off
	Maxwell Correction	Off
	log physio files	Off
	FFT scale	1.00
	dummy prepscan time	3 s
	z shim	0.00 mT/m*ms
	RF duration	2560 us
	RF BWTP	5.2
	Renzo: Delta TI	102 ms
	EFFECTIVE TR	160000 ms
	PatPartitions	32
	EPI phase correction	local

\\USER\Feinberglab\Tanja\Renzo_Playground\VASO_116_orig

TA: 0:10 PAT	: Off Voxel size: 20.7>	46.8×1.0 mm Rel. SNR: 1.00 L	JSER: VASO_116
Description		Prescan Normalize	Off
Properties	0"	Raw filter	Off
Prio Recon	Off	Elliptical filter	Off
Before measurement After measurement		Hamming	Off
Load to viewer	On	Geometry	
Inline movie	Off	Multi-slice mode	Interleaved
Auto store images	On	Series	Ascending
Load to stamp segments	Off		
Load images to graphic	Off	Special sat.	Parallel F
segments		Gap	25.0 mm
Auto open inline display	Off	Thickness	100 mm
Start measurement without	On	Table position	Н
further preparation		Table position	0 mm
Wait for user to start	Off	Inline Composing	Off
Start measurements	single	System	
Routine		System T1	On
Slab group 1		N2	Off
Slabs	1	B4	Off
Dist. factor	50 %	M3	Off
Position	Isocenter	V32	Off
Orientation	Transversal		
Phase enc. dir.	A >> P	Positioning mode	REF
Rotation	0.00 deg	MSMA	S - C - T
Phase oversampling	0 %	Sagittal	R >> L
Slice oversampling	0.0 %	Coronal	A >> P
Slices per slab	8	Transversal	F >> H
FoV read	300.0 mm	Save uncombined	Off
FoV phase	300.0 %	Coil Combine Mode	Sum of Squares
Slice thickness	1.00 mm	Auto Cail Calast	Defectly
TR	5000.00 ms	Auto Coil Select	Default
TE	52 ms	Shim mode	Standard
Averages	1	Adjust with body coil	Off
Concatenations	1	Confirm freq. adjustment	Off
Filter	None	Assume Silicone	Off
Coil elements	T1	? Ref. amplitude 1H	0.000 V
Contrast		Adjustment Tolerance	Auto
Perfusion mode	Picore Q2TIPS	Adjust volume	
TI2	1100 ms	Position	Isocenter
TI1	50 ms	Orientation	Transversal
TI1s	50 ms	Rotation	90.00 deg
Flip angle	90 deg	A >> P	900 mm 300 mm
Fat suppr.	None	R >> L F >> H	***
Averaging mode	Long term	Г>>П	8 mm
Reconstruction	Magnitude	Physio	
Measurements	2	1st Signal/Mode	None
Delay in TR	0 ms	BOLD	
Multiple series	Off	Motion correction	Off
		Spatial filter	Off
Perfusion mode	PICORE Q2T	Spatial litter	Oli
Inversion time 1	50 ms	Sequence	
Saturation stop time	50 ms	Introduction	On
Inversion time 2	1100.0 ms	Dimension	3D
Flow limit	100.0 cm/s	Reordering	Linear
Resolution		Contrasts	1
Base resolution	44	Bandwidth	752 Hz/Px
Phase resolution	33 %	Free echo spacing	Off
Slice resolution	100 %	Echo spacing	1.43 ms
Phase partial Fourier	Off	EPI factor	44
Slice partial Fourier	Off	RF pulse type	Normal
Interpolation	Off	Gradient mode	Fast
PAT mode	None	Excitation	Slab-sel.
		RF spoiling	On

Ampl 100 BWDTH 150 3.1kHz ph.skip 4 Robert (the one) 30 use Ernst angle Off Maxwell Correction Off log physio files Off FFT scale 1.00 dummy prepscan time 3 s z shim 0.00 mT/m*ms RF duration 2560 us **RF BWTP** 5.2 Renzo: Delta TI 88 ms **EFFECTIVE TR** 40000 ms PatPartitions EPI phase correction local

TA: 7.5 s PAT: 2 Voxel size: 0.7×0.7×1.5 mm Rel. SNR: 1.00 USER: VASO_116

Properties		PAT mode	GRAPPA
Prio Recon	Off	- Accel. factor PE Ref. lines PE	2 36
Before measurement		Accel. factor 3D	36 1
After measurement		Ref. lines 3D	8
Load to viewer	On	Reference scan mode	Separate
Inline movie	Off		
Auto store images	On	Prescan Normalize	Off
Load to stamp segments	Off	Raw filter	Off
Load images to graphic	Off	Elliptical filter	Off
segments		Hamming	Off
Auto open inline display	Off		
Start measurement without	On	Geometry	
further preparation	3	Multi-slice mode	Interleaved
Wait for user to start	Off	Series	Ascending
Start measurements	single	Special sat.	Parallel F
Routine	Single	Gap	25.0 mm
Slab group 1		- Thickness	100 mm
Slabs	1	Table position	Н
Dist. factor	50 %	Table position	0 mm
Position	R36.4 P0.0 H40.5	Inline Composing	Off
Orientation	T > S31.0	I mine composing	OII
Phase enc. dir.	R >> L	System	
Rotation	90.00 deg		On
Phase oversampling	90.00 deg 0 %	M2	On
	0.0 %	B4	On
Slice oversampling	8	M3	On
Slices per slab	_	V32	Off
FoV read	32.8 mm		
FoV phase	300.0 %	Positioning mode	REF
Slice thickness	1.50 mm	MSMA	S - C - T
TR	1500.00 ms	Sagittal	R >> L
TE .	24 ms	Coronal	A >> P
Averages	1	Transversal	F >> H
Concatenations	1	Save uncombined	Off
Filter	None	Coil Combine Mode	Sum of Squares
Coil elements	B4;M2,3;T1	AutoAlign	
Contrast		Auto Coil Select	Default
Perfusion mode	Picore Q2TIPS	Shim mode	Standard
TI2	900 ms	Adjust with body coil	Off
TI1	50 ms	Confirm freq. adjustment	Off
TI1s	50 ms	Assume Silicone	Off
Flip angle	90 deg	! Ref. amplitude 1H	220.000 V
Fat suppr.	Fat sat.	Adjustment Tolerance	Auto
Fat sat. mode	Strong	Adjust volume	71UIU
		! Position	D21 0 A24 2 H24 2
Averaging mode	Long term	! Position ! Orientation	R31.0 A24.3 H24.3 T > S-0.4
Reconstruction	Magnitude		
Measurements	5	! Rotation	180.00 deg
Delay in TR	0 ms	! R >> L	99 mm
Multiple series	Off	! A >> P	82 mm
Perfusion mode	PICORE Q2T	! F >> H	78 mm
		Physio	
Inversion time 1	50 ms	1st Signal/Mode	None
Saturation stop time	50 ms		
Inversion time 2	900.0 ms	BOLD	
Flow limit	100.0 cm/s	Motion correction	Off
Resolution		Spatial filter	Off
Base resolution	44	Sequence	
Phase resolution	100 %	Introduction	On
Slice resolution	100 %	Dimension	3D
			~ -
Phase partial Fourier	6/8	Reordering	Linear
Phase partial Fourier Slice partial Fourier	6/8	Reordering Contrasts	Linear 1
Slice partial Fourier	6/8 Off	Contrasts	1
	6/8	<u> </u>	

Echo spacing	1.07 ms
EPI factor RF pulse type Gradient mode Excitation RF spoiling	132 Normal Normal Slab-sel. On
Ampl BWDTH ph.skip 4 Robert (the one) use Ernst angle Maxwell Correction log physio files FFT scale dummy prepscan time z shim RF duration RF BWTP Renzo: Delta TI EFFECTIVE TR PatPartitions EPI phase correction PAT refscan mode use CAIPI	120 150 3.1kHz 30 Off Off Off 1.00 3 s 0.00 mT/m*ms 2560 us 25.0 71 ms 12000 ms 8 local segm LIN->PAR Off

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_PhSk338_2rep_V230 TA: 6.0 s PAT: Off Voxel size: 0.7×0.7×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10

Properties		Position	L1.1 A3.0 H0.5
Prio Recon	Off	Orientation	C > S20.0 > T8.1
Before measurement	5	Special sat.	None
After measurement		Table position	Н
Load to viewer	On	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On		
Load to stamp segments	Off	System	
Load images to graphic	Off	T1	On
segments		M2	On
Auto open inline display	Off	B4	On
Start measurement without	On	M3 V32	On Off
further preparation		V 32	OII
Wait for user to start	Off	Positioning mode	FIX
Start measurements	single	MSMA	S - C - T
Routine		Sagittal	R >> L
Slab group 1		Coronal	A >> P
Slabs	1	Transversal	F >> H
Dist. factor	0 %	Save uncombined	Off
Position	R29.1 A11.5 H23.0	Coil Combine Mode	Adaptive Combine
Orientation	T > S28.5	AutoAlign	
Phase enc. dir.	A >> P	Auto Coil Select	Default
Rotation	-20.00 deg	Shim mode	Standard
Phase oversampling	0 %	Adjust with body coil	Off
Slice oversampling	0.0 %	Confirm freq. adjustment	Off
Slices per slab	8	Assume Silicone	Off
FoV read	94 mm	! Ref. amplitude 1H	230.000 V
FoV phase	27.0 %	Adjustment Tolerance	Auto
Slice thickness	1.5 mm	Adjust volume	Auto
TR	3000 ms	Position	R29.1 A11.5 H23.0
TE	45.0 ms	Orientation	T > S28.5
Averages	1	Rotation	-20.00 deg
Concatenations	1	R >> L	94 mm
Filter	None	A >> P	26 mm
Coil elements	B4;M2,3;T1	F >> H	12 mm
1	. , .	1	
Contrast	Non-sel, IR	Physio	
Magn. preparation TI	1100 ms	1st Signal/Mode	None
	180 deg	Composing	
Flip angle Fat suppr.	Fat sat.	0.0000000000000000000000000000000000000	
Fat sat. mode	Strong	Sequence	0"
		Introduction	Off
Averaging mode	Long term	Dimension	3D
Reconstruction	Magn./Phase	Reordering Contrasts	Centric 2
Measurements	2	Bandwidth	2 1102 Hz/Px
Pause after meas. 1	0.0 s	Echo spacing	1.1 ms
Multiple series	Off	Line spacing	1.11115
Resolution		Turbo factor	5
Base resolution	126	EPI factor	34
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast*
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
		phase encoding	ON
PAT mode	None	Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
		Proposalio	•
Geometry	Into vio access	<u> </u>	
Series	Interleaved		
Sat. region 1			
Thickness	32 mm		
I and the second			

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR7680

TA: 3.0 s PAT: Off Voxel size: 0.7×0.7×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR7680

Properties		Orientation	Transversal
Prio Recon	Off	Special sat.	None
Before measurement		Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	Off
Load images to graphic	Off	B4	Off
segments		M3	Off
Auto open inline display	Off	V32	Off
Start measurement without	On	V 32	OII
further preparation		Positioning mode	REF
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
Slab group 1		Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	Isocenter	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	0.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freg. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	? Ref. amplitude 1H	0.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	28.6 %	Adjust volume	71010
Slice thickness	1.5 mm	Position	Isocenter
TR	3000 ms	Orientation	Transversal
TE	44.5 ms	Rotation	0.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	27 mm
Filter	None	F >> H	12 mm
Coil elements	T1	Discosio	
Contrast		Physio	Niere
Magn. preparation	Non-sel. IR	1st Signal/Mode	None
TI	1100 ms	Composing	
Flip angle	180 deg	Coguenee	
Fat suppr.	Fat sat.	Sequence	0"
Fat sat. mode	Strong	Introduction	Off 3D
		Dimension Reordering	Centric
Averaging mode	Long term	Contrasts	2
Reconstruction	Magn./Phase	Bandwidth	2 1168 Hz/Px
Measurements	1	Echo spacing	1 ms
Multiple series	Off		
Resolution		Turbo factor	5
Base resolution	126	EPI factor	36
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry			
Series	Interleaved		
Sat. region 1			
Thickness	66 mm		
Position	Isocenter		
1			

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_test
TA: 3.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties		Orientation - Special sat.	C > S20.0 > T8.1 None
Prio Recon	Off		
Before measurement		Table position	H
After measurement	0.5	Table position	0 mm
Load to viewer	On O#	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On Off	T1	On
Load to stamp segments Load images to graphic	Off	M2	On
segments	Oli	B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation		Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Douting	•	Coronal	A >> P
Routine		- Transversal	F >> H
Slab group 1 Slabs	1	Save uncombined	Off
Dist. factor	1 0 %	Coil Combine Mode	Adaptive Combine
Position	R29.1 A11.5 H23.0	AutoAlign	
Orientation	T > S28.5	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	27.1 %	Adjust volume	
Slice thickness	1.5 mm	Position	R29.1 A11.5 H23.0
TR	3000 ms	Orientation	T > S28.5
TE	42.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations Filter	1 None	A >> P	26 mm
Coil elements	B4;M2,3;T1	F >> H	12 mm
Con elements	D4,1VI2,3,1 1	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	Non-sel. IR	Composing	
TI .	1200 ms		
Flip angle	160 deg	Sequence	
Fat suppr. Fat sat. mode	Fat sat.	Introduction	Off
rat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magnitude	Contrasts Bandwidth	2 1086 Hz/Px
Measurements	1	Echo spacing	1.1 ms
Multiple series	Off		1.1 1113
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON Off
Prescan Normalize	Off	Maxwell compensation ICE program	Off
Raw filter	Off		single
		prepscans	0
Geometry	Interlegued	-	
Series	Interleaved		
Sat. region 1			
Thickness	32 mm		
Position	L1.1 A3.0 H0.5		

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_func

TA: 12:00 PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR640(Position L2.1 A5.8 H0.0 Properties Orientation C > S20.0Prio Recon Off Special sat. None Before measurement Table position After measurement Table position Load to viewer On 0 mm Inline movie Off Inline Composing Off Auto store images On System Load to stamp segments Off On T1 Load images to graphic Off M2 On segments В4 On Off Auto open inline display М3 On Start measurement without On V32 Off further preparation Wait for user to start Off Positioning mode FIX Start measurements single **MSMA** S-C-T Sagittal R >> L Routine Coronal A >> P Slab group 1 Transversal F >> H Slabs 1 Save uncombined Off Dist. factor 0 % Coil Combine Mode Adaptive Combine Position R34.7 A19.5 H32.0 AutoAlign Orientation Transversal Auto Coil Select Default Phase enc. dir. A >> P -20.00 deg Rotation Shim mode Standard Phase oversampling 0 % Adjust with body coil Off 0.0 % Slice oversampling Confirm freq. adjustment Off Slices per slab Assume Silicone Off FoV read 94 mm ! Ref. amplitude 1H 230,000 V FoV phase 27.1 % Adjustment Tolerance Auto Slice thickness 1.5 mm Adjust volume TR 3000 ms Position R34.7 A19.5 H32.0 TE 41.7 ms Orientation Transversal **Averages** Rotation -20.00 deg Concatenations 94 mm R >> L None Filter A >> P 26 mm Coil elements B4;M2,3;T1 F >> H 12 mm Contrast Physio Magn. preparation Non-sel. IR 1st Signal/Mode None 1100 ms Composing Flip angle 165 deg Fat suppr. Fat sat. Sequence Fat sat. mode Strong Off Introduction Dimension 3D Averaging mode Long term Reordering Centric Reconstruction Magnitude Contrasts 2 Measurements 240 Bandwidth 1116 Hz/Px 0.0 sPause after meas. Echo spacing 1 ms Multiple series Off Turbo factor 5 Resolution EPI factor 32 Base resolution 118 RF pulse type Normal Phase resolution 100 % Gradient mode Fast 100 % Slice resolution Slice partial Fourier 5/8 IR-RF: 2nd segm phase 338 Interpolation Off flip angle excit 90 phase encoding ON PAT mode None Maxwell compensation Off Prescan Normalize Off ICE program single Raw filter Off prepscans 0 Geometry Series Interleaved Sat. region 1

Thickness

28 mm

\\USER\Feinberglab\Tan	a\GRASEandRenzosEPI\VASO	116	phantom
(OOLIVII CIIIDCIGIADVIAII		110	DHAHLOH

TA: 12:05 PAT: 2 Voxel size: 0.8x0.8x1.5 mm Rel. SNR: 1.00 USER: VASO_116

Properties		PAT mode	GRAPPA
Prio Recon	Off	Accel. factor PE Ref. lines PE	2 36
Before measurement		Accel. factor 3D	1
After measurement		Ref. lines 3D	8
Load to viewer	On	Reference scan mode	Separate
Inline movie	Off		
Auto store images	On	Prescan Normalize	Off
Load to stamp segments	Off	Raw filter	Off
Load images to graphic	Off	Elliptical filter	Off
segments		Hamming	Off
Auto open inline display	Off	1	
Start measurement without	On	Geometry	
further preparation		Multi-slice mode	Interleaved
Wait for user to start	Off	Series	Ascending
Start measurements	single	Special sat.	Parallel F
Routine	C	Gap	25.0 mm
Slab group 1		Thickness	100 mm
Slabs	1	Table position	Н
Dist. factor	50 %	Table position	0 mm
Position	R6.6 A8.4 H32.0	Inline Composing	Off
Orientation	Transversal	1	
Phase enc. dir.	R >> L	System	
Rotation	70.00 deg	T1	On
Phase oversampling	0 %	M2	On
Slice oversampling	0.0 %	B4	On
Slices per slab	8	M3	On
FoV read	35.0 mm	V32	Off
FoV phase	300.0 %	Positioning mode	FIX
Slice thickness	1.50 mm	Positioning mode MSMA	S - C - T
TR	1500.00 ms	Sagittal	R >> L
TE	24 ms	Coronal	A >> P
Averages	1		
Concatenations	1	Transversal	F >> H
Filter	None	Save uncombined	Off
Coil elements	B4;M2,3;T1	Coil Combine Mode	Sum of Squares
Con elements	D4,IVIZ,3,1 1	AutoAlign	 D ()
Contrast		Auto Coil Select	Default
Perfusion mode	Picore Q2TIPS	Shim mode	Standard
TI2	900 ms	Adjust with body coil	Off
TI1	50 ms	Confirm freq. adjustment	Off
TI1s	50 ms	Assume Silicone	Off
Flip angle	26 deg	! Ref. amplitude 1H	230.000 V
Fat suppr.	Fat sat.	Adjustment Tolerance	Auto
Fat sat. mode	Strong	Adjust volume	Auto
		! Position	R25.0 A24.3 H16.2
Averaging mode	Long term	! Orientation	T > S-0.4
Reconstruction	Magnitude	! Rotation	180.00 deg
Measurements	483	! R >> L	84 mm
Delay in TR	0 ms	! A >> P	82 mm
Multiple series	Off	! F >> H	66 mm
Perfusion mode	PICORE Q2T	152211	OO IIIIII
Inversion time 1	50 ms	Physio	
Saturation stop time	50 ms	1st Signal/Mode	None
Inversion time 2	900.0 ms	•	
Flow limit	100.0 cm/s	BOLD Mation correction	0#
i iOvv iiiiill	100.0 011/5	Motion correction	Off
Resolution		Spatial filter	Off
Base resolution	44	Sequence	
Phase resolution	100 %	Introduction	On
Slice resolution	100 %	Dimension	3D
	0.40		
Phase partial Fourier	6/8	i Reorderina	Linear
Phase partial Fourier Slice partial Fourier	6/8 Off	Reordering Contrasts	Linear 1
		_	

Echo spacing	1.07 ms
EPI factor RF pulse type Gradient mode Excitation RF spoiling	132 Normal Normal Slab-sel. On
Ampl BWDTH ph.skip 4 Robert (the one) use Ernst angle Maxwell Correction log physio files FFT scale dummy prepscan time z shim RF duration RF BWTP Renzo: Delta TI EFFECTIVE TR PatPartitions EPI phase correction PAT refscan mode FlashRef BaseRes FlashRef BW FlashRef FA use CAIPI	120 150 3.1kHz 30 Off Off Off Off 1.00 3 s 0.00 mT/m*ms 2560 us 25.0 71 ms 12000 ms 8 local Flash 44 136 Hz/px 5000 us 5 deg Off

"	\USER\Fein	berglab\Tanja\GRASEandRe	enzosEPI\BP_gras	se_clean_VASO_V10_IR6400_T1
TA: 5.0 s	PAT: Off	Voxel size: 0.8×0.8×1.5 mm	Rel. SNR: 1.00	USER: BP_grase_clean_VASO_V10_IR6400

Properties		Orientation - Special sat.	C > S20.0 None
Prio Recon	Off		110116
Before measurement		Table position	Н
After measurement	_	Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On		
further preparation		Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
Slab group 1		- Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	R34.7 A19.5 H32.0	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	27.1 %	Adjust volume	
Slice thickness	1.5 mm	Position	R34.7 A19.5 H32.0
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	Non-sel. IR	- 1	None
TI	23 ms	Composing	
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
		Reordering	Centric
Averaging mode	Long term	Contrasts	2
Reconstruction Measurements	Magn./Phase	Bandwidth	1116 Hz/Px
	1	Echo spacing	1 ms
Multiple series	Off		
Resolution		Turbo factor	5
Base resolution	118	- EPI factor	32
Phase resolution	100 %	RF pulse type	Normal Fact
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON Off
Prescan Normalize	Off	Maxwell compensation ICE program	single
Raw filter	Off	prepscans	Single 0
		prepacaria	J
Geometry		_	
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L2.1 A5.8 H0.0		
•			

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_func

TA: 12:00 PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR640(Position L2.1 A5.8 H0.0 Properties Orientation C > S20.0Prio Recon Off Special sat. None Before measurement Table position After measurement Table position Load to viewer On 0 mm Inline movie Off Inline Composing Off Auto store images On System Load to stamp segments Off On T1 Load images to graphic Off M2 On segments В4 On Off Auto open inline display М3 On Start measurement without On V32 Off further preparation Wait for user to start Off Positioning mode FIX Start measurements single **MSMA** S-C-T Sagittal R >> L Routine Coronal A >> P Slab group 1 Transversal F >> H Slabs 1 Save uncombined Off Dist. factor 0 % Coil Combine Mode Adaptive Combine Position R34.7 A19.5 H32.0 AutoAlign Orientation Transversal Auto Coil Select Default Phase enc. dir. A >> P -20.00 deg Rotation Shim mode Standard Phase oversampling 0 % Adjust with body coil Off 0.0 % Slice oversampling Confirm freq. adjustment Off Slices per slab Assume Silicone Off FoV read 94 mm ! Ref. amplitude 1H 230,000 V FoV phase 27.1 % Adjustment Tolerance Auto Slice thickness 1.5 mm Adjust volume TR 3000 ms Position R34.7 A19.5 H32.0 TE 41.7 ms Orientation Transversal **Averages** Rotation -20.00 deg Concatenations 94 mm R >> L None Filter A >> P 26 mm Coil elements B4;M2,3;T1 F >> H 12 mm Contrast Physio Magn. preparation Non-sel. IR 1st Signal/Mode None 1100 ms Composing Flip angle 165 deg Fat suppr. Fat sat. Sequence Fat sat. mode Strong Off Introduction Dimension 3D Averaging mode Long term Reordering Centric Reconstruction Magn./Phase Contrasts 2 Measurements 240 Bandwidth 1116 Hz/Px 0.0 sPause after meas. Echo spacing 1 ms Multiple series Off Turbo factor 5 Resolution EPI factor 32 Base resolution 118 RF pulse type Normal Phase resolution 100 % Gradient mode Fast 100 % Slice resolution Slice partial Fourier 5/8 IR-RF: 2nd segm phase 338 Interpolation Off flip angle excit 90 phase encoding ON PAT mode None Maxwell compensation Off Prescan Normalize Off ICE program single Raw filter Off prepscans 0 Geometry Series Interleaved Sat. region 1

Thickness

28 mm

\\USER\Feinberglab\Tan	a\GRASEandRenzosEPI\VASO	116	phantom
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TA: 12:05 PAT: 2 Voxel size: 0.8x0.8x1.5 mm Rel. SNR: 1.00 USER: VASO_116

Properties		PAT mode	GRAPPA
Prio Recon	Off	Accel. factor PE Ref. lines PE	2 36
Before measurement			
After measurement		Accel. factor 3D Ref. lines 3D	1 8
Load to viewer	On		-
Inline movie	Off	Reference scan mode	Separate
Auto store images	On	Prescan Normalize	Off
Load to stamp segments	Off	Raw filter	Off
Load images to graphic	Off	Elliptical filter	Off
segments		Hamming	Off
Auto open inline display	Off	1	.
Start measurement without	On	Geometry	
further preparation		Multi-slice mode	Interleaved
Wait for user to start	Off	Series	Ascending
Start measurements	single	Chariel ant	Parallel F
	Single	Special sat. Gap	25.0 mm
Routine Slab group 1		Thickness	100 mm
Slabs	1	Table position	Н
Dist. factor	50 %	Table position	
Position	86.6 A8.4 H32.0	Table position	0 mm
		Inline Composing	Off
Orientation	Transversal	System	
Phase enc. dir.	R >> L	T1	On
Rotation	70.00 deg	M2	On
Phase oversampling	0 %	B4	On
Slice oversampling	0.0 %	M3	On
Slices per slab	8	V32	Off
FoV read	35.0 mm	V 32	OII
FoV phase	300.0 %	Positioning mode	FIX
Slice thickness	1.50 mm	MSMA	S - C - T
TR	1500.00 ms	Sagittal	R >> L
TE	24 ms	Coronal	A >> P
Averages	1	Transversal	F >> H
Concatenations	1	Save uncombined	Off
Filter	None	Coil Combine Mode	Sum of Squares
Coil elements	B4;M2,3;T1		
	5 1,1112,0,1 1	AutoAlign Auto Coil Select	Default
Contrast	D: OOTIDO		
Perfusion mode	Picore Q2TIPS	Shim mode	Standard
TI2	900 ms	Adjust with body coil	Off
TI1	50 ms	Confirm freq. adjustment	Off
TI1s	50 ms	Assume Silicone	Off
Flip angle	26 deg	! Ref. amplitude 1H	230.000 V
Fat suppr.	Fat sat.	Adjustment Tolerance	Auto
Fat sat. mode	Strong	Adjust volume	
Avoraging made	Long torm	! Position	R25.0 A24.3 H16.2
Averaging mode	Long term	! Orientation	T > S-0.4
Reconstruction	Magnitude	! Rotation	180.00 deg
Measurements	483	! R >> L	84 mm
Delay in TR	0 ms	! A >> P	82 mm
Multiple series	Off	! A >> P ! F >> H	66 mm
Perfusion mode	PICORE Q2T	I	OO IIIIII
Inversion time 1	50 ms	Physio	
Saturation stop time	50 ms	1st Signal/Mode	None
Inversion time 2	900.0 ms	1	
Flow limit	100.0 cm/s	BOLD	0"
I ICANA III I III	100.0 011/3	Motion correction	Off
		Spatial filter	Off
Resolution		-	
Resolution Base resolution	44	Sequence	
Resolution	44 100 %	Sequence Introduction	On
Resolution Base resolution		Introduction	
Resolution Base resolution Phase resolution Slice resolution	100 % 100 %	Introduction Dimension	3D
Resolution Base resolution Phase resolution Slice resolution Phase partial Fourier	100 % 100 % 6/8	Introduction Dimension Reordering	3D Linear
Resolution Base resolution Phase resolution Slice resolution	100 % 100 %	Introduction Dimension	3D

Echo spacing	1.07 ms
EPI factor RF pulse type Gradient mode Excitation RF spoiling	132 Normal Normal Slab-sel. On
Ampl BWDTH ph.skip 4 Robert (the one) use Ernst angle Maxwell Correction log physio files FFT scale dummy prepscan time z shim RF duration RF BWTP Renzo: Delta TI EFFECTIVE TR PatPartitions EPI phase correction PAT refscan mode FlashRef BaseRes FlashRef BW FlashRef FA use CAIPI	120 150 3.1kHz 30 Off Off Off Off 1.00 3 s 0.00 mT/m*ms 2560 us 25.0 71 ms 12000 ms 8 local Flash 44 136 Hz/px 5000 us 5 deg Off

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_23
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties		Orientation Special sat.	C > S20.0 None
Prio Recon	Off	- Special Sat.	None
Before measurement		Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On		
further preparation	0"	Positioning mode	FIX
Wait for user to start	Off	MSMA	S-C-T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
Slab group 1		- Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	R32.8 A8.0 H18.5	Auto Coil Soloet	Dofault
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	27.1 %	Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	Non-sel. IR	= 1	
TI TI	23 ms	Composing	
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long torm	Reordering	Centric
Averaging mode Reconstruction	Long term Magn./Phase	Contrasts	2
Measurements	1	Bandwidth	1116 Hz/Px
Multiple series	Off	Echo spacing	1 ms
i .		Turbo factor	5
Resolution		- EPI factor	32
Base resolution	118	RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %		
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding Maxwell compensation	ON Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	Single 0
	<u></u>	highadalia	J
Geometry	late de ove d	_	
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		

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TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Proportios		Orientation	C > S20.0
Properties Properties	0#	Special sat.	None
Prio Recon	Off		
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On	V 32	OII
further preparation		Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
	3 -	Coronal	A >> P
Routine		Transversal	F >> H
Slab group 1		Save uncombined	Off
Slabs	1	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %		Adaptive Combine
Position	R32.8 A8.0 H18.5	Auto Coil Soloet	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm		
	27.1 %	Adjustment Tolerance	Auto
FoV phase		Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	D	
Contrast		Physio	N.
	Non-sel. IR	1st Signal/Mode	None
Magn. preparation		Composing	
TI .	100 ms		
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magn./Phase	Contrasts	2
Measurements	Mayn./Fnase 1	Bandwidth	1116 Hz/Px
	Off	Echo spacing	1 ms
Multiple series	Oii		
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	ID DE: 2nd acom phase	220
Interpolation	Off	IR-RF: 2nd segm phase	338
	— — — — — — — — — — — — — — — — — — —	flip angle excit	90
PAT mode	None	phase encoding	ON
Desara Na P	O#	Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry		·	
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
•			

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_300
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties Prio Recon	Off	Orientation Special sat.	C > S20.0 None
Before measurement	Oii	Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		311
Auto store images	On	System	
Load to stamp segments	Off	T1	On
Load images to graphic	Off	M2	On
segments	3. 1	B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation	011	Positioning mode	FIX
Wait for user to start	Off	Positioning mode MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Start modearomente	onigio	Coronal	A >> P
Routine		— Transversal	F >> H
Slab group 1			Off
Slabs	1	Save uncombined Coil Combine Mode	
Dist. factor	0 %	AutoAlign	Adaptive Combine
Position	R32.8 A8.0 H18.5	Auto Coil Select	 Default
Orientation	Transversal	Auto Con Select	Delauli
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	27.1 %	Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	I	
Operation at		Physio	
Contrast	N LIB	1st Signal/Mode	None
Magn. preparation	Non-sel. IR	Composing	
TI .	300 ms		
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magn./Phase	Contrasts	2
Measurements	1	Bandwidth	1116 Hz/Px
Multiple series	Off	Echo spacing	1 ms
1		Turbo factor	5
Resolution	440	EPI factor	32
Base resolution	118	RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %		
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
Droops Normalias	Off	Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry		<u></u>	
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
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TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Proportios		Orientation	C > S20.0
Properties Properties	0#	Special sat.	None
Prio Recon	Off		
Before measurement		Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On	V32	
further preparation		Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
	3 -	Coronal	A >> P
Routine		—— Transversal	F >> H
Slab group 1		Save uncombined	Off
Slabs	1	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %	AutoAlign	Adaptive Combine
Position	R32.8 A8.0 H18.5		
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm		
FoV phase	27.1 %	Adjustment Tolerance	Auto
Slice thickness	1.5 mm	Adjust volume	D00 0 40 0 1140 5
	_	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	Non-sel. IR	Tat digha/Mode	None
TI	500 ms	Composing	
Flip angle	165 deg	Caguanas	
Fat suppr.	Fat sat.	Sequence	0"
Fat sat. mode	Strong	Introduction	Off
rat sat. mode		Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magn./Phase	Contrasts	2
Measurements	1	Bandwidth	1116 Hz/Px
Multiple series	Off	Echo spacing	1 ms
1		Turbo factor	5
Resolution	110	EPI factor	32
Base resolution	118	RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %	Gradient mode	। वज्र
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
DAT mode	None	phase encoding	ON
PAT mode	None	Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
0		proposano	C
Geometry	Intorio over d		
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
1			

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TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Proportion		Orientation	C > S20.0
Properties Properties	0#	Special sat.	None
Prio Recon	Off		
Before measurement		Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On	V32	OII
further preparation		Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
	3 -	Coronal	A >> P
Routine		—— Transversal	F >> H
Slab group 1		Save uncombined	Off
Slabs	1	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %		Adaptive Combine
Position	R32.8 A8.0 H18.5	Auto Coil Soloot	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm		
	27.1 %	Adjustment Tolerance	Auto
FoV phase		Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	D	
Contrast		Physio	Niere
	Non-sel. IR	1st Signal/Mode	None
Magn. preparation		Composing	
TI .	600 ms	·	
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magn./Phase	Contrasts	2
Measurements	Magn./Fnase 1	Bandwidth	1116 Hz/Px
	Off	Echo spacing	1 ms
Multiple series	Oli		
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	ID DE: 2nd norm phase	220
Interpolation	Off	IR-RF: 2nd segm phase	338
	••••••••••••••••••••••••••••••••••••••	flip angle excit	90 ON
PAT mode	None	phase encoding	ON Off
Dragger Newspit-	O#	Maxwell compensation	Off
Prescan Normalize	Off Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry			
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_700
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Proportios		Orientation	C > S20.0
Properties Properties	0#	Special sat.	None
Prio Recon	Off		
Before measurement		Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On	V32	
further preparation		Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
	3 -	Coronal	A >> P
Routine		—— Transversal	F >> H
Slab group 1		Save uncombined	Off
Slabs	1	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %	AutoAlign	Adaptive Combine
Position	R32.8 A8.0 H18.5		
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm		
FoV phase	27.1 %	Adjustment Tolerance	Auto
Slice thickness	1.5 mm	Adjust volume	D00 0 40 0 1140 5
	_	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	Dharais	
Contrast		Physio 1st Signal/Mode	None
Magn. preparation	Non-sel. IR	TSt Signal/Mode	None
TI	700 ms	Composing	
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magn./Phase	Contrasts	2
Measurements	1	Bandwidth	1116 Hz/Px
Multiple series	Off	Echo spacing	1 ms
1	On.		E
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
		phase encoding	ON
PAT mode	None		Off
Prescan Normalize	Off	Maxwell compensation	
		ICE program	single
Raw filter	Off	prepscans	0
Geometry			
Series	Interleaved		
0-1			
Sat. region 1	00		
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_800
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties Prio Recon	Off	Orientation — Special sat.	C > S20.0 None
Before measurement	Oii	Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		311
Auto store images	On	System	
Load to stamp segments	Off	T1	On
Load images to graphic	Off	M2	On
segments	5	B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation	011	Positioning mode	FIX
Wait for user to start	Off	Positioning mode MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
I	Single	Coronal	A >> P
Routine		Transversal	F >> H
Slab group 1		Save uncombined	Off
Slabs	1	Coil Combine Mode	
Dist. factor	0 %	AutoAlign	Adaptive Combine
Position	R32.8 A8.0 H18.5	Auto Coil Select	 Default
Orientation	Transversal	Auto Coii Select	Delauli
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	27.1 %	Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	I	
Contract		Physio	
Contrast	Nep eel ID	1st Signal/Mode	None
Magn. preparation	Non-sel. IR 800 ms	Composing	
TI Flip angle			
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magn./Phase	Contrasts	2
Measurements	1	Bandwidth	1116 Hz/Px
Multiple series	Off	Echo spacing	1 ms
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice resolution Slice partial Fourier	100 % 5/8		
Interpolation	Off	IR-RF: 2nd segm phase	338
Interpolation		flip angle excit	90
PAT mode	None	phase encoding	ON Off
Drogon Normalias	Off	Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry			
Series	Interleaved	_	
Sat ragion 1			
Sat. region 1 Thickness	29 mm		
Position	28 mm L4.0 P5.6 F13.5		
FUSITION	L4.U F3.0 F13.3		

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_900
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties		Orientation Special sat.	C > S20.0 None
Prio Recon	Off	- Special Sat.	None
Before measurement		Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On		
further preparation	0#	Positioning mode	FIX
Wait for user to start Start measurements	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P F >> H
Slab group 1		TransversalSave uncombined	F >> □ Off
Slabs	1	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %	AutoAlign	
Position	R32.8 A8.0 H18.5	Auto Coil Select	Default
Orientation	Transversal		
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab FoV read	8 94 mm	! Ref. amplitude 1H	230.000 V
	_	Adjustment Tolerance	Auto
FoV phase Slice thickness	27.1 % 1.5 mm	Adjust volume	D00 0 40 0 140 5
TR	5000 ms	Position Orientation	R32.8 A8.0 H18.5
TE	41.7 ms	Rotation	Transversal -20.00 deg
Averages	1	Rotation R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	ļ	12 111111
ı	, ,-,	Physio	
Contrast	Nan and ID	_ 1st Signal/Mode	None
Magn. preparation	Non-sel. IR 900 ms	Composing	
Flip angle Fat suppr.	165 deg Fat sat.	Sequence	0"
Fat sat. mode	Strong	Introduction	Off
		Dimension	3D Contrin
Averaging mode	Long term	Reordering Contrasts	Centric 2
Reconstruction	Magn./Phase	Bandwidth	2 1116 Hz/Px
Measurements	1	Echo spacing	1 ms
Multiple series	Off		
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry			
Series	Interleaved	_	
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
1			

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_1000
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties Prio Recon	Off	Orientation — Special sat.	C > S20.0 None
Before measurement	Oii	Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		311
Auto store images	On	System	
Load to stamp segments	Off	T1	On
Load images to graphic	Off	M2	On
segments	5	B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation	011	Positioning mode	FIX
Wait for user to start	Off	Positioning mode MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Start modearomente	onigio	Coronal	A >> P
Routine		Transversal	F >> H
Slab group 1		Save uncombined	Off
Slabs	1		
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	R32.8 A8.0 H18.5	Auto Coil Soloot	 Default
Orientation	Transversal	Auto Coil Select	Delault
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freg. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	27.1 %	Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	ļ	
Operation at		Physio	
Contrast	N. LID	1st Signal/Mode	None
Magn. preparation	Non-sel. IR	Composing	
TI .	1000 ms		
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magn./Phase	Contrasts	2
Measurements	1	Bandwidth	1116 Hz/Px
Multiple series	Off	Echo spacing	1 ms
Resolution		Turbo factor	5
	110	EPI factor	32
Base resolution	118	RF pulse type	Normal
Phase resolution Slice resolution	100 %	Gradient mode	Fast
	100 % 5/8		
Slice partial Fourier	5/8 Off	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
Droopp Normaliza	O#	Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry			
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
1 OSILIOIT	LT.01 J.01 1J.J		

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_1200
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties		Orientation Special sat.	C > S20.0 None
Prio Recon	Off	- Special Sat.	None
Before measurement		Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On		
further preparation	0#	Positioning mode	FIX
Wait for user to start Start measurements	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P F >> H
Slab group 1		TransversalSave uncombined	г>>п Off
Slabs	1	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %	AutoAlign	Adaptive Combine
Position	R32.8 A8.0 H18.5	Auto Coil Select	Default
Orientation	Transversal		
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab FoV read	8 94 mm	! Ref. amplitude 1H	230.000 V
	27.1 %	Adjustment Tolerance	Auto
FoV phase Slice thickness	1.5 mm	Adjust volume	D22.0.40.0.140.5
TR	5000 ms	Position Orientation	R32.8 A8.0 H18.5 Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	I	12 111111
ı	, ,	Physio	
Contrast	Nan and ID	1st Signal/Mode	None
Magn. preparation	Non-sel. IR	Composing	
	1200 ms		
Flip angle Fat suppr.	165 deg Fat sat.	Sequence	
Fat sat. mode	Strong	Introduction	Off
		Dimension Poordoring	3D Contrin
Averaging mode	Long term	Reordering Contrasts	Centric 2
Reconstruction	Magn./Phase	Bandwidth	2 1116 Hz/Px
Measurements	1	Echo spacing	1 ms
Multiple series	Off		
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry			
Series	Interleaved	_	
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
1			

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_1400
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

		Orientation	C > S20.0
Properties	0"	— Special sat.	None
Prio Recon	Off		
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On		OII
further preparation		Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
Slab group 1		—— Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	R32.8 A8.0 H18.5	AutoAlign	·
Orientation	Transversal	Auto Coil Select	Default
	A >> P	Ohima manda	Ctandand
Phase enc. dir.		Shim mode	Standard
Rotation Phase oversampling	-20.00 deg 0 %	Adjust with body coil	Off
	0.0 %	Confirm freq. adjustment	Off
Slice oversampling		Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	27.1 %	Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	Non-sel. IR		
TI	1400 ms	Composing	
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
		Reordering	Centric
Averaging mode	Long term	Contrasts	2
Reconstruction	Magn./Phase	Bandwidth	1116 Hz/Px
Measurements	1	Echo spacing	1 ms
Multiple series	Off		
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
	-	phase encoding	ON ON
PAT mode	None	Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	Single 0
Į.	J.,	prepadana	0
Geometry	Interlegued		
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
1			

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_1600
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties		Orientation	C > S20.0
Prio Recon	Off	Special sat.	None
Before measurement		Table position	H
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		
Auto store images	On	System	
Load to stamp segments	Off	T1	On
Load images to graphic	Off	M2	On
segments	.	B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation	011	Desitioning made	FIX
Wait for user to start	Off	Positioning mode MSMA	S - C - T
Start measurements	single	_	8 - C - 1 R >> L
Start measurements	Sirigle	Sagittal	· · · · · =
Routine		Coronal	A >> P
Slab group 1		Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	R32.8 A8.0 H18.5	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8		_
FoV read	94 mm	! Ref. amplitude 1H	230.000 V
	27.1 %	Adjustment Tolerance	Auto
FoV phase		Adjust volume	D00 0 40 0 1140 5
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	Non-sel. IR	TSt Signal/Mode	None
TI	1600 ms	Composing	
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction	Magn./Phase	Contrasts	2
Measurements	1	Bandwidth	1116 Hz/Px
Multiple series	Off	Echo spacing	1 ms
1	5	Turbo factor	E
Resolution			5
Base resolution	118	EPI factor	32 Normal
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
		phase encoding	ON
PAT mode	None	Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off		0
Naw Inter	Oli	prepscans	U
Geometry			
Series	Interleaved		
Cat magic 4			
Sat. region 1	00		
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_1800
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties		Orientation	C > S20.0
Prio Recon	Off	Special sat.	None
Before measurement		Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off		
Auto store images	On	System	
Load to stamp segments	Off	T1	On
Load images to graphic	Off	M2	On
segments	Oli	B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
	On		FIV
further preparation	0#	Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Routine		Coronal	A >> P
Slab group 1		Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	R32.8 A8.0 H18.5	AutoAlign	
		Auto Coil Select	Default
Orientation	Transversal		
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	27.1 %	Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	1 >>11	12 111111
Con ciomonio	D 1,1012,0,1 1	Physio	
Contrast		1st Signal/Mode	None
Magn. preparation	Non-sel. IR	Composing	
TI	1800 ms	Composing	
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
		Reordering	Centric
Averaging mode	Long term	Contrasts	2
Reconstruction	Magn./Phase	Bandwidth	2 1116 Hz/Px
Measurements	1		
Multiple series	Off	Echo spacing	1 ms
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
		RF pulse type	Normal
Phase resolution	100 %	Gradient mode	Fast
Slice resolution	100 %		
Slice partial Fourier	5/8	IR-RF: 2nd segm phase	338
Interpolation	Off	flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
		p. spoodilo	-
Geometry			
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
1 00111011	_ 1.0 1 0.0 1 10.0		

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_2000
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Properties		Orientation	C > S20.0
Prio Recon	Off	Special sat.	None
Before measurement	OII	Table position	Н
			0 mm
After measurement	0	Table position	-
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off		_
Load images to graphic	Off	M2	On
segments		B4	On
Auto open inline display	Off	M3	On
		V32	Off
Start measurement without	On		
further preparation		Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
Sandia -		Coronal	A >> P
Routine		Transversal	F >> H
Slab group 1		Save uncombined	Off
Slabs	1		_
Dist. factor	0 %	Coil Combine Mode	Adaptive Combine
Position	R32.8 A8.0 H18.5	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
			Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm	Adjustment Tolerance	Auto
FoV phase	27.1 %	Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms		
		Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1		
Contract		Physio	
Contrast	Nan and ID	1st Signal/Mode	None
Magn. preparation	Non-sel. IR	Composing	
TI	2000 ms	Composing	
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
		Reordering	Centric
Averaging mode	Long term	•	
Reconstruction	Magn./Phase	Contrasts	2
Measurements	1	Bandwidth	1116 Hz/Px
Multiple series	Off	Echo spacing	1 ms
•		Turbo factor	F.
Resolution			5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice partial Fourier	5/8	ID DC: 2nd acces there	220
Interpolation	Off	IR-RF: 2nd segm phase	338
πιειρυιαιι0Π	OII	flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
		F. 50000110	-
Geometry	late de son d		
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
7 00111011	_ 1.0 1 0.0 1 10.0		

\\USER\Feinberglab\Tanja\GRASEandRenzosEPI\BP_grase_clean_VASO_V10_IR6400_T1_2200
TA: 5.0 s PAT: Off Voxel size: 0.8×0.8×1.5 mm Rel. SNR: 1.00 USER: BP_grase_clean_VASO_V10_IR6400

Proportios		Orientation	C > S20.0
Properties Properties	0#	Special sat.	None
Prio Recon	Off		
Before measurement		Table position	Н
After measurement		Table position	0 mm
Load to viewer	On	Inline Composing	Off
Inline movie	Off	System	
Auto store images	On	T1	On
Load to stamp segments	Off	M2	On
Load images to graphic	Off	B4	On
segments		M3	On
Auto open inline display	Off	V32	Off
Start measurement without	On	V32	OII
further preparation		Positioning mode	FIX
Wait for user to start	Off	MSMA	S - C - T
Start measurements	single	Sagittal	R >> L
D #	3 -	Coronal	A >> P
Routine		—— Transversal	F >> H
Slab group 1		Save uncombined	Off
Slabs	1	Coil Combine Mode	Adaptive Combine
Dist. factor	0 %	AutoAlign	Adaptive Combine
Position	R32.8 A8.0 H18.5	Auto Coil Select	
Orientation	Transversal	Auto Coll Select	Default
Phase enc. dir.	A >> P	Shim mode	Standard
Rotation	-20.00 deg	Adjust with body coil	Off
Phase oversampling	0 %	Confirm freq. adjustment	Off
Slice oversampling	0.0 %	Assume Silicone	Off
Slices per slab	8	! Ref. amplitude 1H	230.000 V
FoV read	94 mm		
	27.1 %	Adjustment Tolerance	Auto
FoV phase		Adjust volume	
Slice thickness	1.5 mm	Position	R32.8 A8.0 H18.5
TR	5000 ms	Orientation	Transversal
TE	41.7 ms	Rotation	-20.00 deg
Averages	1	R >> L	94 mm
Concatenations	1	A >> P	26 mm
Filter	None	F >> H	12 mm
Coil elements	B4;M2,3;T1	I	
Operators		Physio	
Contrast	Name and ID	1st Signal/Mode	None
Magn. preparation	Non-sel. IR	Composing	
	2200 ms	- 	
Flip angle	165 deg	Sequence	
Fat suppr.	Fat sat.	Introduction	Off
Fat sat. mode	Strong	Dimension	3D
Averaging mode	Long term	Reordering	Centric
Reconstruction		Contrasts	2
	Magn./Phase	Bandwidth	1116 Hz/Px
Measurements	1 Off	Echo spacing	1 ms
Multiple series	Off		
Resolution		Turbo factor	5
Base resolution	118	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Slice resolution Slice partial Fourier	5/8	ID DC: Ond access the con-	220
Interpolation	Off	IR-RF: 2nd segm phase	338
		flip angle excit	90
PAT mode	None	phase encoding	ON
		Maxwell compensation	Off
Prescan Normalize	Off	ICE program	single
Raw filter	Off	prepscans	0
Geometry		•	
Series	Interleaved		
Sat. region 1			
Thickness	28 mm		
Position	L4.0 P5.6 F13.5		
I	-		

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Feinberglab
       Tanja
              Renzo_Playground
                     VASO_121
                     VASO_116_orig
                     VASO_116_phantom
              GRASE and Renzos EPI
                     BP_grase_clean_VASO_V10_PhSk338_2rep_V230
                     BP_grase_clean_VASO_V10_IR7680
                     BP_grase_clean_VASO_V10_IR6400_test
                     BP_grase_clean_VASO_V10_IR6400_func
                     VASO_116_phantom
                      --- 03082018 ---
                     BP_grase_clean_VASO_V10_IR6400_T1
                     BP_grase_clean_VASO_V10_IR6400_func
                     VASO_116_phantom
                      --T1 mapping
                     BP_grase_clean_VASO_V10_IR6400_T1_23
                     BP_grase_clean_VASO_V10_IR6400_T1_100
                     BP_grase_clean_VASO_V10_IR6400_T1_300
                     BP_grase_clean_VASO_V10_IR6400_T1_500
                     BP_grase_clean_VASO_V10_IR6400_T1_600
                     BP_grase_clean_VASO_V10_IR6400_T1_700
                     BP_grase_clean_VASO_V10_IR6400_T1_800
                     BP_grase_clean_VASO_V10_IR6400_T1_900
                     BP_grase_clean_VASO_V10_IR6400_T1_1000
                     BP_grase_clean_VASO_V10_IR6400_T1_1200
                     BP_grase_clean_VASO_V10_IR6400_T1_1400
                     BP_grase_clean_VASO_V10_IR6400_T1_1600
                     BP_grase_clean_VASO_V10_IR6400_T1_1800
                     BP_grase_clean_VASO_V10_IR6400_T1_2000
                     BP_grase_clean_VASO_V10_IR6400_T1_2200
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