TA: 0:59 F	PAT: Off Voxel size: 1.1×1.	.1×5.0 mm Rel. SNR: 1.00	SIEMENS: tfl
Properties		Interpolation	Off
Prio Recon	Off	PAT mode	None
Before measurement	-		
After measurement		Image Filter	Off
Load to viewer	On	Distortion Corr.	Off
Inline movie	Off	Prescan Normalize	Off
Auto store images	On	Normalize	Off
Load to stamp segments	Off	B1 filter	Off
Load images to graphic	Off	Raw filter	Off
segments	U II	Elliptical filter	Off
Auto open inline display	Off	Goometry	
Start measurement without	Off	Geometry Multi alice mode	Cognostic
further preparation	U II	Multi-slice mode Series	Sequential
Wait for user to start	Off	Selles	Ascending
Start measurements	single	T-LI- 99	
1	51910	Table position	H
Routine		Table position	0 mm
Slice group 1		Inline Composing	Off
Slices	11	System	
Dist. factor	80 %	V32	Off
Position	L0.0 A18.9 F0.7	A32	On
Orientation	Sagittal		
Phase enc. dir.	A >> P	Positioning mode	REF
Rotation	0.00 deg	MSMA	S - C - T
Slice group 2	-	Sagittal	R >> L
Slices	3	Coronal	A >> P
Dist. factor	100 %	Transversal	F >> H
Position	L0.0 A16.2 H45.9	Save uncombined	Off
Orientation	Transversal	Coil Combine Mode	Adaptive Combine
Phase enc. dir.	A >> P	AutoAlign	
Rotation	0.00 deg	Auto Coil Select	Default
Slice group 3	- · 		
Slices	5	Shim mode	Tune up
Dist. factor	100 %	Adjust with body coil	Off
Position	L0.0 A8.1 H1.7	Confirm freq. adjustment	Off
Orientation	Coronal	Assume Silicone	Off
Phase enc. dir.	R >> L	! Ref. amplitude 1H	220.000 V
Rotation	0.00 deg	Adjustment Tolerance	Auto
Phase oversampling	0.00 deg 0 %	Adjust volume	
FoV read	220 mm	Position	Isocenter
FoV phase	100.0 %	Orientation	Transversal
Slice thickness	5.0 mm	Rotation	0.00 deg
TR	3000 ms	R >> L	350 mm
TE	3.12 ms	A >> P	263 mm
Averages	3.12 ms 1	F >> H	350 mm
<u> </u>		Physio	
Concatenations Filter	19 None	Physio	None
	None	1st Signal/Mode	None
Contrast	A32	Dark blood	Off
Contrast TD	0 ms	Resp. control	Off
Magn. preparation	Slice-sel. IR	Inline	
TI	1100 ms	Subtract	Off
Flip angle	6 deg	Std-Dev-Sag	Off
Fat suppr.	None	Std-Dev-Sag Std-Dev-Cor	Off
Water suppr.	None	Std-Dev-Cor Std-Dev-Tra	Off
Averaging mode	Long term	Std-Dev-Time	Off
Reconstruction	Magnitude	MIP-Sag	Off
Measurements	1	MIP-Cor	Off
Multiple series	Each measurement	MIP-Tra	Off
•		MIP-Time	Off
Resolution	400	Save original images	On
Base resolution	192	1	
Phase resolution	100 %	Sequence	

Phase partial Fourier

Off

Introduction Dimension Asymmetric echo Bandwidth Flow comp. Echo spacing	On 2D Off 240 Hz/Px No 6.4 ms
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slice-sel.
RF spoiling	On

\\USER\UserProtocols\Renzo\3D_SMS_template\low_3DVASO_2x3_flash_CAIPI_PF_low_res TA: 12:16 PAT: 6 Voxel size: 3.0×3.0×3.0 mm Rel. SNR: 1.00 USER: VASO_109

Properties		PAT mode	GRAPPA
Prio Recon	Off	Accel. factor PE	3
Before measurement	-	Ref. lines PE	36
After measurement		Accel. factor 3D	2
Load to viewer	On	Ref. lines 3D	12 Soporato
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	Geometry	
Start measurement without	On	Geometry Multi slice mode	Interleaved
further preparation		Multi-slice mode Series	Interleaved
Wait for user to start	Off	Selies	Ascending
Start measurements	single	Special sat.	Parallel F
Routine		Gap	25.0 mm
Slab group 1		Thickness	100 mm
Slabs	1	Table position	Н
Dist. factor	50 %	Table position	0 mm
Position	L0.0 A23.4 H9.9	Inline Composing	Off
Orientation	T > C-11.1		
Phase enc. dir.	A >> P	System V32	Off
Rotation	0.00 deg	N32 A32	On
Phase oversampling	0 %	M32	OII
Slice oversampling	0.0 %	Positioning mode	FIX
Slices per slab	32	MSMA	S - C - T
FoV read	180.0 mm	Sagittal	R >> L
FoV phase	100.0 %	Coronal	A >> P
Slice thickness	3.00 mm	Transversal	F >> H
TR	1524.0 ms	Save uncombined	Off
TE	12 ms	Coil Combine Mode	Sum of Squares
Averages	1	AutoAlign	
Concatenations Filter	1 None	Auto Coil Select	Default
	None	Shim mode	Standard
Coil elements	A32	Adjust with body coil	Off
Contrast		Confirm freq. adjustment	Off
Perfusion mode	Picore Q2TIPS	Assume Silicone	Off
TI2	1050 ms	! Ref. amplitude 1H	220.000 V
TI1	50 ms	Adjustment Tolerance	Auto
TI1s	50 ms	Adjust volume	·
Flip angle	17 deg	! Position	R1.4 A22.6 H8.8
Fat suppr.	Fat sat.	! Orientation	Sagittal
Fat sat. mode	Strong	! Rotation	10.29 deg
Averaging mode	Long term	! F >> H	85 mm
Reconstruction	Magnitude	! A >> P	178 mm
Measurements	483	! R >> L	157 mm
Delay in TR	0 ms	ı	
Multiple series	Off	Physio	Nana
	-	1st Signal/Mode	None
Perfusion mode	PICORE Q2T	BOLD	
Inversion time 1	50 ms	Motion correction	Off
Saturation stop time	50 ms	Spatial filter	Off
Inversion time 2	1050.0 ms	1 .	
Flow limit	100.0 cm/s	Sequence	00
Resolution		Introduction	On
Base resolution	60	Dimension Poordoring	3D Linear
Phase resolution	100 %	Reordering	Linear
Slice resolution	100 %	Contrasts Bandwidth	1 1952 Hz/Dy
Phase partial Fourier	7/8		1852 Hz/Px Off
Slice partial Fourier	7/8	Free echo spacing Echo spacing	0.64 ms
Interpolation	Off	Lono spacing	v.u + iiiə
1		EPI factor	60

RF pulse type Gradient mode Excitation RF spoiling	Normal Normal Slab-sel. On
Ampl BWDTH thickness use Ernst angle Maxwell Correction log physio files FFT scale dummy prepscan time z shim RF duration RF BWTP EFFECTIVE TR PatPartitions EPI phase correction PAT refscan mode use CAIPI CAIPI shift kz CAIPI shift ky	95 150 3.1kHz 30 Off Off Off 0.50 3 s 0.00 mT/m*ms 5120 us 25.0 21336 ms 14 local segm LIN->PAR On 0
CAIPI Shift Ky	1

\\USER\UserProtocols\Re	nzo\3D_SMS_template\low_9	SMSVASO_79_SMSfor_3D	DEPIcomparison1.3x1.3x1.3
TA: 12:09	PAT: 3 Voxel size: 3.0×3.0×	3.0 mm Rel. SNR: 1.00	UNKNOWN:
Properties		Prescan Normalize Raw filter	Off Off
Prio Recon	Off	Elliptical filter	Off
Before measurement		Hamming	Off
After measurement	0-	Coomotivi	
Load to viewer	On O"	Geometry	
Inline movie	Off	Multi-slice mode	Interleaved
Auto store images	On Off	Series	Descending
Load to stamp segments	Off Off	Special sat.	Parallel F
Load images to graphic	Oll	Gap	25.0 mm
segments Auto open inline display	Off	Thickness	100 mm
Start measurement without	On	Table position	11
further preparation	On	Table position	H 0 mm
Wait for user to start	Off	Table position Inline Composing	0 mm Off
Start measurements	single	Inline Composing	Oil
1	519.6	System	
Routine		V32	Off
Slice group 1		A32	On
Slices	33	Positioning mode	FIX
Dist. factor	0 %	Positioning mode MSMA	S - C - T
Position	L0.0 A23.4 H9.9	Sagittal	R >> L
Orientation	T > C-11.1	Coronal	A >> P
Phase enc. dir.	A >> P	Transversal	F >> H
Rotation	0.00 deg	Save uncombined	Off
Phase oversampling	0 %	Coil Combine Mode	Sum of Squares
FoV read	192 mm	AutoAlign	
FoV phase	100.0 %	Auto Coil Select	Default
Slice thickness	3.0 mm		
TR	1500.0 ms	Shim mode	Standard
TE	14 ms	Adjust with body coil	Off
Averages	1	Confirm freq. adjustment	Off
Concatenations Filter	None	Assume Silicone	Off
		! Ref. amplitude 1H	220.000 V
Coil elements	A32	Adjustment Tolerance	Auto
Contrast		Adjust volume	
Perf / VASO mode	SS-SI VASO	! Position	R1.4 A22.6 H8.8
TI2	1100 ms	! Orientation	Sagittal
TI1	50 ms	! Rotation	10.29 deg
TI1s	50 ms	!F>>H	85 mm
Flip angle	90 deg	! A >> P	178 mm
Fat suppr.	Fat sat.	! R >> L	157 mm
Fat sat. mode	Strong	Physio	
Averaging mode	Long term	1st Signal/Mode	None
Reconstruction	Magnitude	BOLD	
Measurements	483	BOLD	
Delay in TR	0 ms	Sequence	
Multiple series	Off	Introduction	On
		Contrasts	1
Perfusion mode	PICORE Q2T	Bandwidth	1860 Hz/Px
Inversion time 1	50 ms	Free echo spacing	Off
Saturation stop time	50 ms	Echo spacing	0.64 ms
Inversion time 2	1100 ms	EPI factor	64
Flow limit	100.0 cm/s	RF pulse type	Normal
Resolution		Gradient mode	Normal
Base resolution	64		
Phase resolution	100 %	Ampl	90
Phase partial Fourier	Off	BWDTH	300 3.1kHz
Interpolation	Off	thickness	100
		Phase skip	30
PAT mode	GRAPPA	Opt. TI2	1106
Accel. factor PE	3	Volumes per TI	1
Ref. lines PE	36 Separate	FatSat flip angle	110 deg
Reference scan mode	Separate	SMS factor	3

CAIPI shift	2
SMS online recon	On
SMS-RF phase optim.	On
log physio files	Off
altern z-shim	0 uT/m
fixed z-shim	0 uT/m
EPI phase correction	normal
PAT refscan mode	FLEET
FLEET dummies	15
FLEET flip angle	15
RF pulse duration	7680 us
FFT scale	8.0

TA: 12:09	PAT: 2 Voxel size: 1.5×1.5		UNKNOWN:
		Prescan Normalize	Off
Properties		- Raw filter	Off
Prio Recon	Off	Elliptical filter	Off
Before measurement		Hamming	Off
After measurement			-
Load to viewer	On Off	Geometry	lata da a cad
Inline movie	Off On	Multi-slice mode Series	Interleaved
Auto store images Load to stamp segments	Off	Series	Ascending
Load images to graphic	Off	Special sat.	Parallel F
segments	Oli	Gap	25.0 mm
Auto open inline display	Off	Thickness	100 mm
Start measurement without	On	T-51	
further preparation	Oll	Table position	H
Wait for user to start	Off	Table position Inline Composing	0 mm Off
Start measurements	single	I milite Composing	Oli
	Sirigio	System	
Routine		V32	Off
Slice group 1		A32	On
Slices	24	Donitioning mode	EIV
Dist. factor	0 %	Positioning mode MSMA	FIX S - C - T
Position	L0.0 A11.6 H18.0		8 - C - 1 R >> L
Orientation	T > C-10.0	Sagittal Coronal	A >> P
Phase enc. dir.	P >> A	Transversal	F >> H
Rotation	180.00 deg	Save uncombined	Off
Phase oversampling	0 %	Coil Combine Mode	Sum of Squares
FoV read	180 mm	AutoAlign	
FoV phase	100.0 %	Auto Coil Select	Default
Slice thickness	2.0 mm		
TR	1500.0 ms	Shim mode	Standard
TE	17 ms	Adjust with body coil	Off
Averages Concatenations	1	Confirm freq. adjustment	Off
Filter	None	Assume Silicone	Off
Coil elements	A32	! Ref. amplitude 1H	220.000 V
Con elements	A32	Adjustment Tolerance	Auto
Contrast		Adjust volume	
Perf / VASO mode	SS-SI VASO	! Position	R1.4 A14.2 H16.9
TI2	1000 ms	! Orientation	Sagittal
TI1	50 ms	! Rotation	-0.07 deg
TI1s	50 ms	! F >> H	86 mm
Flip angle	63 deg	! A >> P	166 mm
Fat suppr.	Fat sat.	! R >> L	157 mm
Fat sat. mode	Weak	Physio	
Averaging mode	Long term	1st Signal/Mode	None
Reconstruction	Magnitude	BOLD	
Measurements	483	BOLD	
Delay in TR	0 ms	Sequence	
Multiple series	Off	Introduction	On
		Contrasts	1
Perfusion mode	PICORE Q2T	Bandwidth	1666 Hz/Px
Inversion time 1	50 ms	Free echo spacing	Off
Saturation stop time	50 ms	Echo spacing	0.7 ms
Inversion time 2	1000 ms	EPI factor	120
Flow limit	100.0 cm/s	RF pulse type	Normal
Resolution		Gradient mode	Normal
Base resolution	120		
Phase resolution	100 %	Ampl	90
Phase partial Fourier	6/8	BWDTH	300 3.1kHz
Interpolation	Off	thickness	100
		Phase skip	30
PAT mode	GRAPPA	Opt. TI2	1106
Accel. factor PE	2	Volumes per TI	1
Ref. lines PE Reference scan mode	48 Separate	FatSat flip angle	110 deg
Vereience Scan Mode	Separate	SMS factor	2

CAIPI shift	3
SMS online recon	On
SMS-RF phase optim.	On
log physio files	Off
altern z-shim	0 uT/m
fixed z-shim	0 uT/m
EPI phase correction	normal
PAT refscan mode	FLEET
FLEET dummies	15
FLEET flip angle	15
RF pulse duration	5120 us
FFT scale	0.5

	TA: 12:38	PAT: 4	Voxel size: 1.5×1.5×2.0 mm	Rel. SNR: 1.00	USER: VASO_109	
Properties Prio Peri	20	Off		PAT mode Accel. factor PE	GRAPPA 2	

Properties		- Accel. factor PE	2
Prio Recon	Off	Ref. lines PE	24
Before measurement			
After measurement		Accel. factor 3D	2
Load to viewer	On	Ref. lines 3D	12
Inline movie	Off	Reference scan mode	Separate
Auto store images	On	Prescan Normalize	Off
Load to stamp segments	Off	Raw filter	Off
	Off		
Load images to graphic	Oli	Elliptical filter	Off
segments	0"	Hamming	Off
Auto open inline display	Off	Geometry	
Start measurement without	On	Multi-slice mode	Interleaved
further preparation		Series	Ascending
Wait for user to start	Off		Ascertaing
Start measurements	single	Special sat.	Parallel F
Routine		Gap	25.0 mm
		- Thickness	100 mm
Slab group 1	4		
Slabs	1	Table position	Н
Dist. factor	50 %	Table position	0 mm
Position	L0.0 A14.4 H32.1	Inline Composing	Off
Orientation	T > C-13.6	Custom	
Phase enc. dir.	P >> A	System	0"
Rotation	180.00 deg	V32	Off
Phase oversampling	0 %	A32	On
Slice oversampling	0.0 %	Positioning mode	FIX
Slices per slab	24	MSMA	S - C - T
FoV read	180.0 mm		R >> L
FoV phase	100.0 %	Sagittal	
Slice thickness	2.00 mm	Coronal	A >> P
TR	1568.60 ms	Transversal	F >> H
TE	16 ms	Save uncombined	Off
	1	Coil Combine Mode	Sum of Squares
Averages	1	AutoAlign	
Concatenations	Ness	Auto Coil Select	Default
Filter	None	Chim made	Ctandard
Coil elements	A32	Shim mode	Standard
Contrast		Adjust with body coil	Off
Perfusion mode	Picore Q2TIPS	Confirm freq. adjustment	Off
TI2	950 ms	Assume Silicone	Off
TI1		! Ref. amplitude 1H	220.000 V
	50 ms	Adjustment Tolerance	Auto
Ti1s	50 ms	Adjust volume	
Flip angle	17 deg	! Position	R1.4 A13.1 H29.5
Fat suppr.	Fat sat.	! Orientation	Sagittal
Fat sat. mode	Strong	! Rotation	13.29 deg
Avoraging mode	Long torm	! F >> H	45 mm
Averaging mode	Long term	! A >> P	178 mm
Reconstruction	Magnitude	! R >> L	157 mm
Measurements	483	: K >> L	197 111111
Delay in TR	0 ms	Physio	
Multiple series	Off	1st Signal/Mode	None
Perfusion mode	PICORE Q2T	•	
Inversion time 1	50 ms	BOLD	
		Motion correction	Off
Saturation stop time	50 ms	Spatial filter	Off
Inversion time 2	950.0 ms	Sequence	
Flow limit	100.0 cm/s	•	On
Resolution		Introduction	On
Base resolution	120	_ Dimension	3D
Phase resolution	100 %	Reordering	Linear
		Contrasts	1
Slice resolution	100 %	Bandwidth	1894 Hz/Px
Phase partial Fourier	6/8	Free echo spacing	Off
Slice partial Fourier	Off	Echo spacing	0.66 ms
Interpolation	Off	EDI fortor	400
1		EPI factor	120

RF pulse type Gradient mode Excitation RF spoiling	Normal Normal Slab-sel. On
Ampl BWDTH thickness use Ernst angle Maxwell Correction log physio files FFT scale dummy prepscan time z shim RF duration RF BWTP EFFECTIVE TR PatPartitions EPI phase correction PAT refscan mode use CAIPI CAIPI shift kz	95 150 3.1kHz 30 Off Off Off 0.50 3 s 0.00 mT/m*ms 5120 us 25.0 18823 ms 12 local segm LIN->PAR On
CAIPI shift ky	0

\\USER\UserProtocols\Renzo\3D_SMS_template\Valsalva_SMS_VASO_79_24slic_1.5x1.5x2_realTR TA: 9:50 PAT: 2 Voxel size: 1.5x1.5x2.0 mm Rel. SNR: 1.00 UNKNOWN:

Frio Recon Def Before measurement After measurement Afte	Properties		Prescan Normalize	Off
Before measurement Laad to viewer		Off	Raw filter Filiptical filter	Off
Arter measurement Load to viewer On Inline movie Off Multi-slice mode Interleaved Auto store images On Series Ascending Auto store images to graphic Off Segments Auto off Series Ascending Auto off Series Ascending Auto off Series Ascending Auto off Segments Auto off Segments Auto off Auto open inline display Off Table position Thickness 100 mm Thickness 100 mm Thickness 100 mm Thickness 100 mm Table position H Table position				_
Inline movie	After measurement		Hamming	OII
Auto store images	Load to viewer	On	Geometry	
Load insages to graphic Off Special sat. Parallel F Gap 25.0 mm Table position H Table position H Table position H Table position H Table position Orf Table position Uniform Table position H Table position Uniform Table position Uniform Table position Uniform Un	Inline movie	Off	Multi-slice mode	Interleaved
Load images to graphic segments Auto Open inline display Off Special sat. Parallel Sag	Auto store images	On	Series	Ascending
Laser mages to graphic segments Auto open inline display Off	Load to stamp segments	Off	0	DU-LE
Segments	Load images to graphic	Off		
Start measurement without further preparation Wait for user to start Start measurements Single Single Single System	segments		•	
Further preparation Walf for user to start Start measurements Single System	Auto open inline display	Off	Inickness	100 mm
Further preparation Wait for user to start Start measurements Single System	Start measurement without	On	Table position	Н
Wait for user to start Start measurements Single	further preparation			0 mm
Start measurements	Wait for user to start	Off		Off
Slice group 1	Start measurements	single		
Silice group 1	Pouting			~
Silices				
Dist. factor		24	A32	On
Position			Positioning mode	FIX
Orientation				
Phase enc. dir. A >> P Rotation 0.00 deg Phase oversampling 0 % FoV read 180 mm FoV phase 100.0 % Slice thickness 2.0 mm TR 1497.6 ms TE 17 ms Averages 1 Concatenations 1 Filter None Filter None Feif? VASO mode 332 T12 1000 ms T2 1000 ms T11 50 ms T12 1000 ms T11 50 ms T12 1000 ms T11 50 ms T11 50 ms Fert / VASO mode 3S-SI VASO T12 1000 ms T11 50 ms Flast suppr. Fat sat. Fat suppr. Fat sat. Fat suppr. Fat sat. Fat suppr. Fat sat. Fat suppr. Fat suppr. Fat sup minderererererererere			_	
Rotation				
Phase oversampling				
FoV read				
FoV phase				- · ·
Slice thickness 2.0 mm				-
TR				Default
TE		_		
Averages				
Concatenations				_
Filter		1		
Coil elements		T Name		Off
Contrast				220.000 V
Peff / VASO mode	Coll elements	A32		Auto
Orientation Sagittal Foundation Sagittal Foundation Founda	Contrast			
Rotation -0.07 deg -0.07	Perf / VASO mode	SS-SI VASO		
F S H 86 mm 166 mm 166 mm 167 mm 166 mm	TI2	1000 ms		
A >> P	TI1	50 ms		
R > L 157 mm	TI1s	50 ms		
Fat sat. mode	Flip angle	63 deg		
Fat sat. mode Weak Physio Averaging mode Long term Reconstruction Magnitude Measurements 391 Delay in TR 0 ms Multiple series Off Sequence Perfusion mode PICORE Q2T Inversion time 1 50 ms Inversion time 2 1000 ms Inversion time 2 1000 ms Flow limit 100.0 cm/s Resolution Base resolution 120 Phase partial Fourier 6/8 BWDTH 300 3.1kHz Interpolation Off Sequence Physio None Resolution Physio 1st Signal/Mode None BOLD Sequence Introduction On Contrasts 1 Bandwidth 1736 Hz/Px Free echo spacing Off Echo spacing 0.68 ms EPI factor 120 RF pulse type Normal Gradient mode Normal Ampl 100 BWDTH 300 3.1kHz Interpolation Off thickness 100 Phase skip 30 Opt. TI2 1106		Fat sat.	! R >> L	157 mm
Averaging mode Long term 1st Signal/Mode None Reconstruction Magnitude BOLD Measurements 391 Sequence Delay in TR 0 ms Sequence Multiple series Off Introduction On Perfusion mode PICORE Q2T Introduction On Perfusion mode PICORE Q2T Bandwidth 1736 Hz/Px Inversion time 1 50 ms Free echo spacing Off Saturation stop time 50 ms Echo spacing 0.68 ms Inversion time 2 1000 ms EPI factor 120 Resolution Resolution 100.0 cm/s EPI factor 120 RF pulse type Normal Gradient mode Normal Base resolution 100 % Ampl 100 Phase partial Fourier 6/8 BWDTH 300 3.1kHz Interpolation Off Phase skip 30 PAT mode GRAPPA Opt. TI2 1106	Fat sat. mode	Weak	Physio	
Reconstruction Magnitude BOLD	A			None
Measurements 391 Sequence Delay in TR 0 ms Introduction On Multiple series Off Introduction On Perfusion mode PICORE Q2T Bandwidth 1736 Hz/Px Inversion time 1 50 ms Bandwidth 1736 Hz/Px Free echo spacing Off Free echo spacing O.68 ms Inversion time 2 1000 ms Echo spacing 0.68 ms Flow limit 100.0 cm/s EPI factor 120 Resolution RF pulse type Normal Phase resolution 100 Ampl Normal Multiple series 100 Ampl 100 Resolution 100 BWDTH 300 3.1kHz Interpolation Off thickness 100 Phase skip 30 Opt. TI2 1106			, -	110110
Delay in TR 0 ms Multiple series Off Multiple series Off Perfusion mode PICORE Q2T Inversion time 1 50 ms Saturation stop time 50 ms Inversion time 2 1000 ms Flow limit 100.0 cm/s Resolution Base resolution 120 Phase resolution 100 % Phase partial Fourier 6/8 Interpolation Off PAT mode Multiple series Off Introduction On Contrasts 1 Bandwidth 1736 Hz/Px Free echo spacing Off Echo spacing 0.68 ms Fley I factor 120 RF pulse type Normal Gradient mode Normal Ampl 100 BWDTH 300 3.1kHz Interpolation Off Thickness 100 Phase skip 30 Opt. TI2 1106			BOLD	
Multiple series Off Perfusion mode PICORE Q2T Inversion time 1 Saturation stop time Inversion time 2 Inversion time 2 Inversion time 2 Inversion time 2 Inversion time 3 Inversion time 4 Inversion time 50 ms Inversion time 50 ms Inversion time 50 ms Inversion time 60 ms Inversion time 7 Inversion time 8 Inversion time 9 Inversion time 9 Introduction On Contrasts Inversion time 1 Interest of time 1 Introduction Introduction On Contrasts Introduction On Contrasts Introduction On Contrasts Introduction Off Bandwidth Inversion time 1 Introduction On Contrasts Introduction Off Introduction On Contrasts Introduction Off Bandwidth Introduction Off Introduction On Contrasts Introduction Off Bandwidth Introduction On On On Contrasts Introduction Off Bandwidth Introduction Introduction Off Bandwidth Introduction Intr			Sequence	
Perfusion mode PICORE Q2T Bandwidth 1736 Hz/Px Inversion time 1 50 ms Free echo spacing Off Echo spacing 0.68 ms Inversion time 2 1000 ms Flow limit 100.0 cm/s EPI factor 120 Resolution 120 Phase resolution 100 % Ampl 100 Phase partial Fourier 6/8 BWDTH 300 3.1kHz Interpolation Off This partial Fourier 100 PAT mode GRAPPA Contrasts 1 Bandwidth 1736 Hz/Px Free echo spacing 0.68 ms EPI factor 120 RF pulse type Normal Gradient mode Normal Ampl 100 BWDTH 300 3.1kHz thickness 100 Phase skip 30 Opt. TI2 1106	·			On
Perfusion mode Inversion time 1 50 ms Free echo spacing Off Saturation stop time 50 ms Echo spacing Off Echo spacing Off Saturation time 2 1000 ms Inversion time 2 100.0 cm/s EPI factor RF pulse type Normal Gradient mode Normal Sase resolution 100 % Ampl 100 Ampl Interpolation Off Share partial Fourier 6/8 BWDTH 300 3.1kHz Interpolation Off Share partial Fourier GRAPPA Opt. TI2 1106	wuitiple series	OII		
Inversion time 1	Perfusion mode	PICORE Q2T		-
Saturation stop time Inversion time 2 50 ms Echo spacing 0.68 ms Inversion time 2 1000 ms EPI factor 120 Resolution Resolution Normal Phase resolution Phase partial Fourier Interpolation 6/8 BWDTH 300 3.1kHz Interpolation PAT mode GRAPPA Phase skip Opt. TI2 30				
Inversion time 2				
Flow limit				
Resolution Base resolution Phase resolution Phase partial Fourier Interpolation PAT mode GRAPPA RF pulse type Gradient mode Normal Ampl 100 BWDTH 300 3.1kHz thickness 100 Phase skip Opt. TI2 1106	Flow limit			_
Base resolution 120 Phase resolution 100 % Phase partial Fourier 6/8 Interpolation Off BWDTH 300 3.1kHz thickness 100 PAT mode GRAPPA PAT mode GRAPPA Gradient mode Normal Ampl 100 BWDTH 300 3.1kHz thickness 100 Phase skip 30 Opt. TI2 1106	Desclution			
Phase resolution 100 % Phase partial Fourier 6/8 Interpolation Off PAT mode GRAPPA Ampl 100 BWDTH 300 3.1kHz thickness 100 Phase skip 30 Opt. TI2 1106		120	Gradient mode	Normal
Phase partial Fourier 6/8 Interpolation Off BWDTH 300 3.1kHz thickness 100 Phase skip 30 PAT mode GRAPPA Opt. TI2 1106			Ampl	100
Interpolation Off thickness 100 PAT mode GRAPPA Phase skip Opt. TI2 1106				
PAT mode GRAPPA Phase skip Opt. TI2 1106				
PAT mode GRAPPA Opt. TI2 1106	interpolation	UIT		
1 A 17 1 BE	PAT mode	GRAPPA		
1 AUGI 1900 I L 4	Accel. factor PE	2		
Volumes per 11				-
Ref. lines PE 48 FatSat flip angle 110 deg Reference scan mode Separate SMS factor 2				
SIVIO IACIUI Z			. Sivio lactul	۷

CAIPI shift	3
SMS online recon	On
SMS-RF phase optim.	On
log physio files	Off
altern z-shim	0 uT/m
fixed z-shim	0 uT/m
EPI phase correction	normal
PAT refscan mode	FLEET
FLEET dummies	15
FLEET flip angle	15
RF pulse duration	5120 us
FFT scale	1.0

\\USER\UserProtocols\Renzo\3D_SMS_template\Valsalva_3DVASO_2x3_flash_CAIPI_PF_1.5x1.5x2_real_TF TA: 9:45 PAT: 4 Voxel size: 1.5x1.5x2.0 mm Rel. SNR: 1.00 USER: VASO_109

		PAT mode	GRAPPA
Properties		Accel. factor PE	2
Prio Recon	Off	Ref. lines PE	24
Before measurement		Accel. factor 3D	2
After measurement	0	Ref. lines 3D	12
Load to viewer	On Off	Reference scan mode	Separate
Inline movie	Off	December 15	·
Auto store images	On Off	Prescan Normalize	Off Off
Load to stamp segments	Off	Raw filter	Off Off
Load images to graphic segments	Oil	Elliptical filter	Off
Auto open inline display	Off	Hamming	Oii
Start measurement without	On	Geometry	
further preparation	Oll	Multi-slice mode	Interleaved
Wait for user to start	Off	Series	Ascending
Start measurements	single	Chariel act	Parallel F
1	Single	Special sat. Gap	25.0 mm
Routine		Thickness	100 mm
Slab group 1		1111CK11ESS	
Slabs	1	Table position	Н
Dist. factor	50 %	Table position	0 mm
Position	L0.0 A3.7 H24.9	Inline Composing	Off
Orientation	T > C-10.0	System	
Phase enc. dir.	A >> P	System V32	Off
Rotation	0.00 deg	A32	On
Phase oversampling	0 %	A32	OII
Slice oversampling	0.0 %	Positioning mode	FIX
Slices per slab	24	MSMA	S - C - T
FoV read	180.0 mm	Sagittal	R >> L
FoV phase	100.0 %	Coronal	A >> P
Slice thickness	2.00 mm	Transversal	F >> H
TR	1496.80 ms	Save uncombined	Off
TE	16 ms	Coil Combine Mode	Sum of Squares
Averages	1	AutoAlign	
Concatenations	1	Auto Coil Select	Default
Filter	None	Shim mode	Standard
Coil elements	A32	Adjust with body coil	Off
Contrast		Confirm freq. adjustment	Off
Perfusion mode	Picore Q2TIPS	Assume Silicone	Off
TI2	975 ms	! Ref. amplitude 1H	220.000 V
TI1	50 ms	Adjustment Tolerance	Auto
TI1s	50 ms	Adjust volume	Adio
Flip angle	17 deg	! Position	R1.4 A10.0 H24.9
Fat suppr.	Fat sat.	! Orientation	Sagittal
Fat sat. mode	Weak	! Rotation	-0.07 deg
Averaging mode	Long torm	! F >> H	86 mm
Averaging mode Reconstruction	Long term Magnitude	! A >> P	166 mm
Measurements	391	! R >> L	157 mm
Delay in TR	0 ms	1	
Multiple series	Off	Physio	
		1st Signal/Mode	None
Perfusion mode	PICORE Q2T	BOLD	
Inversion time 1	50 ms	Motion correction	Off
Saturation stop time	50 ms	Spatial filter	Off
Inversion time 2	975.0 ms	1 .	
Flow limit	100.0 cm/s	Sequence	
Resolution		Introduction	On
Base resolution	120	Dimension	3D
Phase resolution	100 %	Reordering	Linear
Slice resolution	100 %	Contrasts	1
Phase partial Fourier	6/8	Bandwidth	1894 Hz/Px
Slice partial Fourier	Off	Free echo spacing	Off
Interpolation	Off	Echo spacing	0.66 ms
······		EPI factor	120
		1	

RF pulse type Gradient mode Excitation RF spoiling	Normal Normal Slab-sel. On
 Ampl BWDTH thickness use Ernst angle Maxwell Correction log physio files FFT scale dummy prepscan time z shim RF duration RF BWTP EFFECTIVE TR	95 150 3.1kHz 30 Off Off Off 0.50 3 s 0.00 mT/m*ms 5120 us 25.0 17961 ms
PatPartitions EPI phase correction PAT refscan mode use CAIPI CAIPI shift kz CAIPI shift ky	12 local segm LIN->PAR On 1

\\USER\UserProtocols\Renzo\3D_SMS_template\3DVASO_ONE_Hemisphere_GRAPPA2_PF68_10Slices_SC TA: 13:16 PAT: 2 Voxel size: 0.7×0.7×1.8 mm Rel. SNR: 1.00 USER: VASO_109

		PAT mode	GRAPPA
Properties	0"	Accel. factor PE	2
Prio Recon	Off	Ref. lines PE	24
Before measurement		Accel. factor 3D	1
After measurement	0.5	Ref. lines 3D	8
Load to viewer	On O"	Reference scan mode	Separate
Inline movie	Off	Dragge Name die	O#
Auto store images	On Off	Prescan Normalize	Off
Load to stamp segments	Off	Raw filter Elliptical filter	Off Off
Load images to graphic segments	Oil	Hamming	Off
Auto open inline display	Off	Hamming	Oil
Start measurement without	On	Geometry	
further preparation	Oli	Multi-slice mode	Interleaved
Wait for user to start	Off	Series	Ascending
Start measurements	single	Chariel act	Parallel F
1	Single	Special sat. Gap	25.0 mm
Routine		Thickness	100 mm
Slab group 1			
Slabs	1	Table position	Н
Dist. factor	50 %	Table position	0 mm
Position	L29.8 P1.9 H31.0	Inline Composing	Off
Orientation	T > S-22.8 > C-5.5	System	
Phase enc. dir.	R >> L	System V32	Off
Rotation	120.00 deg	A32	On
Phase oversampling	0 %	A32	
Slice oversampling	0.0 %	Positioning mode	FIX
Slices per slab	10	MSMA	S - C - T
FoV read	32.8 mm	Sagittal	R >> L
FoV phase	300.0 %	Coronal	A >> P
Slice thickness	1.80 mm	Transversal	F >> H
TR	1648.80 ms	Save uncombined	Off
TE	24 ms	Coil Combine Mode	Sum of Squares
Averages	1	AutoAlign	
Concatenations	1	Auto Coil Select	Default
Filter	None	Object of a	04
Coil elements	A32	Shim mode	Standard
Contrast		Adjust with body coil	Off Off
Perfusion mode	Picore Q2TIPS	Confirm freq. adjustment Assume Silicone	Off
TI2	900 ms	! Ref. amplitude 1H	220.000 V
TI1	50 ms	Adjustment Tolerance	
TI1s	50 ms		Auto
Flip angle	30 deg	Adjust volume ! Position	L24.9 P2.2 H31.4
Fat suppr.	Fat sat.	! Orientation	S > T0.7
Fat sat. mode	Strong		
A		! Rotation ! F >> H	-0.26 deg 60 mm
Averaging mode	Long term	! F >> FI ! A >> P	72 mm
Reconstruction	Magnitude	! R >> L	72 mm 85 mm
Measurements	483	! K >> L	65 111111
Delay in TR	0 ms	Physio	
Multiple series	Off	1st Signal/Mode	None
Perfusion mode	PICORE Q2T	BOLD	
Inversion time 1	50 ms		Off
Saturation stop time	50 ms	Motion correction	Off Off
Inversion time 2	900.0 ms	Spatial filter	Oii
Flow limit	100.0 cm/s	Sequence	
!		Introduction	On
Resolution		Dimension	3D
Base resolution	44	Reordering	Linear
Phase resolution	100 %	Contrasts	1
Slice resolution	100 %	Bandwidth	1042 Hz/Px
Phase partial Fourier	6/8	Free echo spacing	Off
Slice partial Fourier	Off	Echo spacing	1.08 ms
Interpolation	Off		422
1		EPI factor	132

RF pulse type Gradient mode Excitation RF spoiling	Normal Normal Slab-sel. On
Ampl BWDTH thickness use Ernst angle Maxwell Correction log physio files FFT scale dummy prepscan time z shim RF duration RF BWTP EFFECTIVE TR PatPartitions EPI phase correction PAT refscan mode FlashRef BaseRes FlashRef BW FlashRef TE FlashRef FA use CAIPI	110 150 3.1kHz 30 Off Off Off Off 1.00 3 s 0.00 mT/m*ms 2560 us 25.0 16488 ms 10 local Flash 44 1000 Hz/px 4800 us 5 deg Off

\\USER\UserProtocols\Renzo\3D_SMS_template\2DVASO_GRAPPA2_PF6/8_ONE_Hemisphere				
TA: 0:25 PAT: 2 Voxel size: 0.7×0.7×1.8 mm Rel. SNR: 1.00 USER: VASO_108				
17. 0.20 17(1. 2 VOXOLOIZO, 0.7×0.7×1.0 IIIII 1(0), O(4)(, 1.00 OOLI(, VAOO_100				
Description		Prescan Normalize	Off	
Properties	Off	- Raw filter	Off	
Prio Recon	Off	Elliptical filter	Off	
Before measurement		Hamming	Off	
After measurement 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		3	
Routine	G	System	0"	
Slice group 1		V32 A32	Off On	
Slices	7	MUZ	OII	
Dist. factor	0 %	Positioning mode	FIX	
Position	L33.8 A5.3 H79.3	MSMA	S - C - T	
Orientation	T > S-27.3	Sagittal	R >> L	
Phase enc. dir.	R >> L	Coronal	A >> P	
Rotation	90.00 deg	Transversal	F >> H	
Phase oversampling	0 %	Save uncombined	Off	
FoV read	32.8 mm	Coil Combine Mode	Sum of Squares	
FoV phase	300.0 %	AutoAlign		
Slice thickness	1.8 mm	Auto Coil Select	Default	
TR	1673.9 ms	Shim mode	Standard	
TE	24 ms	Adjust with body coil	Off	
Averages	1	Confirm freq. adjustment	Off	
Concatenations	1	Assume Silicone	Off	
Filter	None	! Ref. amplitude 1H	220.000 V	
Coil elements	A32	Adjustment Tolerance	Auto	
Contract		Adjust volume	Adio	
Contrast	66 61 // 60	! Position	R1.4 A13.7 H64.7	
Perf / VASO mode	SS-SI VASO	! Orientation	S > T0.7	
TI2	1175 ms	! Rotation	-0.26 deg	
TI1 TI1s	50 ms 50 ms	! F >> H	75 mm	
		! A >> P	120 mm	
Flip angle	90 deg	! R >> L	163 mm	
Fat suppr. Fat sat. mode	Fat sat. Strong	1	-	
		Physio	None	
Averaging mode	Long term	1st Signal/Mode	None	
Reconstruction	Magn./Phase	BOLD		
Measurements	11	Coguenes		
Delay in TR	0 ms	Sequence	02	
Multiple series	Off	Introduction	On 1	
Perfusion mode	PICORE Q2T	Contrasts Bandwidth	1 1052 Hz/Px	
Inversion time 1	50 ms	Free echo spacing	Off	
Saturation stop time	50 ms	Echo spacing	1.08 ms	
Inversion time 2	1175 ms	spacing		
Flow limit	100.0 cm/s	EPI factor	132	
Resolution		RF pulse type	Normal	
Base resolution	44	Gradient mode	Normal	
Phase resolution	44 100 %	Ampl	100	
Phase resolution Phase partial Fourier	6/8	BWDTH	300 3.1kHz	
	Off	thickness	100	
Interpolation	∪ II	Phase skip	30	
PAT mode	GRAPPA	Opt. TI2	1106	
Accel. factor PE	2	Volumes per TI	1	

FatSat flip angle

SMS factor

Reference scan mode

Ref. lines PE

24

Separate

1

110 deg

log physio files	Off
altern z-shim	0 uT/m
fixed z-shim	0 uT/m
EPI phase correction	local
PAT refscan mode	FLEET
FLEET dummies	15
FLEET flip angle	25
RF pulse duration	2560 us
FFT scale	0.5

\\USER\UserProto	cols\Renz	zo\3D_SMS_template\tSNR_	_SMS_VASO_79_	_12slic_POCS_1.5x1.5
TA: 2:15	PAT: 2	Voxel size: 1.5×1.5×0.3 mm	Rel. SNR: 1.00	UNKNOWN:

Properties		Prescan Normalize	Off
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		
Load images to graphic	Off	Special sat.	Parallel F
segments	5	Gap	25.0 mm
Auto open inline display	Off	Thickness	100 mm
Start measurement without	On	Table position	H
further preparation	-	Table position	0 mm
Wait for user to start	Off	Inline Composing	Off
Start measurements	single		
Routine	•	System	
Slice group 1		_ V32	Off
Slice group 1	12	A32	On
Dist. factor	0 %	Positioning mode	FIX
Position	L0.0 A14.3 H11.6	MSMA	S - C - T
Orientation	T > C-10.0	Sagittal	R >> L
Phase enc. dir.	A >> P	Coronal	A >> P
Rotation	0.00 deg	Transversal	F >> H
Phase oversampling	0 %	Save uncombined	Off
FoV read	180 mm	Coil Combine Mode	Sum of Squares
FoV phase	100.0 %	AutoAlign	
Slice thickness	0.3 mm	Auto Coil Select	Default
TR	1559.4 ms	Shim mode	Standard
TE	22 ms	Adjust with body coil	Off
Averages	1	Confirm freq. adjustment	Off
Concatenations	1	Assume Silicone	Off
Filter	None	! Ref. amplitude 1H	220.000 V
Coil elements	A32	Adjustment Tolerance	Auto
Contrast		Adjust volume	71010
Perf / VASO mode	SS-SI VASO	! Position	R1.4 A18.4 H4.1
TI2	1000 ms	! Orientation	Sagittal
TI1	50 ms	! Rotation	10.10 deg
Tils	50 ms	! F >> H	81 mm
Flip angle	63 deg	! A >> P	163 mm
Fat suppr.	Fat sat.	! R >> L	157 mm
Fat sat. mode	Weak	Physic	
		Physio 1st Signal/Mode	None
Averaging mode	Long term		NONE
Reconstruction	Magnitude	BOLD	
Measurements	83 0 ms	Sequence	
Delay in TR	0 ms Off	Introduction	On
Multiple series	∪ II	Contrasts	1
Perfusion mode	PICORE Q2T	Bandwidth	1666 Hz/Px
Inversion time 1	50 ms	Free echo spacing	Off
Saturation stop time	50 ms	Echo spacing	0.7 ms
Inversion time 2	1000 ms		
Flow limit	100.0 cm/s	EPI factor	120
Resolution		RF pulse type	Normal
Base resolution	120	Gradient mode	Normal
Phase resolution	100 %	Ampl	90
Phase partial Fourier	6/8	BWDTH	300 3.1kHz
Interpolation	Off	thickness	100
		Phase skip	30
PAT mode	GRAPPA	Opt. TI2	1106
Accel. factor PE	2	Volumes per TI	1
Ref. lines PE	48	FatSat flip angle	110 deg
Reference scan mode	Separate	SMS factor	1
1		19/+	

log physio files	Off
altern z-shim	0 uT/m
fixed z-shim	0 uT/m
EPI phase correction	normal
PAT refscan mode	FLEET
FLEET dummies	15
FLEET flip angle	15
RF pulse duration	5120 us
FFT scale	0.5

 $\verb|\USER\USer|| Protocols\Renzo\3D_SMS_template\SNR_3DVASO_2x3_flash_CAIPI_PF_1.5x1.5||$

TA: 2:17	PAT: 2	Voxel size: 1.5×1.5×0.3 mm	Rel. SNR: 1.00	USER: VASO_109
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Properties Prio Recon	Off	PAT mode Accel. factor PE	GRAPPA 2
Before measurement		Ref. lines PE Accel. factor 3D	24 1
After measurement Load to viewer	On	Ref. lines 3D	12
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	Oli	Hamming	Off
Auto open inline display	Off	Tiamining	Oli
Start measurement without	On	Geometry	
further preparation	011	Multi-slice mode	Interleaved
Wait for user to start	Off	Series	Ascending
Start measurements	single	Special sat	Parallel F
1	Single	Special sat. Gap	25.0 mm
Routine		Thickness	100 mm
Slab group 1			
Slabs	1	Table position	Н
Dist. factor	50 %	Table position	0 mm
Position	L0.0 A14.3 H11.6	Inline Composing	Off
Orientation	T > C-10.0	System	
Phase enc. dir.	A >> P	V32	Off
Rotation	0.00 deg		
Phase oversampling	0 %	A32	On
Slice oversampling	0.0 %	Positioning mode	FIX
Slices per slab	12	MSMA	S - C - T
FoV read	180.0 mm	Sagittal	R >> L
FoV phase	100.0 %	Coronal	A >> P
Slice thickness	0.30 mm	Transversal	F >> H
TR	1647.8 ms	Save uncombined	Off
TE	22 ms	Coil Combine Mode	Sum of Squares
Averages	1	AutoAlign	
Concatenations	1	Auto Coil Select	Default
Filter	None		
Coil elements	A32	Shim mode	Standard
Contrast		Adjust with body coil	Off
Perfusion mode	Picore Q2TIPS	Confirm freq. adjustment	Off
TI2	950 ms	Assume Silicone	Off
TI1	50 ms	! Ref. amplitude 1H	220.000 V
TI1s	50 ms	Adjustment Tolerance	Auto
Flip angle	17 deg	Adjust volume	D4 4 440 4 114 4
Fat suppr.	Fat sat.	! Position	R1.4 A18.4 H4.1
Fat sat. mode	Strong	! Orientation ! Rotation	Sagittal
		! Rotation ! F >> H	10.10 deg
Averaging mode	Long term	! F >> F ! A >> P	81 mm 163 mm
Reconstruction	Magnitude	! R >> L	157 mm
Measurements	83	! K >> L	157 111111
Delay in TR	0 ms	Physio	
Multiple series	Off	1st Signal/Mode	None
Perfusion mode	PICORE Q2T	BOLD	
Inversion time 1	50 ms	Motion correction	Off
Saturation stop time	50 ms	Spatial filter	Off
Inversion time 2	950.0 ms	Spatial filter	Oli
Flow limit	100.0 cm/s	Sequence	
I '		Introduction	On
Resolution		Dimension	3D
Base resolution	120	Reordering	Linear
Phase resolution	100 %	Contrasts	1
Slice resolution	100 %	Bandwidth	1894 Hz/Px
		Banawati	
Phase partial Fourier	6/8	Free echo spacing	Off
Slice partial Fourier	6/8 Off		
	6/8	Free echo spacing	Off

RF pulse type Gradient mode Excitation RF spoiling	Normal Normal Slab-sel. On
Ampl BWDTH thickness use Ernst angle Maxwell Correction log physio files FFT scale dummy prepscan time z shim RF duration RF BWTP EFFECTIVE TR PatPartitions EPI phase correction PAT refscan mode use CAIPI CAIPI shift kz CAIPI shift ky	95 150 3.1kHz 30 Off Off Off 0.50 3 s 0.00 mT/m*ms 5120 us 25.0 19773 ms 12 local segm LIN->PAR On 0

\\USER\UserProtocols\Renzo\3D_SMS_template\1.2_SMS_VASO_79_24slic_noPF

TA: 14:40		.2×2.0 mm Rel. SNR: 1.00	UNKNOWN:
		l Prescan Normalize	Off
Properties		Raw filter	Off
Prio Recon	Off	Elliptical filter	Off
Before measurement		Hamming	Off
After measurement 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		
Routine		System	Off
Slice group 1		V32 A32	Off On
Slices	24		OII
Dist. factor	0 %	Positioning mode	FIX
Position	L0.0 A13.5 H28.6	MSMA	S - C - T
Orientation	T > C-10.0	Sagittal	R >> L
Phase enc. dir.	P >> A	Coronal	A >> P
Rotation	180.00 deg	Transversal	F >> H
Phase oversampling	0 %	Save uncombined	Off
FoV read	180 mm	Coil Combine Mode	Sum of Squares
FoV phase	100.0 %	AutoAlign	 D ()
Slice thickness	2.0 mm	Auto Coil Select	Default
TR	1809.1 ms	Shim mode	Standard
TE	35 ms	Adjust with body coil	Off
Averages	1	Confirm freq. adjustment	Off
Concatenations	1 Name	Assume Silicone	Off
Filter	None	! Ref. amplitude 1H	220.000 V
Coil elements	A32	Adjustment Tolerance	Auto
Contrast		Adjust volume	B
Perf / VASO mode	SS-SI VASO	! Position	R1.4 A13.3 H27.0
TI2	1000 ms	! Orientation	Sagittal
TI1	50 ms	! Rotation	10.86 deg
TI1s	50 ms	! F >> H ! A >> P	86 mm 166 mm
Flip angle	80 deg	! R >> L	157 mm
Fat suppr.	Fat sat.	: K >> L	137 111111
Fat sat. mode	Weak	Physio	
Averaging mode	Long term	1st Signal/Mode	None
Reconstruction	Magnitude	BOLD	
Measurements	483		
Delay in TR	0 ms	Sequence	
Multiple series	Off	Introduction	On
Perfusion mode	PICORE Q2T	Contrasts	1 1666 Hz/Dy
Inversion time 1	50 ms	Bandwidth Free echo spacing	1666 Hz/Px Off
Saturation stop time	50 ms	Echo spacing	0.76 ms
Inversion time 2	1000 ms		0.70 mg
Flow limit	100.0 cm/s	EPI factor	150
Resolution		RF pulse type	Normal
Base resolution	150	Gradient mode	Normal
Phase resolution	100 %	Ampl	90
Phase partial Fourier	Off	BWDTH	300 3.1kHz
Interpolation	Off	thickness	100
		··· Phase skip	30
PAT mode	GRAPPA	Opt. TI2	1106
Accel. factor PE	2	Volumes per TI	1
Ref. lines PE	48	FatSat flip angle	110 deg
Reference scan mode	Separate	SMS factor	2
		-	

CAIPI shift	3
SMS online recon	On
SMS-RF phase optim.	On
log physio files	Off
altern z-shim	0 uT/m
fixed z-shim	0 uT/m
EPI phase correction	normal
PAT refscan mode	FLEET
FLEET dummies	15
FLEET flip angle	15
RF pulse duration	5120 us
FFT scale	0.5

\\USER\Use	rProtocols	s\Renzo\3D_SMS_template\	1.2_3DVASO_2x	3_flash_CAIPI_noPF	
TA: 14:55	PAT: 4	Voxel size: 1.2×1.2×2.0 mm	Rel. SNR: 1.00	USER: VASO 109	

Description		PAT mode	GRAPPA
Properties	0"	Accel. factor PE	2
Prio Recon	Off	Ref. lines PE	24
Before measurement		Accel. factor 3D	2
After measurement		Ref. lines 3D	12
Load to viewer	On O"	Reference scan mode	Separate
Inline movie	Off		
Auto store images	On Off	Prescan Normalize	Off
Load to stamp segments	Off	Raw filter	Off
Load images to graphic	Off	Elliptical filter	Off
segments	0#	Hamming	Off
Auto open inline display Start measurement without	Off On	Geometry	
	On	Multi-slice mode	Interleaved
further preparation	Off	Series	Ascending
Wait for user to start			
Start measurements	single	Special sat.	Parallel F
Routine		Gap	25.0 mm
Slab group 1		Thickness	100 mm
Slabs	1	Table position	Н
Dist. factor	50 %	Table position	0 mm
Position	L0.0 A13.5 H28.6	Inline Composing	Off
Orientation	T > C-10.0		
Phase enc. dir.	P >> A	System	
Rotation	180.00 deg	V32	Off
Phase oversampling	0 %	A32	On
Slice oversampling	0.0 %	Positioning mode	FIX
Slices per slab	24	MSMA	S - C - T
FoV read	180.0 mm	Sagittal	R >> L
FoV phase	100.0 %	Coronal	A >> P
Slice thickness	2.00 mm	Transversal	F >> H
TR	1852.60 ms	Save uncombined	Off
TE	35 ms	Coil Combine Mode	Sum of Squares
Averages	1	AutoAlign	
Concatenations	1	Auto Coil Select	Default
Filter	None		0, 1, 1
Coil elements	A32	Shim mode	Standard
Contrast		Adjust with body coil	Off
Perfusion mode	Picore Q2TIPS	Confirm freq. adjustment Assume Silicone	Off Off
TI2	900 ms	! Ref. amplitude 1H	220.000 V
TI1	50 ms	Adjustment Tolerance	
TI1s	50 ms	1 ,	Auto
Flip angle	17 deg	Adjust volume ! Position	R1.4 A13.3 H27.0
Fat suppr.	Fat sat.	! Orientation	Sagittal
Fat sat. mode	Strong	! Rotation	10.86 deg
		! F >> H	86 mm
Averaging mode	Long term	! A >> P	166 mm
Reconstruction	Magnitude	! R >> L	157 mm
Measurements	483	1	137 111111
Delay in TR	0 ms	Physio	
Multiple series	Off	1st Signal/Mode	None
Perfusion mode	PICORE Q2T	BOLD	
Inversion time 1	50 ms	Motion correction	Off
Saturation stop time	50 ms	Spatial filter	Off
Inversion time 2	900.0 ms	1 .	311
Flow limit	100.0 cm/s	Sequence	
Resolution		Introduction	On
Base resolution	150	Dimension	3D
Phase resolution	100 %	Reordering	Linear
Slice resolution	100 %	Contrasts	1
Phase partial Fourier	Off	Bandwidth	1588 Hz/Px
Slice partial Fourier	Off	Free echo spacing	Off
Interpolation	Off	Echo spacing	0.75 ms
	OII	EPI factor	150
•		1 = : : : : : : : : : : : : : : : : : :	

RF pulse type Gradient mode Excitation RF spoiling	Normal Normal Slab-sel. On
Ampl BWDTH thickness use Ernst angle Maxwell Correction log physio files FFT scale dummy prepscan time z shim RF duration RF BWTP EFFECTIVE TR PatPartitions EPI phase correction PAT refscan mode FlashRef BaseRes FlashRef BW	95 150 3.1kHz 30 Off Off Off 0.50 3 s 0.00 mT/m*ms 5120 us 25.0 22231 ms 12 local Flash 150 1000 Hz/px
FlashRef TE FlashRef FA	4800 us 5 deg
use CAIPI CAIPI shift kz	On 1
CAIPI shift ky	0