TA: 8.0 s PAT: Off	Voxel size: 0.8×0.8×0.8 mm	Rel. SNR: 1.00 USER	:: BP_grase_clean_sat
Properties		Position	L0.0 P54.0 H0.0
Prio Recon	Off	Orientation	Coronal
Before measurement	Oil	Special sat.	None
		Table position	⊔
After measurement	On	Table position	H 0 mm
Load to viewer	On O#	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On Off	System	
Load to stamp segments	Off	T1	On
Load images to graphic	Off	M2	On
segments	0"	B4	On
Auto open inline display	Off	M3	On
Start measurement without	On	V32	Off
further preparation	0"		
Wait for user to start	Off	Positioning mode	REF
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	L0.0 P54.2 H10.8	Coil Combine Mode	Sum of Squares
Orientation	Transversal	AutoAlign	
Phase enc. dir.	A >> P	Auto Coil Select	Default
Rotation	0.00 deg	Object on a de	04
Phase oversampling	0.00 deg 0 %	Shim mode	Standard
		Adjust with body coil	Off
Slice oversampling	20.0 %	Confirm freq. adjustment	Off
Slices per slab	10	Assume Silicone	Off
FoV read	210 mm	? Ref. amplitude 1H	0.000 V
FoV phase	12.5 %	Adjustment Tolerance	Auto
Slice thickness	0.8 mm	Adjust volume	
TR	2000 ms	Position	L0.0 P54.2 H10.8
TE	42.12 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	210 mm
Filter	None	A >> P	27 mm
Coil elements	B4;M2,3;T1	F >> H	8 mm
Contrast		Physio	
Flip angle	180 deg	1st Signal/Mode	None
Fat suppr.	Fat sat.	_	140110
Fat sat. mode	Strong _	Composing	
		Sequence	
Averaging mode	Long term	Introduction	Off
Reconstruction	Magnitude	Dimension	3D
Measurements	4		
Pause after meas. 1	0.0 s	Reordering	Centric
Pause after meas. 2	0.0 s	Asymmetric echo	Allowed
Pause after meas. 3	0.0 s	Contrasts	1
Multiple series	Off	Bandwidth	1148 Hz/Px
Resolution		Echo spacing	0.8 ms
	256	Turbo factor	9
Base resolution	256	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Phase partial Fourier	Off		
Slice partial Fourier	6/8	refocussing type	sinc 2560
Interpolation	On	flip angle excit	90
PAT mode	None	Crusher Momentum	72000
		Crusher Time	2000
Raw filter	Off	phase encoding	ON
Geometry		Maxwell compensation	Off
	Interleaved	ICE program	single
Series	Interleaved	prepscans	0
Sat. region 1		Refocusing Duration	10240
Thickness	24 mm		

Thickness

24 mm

Voxel size: 0.8×0.8×0.8 mm

TA: 0:12

PAT: Off

Rel. SNR: 1.00

USER: BP_grase_clean_sat

Description		Position	L0.0 P54.0 H0.0
Properties		Orientation	Coronal
Prio Recon	Off	Special sat.	None
Before measurement			
After measurement	0-	Table position	H
Load to viewer	On	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images Load to stamp segments	On Off	System	
Load images to graphic	Off	T1	On
segments	Oll	M2	On
Auto open inline display	Off	B4	On
Start measurement without	On	M3	On
further preparation	Oli	V32	Off
Wait for user to start	Off	Positioning mode	REF
Start measurements	single	MSMA	S-C-T
	Sirigio	Sagittal	R >> L
Routine		Coronal	A >> P
Slab group 1		Transversal	F >> H
Slabs	1	Save uncombined	Off
Dist. factor	0 %	Coil Combine Mode	Sum of Squares
Position	L0.0 P54.2 H10.8	AutoAlign	
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P		
Rotation	0.00 deg	Shim mode	Standard
Phase oversampling	0 %	Adjust with body coil	Off
Slice oversampling	20.0 %	Confirm freq. adjustment	Off
Slices per slab	10	Assume Silicone	Off
FoV read	210 mm	? Ref. amplitude 1H	0.000 V
FoV phase	12.5 %	Adjustment Tolerance	Auto
Slice thickness	0.8 mm	Adjust volume	
TR	3000 ms	Position	L0.0 P54.2 H10.8
TE	42.12 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	210 mm
Filter	None	A >> P	27 mm
Coil elements	B4;M2,3;T1	F >> H	8 mm
Contrast		Physio	
Flip angle	180 deg	1st Signal/Mode	None
Fat suppr.	Fat sat.	Composing	
Fat sat. mode	Strong		
Averaging mode	Long term	Sequence	
Reconstruction	Magnitude	Introduction	Off
Measurements	4	Dimension	3D
Pause after meas. 1	0.0 s	Reordering	Centric
Pause after meas. 2	0.0 s	Asymmetric echo	Allowed
Pause after meas. 3	0.0 s	Contrasts	1
Multiple series	Off	Bandwidth	1148 Hz/Px
Resolution		Echo spacing	0.8 ms
Base resolution	256	Turbo factor	9
Phase resolution	100 %	EPI factor	32
Slice resolution	100 %	RF pulse type	Normal
Phase partial Fourier	Off	Gradient mode	Fast
Slice partial Fourier	6/8	referencing type	sinc 2560
Interpolation	On	refocussing type	sinc 2560
		flip angle excit Crusher Momentum	90
PAT mode	None	Crusher Momentum Crusher Time	72000 2000
Raw filter	Off	phase encoding	2000 ON
	-	Maxwell compensation	Off
Geometry		ICE program	single
Series	Interleaved	prepscans	0
Sat. region 1		Refocusing Duration	10240
Thickness	24 mm	Troiocasing Daration	10270
111101111000	<u> </u>		

TA: 3.0 s PAT: Off	f Voxel size: 0.8×0.8×0.8 mm	Rel. SNR: 1.00 USER	: BP_grase_clean_sat
Properties		Table position	Н
Prio Recon	Off	Table position	0 mm
Before measurement	Oli	Inline Composing	Off
After measurement		System	
Load to viewer	On	T1	On
Inline movie	Off	M2	On
Auto store images	On	B4	On
Load to stamp segments	Off	M3	On
Load images to graphic	Off	V32	Off
segments		Positioning mode	REF
Auto open inline display	Off	MSMA	S - C - T
Start measurement without	On	Sagittal	R >> L
further preparation	0"	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Save uncombined	Off
outine		Coil Combine Mode	Sum of Squares
Slab group 1		AutoAlign	
Slabs	1	Auto Coil Select	Default
Dist. factor	0 %	Shim mode	Standard
Position	L0.0 P54.2 H10.8	Adjust with body coil	Off
Orientation	Transversal	Confirm freq. adjustment	Off
Phase enc. dir.	A >> P	Assume Silicone	Off
Rotation	0.00 deg	? Ref. amplitude 1H	0.000 V
Phase oversampling	0 % 20.0 %	Adjustment Tolerance	Auto
Slice oversampling Slices per slab	20.0 % 10	Adjust volume	
FoV read	210 mm	Position	L0.0 P54.2 H10.8
FoV phase	12.5 %	Orientation	Transversal
Slice thickness	0.8 mm	Rotation	0.00 deg
TR	3000 ms	R >> L	210 mm
TE	44.84 ms	A >> P	27 mm
Averages	1	F >> H	8 mm
Concatenations	1	Physio	
Filter	None	1st Signal/Mode	None
Coil elements	B4;M2,3;T1	Composing	
Contrast	400 days	Sequence	
Flip angle	180 deg	Introduction	Off
Fat suppr. Fat sat. mode	Fat sat.	Dimension	3D
rat sat. mode	Strong	Reordering	Centric
Averaging mode	Long term	Asymmetric echo	Off
Reconstruction	Magnitude	Contrasts	1
Measurements	1	Bandwidth	1148 Hz/Px
Multiple series	Off	Echo spacing	1 ms
esolution		Turbo factor	9
Base resolution	256	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Phase partial Fourier	7/8		
Slice partial Fourier	6/8	refocussing type	sinc 2560
Interpolation	On	flip angle excit	90
PAT mode	None	Crusher Momentum Crusher Time	72000 2000
Raw filter	Off	phase encoding	ON
	On .	Maxwell compensation	Off
eometry		ICE program	single
Series	Interleaved	prepscans Personal Duration	0
Sat. region 1		Refocusing Duration	10240
Thickness	24 mm		
Position	L0.0 P54.0 H0.0		
Orientation	Coronal		
Special sat.	None		

TA: 3.0 s PAT: Off	Voxel size: 0.8×0.8×0.8 mm	Rel. SNR: 1.00 USER	: BP_grase_clean_sat
Properties		Table position	Н
Prio Recon	Off	Table position	0 mm
Before measurement	Oli	Inline Composing	Off
After measurement		System	
Load to viewer	On	T1	On
Inline movie	Off	M2	On
Auto store images	On	B4	On
Load to stamp segments	Off	M3	On
Load images to graphic	Off	V32	Off
segments		Positioning mode	REF
Auto open inline display	Off	MSMA	S - C - T
Start measurement without	On	Sagittal	R >> L
further preparation	0"	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Save uncombined	Off
outine		Coil Combine Mode	Sum of Squares
Slab group 1		AutoAlign	
Slabs	1	Auto Coil Select	Default
Dist. factor	0 %		
Position	L0.0 P54.2 H10.8	Shim mode	Standard
Orientation	Transversal	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment Assume Silicone	Off Off
Rotation	0.00 deg		0.000 V
Phase oversampling	0 %	? Ref. amplitude 1H Adjustment Tolerance	Auto
Slice oversampling	20.0 %	Adjust volume	Auto
Slices per slab	10	Position	L0.0 P54.2 H10.8
FoV read	210 mm	Orientation	Transversal
FoV phase	12.5 %	Rotation	0.00 deg
Slice thickness	0.8 mm	R >> L	210 mm
TR	3000 ms	A >> P	27 mm
TE	38.92 ms	F >> H	8 mm
Averages	1	I.	5
Concatenations	1	Physio	
Filter Coil elements	None	1st Signal/Mode	None
	B4;M2,3;T1	Composing	
Contrast	100 dog	Sequence	
Flip angle	180 deg	Introduction	Off
Fat suppr. Fat sat. mode	Fat sat. Strong	Dimension	3D
		Reordering	Centric
Averaging mode	Long term	Asymmetric echo	Allowed
Reconstruction	Magnitude	Contrasts	1
Measurements	1	Bandwidth	1148 Hz/Px
Multiple series	Off	Echo spacing	0.8 ms
esolution		Turbo factor	9
Base resolution	256	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Phase partial Fourier	7/8		
Slice partial Fourier	6/8	refocussing type	sinc 2560
Interpolation	On	flip angle excit	90
PAT mode	None	Crusher Momentum Crusher Time	72000 2000
		phase encoding	ON
Raw filter	Off	Maxwell compensation	Off
Geometry		ICE program	single
Series	Interleaved	prepscans	0
Sat. region 1		Refocusing Duration	10240
Thickness	24 mm		
Position	L0.0 P54.0 H0.0		
Orientation	Coronal		
Special sat.	None		
•			

TA: 3.0 s PAT: Off	f Voxel size: 0.8×0.8×0.8 mm	Rel. SNR: 1.00 USER	: BP_grase_clean_sat
Properties		Table position	Н
Prio Recon	Off	Table position	0 mm
Before measurement	OII	Inline Composing	Off
After measurement		System	
Load to viewer	On	T1	On
Inline movie	Off	M2	On
Auto store images	On	B4	On
Load to stamp segments	Off	M3	On
Load images to graphic	Off	V32	Off
segments		Positioning mode	REF
Auto open inline display	Off	MSMA	S-C-T
Start measurement without	On	Sagittal	R >> L
further preparation	0"	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Save uncombined	Off
outine		Coil Combine Mode	Sum of Squares
Slab group 1		AutoAlign	
Slabs	1	Auto Coil Select	Default
Dist. factor	0 %		
Position	L0.0 P54.2 H10.8	Shim mode	Standard
Orientation	Transversal	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment Assume Silicone	Off Off
Rotation	0.00 deg		
Phase oversampling	0 %	? Ref. amplitude 1H Adjustment Tolerance	0.000 V Auto
Slice oversampling	20.0 %	Adjust volume	Auto
Slices per slab	10	Position	L0.0 P54.2 H10.8
FoV read	210 mm	Orientation	Transversal
FoV phase	12.5 %	Rotation	0.00 deg
Slice thickness	0.8 mm	R >> L	210 mm
TR	3000 ms	A >> P	27 mm
TE	35.72 ms	F >> H	8 mm
Averages	1	I.	5 111111
Concatenations	1	Physio	
Filter	None	1st Signal/Mode	None
Coil elements	B4;M2,3;T1	Composing	
Contrast	400 da a	Sequence	
Flip angle	180 deg	Introduction	Off
Fat suppr. Fat sat. mode	Fat sat. Strong	Dimension	3D
rai sai. mode	Strong	Reordering	Centric
Averaging mode	Long term	Asymmetric echo	Allowed
Reconstruction	Magnitude	Contrasts	1
Measurements	1	Bandwidth	1148 Hz/Px
Multiple series	Off	Echo spacing	0.8 ms
esolution		Turbo factor	9
Base resolution	256	EPI factor	32
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Phase partial Fourier	6/8		
Slice partial Fourier	6/8	refocussing type	sinc 2560
Interpolation	On	flip angle excit	90
PAT mode	None	Crusher Momentum	72000
		Crusher Time phase encoding	2000 ON
Raw filter	Off	Maxwell compensation	Off
eometry		ICE program	single
Series	Interleaved	prepscans	0
Sat. region 1		Refocusing Duration	10240
Thickness	24 mm		
Position	L0.0 P54.0 H0.0		
Orientation	Coronal		
Special sat.	None		
Crooiai oati			

TA: 3.0 s PAT: Off	f Voxel size: 0.6×0.6×0.6 mm	Rel. SNR: 1.00 USER	: BP_grase_clean_sat
Properties		Table position	Н
Prio Recon	Off	Table position	0 mm
Before measurement	Oli	Inline Composing	Off
After measurement		System	
Load to viewer	On	T1	On
Inline movie	Off	M2	On
Auto store images	On	B4	On
Load to stamp segments	Off	M3	On
Load images to graphic	Off	V32	Off
segments		Positioning mode	REF
Auto open inline display	Off	MSMA	S - C - T
Start measurement without	On	Sagittal	R >> L
further preparation		Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Save uncombined	Off
outine		Coil Combine Mode	Sum of Squares
Slab group 1		AutoAlign	
Slabs	1	Auto Coil Select	Default
Dist. factor	0 %		
Position	L0.0 P54.2 H10.8	Shim mode	Standard
Orientation	Transversal	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
Slice oversampling	20.0 %	Adjustment Tolerance Adjust volume	Auto
Slices per slab	10	Position	L0.0 P54.2 H10.8
FoV read	210 mm	Orientation	Transversal
FoV phase	12.2 %	Rotation	0.00 deg
Slice thickness	0.6 mm	R >> L	210 mm
TR	3000 ms	A >> P	26 mm
TE	52.04 ms	F >> H	6 mm
Averages	1	I	5
Concatenations	1	Physio	
Filter	None	1st Signal/Mode	None
Coil elements	B4;M2,3;T1	Composing	
Contrast	400 do 2	Sequence	
Flip angle	180 deg	Introduction	Off
Fat suppr. Fat sat. mode	Fat sat. Strong	Dimension	3D
rai sai. mode		Reordering	Centric
Averaging mode	Long term	Asymmetric echo	Allowed
Reconstruction	Magnitude	Contrasts	1
Measurements	1	Bandwidth	816 Hz/Px
Multiple series	Off	Echo spacing	1.1 ms
tesolution		Turbo factor	9
Base resolution	360	EPI factor	44
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Phase partial Fourier	6/8		
Slice partial Fourier	6/8	refocussing type	sinc 2560
Interpolation	On	flip angle excit	90
PAT mode	None	Crusher Momentum Crusher Time	72000 2000
		phase encoding	2000 ON
Raw filter	Off	Maxwell compensation	Off
Geometry		ICE program	single
Series	Interleaved	prepscans	0
Sat. region 1		Refocusing Duration	10240
Thickness	24 mm		
Position	L0.0 P54.0 H0.0		
Orientation	Coronal		
Special sat.	None		
•			

TA: 3.0 s PAT: Off		Rel. SNR: 1.00 USER	
Properties		Table position	Н
Prio Recon	Off	Table position	0 mm
Before measurement	Oil	Inline Composing	Off
After measurement		System	
Load to viewer	On	T1	On
Inline movie	Off	M2	On
Auto store images	On	B4	On
Load to stamp segments	Off	M3	On
Load images to graphic	Off	V32	Off
segments	Oll		
Auto open inline display	Off	Positioning mode	REF
Start measurement without	On	MSMA	S - C - T
	Oli	Sagittal	R >> L
further preparation Wait for user to start	Off	Coronal	A >> P
	_	Transversal	F >> H
Start measurements	single	Save uncombined	Off
outine		Coil Combine Mode	Sum of Squares
Slab group 1		AutoAlign	
Slabs	1	Auto Coil Select	Default
Dist. factor	0 %		
Position	L0.0 P54.2 H10.8	Shim mode	Standard
Orientation	Transversal	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0.00 deg 0 %	? Ref. amplitude 1H	0.000 V
	20.0 %	Adjustment Tolerance	Auto
Slice oversampling		Adjust volume	
Slices per slab	10	Position	L0.0 P54.2 H10.8
FoV read	210 mm	Orientation	Transversal
FoV phase	12.2 %	Rotation	0.00 deg
Slice thickness	0.6 mm	R >> L	210 mm
TR	3000 ms	A >> P	26 mm
TE	51.04 ms	F >> H	6 mm
Averages	1	ı	0 111111
Concatenations	1	Physio	
Filter	None	1st Signal/Mode	None
Coil elements	B4;M2,3;T1	Composing	
Contrast	400 da	Sequence	
Flip angle	180 deg	Introduction	Off
Fat suppr.	Fat sat.	Dimension	3D
Fat sat. mode	Strong	Reordering	Centric
Averaging mode	Long term	Asymmetric echo	Allowed
Reconstruction	Magnitude	Contrasts	1
Measurements	1	Bandwidth	1 816 Hz/Px
Multiple series	Off	Echo spacing	1.1 ms
•	Oll	spacing	1.1 1115
esolution		Turbo factor	9
Base resolution	360	EPI factor	44
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Phase partial Fourier	6/8		-: 0500
Slice partial Fourier	6/8	refocussing type	sinc 2560
Interpolation	On	flip angle excit	90
PAT mode	None	Crusher Momentum Crusher Time	50000
		phase encoding	1500 ON
Raw filter	Off	Maxwell compensation	Off
Geometry		ICE program	single
Series	Interleaved	prepscans	0
Sat. region 1		Refocusing Duration	10240
Thickness	24 mm		
Position	L0.0 P54.0 H0.0		
Orientation	Coronal		
Special sat.	None		
ODECIAI SAL	INOTIC		

Voxel size: 0.6×0.6×0.6 mm Rel. SNR: 1.00

PAT: 2

TA: 6.0 s

USER: BP_grase_clean_sat

Series	Interleaved	prepscans	0
Geometry		Maxwell compensation ICE program	Oπ single
Raw filter	Off	phase encoding	ON Off
		Crusher Time	1500 ON
Reference scan mode	Separate	Crusher Momentum	50000
Ref. lines 3D	12	flip angle excit	90
Accel. factor 3D	1	refocussing type	sinc 2560
Ref. lines PE	22	Gradient mode	гаы
Accel. factor PE	2	RF pulse type Gradient mode	Normal Fast
PAT mode	GRAPPA		44 Normal
Interpolation	On	Turbo factor EPI factor	12 44
Slice partial Fourier	Off		
Phase partial Fourier	Off	Echo spacing	1.1 ms
Slice resolution	100 %	Bandwidth	816 Hz/Px
Phase resolution	100 %	Contrasts	1
Base resolution	360	Asymmetric echo	Allowed
Resolution		Reordering	Centric
Multiple series	Off	Dimension	3D
Measurements	1	Introduction	Off
Reconstruction	Magnitude	Sequence	
Averaging mode	Long term	Composing	
		1st Signal/Mode	None
Fat sat. mode	Strong		None
Fat suppr.	Fat sat.	Physio	
Flip angle	180 deg	—— F >> H	6 mm
Contrast		A >> P	26 mm
Coil elements	B4;M2,3;T1	R >> L	210 mm
Filter	None	Rotation	0.00 deg
Concatenations	1	Orientation	Transversal
Averages	1	Position	L0.0 P54.2 H10.8
TE	40.42 ms	Adjust volume	
TR	3000 ms	Adjustment Tolerance	Auto
Slice thickness	0.6 mm	? Ref. amplitude 1H	0.000 V
FoV phase	12.2 %	Assume Silicone	Off
FoV read	210 mm	Confirm freq. adjustment	Off
Slices per slab	10	Adjust with body coil	Off
Slice oversampling	20.0 %	Shim mode	Standard
Phase oversampling	0 %	Auto Coli Select	Delauit
Rotation	0.00 deg	Auto Coil Select	Default
Phase enc. dir.	A >> P	AutoAlign	
Orientation	Transversal	Coil Combine Mode	Sum of Squares
Position	L0.0 P54.2 H10.8	Save uncombined	Off
Dist. factor	0 %	Transversal	F >> H
Slabs	1	Coronal	A >> P
Slab group 1	4	Sagittal	R >> L
Routine		MSMA	S - C - T
	-	Positioning mode	REF
Start measurements	single	V32	Off
Wait for user to start	Off	M3	On
further preparation	OII	B4	On
Start measurement without	On	M2	On
Auto open inline display	Off	T1	On
Load images to graphic segments	OII	System	
Load to stamp segments	Off	Inline Composing	OII
Auto store images	On Off	Table position	0 mm Off
		Table position	
Inline movie	Off	Table position	 Н
Load to viewer	On	Special sat.	None
Before measurement After measurement		Orientation	Coronal
Prio Recon	Off	Position	L0.0 P54.0 H0.0
	0"	—— Thickness	24 mm
Properties		Sat. region 1	

Refocusing Duration

7680

TA: 6.0 s PAT: 2	Voxel size: 0.6x0.6x0.6 mm	Rel. SNR: 1.00 USER:	BP_grase_clean_sat
Dranastias		Position	L0.0 P54.0 H0.0
Properties		Orientation	Coronal
Prio Recon	Off	Special sat.	None
Before measurement			
After measurement		Table position	H
Load to viewer	On	Table position	0 mm
Inline movie	Off	Inline Composing	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	0"		
Wait for user to start	Off	Positioning mode	REF
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	L0.0 P54.2 H10.8	Coil Combine Mode	Sum of Squares
Orientation	Transversal	AutoAlign	
Phase enc. dir.	A >> P	Auto Coil Select	Default
Rotation	0.00 deg	Shim mode	Standard
Phase oversampling	0 %	Adjust with body coil	Off
Slice oversampling	20.0 %	Confirm freq. adjustment	Off
Slices per slab	10	Assume Silicone	Off
FoV read	210 mm	? Ref. amplitude 1H	0.000 V
FoV phase	12.2 %	Adjustment Tolerance	Auto
Slice thickness	0.6 mm	Adjust volume	Adio
TR	3000 ms	Position	L0.0 P54.2 H10.8
TE	40.42 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	210 mm
Filter	None	A >> P	26 mm
Coil elements	B4;M2,3;T1	F >> H	6 mm
Operation of	, , ,	·	· · · · · · · · · · · · · · · · · · ·
Contrast	400 da a	Physio	
Flip angle	180 deg	1st Signal/Mode	None
Fat suppr.	Fat sat.	Composing	
Fat sat. mode	Strong		
Averaging mode	Long term	Sequence	
Reconstruction	Magnitude	Introduction	Off
Measurements	1	Dimension	3D
Multiple series	Off	Reordering	Centric
Resolution		Asymmetric echo	Allowed
	200	Contrasts	1
Base resolution	360	Bandwidth	816 Hz/Px
Phase resolution	100 %	Echo spacing	1.1 ms
Slice resolution	100 %	Turbo factor	12
Phase partial Fourier	Off	EPI factor	44
Slice partial Fourier	Off	RF pulse type	Normal
Interpolation	On	Gradient mode	Fast
PAT mode	mSENSE		
Accel. factor PE	2	refocussing type	sinc 2560
Ref. lines PE	22	flip angle excit	90
Reference scan mode	Separate	Crusher Momentum	50000
		Crusher Time	1500
Raw filter	Off	phase encoding	ON
Geometry		Maxwell compensation	Off
Series	Interleaved	ICE program	single
		prepscans	0
Sat. region 1	04	Refocusing Duration	7680
Thickness	24 mm		

Thickness

24 mm

TA: 3.0 s PAT: Off	Voxel size: 0.6×0.6×0.6 mm	Rel. SNR: 1.00 USER	: BP_grase_clean_sat
Properties		Table position	Н
Prio Recon	Off	Table position	0 mm
Before measurement	Oli	Inline Composing	Off
After measurement		System	
Load to viewer	On	T1	On
Inline movie	Off	M2	On
Auto store images	On	B4	On
Load to stamp segments	Off	M3	On
Load images to graphic	Off	V32	Off
segments	311		
Auto open inline display	Off	Positioning mode	REF
Start measurement without	On	MSMA	S - C - T
further preparation	5	Sagittal	R >> L
Wait for user to start	Off	Coronal	A >> P
Start measurements	single	Transversal	F >> H
	5ig.G	Save uncombined	Off
outine		Coil Combine Mode	Sum of Squares
Slab group 1		AutoAlign	
Slabs	1	Auto Coil Select	Default
Dist. factor	0 %	Shim mode	Standard
Position	L0.0 P54.2 H10.8	Adjust with body coil	Off
Orientation	Transversal	Confirm freq. adjustment	Off
Phase enc. dir.	A >> P	Assume Silicone	Off
Rotation	0.00 deg	? Ref. amplitude 1H	0.000 V
Phase oversampling	0 %	Adjustment Tolerance	Auto
Slice oversampling	20.0 %	Adjust volume	Adio
Slices per slab	10	Position	L0.0 P54.2 H10.8
FoV read	210 mm	Orientation	Transversal
FoV phase	12.2 %	Rotation	0.00 deg
Slice thickness	0.6 mm	R >> L	210 mm
TR	3000 ms	A >> P	26 mm
TE	48.48 ms	F >> H	6 mm
Averages	1	F >> 11	O IIIIII
Concatenations	1	Physio	
Filter	None	1st Signal/Mode	None
Coil elements	B4;M2,3;T1	Composing	
Contrast	400 de a	Sequence	
Flip angle	180 deg	Introduction	Off
Fat suppr.	Fat sat.	Dimension	3D
Fat sat. mode	Strong	Reordering	Centric
Averaging mode	Long term	Asymmetric echo	Allowed
Reconstruction	Magnitude	Contrasts	1
Measurements	1	Bandwidth	816 Hz/Px
Multiple series	Off	Echo spacing	1.1 ms
•			
Resolution	260	Turbo factor	9
Base resolution	360	EPI factor	44
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Phase partial Fourier	6/8	refocussing type	sinc 2560
Slice partial Fourier	6/8	flip angle excit	90
Interpolation	On	Crusher Momentum	50000
PAT mode	None	Crusher Time	1500
D #14	Off	phase encoding	ON Off
Raw filter		Maxwell compensation ICE program	Off single
			SILICIE
eometry	Interleaved		-
Raw filter Geometry Series	Interleaved	prepscans	0
Geometry			-
Seometry Series		prepscans	0
Seometry Series Sat. region 1		prepscans	0
Series Sat. region 1 Thickness	24 mm	prepscans	0

TA: 3.0 s PAT: Off	f Voxel size: 0.6×0.6×0.6 mm	Rel. SNR: 1.00 USER	: BP_grase_clean_sat
Properties		Table position	Н
Prio Recon	Off	Table position	0 mm
Before measurement	Oil	Inline Composing	Off
After measurement		System	
Load to viewer	On	T1	On
Inline movie	Off	M2	On
Auto store images	On	B4	On
Load to stamp segments	Off	M3	On
Load images to graphic	Off	V32	Off
segments		Desitioning mode	DEE
Auto open inline display	Off	Positioning mode MSMA	REF S - C - T
Start measurement without	On	Sagittal	R >> L
further preparation		Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Save uncombined	Off
toutine		Coil Combine Mode	Sum of Squares
Slab group 1		AutoAlign	
Slabs	1	Auto Coil Select	Default
Dist. factor	0 %		
Position	L0.0 P54.2 H10.8	Shim mode	Standard
Orientation	Transversal	Adjust with body coil	Off
Phase enc. dir.	A >> P	Confirm freq. adjustment	Off
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
Slice oversampling	20.0 %	Adjustment Tolerance	Auto
Slices per slab	10	Adjust volume Position	LO O DE 4 O U4O O
FoV read	225 mm		L0.0 P54.2 H10.8
FoV phase	12.2 %	Orientation Rotation	Transversal 0.00 deg
Slice thickness	0.6 mm	Rotation R >> L	225 mm
TR	3000 ms	A >> P	28 mm
TE	49.44 ms	F >> H	6 mm
Averages	1	I.	0 111111
Concatenations	1	Physio	
Filter	None	1st Signal/Mode	None
Coil elements	B4;M2,3;T1	Composing	
Contrast	400 da a	Sequence	
Flip angle	180 deg	Introduction	Off
Fat suppr. Fat sat. mode	Fat sat. Strong	Dimension	3D
rai sai. mode	Strong	Reordering	Centric
Averaging mode	Long term	Asymmetric echo	Allowed
Reconstruction	Magnitude	Contrasts	1
Measurements	1	Bandwidth	816 Hz/Px
Multiple series	Off	Echo spacing	1.1 ms
Resolution		Turbo factor	9
Base resolution	360	EPI factor	44
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Phase partial Fourier	6/8		
Slice partial Fourier	6/8	refocussing type	sinc 2560
Interpolation	On	flip angle excit	90
PAT mode	None	Crusher Momentum Crusher Time	50000 1500
	Off	phase encoding	ON
Raw filter	Oii	Maxwell compensation	Off
Geometry		ICE program	single
Series	Interleaved	prepscans	0
Sat. region 1		Refocusing Duration	7680
Thickness	24 mm		
Position	L0.0 P54.0 H0.0		
Orientation	Coronal		
Special sat.	None		
•			

			:: BP_grase_clean_sat
ran artica		Table position	Н
roperties Prio Recon	0"	Table position	0 mm
	Off	Inline Composing	Off
Before measurement		Cycham	
After measurement		System	
Load to viewer	On	T1	On
Inline movie	Off	M2	On
Auto store images	On	B4	On
Load to stamp segments	Off	M3	On
Load images to graphic	Off	V32	Off
segments			
Auto open inline display	Off	Positioning mode	REF
Start measurement without	On	MSMA	S - C - T
	Oli	Sagittal	R >> L
further preparation	0#	Coronal	A >> P
Wait for user to start	Off	Transversal	F >> H
Start measurements	single	Save uncombined	Off
Routine		Coil Combine Mode	Sum of Squares
			Sulli of Squares
Slab group 1	4	AutoAlign	Defends
Slabs	1	Auto Coil Select	Default
Dist. factor	0 %	Shim mode	Standard
Position	L0.0 P54.2 H10.8	Adjust with body coil	Off
Orientation	Transversal	Confirm freg. adjustment	Off
Phase enc. dir.	A >> P		
Rotation	0.00 deg	Assume Silicone	Off
Phase oversampling	0 %	? Ref. amplitude 1H	0.000 V
Slice oversampling	25.0 %	Adjustment Tolerance	Auto
Slices per slab	16	Adjust volume	
•		Position	L0.0 P54.2 H10.8
FoV read	225 mm	Orientation	Transversal
FoV phase	12.2 %	Rotation	0.00 deg
Slice thickness	1.0 mm	R >> L	225 mm
TR	3000 ms	A >> P	28 mm
TE	49.3 ms		_
Averages	1	F >> H	16 mm
Concatenations	1	Physio	
Filter	None	1st Signal/Mode	None
Coil elements	B4;M2,3;T1	13t Signal/Wode	None
	B 1,1012,0,1 1	Composing	
Contrast		Sequence	
Flip angle	180 deg	Introduction	Off
Fat suppr.	Fat sat.		
Fat sat. mode	Strong	Dimension	3D
		Reordering	Centric
Averaging mode	Long term	Asymmetric echo	Allowed
Reconstruction	Magnitude	Contrasts	1
Measurements	1	Bandwidth	816 Hz/Px
Multiple series	Off	Echo spacing	1.1 ms
Resolution			
	360	Turbo factor	20
Base resolution		EPI factor	44
Phase resolution	100 %	RF pulse type	Normal
Slice resolution	100 %	Gradient mode	Fast
Phase partial Fourier	6/8	male acceptant	-i 0500
Slice partial Fourier	Off	refocussing type	sinc 2560
Interpolation	On	flip angle excit	90
		Crusher Momentum	50000
PAT mode	None	Crusher Time	1500
Paw filtor	Off	phase encoding	ON
Raw filter	Off	Maxwell compensation	Off
Geometry		ICE program	single
Series	Interleaved	prepscans	0
		Refocusing Duration	7680
Sat. region 1		1.0.00doing Daration	. 555
Thickness	24 mm		
Position	L0.0 P54.0 H0.0		
Orientation	Coronal		
Special sat.	None		

 $\verb|\USER\Feinberg| lab\Test\GRASE-3D\BP_grase_clean_sat|$

Voxel size: 0.7×0.7×1.0 mm Rel. SNR: 1.00

PAT: 4

TA: 6.0 s

USER: BP_grase_clean_sat

Properties		Sat. region 1 Thickness	28 mm
Prio Recon	Off	Position	L0.0 P54.7 H0.0
Before measurement		Orientation	Coronal
After measurement		Special sat.	None
Load to viewer	On		
Inline movie	Off	Table position	Н
Auto store images	On	Table position	0 mm
Load to stamp segments	Off	Inline Composing	Off
Load images to graphic	Off		
segments		System	
Auto open inline display	Off	T1	On
Start measurement without	On	M2	On
further preparation	311	B4	On
Wait for user to start	Off	M3	On
Start measurements	single	V32	Off
Start measurements	Single	Docitioning mode	DEE
Routine		Positioning mode	REF
Slab group 1		- MSMA	S-C-T
Slabs	1	Sagittal	R >> L
Dist. factor	0 %	Coronal	A >> P
Position	L0.0 P54.2 H10.8	Transversal	F >> H
Orientation	Transversal	Save uncombined	Off
Phase enc. dir.	A >> P	Coil Combine Mode	Sum of Squares
Rotation	0.00 deg	AutoAlign	
	0.00 deg 0 %	Auto Coil Select	Default
Phase oversampling			
Slice oversampling	25.0 %	Shim mode	Standard
Slices per slab	16	Adjust with body coil	Off
FoV read	205 mm	Confirm freq. adjustment	Off
FoV phase	17.9 %	Assume Silicone	Off
Slice thickness	1.0 mm	? Ref. amplitude 1H	0.000 V
TR	3000 ms	Adjustment Tolerance	Auto
TE	40.48 ms	Adjust volume	
Averages	1	Position	L0.0 P54.2 H10.8
Concatenations	1	Orientation	Transversal
Filter	None	Rotation	0.00 deg
Coil elements	B4;M2,3;T1	R >> L	205 mm
		A >> P	37 mm
Contrast	400 1	- F>> H	16 mm
Flip angle	180 deg		
Fat suppr.	Fat sat.	Physio	
Fat sat. mode	Strong	1st Signal/Mode	None
Averaging mode	Long term	Composing	
Reconstruction	Magnitude		
Measurements	1	Sequence	
Multiple series	Off	Introduction	Off
•	5 11	Dimension	3D
Resolution		Reordering	Centric
Base resolution	312	Asymmetric echo	Allowed
Phase resolution	100 %	Contrasts	1
Slice resolution	100 %	Bandwidth	890 Hz/Px
Phase partial Fourier	Off	Echo spacing	1 ms
Slice partial Fourier	Off		
Interpolation	On	Turbo factor	10
		EPI factor	56
PAT mode	GRAPPA	RF pulse type	Normal
Accel. factor PE	2	Gradient mode	Fast
Ref. lines PE	24		. 0500
Accel. factor 3D	2	refocussing type	sinc 2560
Ref. lines 3D	10	flip angle excit	90
Reference scan mode	Separate	Crusher Momentum	30000
		Crusher Time	1000
Raw filter	Off	phase encoding	ON
Geometry		Maxwell compensation	Off
Series	Interleaved	 ICE program 	single
		prepscans	0

Refocusing Duration

7680

 $\verb|\USER\Feinberg| lab\Test\GRASE-3D\BP_grase_clean_sat|$

TA: 6.0 s PAT: 2	Voxel size: 0.7×0.7×1.0 mm	n Rel. SNR: 1.00 USER:	BP_grase_clean_sat
Properties		Position	L0.0 P54.7 H0.0
Prio Recon	Off	 Orientation 	Coronal
	Oii	Special sat.	None
Before measurement		Table position	
After measurement	0	Table position	H
Load to viewer	On O"	Table position	0 mm
Inline movie	Off	Inline Composing	Off
Auto store images	On O"	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			
Wait for user to start	Off	Positioning mode	REF
Start measurements	single	MSMA	S - C - T
Routine		Sagittal	R >> L
		- Coronal	A >> P
Slab group 1 Slabs	1	Transversal	F >> H
Dist. factor	0 %	Save uncombined	Off
		Coil Combine Mode	Sum of Squares
Position	L0.0 P54.2 H10.8	AutoAlign	·
Orientation	Transversal	Auto Coil Select	Default
Phase enc. dir.	A >> P		
Rotation	0.00 deg	Shim mode	Standard
Phase oversampling	0 %	Adjust with body coil	Off
Slice oversampling	25.0 %	Confirm freq. adjustment	Off
Slices per slab	16	Assume Silicone	Off
FoV read	205 mm	? Ref. amplitude 1H	0.000 V
FoV phase	17.9 %	Adjustment Tolerance	Auto
Slice thickness	1.0 mm	Adjust volume	
TR	3000 ms	Position	L0.0 P54.2 H10.8
TE	40.48 ms	Orientation	Transversal
Averages	1	Rotation	0.00 deg
Concatenations	1	R >> L	205 mm
Filter	None	A >> P	37 mm
Coil elements	B4;M2,3;T1	F >> H	16 mm
Contrast		Physio	
Flip angle	180 deg	1st Signal/Mode	None
Fat suppr.	Fat sat.	Composing	
Fat sat. mode	Strong		
Averaging mode	Long term	Sequence	~"
Reconstruction	Magnitude	Introduction	Off
Measurements	1	Dimension	3D
Multiple series	Off	Reordering	Centric
Pasalutian		Asymmetric echo	Allowed
Resolution	040	Contrasts	1
Base resolution	312	Bandwidth	890 Hz/Px
Phase resolution	100 %	Echo spacing	1 ms
Slice resolution	100 %	Turbo factor	10
Phase partial Fourier	Off	EPI factor	10 56
Slice partial Fourier	Off		
Interpolation	On	RF pulse type	Normal Foot
PAT mode	mSENSE	Gradient mode	Fast
Accel. factor PE	2	refocussing type	sinc 2560
Ref. lines PE		flip angle excit	90
	24 Sanarata	Crusher Momentum	30000
Reference scan mode	Separate	Crusher Time	1000
Raw filter	Off	phase encoding	ON
		Maxwell compensation	Off
Geometry		- ICE program	single
Series	Interleaved	prepscans	0
Sat. region 1		Refocusing Duration	7680
Thickness	28 mm	l	. 300

Thickness

28 mm

\\USER\Feinberglab\Test\GRASE-3D\BP_	grase clean	sat iso0 8
	grade dicarr	541 1555 5

TA: 0:12	PAT: 2	Voxel size: 0.8×0.8×0.8 mm	Rel. SNR: 1.00	USER: BP gra	se clean sat

Properties		Series	Interleaved
Prio Recon	Off	Sat. region 1	
Before measurement		Thickness	25 mm
After measurement		Position	L0.0 P20.8 H0.0
Load to viewer	On	Orientation	Coronal
Inline movie	Off	Special sat.	None
Auto store images	On		
Load to stamp segments	Off	Table position	Н
Load images to graphic	Off	Table position	0 mm
segments	.	Inline Composing	Off
Auto open inline display	Off	System	
Start measurement without	On	T1	On
further preparation	OII		_
Wait for user to start	Off	M2 B4	On
Start measurements	single	M3	On On
Start measurements	Sirigie	V32	Off
Routine			
Slab group 1	4	Positioning mode	FIX
Slabs	1	MSMA	S-C-T
Dist. factor	0 %	Sagittal	R >> L
Position	L0.0 P21.0 H59.0	Coronal	A >> P
Orientation	Transversal	Transversal	F >> H
Phase enc. dir.	A >> P	Save uncombined	Off
Rotation	0.00 deg	Coil Combine Mode	Sum of Squares
Phase oversampling	0 %	AutoAlign	
Slice oversampling	16.7 %	Auto Coil Select	Default
Slices per slab	12	Ohim mada	Oten dend
FoV read	120 mm	Shim mode	Standard
FoV phase	31.3 %	Adjust with body coil	Off
Slice thickness	0.8 mm	Confirm freq. adjustment	Off
TR	3000 ms	Assume Silicone	Off
TE	38.32 ms	? Ref. amplitude 1H	0.000 V
Averages	1	Adjustment Tolerance	Auto
Concatenations	1	Adjust volume	
Filter	None	! Position	L0.0 P21.0 H59.0
Coil elements	B4;M2,3;T1	! Orientation	Transversal
1	_ ,,,, , ,	! Rotation	0.00 deg
Contrast		! R >> L	205 mm
Flip angle	180 deg	! A >> P	37 mm
Fat suppr.	Fat sat.	! F >> H	16 mm
Fat sat. mode	Strong	Physio	
Averaging mode	Long term	1st Signal/Mode	None
Reconstruction	Magnitude	1	
Measurements	3	Composing	
Pause after meas. 1	0.0 s	Sequence	
Pause after meas. 2	0.0 s	Introduction	Off
Multiple series	Off	Dimension	3D
1		Reordering	Centric
Resolution		Asymmetric echo	Allowed
Base resolution	160	Contrasts	7 HOWEG 1
Phase resolution	100 %	Bandwidth	1 1302 Hz/Pv
Slice resolution	100 %		1302 Hz/Px
Phase partial Fourier	Off	Echo spacing	1 ms
Slice partial Fourier	Off	Turbo factor	14
Interpolation	On	EPI factor	50
PAT mode	GRAPPA	RF pulse type	Normal
		Gradient mode	Fast*
Accel. factor PE	2		
Ref. lines PE	24	refocussing type	sinc 2560
Accel. factor 3D	1	flip angle excit	90
Ref. lines 3D	14	Crusher Momentum	30000
Reference scan mode	Separate	Crusher Time	950
Raw filter	Off	phase encoding	ON
ı	-	Maxwell compensation	Off
Geometry		ICE program	single
		17/19	

prepscans 0 Refocusing Duration 7680

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