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\MARTINOS DEVELOPER

HUBER

Functional

FRISGO\_20250808

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## \MARTINOS DEVELOPER\HUBER\Functional\FRISGO\_20250808\scout\_axial

TA: 17 sec Coil Selection: Manual Voxel Size: 1.6x1.6x1.6 mm<sup>3</sup> Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	Off
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

**Resolution - Common**

FOV Read	260 mm
FOV Phase	100.0 %
Slice Thickness	1.600 mm
Base Resolution	160
Phase Resolution	100 %
Slice Resolution	69 %
Interpolation	Off

**Routine**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	L0.0 A16.0 H0.0 mm
Orientation	Transversal
Phase Encoding Dir.	A >> P
Slices per Slab	160
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	260 mm
FOV Phase	100.0 %
Slice Thickness	1.600 mm
TR	3.6 ms
TE	1.56 ms
Averages	1
Concatenations	1
AutoAlign	---
Coil Elements	AC

**Resolution - Acceleration**

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	24
Acceleration Factor 3D	1
Phase Partial Fourier	6/8
Slice Partial Fourier	6/8
Asymmetric Echo	Off
Elliptical Scanning	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	3D
Normalize	Off
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	L0.0 A16.0 H0.0 mm
Orientation	Transversal
Phase Encoding Dir.	A >> P
Slices per Slab	160
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	260 mm
FOV Phase	100.0 %
Slice Thickness	1.600 mm
TR	3.6 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slab Group	1
Position	L0.0 A16.0 H0.0 mm
Orientation	Transversal
Phase Encoding Dir.	A >> P
AutoAlign	---

**Contrast - Common**

TR	3.6 ms
TE	1.56 ms
MTC	Off
Magn. Preparation	None
Flip Angle	16 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
SWI	Off
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

**Geometry - AutoAlign**

Initial Position	L0.0 A16.0 H0.0
L	0.0 mm
A	16.0 mm
H	0.0 mm
Initial Orientation	Transversal
Initial Rotation	0.00 deg

**Physio - Signal**

1st Signal/Mode	None
TR	3.6 ms
Segments	1
Concatenations	1

**Geometry - Saturation**

Saturation Mode	Standard
Special Saturation	None

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H

**System - Miscellaneous**

Coil Selection	Manual
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Tune up
B1 Shim	TrueForm
Adjustment Tolerance	Auto
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	L0.0 A36.7 F31.6 mm
! Orientation	Transversal
! Rotation	0.00 deg
! A >> P	263 mm
! R >> L	350 mm
! F >> H	350 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Non-sel.

**System - Tx/Rx**

Frequency 1H	297.117954 MHz
! Ref. Amplitude 1H	250.000 V
Reset	Off
Correction Factor	1.00
Image Scaling	1.000

**Physio - Cardiac**

Tagging	None
Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FOV Read	260 mm
FOV Phase	100.0 %
Phase Resolution	100 %

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Liver**

Liver Registration	Off
Save Original Images	On

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Soft Tissue**

Wash-in	Off
Wash-out	Off
TTP	Off
PEI	Off
MIP Time	Off
Measurements	1

**Inline - Composing**

Maplt	None
Flip Angle	16 deg
Measurements	1
Contrasts	1

**Inline - Maplt**

TE	1.56 ms
TR	3.6 ms
Save Original Images	On

**Sequence - Part 1**

Sequence Name	fl
Dimension	3D
Excitation	Non-sel.
RF Pulse Type	Fast
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	540 Hz/Px
Asymmetric Echo	Off
Segments	1

**Sequence - Part 2**

Introduction	Off
RF Spoiling	On
Acoustic noise reduction	Off

**Sequence - Nuclei**

TX/RX Nucleus	1H
TX/RX Delta Frequency	0 Hz
TX Nucleus	None
TX Delta Frequency	0 Hz
Coil Elements	AC

**Sequence - Special**

Readout polarity	Positive
Image processing	Standard
Apply echo spacing	Off
Echo spacing	0 us
Delta echo spacing	0 us
Dummy scans	0 ms
RF pulse duration	100 us
Gradient spoiling	Siemens
Gradient moment factor	1.00
Receiver gain mode	Siemens
Number of segments	1
Current segment	0
Lines before/after seg	0

**Sequence - Assistant**

SAR Assistant	Off
Allowed Delay	0 s

\MARTINOS DEVELOPER\HUBER\Functional\FRISGO\_20250808\scout\_sag

TA: 13 sec Coil Selection: Manual Voxel Size: 1.6x1.6x1.6 mm<sup>3</sup> Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	Off
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

**Resolution - Common**

FOV Read	260 mm
FOV Phase	100.0 %
Slice Thickness	1.600 mm
Base Resolution	160
Phase Resolution	100 %
Slice Resolution	69 %
Interpolation	Off

**Routine**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	L0.0 A16.0 H0.0 mm
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	128
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	260 mm
FOV Phase	100.0 %
Slice Thickness	1.600 mm
TR	3.5 ms
TE	1.51 ms
Averages	1
Concatenations	1
AutoAlign	---
Coil Elements	AC

**Resolution - Acceleration**

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	24
Acceleration Factor 3D	1
Phase Partial Fourier	6/8
Slice Partial Fourier	6/8
Asymmetric Echo	Allowed
Elliptical Scanning	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	3D
Normalize	Off
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	L0.0 A16.0 H0.0 mm
Orientation	Sagittal
Phase Encoding Dir.	A >> P
Slices per Slab	128
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	260 mm
FOV Phase	100.0 %
Slice Thickness	1.600 mm
TR	3.5 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slab Group	1
Position	L0.0 A16.0 H0.0 mm
Orientation	Sagittal
Phase Encoding Dir.	A >> P
AutoAlign	---

**Contrast - Common**

TR	3.5 ms
TE	1.51 ms
MTC	Off
Magn. Preparation	None
Flip Angle	16 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
SWI	Off
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

**Geometry - AutoAlign**

Initial Position	L0.0 A16.0 H0.0
L	0.0 mm
A	16.0 mm
H	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	0.00 deg

**Physio - Signal**

1st Signal/Mode	None
TR	3.5 ms
Segments	1
Concatenations	1

**Geometry - Saturation**

Saturation Mode	Standard
Special Saturation	None

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H

**System - Miscellaneous**

Coil Selection	Manual
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Tune up
B1 Shim	TrueForm
Adjustment Tolerance	Auto
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	L0.0 A36.7 F31.6 mm
! Orientation	Transversal
! Rotation	0.00 deg
! A >> P	263 mm
! R >> L	350 mm
! F >> H	350 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Non-sel.

**System - Tx/Rx**

Frequency 1H	297.117954 MHz
! Ref. Amplitude 1H	250.000 V
Reset	Off
Correction Factor	1.00
Image Scaling	1.000

**Physio - Cardiac**

Tagging	None
Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FOV Read	260 mm
FOV Phase	100.0 %
Phase Resolution	100 %

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Liver**

Liver Registration	Off
Save Original Images	On

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Soft Tissue**

Wash-in	Off
Wash-out	Off
TTP	Off
PEI	Off
MIP Time	Off
Measurements	1

**Inline - Composing**

Maplt	None
Flip Angle	16 deg
Measurements	1
Contrasts	1

**Inline - Maplt**

TE	1.51 ms
TR	3.5 ms
Save Original Images	On

**Sequence - Part 1**

Sequence Name	fl
Dimension	3D
Excitation	Non-sel.
RF Pulse Type	Fast
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	540 Hz/Px
Asymmetric Echo	Allowed
Segments	1

**Sequence - Part 2**

Introduction	Off
RF Spoiling	On
Acoustic noise reduction	Off

**Sequence - Nuclei**

TX/RX Nucleus	1H
TX/RX Delta Frequency	0 Hz
TX Nucleus	None
TX Delta Frequency	0 Hz
Coil Elements	AC

**Sequence - Special**

Readout polarity	Positive
Image processing	Standard
Apply echo spacing	Off
Echo spacing	0 us
Delta echo spacing	0 us
Dummy scans	0 ms
RF pulse duration	100 us
Gradient spoiling	Siemens
Gradient moment factor	1.00
Receiver gain mode	Siemens
Number of segments	1
Current segment	0
Lines before/after seg	0

**Sequence - Assistant**

SAR Assistant	Off
Allowed Delay	0 s

\MARTINOS DEVELOPER\HUBER\Functional\FRISGO\_20250808\scout\_cor

TA: 13 sec Coil Selection: Manual Voxel Size: 1.6x1.6x1.6 mm<sup>3</sup> Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	Off
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	On
Graphic segment	Default
Inline Movie	Off

**Resolution - Common**

FOV Read	260 mm
FOV Phase	100.0 %
Slice Thickness	1.600 mm
Base Resolution	160
Phase Resolution	100 %
Slice Resolution	69 %
Interpolation	Off

**Routine**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	L0.0 A21.6 F1.2 mm
Orientation	Coronal
Phase Encoding Dir.	R >> L
Slices per Slab	128
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	260 mm
FOV Phase	100.0 %
Slice Thickness	1.600 mm
TR	3.5 ms
TE	1.51 ms
Averages	1
Concatenations	1
AutoAlign	---
Coil Elements	AC

**Resolution - Acceleration**

Acceleration Mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	24
Acceleration Factor 3D	1
Phase Partial Fourier	6/8
Slice Partial Fourier	6/8
Asymmetric Echo	Allowed
Elliptical Scanning	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	3D
Normalize	Off
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Distance Factor	20 %
Position	L0.0 A21.6 F1.2 mm
Orientation	Coronal
Phase Encoding Dir.	R >> L
Slices per Slab	128
Phase Oversampling	0 %
Slice Oversampling	0.0 %
FOV Read	260 mm
FOV Phase	100.0 %
Slice Thickness	1.600 mm
TR	3.5 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slab Group	1
Position	L0.0 A21.6 F1.2 mm
Orientation	Coronal
Phase Encoding Dir.	R >> L
AutoAlign	---

**Contrast - Common**

TR	3.5 ms
TE	1.51 ms
MTC	Off
Magn. Preparation	None
Flip Angle	16 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
SWI	Off
Reconstruction	Magnitude

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

**Geometry - AutoAlign**

Initial Position	L0.0 A21.6 F1.2
L	0.0 mm
A	21.6 mm
F	1.2 mm
Initial Orientation	Coronal
Initial Rotation	0.00 deg

**Physio - Signal**

1st Signal/Mode	None
TR	3.5 ms
Segments	1
Concatenations	1

**Geometry - Saturation**

Saturation Mode	Standard
Special Saturation	None

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H

**System - Miscellaneous**

Coil Selection	Manual
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Tune up
B1 Shim	TrueForm
Adjustment Tolerance	Auto
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	L0.0 A36.7 F31.6 mm
! Orientation	Transversal
! Rotation	0.00 deg
! A >> P	263 mm
! R >> L	350 mm
! F >> H	350 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Non-sel.

**System - Tx/Rx**

Frequency 1H	297.117954 MHz
! Ref. Amplitude 1H	250.000 V
Reset	Off
Correction Factor	1.00
Image Scaling	1.000

**Physio - Cardiac**

Tagging	None
Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FOV Read	260 mm
FOV Phase	100.0 %
Phase Resolution	100 %

**Physio - PACE**

Resp. Control	Off
Concatenations	1

**Inline - Liver**

Liver Registration	Off
Save Original Images	On

**Inline - Subtraction**

Subtract	Off
Measurements	1
StdDev	Off
Save Original Images	On

**Inline - MIP**

MIP Sag	Off
MIP Cor	Off
MIP Tra	Off
MIP Time	Off
Radial MIP	Off
Save Original Images	On
MPR Sag	Off
MPR Cor	Off
MPR Tra	Off

**Inline - Soft Tissue**

Wash-in	Off
Wash-out	Off
TTP	Off
PEI	Off
MIP Time	Off
Measurements	1

**Inline - Composing**

Maplt	None
Flip Angle	16 deg
Measurements	1
Contrasts	1

**Inline - Maplt**

TE	1.51 ms
TR	3.5 ms
Save Original Images	On

**Sequence - Part 1**

Sequence Name	fl
Dimension	3D
Excitation	Non-sel.
RF Pulse Type	Fast
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	540 Hz/Px
Asymmetric Echo	Allowed
Segments	1

**Sequence - Part 2**

Introduction	Off
RF Spoiling	On
Acoustic noise reduction	Off

**Sequence - Nuclei**

TX/RX Nucleus	1H
TX/RX Delta Frequency	0 Hz
TX Nucleus	None
TX Delta Frequency	0 Hz
Coil Elements	AC

**Sequence - Special**

Readout polarity	Positive
Image processing	Standard
Apply echo spacing	Off
Echo spacing	0 us
Delta echo spacing	0 us
Dummy scans	0 ms
RF pulse duration	100 us
Gradient spoiling	Siemens
Gradient moment factor	1.00
Receiver gain mode	Siemens
Number of segments	1
Current segment	0
Lines before/after seg	0

**Sequence - Assistant**

SAR Assistant	Off
Allowed Delay	0 s

\MARTINOS DEVELOPER\HUBER\Functional\FRISGO\_20250808\rslh\_ep3d\_0.39\_FRISGO\_run1\_RO

TA: 10:54 min Coil Selection: Manual Voxel Size: 0.4x0.4x0.4 mm<sup>3</sup> Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Resolution - Common**

FOV Read	140 mm
FOV Phase	100.0 %
Slice Thickness	0.39 mm
Base Resolution	356
Phase Resolution	100 %
Slice Resolution	100 %
Interpolation	Off

**Routine**

Slab Group	1
Slabs	1
Position	R1.9 P52.4 F29.2 mm
Orientation	C > T-0.9
Phase Encoding Dir.	H >> F
Slices per Slab	18
Phase Oversampling	0.0 %
Slice Oversampling	0.0 %
FOV Read	140 mm
FOV Phase	100.0 %
Slice Thickness	0.39 mm
TR	49.5 ms
Vol. TR	3564 ms
TE 1	17.60 ms
Averages	1
Multi-echo Shots	1
AutoAlign	---
Coil Elements	AC

**Resolution - Acceleration**

Acceleration Mode	CAIPIRINHA
Reference Scans	GRE/Separate
Acceleration Factor PE	1
Reference Lines PE	75
Acceleration Factor 3D	3
Reference Lines 3D	18
Reordering Shift 3D	2
Phase Partial Fourier	6/8
Slice Partial Fourier	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	Off
Normalize	Off
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Position	R1.9 P52.4 F29.2 mm
Orientation	C > T-0.9
Phase Encoding Dir.	H >> F
Slices per Slab	18
Phase Oversampling	0.0 %
Slice Oversampling	0.0 %
FOV Read	140 mm
FOV Phase	100.0 %
Slice Thickness	0.39 mm
TR	49.5 ms
Vol. TR	3564 ms
Multi-echo Shots	1

**Contrast - Common**

TR	49.5 ms
Vol. TR	3564 ms
TE 1	17.60 ms
Multi-echo spacing	41.40 ms
MTC	Off
Flip Angle	15 deg
Fat-Water Contrast	Standard
Magn. Prep. Shots	1
Contrasts	1
Reconstruction	Magnitude

**Geometry - AutoAlign**

Slab Group	1
Position	R1.9 P52.4 F29.2 mm
Orientation	C > T-0.9
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	R1.9 P52.4 F29.2
R	1.9 mm

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	180
Reordering	Linear

**Geometry - AutoAlign**

P	52.4 mm
F	29.2 mm
Initial Orientation	C > T
C > T	-0.90
> S	0.00
Initial Rotation	-90.00 deg

**Geometry - Saturation**

Saturation Mode	Standard
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H

**System - Miscellaneous**

Coil Selection	Manual
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Brain
B1 Shim	TrueForm
Adjustment Tolerance	Auto
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	R0.6 P44.1 F27.1 mm
! Orientation	C > T-0.6
! Rotation	90.00 deg
! F >> H	95 mm
! R >> L	99 mm
! A >> P	24 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Slab-sel.

**System - Tx/Rx**

Frequency 1H	297.117954 MHz
! Ref. Amplitude 1H	370.000 V
Reset	Off
Correction Factor	1.00
Image Scaling	1.000

**Sequence - Part 1**

Sequence Name	vaso a2d6453
Dimension	3D
Excitation	Slab-sel.
RF Pulse Type	Normal
Gradient Mode	Fast
Reordering	Linear
Bandwidth	668 Hz/Px
Echo Spacing	1.72 ms
Turbo Factor	72
Segmentation	12
EPI Factor	23

**Sequence - Part 2**

Introduction	On
RF Spoiling	On

**Sequence - Special**

RF duration	1500 us
RF time x BW	8
PAT ref. FA	3 deg
Fat sat. FA	110 deg
T1 (Ernst FA)	1200 ms
Invert PE	Off
Min. TE w/ PF	On
Ramp Sampling	On
Trigger per shot	Off
Noise image	Off
Relax spoilers	Off
Round up Vol. TR	Off
MT flip angle	500 deg
MT off-res.	2000 Hz
MT RF duration	10240 us
Custom Water Exc.	-none-
Phase Correction	per Series
Saturation RF	per Shot
EPI rise time factor	1.43
G. spoil dephasing[1]	0.0 pi
G. spoil dephasing[2]	4.0 pi
G. spoil dephasing[3]	2.0 pi
Modify Ice Config	On
G-factor map	Off
GRAPPA Regularization	5000 /10^6
Slab Scale	-10 %
RF spoil scheme	Conventional
Read polarity	Regular RO

**Sequence - Assistant**

SAR Assistant	Off
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\MARTINOS DEVELOPER\HUBER\Functional\FRISGO\_20250808\rslh\_ep3d\_0.39\_FRISGO\_run2\_OR

TA: 10:54 min Coil Selection: Manual Voxel Size: 0.4x0.4x0.4 mm<sup>3</sup> Acc:: 3 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	On
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Resolution - Common**

FOV Read	140 mm
FOV Phase	100.0 %
Slice Thickness	0.39 mm
Base Resolution	356
Phase Resolution	100 %
Slice Resolution	100 %
Interpolation	Off

**Routine**

Slab Group	1
Slabs	1
Position	R1.9 P52.4 F29.2 mm
Orientation	C > T-0.9
Phase Encoding Dir.	H >> F
Slices per Slab	18
Phase Oversampling	0.0 %
Slice Oversampling	0.0 %
FOV Read	140 mm
FOV Phase	100.0 %
Slice Thickness	0.39 mm
TR	49.5 ms
Vol. TR	3564 ms
TE 1	17.60 ms
Averages	1
Multi-echo Shots	1
AutoAlign	---
Coil Elements	AC

**Resolution - Acceleration**

Acceleration Mode	CAIPIRINHA
Reference Scans	GRE/Separate
Acceleration Factor PE	1
Reference Lines PE	75
Acceleration Factor 3D	3
Reference Lines 3D	18
Reordering Shift 3D	2
Phase Partial Fourier	6/8
Slice Partial Fourier	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	Off
Normalize	Off
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Position	R1.9 P52.4 F29.2 mm
Orientation	C > T-0.9
Phase Encoding Dir.	H >> F
Slices per Slab	18
Phase Oversampling	0.0 %
Slice Oversampling	0.0 %
FOV Read	140 mm
FOV Phase	100.0 %
Slice Thickness	0.39 mm
TR	49.5 ms
Vol. TR	3564 ms
Multi-echo Shots	1

**Contrast - Common**

TR	49.5 ms
Vol. TR	3564 ms
TE 1	17.60 ms
Multi-echo spacing	41.40 ms
MTC	Off
Flip Angle	15 deg
Fat-Water Contrast	Standard
Magn. Prep. Shots	1
Contrasts	1
Reconstruction	Magnitude

**Geometry - AutoAlign**

Slab Group	1
Position	R1.9 P52.4 F29.2 mm
Orientation	C > T-0.9
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	R1.9 P52.4 F29.2
R	1.9 mm

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	180
Reordering	Linear

**Geometry - AutoAlign**

P	52.4 mm
F	29.2 mm
Initial Orientation	C > T
C > T	-0.90
> S	0.00
Initial Rotation	-90.00 deg

**Geometry - Saturation**

Saturation Mode	Standard
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H

**System - Miscellaneous**

Coil Selection	Manual
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Brain
B1 Shim	TrueForm
Adjustment Tolerance	Auto
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

! Position	R0.6 P44.1 F27.1 mm
! Orientation	C > T-0.6
! Rotation	90.00 deg
! F >> H	95 mm
! R >> L	99 mm
! A >> P	24 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Slab-sel.

**System - Tx/Rx**

Frequency 1H	297.117954 MHz
! Ref. Amplitude 1H	370.000 V
Reset	Off
Correction Factor	1.00
Image Scaling	1.000

**Sequence - Part 1**

Sequence Name	vaso a2d6453
Dimension	3D
Excitation	Slab-sel.
RF Pulse Type	Normal
Gradient Mode	Fast
Reordering	Linear
Bandwidth	668 Hz/Px
Echo Spacing	1.72 ms
Turbo Factor	72
Segmentation	12
EPI Factor	23

**Sequence - Part 2**

Introduction	On
RF Spoiling	On

**Sequence - Special**

RF duration	1500 us
RF time x BW	8
PAT ref. FA	3 deg
Fat sat. FA	110 deg
T1 (Ernst FA)	1200 ms
Invert PE	Off
Min. TE w/ PF	On
Ramp Sampling	On
Trigger per shot	Off
Noise image	Off
Relax spoilers	Off
Round up Vol. TR	Off
MT flip angle	500 deg
MT off-res.	2000 Hz
MT RF duration	10240 us
Custom Water Exc.	-none-
Phase Correction	per Series
Saturation RF	per Shot
EPI rise time factor	1.43
G. spoil dephasing[1]	0.0 pi
G. spoil dephasing[2]	4.0 pi
G. spoil dephasing[3]	2.0 pi
Modify Ice Config	On
G-factor map	Off
GRAPPA Regularization	5000 /10^6
Slab Scale	-10 %
RF spoil scheme	Conventional
Read polarity	Inverted RO

**Sequence - Assistant**

SAR Assistant	Off
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TA: 6:27 min Coil Selection: Manual Voxel Size: 0.4x0.4x0.4 mm<sup>3</sup> Acc:: 6 Rel. SNR: 1.00**Properties**

Start measurement without further preparation	Off
Wait for User to Start	Off
Start measurements	Single Measurement
Prio Recon	Off
Auto Open Inline Display	Off
Auto Close Inline Display	Off
Load Images to MR View&GO	On
Auto Store Images	On
Disable auto transfer to PACS	Off
Load Images to Stamp Segments	Off
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

**Contrast - Dynamic**

Dynamic Mode	Standard
Measurements	1
Reordering	Linear

**Resolution - Common**

FOV Read	165 mm
FOV Phase	112.7 %
Slice Thickness	0.35 mm
Base Resolution	466
Phase Resolution	100 %
Slice Resolution	100 %
Interpolation	Off

**Routine**

Slab Group	1
Slabs	1
Position	L0.0 A4.2 F26.9 mm
Orientation	T > C-12.6
Phase Encoding Dir.	A >> P
Slices per Slab	352
Phase Oversampling	2.9 %
Slice Oversampling	0.0 %
FOV Read	165 mm
FOV Phase	112.7 %
Slice Thickness	0.35 mm
TR	60.0 ms
Vol. TR	380.16 s
TE 1	10.60 ms
TE 2	27.20 ms
TE 3	43.80 ms
Averages	1
Multi-echo Shots	1
AutoAlign	---
Coil Elements	AC

**Resolution - Acceleration**

Acceleration Mode	CAIPIRINHA
Reference Scans	GRE/Separate
Acceleration Factor PE	3
Reference Lines PE	24
Acceleration Factor 3D	2
Reference Lines 3D	24
Reordering Shift 3D	1
Phase Partial Fourier	Off
Slice Partial Fourier	Off

**Resolution - Filter**

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	Off
Normalize	Off
Image Filter	Off

**Geometry - Common**

Slab Group	1
Slabs	1
Position	L0.0 A4.2 F26.9 mm
Orientation	T > C-12.6
Phase Encoding Dir.	A >> P
Slices per Slab	352
Phase Oversampling	2.9 %
Slice Oversampling	0.0 %
FOV Read	165 mm
FOV Phase	112.7 %
Slice Thickness	0.35 mm
TR	60.0 ms
Vol. TR	380.16 s
Multi-echo Shots	1

**Contrast - Common**

TR	60.0 ms
Vol. TR	380.16 s
TE 1	10.60 ms
TE 2	27.20 ms
TE 3	43.80 ms
Multi-echo spacing	16.60 ms
MTC	Off
Flip Angle	15 deg
Fat-Water Contrast	Standard
Magn. Prep. Shots	1
Contrasts	3
Reconstruction	Magnitude

**Geometry - AutoAlign**

Slab Group	1
Position	L0.0 A4.2 F26.9 mm

**Geometry - AutoAlign**

Orientation	T > C-12.6
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	L0.0 A4.2 F26.9
L	0.0 mm
A	4.2 mm
F	26.9 mm
Initial Orientation	T > C
T > C	-12.60
> S	0.00
Initial Rotation	0.00 deg

**Geometry - Saturation**

Saturation Mode	Standard
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**Geometry - Tim Planning Suite**

Set-n-Go Protocol	Off
Table Position	0 mm
Table Position	H

**System - Miscellaneous**

Coil Selection	Manual
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combination	Adaptive Combine
Matrix Optimization	Off

**System - Adjustments**

Adjustment Strategy	Standard
B0 Shim	Brain
B1 Shim	TrueForm
Adjustment Tolerance	Auto
Confirm Frequency	Never
Assume Silicone	Off

**System - Adjust Volume**

Position	L0.0 A4.2 F26.9 mm
Orientation	T > C-12.6
Rotation	90.00 deg
R >> L	165 mm
A >> P	186 mm
F >> H	124 mm
Reset	Off

**System - pTx**

B1 Shim	TrueForm
Excitation	Slab-sel.

**System - Tx/Rx**

Frequency 1H	297.117954 MHz
? Ref. Amplitude 1H	0.000 V

**System - Tx/Rx**

Reset	Off
Correction Factor	1.00
Image Scaling	1.000

**Sequence - Part 1**

Sequence Name	vaso a2d6453
Dimension	3D
Excitation	Slab-sel.
RF Pulse Type	Normal
Gradient Mode	Normal
Reordering	Linear
Bandwidth	466 Hz/Px
Echo Spacing	2.83 ms
Turbo Factor	6336
Segmentation	36
EPI Factor	5

**Sequence - Part 2**

Introduction	On
RF Spoiling	On

**Sequence - Special**

RF duration	1000 us
RF time x BW	20
PAT ref. FA	3 deg
Fat sat. FA	110 deg
T1 (Ernst FA)	1200 ms
Invert PE	Off
Min. TE w/ PF	On
Ramp Sampling	On
Trigger per shot	Off
Noise image	Off
Relax spoilers	Off
Round up Vol. TR	Off
MT flip angle	500 deg
MT off-res.	2000 Hz
MT RF duration	10240 us
Custom Water Exc.	-none-
Phase Correction	per Series
Saturation RF	per Shot
EPI rise time factor	1.10
G. spoil dephasing[1]	0.0 pi
G. spoil dephasing[2]	4.0 pi
G. spoil dephasing[3]	2.0 pi
Modify Ice Config	On
G-factor map	Off
GRAPPA Regularization	10 /10^6
Slab Scale	-10 %
RF spoil scheme	Conventional
Read polarity	Regular RO

**Sequence - Assistant**

SAR Assistant	Off
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