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\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\localizer

TA: 0:13 PM: FIX Voxel size: 0.5×0.5×5.0 mmPAT: Off Rel. SNR: 1.00 : qfl

**Properties**

Prio recon	On
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	On
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	On
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	3
Dist. factor	20 %
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2
Slices	1
Dist. factor	20 %
Position	Isocenter
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	3
Slices	1
Dist. factor	20 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	250 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
TR	8.6 ms
TE	3.69 ms
Averages	1
Concatenations	5
Filter	Distortion Corr.(2D), Elliptical filter
Coil elements	CSP

**Contrast - Common**

TR	8.6 ms
TE	3.69 ms
TD	0 ms
MTC	Off
Magn. preparation	None
Flip angle	20 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

**Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magnitude
Measurements	1

**Contrast - Dynamic**

Multiple series	Each measurement
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**Resolution - Common**

FoV read	250 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
Base resolution	256
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	On

**Resolution - iPAT**

PAT mode	None
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**Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	On

**Geometry - Common**

Slice group	1
Slices	3
Dist. factor	20 %
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2
Slices	1
Dist. factor	20 %
Position	Isocenter
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	3
Slices	1
Dist. factor	20 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	250 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
TR	8.6 ms
Multi-slice mode	Sequential
Series	Interleaved
Concatenations	5

**Geometry - AutoAlign**

Slice group	1
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice group	2

**Geometry - AutoAlign**

Position	Isocenter
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	3
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Sagittal

**Geometry - Saturation**

Saturation mode	Standard
Fat suppr.	None
Water suppr.	None
Special sat.	None

**Geometry - Tim CT**

Tim CT mode	Off
Slices	1
Slice thickness	5.0 mm
Dist. factor	20 %
FoV read	250 mm
FoV phase	100.0 %
Segments	1

**System - Miscellaneous**

Positioning mode	FIX
Table position	F
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Off - AutoCoilSelect

**System - Adjustments**

B0 Shim mode	Tune up
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1

**System - Tx/Rx**

Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	8.6 ms
Concatenations	5
Segments	1

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	250 mm
FoV phase	100.0 %
Phase resolution	100 %

**Physio - PACE**

Resp. control	Off
Concatenations	5

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Liver registration	Off
Save original images	On

**Inline - MIP**

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

**Inline - Soft Tissue**

Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
Measurements	1

**Inline - Composing**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Flow comp.	No
Multi-slice mode	Sequential
Bandwidth	320 Hz/Px

**Sequence - Part 2**

Segments	1
Acoustic noise reduction	Active

**Sequence - Part 2**

RF pulse type	Normal
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On

**Sequence - Nuclei**

TX/RX Nucleus	<sup>1</sup> H
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	CSP

**Sequence - Assistant**

Mode	Off
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\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\localizer\_cor

TA: 0:13 PM: ISO Voxel size: 1.0×1.0×5.0 mmPAT: Off Rel. SNR: 1.00 : fl

**Properties**

Prio recon	On
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	On
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	7
Dist. factor	10 %
Position	L1.3 A12.9 F11.3 mm
Orientation	C > T6.0 > S0.6
Phase enc. dir.	R >> L
AutoAlign	---
Phase oversampling	0 %
FoV read	320 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
TR	7.8 ms
TE	3.12 ms
Averages	1
Concatenations	7
Filter	Distortion Corr.(2D), Elliptical filter
Coil elements	CSP

**Contrast - Common**

TR	7.8 ms
TE	3.12 ms
TD	0 ms
MTC	Off
Magn. preparation	None
Flip angle	20 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

**Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

**Resolution - Common**

FoV read	320 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
Base resolution	320
Phase resolution	100 %
Phase partial Fourier	6/8
Interpolation	Off

**Resolution - iPAT**

PAT mode	None
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**Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	On

**Geometry - Common**

Slice group	1
Slices	7
Dist. factor	10 %
Position	L1.3 A12.9 F11.3 mm
Orientation	C > T6.0 > S0.6
Phase enc. dir.	R >> L
FoV read	320 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
TR	7.8 ms
Multi-slice mode	Sequential
Series	Interleaved
Concatenations	7

**Geometry - AutoAlign**

Slice group	1
Position	L1.3 A12.9 F11.3 mm
Orientation	C > T6.0 > S0.6
Phase enc. dir.	R >> L
AutoAlign	---
Initial Position	L1.3 A12.9 F11.3
L	1.3 mm
A	12.9 mm
F	11.3 mm
Initial Rotation	0.00 deg
Initial Orientation	C > T
C > T	6.0
> S	0.6

**Geometry - Saturation**

Saturation mode	Standard
Fat suppr.	None
Water suppr.	None
Special sat.	None

**Geometry - Tim CT**

Tim CT mode	Off
Slices	7
Slice thickness	5.0 mm
Dist. factor	10 %
FoV read	320 mm
FoV phase	100.0 %
Segments	1

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	11 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Tune up
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	7.8 ms
Concatenations	7
Segments	1

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	320 mm
FoV phase	100.0 %
Phase resolution	100 %

**Physio - PACE**

Resp. control	Off
Concatenations	7

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Liver registration	Off
Save original images	On

**Inline - MIP**

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

**Inline - Soft Tissue**

Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
Measurements	1

**Inline - Composing**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	Off
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Flow comp.	No
Multi-slice mode	Sequential
Bandwidth	260 Hz/Px

**Sequence - Part 2**

Segments	1
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Whisper
Excitation	Slice-sel.
RF spoiling	On

**Sequence - Nuclei**

TX/RX Nucleus	1H
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	CSP

**Sequence - Assistant**

Mode	Off
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\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\localizer\_sag

TA: 9.4 s PM: ISO Voxel size: 1.0×1.0×5.0 mmPAT: Off Rel. SNR: 1.00 : fl

**Properties**

Prio recon	On
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	On
Load images to graphic segments	On
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	5
Dist. factor	100 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	320 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
TR	7.8 ms
TE	3.12 ms
Averages	1
Concatenations	5
Filter	Distortion Corr.(2D), Elliptical filter
Coil elements	CSP

**Contrast - Common**

TR	7.8 ms
TE	3.12 ms
TD	0 ms
MTC	Off
Magn. preparation	None
Flip angle	20 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

**Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

**Resolution - Common**

FoV read	320 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
Base resolution	320
Phase resolution	100 %
Phase partial Fourier	6/8
Interpolation	Off

**Resolution - iPAT**

PAT mode	None
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**Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	On

**Geometry - Common**

Slice group	1
Slices	5
Dist. factor	100 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
FoV read	320 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
TR	7.8 ms
Multi-slice mode	Sequential
Series	Interleaved
Concatenations	5

**Geometry - AutoAlign**

Slice group	1
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	R4.7 A21.1 F4.6
R	4.7 mm
A	21.1 mm
F	4.6 mm
Initial Rotation	0.00 deg
Initial Orientation	S > C
S > C	0.3
> T	-0.1

**Geometry - Saturation**

Saturation mode	Standard
Fat suppr.	None
Water suppr.	None
Special sat.	None

**Geometry - Tim CT**

Tim CT mode	Off
Slices	5
Slice thickness	5.0 mm
Dist. factor	100 %
FoV read	320 mm
FoV phase	100.0 %
Segments	1

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	5 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Tune up
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	263 mm
R >> L	350 mm
F >> H	350 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	7.8 ms
Concatenations	5
Segments	1

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	320 mm
FoV phase	100.0 %
Phase resolution	100 %

**Physio - PACE**

Resp. control	Off
Concatenations	5

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Liver registration	Off
Save original images	On

**Inline - MIP**

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

**Inline - Soft Tissue**

Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
Measurements	1

**Inline - Composing**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	Off
Dimension	2D
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Flow comp.	No
Multi-slice mode	Sequential
Bandwidth	260 Hz/Px

**Sequence - Part 2**

Segments	1
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Whisper
Excitation	Slice-sel.
RF spoiling	On

**Sequence - Nuclei**

TX/RX Nucleus	1H
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	CSP

**Sequence - Assistant**

Mode	Off
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\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\tfl\_b1map\_sag\_7sl\_auto

TA: 0:14 PM: FIX Voxel size: 1.0×1.0×2.0 mmPAT: Off Rel. SNR: 1.00 : tfl

**Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	7
Dist. factor	100 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	200 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	6460.0 ms
TE	2.29 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D)
Coil elements	CSP

**Contrast - Common**

TR	6460.0 ms
TE	2.29 ms
Magn. preparation	None
Flip angle	10 deg
Fat suppr.	None
Water suppr.	None

**Contrast - Dynamic**

Averages	1
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

**Resolution - Common**

FoV read	200 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
Base resolution	192
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

**Resolution - iPAT**

PAT mode	None
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**Resolution - Filter Image**

Image Filter	Off
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**Resolution - Filter Image**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	7
Dist. factor	100 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
FoV read	200 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	6460.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice group	1
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	R4.7 A21.1 H0.4
R	4.7 mm
A	21.1 mm
F	0.4 mm
Initial Rotation	0.00 deg
Initial Orientation	S > C
S > C	0.3
> T	-0.1

**System - Miscellaneous**

Positioning mode	FIX
Table position	F
Table position	5 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off

**System - Adjustments**

Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L0.9 A9.9 F7.0 mm
! Orientation	T > S2.3 > C-2.2
! Rotation	-0.18 deg
! A >> P	51 mm
! R >> L	59 mm
! F >> H	112 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	Off
Dimension	2D
Asymmetric echo	Allowed
Flow comp.	No
Multi-slice mode	Interleaved
Echo spacing	4.8 ms
Bandwidth	490 Hz/Px

**Sequence - Part 2**

RF pulse type	Low SAR
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
Turbo factor	192

**Sequence - Assistant**

Mode	Off
------	-----

\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\tfl\_b1map\_sag\_7sl\_manual

TA: 0:14 PM: FIX Voxel size: 1.0×1.0×2.0 mmPAT: Off Rel. SNR: 1.00 : tfl

**Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	7
Dist. factor	100 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	200 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	6460.0 ms
TE	2.29 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D)
Coil elements	CSP

**Contrast - Common**

TR	6460.0 ms
TE	2.29 ms
Magn. preparation	None
Flip angle	10 deg
Fat suppr.	None
Water suppr.	None

**Contrast - Dynamic**

Averages	1
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

**Resolution - Common**

FoV read	200 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
Base resolution	192
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

**Resolution - iPAT**

PAT mode	None
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**Resolution - Filter Image**

Image Filter	Off
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**Resolution - Filter Image**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	7
Dist. factor	100 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
FoV read	200 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	6460.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice group	1
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	R4.7 A21.1 H0.4
R	4.7 mm
A	21.1 mm
F	0.4 mm
Initial Rotation	0.00 deg
Initial Orientation	S > C
S > C	0.3
> T	-0.1

**System - Miscellaneous**

Positioning mode	FIX
Table position	F
Table position	5 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off

**System - Adjustments**

Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L0.9 A9.9 F7.0 mm
! Orientation	T > S2.3 > C-2.2
! Rotation	-0.18 deg
! A >> P	51 mm
! R >> L	59 mm
! F >> H	112 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	365.000 V

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	Off
Dimension	2D
Asymmetric echo	Allowed
Flow comp.	No
Multi-slice mode	Interleaved
Echo spacing	4.8 ms
Bandwidth	490 Hz/Px

**Sequence - Part 2**

RF pulse type	Low SAR
Gradient mode	Normal
Excitation	Slice-sel.
RF spoiling	On
Turbo factor	192

**Sequence - Assistant**

Mode	Off
------	-----

\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\b0map\_gre\_field\_sag\_1x1x2\_7sl

TA: 1:17 PM: FIX Voxel size: 1.0×1.0×2.0 mmRel. SNR: 1.00 : fm

**Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	7
Dist. factor	10 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	200.0 ms
TE 1	3.06 ms
TE 2	4.08 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	CSP

**Contrast - Common**

TR	200.0 ms
TE 1	3.06 ms
TE 2	4.08 ms
MTC	Off
Flip angle	32 deg
Fat suppr.	None

**Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magn./Phase
Measurements	1
Multiple series	Off

**Resolution - Common**

FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
Base resolution	192
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

**Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	Off

**Resolution - Filter Image**

Prescan Normalize	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	7
Dist. factor	10 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	200.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice group	1
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	R4.7 A21.1 H0.4
R	4.7 mm
A	21.1 mm
F	0.4 mm
Initial Rotation	0.00 deg
Initial Orientation	S > C
S > C	0.3
> T	-0.1

**Geometry - Saturation**

Fat suppr.	None
Special sat.	None

**System - Miscellaneous**

Positioning mode	FIX
Table position	F
Table position	5 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off

**System - Adjustments**

Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L0.9 A9.9 F7.0 mm
! Orientation	T > S2.3 > C-2.2
! Rotation	-0.18 deg
! A >> P	51 mm
! R >> L	59 mm
! F >> H	112 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	365.000 V

**Sequence - Part 1**

Introduction	Off
Dimension	2D
Asymmetric echo	Off
Contrasts	2
Flow comp.	No
Multi-slice mode	Interleaved
Bandwidth	965 Hz/Px

**Sequence - Part 2**

RF pulse type	Normal
Gradient mode	Normal
RF spoiling	On

**Sequence - Assistant**

Mode	Off
------	-----

\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\t2\_tse\_sag\_2D\_3sl\_p2\_trig

TA: 2:24 PM: FIX Voxel size: 0.6×0.6×2.2 mmPAT: 2 Rel. SNR: 1.00 : tse

**Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	3
Dist. factor	40 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	H >> F
AutoAlign	---
Phase oversampling	60 %
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.2 mm
TR	4000.0 ms
TE	37.0 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D), B1 filter
Coil elements	CSP

**Contrast - Common**

TR	4000.0 ms
TE	37.0 ms
MTC	Off
Magn. preparation	None
Flip angle	120 deg
Fat suppr.	Fat sat.
Fat sat. mode	Strong
Water suppr.	None
Restore magn.	Off

**Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

**Resolution - Common**

FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.2 mm
Base resolution	320
Phase resolution	100 %
Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	31
Reference scan mode	Integrated

**Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	On
Unfiltered images	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	3
Dist. factor	40 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	H >> F
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.2 mm
TR	4000.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice group	1
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	H >> F
AutoAlign	---
Initial Position	R4.7 A21.1 H0.4
R	4.7 mm
A	21.1 mm
F	0.4 mm
Initial Rotation	90.00 deg
Initial Orientation	S > C
S > C	0.3
> T	-0.1

**Geometry - Saturation**

Fat suppr.	Fat sat.
Fat sat. mode	Strong
Water suppr.	None
Restore magn.	Off
Special sat.	None

**Geometry - Navigator****Geometry - Tim CT**

Tim CT mode	Off
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**Geometry - Tim CT**

Slices	3
Slice thickness	2.2 mm
Dist. factor	40 %
FoV read	192 mm
FoV phase	100.0 %

**System - Miscellaneous**

Positioning mode	FIX
Table position	F
Table position	5 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L0.9 A9.9 F7.0 mm
! Orientation	T > S2.3 > C-2.2
! Rotation	-0.18 deg
! A >> P	51 mm
! R >> L	59 mm
! F >> H	112 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	365.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	4000.0 ms
Concatenations	1

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	Fat sat.
Dark blood	Off
FoV read	192 mm
FoV phase	100.0 %
Phase resolution	100 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	1

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	Off
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	On
Contrasts	1
Flow comp.	No
Optimization	In phase
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	9.14 ms
Bandwidth	579 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	34
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Normal
Hyperecho	On
WARP	Off
Red. EC sensitivity	Off
Turbo factor	8

**Sequence - Assistant**

Mode	Off
Allowed delay	0 s



\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\t1\_mp2rage\_cor\_nonSelHS1\_0.7iso

TA: 8:47 PM: FIX Voxel size: 0.7×0.7×0.7 mmPAT: 2 Rel. SNR: 1.00 : tfl

**Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slab group	1
Slabs	1
Dist. factor	50 %
Position	R1.7 A13.7 H1.7 mm
Orientation	C > T6.1 > S-0.1
Phase enc. dir.	R >> L
AutoAlign	---
Phase oversampling	0 %
Slice oversampling	0.0 %
Slices per slab	192
FoV read	260 mm
FoV phase	65.8 %
Slice thickness	0.70 mm
TR	5000.0 ms
TE	2.13 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(3D)
Coil elements	CSP

**Contrast - Common**

TR	5000.0 ms
TE	2.13 ms
Magn. preparation	Non-sel. IR
TI 1	700 ms
TI 2	2400 ms
Flip angle 1	4.0 deg
Flip angle 2	5.0 deg
Fat suppr.	None
Water suppr.	None

**Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

**Resolution - Common**

FoV read	260 mm
FoV phase	65.8 %
Slice thickness	0.70 mm
Base resolution	368
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	6/8

**Resolution - Common**

Slice partial Fourier	Off
Interpolation	Off

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	28
Accel. factor 3D	1
Reference scan mode	Integrated

**Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	On
Mode	3D
Unfiltered images	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slab group	1
Slabs	1
Dist. factor	50 %
Position	R1.7 A13.7 H1.7 mm
Orientation	C > T6.1 > S-0.1
Phase enc. dir.	R >> L
Slice oversampling	0.0 %
Slices per slab	192
FoV read	260 mm
FoV phase	65.8 %
Slice thickness	0.70 mm
TR	5000.0 ms
Multi-slice mode	Single shot
Series	Ascending
Concatenations	1

**Geometry - AutoAlign**

Slab group	1
Position	R1.7 A13.7 H1.7 mm
Orientation	C > T6.1 > S-0.1
Phase enc. dir.	R >> L
AutoAlign	---
Initial Position	R1.7 A13.7 H6.7
R	1.7 mm
A	13.7 mm
H	6.7 mm
Initial Rotation	-0.70 deg
Initial Orientation	C > T
C > T	6.1
> S	-0.1

**Geometry - Navigator****System - Miscellaneous**

Positioning mode	FIX
Table position	F

**System - Miscellaneous**

Table position	5 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L0.9 A9.9 F7.0 mm
! Orientation	T > S2.3 > C-2.2
! Rotation	-0.18 deg
! A >> P	51 mm
! R >> L	59 mm
! F >> H	112 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	365.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	5000.0 ms
Concatenations	1

**Physio - Cardiac**

Magn. preparation	Non-sel. IR
TI 1	700 ms
TI 2	2400 ms
Fat suppr.	None
Dark blood	Off
FoV read	260 mm
FoV phase	65.8 %
Phase resolution	100 %

**Physio - PACE**

Resp. control	Off
Concatenations	1

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

MIP-Sag	Off
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**Inline - MIP**

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

**Inline - Composing**

Distortion Corr.	On
Mode	3D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	3D
Elliptical scanning	Off
Reordering	Linear
Asymmetric echo	Allowed
Flow comp.	No
Multi-slice mode	Single shot
Echo spacing	6.3 ms
Bandwidth	220 Hz/Px

**Sequence - Part 2**

RF pulse type	Normal
Gradient mode	Normal*
Excitation	Non-sel.
RF spoiling	On
Incr. Gradient spoiling	Off
Turbo factor	192

**Sequence - Nuclei**

TX/RX Nucleus	1H
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	CSP

**Sequence - Special**

Use Custom Inversion	On
Inv pulse type	HS1
HS pulse dur	10240 us
HS pulse offset	0 Hz
HS flip angle	360 deg
TR_FOCI B1	0.00 uT
Echo Spacing	6340 us
Denoise Weighting	100

**Sequence - Assistant**

Mode	Off
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\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\crmbm\_ep2d\_diff\_msma\_5s\_LR\_rev\_b0

TA: 0:21 PM: ISO Voxel size: 0.8×0.8×3.0 mmPAT: 2 Rel. SNR: 1.00 : epse

**Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	1
Dist. factor	50 %
Position	R4.6 A16.3 F24.2 mm
Orientation	T > C2.0 > S0.2
Phase enc. dir.	L >> R
Slice group	2
Slices	1
Dist. factor	50 %
Position	R4.6 A13.8 F8.9 mm
Orientation	T > C1.7 > S0.2
Phase enc. dir.	L >> R
Slice group	3
Slices	1
Dist. factor	50 %
Position	R4.7 A11.9 H8.1 mm
Orientation	T > S0.1 > C-0.1
Phase enc. dir.	L >> R
Slice group	4
Slices	1
Dist. factor	50 %
Position	R4.7 A11.8 H25.0 mm
Orientation	T > C1.0 > S0.2
Phase enc. dir.	L >> R
Slice group	5
Slices	1
Dist. factor	50 %
Position	R4.7 A10.3 H37.9 mm
Orientation	T > C-0.7 > S0.1
Phase enc. dir.	L >> R
AutoAlign	---
Phase oversampling	25 %
FoV read	105 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
TR	650 ms
TE	57.0 ms
Concatenations	3
Filter	Dynamic Field Corr.
Coil elements	CSP

**Contrast - Common**

TR	650 ms
TE	57.0 ms
MTC	Off
Magn. preparation	None
Flip angle exc	90 deg

**Contrast - Common**

Fat suppr.	None
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**Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Delay in TR	0 ms
Multiple series	Off

**Resolution - Common**

FoV read	105 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	5/8
Interpolation	Off

**Resolution - iPAT**

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	EPI/separate

**Resolution - Filter Image**

Distortion Corr.	Off
Prescan Normalize	Off
Dynamic Field Corr.	On
Unfiltered images	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	1
Dist. factor	50 %
Position	R4.6 A16.3 F24.2 mm
Orientation	T > C2.0 > S0.2
Phase enc. dir.	L >> R
Slice group	2
Slices	1
Dist. factor	50 %
Position	R4.6 A13.8 F8.9 mm
Orientation	T > C1.7 > S0.2
Phase enc. dir.	L >> R
Slice group	3
Slices	1
Dist. factor	50 %
Position	R4.7 A11.9 H8.1 mm
Orientation	T > S0.1 > C-0.1
Phase enc. dir.	L >> R
Slice group	4
Slices	1
Dist. factor	50 %
Position	R4.7 A11.8 H25.0 mm
Orientation	T > C1.0 > S0.2
Phase enc. dir.	L >> R
Slice group	5

**Geometry - Common**

Slices	1
Dist. factor	50 %
Position	R4.7 A10.3 H37.9 mm
Orientation	T > C-0.7 > S0.1
Phase enc. dir.	L >> R
FoV read	105 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
TR	650 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	3

**Geometry - AutoAlign**

Slice group	1
Position	R4.6 A16.3 F24.2 mm
Orientation	T > C2.0 > S0.2
Phase enc. dir.	L >> R
Slice group	2
Position	R4.6 A13.8 F8.9 mm
Orientation	T > C1.7 > S0.2
Phase enc. dir.	L >> R
Slice group	3
Position	R4.7 A11.9 H8.1 mm
Orientation	T > S0.1 > C-0.1
Phase enc. dir.	L >> R
Slice group	4
Position	R4.7 A11.8 H25.0 mm
Orientation	T > C1.0 > S0.2
Phase enc. dir.	L >> R
Slice group	5
Position	R4.7 A10.3 H37.9 mm
Orientation	T > C-0.7 > S0.1
Phase enc. dir.	L >> R
AutoAlign	---
Initial Position	R4.6 A16.3 F24.2
R	4.6 mm
A	16.3 mm
F	24.2 mm
Initial Rotation	-90.00 deg
Initial Orientation	T > C
T > C	2.0
> S	0.2

**Geometry - Saturation**

Fat suppr.	None
Special sat.	None

**Geometry - Navigator****System - Miscellaneous**

Positioning mode	ISO
Table position	H
Table position	6 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	R0.2 A14.0 H10.5 mm
! Orientation	T > C-5.2 > S2.3
! Rotation	-0.05 deg
! A >> P	25 mm
! R >> L	38 mm
! F >> H	79 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	365.000 V

**Physio - Signal1**

1st Signal/Mode	Pulse/Trigger
Average cycle	780 ± 114 ms
Average cycle	No Signal ms
Acquisition window	650 ms
Trigger pulse	1
Trigger delay	0 ms
TR	650 ms
Concatenations	3
Phases	1

**Physio - PACE**

Resp. control	Off
Concatenations	3

**Diff - Neuro**

Diffusion mode	MDDW
Diff. directions	30
Diffusion Scheme	Monopolar
Diff. weightings	1
b-value	0 s/mm <sup>2</sup>
b-value	3
Diff. weighted images	On
Trace weighted images	Off
ADC maps	Off
FA maps	Off
Mosaic	Off
Tensor	Off
Noise level	40

**Diff - Body**

Diffusion mode	MDDW
Diff. directions	30
Diffusion Scheme	Monopolar
Diff. weightings	1
b-value	0 s/mm <sup>2</sup>
b-value	3
Diff. weighted images	On
Trace weighted images	Off

**Diff - Body**

ADC maps	Off
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm <sup>2</sup>
Noise level	40

**Diff - Composing**

Distortion Corr.	Off
------------------	-----

**Sequence - Part 1**

Introduction	Off
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	1.02 ms
Bandwidth	1116 Hz/Px

**Sequence - Part 2**

EPI factor	128
RF pulse type	Normal
Gradient mode	Fast*

\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\crmbm\_ep2d\_diff\_msma\_5s\_RL\_fwd

TA: 3:18 PM: ISO Voxel size: 0.8×0.8×3.0 mmPAT: 2 Rel. SNR: 1.00 : epse

**Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	1
Dist. factor	50 %
Position	R4.6 A16.3 F24.2 mm
Orientation	T > C2.0 > S0.2
Phase enc. dir.	R >> L
Slice group	2
Slices	1
Dist. factor	50 %
Position	R4.6 A13.8 F8.9 mm
Orientation	T > C1.7 > S0.2
Phase enc. dir.	A >> P
Slice group	3
Slices	1
Dist. factor	50 %
Position	R4.7 A11.9 H8.1 mm
Orientation	T > S0.1 > C-0.1
Phase enc. dir.	A >> P
Slice group	4
Slices	1
Dist. factor	50 %
Position	R4.7 A11.8 H25.0 mm
Orientation	T > C1.0 > S0.2
Phase enc. dir.	A >> P
Slice group	5
Slices	1
Dist. factor	50 %
Position	R4.7 A10.3 H37.9 mm
Orientation	T > C-0.7 > S0.1
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	25 %
FoV read	105 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
TR	650 ms
TE	57.0 ms
Concatenations	3
Filter	Dynamic Field Corr.
Coil elements	CSP

**Contrast - Common**

TR	650 ms
TE	57.0 ms
MTC	Off
Magn. preparation	None
Flip angle exc	90 deg

**Contrast - Common**

Fat suppr.	None
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**Contrast - Dynamic**

Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Delay in TR	0 ms
Multiple series	Off

**Resolution - Common**

FoV read	105 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	5/8
Interpolation	Off

**Resolution - iPAT**

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Reference scan mode	EPI/separate

**Resolution - Filter Image**

Distortion Corr.	Off
Prescan Normalize	Off
Dynamic Field Corr.	On
Unfiltered images	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	1
Dist. factor	50 %
Position	R4.6 A16.3 F24.2 mm
Orientation	T > C2.0 > S0.2
Phase enc. dir.	R >> L
Slice group	2
Slices	1
Dist. factor	50 %
Position	R4.6 A13.8 F8.9 mm
Orientation	T > C1.7 > S0.2
Phase enc. dir.	A >> P
Slice group	3
Slices	1
Dist. factor	50 %
Position	R4.7 A11.9 H8.1 mm
Orientation	T > S0.1 > C-0.1
Phase enc. dir.	A >> P
Slice group	4
Slices	1
Dist. factor	50 %
Position	R4.7 A11.8 H25.0 mm
Orientation	T > C1.0 > S0.2
Phase enc. dir.	A >> P
Slice group	5

**Geometry - Common**

Slices	1
Dist. factor	50 %
Position	R4.7 A10.3 H37.9 mm
Orientation	T > C-0.7 > S0.1
Phase enc. dir.	A >> P
FoV read	105 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
TR	650 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	3

**Geometry - AutoAlign**

Slice group	1
Position	R4.6 A16.3 F24.2 mm
Orientation	T > C2.0 > S0.2
Phase enc. dir.	R >> L
Slice group	2
Position	R4.6 A13.8 F8.9 mm
Orientation	T > C1.7 > S0.2
Phase enc. dir.	A >> P
Slice group	3
Position	R4.7 A11.9 H8.1 mm
Orientation	T > S0.1 > C-0.1
Phase enc. dir.	A >> P
Slice group	4
Position	R4.7 A11.8 H25.0 mm
Orientation	T > C1.0 > S0.2
Phase enc. dir.	A >> P
Slice group	5
Position	R4.7 A10.3 H37.9 mm
Orientation	T > C-0.7 > S0.1
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	R4.6 A16.3 F24.2
R	4.6 mm
A	16.3 mm
F	24.2 mm
Initial Rotation	90.00 deg
Initial Orientation	T > C
T > C	2.0
> S	0.2

**Geometry - Saturation**

Fat suppr.	None
Special sat.	None

**Geometry - Navigator****System - Miscellaneous**

Positioning mode	ISO
Table position	H
Table position	6 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	On
Only after freq. change	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	R0.2 A14.0 H10.5 mm
! Orientation	T > C-5.2 > S2.3
! Rotation	-0.05 deg
! A >> P	25 mm
! R >> L	38 mm
! F >> H	79 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	365.000 V

**Physio - Signal1**

1st Signal/Mode	Pulse/Trigger
Average cycle	780 ± 114 ms
Average cycle	No Signal ms
Acquisition window	650 ms
Trigger pulse	1
Trigger delay	0 ms
TR	650 ms
Concatenations	3
Phases	1

**Physio - PACE**

Resp. control	Off
Concatenations	3

**Diff - Neuro**

Diffusion mode	MDDW
Diff. directions	30
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	3
Diff. weighted images	On
Trace weighted images	Off
ADC maps	Off
FA maps	Off
Mosaic	Off
Tensor	Off
Noise level	40

**Diff - Body**

Diffusion mode	MDDW
Diff. directions	30
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>

**Diff - Body**

b-value 1	3
b-value 2	3
Diff. weighted images	On
Trace weighted images	Off
ADC maps	Off
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm <sup>2</sup>
Noise level	40

**Diff - Composing**

Distortion Corr.	Off
------------------	-----

**Sequence - Part 1**

Introduction	On
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	1.02 ms
Bandwidth	1116 Hz/Px

**Sequence - Part 2**

EPI factor	128
RF pulse type	Normal
Gradient mode	Fast*



\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\b0map\_gre\_field\_sag\_1x1x2\_7sl

TA: 1:17 PM: FIX Voxel size: 1.0×1.0×2.0 mmRel. SNR: 1.00 : fm

**Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

Slice group	1
Slices	7
Dist. factor	10 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	200.0 ms
TE 1	3.06 ms
TE 2	4.08 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	CSP

**Contrast - Common**

TR	200.0 ms
TE 1	3.06 ms
TE 2	4.08 ms
MTC	Off
Flip angle	32 deg
Fat suppr.	None

**Contrast - Dynamic**

Averages	1
Averaging mode	Short term
Reconstruction	Magn./Phase
Measurements	1
Multiple series	Off

**Resolution - Common**

FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
Base resolution	192
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

**Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	Off

**Resolution - Filter Image**

Prescan Normalize	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	7
Dist. factor	10 %
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
FoV read	192 mm
FoV phase	100.0 %
Slice thickness	2.0 mm
TR	200.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice group	1
Position	R4.7 A21.1 F4.6 mm
Orientation	S > C0.3 > T-0.1
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	R4.7 A21.1 H0.4
R	4.7 mm
A	21.1 mm
F	0.4 mm
Initial Rotation	0.00 deg
Initial Orientation	S > C
S > C	0.3
> T	-0.1

**Geometry - Saturation**

Fat suppr.	None
Special sat.	None

**System - Miscellaneous**

Positioning mode	FIX
Table position	F
Table position	5 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off

**System - Adjustments**

Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	R0.2 A14.0 F0.5 mm
! Orientation	T > C-5.2 > S2.3
! Rotation	-0.05 deg
! A >> P	25 mm
! R >> L	38 mm
! F >> H	79 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	365.000 V

**Sequence - Part 1**

Introduction	Off
Dimension	2D
Asymmetric echo	Off
Contrasts	2
Flow comp.	No
Multi-slice mode	Interleaved
Bandwidth	965 Hz/Px

**Sequence - Part 2**

RF pulse type	Normal
Gradient mode	Normal
RF spoiling	On

**Sequence - Assistant**

Mode	Off
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\\USER\FIL Physics\Nadine\2023\_07\_05\_M700622\_qMRI\MGE\_5TE\_msma\_5x2sl\_2meas

TA: 7:43 PM: FIX Voxel size: 0.3×0.3×3.0 mmPAT: Off Rel. SNR: 1.00 : fl

**Properties**

Prio recon	Off
Load images to viewer	On
Inline movie	Off
Auto store images	On
Load images to stamp segments	Off
Load images to graphic segments	Off
Auto open inline display	Off
Auto close inline display	Off
Start measurement without further preparation	Off
Wait for user to start	Off
Start measurements	Single measurement

**Routine**

TR	461.0 ms
TE 1	4.55 ms
TE 2	8.81 ms
TE 3	13.07 ms
TE 4	17.33 ms
TE 5	21.59 ms
Averages	1
Concatenations	1
Filter	None
Coil elements	CSP

**Routine**

Slice group	1
Slices	2
Dist. factor	100 %
Position	R4.6 A16.3 F24.2 mm
Orientation	T > C2.0 > S0.2
Phase enc. dir.	A >> P
Slice group	2
Slices	2
Dist. factor	100 %
Position	R4.6 A13.8 F8.9 mm
Orientation	T > C1.7 > S0.2
Phase enc. dir.	A >> P
Slice group	3
Slices	2
Dist. factor	100 %
Position	R4.7 A11.9 H8.1 mm
Orientation	T > S0.1 > C-0.1
Phase enc. dir.	A >> P
Slice group	4
Slices	2
Dist. factor	100 %
Position	R4.7 A11.8 H25.0 mm
Orientation	T > C1.0 > S0.2
Phase enc. dir.	A >> P
Slice group	5
Slices	2
Dist. factor	100 %
Position	R4.7 A10.3 H37.9 mm
Orientation	T > C-0.7 > S0.1
Phase enc. dir.	A >> P
Slice group	6
Slices	2
Dist. factor	100 %
Position	R4.6 A16.2 F39.4 mm
Orientation	T > C10.1 > S0.2
Phase enc. dir.	A >> P
Slice group	7
Slices	2
Dist. factor	100 %
Position	R4.5 A14.6 F55.5 mm
Orientation	T > C14.9 > S0.2
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	128 mm
FoV phase	100.0 %
Slice thickness	3.0 mm

**Contrast - Common**

TR	461.0 ms
TE 1	4.55 ms
TE 2	8.81 ms
TE 3	13.07 ms
TE 4	17.33 ms
TE 5	21.59 ms
MTC	Off
Magn. preparation	None
Flip angle	39 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

**Contrast - Dynamic**

Averages	1
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	2
Pause after meas. 1	0.0 s
Multiple series	Off

**Resolution - Common**

FoV read	128 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
Base resolution	500
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

**Resolution - iPAT**

PAT mode	None
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**Resolution - Filter Image**

Image Filter	Off
Distortion Corr.	Off
Prescan Normalize	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	2
Dist. factor	100 %

**Geometry - Common**

Position	R4.6 A16.3 F24.2 mm
Orientation	T > C2.0 > S0.2
Phase enc. dir.	A >> P
Slice group	2
Slices	2
Dist. factor	100 %
Position	R4.6 A13.8 F8.9 mm
Orientation	T > C1.7 > S0.2
Phase enc. dir.	A >> P
Slice group	3
Slices	2
Dist. factor	100 %
Position	R4.7 A11.9 H8.1 mm
Orientation	T > S0.1 > C-0.1
Phase enc. dir.	A >> P
Slice group	4
Slices	2
Dist. factor	100 %
Position	R4.7 A11.8 H25.0 mm
Orientation	T > C1.0 > S0.2
Phase enc. dir.	A >> P
Slice group	5
Slices	2
Dist. factor	100 %
Position	R4.7 A10.3 H37.9 mm
Orientation	T > C-0.7 > S0.1
Phase enc. dir.	A >> P
Slice group	6
Slices	2
Dist. factor	100 %
Position	R4.6 A16.2 F39.4 mm
Orientation	T > C10.1 > S0.2
Phase enc. dir.	A >> P
Slice group	7
Slices	2
Dist. factor	100 %
Position	R4.5 A14.6 F55.5 mm
Orientation	T > C14.9 > S0.2
Phase enc. dir.	A >> P
FoV read	128 mm
FoV phase	100.0 %
Slice thickness	3.0 mm
TR	461.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice group	1
Position	R4.6 A16.3 F24.2 mm
Orientation	T > C2.0 > S0.2
Phase enc. dir.	A >> P
Slice group	2
Position	R4.6 A13.8 F8.9 mm
Orientation	T > C1.7 > S0.2
Phase enc. dir.	A >> P
Slice group	3
Position	R4.7 A11.9 H8.1 mm
Orientation	T > S0.1 > C-0.1
Phase enc. dir.	A >> P
Slice group	4
Position	R4.7 A11.8 H25.0 mm
Orientation	T > C1.0 > S0.2
Phase enc. dir.	A >> P

**Geometry - AutoAlign**

Slice group	5
Position	R4.7 A10.3 H37.9 mm
Orientation	T > C-0.7 > S0.1
Phase enc. dir.	A >> P
Slice group	6
Position	R4.6 A16.2 F39.4 mm
Orientation	T > C10.1 > S0.2
Phase enc. dir.	A >> P
Slice group	7
Position	R4.5 A14.6 F55.5 mm
Orientation	T > C14.9 > S0.2
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	R4.6 A16.3 F30.2
R	4.6 mm
A	16.3 mm
F	30.2 mm
Initial Rotation	0.00 deg
Initial Orientation	T > C
T > C	2.0
> S	0.2

**Geometry - Saturation**

Saturation mode	Standard
Fat suppr.	None
Water suppr.	None
Special sat.	None

**Geometry - Tim CT**

Tim CT mode	Off
Slices	2
Slice thickness	3.0 mm
Dist. factor	100 %
FoV read	128 mm
FoV phase	100.0 %
Segments	1

**System - Miscellaneous**

Positioning mode	FIX
Table position	H
Table position	6 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	F >> H
Coil Combine Mode	Sum of Squares
Save uncombined	Off
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Brain
B1 Shim mode	TrueForm
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L0.9 A13.6 F7.2 mm
! Orientation	T > C3.6 > S2.3
! Rotation	-0.19 deg
! A >> P	41 mm

**System - Adjust Volume**

! R >> L	51 mm
! F >> H	126 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	297.212527 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
! Ref. amplitude 1H	365.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	461.0 ms
Concatenations	1
Segments	1

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	128 mm
FoV phase	100.0 %
Phase resolution	100 %

**Physio - PACE**

Resp. control	Off
Concatenations	1

**Inline - Common**

Subtract	Off
Measurements	2
StdDev	Off
Liver registration	Off
Save original images	On

**Inline - MIP**

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

**Inline - Soft Tissue**

Wash - In	Off
Wash - Out	Off
TTP	Off
PEI	Off
MIP - time	Off
Measurements	2
Pause after meas. 1	0.0 s

**Inline - Composing**

Distortion Corr.	Off
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**Sequence - Part 1**

Introduction	On
Dimension	2D
Phase stabilisation	On
Asymmetric echo	Off
Contrasts	5
Flow comp. 1	No

**Sequence - Part 1**

Readout mode	Bipolar
Multi-slice mode	Interleaved
Bandwidth 1	250 Hz/Px
Bandwidth 2	250 Hz/Px
Bandwidth 3	250 Hz/Px
Bandwidth 4	250 Hz/Px
Bandwidth 5	250 Hz/Px

**Sequence - Part 2**

Segments	1
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slice-sel.
RF spoiling	On

**Sequence - Nuclei**

TX/RX Nucleus	1H
TX/RX delta frequency	0 Hz
TX Nucleus	None
TX delta frequency	0 Hz
Coil elements	CSP

**Sequence - Assistant**

Mode	Off
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