\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_sag-AAT-DRB *

TA: 1:10 min Coil Selection: Auto Voxel Size: 0.4×0.4×3.0 mm³ Acc:: 4 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	1st Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	15
Distance Factor	10 %
Position	R9.5 P21.0 F14.2 mm
Orientation	S > T5.5
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	2730.0 ms
TE	79.00 ms
Averages	2
Concatenations	1
AutoAlign	Spine > Cervical

Contrast - Common

TR	2730.0 ms
TE	79.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	220 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	288
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	39
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	15
Distance Factor	10 %
Position	R9.5 P21.0 F14.2 mm
Orientation	S > T5.5
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	2730.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	R9.5 P21.0 F14.2 mm
Orientation	S > T5.5
Phase Encoding Dir.	H >> F
AutoAlign	Spine > Cervical
Initial Position	R9.5 P21.0 F14.2
R	9.5 mm
P	21.0 mm
F	14.2 mm
Initial Orientation	S > T
S > T	5.50
> C	0.00

Geometry - AutoAlign

Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	80.00 mm
Position	R8.0 A42.7 F39.8 mm
Orientation	C > T-17.9 > S0.8
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	14 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	2730.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	220 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tseR_rr
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Normal
Flow Compensation	Read
Bandwidth	191 Hz/Px
Echo Spacing	9.92 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	16
Echo Trains per Slice	12

Sequence - Part 2

Introduction	On
Phase Correction	Automatic

Sequence - Part 2

Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	6000.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag-AAT-DRB *

TA: 1:32 min Coil Selection: Auto Voxel Size: 0.4×0.4×3.0 mm³ Acc:: 4 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	2nd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	15
Distance Factor	10 %
Position	R9.5 P21.0 F14.2 mm
Orientation	S > T5.5
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	401.0 ms
TE	11.00 ms
Averages	2
Concatenations	2
AutoAlign	Spine > Cervical

Contrast - Common

TR	401.0 ms
TE	11.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	110 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	272
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	24
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	15
Distance Factor	10 %
Position	R9.5 P21.0 F14.2 mm
Orientation	S > T5.5
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	401.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	R9.5 P21.0 F14.2 mm
Orientation	S > T5.5
Phase Encoding Dir.	H >> F
AutoAlign	Spine > Cervical
Initial Position	R9.5 P21.0 F14.2
R	9.5 mm
P	21.0 mm
F	14.2 mm
Initial Orientation	S > T
S > T	5.50

Geometry - AutoAlign

> C	0.00
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	80.00 mm
Position	R8.0 A42.7 F39.8 mm
Orientation	C > T-17.9 > S0.8
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	14 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	401.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	220 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Low SAR
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	191 Hz/Px
Echo Spacing	10.9 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	57

Sequence - Part 2

Introduction	Off
Phase Correction	Automatic

Sequence - Part 2

Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	600.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_space_tra-AAT-CS *

TA: 3:08 min Coil Selection: Auto Voxel Size: 0.4×0.4×1.5 mm³ Acc:: 3.0 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slab Group	1
Slabs	1
Position	R0.2 P27.5 F7.6 mm
Orientation	T > C18.1 > S2.0
Phase Encoding Dir.	A >> P
Slices per Slab	48
Phase Oversampling	0 %
Slice Oversampling	33.3 %
FoV Read	190 mm
FoV Phase	100.0 %
Slice Thickness	1.50 mm
TR	1200.0 ms
TE	89.00 ms
Averages	3.4
Concatenations	1
AutoAlign	---

Contrast - Common

TR	1200.0 ms
TE	89.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle Mode	Constant
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Blood Suppression	Off
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off
Reordering	Linear

Resolution - Common

FoV Read	190 mm
FoV Phase	100.0 %
Slice Thickness	1.50 mm
Base Resolution	256
Phase Resolution	90 %
Slice Resolution	91 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	CS
Total Factor	3.0
Reference Scans	Integrated
Reference Lines PE	24
Reference Lines 3D	24
Phase Partial Fourier	Off
Slice Partial Fourier	Off
Elliptical Scanning	Off

Resolution - Filter

Raw Filter	On
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	On

Geometry - Common

Slab Group	1
Slabs	1
Position	R0.2 P27.5 F7.6 mm
Orientation	T > C18.1 > S2.0
Phase Encoding Dir.	A >> P
Slices per Slab	48
Phase Oversampling	0 %
Slice Oversampling	33.3 %
FoV Read	190 mm
FoV Phase	100.0 %
Slice Thickness	1.50 mm
TR	1200.0 ms
Concatenations	1

Geometry - AutoAlign

Slab Group	1
Position	R0.2 P27.5 F7.6 mm
Orientation	T > C18.1 > S2.0
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	L16.6 P19.9 F160.7
L	16.6 mm
P	19.9 mm
F	160.7 mm

Geometry - AutoAlign

Initial Orientation	T > C
T > C	9.90
> S	1.90
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	150.00 mm
Position	R22.4 A134.3 H109.7 mm
Orientation	C > T-18.0 > S-2.4
Special Saturation	Parallel F/H
Gap	5.00 mm
Thickness	80.00 mm

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	8 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz

System - Tx/Rx

? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
Trigger Delay	0 ms
TR	1200.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	190 mm
FoV Phase	100.0 %
Phase Resolution	90 %

Physio - PACE

Resp. Control	Off
Concatenations	1

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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	spcR
Dimension	3D
Excitation	Slab-sel.
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	None
Reordering	Linear
Bandwidth	610 Hz/Px
Echo Spacing	3.88 ms
Turbo Factor	112
Echo Train Duration	442 ms

Sequence - Part 2

Introduction	On

Sequence - Assistant

SAR Assistant	Off
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_stir_sag-AAT-DRB *

TA: 2:47 min Coil Selection: Auto Voxel Size: 0.5×0.5×3.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	15
Distance Factor	10 %
Position	L0.0 A1.5 H17.2 mm
Orientation	S > T2.2
Phase Encoding Dir.	H >> F
Phase Oversampling	100 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	3000.0 ms
TE	75.00 ms
Averages	3
Concatenations	1
AutoAlign	Spine > Cervical

Contrast - Common

TR	3000.0 ms
TE	75.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	160 ms
Freeze Suppr. Tissue	Off
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	240
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	35
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	15
Distance Factor	10 %
Position	L0.0 A1.5 H17.2 mm
Orientation	S > T2.2
Phase Encoding Dir.	H >> F
Phase Oversampling	100 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	3000.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L0.0 A1.5 H17.2 mm
Orientation	S > T2.2
Phase Encoding Dir.	H >> F
AutoAlign	Spine > Cervical
Initial Position	L0.0 A1.5 H17.2
L	0.0 mm
A	1.5 mm
H	17.2 mm
Initial Orientation	S > T
S > T	2.20

Geometry - AutoAlign

> C	0.00
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	80.00 mm
Position	L0.0 A61.2 H11.3 mm
Orientation	C > T-20.0 > S0.1
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	17 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	3000.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	160 ms
Dark Blood	Off
FoV Read	220 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tir_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Normal
Flow Compensation	Read
Bandwidth	189 Hz/Px
Echo Spacing	8.38 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	11
Echo Trains per Slice	18

Sequence - Part 2

Introduction	On

Sequence - Part 2

Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle
Min Flip Angle	130 deg
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_dixon_sag post-AAT-DRG *

TA: 2:10 min Coil Selection: Auto Voxel Size: 0.5×0.5×3.2 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	15
Distance Factor	10 %
Position	L2.5 P26.6 H31.8 mm
Orientation	S > C0.1 > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	50 %
FoV Read	230 mm
FoV Phase	100.0 %
Slice Thickness	3.2 mm
TR	752.0 ms
TE	12.00 ms
Averages	2
Concatenations	1
AutoAlign	Spine > Cervical

Contrast - Common

TR	752.0 ms
TE	12.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	125 deg
Fat-Water Contrast	Dixon
Fat Saturation	Strong
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	230 mm
FoV Phase	100.0 %
Slice Thickness	3.2 mm
Base Resolution	224
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	TSE/Separate
Acceleration Factor PE	2
Reference Lines PE	32
Deep Resolve	On
Phase Partial Fourier	Off
Asymmetric Echo	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	15
Distance Factor	10 %
Position	L2.5 P26.6 H31.8 mm
Orientation	S > C0.1 > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	50 %
FoV Read	230 mm
FoV Phase	100.0 %
Slice Thickness	3.2 mm
TR	752.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L2.5 P26.6 H31.8 mm
Orientation	S > C0.1 > T0.1
Phase Encoding Dir.	H >> F
AutoAlign	Spine > Cervical
Initial Position	L2.5 P26.6 H31.8
L	2.5 mm
P	26.6 mm
H	31.8 mm
Initial Orientation	S > C

Geometry - AutoAlign

S > C	0.10
> T	0.10
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	50.00 mm
Position	L3.0 A29.0 F22.0 mm
Orientation	C > T-20.8 > S1.6
Shape	Standard
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	32 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	L2.5 P26.6 H31.8 mm
Orientation	S > C0.1 > T0.1
Rotation	90.00 deg
F >> H	230 mm
A >> P	230 mm
R >> L	53 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	752.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Dixon
Magn. Preparation	None
Dark Blood	Off
FoV Read	230 mm
FoV Phase	100.0 %
Phase Resolution	75 %

Physio - PACE

Resp. Control	Off
Concatenations	1

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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	302 Hz/Px
Echo Spacing	12.22 ms
Asymmetric Echo	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	42

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Red. EC Sensitivity	Off
Reduce Motion Sens.	On

Sequence - Assistant

SAR Assistant	Off
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_sag-AAT-DRB *

TA: 1:06 min Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	2nd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	16
Distance Factor	20 %
Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	2690.0 ms
TE	90.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	2690.0 ms
TE	90.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

Resolution - Common

FoV Read	320 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	368
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	46
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	16
Distance Factor	20 %
Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	2690.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L9.1 P14.0 F200.5
L	9.1 mm
P	14.0 mm
F	200.5 mm
Initial Orientation	S > T
S > T	-3.80
> C	0.00

Geometry - AutoAlign

Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	200 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	2690.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	320 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tseR_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	191 Hz/Px
Echo Spacing	8.16 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	19
Echo Trains per Slice	23

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag-AAT-DRB *

TA: 1:18 min Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	16
Distance Factor	20 %
Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	534.0 ms
TE	8.80 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	534.0 ms
TE	8.80 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	320 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	368
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	16
Distance Factor	20 %
Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	534.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L9.1 P14.0 F200.5
L	9.1 mm
P	14.0 mm
F	200.5 mm
Initial Orientation	S > T
S > T	-3.80
> C	0.00

Geometry - AutoAlign

Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	200 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	534.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	320 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	219 Hz/Px
Echo Spacing	8.78 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	142

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	680.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_tra_lower-AAT-DRB *

TA: 1:37 min Coil Selection: Auto Voxel Size: 0.3×0.3×4.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	23
Distance Factor	10 %
Position	L28.8 P85.0 F285.2 mm
Orientation	T > C-9.7 > S-1.8
Phase Encoding Dir.	A >> P
Phase Oversampling	150 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4530.0 ms
TE	85.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	4530.0 ms
TE	85.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	135 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	200 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	304
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	30
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	23
Distance Factor	10 %
Position	L28.8 P85.0 F285.2 mm
Orientation	T > C-9.7 > S-1.8
Phase Encoding Dir.	A >> P
Phase Oversampling	150 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4530.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L28.8 P85.0 F285.2 mm
Orientation	T > C-9.7 > S-1.8
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	L28.8 P85.0 F285.2
L	28.8 mm
P	85.0 mm
F	285.2 mm
Initial Orientation	T > C
T > C	-9.70
> S	-1.80

Geometry - AutoAlign

Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	50.00 mm
Position	L21.3 A25.7 F349.0 mm
Orientation	C > T16.2 > S-0.1
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	285 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	4530.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	200 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tseR
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	191 Hz/Px
Echo Spacing	8.52 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	15
Echo Trains per Slice	20

Sequence - Part 2

Introduction	On
Phase Correction	Off

Sequence - Part 2

Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	5500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_space_tra_3mm-AAT-CS *

TA: 2:03 min Coil Selection: Auto Voxel Size: 0.4×0.4×3.0 mm³ Acc:: 3.0 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slab Group	1
Slabs	1
Position	L16.6 P19.9 F160.7 mm
Orientation	T > C9.9 > S1.9
Phase Encoding Dir.	A >> P
Slices per Slab	72
Phase Oversampling	0 %
Slice Oversampling	33.3 %
FoV Read	190 mm
FoV Phase	100.0 %
Slice Thickness	3.00 mm
TR	1200.0 ms
TE	143.00 ms
Averages	1.4
Concatenations	1
AutoAlign	---

Contrast - Common

TR	1200.0 ms
TE	143.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle Mode	Constant
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Blood Suppression	Off
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off
Reordering	Linear

Resolution - Common

FoV Read	190 mm
FoV Phase	100.0 %
Slice Thickness	3.00 mm
Base Resolution	256
Phase Resolution	90 %
Slice Resolution	100 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	CS
Total Factor	3.0
Reference Scans	Integrated
Reference Lines PE	24
Reference Lines 3D	24
Phase Partial Fourier	Allowed
Slice Partial Fourier	Off
Elliptical Scanning	Off

Resolution - Filter

Raw Filter	On
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	On

Geometry - Common

Slab Group	1
Slabs	1
Position	L16.6 P19.9 F160.7 mm
Orientation	T > C9.9 > S1.9
Phase Encoding Dir.	A >> P
Slices per Slab	72
Phase Oversampling	0 %
Slice Oversampling	33.3 %
FoV Read	190 mm
FoV Phase	100.0 %
Slice Thickness	3.00 mm
TR	1200.0 ms
Concatenations	1

Geometry - AutoAlign

Slab Group	1
Position	L16.6 P19.9 F160.7 mm
Orientation	T > C9.9 > S1.9
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	L16.6 P19.9 F160.7
L	16.6 mm
P	19.9 mm
F	160.7 mm

Geometry - AutoAlign

Initial Orientation	T > C
T > C	9.90
> S	1.90
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	150.00 mm
Position	R5.3 A123.7 F21.4 mm
Orientation	C > T-9.8 > S-2.4
Special Saturation	Parallel F/H
Gap	5.00 mm
Thickness	80.00 mm

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	161 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V

System - Tx/Rx

Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
Trigger Delay	0 ms
TR	1200.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	190 mm
FoV Phase	100.0 %
Phase Resolution	90 %

Physio - PACE

Resp. Control	Off
Concatenations	1

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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	spcR
Dimension	3D
Excitation	Slab-sel.
RF Pulse Type	Normal
Gradient Mode	Fast
Flow Compensation	None
Reordering	Linear
Bandwidth	610 Hz/Px
Echo Spacing	3.88 ms
Turbo Factor	112
Echo Train Duration	353 ms

Sequence - Part 2

Introduction	On

Sequence - Assistant

SAR Assistant	Off
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_tra-AAT-DRG *

TA: 52 sec Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	20
Distance Factor	10 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	A >> P
Phase Oversampling	50 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	500.0 ms
TE	10.00 ms
Averages	1
Concatenations	2
AutoAlign	---

Contrast - Common

TR	500.0 ms
TE	10.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	224
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	20
Distance Factor	10 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	A >> P
Phase Oversampling	50 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	500.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	Transversal
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	80.00 mm
Position	L0.0 A60.0 H0.0 mm
Orientation	Coronal
Shape	Standard
Special Saturation	None

Geometry - Tim Planning Suite

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

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	220 mm
R >> L	220 mm
F >> H	88 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	500.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	220 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Low SAR
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	205 Hz/Px
Echo Spacing	10.3 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	49

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_stir_sag-AAT-DRB *

TA: 1:48 min Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	15
Distance Factor	30 %
Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4440.0 ms
TE	87.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	4440.0 ms
TE	87.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	160 ms
Freeze Suppr. Tissue	Off
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	432
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	32
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	15
Distance Factor	30 %
Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4440.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L9.1 P14.0 F200.5
L	9.1 mm
P	14.0 mm
F	200.5 mm
Initial Orientation	S > T
S > T	-3.80

Geometry - AutoAlign

> C	0.00
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	107.00 mm
Position	R13.2 A57.7 F189.4 mm
Orientation	C > T-5.0 > S-2.3
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	200 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	L9.1 P14.0 F200.5 mm
Orientation	S > T-3.8
Rotation	90.00 deg
F >> H	320 mm
A >> P	320 mm
R >> L	77 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	4440.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	160 ms
Dark Blood	Off
FoV Read	320 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tir_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	181 Hz/Px
Echo Spacing	8.68 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	15
Echo Trains per Slice	23

Sequence - Part 2

Introduction	On

Sequence - Part 2

Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle > TR
Min Flip Angle	140 deg
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag_fs-AAT-DRB *

TA: 1:21 min Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ Acc:: 4 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	18
Distance Factor	20 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	502.0 ms
TE	7.30 ms
Averages	1
Concatenations	2
AutoAlign	Spine > Lumbar

Contrast - Common

TR	502.0 ms
TE	7.30 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	SPAIR
Fat Saturation	Strong
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	384
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	24
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	18
Distance Factor	20 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	502.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	H >> F
AutoAlign	Spine > Lumbar
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

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

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Sagittal
Rotation	90.00 deg
F >> H	320 mm
A >> P	320 mm
R >> L	86 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	502.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	SPAIR
Magn. Preparation	None
Dark Blood	Off

Physio - Cardiac

FoV Read	320 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	233 Hz/Px
Echo Spacing	7.30 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	78

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_tra_fs-AAT-DRG *

TA: 1:54 min Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	20
Distance Factor	10 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	A >> P
Phase Oversampling	50 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	612.0 ms
TE	10.00 ms
Averages	2
Concatenations	2
AutoAlign	---

Contrast - Common

TR	612.0 ms
TE	10.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Fat Saturation
Fat Saturation	Weak
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	224
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Self-calibration
Acceleration Factor PE	2
Reference Lines PE	32
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	20
Distance Factor	10 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	A >> P
Phase Oversampling	50 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	612.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	Transversal
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	80.00 mm
Position	L0.0 A60.0 H0.0 mm
Orientation	Coronal
Shape	Standard
Special Saturation	None

Geometry - Tim Planning Suite

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

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	220 mm
R >> L	220 mm
F >> H	88 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	612.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	Fat Saturation
Magn. Preparation	None
Dark Blood	Off
FoV Read	220 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Low SAR
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	205 Hz/Px
Echo Spacing	10.3 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	45

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_sag-AAT-DRB *

TA: 1:07 min Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	1st Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	17
Distance Factor	20 %
Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	3470.0 ms
TE	88.00 ms
Averages	1
Concatenations	1
AutoAlign	Spine > Lumbar

Contrast - Common

TR	3470.0 ms
TE	88.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	300 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	384
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	17
Distance Factor	20 %
Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	3470.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Phase Encoding Dir.	H >> F
AutoAlign	Spine > Lumbar
Initial Position	L6.8 P37.5 H51.7
L	6.8 mm
P	37.5 mm
H	51.7 mm
Initial Orientation	S > T
S > T	1.60
> C	1.30

Geometry - AutoAlign

Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	52 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	3470.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	300 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tseR_rr
Dimension	2D
RF Pulse Type	Low SAR
Gradient Mode	Normal
Flow Compensation	Read
Bandwidth	197 Hz/Px
Echo Spacing	11.0 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	17
Echo Trains per Slice	18

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag-AAT-DRB *

TA: 1:14 min Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	2nd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	17
Distance Factor	20 %
Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	620.0 ms
TE	9.70 ms
Averages	1
Concatenations	1
AutoAlign	Spine > Lumbar

Contrast - Common

TR	620.0 ms
TE	9.70 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	300 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	320
Phase Resolution	70 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	17
Distance Factor	20 %
Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	620.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Phase Encoding Dir.	H >> F
AutoAlign	Spine > Lumbar
Initial Position	L6.8 P37.5 H51.7
L	6.8 mm
P	37.5 mm
H	51.7 mm
Initial Orientation	S > T
S > T	1.60
> C	1.30

Geometry - AutoAlign

Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	52 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	620.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	300 mm
FoV Phase	100.0 %
Phase Resolution	70 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Low SAR
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	233 Hz/Px
Echo Spacing	9.74 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	116

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_cor-AAT-DRG *

TA: 55 sec Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 4 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	18
Distance Factor	30 %
Position	L7.6 P72.9 H72.5 mm
Orientation	C > T3.5
Phase Encoding Dir.	R >> L
Phase Oversampling	50 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	2810.0 ms
TE	89.00 ms
Averages	3
Concatenations	1
AutoAlign	Spine > Lumbar

Contrast - Common

TR	2810.0 ms
TE	89.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	300 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	320
Phase Resolution	70 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	24
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	18
Distance Factor	30 %
Position	L7.6 P72.9 H72.5 mm
Orientation	C > T3.5
Phase Encoding Dir.	R >> L
Phase Oversampling	50 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	2810.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L7.6 P72.9 H72.5 mm
Orientation	C > T3.5
Phase Encoding Dir.	R >> L
AutoAlign	Spine > Lumbar
Initial Position	L7.6 P72.9 H72.5
L	7.6 mm
P	72.9 mm
H	72.5 mm
Initial Orientation	C > T
C > T	3.50
> S	0.00

Geometry - AutoAlign

Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	72 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	2810.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	300 mm
FoV Phase	100.0 %
Phase Resolution	70 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tseR_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Normal
Flow Compensation	Read
Bandwidth	198 Hz/Px
Echo Spacing	8.10 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	17
Echo Trains per Slice	6

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_tra_msma-AAT-DRB *

TA: 1:26 min Coil Selection: Auto Voxel Size: 0.3×0.3×3.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	7
Distance Factor	10 %
Position	L23.0 P42.9 H62.7 mm
Orientation	T > S0.6 > C0.2
Phase Encoding Dir.	A >> P
Slice Group	2
Slices	7
Distance Factor	10 %
Position	L23.0 P42.9 H62.7 mm
Orientation	T > S0.6 > C0.2
Phase Encoding Dir.	A >> P
Slice Group	3
Slices	7
Distance Factor	10 %
Position	L23.0 P42.9 H62.7 mm
Orientation	T > S0.6 > C0.2
Phase Encoding Dir.	A >> P
Phase Oversampling	20 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	4470.0 ms
TE	90.00 ms
Averages	2
Concatenations	1
AutoAlign	Spine > Lumbar

Contrast - Common

TR	4470.0 ms
TE	90.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off

Contrast - Common

Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	288
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	7
Distance Factor	10 %
Position	L23.0 P42.9 H62.7 mm
Orientation	T > S0.6 > C0.2
Phase Encoding Dir.	A >> P
Slice Group	2
Slices	7
Distance Factor	10 %
Position	L23.0 P42.9 H62.7 mm
Orientation	T > S0.6 > C0.2
Phase Encoding Dir.	A >> P
Slice Group	3
Slices	7
Distance Factor	10 %
Position	L23.0 P42.9 H62.7 mm
Orientation	T > S0.6 > C0.2

Geometry - Common

Phase Encoding Dir.	A >> P
Phase Oversampling	20 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	4470.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L23.0 P42.9 H62.7 mm
Orientation	T > S0.6 > C0.2
Phase Encoding Dir.	A >> P
Slice Group	2
Position	L23.0 P42.9 H62.7 mm
Orientation	T > S0.6 > C0.2
Phase Encoding Dir.	A >> P
Slice Group	3
Position	L23.0 P42.9 H62.7 mm
Orientation	T > S0.6 > C0.2
Phase Encoding Dir.	A >> P
AutoAlign	Spine > Lumbar
Initial Position	L23.0 P42.9 H62.7
L	23.0 mm
P	42.9 mm
H	62.7 mm
Initial Orientation	T > S
T > S	0.60
> C	0.20
Initial Rotation	2.13 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	125.00 mm
Position	L22.9 A76.5 F13.5 mm
Orientation	C > T10.7 > S-2.2
Shape	Standard
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	5 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

Coil Selection	Auto Coil Select
Radial Sorting	Off
MSMA	S - C - T
Sagittal	R >> L

System - Miscellaneous

Coronal	A >> P
Transversal	H >> F
Coil Combination	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	4470.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	200 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tseR
Dimension	2D
RF Pulse Type	Low SAR
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	193 Hz/Px
Echo Spacing	11.2 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	17
Echo Trains per Slice	9

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_stir_sag-AAT-DRG *

TA: 2:46 min Coil Selection: Auto Voxel Size: 0.6×0.6×4.0 mm³ Acc:: None 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	17
Distance Factor	20 %
Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	330 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	2790.0 ms
TE	38.00 ms
Averages	1
Concatenations	1
AutoAlign	Spine > Lumbar

Contrast - Common

TR	2790.0 ms
TE	38.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	170 ms
Freeze Suppr. Tissue	Off
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	330 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	256
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	None
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	17
Distance Factor	20 %
Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	330 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	2790.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Phase Encoding Dir.	H >> F
AutoAlign	Spine > Lumbar
Initial Position	L6.8 P37.5 H51.7
L	6.8 mm
P	37.5 mm
H	51.7 mm
Initial Orientation	S > T
S > T	1.60
> C	1.30
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	89.00 mm
Position	R22.7 A48.7 H18.3 mm
Orientation	C > T13.7 > S4.6
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	52 mm
Table Position	H
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	L6.8 P37.5 H51.7 mm
Orientation	S > T1.6 > C1.3
Rotation	90.00 deg
F >> H	330 mm
A >> P	330 mm
R >> L	81 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	2790.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	170 ms
Dark Blood	Off
FoV Read	330 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tirR
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	191 Hz/Px
Echo Spacing	9.58 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	10
Echo Trains per Slice	58

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off

Sequence - Part 2

Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	3800.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag_fs-AAT-DRB *

TA: 1:21 min Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ Acc:: 4 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	17
Distance Factor	20 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	502.0 ms
TE	7.30 ms
Averages	1
Concatenations	2
AutoAlign	Spine > Lumbar

Contrast - Common

TR	502.0 ms
TE	7.30 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	SPAIR
Fat Saturation	Strong
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	384
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	24
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	17
Distance Factor	20 %
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	502.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	Isocenter
Orientation	Sagittal
Phase Encoding Dir.	H >> F
AutoAlign	Spine > Lumbar
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

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

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Sagittal
Rotation	90.00 deg
F >> H	320 mm
A >> P	320 mm
R >> L	81 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	502.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	SPAIR
Magn. Preparation	None
Dark Blood	Off

Physio - Cardiac

FoV Read	320 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	233 Hz/Px
Echo Spacing	7.30 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	78

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_tra fs-AAT-DRB *

TA: 39 sec Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 4 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	20
Distance Factor	10 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	A >> P
Phase Oversampling	50 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	612.0 ms
TE	10.00 ms
Averages	1
Concatenations	2
AutoAlign	---

Contrast - Common

TR	612.0 ms
TE	10.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Fat Saturation
Fat Saturation	Weak
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	224
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	20
Distance Factor	10 %
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	A >> P
Phase Oversampling	50 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	612.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	Isocenter
Orientation	Transversal
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Orientation	Transversal
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	80.00 mm
Position	L0.0 A60.0 H0.0 mm
Orientation	Coronal
Shape	Standard
Special Saturation	None

Geometry - Tim Planning Suite

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

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	Isocenter
Orientation	Transversal
Rotation	0.00 deg
A >> P	220 mm
R >> L	220 mm
F >> H	88 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	612.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	Fat Saturation
Magn. Preparation	None
Dark Blood	Off
FoV Read	220 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Low SAR
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	205 Hz/Px
Echo Spacing	10.3 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	29

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_sag_I-III-AAT-DRB *

TA: 50 sec Coil Selection: Auto Voxel Size: 0.4×0.4×3.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 1/3

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	2nd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L6.5 P0.0 H16.8 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	280 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	2880.0 ms
TE	82.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	2880.0 ms
TE	82.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

Resolution - Common

FoV Read	280 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	336
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	29
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L6.5 P0.0 H16.8 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	280 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	2880.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L6.5 P0.0 H16.8 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L6.5 P0.0 H16.8
L	6.5 mm
P	0.0 mm
H	16.8 mm
Initial Orientation	Sagittal
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	17 mm
Table Position	H
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	2880.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	280 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

Sequence - Part 1

Sequence Name	tseR_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	191 Hz/Px
Echo Spacing	8.18 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	17
Echo Trains per Slice	16

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off

Sequence - Part 2

Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_sag_I-III-AAT-DRB *

TA: 56 sec Coil Selection: Auto Voxel Size: 0.4×0.4×3.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 2/3

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	2nd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L6.5 P0.0 F203.2 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	3190.0 ms
TE	90.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	3190.0 ms
TE	90.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

Resolution - Common

FoV Read	300 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	368
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	41
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L6.5 P0.0 F203.2 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	3190.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L6.5 P0.0 F203.2 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Orientation	Transversal
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	203 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	3190.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	300 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

Sequence - Part 1

Sequence Name	tseR_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	191 Hz/Px
Echo Spacing	8.18 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	19
Echo Trains per Slice	16

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off

Sequence - Part 2

Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_sag_I-III-AAT-DRB *

TA: 37 sec Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 3/3

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	2nd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L9.5 A1.9 F438.9 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	3210.0 ms
TE	82.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	3210.0 ms
TE	82.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

Resolution - Common

FoV Read	320 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	384
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	26
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L9.5 A1.9 F438.9 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	3210.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L9.5 A1.9 F438.9 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Orientation	Transversal
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	439 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	3210.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	320 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

Sequence - Part 1

Sequence Name	tseR_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	191 Hz/Px
Echo Spacing	8.22 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	19
Echo Trains per Slice	10

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off

Sequence - Part 2

Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag_I-III-AAT-DRB *

TA: 55 sec Coil Selection: Auto Voxel Size: 0.4×0.4×3.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 1/3

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L6.5 P0.0 H16.8 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	584.0 ms
TE	8.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	584.0 ms
TE	8.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	260 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	336
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L6.5 P0.0 H16.8 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	584.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L6.5 P0.0 H16.8 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L6.5 P0.0 H16.8
L	6.5 mm
P	0.0 mm
H	16.8 mm
Initial Orientation	Sagittal
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	17 mm
Table Position	H
Disable Voice Commands	Off
Inline Composing	On
Normalize	Weak
Save non-normalized	Off
Composing Function	Spine
Series Description	t1_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	584.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	260 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Weak
Save non-normalized	Off
Composing Function	Spine
Series Description	t1_sag

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	193 Hz/Px
Echo Spacing	7.98 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	90

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off

Sequence - Part 2

Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag_I-III-AAT-DRB *

TA: 56 sec Coil Selection: Auto Voxel Size: 0.4×0.4×3.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 2/3

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L6.5 P0.0 F203.2 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	551.0 ms
TE	7.50 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	551.0 ms
TE	7.50 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	368
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L6.5 P0.0 F203.2 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	300 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	551.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L6.5 P0.0 F203.2 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Orientation	Transversal
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	203 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Weak
Save non-normalized	Off
Composing Function	Spine
Series Description	t1_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	551.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	300 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Weak
Save non-normalized	Off
Composing Function	Spine
Series Description	t1_sag

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	219 Hz/Px
Echo Spacing	7.50 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	98

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off

Sequence - Part 2

Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	680.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag_I-III-AAT-DRB *

TA: 43 sec Coil Selection: Auto Voxel Size: 0.4×0.4×4.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 3/3

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L9.5 A1.9 F438.9 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	120 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	538.0 ms
TE	7.30 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	538.0 ms
TE	7.30 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	384
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	26
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	19
Distance Factor	20 %
Position	L9.5 A1.9 F438.9 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
Phase Oversampling	120 %
FoV Read	320 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	538.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L9.5 A1.9 F438.9 mm
Orientation	Sagittal
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Orientation	Transversal
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	439 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Weak
Save non-normalized	Off
Composing Function	Spine
Series Description	t1_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	538.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	320 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Weak
Save non-normalized	Off
Composing Function	Spine
Series Description	t1_sag

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	233 Hz/Px
Echo Spacing	7.30 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	76

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off

Sequence - Part 2

Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_stir_sag-AAT-DRB *

TA: 1:48 min Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 1/2

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	15
Distance Factor	20 %
Position	L11.0 P0.7 F61.8 mm
Orientation	S > T0.5
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4440.0 ms
TE	87.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	4440.0 ms
TE	87.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	160 ms
Freeze Suppr. Tissue	Off
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	432
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	32
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	15
Distance Factor	20 %
Position	L11.0 P0.7 F61.8 mm
Orientation	S > T0.5
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4440.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L11.0 P0.7 F61.8 mm
Orientation	S > T0.5
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L11.0 P0.7 F61.8
L	11.0 mm
P	0.7 mm
F	61.8 mm
Initial Orientation	S > T
S > T	0.50

Geometry - AutoAlign

> C	0.00
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	50.00 mm
Position	L12.0 A42.1 F140.0 mm
Orientation	C > T-2.1
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	62 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	stir_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	L11.0 P0.7 F61.8 mm
Orientation	S > T0.5
Rotation	90.00 deg
F >> H	420 mm
A >> P	420 mm
R >> L	72 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	4440.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	160 ms
Dark Blood	Off
FoV Read	420 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	stir_sag

Sequence - Part 1

Sequence Name	tir_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast

Sequence - Part 1

Flow Compensation	Read
Bandwidth	181 Hz/Px
Echo Spacing	8.68 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	15
Echo Trains per Slice	23

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle > TR
Min Flip Angle	140 deg
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_stir_sag-AAT-DRB *

TA: 1:48 min Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 2/2

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	15
Distance Factor	30 %
Position	L10.7 P4.3 F378.2 mm
Orientation	S > T-0.3
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4440.0 ms
TE	87.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	4440.0 ms
TE	87.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	160 ms
Freeze Suppr. Tissue	Off
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	432
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	32
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	15
Distance Factor	30 %
Position	L10.7 P4.3 F378.2 mm
Orientation	S > T-0.3
Phase Encoding Dir.	H >> F
Phase Oversampling	200 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4440.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L10.7 P4.3 F378.2 mm
Orientation	S > T-0.3
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	50.00 mm
Position	L12.0 A17.2 F378.0 mm
Orientation	C > T7.4
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	378 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	stir_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	L10.7 P4.3 F378.2 mm
Orientation	S > T-0.3
Rotation	90.00 deg
F >> H	420 mm
A >> P	420 mm
R >> L	77 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	4440.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	160 ms
Dark Blood	Off
FoV Read	420 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	stir_sag

Sequence - Part 1

Sequence Name	tir_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	181 Hz/Px
Echo Spacing	8.68 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	15

Sequence - Part 1

Echo Trains per Slice	23

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle > TR
Min Flip Angle	140 deg
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_tra_block-AAT-DRB *

TA: 1:09 min Coil Selection: Auto Voxel Size: 0.3×0.3×4.0 mm³ Acc:: 4 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	30
Distance Factor	10 %
Position	L7.8 P63.7 F245.2 mm
Orientation	T > C-3.5 > S-1.0
Phase Encoding Dir.	A >> P
Phase Oversampling	33 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4530.0 ms
TE	87.00 ms
Averages	2
Concatenations	1
AutoAlign	---

Contrast - Common

TR	4530.0 ms
TE	87.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	135 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	200 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	336
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	28
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	30
Distance Factor	10 %
Position	L7.8 P63.7 F245.2 mm
Orientation	T > C-3.5 > S-1.0
Phase Encoding Dir.	A >> P
Phase Oversampling	33 %
FoV Read	200 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	4530.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L7.8 P63.7 F245.2 mm
Orientation	T > C-3.5 > S-1.0
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	L7.8 P63.7 F245.2
L	7.8 mm
P	63.7 mm
F	245.2 mm
Initial Orientation	T > C
T > C	-3.50
> S	-1.00

Geometry - AutoAlign

Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	150.00 mm
Position	L13.9 A42.1 F199.7 mm
Orientation	C > T5.7
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	245 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	4530.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	200 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tseR
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	191 Hz/Px
Echo Spacing	8.72 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	15
Echo Trains per Slice	7

Sequence - Part 2

Introduction	On
Phase Correction	Off

Sequence - Part 2

Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	5500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_stir_sag-AAT-DRB *

TA: 1:22 min Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 1/2

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	17
Distance Factor	20 %
Position	L11.0 P0.7 F61.8 mm
Orientation	S > T0.5
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	5030.0 ms
TE	87.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	5030.0 ms
TE	87.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	160 ms
Freeze Suppr. Tissue	Off
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	432
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	45
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	17
Distance Factor	20 %
Position	L11.0 P0.7 F61.8 mm
Orientation	S > T0.5
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	5030.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L11.0 P0.7 F61.8 mm
Orientation	S > T0.5
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L11.0 P0.7 F61.8
L	11.0 mm
P	0.7 mm
F	61.8 mm
Initial Orientation	S > T
S > T	0.50

Geometry - AutoAlign

> C	0.00
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	50.00 mm
Position	L12.0 A42.1 F140.0 mm
Orientation	C > T-2.1
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	62 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	stir_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	L11.0 P0.7 F61.8 mm
Orientation	S > T0.5
Rotation	90.00 deg
F >> H	420 mm
A >> P	420 mm
R >> L	81 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	5030.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	160 ms
Dark Blood	Off
FoV Read	420 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	stir_sag

Sequence - Part 1

Sequence Name	tir_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast

Sequence - Part 1

Flow Compensation	Read
Bandwidth	181 Hz/Px
Echo Spacing	8.68 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	15
Echo Trains per Slice	15

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle > TR
Min Flip Angle	140 deg
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_stir_sag-AAT-DRB *

TA: 1:22 min Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 2/2

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	17
Distance Factor	30 %
Position	L10.7 P4.3 F378.2 mm
Orientation	S > T-0.3
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	5030.0 ms
TE	87.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	5030.0 ms
TE	87.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	160 ms
Freeze Suppr. Tissue	Off
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	432
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	45
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	17
Distance Factor	30 %
Position	L10.7 P4.3 F378.2 mm
Orientation	S > T-0.3
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	5030.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L10.7 P4.3 F378.2 mm
Orientation	S > T-0.3
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Saturation Region	1
Thickness	50.00 mm
Position	L12.0 A17.2 F378.0 mm
Orientation	C > T7.4
Shape	Asymmetric
Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	378 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	stir_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Standard
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

System - Adjust Volume

Position	L10.7 P4.3 F378.2 mm
Orientation	S > T-0.3
Rotation	90.00 deg
F >> H	420 mm
A >> P	420 mm
R >> L	88 mm
Reset	Off

System - Tx/Rx

Frequency 1H	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	5030.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	160 ms
Dark Blood	Off
FoV Read	420 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	stir_sag

Sequence - Part 1

Sequence Name	tir_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	181 Hz/Px
Echo Spacing	8.68 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	15

Sequence - Part 1

Echo Trains per Slice	15

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	Flip Angle > TR
Min Flip Angle	140 deg
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag_I-II-AAT-DRB *

TA: 44 sec Coil Selection: Auto Voxel Size: 0.5×0.5×3.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 1/2

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	21
Distance Factor	20 %
Position	L6.0 P10.9 F53.0 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	598.0 ms
TE	7.30 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	598.0 ms
TE	7.30 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	400
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	21
Distance Factor	20 %
Position	L6.0 P10.9 F53.0 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	598.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L6.0 P10.9 F53.0 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L6.0 P10.9 F53.0
L	6.0 mm
P	10.9 mm
F	53.0 mm
Initial Orientation	S > T
S > T	0.10
> C	0.00

Geometry - AutoAlign

Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	53 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t1_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	598.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	420 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t1_sag

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	231 Hz/Px
Echo Spacing	7.34 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	70

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	680.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_sag_I-II-AAT-DRB *

TA: 44 sec Coil Selection: Auto Voxel Size: 0.5×0.5×3.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 2/2

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	3rd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	21
Distance Factor	20 %
Position	L5.6 P14.1 F399.6 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	598.0 ms
TE	7.30 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	598.0 ms
TE	7.30 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	420 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	400
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	21
Distance Factor	20 %
Position	L5.6 P14.1 F399.6 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	598.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L5.6 P14.1 F399.6 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	400 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t1_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	598.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	420 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t1_sag

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	231 Hz/Px
Echo Spacing	7.34 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	70

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off

Sequence - Part 2

Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_sag_I-II-AAT-DRB *

TA: 46 sec Coil Selection: Auto Voxel Size: 0.5×0.5×3.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 1/2

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	2nd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	21
Distance Factor	20 %
Position	L6.0 P10.9 F53.0 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	3200.0 ms
TE	90.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	3200.0 ms
TE	90.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

Resolution - Common

FoV Read	420 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	400
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	44
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	21
Distance Factor	20 %
Position	L6.0 P10.9 F53.0 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	3200.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L6.0 P10.9 F53.0 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L6.0 P10.9 F53.0
L	6.0 mm
P	10.9 mm
F	53.0 mm
Initial Orientation	S > T
S > T	0.10
> C	0.00

Geometry - AutoAlign

Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	53 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	3200.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	420 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

Sequence - Part 1

Sequence Name	tseR_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	192 Hz/Px
Echo Spacing	8.22 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	17
Echo Trains per Slice	13

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_sag_I-II-AAT-DRB *

TA: 46 sec Coil Selection: Auto Voxel Size: 0.5×0.5×3.0 mm³ Acc:: 3 Rel. SNR: 1.00 | Substep: 2/2

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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	On
Graphic segment	2nd Segment
Inline Movie	Off

Routine

Slice Group	1
Slices	21
Distance Factor	20 %
Position	L5.6 P14.1 F399.6 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	3200.0 ms
TE	90.00 ms
Averages	1
Concatenations	1
AutoAlign	---

Contrast - Common

TR	3200.0 ms
TE	90.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	Restore
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Off

Resolution - Common

FoV Read	420 mm

Resolution - Common

FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	400
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	3
Reference Lines PE	44
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	21
Distance Factor	20 %
Position	L5.6 P14.1 F399.6 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	80 %
FoV Read	420 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	3200.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L5.6 P14.1 F399.6 mm
Orientation	S > T0.1
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
F	0.0 mm
Initial Orientation	Sagittal
Initial Rotation	90.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	On
Table Position	400 mm
Table Position	F
Disable Voice Commands	Off
Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	3200.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	420 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	On
Normalize	Off
Save non-normalized	On
Composing Function	Spine
Series Description	t2_sag

Sequence - Part 1

Sequence Name	tseR_rr
Dimension	2D
RF Pulse Type	Fast
Gradient Mode	Fast
Flow Compensation	Read
Bandwidth	192 Hz/Px
Echo Spacing	8.22 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	17
Echo Trains per Slice	13

Sequence - Part 2

Introduction	On
Phase Correction	Off
Compensate T2 Decay	Off

Sequence - Part 2

Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	4500.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_stir_cor-AAT-DRB *

TA: 1:33 min Coil Selection: Auto Voxel Size: 0.6×0.6×4.0 mm³ Acc:: 4 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	25
Distance Factor	20 %
Position	L39.6 P47.6 F27.6 mm
Orientation	C > T-20.1 > S-0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	90 %
FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	3670.0 ms
TE	48.00 ms
Averages	2
Concatenations	1
AutoAlign	---

Contrast - Common

TR	3670.0 ms
TE	48.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	170 ms
Freeze Suppr. Tissue	Off
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	224
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	30
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	25
Distance Factor	20 %
Position	L39.6 P47.6 F27.6 mm
Orientation	C > T-20.1 > S-0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	90 %
FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	3670.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L39.6 P47.6 F27.6 mm
Orientation	C > T-20.1 > S-0.1
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L39.6 P47.6 F27.6
L	39.6 mm
P	47.6 mm
F	27.6 mm
Initial Orientation	C > T
C > T	-20.10

Geometry - AutoAlign

> S	-0.10
Initial Rotation	-89.54 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	28 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	3670.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	170 ms
Dark Blood	Off
FoV Read	260 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tir
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	191 Hz/Px
Echo Spacing	9.60 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	9
Echo Trains per Slice	12

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off

Sequence - Part 2

Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR > Flip Angle
Min Flip Angle	130 deg
Max. TR	4000.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_tra-AAT-DRB *

TA: 2:22 min Coil Selection: Auto Voxel Size: 0.5×0.5×3.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	30
Distance Factor	10 %
Position	L43.7 P51.4 F45.0 mm
Orientation	T > C24.7 > S0.5
Phase Encoding Dir.	A >> P
Phase Oversampling	100 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	579.0 ms
TE	10.00 ms
Averages	2
Concatenations	2
AutoAlign	---

Contrast - Common

TR	579.0 ms
TE	10.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	224
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	24
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	30
Distance Factor	10 %
Position	L43.7 P51.4 F45.0 mm
Orientation	T > C24.7 > S0.5
Phase Encoding Dir.	A >> P
Phase Oversampling	100 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	579.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	L43.7 P51.4 F45.0 mm
Orientation	T > C24.7 > S0.5
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	L43.7 P51.4 F45.0
L	43.7 mm
P	51.4 mm
F	45.0 mm
Initial Orientation	T > C
T > C	24.70

Geometry - AutoAlign

> S	0.50
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	45 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	579.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	220 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Low SAR
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	205 Hz/Px
Echo Spacing	10.3 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	60

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t2_tse_stir_tra-AAT-DRB *

TA: 1:46 min Coil Selection: Auto Voxel Size: 0.6×0.6×3.0 mm³ Acc:: 4 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	30
Distance Factor	10 %
Position	L43.7 P51.4 F45.0 mm
Orientation	T > C24.7 > S0.5
Phase Encoding Dir.	A >> P
Phase Oversampling	90 %
FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	4190.0 ms
TE	48.00 ms
Averages	2
Concatenations	1
AutoAlign	---

Contrast - Common

TR	4190.0 ms
TE	48.00 ms
MTC	Off
Magn. Preparation	Slice-sel. IR
TI	170 ms
Freeze Suppr. Tissue	Off
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
Base Resolution	224
Phase Resolution	80 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	4
Reference Lines PE	30
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	30
Distance Factor	10 %
Position	L43.7 P51.4 F45.0 mm
Orientation	T > C24.7 > S0.5
Phase Encoding Dir.	A >> P
Phase Oversampling	90 %
FoV Read	260 mm
FoV Phase	100.0 %
Slice Thickness	3.0 mm
TR	4190.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice Group	1
Position	L43.7 P51.4 F45.0 mm
Orientation	T > C24.7 > S0.5
Phase Encoding Dir.	A >> P
AutoAlign	---
Initial Position	L43.7 P51.4 F45.0
L	43.7 mm
P	51.4 mm
F	45.0 mm
Initial Orientation	T > C
T > C	24.70

Geometry - AutoAlign

> S	0.50
Initial Rotation	0.00 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	45 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	4190.0 ms
Concatenations	1

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	Slice-sel. IR
TI	170 ms
Dark Blood	Off
FoV Read	260 mm
FoV Phase	100.0 %
Phase Resolution	80 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	1

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tir
Dimension	2D
RF Pulse Type	Normal
Gradient Mode	Normal
Flow Compensation	None
Bandwidth	191 Hz/Px
Echo Spacing	9.60 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	9
Echo Trains per Slice	12

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off

Sequence - Part 2

Acoustic noise reduction	Off
Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR > Flip Angle
Min Flip Angle	130 deg
Max. TR	4000.0 ms
Allowed Delay	30 s

\\MR Physics 2 - AAT\Spine\Spine all\AAT options\t1_tse_cor-AAT-DRB *

TA: 1:59 min Coil Selection: Auto Voxel Size: 0.5×0.5×4.0 mm³ Acc:: 2 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
Load Images to Stamp Segments	On
Load Images to Graphic Segments	Off
Graphic segment	Default
Inline Movie	Off

Routine

Slice Group	1
Slices	25
Distance Factor	20 %
Position	L39.6 P47.6 F27.6 mm
Orientation	C > T-20.1 > S-0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	90 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	502.0 ms
TE	10.00 ms
Averages	2
Concatenations	2
AutoAlign	---

Contrast - Common

TR	502.0 ms
TE	10.00 ms
TD	0.00 ms
MTC	Off
Magn. Preparation	None
Flip Angle	150 deg
Fat-Water Contrast	Standard
Dark Blood	Off
Contrasts	1
Wrap-up Magn.	None
Reconstruction	Magnitude

Contrast - Dynamic

Dynamic Mode	Standard
Measurements	1
Multiple Series	Each Measurement

Resolution - Common

FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
Base Resolution	224
Phase Resolution	75 %
Interpolation	On

Resolution - Acceleration

Acceleration mode	GRAPPA
Reference Scans	Integrated
Acceleration Factor PE	2
Reference Lines PE	27
Deep Resolve	On
Phase Partial Fourier	Off

Resolution - Filter

Raw Filter	Off
Elliptical Filter	Off
Distortion Correction	2D
Normalize	Prescan
Image Filter	Off

Geometry - Common

Slice Group	1
Slices	25
Distance Factor	20 %
Position	L39.6 P47.6 F27.6 mm
Orientation	C > T-20.1 > S-0.1
Phase Encoding Dir.	H >> F
Phase Oversampling	90 %
FoV Read	220 mm
FoV Phase	100.0 %
Slice Thickness	4.0 mm
TR	502.0 ms
Multi-Slice Mode	Interleaved
Series	Interleaved
Concatenations	2

Geometry - AutoAlign

Slice Group	1
Position	L39.6 P47.6 F27.6 mm
Orientation	C > T-20.1 > S-0.1
Phase Encoding Dir.	H >> F
AutoAlign	---
Initial Position	L39.6 P47.6 F27.6
L	39.6 mm
P	47.6 mm
F	27.6 mm
Initial Orientation	C > T
C > T	-20.10

Geometry - AutoAlign

> S	-0.10
Initial Rotation	-89.54 deg

Geometry - Navigator

Geometry - Saturation

Special Saturation	None

Geometry - Tim Planning Suite

Set-n-Go Protocol	Off
Table Position	28 mm
Table Position	F
Inline Composing	Off

System - Miscellaneous

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

System - Adjustments

Adjustment Strategy	Standard
B0 Shim	Tune up
CoilShim	Off
Adjustment Tolerance	Auto
Adjust with Body Coil	Off
Confirm Frequency	Never
Assume Silicone	Off

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	63.679699 MHz
? Ref. Amplitude 1H	0.000 V
Reset	Off
Image Scaling	1.000

Physio - Signal

1st Signal/Mode	None
TR	502.0 ms
Concatenations	2

Physio - Cardiac

Fat-Water Contrast	Standard
Magn. Preparation	None
Dark Blood	Off
FoV Read	220 mm
FoV Phase	100.0 %
Phase Resolution	75 %
Motion Correction	None

Physio - PACE

Resp. Control	Off
Concatenations	2

Inline - Subtraction

Subtract	Off
Measurements	1
StdDev	Off
Motion Correction	None
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 - Composing

Inline Composing	Off

Sequence - Part 1

Sequence Name	tse
Dimension	2D
RF Pulse Type	Low SAR
Gradient Mode	Fast
Flow Compensation	None
Bandwidth	205 Hz/Px
Echo Spacing	10.3 ms
Free Echo Spacing	Off
Define	Turbo Factor
Turbo Factor	3
Echo Trains per Slice	58

Sequence - Part 2

Introduction	On
Phase Correction	Automatic
Compensate T2 Decay	Off
Fast Mode	Off
WARP	Off
Red. EC Sensitivity	Off
Acoustic noise reduction	Off

Sequence - Part 2

Reduce Motion Sens.	On
Motion Correction	None

Sequence - Assistant

SAR Assistant	TR
Max. TR	650.0 ms
Allowed Delay	30 s