

**Table of contents**

\\User\_PW

Ganzkörper

Myelom

Myelom Standard

[FastViewLocalizer](#)  
[GK\\_t2\\_tirm\\_cor](#)  
[GK\\_t1\\_tse\\_cor](#)  
[DWEPI\\_b50\\_800d\\_ishim\\_ir\\_von Nasenwurzel  
abwärts](#)

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\FastViewLocalizer

TA: 0:42 PM: ISO Voxel size: 5.0×5.0×5.0 mmRel. SNR: 1.00 : flct

**Properties**

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

**Routine**

Slice group	1
Slices	1
Dist. factor	100 %
Position	L0.0 A25.0 H247.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
FoV read	480 mm
FoV phase	87.5 %
Slice thickness	5 mm
TR	3.31 ms
TE	2.19 ms
Filter	Distortion Corr.(2D)
Coil elements	BC

**Contrast - Common**

TR	3.31 ms
TE	2.19 ms

**Resolution - Common**

FoV read	480 mm
FoV phase	87.5 %
Slice thickness	5 mm
Base resolution	96
Phase resolution	100 %
Phase partial Fourier	6/8

**Geometry - Common**

Slice group	1
Slices	1
Dist. factor	100 %
Position	L0.0 A25.0 H247.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	480 mm
FoV phase	87.5 %
Slice thickness	5 mm
TR	3.31 ms

**Geometry - AutoAlign**

Slice group	1
Position	L0.0 A25.0 H247.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	L0.0 A25.0 H247.0

**Geometry - AutoAlign**

L	0.0 mm
A	25.0 mm
H	247.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

**Geometry - Tim Planning Suite**

Table position	H
Table position	247 mm
Inline Composing	Off

**Geometry - Tim CT**

Tim CT mode	On
Range start	H
Range start	250 mm
Total FoV	H >> F
Total FoV	1500 mm
Slices	1
Slice thickness	5 mm
Dist. factor	100 %
FoV read	480 mm
FoV phase	87.5 %
Perform CTM adjustments	On
Table Speed	36 mm/s

**System - Miscellaneous**

Positioning mode	ISO
Table position	H
Table position	247 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Standard
Adj. water suppr.	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Perform CTM adjustments	On
Adjustment Tolerance	Maximum

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Img. Scale Cor.	1.000

**Sequence - Part 1**

Dimension	2D
Bandwidth	801.282051 Hz/Px

**Sequence - Assistant**

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

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t2\_tirm\_cor

TA: 1:07 PM: ISO Voxel size: 0.7×0.7×5.0 mmPAT: 3 Rel. SNR: 1.00 : tir | Substep: 1/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 H9.9 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	70 %
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
TE	56 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	BO1,2;HE3,4;NE1,2;SP1,2

**Contrast - Common**

TR	3650.0 ms
TE	56 ms
TD	0.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	160 ms
Flip angle	140 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off
Freeze suppressed tissue	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	320
Phase resolution	75 %
Phase partial Fourier	Off

**Resolution - Common**

Trajectory	Cartesian
Interpolation	On

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	27
Reference scan mode	Integrated

**Resolution - Filter Image**

Image Filter	On
! Intensity	Sharp
Edge Enhancement	1
Smoothing	1
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	On
Unfiltered images	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 H9.9 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	2

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 H9.9 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P16.3 H9.9
L	11.1 mm
P	16.3 mm
H	9.9 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator**

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	H
Table position	10 mm
Inline Composing	On
Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	H
Table position	10 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	3650.0 ms
Concatenations	2

**Physio - Cardiac**

Magn. preparation	Slice-sel. IR
T1	160 ms
Fat suppr.	None
Dark blood	Off
FoV read	470 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	2

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T2 Tirm comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	7.04 ms
Bandwidth	233 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	8
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Fast
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	15

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	140 deg
Allowed delay	30 s

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t2\_tirm\_cor

TA: 1:07 PM: ISO Voxel size: 0.7×0.7×5.0 mmPAT: 3 Rel. SNR: 1.00 : tir | Substep: 2/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F219.3 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	70 %
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
TE	56 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	BO1-3;BO1;NE1,2;SP1-3

**Contrast - Common**

TR	3650.0 ms
TE	56 ms
TD	0.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	160 ms
Flip angle	140 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off
Freeze suppressed tissue	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	320
Phase resolution	75 %
Phase partial Fourier	Off

**Resolution - Common**

Trajectory	Cartesian
Interpolation	On

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	27
Reference scan mode	Integrated

**Resolution - Filter Image**

Image Filter	On
! Intensity	Sharp
Edge Enhancement	1
Smoothing	1
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	On
Unfiltered images	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F219.3 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	2

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 F219.3 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P2.6 F263.7
L	11.1 mm
P	2.6 mm
F	263.7 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator**

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	F
Table position	219 mm
Inline Composing	On
Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	219 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	3650.0 ms
Concatenations	2

**Physio - Cardiac**

Magn. preparation	Slice-sel. IR
T1	160 ms
Fat suppr.	None
Dark blood	Off
FoV read	470 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	2

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T2 Tirm comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	7.04 ms
Bandwidth	233 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	8
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Fast
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	15

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	140 deg
Allowed delay	30 s

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t2\_tirm\_cor

TA: 1:07 PM: ISO Voxel size: 0.7×0.7×5.0 mmPAT: 3 Rel. SNR: 1.00 : tir | Substep: 3/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F479.7 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	70 %
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
TE	56 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	BO3;BO1-3;SP3-5

**Contrast - Common**

TR	3650.0 ms
TE	56 ms
TD	0.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	160 ms
Flip angle	140 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off
Freeze suppressed tissue	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	320
Phase resolution	75 %
Phase partial Fourier	Off

**Resolution - Common**

Trajectory	Cartesian
Interpolation	On

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	27
Reference scan mode	Integrated

**Resolution - Filter Image**

Image Filter	On
! Intensity	Sharp
Edge Enhancement	1
Smoothing	1
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	On
Unfiltered images	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F479.7 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	2

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 F479.7 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P2.6 F263.7
L	11.1 mm
P	2.6 mm
F	263.7 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator**

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	F
Table position	480 mm
Inline Composing	On
Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	480 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	3650.0 ms
Concatenations	2

**Physio - Cardiac**

Magn. preparation	Slice-sel. IR
T1	160 ms
Fat suppr.	None
Dark blood	Off
FoV read	470 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	2

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T2 Tirm comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	7.04 ms
Bandwidth	233 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	8
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Fast
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	15

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	140 deg
Allowed delay	30 s



\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t2\_tirm\_cor

TA: 1:07 PM: ISO Voxel size: 0.7×0.7×5.0 mmPAT: 3 Rel. SNR: 1.00 : tir | Substep: 4/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F689.8 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	70 %
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
TE	56 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	BO2,3;PA5,6;SP4-7

**Contrast - Common**

TR	3650.0 ms
TE	56 ms
TD	0.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	160 ms
Flip angle	140 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off
Freeze suppressed tissue	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	320
Phase resolution	75 %
Phase partial Fourier	Off

**Resolution - Common**

Trajectory	Cartesian
Interpolation	On

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	27
Reference scan mode	Integrated

**Resolution - Filter Image**

Image Filter	On
! Intensity	Sharp
Edge Enhancement	1
Smoothing	1
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	On
Unfiltered images	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F689.8 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	2

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 F689.8 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P2.6 F263.7
L	11.1 mm
P	2.6 mm
F	263.7 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	F
Table position	690 mm
Inline Composing	On
Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	690 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	3650.0 ms
Concatenations	2

**Physio - Cardiac**

Magn. preparation	Slice-sel. IR
T1	160 ms
Fat suppr.	None
Dark blood	Off
FoV read	470 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	2

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T2 Tirm comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	7.04 ms
Bandwidth	233 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	8
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Fast
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	15

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	140 deg
Allowed delay	30 s

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t2\_tirm\_cor

TA: 1:07 PM: ISO Voxel size: 0.7×0.7×5.0 mmPAT: 3 Rel. SNR: 1.00 : tir | Substep: 5/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F934.2 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	70 %
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
TE	56 ms
Averages	1
Concatenations	2
Filter	Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	PA4-6;SP6-8

**Contrast - Common**

TR	3650.0 ms
TE	56 ms
TD	0.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	160 ms
Flip angle	140 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off
Freeze suppressed tissue	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	320
Phase resolution	75 %
Phase partial Fourier	Off

**Resolution - Common**

Trajectory	Cartesian
Interpolation	On

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	27
Reference scan mode	Integrated

**Resolution - Filter Image**

Image Filter	On
! Intensity	Sharp
Edge Enhancement	1
Smoothing	1
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Unfiltered images	Off
Prescan Normalize	On
Unfiltered images	Off
Normalize	Off
B1 filter	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F934.2 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	470 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	3650.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	2

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 F934.2 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P2.6 F263.7
L	11.1 mm
P	2.6 mm
F	263.7 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator**

**Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	F
Table position	934 mm
Inline Composing	On
Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	934 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	3650.0 ms
Concatenations	2

**Physio - Cardiac**

Magn. preparation	Slice-sel. IR
T1	160 ms
Fat suppr.	None
Dark blood	Off
FoV read	470 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	2

**Inline - Common**

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T2 Tirm comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	Off
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	7.04 ms
Bandwidth	233 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	8
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Fast
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	15

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	140 deg
Allowed delay	30 s

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t1\_tse\_cor

TA: 1:43 PM: ISO Voxel size: 1.3×1.3×5.0 mmPAT: 2 Rel. SNR: 1.00 : tse | Substep: 1/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 H9.9 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	60 %
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
TE	8.4 ms
Averages	1
Concatenations	4
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	HE1-4;NE1,2;SP1

**Contrast - Common**

TR	528.0 ms
TE	8.4 ms
TD	0.0 ms
MTC	Off
Magn. preparation	None
Flip angle	150 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	384
Phase resolution	75 %
Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	30
Reference scan mode	Integrated

**Resolution - Filter Image**

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

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	On

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 H9.9 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	4

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 H9.9 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P16.3 H9.9
L	11.1 mm
P	16.3 mm
H	9.9 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	H
Table position	10 mm
Inline Composing	On

**Geometry - Tim Planning Suite**

Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	H
Table position	10 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	528.0 ms
Concatenations	4

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	500 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	4

**Inline - Common**

Subtract	Off
----------	-----

**Inline - Common**

Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T1 cor comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	On
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	8.42 ms
Bandwidth	241 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	47
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	4

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	130 deg
Allowed delay	30 s

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t1\_tse\_cor

TA: 1:43 PM: ISO Voxel size: 1.3×1.3×5.0 mmPAT: 2 Rel. SNR: 1.00 : tse | Substep: 2/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F219.3 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	60 %
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
TE	8.4 ms
Averages	1
Concatenations	4
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	BO1,2;HE3,4;NE1,2;SP1,2

**Contrast - Common**

TR	528.0 ms
TE	8.4 ms
TD	0.0 ms
MTC	Off
Magn. preparation	None
Flip angle	150 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	384
Phase resolution	75 %
Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	30
Reference scan mode	Integrated

**Resolution - Filter Image**

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

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	On

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F219.3 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	4

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 F219.3 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P2.6 F263.7
L	11.1 mm
P	2.6 mm
F	263.7 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	F
Table position	219 mm
Inline Composing	On

**Geometry - Tim Planning Suite**

Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	219 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	528.0 ms
Concatenations	4

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	500 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	4

**Inline - Common**

Subtract	Off
----------	-----

**Inline - Common**

Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T1 cor comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	On
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	8.42 ms
Bandwidth	241 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	47
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	4

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	130 deg
Allowed delay	30 s



\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t1\_tse\_cor

TA: 1:43 PM: ISO Voxel size: 1.3×1.3×5.0 mmPAT: 2 Rel. SNR: 1.00 : tse | Substep: 3/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F479.7 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	60 %
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
TE	8.4 ms
Averages	1
Concatenations	4
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	BO1-3;BO1;SP2-4

**Contrast - Common**

TR	528.0 ms
TE	8.4 ms
TD	0.0 ms
MTC	Off
Magn. preparation	None
Flip angle	150 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	384
Phase resolution	75 %
Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	30
Reference scan mode	Integrated

**Resolution - Filter Image**

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

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	On

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F479.7 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	4

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 F479.7 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P2.6 F263.7
L	11.1 mm
P	2.6 mm
F	263.7 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	F
Table position	480 mm
Inline Composing	On

**Geometry - Tim Planning Suite**

Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	480 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	528.0 ms
Concatenations	4

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	500 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	4

**Inline - Common**

Subtract	Off
----------	-----

**Inline - Common**

Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T1 cor comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	On
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	8.42 ms
Bandwidth	241 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	47
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	4

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	130 deg
Allowed delay	30 s

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t1\_tse\_cor

TA: 1:43 PM: ISO Voxel size: 1.3×1.3×5.0 mmPAT: 2 Rel. SNR: 1.00 : tse | Substep: 4/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F689.8 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	60 %
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
TE	8.4 ms
Averages	1
Concatenations	4
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	BO3;BO1-3;SP3-6

**Contrast - Common**

TR	528.0 ms
TE	8.4 ms
TD	0.0 ms
MTC	Off
Magn. preparation	None
Flip angle	150 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	384
Phase resolution	75 %
Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	30
Reference scan mode	Integrated

**Resolution - Filter Image**

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

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	On

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F689.8 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	4

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 F689.8 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P2.6 F263.7
L	11.1 mm
P	2.6 mm
F	263.7 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	F
Table position	690 mm
Inline Composing	On

**Geometry - Tim Planning Suite**

Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	690 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	528.0 ms
Concatenations	4

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	500 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	4

**Inline - Common**

Subtract	Off
----------	-----

**Inline - Common**

Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T1 cor comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	On
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	8.42 ms
Bandwidth	241 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	47
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	4

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	130 deg
Allowed delay	30 s

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\GK\_t1\_tse\_cor

TA: 1:43 PM: ISO Voxel size: 1.3×1.3×5.0 mmPAT: 2 Rel. SNR: 1.00 : tse | Substep: 5/5

**Properties**

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

**Routine**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F934.2 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Phase oversampling	60 %
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
TE	8.4 ms
Averages	1
Concatenations	4
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	BO2,3;PA6;SP5-8

**Contrast - Common**

TR	528.0 ms
TE	8.4 ms
TD	0.0 ms
MTC	Off
Magn. preparation	None
Flip angle	150 deg
Fat suppr.	None
Water suppr.	None
Restore magn.	Off

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
Base resolution	384
Phase resolution	75 %
Phase partial Fourier	Off
Trajectory	Cartesian
Interpolation	Off

**Resolution - iPAT**

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	30
Reference scan mode	Integrated

**Resolution - Filter Image**

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

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	On

**Geometry - Common**

Slice group	1
Slices	52
Dist. factor	10 %
Position	L11.1 P16.3 F934.2 mm
Orientation	Coronal
Phase enc. dir.	F >> H
FoV read	500 mm
FoV phase	75.0 %
Slice thickness	5.0 mm
TR	528.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	4

**Geometry - AutoAlign**

Slice group	1
Position	L11.1 P16.3 F934.2 mm
Orientation	Coronal
Phase enc. dir.	F >> H
AutoAlign	---
Initial Position	L11.1 P2.6 F263.7
L	11.1 mm
P	2.6 mm
F	263.7 mm
Initial Rotation	90.00 deg
Initial Orientation	Coronal

**Geometry - Saturation**

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

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
Table position	F
Table position	934 mm
Inline Composing	On

**Geometry - Tim Planning Suite**

Normalize	Off
Composing Function	Adaptive

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	934 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Save uncombined	Off
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	Tune up
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

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

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	528.0 ms
Concatenations	4

**Physio - Cardiac**

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	500 mm
FoV phase	75.0 %
Phase resolution	75 %
Trajectory	Cartesian

**Physio - PACE**

Resp. control	Off
Concatenations	4

**Inline - Common**

Subtract	Off
----------	-----

**Inline - Common**

Measurements	1
StdDev	Off
Save original images	On

**Inline - MIP**

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

**Inline - Composing**

Inline Composing	On
Composing Function	Adaptive
Normalize	Off
Series Description	T1 cor comp
Distortion Corr.	On
Mode	2D
Unfiltered images	Off

**Sequence - Part 1**

Introduction	On
Dimension	2D
Compensate T2 decay	Off
Reduce Motion Sens.	On
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	8.42 ms
Bandwidth	241 Hz/Px

**Sequence - Part 2**

Define	Turbo factor
Echo trains per slice	47
Phase correction	Automatic
Acoustic noise reduction	None
RF pulse type	Normal
Gradient mode	Fast
WARP	Off
Red. EC sensitivity	Off
Turbo factor	4

**Sequence - Assistant**

Mode	Min flip angle
Min flip angle	130 deg
Allowed delay	30 s

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\DWEPI\_b50\_800d\_ishim\_ir\_von Nasenwurzel abw  
ärts

TA: 2:49 PM: ISO Voxel size: 1.8×1.8×6.0 mmPAT: 2 Rel. SNR: 1.00 : WIPepir | Substep: 1/5

### Properties

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

### Routine

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F6.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
TE	64.0 ms
Concatenations	1
Filter	Dynamic Field Corr., Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	BO1;HE3,4;NE1,2;SP1

### Contrast - Common

TR	5130 ms
TE	64.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	180 ms
IR scheme	Sequential
Fat suppr.	None
Fat sat. mode	Strong

### Contrast - Dynamic

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

### Resolution - Common

FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	On

### Resolution - iPAT

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Reference scan mode	GRE/separate

### Resolution - Filter Image

Image Filter	On
Intensity	Iterative Denoising
Edge Enhancement	3
Smoothing	3
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Prescan Normalize	On
Dynamic Field Corr.	On
Unfiltered images	Off

### Resolution - Filter Rawdata

Raw filter	Off
Elliptical filter	Off

### Geometry - Common

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F6.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	L12.8 P4.5 F6.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	L12.8 P4.5 F6.0
L	12.8 mm
P	4.5 mm
F	6.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

### Geometry - Saturation

Fat suppr.	None
Fat sat. mode	Strong
Special sat.	None

### Geometry - Navigator

### Geometry - Tim Planning Suite

Set-n-Go Protocol	On
-------------------	----

**Geometry - Tim Planning Suite**

Table position	F
Table position	6 mm
Inline Composing	On
Normalize	Off
Composing Function	Diffusion

**System - Miscellaneous**

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

**System - Adjustments**

B0 Shim mode	iShim
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L3.8 P17.5 F8.3 mm
! Orientation	Transversal
! Rotation	0.00 deg
! A >> P	270 mm
! R >> L	365 mm
! F >> H	266 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	3.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	5130 ms
Concatenations	1

**Physio - PACE**

Resp. control	Off
Concatenations	1

**Diff - Neuro**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21

**Diff - Neuro**

Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
FA maps	Off
Mosaic	Off
Tensor	Off
Synthetic images	Off
Plain images	Off
Noise level	10

**Diff - Body**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm <sup>2</sup>
Noise level	10

**Diff - Composing**

Inline Composing	On
Composing Function	Diffusion
Normalize	Off
Series Description	
Distortion Corr.	On
Mode	2D

**Sequence - Part 1**

Introduction	Off
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.65 ms
Bandwidth	1776 Hz/Px

**Sequence - Part 2**

RF Optimization	Auto
EPI factor	80
RF pulse type	Low SAR
Gradient mode	Fast

**Sequence - Special**

iShim mode	Freq. + Grad.
Phase correction	Internal
Adv. Processing	On
Moco Averages	Off
Moco BValues	Off
Moco 3D	Off
Filter	On
Combine	On
Rescale	On
MIP high b-value	Off
Send Original	On
Calc ADC	On



**Sequence - Special**

Least Square	Off
Adv. Noise Est.	Off
PMU Signal	Off
Locally Correct ADC	Off
Locally Corrected DWI	Off
Toggle PE polarity	Off
Background suppression	On
Safety Region	0 Pixel
iShim window	On
iShim window L >> R	200 mm
iShim window A >> P	144 mm
iShim Distor. correction	On
DFC tolerance x	1.0

**Sequence - Assistant**

Allowed delay	30 s
---------------	------

\\User_PW\Ganzkörper\Myelom\Myelom Standard\DWEPI_b50_800d_ishim_ir_von Nasenwurzel abwärts
TA: 2:49 PM: ISO Voxel size: 1.8×1.8×6.0 mmPAT: 2 Rel. SNR: 1.00 : WIPepir   Substep: 2/5

**Properties**

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

**Routine**

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F234.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
TE	64.0 ms
Concatenations	1
Filter	Dynamic Field Corr., Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	BO1-3;SP1-3

**Contrast - Common**

TR	5130 ms
TE	64.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	180 ms
IR scheme	Sequential
Fat suppr.	None
Fat sat. mode	Strong

**Contrast - Dynamic**

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

**Resolution - Common**

FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	On

**Resolution - iPAT**

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Reference scan mode	GRE/separate

**Resolution - Filter Image**

Image Filter	On
Intensity	Iterative Denoising
Edge Enhancement	3
Smoothing	3
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Prescan Normalize	On
Dynamic Field Corr.	On
Unfiltered images	Off

**Resolution - Filter Rawdata**

Raw filter	Off
Elliptical filter	Off

**Geometry - Common**

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F234.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

**Geometry - AutoAlign**

Slice group	1
Position	L12.8 P4.5 F234.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	L6.0 P23.8 F121.9
L	6.0 mm
P	23.8 mm
F	121.9 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

**Geometry - Saturation**

Fat suppr.	None
Fat sat. mode	Strong
Special sat.	None

**Geometry - Navigator****Geometry - Tim Planning Suite**

Set-n-Go Protocol	On
-------------------	----

**Geometry - Tim Planning Suite**

Table position	F
Table position	234 mm
Inline Composing	On
Normalize	Off
Composing Function	Diffusion

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	234 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	iShim
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L0.3 P17.5 F237.1 mm
! Orientation	Transversal
! Rotation	0.00 deg
! A >> P	270 mm
! R >> L	442 mm
! F >> H	266 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	3.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	5130 ms
Concatenations	1

**Physio - PACE**

Resp. control	Off
Concatenations	1

**Diff - Neuro**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21

**Diff - Neuro**

Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
FA maps	Off
Mosaic	Off
Tensor	Off
Synthetic images	Off
Plain images	Off
Noise level	10

**Diff - Body**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm <sup>2</sup>
Noise level	10

**Diff - Composing**

Inline Composing	On
Composing Function	Diffusion
Normalize	Off
Series Description	
Distortion Corr.	On
Mode	2D

**Sequence - Part 1**

Introduction	Off
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.65 ms
Bandwidth	1776 Hz/Px

**Sequence - Part 2**

RF Optimization	Auto
EPI factor	80
RF pulse type	Low SAR
Gradient mode	Fast

**Sequence - Special**

iShim mode	Freq. + Grad.
Phase correction	Internal
Adv. Processing	On
Moco Averages	Off
Moco BValues	Off
Moco 3D	Off
Filter	On
Combine	On
Rescale	On
MIP high b-value	Off
Send Original	On
Calc ADC	On

**Sequence - Special**

Least Square	Off
Adv. Noise Est.	Off
PMU Signal	Off
Locally Correct ADC	Off
Locally Corrected DWI	Off
Toggle PE polarity	Off
Background suppression	On
Safety Region	0 Pixel
iShim window	On
iShim window L >> R	200 mm
iShim window A >> P	144 mm
iShim Distor. correction	On
DFC tolerance x	1.0

**Sequence - Assistant**

Allowed delay	30 s
---------------	------

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\DWEPI\_b50\_800d\_ishim\_ir\_von Nasenwurzel abwärts

TA: 2:49 PM: ISO Voxel size: 1.8×1.8×6.0 mmPAT: 2 Rel. SNR: 1.00 : WIPepir | Substep: 3/5

### Properties

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

### Routine

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F462.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
TE	64.0 ms
Concatenations	1
Filter	Dynamic Field Corr., Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	BO3;BO1,2;SP3-5

### Contrast - Common

TR	5130 ms
TE	64.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	180 ms
IR scheme	Sequential
Fat suppr.	None
Fat sat. mode	Strong

### Contrast - Dynamic

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

### Resolution - Common

FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	On

### Resolution - iPAT

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Reference scan mode	GRE/separate

### Resolution - Filter Image

Image Filter	On
Intensity	Iterative Denoising
Edge Enhancement	3
Smoothing	3
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Prescan Normalize	On
Dynamic Field Corr.	On
Unfiltered images	Off

### Resolution - Filter Rawdata

Raw filter	Off
Elliptical filter	Off

### Geometry - Common

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F462.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	L12.8 P4.5 F462.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	L6.0 P23.8 F121.9
L	6.0 mm
P	23.8 mm
F	121.9 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

### Geometry - Saturation

Fat suppr.	None
Fat sat. mode	Strong
Special sat.	None

### Geometry - Navigator

### Geometry - Tim Planning Suite

Set-n-Go Protocol	On
-------------------	----

**Geometry - Tim Planning Suite**

Table position	F
Table position	462 mm
Inline Composing	On
Normalize	Off
Composing Function	Diffusion

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	462 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	iShim
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L7.3 P17.5 F455.3 mm
! Orientation	Transversal
! Rotation	0.00 deg
! A >> P	270 mm
! R >> L	442 mm
! F >> H	266 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	3.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	5130 ms
Concatenations	1

**Physio - PACE**

Resp. control	Off
Concatenations	1

**Diff - Neuro**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21

**Diff - Neuro**

Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
FA maps	Off
Mosaic	Off
Tensor	Off
Synthetic images	Off
Plain images	Off
Noise level	10

**Diff - Body**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm <sup>2</sup>
Noise level	10

**Diff - Composing**

Inline Composing	On
Composing Function	Diffusion
Normalize	Off
Series Description	
Distortion Corr.	On
Mode	2D

**Sequence - Part 1**

Introduction	Off
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.65 ms
Bandwidth	1776 Hz/Px

**Sequence - Part 2**

RF Optimization	Auto
EPI factor	80
RF pulse type	Low SAR
Gradient mode	Fast

**Sequence - Special**

iShim mode	Freq. + Grad.
Phase correction	Internal
Adv. Processing	On
Moco Averages	Off
Moco BValues	Off
Moco 3D	Off
Filter	On
Combine	On
Rescale	On
MIP high b-value	Off
Send Original	On
Calc ADC	On

**Sequence - Special**

Least Square	Off
Adv. Noise Est.	Off
PMU Signal	Off
Locally Correct ADC	Off
Locally Corrected DWI	Off
Toggle PE polarity	Off
Background suppression	On
Safety Region	0 Pixel
iShim window	On
iShim window L >> R	200 mm
iShim window A >> P	144 mm
iShim Distor. correction	On
DFC tolerance x	1.0

**Sequence - Assistant**

Allowed delay	30 s
---------------	------

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\DWEPI\_b50\_800d\_ishim\_ir\_von Nasenwurzel abw  
ärts

TA: 2:49 PM: ISO Voxel size: 1.8×1.8×6.0 mmPAT: 2 Rel. SNR: 1.00 : WIPepir | Substep: 4/5

### Properties

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

### Routine

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F690.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
TE	64.0 ms
Concatenations	1
Filter	Dynamic Field Corr., Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	BO2,3;SP5,6

### Contrast - Common

TR	5130 ms
TE	64.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	180 ms
IR scheme	Sequential
Fat suppr.	None
Fat sat. mode	Strong

### Contrast - Dynamic

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

### Resolution - Common

FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	On

### Resolution - iPAT

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Reference scan mode	GRE/separate

### Resolution - Filter Image

Image Filter	On
Intensity	Iterative Denoising
Edge Enhancement	3
Smoothing	3
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Prescan Normalize	On
Dynamic Field Corr.	On
Unfiltered images	Off

### Resolution - Filter Rawdata

Raw filter	Off
Elliptical filter	Off

### Geometry - Common

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F690.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	L12.8 P4.5 F690.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	L6.0 P23.8 F121.9
L	6.0 mm
P	23.8 mm
F	121.9 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

### Geometry - Saturation

Fat suppr.	None
Fat sat. mode	Strong
Special sat.	None

### Geometry - Navigator

### Geometry - Tim Planning Suite

Set-n-Go Protocol	On
-------------------	----



**Geometry - Tim Planning Suite**

Table position	F
Table position	690 mm
Inline Composing	On
Normalize	Off
Composing Function	Diffusion

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	690 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	iShim
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L3.8 P17.5 F680.6 mm
! Orientation	Transversal
! Rotation	0.00 deg
! A >> P	270 mm
! R >> L	449 mm
! F >> H	266 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	3.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	5130 ms
Concatenations	1

**Physio - PACE**

Resp. control	Off
Concatenations	1

**Diff - Neuro**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21

**Diff - Neuro**

Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
FA maps	Off
Mosaic	Off
Tensor	Off
Synthetic images	Off
Plain images	Off
Noise level	10

**Diff - Body**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm <sup>2</sup>
Noise level	10

**Diff - Composing**

Inline Composing	On
Composing Function	Diffusion
Normalize	Off
Series Description	
Distortion Corr.	On
Mode	2D

**Sequence - Part 1**

Introduction	Off
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.65 ms
Bandwidth	1776 Hz/Px

**Sequence - Part 2**

RF Optimization	Auto
EPI factor	80
RF pulse type	Low SAR
Gradient mode	Fast

**Sequence - Special**

iShim mode	Freq. + Grad.
Phase correction	Internal
Adv. Processing	On
Moco Averages	Off
Moco BValues	Off
Moco 3D	Off
Filter	On
Combine	On
Rescale	On
MIP high b-value	Off
Send Original	On
Calc ADC	On

**Sequence - Special**

Least Square	Off
Adv. Noise Est.	Off
PMU Signal	Off
Locally Correct ADC	Off
Locally Corrected DWI	Off
Toggle PE polarity	Off
Background suppression	On
Safety Region	0 Pixel
iShim window	On
iShim window L >> R	200 mm
iShim window A >> P	144 mm
iShim Distor. correction	On
DFC tolerance x	1.0

**Sequence - Assistant**

Allowed delay	30 s
---------------	------

\\User\_PW\Ganzkörper\Myelom\Myelom Standard\DWEPI\_b50\_800d\_ishim\_ir\_von Nasenwurzel abwärts

TA: 2:49 PM: ISO Voxel size: 1.8×1.8×6.0 mmPAT: 2 Rel. SNR: 1.00 : WIPepir | Substep: 5/5

### Properties

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

### Routine

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F918.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
TE	64.0 ms
Concatenations	1
Filter	Dynamic Field Corr., Distortion Corr.(2D), Prescan Normalize, Image Filter
Coil elements	PA5,6;SP6-8

### Contrast - Common

TR	5130 ms
TE	64.0 ms
MTC	Off
Magn. preparation	Slice-sel. IR
TI	180 ms
IR scheme	Sequential
Fat suppr.	None
Fat sat. mode	Strong

### Contrast - Dynamic

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

### Resolution - Common

FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
Base resolution	128
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	On

### Resolution - iPAT

Accel. mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Reference scan mode	GRE/separate

### Resolution - Filter Image

Image Filter	On
Intensity	Iterative Denoising
Edge Enhancement	3
Smoothing	3
Unfiltered images	Off
Distortion Corr.	On
Mode	2D
Prescan Normalize	On
Dynamic Field Corr.	On
Unfiltered images	Off

### Resolution - Filter Rawdata

Raw filter	Off
Elliptical filter	Off

### Geometry - Common

Slice group	1
Slices	38
Dist. factor	0 %
Position	L12.8 P4.5 F918.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	460 mm
FoV phase	62.5 %
Slice thickness	6.0 mm
TR	5130 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

### Geometry - AutoAlign

Slice group	1
Position	L12.8 P4.5 F918.0 mm
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	L6.0 P23.8 F121.9
L	6.0 mm
P	23.8 mm
F	121.9 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

### Geometry - Saturation

Fat suppr.	None
Fat sat. mode	Strong
Special sat.	None

### Geometry - Navigator

### Geometry - Tim Planning Suite

Set-n-Go Protocol	On
-------------------	----

**Geometry - Tim Planning Suite**

Table position	F
Table position	918 mm
Inline Composing	On
Normalize	Off
Composing Function	Diffusion

**System - Miscellaneous**

Positioning mode	ISO
Table position	F
Table position	918 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Off
Coil Focus	Flat
AutoAlign	---
Coil Select Mode	Default

**System - Adjustments**

B0 Shim mode	iShim
Adjust with body coil	Off
Confirm freq. adjustment	Off
Assume Dominant Fat	Off
Assume Silicone	Off
Adjustment Tolerance	Auto

**System - Adjust Volume**

! Position	L0.3 P17.5 F909.3 mm
! Orientation	Transversal
! Rotation	0.00 deg
! A >> P	270 mm
! R >> L	414 mm
! F >> H	266 mm
Reset	Off

**System - Tx/Rx**

Frequency 1H	63.685755 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	3.000
Reset	Off
? Ref. amplitude 1H	0.000 V

**Physio - Signal1**

1st Signal/Mode	None
TR	5130 ms
Concatenations	1

**Physio - PACE**

Resp. control	Off
Concatenations	1

**Diff - Neuro**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21

**Diff - Neuro**

Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
FA maps	Off
Mosaic	Off
Tensor	Off
Synthetic images	Off
Plain images	Off
Noise level	10

**Diff - Body**

Diffusion mode	3D Diagonal
Diff. directions	1
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	50 s/mm <sup>2</sup>
b-value 2	800 s/mm <sup>2</sup>
b-value 1	3
b-value 2	21
Diff. weighted images	On
Trace weighted images	Off
ADC maps	On
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm <sup>2</sup>
Noise level	10

**Diff - Composing**

Inline Composing	On
Composing Function	Diffusion
Normalize	Off
Series Description	
Distortion Corr.	On
Mode	2D

**Sequence - Part 1**

Introduction	Off
Optimization	None
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.65 ms
Bandwidth	1776 Hz/Px

**Sequence - Part 2**

RF Optimization	Auto
EPI factor	80
RF pulse type	Low SAR
Gradient mode	Fast

**Sequence - Special**

iShim mode	Freq. + Grad.
Phase correction	Internal
Adv. Processing	On
Moco Averages	Off
Moco BValues	Off
Moco 3D	Off
Filter	On
Combine	On
Rescale	On
MIP high b-value	Off
Send Original	On
Calc ADC	On

**Sequence - Special**

Least Square	Off
Adv. Noise Est.	Off
PMU Signal	Off
Locally Correct ADC	Off
Locally Corrected DWI	Off
Toggle PE polarity	Off
Background suppression	On
Safety Region	0 Pixel
iShim window	On
iShim window L >> R	200 mm
iShim window A >> P	144 mm
iShim Distor. correction	On
DFC tolerance x	1.0

**Sequence - Assistant**

Allowed delay	30 s
---------------	------