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\\WBIC_PRISMA

WBIC Protocols in Progress

Protocol 418

Ben Davies Spinal 2019-03-22_ZOOMit

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\\WBIC_PRISMA\WBIC Protocols in Progress\Protocol 418\Ben Davies Spinal 2019-03-22_ZOOMit\Localizer

TA: 0:19 PM: ISO Voxel size: 1.0×1.0×6.0 mmPAT: Off Rel. SNR: 1.00 : fl

Properties

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

Routine

Slice group	1
Slices	5
Dist. factor	300 %
Position	L0.0 P10.0 H0.0 mm
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	2
Slices	3
Dist. factor	50 %
Position	L0.0 P2.6 H0.0 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	38 %
FoV read	500 mm
FoV phase	100.0 %
Slice thickness	6.0 mm
TR	7.8 ms
TE	3.69 ms
Averages	1
Concatenations	8
Filter	Distortion Corr.(2D), Prescan Normalize
Coil elements	HC1,3-7;NC1,2;SP1

Contrast - Common

TR	7.8 ms
TE	3.69 ms
TD	0 ms
MTC	Off
Magn. preparation	None
Flip angle	20 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

Contrast - Dynamic

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

Resolution - Common

FoV read	500 mm
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Resolution - Common

FoV phase	100.0 %
Slice thickness	6.0 mm
Base resolution	256
Phase resolution	80 %
Phase partial Fourier	Off
Interpolation	On

Resolution - iPAT

PAT mode	None
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Resolution - Filter Image

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

Resolution - Filter Rawdata

Raw filter	Off
Elliptical filter	Off

Geometry - Common

Slice group	1
Slices	5
Dist. factor	300 %
Position	L0.0 P10.0 H0.0 mm
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	2
Slices	3
Dist. factor	50 %
Position	L0.0 P2.6 H0.0 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
FoV read	500 mm
FoV phase	100.0 %
Slice thickness	6.0 mm
TR	7.8 ms
Multi-slice mode	Sequential
Series	Interleaved
Concatenations	8

Geometry - AutoAlign

Slice group	1
Position	L0.0 P10.0 H0.0 mm
Orientation	Coronal
Phase enc. dir.	R >> L
Slice group	2
Position	L0.0 P2.6 H0.0 mm
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	L0.0 P10.0 H0.0
L	0.0 mm
P	10.0 mm
H	0.0 mm

Geometry - AutoAlign

Initial Rotation	0.00 deg
Initial Orientation	Coronal

Geometry - Saturation

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

System - Miscellaneous

Positioning mode	ISO
Table position	H
Table position	0 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
B1 Shim mode	TrueForm
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 - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Slice-sel.

System - Tx/Rx

Frequency 1H	123.250766 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

Physio - Signal1

1st Signal/Mode	None
TR	7.8 ms
Concatenations	8
Segments	1

Physio - Cardiac

Magn. preparation	None
Fat suppr.	None

Physio - Cardiac

Dark blood	Off
FoV read	500 mm
FoV phase	100.0 %
Phase resolution	80 %

Physio - PACE

Resp. control	Off
Concatenations	8

Inline - Common

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

Inline - MIP

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

Inline - Soft Tissue

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

Inline - Composing

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

Inline - MapIt

Save original images	On
MapIt	None
Flip angle	20 deg
Measurements	1
Contrasts	1
TR	7.8 ms
TE	3.69 ms

Sequence - Part 1

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

Sequence - Part 2

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

Sequence - Assistant

Mode	Off
Allowed delay	0 s

\\WBIC_PRISMA\WBIC Protocols in Progress\Protocol 418\Ben Davies Spinal 2019-03-22_ZOOMit\T 1w
TA: 4:44 PM: ISO Voxel size: 1.0×1.0×1.0 mmPAT: 2 Rel. SNR: 1.00 : tfl

Properties

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

Routine

Slab group	1
Slabs	1
Dist. factor	50 %
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
Slice oversampling	0.0 %
Slices per slab	192
FoV read	320 mm
FoV phase	81.3 %
Slice thickness	1.00 mm
TR	2000.0 ms
TE	3.72 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(3D), Prescan Normalize
Coil elements	HC1-7;NC1,2

Contrast - Common

TR	2000.0 ms
TE	3.72 ms
Magn. preparation	Non-sel. IR
T1	1000 ms
Flip angle	9 deg
Fat suppr.	None
Water suppr.	None

Contrast - Dynamic

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

Resolution - Common

FoV read	320 mm
FoV phase	81.3 %
Slice thickness	1.00 mm
Base resolution	320
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	Off

Resolution - Common

Slice partial Fourier	Off
Interpolation	Off

Resolution - iPAT

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
Accel. factor 3D	1
Reference scan mode	Integrated

Resolution - Filter Image

Image Filter	Off
Distortion Corr.	On
Mode	3D
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

Slab group	1
Slabs	1
Dist. factor	50 %
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
Slice oversampling	0.0 %
Slices per slab	192
FoV read	320 mm
FoV phase	81.3 %
Slice thickness	1.00 mm
TR	2000.0 ms
Multi-slice mode	Single shot
Series	Ascending
Concatenations	1

Geometry - AutoAlign

Slab group	1
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Sagittal

Geometry - Navigator**System - Miscellaneous**

Positioning mode	ISO
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System - Miscellaneous

Table position	H
Table position	0 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
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

System - Adjustments

B0 Shim mode	Standard
B1 Shim mode	TrueForm
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	Sagittal
Rotation	0.00 deg
A >> P	260 mm
F >> H	320 mm
R >> L	192 mm
Reset	Off

System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Slab-sel.

System - Tx/Rx

Frequency 1H	123.250766 MHz
Correction factor	1
Gain	Low
Img. Scale Cor.	1.000
Reset	Off
? Ref. amplitude 1H	0.000 V

Physio - Signal1

1st Signal/Mode	None
TR	2000.0 ms
Concatenations	1

Physio - Cardiac

Magn. preparation	Non-sel. IR
TI	1000 ms
Fat suppr.	None
Dark blood	Off
FoV read	320 mm
FoV phase	81.3 %
Phase resolution	100 %

Physio - PACE

Resp. control	Off
Concatenations	1

Inline - Common

Subtract	Off
Measurements	1

Inline - Common

StdDev	Off
Save original images	On

Inline - MIP

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

Inline - Composing

Distortion Corr.	On
Mode	3D
Unfiltered images	Off

Inline - Maplt

Save original images	On
Maplt	None
Flip angle	9 deg
Measurements	1
TR	2000.0 ms
TE	3.72 ms

Sequence - Part 1

Introduction	On
Dimension	3D
Elliptical scanning	Off
Reordering	Linear
Asymmetric echo	Allowed
Flow comp.	No
Multi-slice mode	Single shot
Echo spacing	10.2 ms
Bandwidth	150 Hz/Px

Sequence - Part 2

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

Sequence - Assistant

Mode	Off
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\\WBIC_PRISMA\WBIC Protocols in Progress\Protocol 418\Ben Davies Spinal 2019-03-22_ZOOMit\T
2w

TA: 4:02 PM: ISO Voxel size: 0.8x0.8x0.8 mmPAT: 3 Rel. SNR: 1.00 : spcR

Properties

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

Routine

Slab group	1
Slabs	1
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	H >> F
AutoAlign	---
Phase oversampling	80 %
Slice oversampling	12.5 %
Slices per slab	64
FoV read	256 mm
FoV phase	100.0 %
Slice thickness	0.80 mm
TR	1500 ms
TE	120 ms
Averages	1.4
Concatenations	1
Filter	Raw filter, Distortion Corr.(3D), Prescan Normalize
Coil elements	HC5-7;NC1,2;SP1

Contrast - Common

TR	1500 ms
TE	120 ms
MTC	Off
Magn. preparation	None
Flip angle	120 deg
Fat suppr.	None
Blood suppr.	Off
Restore magn.	On

Contrast - Dynamic

Averages	1.4
Reconstruction	Magnitude
Measurements	1
Multiple series	Each measurement

Resolution - Common

FoV read	256 mm
FoV phase	100.0 %
Slice thickness	0.80 mm
Base resolution	320
Phase resolution	100 %
Slice resolution	100 %
Phase partial Fourier	Allowed

Resolution - Common

Slice partial Fourier	6/8
Interpolation	Off

Resolution - iPAT

PAT mode	GRAPPA
Accel. factor PE	3
Ref. lines PE	32
Accel. factor 3D	1
Reference scan mode	Integrated

Resolution - Filter Image

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

Resolution - Filter Rawdata

Raw filter	On
Elliptical filter	Off

Geometry - Common

Slab group	1
Slabs	1
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	H >> F
Slice oversampling	12.5 %
Slices per slab	64
FoV read	256 mm
FoV phase	100.0 %
Slice thickness	0.80 mm
TR	1500 ms
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slab group	1
Position	Isocenter
Orientation	Sagittal
Phase enc. dir.	H >> F
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Rotation	90.00 deg
Initial Orientation	Sagittal

Geometry - Saturation

Fat suppr.	None
Restore magn.	On
Special sat.	None

Geometry - Navigator

System - Miscellaneous

Positioning mode	ISO
Table position	H
Table position	0 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	Standard
B1 Shim mode	TrueForm
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	Sagittal
Rotation	90.00 deg
F >> H	256 mm
A >> P	256 mm
R >> L	52 mm
Reset	Off

System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Slab-sel.

System - Tx/Rx

Frequency 1H	123.250766 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	4.000
Reset	Off
? Ref. amplitude 1H	0.000 V

Physio - Signal1

1st Signal/Mode	None
Trigger delay	0 ms
TR	1500 ms
Concatenations	1

Physio - Cardiac

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	256 mm
FoV phase	100.0 %
Phase resolution	100 %

Physio - PACE

Resp. control	Off
Concatenations	1

Inline - Common

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

Inline - MIP

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

Inline - Composing

Distortion Corr.	On
Mode	3D
Unfiltered images	Off

Sequence - Part 1

Introduction	On
Dimension	3D
Elliptical scanning	Off
Reordering	Linear
Flow comp.	No
Echo spacing	3.99 ms
Adiabatic-mode	Off
Bandwidth	625 Hz/Px

Sequence - Part 2

Echo train duration	311 ms
RF pulse type	Normal
Gradient mode	Fast
Excitation	Slab-sel.
Flip angle mode	Constant
Turbo factor	100

Sequence - Assistant

Allowed delay	30 s
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\\WBIC_PRISMA\WBIC Protocols in Progress\Protocol 418\Ben Davies Spinal 2019-03-22_ZOOMit\DWI

TA: 2:06 PM: ISO Voxel size: 0.9x0.9x5.0 mmPAT: Off Rel. SNR: 1.00 : ezse

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	15
Dist. factor	0 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	86 mm
FoV phase	37.5 %
Slice thickness	5.0 mm
TR	620 ms
TE	60.0 ms
Concatenations	5
Filter	Prescan Normalize
Coil elements	HC5-7;NC1,2

Contrast - Common

TR	620 ms
TE	60.0 ms
MTC	Off
Magn. preparation	None
Fat suppr.	SPAIR
Fat sat. mode	Strong

Contrast - Dynamic

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

Resolution - Common

FoV read	86 mm
FoV phase	37.5 %
Slice thickness	5.0 mm
Base resolution	96
Phase resolution	100 %
Phase partial Fourier	7/8
Interpolation	Off

Resolution - iPAT

Accel. mode	None
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Resolution - Filter Image

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

Resolution - Filter Rawdata

Raw filter	Off
Elliptical filter	Off

Geometry - Common

Slice group	1
Slices	15
Dist. factor	0 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	86 mm
FoV phase	37.5 %
Slice thickness	5.0 mm
TR	620 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	5

Geometry - AutoAlign

Slice group	1
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

Geometry - Saturation

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

Geometry - Navigator

System - Miscellaneous

Positioning mode	ISO
Table position	H
Table position	0 mm
MSMA	S - C - T
Sagittal	R >> L
Coronal	A >> P
Transversal	H >> F
Coil Combine Mode	Adaptive Combine
Matrix Optimization	Off
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

System - Adjustments

B0 Shim mode	Standard
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System - Adjustments

B1 Shim mode	TrueForm
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	90.00 deg
R >> L	86 mm
A >> P	250 mm
F >> H	75 mm
Reset	Off
Couple to	pTx Volume

System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	ZOOMit
pTx Volume	1
Vol. Property	Optimization Vol.
Position	Isocenter
Orientation	Transversal
Rotation	0 deg
A >> P	250 mm
R >> L	86 mm
F >> H	75 mm
Vol. Visibility	On

System - Tx/Rx

Frequency 1H	123.250766 MHz
Correction factor	1
Gain	High
Img. Scale Cor.	5.000
Reset	Off
? Ref. amplitude 1H	0.000 V

Physio - Signal1

1st Signal/Mode	Pulse/Trigger
Average cycle	900 ± 231 ms
Average cycle	No Signal ms
Acquisition window	3600 ms
Trigger pulse	1
Trigger delay	0 ms
TR	620 ms
Concatenations	5
Phases	1

Physio - PACE

Resp. control	Off
Concatenations	5

Diff - Neuro

Diffusion mode	MDDW
Diff. directions	30
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm ²
b-value 2	800 s/mm ²
b-value 1	5
b-value 2	1
Diff. weighted images	On
Trace weighted images	Off

Diff - Neuro

ADC maps	Off
FA maps	Off
Mosaic	On
Tensor	Off
Noise level	8

Diff - Body

Diffusion mode	MDDW
Diff. directions	30
Diffusion Scheme	Monopolar
Diff. weightings	2
b-value 1	0 s/mm ²
b-value 2	800 s/mm ²
b-value 1	5
b-value 2	1
Diff. weighted images	On
Trace weighted images	Off
ADC maps	Off
Exponential ADC Maps	Off
FA maps	Off
Invert Gray Scale	Off
Calculated Image	Off
b-Value >=	0 s/mm ²
Noise level	8

Diff - Composing

Distortion Corr.	Off
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Sequence - Part 1

Introduction	On
Optimization	Min. TE
Multi-slice mode	Interleaved
Free echo spacing	Off
Echo spacing	0.94 ms
Bandwidth	1270 Hz/Px

Sequence - Part 2

EPI factor	36
RF pulse type	Normal
Gradient mode	Performance
Excitation	ZOOMit

Sequence - pTX Pulses

pTX Pulse	1
TX acceleration	1.0

\\WBIC_PRISMA\WBIC Protocols in Progress\Protocol 418\Ben Davies Spinal 2019-03-22_ZOOMit\GRE-MT1

TA: 2:12 PM: ISO Voxel size: 0.9×0.9×5.0 mmPAT: 2 Rel. SNR: 1.00 : fl

Properties

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

Routine

Slab group	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
Slice oversampling	18.2 %
Slices per slab	22
FoV read	230 mm
FoV phase	100.0 %
Slice thickness	5.00 mm
TR	35.0 ms
TE	3.13 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D), Prescan Normalize
Coil elements	HC5-7;NC1,2

Contrast - Common

TR	35.0 ms
TE	3.13 ms
MTC	On
Magn. preparation	None
Flip angle	9 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

Contrast - Dynamic

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

Resolution - Common

FoV read	230 mm
FoV phase	100.0 %
Slice thickness	5.00 mm
Base resolution	256
Phase resolution	100 %
Slice resolution	100 %

Resolution - Common

Phase partial Fourier	Off
Slice partial Fourier	Off
Interpolation	Off

Resolution - iPAT

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Accel. factor 3D	1
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	Off

Geometry - Common

Slab group	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
Slice oversampling	18.2 %
Slices per slab	22
FoV read	230 mm
FoV phase	100.0 %
Slice thickness	5.00 mm
TR	35.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slab group	1
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

Geometry - Saturation

Saturation mode	Standard
Fat suppr.	None
Water suppr.	None

Geometry - Saturation

Special sat.	None
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System - Miscellaneous

Positioning mode	ISO
Table position	H
Table position	0 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
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

System - Adjustments

B0 Shim mode	Standard Neck
B1 Shim mode	TrueForm
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	58 mm
R >> L	230 mm
F >> H	110 mm
Reset	Off

System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Slab-sel.

System - Tx/Rx

Frequency 1H	123.250766 MHz
Correction factor	1
Gain	Low
Img. Scale Cor.	5.000
Reset	Off
? Ref. amplitude 1H	0.000 V

Physio - Signal1

1st Signal/Mode	None
TR	35.0 ms
Concatenations	1
Segments	1

Physio - Cardiac

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	230 mm
FoV phase	100.0 %
Phase resolution	100 %

Physio - PACE

Resp. control	Off
Concatenations	1

Inline - Common

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

Inline - MIP

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

Inline - Soft Tissue

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

Inline - Composing

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

Inline - MapIt

Save original images	On
MapIt	None
Flip angle	9 deg
Measurements	1
Contrasts	1
TR	35.0 ms
TE	3.13 ms

Sequence - Part 1

Introduction	On
Dimension	3D
Elliptical scanning	Off
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Bandwidth	260 Hz/Px

Sequence - Part 2

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

Sequence - Assistant

Mode	Off
Allowed delay	0 s

\\WBIC_PRISMA\WBIC Protocols in Progress\Protocol 418\Ben Davies Spinal 2019-03-22_ZOOMit\GRE-MT0

TA: 2:12 PM: ISO Voxel size: 0.9×0.9×5.0 mmPAT: 2 Rel. SNR: 1.00 : fl

Properties

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

Routine

Slab group	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
Slice oversampling	18.2 %
Slices per slab	22
FoV read	230 mm
FoV phase	100.0 %
Slice thickness	5.00 mm
TR	35.0 ms
TE	3.13 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D), Prescan Normalize
Coil elements	HC5-7;NC1,2

Contrast - Common

TR	35.0 ms
TE	3.13 ms
MTC	Off
Magn. preparation	None
Flip angle	9 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

Contrast - Dynamic

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

Resolution - Common

FoV read	230 mm
FoV phase	100.0 %
Slice thickness	5.00 mm
Base resolution	256
Phase resolution	100 %
Slice resolution	100 %

Resolution - Common

Phase partial Fourier	Off
Slice partial Fourier	Off
Interpolation	Off

Resolution - iPAT

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Accel. factor 3D	1
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	Off

Geometry - Common

Slab group	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
Slice oversampling	18.2 %
Slices per slab	22
FoV read	230 mm
FoV phase	100.0 %
Slice thickness	5.00 mm
TR	35.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slab group	1
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

Geometry - Saturation

Saturation mode	Standard
Fat suppr.	None
Water suppr.	None

Geometry - Saturation

Special sat.	None
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System - Miscellaneous

Positioning mode	ISO
Table position	H
Table position	0 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
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

System - Adjustments

B0 Shim mode	Standard Neck
B1 Shim mode	TrueForm
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	58 mm
R >> L	230 mm
F >> H	110 mm
Reset	Off

System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Slab-sel.

System - Tx/Rx

Frequency 1H	123.250766 MHz
Correction factor	1
Gain	Low
Img. Scale Cor.	5.000
Reset	Off
? Ref. amplitude 1H	0.000 V

Physio - Signal1

1st Signal/Mode	None
TR	35.0 ms
Concatenations	1
Segments	1

Physio - Cardiac

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	230 mm
FoV phase	100.0 %
Phase resolution	100 %

Physio - PACE

Resp. control	Off
Concatenations	1

Inline - Common

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

Inline - MIP

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

Inline - Soft Tissue

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

Inline - Composing

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

Inline - MapIt

Save original images	On
MapIt	None
Flip angle	9 deg
Measurements	1
Contrasts	1
TR	35.0 ms
TE	3.13 ms

Sequence - Part 1

Introduction	On
Dimension	3D
Elliptical scanning	Off
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Bandwidth	260 Hz/Px

Sequence - Part 2

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

Sequence - Assistant

Mode	Off
Allowed delay	0 s

\\WBIC_PRISMA\WBIC Protocols in Progress\Protocol 418\Ben Davies Spinal 2019-03-22_ZOOMit\GRE-T1w

TA: 0:57 PM: ISO Voxel size: 0.9x0.9x5.0 mmPAT: 2 Rel. SNR: 1.00 : fl

Properties

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

Routine

Slab group	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
Slice oversampling	18.2 %
Slices per slab	22
FoV read	230 mm
FoV phase	100.0 %
Slice thickness	5.00 mm
TR	15.0 ms
TE	3.13 ms
Averages	1
Concatenations	1
Filter	Distortion Corr.(2D), Prescan Normalize
Coil elements	HC5-7;NC1,2

Contrast - Common

TR	15.0 ms
TE	3.13 ms
MTC	Off
Magn. preparation	None
Flip angle	15 deg
Fat suppr.	None
Water suppr.	None
SWI	Off

Contrast - Dynamic

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

Resolution - Common

FoV read	230 mm
FoV phase	100.0 %
Slice thickness	5.00 mm
Base resolution	256
Phase resolution	100 %
Slice resolution	100 %

Resolution - Common

Phase partial Fourier	Off
Slice partial Fourier	Off
Interpolation	Off

Resolution - iPAT

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	32
Accel. factor 3D	1
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	Off

Geometry - Common

Slab group	1
Slabs	1
Dist. factor	20 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
Slice oversampling	18.2 %
Slices per slab	22
FoV read	230 mm
FoV phase	100.0 %
Slice thickness	5.00 mm
TR	15.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slab group	1
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

Geometry - Saturation

Saturation mode	Standard
Fat suppr.	None
Water suppr.	None

Geometry - Saturation

Special sat.	None
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System - Miscellaneous

Positioning mode	ISO
Table position	H
Table position	0 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
AutoAlign	---
Coil Select Mode	On - AutoCoilSelect

System - Adjustments

B0 Shim mode	Standard Neck
B1 Shim mode	TrueForm
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	58 mm
R >> L	230 mm
F >> H	110 mm
Reset	Off

System - pTx Volumes

B1 Shim mode	TrueForm
Excitation	Slab-sel.

System - Tx/Rx

Frequency 1H	123.250766 MHz
Correction factor	1
Gain	Low
Img. Scale Cor.	5.000
Reset	Off
? Ref. amplitude 1H	0.000 V

Physio - Signal1

1st Signal/Mode	None
TR	15.0 ms
Concatenations	1
Segments	1

Physio - Cardiac

Magn. preparation	None
Fat suppr.	None
Dark blood	Off
FoV read	230 mm
FoV phase	100.0 %
Phase resolution	100 %

Physio - PACE

Resp. control	Off
Concatenations	1

Inline - Common

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

Inline - MIP

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

Inline - Soft Tissue

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

Inline - Composing

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

Inline - MapIt

Save original images	On
MapIt	None
Flip angle	15 deg
Measurements	1
Contrasts	1
TR	15.0 ms
TE	3.13 ms

Sequence - Part 1

Introduction	On
Dimension	3D
Elliptical scanning	Off
Phase stabilisation	Off
Asymmetric echo	Allowed
Contrasts	1
Flow comp.	No
Multi-slice mode	Interleaved
Bandwidth	260 Hz/Px

Sequence - Part 2

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

Sequence - Assistant

Mode	Off
Allowed delay	0 s

\\WBIC_PRISMA\WBIC Protocols in Progress\Protocol 418\Ben Davies Spinal 2019-03-22_ZOOMit\GRE-RE-ME

TA: 4:45 PM: ISO Voxel size: 0.5×0.5×5.0 mmPAT: 2 Rel. SNR: 1.00 : me_r

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	15
Dist. factor	0 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Phase oversampling	0 %
FoV read	224 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
TR	600.0 ms
TE	14.0 ms
Averages	2
Concatenations	1
Filter	Distortion Corr.(2D), Prescan Normalize, Elliptical filter
Coil elements	HC5-7;NC1,2

Contrast - Common

TR	600.0 ms
TE	14.0 ms
MTC	Off
Flip angle	30 deg
Fat suppr.	None
Water suppr.	None

Contrast - Dynamic

Averages	2
Averaging mode	Long term
Reconstruction	Magnitude
Measurements	1
Multiple series	Off

Resolution - Common

FoV read	224 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
Base resolution	448
Phase resolution	100 %
Phase partial Fourier	Off
Interpolation	Off

Resolution - iPAT

PAT mode	GRAPPA
Accel. factor PE	2
Ref. lines PE	24
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	15
Dist. factor	0 %
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
FoV read	224 mm
FoV phase	100.0 %
Slice thickness	5.0 mm
TR	600.0 ms
Multi-slice mode	Interleaved
Series	Interleaved
Concatenations	1

Geometry - AutoAlign

Slice group	1
Position	Isocenter
Orientation	Transversal
Phase enc. dir.	A >> P
AutoAlign	---
Initial Position	Isocenter
L	0.0 mm
P	0.0 mm
H	0.0 mm
Initial Rotation	0.00 deg
Initial Orientation	Transversal

Geometry - Saturation

Sat. region	1
Thickness	100 mm
Position	L0.0 A100.0 F11.0 mm
Orientation	Coronal
Water suppr.	None
Special sat.	None

System - Miscellaneous

Positioning mode	ISO
Table position	H

System - Miscellaneous

Table position	0 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
AutoAlign	---
Coil Select Mode	Off - AutoCoilSelect

System - Adjustments

B0 Shim mode	Standard
B1 Shim mode	TrueForm
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	224 mm
R >> L	224 mm
F >> H	75 mm
Reset	Off

System - pTx Volumes

B1 Shim mode	TrueForm
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System - Tx/Rx

Frequency 1H	123.250766 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	600.0 ms
Concatenations	1

Inline - Common

Subtract	Off
Measurements	1
StdDev	Off
Save original images	On

Inline - MIP

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

Inline - Composing

Distortion Corr.	On
Mode	2D
Unfiltered images	Off

Sequence - Part 1

Introduction	On
Dimension	2D
Combined echoes	3
Flow comp.	Yes
Multi-slice mode	Interleaved
Bandwidth	260 Hz/Px

Sequence - Part 2

RF pulse type	Fast
Gradient mode	Normal
RF spoiling	On

Sequence - Assistant

Mode	Off
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