

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

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|--------------------|-------------------------------|--|---------------------------|----------------|
| SilentMR Localizer | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 3D |
| | Patient Position | Supine | Pulse Sequence | Silenz |
| | Coil Configuration | GE48chHeadAnt;GE48chHeadPos | Imaging Options | EDR, Fast, SqP |
| | Plane | CORONAL | SCAN RANGE | |
| | Series Description | SilentMR Localizer | FOV | 24.0 |
| | SCAN TIMING | | Slice Thickness | 1.80 |
| | Flip Angle | 3 | Overlap Locations | 0 |
| | Number of Echoes | 1 | Number of Slices | 1 |
| | Receiver Bandwidth | 31.25 | ACQ TIMING | |
| | Recovery Time | 0 | Freq | 134 |
| | IMAGE ENHANCE | | Freq DIR | S/I |
| | Filter Choice | None | NEX | 1.00 |
| | GATING/TRIGGER | | Auto Shim | Off |
| | Pause After Navigator Prescan | 0 | Phase Correction | No |
| | FMRI | | RF Drive Mode | Preset |
| | PSD Trigger | Internal | Excitation Mode | Selective |
| | View Order | Bottom/Up | Spokes Per Segment | 256 |
| | # of Repetitions REST | 0 | USER CVS | |
| | # of Repetitions ACTIVE | 0 | User CV Mask2 | 0 |
| | SAT | | MULTI-PHASE | |
| | Tag Type | None | Seperate Series | 0 |
| | TRICKS | | Mask Phase | 0 |
| | Pause On/Off | On | Mask Pause | 0 |
| | Auto Subtract | 0 | Preserve | 0 |
| | Auto SCIC | Off | DIFFUSION | |
| | OTHERS | | Recon All Images | On |
| | Protocol Notes | Reformatted images will be put in one series for localization. Please wait for post process completion before moving to the next Silent series. | | |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

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|------------------------|-------------------------------|-------------------------------|---------------------------|---------------------|
| Sag T1 3D SilentMR 1mm | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 3D |
| | Patient Position | Supine | Pulse Sequence | Silenz |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR, Fast, SqP, IrP |
| | Plane | OBLIQUE | SCAN RANGE | |
| | Series Description | Sag T1 3D SilentMR 1mm | FOV | 18.0 |
| | SCAN TIMING | | Slice Thickness | 1.0 |
| | Flip Angle | 5 | Number of Slices | 1 |
| | Number of Echoes | 1 | ACQ TIMING | |
| | TI | 800 | Freq | 180 |
| | Receiver Bandwidth | 20.83 | Freq DIR | S/I |
| | Recovery Time | 1000 | NEX | 2.00 |
| | IMAGE ENHANCE | | Auto Shim | On |
| | Filter Choice | None | Phase Correction | No |
| | GATING/TRIGGER | | RF Drive Mode | Preset |
| | Pause After Navigator Prescan | 0 | Excitation Mode | Selective |
| | FMRI | | Spokes Per Segment | 384 |
| | PSD Trigger | Internal | USER CVS | |
| | View Order | Bottom/Up | User CV Mask2 | 1024 |
| | # of Repetitions REST | 0 | MULTI-PHASE | |
| | # of Repetitions ACTIVE | 0 | Seperate Series | 0 |
| SAT | | | Mask Phase | 0 |
| Tag Type | | None | Mask Pause | 0 |
| TRICKS | | | Preserve | 0 |
| Pause On/Off | | On | DIFFUSION | |
| Auto Subtract | | 0 | Recon All Images | On |
| Auto SCIC | | 3 | # Synthetic b-values | 1 |
| | | | Synthetic b-value | 1000.0; |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

Sag T1 3D SilentMR 1mm

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|-----------------|-------------------------|-----------------------------|---------------------------|---------------------------------|
| Ax T2 FSE 1,0mm | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 2D |
| | Patient Position | Supine | Pulse Sequence | FSE-XL |
| | Coil Configuration | GE48chHeadAnt;GE48chHeadPos | Imaging Options | EDR, TRF, Fast, ZIP512, FR, ARC |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax T2 FSE 1,0mm | SCAN RANGE | |
| | SCAN TIMING | | FOV | 19.2 |
| | Flip Angle | 111 | Slice Thickness | 1.0 |
| | TE | 147.0 | Slice Spacing | 0.0 |
| | Number of Echoes | 1 | Number of Slices | 102 |
| | TR | 13240.0 | ACQ TIMING | |
| | Echo Train Length | 15 | Freq | 192 |
| | Receiver Bandwidth | 25.00 | Phase | 192 |
| | IMAGE ENHANCE | | Freq DIR | A/P |
| | Filter Choice | None | Fat Shift DIR | Normal (A) |
| | USER CVS | | NEX | 1.00 |
| | User CV18 | 1.00 | # of Acq. Before Pause | 0 |
| | User CV29 | 1.00 | Phase FOV | 1.00 |
| | User CV Mask2 | 1024 | Auto Shim | On |
| | MULTI-PHASE | | Phase Correction | No |
| | Seperate Series | 0 | RF Drive Mode | Preset |
| | Mask Phase | 0 | Excitation Mode | Selective |
| | Mask Pause | 0 | FMRI | |
| | Preserve | 0 | PSD Trigger | Internal |
| | DIFFUSION | | View Order | Bottom/Up |
| | Recon All Images | On | # of Repetitions REST | 0 |
| | # Synthetic b-values | 1 | # of Repetitions ACTIVE | 0 |
| | Synthetic b-value | 1000.0; | SAT | |
| | CONTRAST | | Tag Type | None |
| | Contrast Yes/No | No | TRICKS | |
| | | | Pause On/Off | On |
| | | | Auto Subtract | 0 |
| | | | Auto SCIC | 3 |

Ax T2 FSE 1,0mm

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|-----------------------|--------------------------|-------------------------------|---------------------------|------------------------------|
| Ax Quiet T2 PROPELLER | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 2D |
| | Patient Position | Supine | Pulse Sequence | PROPELLER |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR, TRF, Fast, FR, ART, ARC |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax Quiet T2 PROPELLER | SCAN RANGE | |
| | SCAN TIMING | | FOV | 20.0 |
| | Flip Angle | 142 | Slice Thickness | 3.0 |
| | TE | 125.0 | Slice Spacing | 0.3 |
| | Number of Echoes | 1 | Number of Slices | 30 |
| | TR | 6515.0 | ACQ TIMING | |
| | Echo Train Length | 15 | Freq | 360 |
| | Receiver Bandwidth | 41.67 | Freq DIR | A/P |
| | IMAGE ENHANCE | | Fat Shift DIR | Normal (A) |
| | Filter Choice | None | NEX | 1.50 |
| | USER CVS | | Auto Shim | On |
| | TR Min | 400.0 | Phase Correction | No |
| | TR Max | 11000.0 | RF Drive Mode | Preset |
| | User CV30 | 1.00 | Excitation Mode | Selective |
| | User CV42 | 1.00 | FMRI | |
| | User CV Mask2 | 3072 | PSD Trigger | Internal |
| | MULTI-PHASE | | View Order | Bottom/Up |
| | Seperate Series | 0 | # of Repetitions REST | 0 |
| | Mask Phase | 0 | # of Repetitions ACTIVE | 0 |
| | Mask Pause | 0 | SAT | |
| | Acoustic Reduction Level | 2 | Tag Type | None |
| | Preserve | 0 | TRICKS | |
| | DIFFUSION | | Pause On/Off | On |
| | Recon All Images | On | Auto Subtract | 0 |
| | Multi b-values | 1000.0; | Auto SCIC | 3 |
| | Multi NEX Values | 1.0; | | |
| | # Synthetic b-values | 1 | | |
| | Synthetic b-value | 1000.0; | | |
| | CONTRAST | | | |
| | Contrast Yes/No | No | | |

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|-------------|-------------------------|-------------------------------|---------------------------|--------------------|
| sag CUBE T2 | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 3D |
| | Patient Position | Supine | Pulse Sequence | Cube |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR, Fast, FR, ARC |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | sag CUBE T2 | Slice | 2.00 |
| | SCAN TIMING | | SCAN RANGE | |
| | TE | 127.0 | FOV | 24.0 |
| | Number of Echoes | 1 | Slice Thickness | 0.4 |
| | TR | 3000.0 | Location per Slab | 344 |
| | Echo Train Length | 140 | Overlap Locations | 0 |
| | Receiver Bandwidth | 41.67 | Number of Slices | 1 |
| | IMAGE ENHANCE | | ACQ TIMING | |
| | Filter Choice | None | Freq | 288 |
| | USER CVS | | Phase | 288 |
| | User CV29 | 1.00 | Freq DIR | S/I |
| | User CV30 | 1.00 | Fat Shift DIR | Normal (S) |
| | User CV Mask2 | 1026 | NEX | 1.00 |
| | MULTI-PHASE | | Phase FOV | 1.00 |
| | Seperate Series | 0 | Auto Shim | Auto |
| | Mask Phase | 0 | Phase Correction | No |
| | Mask Pause | 0 | RF Drive Mode | Preset |
| | Preserve | 0 | Excitation Mode | Non-Selective |
| | DIFFUSION | | FMRI | |
| | Recon All Images | On | PSD Trigger | Internal |
| | Multi b-values | 1000.0; | View Order | Bottom/Up |
| | Multi NEX Values | 1.0; | # of Repetitions REST | 0 |
| | # Synthetic b-values | 1 | # of Repetitions ACTIVE | 0 |
| | Synthetic b-value | 1000.0; | SAT | |
| | CONTRAST | | SAT Location | I |
| | Contrast Yes/No | No | Tag Type | None |
| | | | TRICKS | |
| | | | Pause On/Off | On |
| | | | Auto Subtract | 0 |
| | | | Auto SCIC | 3 |

sag CUBE T2

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|---------------------------|------------------------------------|-------------------------------|---------------------------|------------------------------|
| Ax DTI 2mm (64 Direction) | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 2D |
| | Patient Position | Supine | Pulse Sequence | Spin Echo |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR, Cla, EPI, DIFF, ARC, HB |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax DTI 2mm (64 Direction) | HyperBand Slice | 2 |
| | SCAN TIMING | | SCAN RANGE | |
| | TE | Minimum | FOV | 20.0 |
| | Number of Echoes | 1 | Slice Thickness | 2.0 |
| | TR | 4347.0 | Slice Spacing | 0.0 |
| | Number of Shots | 1 | Number of Slices | 46 |
| | IMAGE ENHANCE | | ACQ TIMING | |
| | Filter Choice | None | Freq | 100 |
| | USER CVS | | Phase | 100 |
| | User CV5 | 1.00 | Freq DIR | R/L |
| | User CV17 | 1.00 | Phase FOV | 1.00 |
| | TR Min | 2000.0 | Auto Shim | Auto |
| | TR Max | 17000.0 | Phase Correction | Yes |
| | User CV Mask2 | 512 | RF Drive Mode | Preset |
| | MULTI-PHASE | | Excitation Mode | Selective |
| | Seperate Series | 0 | FMRI | |
| | Mask Phase | 0 | PSD Trigger | Internal |
| | Mask Pause | 0 | View Order | Bottom/Up |
| | Preserve | 0 | # of Repetitions REST | 0 |
| | DIFFUSION | | # of Repetitions ACTIVE | 0 |
| | Optimized TE | Yes | SAT | |
| | Diffusion Directions | Tensor | Tag Type | None |
| | Number of Diffusion Directions | 64 | TRICKS | |
| | Number of T2 Images | 6 | Pause On/Off | On |
| | Dual Spin Echo | Off | Auto Subtract | 0 |
| | Diffusion Tensor Processing Output | No Selection | Auto SCIC | 2 |
| | Recon All Images | Off | | |
| | Multi b-values | 800.0; | | |
| | Multi NEX Values | 1.0; | | |
| | Real Time Field Adjustment | 1 | | |
| | CONTRAST | | | |
| | Contrast Yes/No | No | | |

Ax DTI 2mm (64 Direction)

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|---------|--------------------------|-------------------------------|---------------------------|----------------------|
| Ax SWAN | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 3D |
| | Patient Position | Supine | Pulse Sequence | SWAN |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | FC, Fast, Asset, ART |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax SWAN | SCAN RANGE | |
| | SCAN TIMING | | FOV | 22.0 |
| | Flip Angle | 15 | Slice Thickness | 1.6 |
| | TE | 22.7 | Location per Slab | 70 |
| | Number of Echoes | 4 | Overlap Locations | 0 |
| | TR | Minimum | Number of Slices | 1 |
| | Receiver Bandwidth | 62.50 | ACQ TIMING | |
| | IMAGE ENHANCE | | Freq | 256 |
| | Filter Choice | None | Phase | 256 |
| | USER CVS | | Freq DIR | A/P |
| | User CV22 | 1.00 | Phase FOV | 0.90 |
| | User CV30 | 1.00 | Auto Shim | Auto |
| | User CV Mask2 | 1024 | Phase Correction | No |
| | MULTI-PHASE | | RF Drive Mode | Preset |
| | Seperate Series | 0 | Excitation Mode | Selective |
| | Mask Phase | 0 | Phase Image | 1 |
| | Mask Pause | 0 | FMRI | |
| | Acoustic Reduction Level | 3 | PSD Trigger | Internal |
| | Preserve | 0 | View Order | Bottom/Up |
| | DIFFUSION | | # of Repetitions REST | 0 |
| | Recon All Images | On | # of Repetitions ACTIVE | 0 |
| | Multi b-values | 1000.0; | SAT | |
| | Multi NEX Values | 1.0; | Tag Type | None |
| | # Synthetic b-values | 1 | TRICKS | |
| | Synthetic b-value | 1000.0; | Pause On/Off | On |
| | CONTRAST | | Auto Subtract | 0 |
| | Contrast Yes/No | No | Auto SCIC | 3 |

Ax SWAN

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|-------------|-------------------------|-------------------------------|-----------------------------|--|
| Ax T1 FLAIR | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 2D |
| | Patient Position | Supine | Pulse Sequence | FSE-XL |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | FC, Seq, EDR, TRF, Fast, ZIP1024, ARC, T1flair |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax T1 FLAIR | SCAN RANGE | |
| | SCAN TIMING | | FOV | 20.0 |
| | Flip Angle | 111 | Slice Thickness | 3.0 |
| | TE | 24.0 | Slice Spacing | 0.0 |
| | Number of Echoes | 1 | Number of Slices | 34 |
| | TR | 2691.9 | ACQ TIMING | |
| | TI | 1071 | Freq | 320 |
| | Echo Train Length | 10 | Phase | 320 |
| | Receiver Bandwidth | 25.00 | Freq DIR | A/P |
| | IMAGE ENHANCE | | Fat Shift DIR | Normal (A) |
| | Filter Choice | None | NEX | 2.00 |
| | USER CVS | | # of Acq. Before Pause | 0 |
| | User CV29 | 1.00 | Phase FOV | 0.80 |
| | User CV30 | 1.00 | Auto Shim | Auto |
| | User CV Mask2 | 1024 | Phase Correction | No |
| Ax T1 FLAIR | MULTI-PHASE | | Flow Direction Compensation | Slice |
| | Seperate Series | 0 | RF Drive Mode | Preset |
| | Mask Phase | 0 | Excitation Mode | Selective |
| | Mask Pause | 0 | FMRI | |
| | Preserve | 0 | PSD Trigger | Internal |
| | DIFFUSION | | View Order | Bottom/Up |
| | Recon All Images | On | # of Repetitions REST | 0 |
| | Multi b-values | 1000.0; | # of Repetitions ACTIVE | 0 |
| | Multi NEX Values | 1.0; | SAT | |
| | # Synthetic b-values | 1 | Tag Type | None |
| | Synthetic b-value | 1000.0; | TRICKS | |
| | CONTRAST | | Pause On/Off | On |
| | Contrast Yes/No | No | Auto Subtract | 0 |
| | | | Auto SCIC | 3 |

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|-----------------|-------------------------------|-----------------------------|---------------------------|-----------------|
| MRS SV 35 DX BG | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | MRS |
| | Patient Position | Supine | Pulse Sequence | Probe-P |
| | Coil Configuration | GE48chHeadAnt;GE48chHeadPos | Imaging Options | EDR |
| | Plane | OBLIQUE | SCAN RANGE | |
| | Series Description | MRS SV 35 DX BG | FOV | 24.0 |
| | SCAN TIMING | | Slice Thickness | 18.0 |
| | TE | 35.0 | Slice Spacing | 18.0 |
| | Number of Echoes | 1 | Location per Slab | 1 |
| | TR | 1500.0 | ACQ TIMING | |
| | IMAGE ENHANCE | | Freq | 1 |
| | Filter Choice | None | Phase | 1 |
| | GATING/TRIGGER | | Freq DIR | Unswap |
| | Pause After Navigator Prescan | 0 | NEX | 8.00 |
| | FMRI | | Auto Shim | Auto |
| | PSD Trigger | Internal | Phase Correction | No |
| | View Order | Bottom/Up | RF Drive Mode | Quadrature (CP) |
| | # of Repetitions REST | 0 | Excitation Mode | Selective |
| | # of Repetitions ACTIVE | 0 | USER CVS | |
| | SAT | | User CV3 | 1.00 |
| | Tag Type | None | User CV4 | 144.00 |
| | TRICKS | | User CV18 | 7.00 |
| | Pause On/Off | On | User CV Mask2 | 0 |
| | Auto Subtract | 0 | MULTI-PHASE | |
| | Auto SCIC | Off | Seperate Series | 0 |
| | | | Mask Phase | 0 |
| | | | Mask Pause | 0 |
| | | | Preserve | 0 |
| | | | DIFFUSION | |
| | | | Recon All Images | On |
| | | | # Synthetic b-values | 1 |
| | | | Synthetic b-value | 1000.0; |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

MRS SV 35 DX BG

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|--------------|-------------------------------|-----------------------------|---------------------------|-----------------|
| MRS SV 35 WM | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | MRS |
| | Patient Position | Supine | Pulse Sequence | Probe-P |
| | Coil Configuration | GE48chHeadAnt;GE48chHeadPos | Imaging Options | EDR |
| | Plane | OBLIQUE | SCAN RANGE | |
| | Series Description | MRS SV 35 WM | FOV | 24.0 |
| | SCAN TIMING | | Slice Thickness | 20.0 |
| | TE | 35.0 | Slice Spacing | 20.0 |
| | Number of Echoes | 1 | Location per Slab | 1 |
| | TR | 2000.0 | ACQ TIMING | |
| | IMAGE ENHANCE | | Freq | 1 |
| | Filter Choice | None | Phase | 1 |
| | GATING/TRIGGER | | Freq DIR | Unswap |
| | Pause After Navigator Prescan | 0 | NEX | 8.00 |
| | FMRI | | Auto Shim | Auto |
| | PSD Trigger | Internal | Phase Correction | No |
| | View Order | Bottom/Up | RF Drive Mode | Quadrature (CP) |
| | # of Repetitions REST | 0 | Excitation Mode | Selective |
| | # of Repetitions ACTIVE | 0 | USER CVS | |
| | SAT | | User CV3 | 1.00 |
| | Tag Type | None | User CV4 | 128.00 |
| | TRICKS | | User CV18 | 7.00 |
| | Pause On/Off | On | User CV Mask2 | 0 |
| | Auto Subtract | 0 | MULTI-PHASE | |
| | Auto SCIC | Off | Seperate Series | 0 |
| | | | Mask Phase | 0 |
| | | | Mask Pause | 0 |
| | | | Preserve | 0 |
| | | | DIFFUSION | |
| | | | Recon All Images | On |
| | | | Multi b-values | 1000.0; |
| | | | Multi NEX Values | 1.0; |
| | | | # Synthetic b-values | 1 |
| | | | Synthetic b-value | 1000.0; |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

MRS SV 35 WM

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|--------------|--------------------------------|-------------------------------|---------------------------|------------------|
| Ax DWI b1000 | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 2D |
| | Patient Position | Supine | Pulse Sequence | Spin Echo |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EPI, DIFF, Asset |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax DWI b1000 | SCAN RANGE | |
| | SCAN TIMING | | FOV | 22.0 |
| | TE | Minimum | Slice Thickness | 3.6 |
| | Number of Echoes | 1 | Slice Spacing | 0.3 |
| | TR | 5988.0 | Number of Slices | 24 |
| | Number of Shots | 1 | ACQ TIMING | |
| | IMAGE ENHANCE | | Freq | 100 |
| | Filter Choice | None | Phase | 100 |
| | USER CVS | | Freq DIR | R/L |
| | User CV0 | 1.00 | Phase FOV | 0.80 |
| | User CV7 | 1.00 | Auto Shim | On |
| | TR Min | 2000.0 | Phase Correction | Yes |
| | TR Max | 17000.0 | RF Drive Mode | Preset |
| | User CV Mask2 | 512 | Excitation Mode | Selective |
| | MULTI-PHASE | | FMRI | |
| | Seperate Series | 0 | PSD Trigger | Internal |
| | Mask Phase | 0 | View Order | Bottom/Up |
| | Mask Pause | 0 | # of Repetitions REST | 0 |
| | Preserve | 0 | # of Repetitions ACTIVE | 0 |
| | DIFFUSION | | SAT | |
| | Optimized TE | Yes | Tag Type | None |
| | Diffusion Directions | All | TRICKS | |
| | Number of Diffusion Directions | 3 | Pause On/Off | On |
| | Number of T2 Images | 1 | Auto Subtract | 0 |
| | Dual Spin Echo | Off | Auto SCIC | 2 |
| | Recon All Images | On | | |
| | Multi b-values | 1000.0; | | |
| | Multi NEX Values | 4.0; | | |
| | NEX For T2 | 2.00 | | |
| | Real Time Field Adjustment | 1 | | |
| | # Synthetic b-values | 0 | | |
| | CONTRAST | | | |
| | Contrast Yes/No | No | | |

Ax DWI b1000

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PATIENT POSITION

Patient Entry *Head First*
 Patient Position *Supine*
 Coil Configuration *GE48chHeadAnt;GE48chHeadPos*
 Plane *3-PLANE*
 Series Description *--Optioner--*

SCAN TIMING

TE *Minimum*
 Number of Echoes *1*
 TR *1000.0*
 Receiver Bandwidth *83.33*

IMAGE ENHANCE

Filter Choice *None*

GATING/TRIGGER

Auto Trigger Type *Off*

FMRI

PSD Trigger *Internal*
 Slice Order *Interleaved*
 View Order *Bottom/Up*
 # of Repetitions REST *0*
 # of Repetitions ACTIVE *0*

SAT

Tag Type *None*

TRICKS

Pause On/Off *On*
 Auto Subtract *0*
 Auto SCIC *Off*

IMAGING PARAMETERS

Imaging Mode *2D*
 Pulse Sequence *Spin Echo*
 Imaging Options *Seq, EDR, Fast, SS, ARC*
 Phase *2.00*

SCAN RANGE

FOV *24.0*
 Slice Thickness *10.0*
 Slice Spacing *0.0*

ACQ TIMING

Freq *128*
 Phase *128*
 Freq DIR *Unswap*
 # of Acq. Before Pause *0*
 Phase FOV *1.00*
 Auto Shim *Auto*
 Phase Correction *No*
 RF Drive Mode *Quadrature*
 Excitation Mode *Selective*

USER CVS

User CV1 *1.00*
 User CV2 *240.00*
 User CV13 *1.00*
 User CV39 *1.00*
 User CV Mask2 *256*

MULTI-PHASE

Seperate Series *0*
 Mask Phase *0*
 Mask Pause *0*
 Preserve *0*

DIFFUSION

Dual Spin Echo *Off*
 Diffusion Tensor Processing Output *No Selection*
 Recon All Images *On*
 Multi b-values *1000.0;*
 Multi NEX Values *1;*
 # Synthetic b-values *1*
 Synthetic b-value *1000.0;*

CONTRAST

Contrast Yes/No *No*

--Optioner--

--Optioner--

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|----------------|--------------------------|-------------------------------|---------------------------|-------------------------|
| Sag T1 MP-RAGE | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 3D |
| | Patient Position | Supine | Pulse Sequence | MP-RAGE |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR, Fast, ARC, HS, IrP |
| | Plane | OBLIQUE | Phase | 1.30 |
| | Series Description | Sag T1 MP-RAGE | Slice | 1.00 |
| | | | HyperSense | 1.00 |
| | SCAN TIMING | | SCAN RANGE | |
| | Flip Angle | 9 | FOV | 24.0 |
| | Number of Echoes | 1 | Slice Thickness | 0.9 |
| | TI | 900 | Location per Slab | 172 |
| | Receiver Bandwidth | 35.71 | Overlap Locations | 0 |
| | Recovery Time | 350 | Number of Slices | 1 |
| | IMAGE ENHANCE | | ACQ TIMING | |
| | Filter Choice | A | Freq | 264 |
| | USER CVS | | Phase | 264 |
| | User CV6 | 1.00 | Freq DIR | S/I |
| | User CV30 | 2.00 | Fat Shift DIR | Reversed (I) |
| | User CV Mask2 | 1024 | NEX | 1.00 |
| | MULTI-PHASE | | Phase FOV | 1.00 |
| | Seperate Series | 0 | Auto Shim | Auto |
| | Trigger Delay without AV | 0 | Phase Correction | No |
| | Mask Phase | 0 | RF Drive Mode | Preset |
| | Mask Pause | 0 | Excitation Mode | Selective |
| | Preserve | 0 | FMRI | |
| | DIFFUSION | | PSD Trigger | Internal |
| | Recon All Images | On | View Order | Bottom/Up |
| | Multi b-values | 1000.0; | # of Repetitions REST | 0 |
| | Multi NEX Values | 1.0; | # of Repetitions ACTIVE | 0 |
| | # Synthetic b-values | 1 | SAT | |
| | Synthetic b-value | 1000.0; | Tag Type | None |
| | CONTRAST | | TRICKS | |
| | Contrast Yes/No | No | Pause On/Off | On |
| | | | Auto Subtract | 0 |
| | | | Auto SCIC | 3 |

Sag T1 MP-RAGE

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| | | | | |
|---------------------------|------------------------------------|-------------------------------|---------------------------|------------------------------|
| Ax DTI 2mm (32 Direction) | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 2D |
| | Patient Position | Supine | Pulse Sequence | Spin Echo |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR, Cla, EPI, DIFF, ARC, HB |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax DTI 2mm (32 Direction) | HyperBand Slice | 2 |
| | SCAN TIMING | | SCAN RANGE | |
| | TE | Minimum | FOV | 20.0 |
| | Number of Echoes | 1 | Slice Thickness | 2.0 |
| | TR | 4179.0 | Slice Spacing | 0.0 |
| | Number of Shots | 1 | Number of Slices | 46 |
| | IMAGE ENHANCE | | ACQ TIMING | |
| | Filter Choice | None | Freq | 100 |
| | USER CVS | | Phase | 100 |
| | User CV5 | 1.00 | Freq DIR | R/L |
| | User CV17 | 1.00 | Phase FOV | 1.00 |
| | TR Min | 2000.0 | Auto Shim | Auto |
| | TR Max | 17000.0 | Phase Correction | Yes |
| | User CV Mask2 | 512 | RF Drive Mode | Preset |
| | MULTI-PHASE | | Excitation Mode | Selective |
| | Seperate Series | 0 | FMRI | |
| | Mask Phase | 0 | PSD Trigger | Internal |
| | Mask Pause | 0 | View Order | Bottom/Up |
| | Preserve | 0 | # of Repetitions REST | 0 |
| | DIFFUSION | | # of Repetitions ACTIVE | 0 |
| | Optimized TE | Yes | SAT | |
| | Diffusion Directions | Tensor | Tag Type | None |
| | Number of Diffusion Directions | 32 | TRICKS | |
| | Number of T2 Images | 6 | Pause On/Off | On |
| | Dual Spin Echo | Off | Auto Subtract | 0 |
| | Diffusion Tensor Processing Output | No Selection | Auto SCIC | 2 |
| | Recon All Images | Off | | |
| | Multi b-values | 800.0; | | |
| | Multi NEX Values | 1.0; | | |
| | Real Time Field Adjustment | 1 | | |
| | CONTRAST | | | |
| | Contrast Yes/No | No | | |

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| | | | | |
|--------------------------|-------------------------------|-------------------------------|---------------------------|---------------------|
| Sag T1 3D SilentMR 0.9mm | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 3D |
| | Patient Position | Supine | Pulse Sequence | Silenz |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR, Fast, SqP, IrP |
| | Plane | OBLIQUE | SCAN RANGE | |
| | Series Description | Sag T1 3D SilentMR 0.9mm | FOV | 18.0 |
| | SCAN TIMING | | Slice Thickness | 0.9 |
| | Flip Angle | 5 | Number of Slices | 1 |
| | Number of Echoes | 1 | ACQ TIMING | |
| | TI | 800 | Freq | 200 |
| | Receiver Bandwidth | 20.83 | Freq DIR | S/I |
| | Recovery Time | 1000 | NEX | 2.00 |
| | IMAGE ENHANCE | | Auto Shim | On |
| | Filter Choice | None | Phase Correction | No |
| | GATING/TRIGGER | | RF Drive Mode | Preset |
| | Pause After Navigator Prescan | 0 | Excitation Mode | Selective |
| | FMRI | | Spokes Per Segment | 384 |
| | PSD Trigger | Internal | USER CVS | |
| | View Order | Bottom/Up | User CV Mask2 | 1024 |
| | # of Repetitions REST | 0 | MULTI-PHASE | |
| | # of Repetitions ACTIVE | 0 | Seperate Series | 0 |
| SAT | | | Mask Phase | 0 |
| Tag Type | | None | Mask Pause | 0 |
| TRICKS | | | Preserve | 0 |
| Pause On/Off | | On | DIFFUSION | |
| Auto Subtract | | 0 | Recon All Images | On |
| Auto SCIC | | 3 | # Synthetic b-values | 1 |
| | | | Synthetic b-value | 1000.0; |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

Sag T1 3D SilentMR 0.9mm

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| | | | | |
|-----------------------|-------------------------|-------------------------------|---------------------------|-----------------|
| MRS SV 30 WM 12x12x30 | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | MRS |
| | Patient Position | Supine | Pulse Sequence | Probe-P |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR |
| | Plane | OBLIQUE | SCAN RANGE | |
| | Series Description | MRS SV 30 WM 12x12x30 | FOV | 24.0 |
| | SCAN TIMING | | Slice Thickness | 12.0 |
| | TE | 30.0 | Slice Spacing | 18.0 |
| | Number of Echoes | 1 | Location per Slab | 1 |
| | TR | 2000.0 | ACQ TIMING | |
| | IMAGE ENHANCE | | Freq | 1 |
| | Filter Choice | None | Phase | 1 |
| | GATING/TRIGGER | | Freq DIR | A/P |
| | Pause After Navigator | 0 | NEX | 8.00 |
| | Prescan | | Auto Shim | Auto |
| | FMRI | | Phase Correction | No |
| | PSD Trigger | Internal | RF Drive Mode | Quadrature (CP) |
| | View Order | Bottom/Up | Excitation Mode | Selective |
| | # of Repetitions REST | 0 | USER CVS | |
| | # of Repetitions ACTIVE | 0 | User CV3 | 1.00 |
| SAT | | | User CV4 | 128.00 |
| Tag Type | | None | User CV18 | 7.00 |
| TRICKS | | | User CV Mask2 | 0 |
| Pause On/Off | | On | MULTI-PHASE | |
| Auto Subtract | | 0 | Seperate Series | 0 |
| Auto SCIC | | Off | Mask Phase | 0 |
| | | | Mask Pause | 0 |
| | | | Preserve | 0 |
| | | | DIFFUSION | |
| | | | Recon All Images | On |
| | | | Multi b-values | 1000.0; |
| | | | Multi NEX Values | 1.0; |
| | | | # Synthetic b-values | 1 |
| | | | Synthetic b-value | 1000.0; |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

MRS SV 30 WM 12x12x30

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| | | | | |
|----------------------|-------------------------------|-------------------------------|---------------------------|-----------------|
| MRS SV 30 WM20x20x20 | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | MRS |
| | Patient Position | Supine | Pulse Sequence | Probe-P |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR |
| | Plane | OBLIQUE | SCAN RANGE | |
| | Series Description | MRS SV 30 WM20x20x20 | FOV | 24.0 |
| | SCAN TIMING | | Slice Thickness | 20.0 |
| | TE | 30.0 | Slice Spacing | 20.0 |
| | Number of Echoes | 1 | Location per Slab | 1 |
| | TR | 2000.0 | ACQ TIMING | |
| | IMAGE ENHANCE | | Freq | 1 |
| | Filter Choice | None | Phase | 1 |
| | GATING/TRIGGER | | Freq DIR | A/P |
| | Pause After Navigator Prescan | 0 | NEX | 8.00 |
| | FMRI | | Auto Shim | Auto |
| | PSD Trigger | Internal | Phase Correction | No |
| | View Order | Bottom/Up | RF Drive Mode | Quadrature (CP) |
| | # of Repetitions REST | 0 | Excitation Mode | Selective |
| | # of Repetitions ACTIVE | 0 | USER CVS | |
| | SAT | | User CV3 | 1.00 |
| | Tag Type | None | User CV4 | 128.00 |
| | TRICKS | | User CV18 | 7.00 |
| | Pause On/Off | On | User CV Mask2 | 0 |
| | Auto Subtract | 0 | MULTI-PHASE | |
| | Auto SCIC | Off | Seperate Series | 0 |
| | | | Mask Phase | 0 |
| | | | Mask Pause | 0 |
| | | | Preserve | 0 |
| | | | DIFFUSION | |
| | | | Recon All Images | On |
| | | | Multi b-values | 1000.0; |
| | | | Multi NEX Values | 1.0; |
| | | | # Synthetic b-values | 1 |
| | | | Synthetic b-value | 1000.0; |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

MRS SV 30 WM20x20x20

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

Cor T2

| PATIENT POSITION | |
|----------------------|-----------------------------|
| Patient Entry | Head First |
| Patient Position | Supine |
| Coil Configuration | GE48chHeadAnt;GE48chHeadPos |
| Plane | OBLIQUE |
| Series Description | Cor T2 |
| SCAN TIMING | |
| Flip Angle | 111 |
| TE | 104.0 |
| Number of Echoes | 1 |
| TR | 4000.0 |
| Echo Train Length | 18 |
| Receiver Bandwidth | 62.50 |
| IMAGE ENHANCE | |
| Filter Choice | None |
| USER CVS | |
| User CV7 | 1.00 |
| User CV18 | 1.00 |
| TR Min | 4000.0 |
| TR Max | 8000.0 |
| User CV29 | 1.00 |
| User CV Mask2 | 1152 |
| MULTI-PHASE | |
| Seperate Series | 0 |
| Mask Phase | 0 |
| Mask Pause | 0 |
| Preserve | 0 |
| DIFFUSION | |
| Recon All Images | On |
| Multi b-values | 1000.0; |
| Multi NEX Values | 1.0; |
| # Synthetic b-values | 1 |
| Synthetic b-value | 1000.0; |
| CONTRAST | |
| Contrast Yes/No | No |

Cor T2

| IMAGING PARAMETERS | |
|-------------------------|-------------------------|
| Imaging Mode | 2D |
| Pulse Sequence | FSE-XL |
| Imaging Options | EDR, TRF, Fast, FR, ARC |
| Phase | 2.00 |
| SCAN RANGE | |
| FOV | 22.0 |
| Slice Thickness | 3.0 |
| Slice Spacing | 0.0 |
| Number of Slices | 21 |
| ACQ TIMING | |
| Freq | 448 |
| Phase | 448 |
| Freq DIR | R/L |
| Fat Shift DIR | Normal (L) |
| NEX | 2.00 |
| Phase FOV | 0.90 |
| Auto Shim | On |
| Phase Correction | No |
| RF Drive Mode | Preset |
| Excitation Mode | Selective |
| FMRI | |
| PSD Trigger | Internal |
| View Order | Bottom/Up |
| # of Repetitions REST | 0 |
| # of Repetitions ACTIVE | 0 |
| SAT | |
| Tag Type | None |
| TRICKS | |
| Pause On/Off | On |
| Auto Subtract | 0 |
| Auto SCIC | 3 |

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| | | | | | |
|----------------------|--------------------|-----------------------------|-----------------------------|-----------------------------------|-------|
| Ax IR | PATIENT POSITION | | IMAGING PARAMETERS | | Ax IR |
| | Patient Entry | Head First | Imaging Mode | 2D | |
| | Patient Position | Supine | Pulse Sequence | FSE-XL | |
| | Coil Configuration | GE48chHeadAnt;GE48chHeadPos | Imaging Options | FC, Seq, EDR, TRF, Fast, ARC, IrP | |
| | Plane | OBLIQUE | Phase | 2.00 | |
| | Series Description | Ax IR | SCAN RANGE | | |
| | SCAN TIMING | | FOV | 18.0 | |
| | Flip Angle | 111 | Slice Thickness | 3.0 | |
| | TE | Min Full | Slice Spacing | 0.5 | |
| | Number of Echoes | 1 | Number of Slices | 30 | |
| | TR | 14000.0 | ACQ TIMING | | |
| | TI | 300 | Freq | 300 | |
| | Echo Train Length | 18 | Phase | 300 | |
| | Receiver Bandwidth | 62.50 | Freq DIR | S/I | |
| | IMAGE ENHANCE | | Fat Shift DIR | Normal (I) | |
| | Filter Choice | None | NEX | 2.00 | |
| | USER CVS | | Phase FOV | 0.90 | |
| | User CV7 | 1.00 | Auto Shim | Auto | |
| | User CV18 | 1.00 | Phase Correction | No | |
| | User CV21 | 1.00 | Flow Direction Compensation | Slice | |
| | User CV29 | 1.00 | RF Drive Mode | Preset | |
| | User CV30 | 1.00 | Excitation Mode | Selective | |
| | User CV Mask2 | 1152 | FMRI | | |
| MULTI-PHASE | | PSD Trigger | Internal | | |
| Seperate Series | 0 | View Order | Bottom/Up | | |
| Mask Phase | 0 | # of Repetitions REST | 0 | | |
| Mask Pause | 0 | # of Repetitions ACTIVE | 0 | | |
| Preserve | 0 | SAT | | | |
| DIFFUSION | | SAT Location | I | | |
| Recon All Images | On | Tag Type | None | | |
| Multi b-values | 1000.0; | TRICKS | | | |
| Multi NEX Values | 1.0; | Pause On/Off | On | | |
| # Synthetic b-values | 1 | Auto Subtract | 0 | | |
| Synthetic b-value | 1000.0; | Auto SCIC | 3 | | |
| CONTRAST | | | | | |
| Contrast Yes/No | No | | | | |

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| | | | | |
|----------------------------|-------------------------|--|---------------------------|----------------|
| Ax T1 SPGR Co-registration | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 2D |
| | Patient Position | Supine | Pulse Sequence | SPGR |
| | Coil Configuration | GE48chHeadAnt;GE48chHeadPos | Imaging Options | EDR, Fast, ARC |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax T1 SPGR Co-registration | SCAN RANGE | |
| | SCAN TIMING | | FOV | 24.0 |
| | Flip Angle | 90 | Slice Thickness | 2.5 |
| | TE | In Phase | Slice Spacing | 0.0 |
| | Number of Echoes | 1 | Number of Slices | 55 |
| | TR | 486.1 | ACQ TIMING | |
| | Receiver Bandwidth | 31.25 | Freq | 380 |
| | IMAGE ENHANCE | | Phase | 380 |
| | Filter Choice | G | Freq DIR | R/L |
| | GATING/TRIGGER | | NEX | 1.00 |
| | Pause After Navigator | 0 | Phase FOV | 1.00 |
| | Prescan | | Auto Shim | Auto |
| | FMRI | | Phase Correction | No |
| | PSD Trigger | Internal | RF Drive Mode | Preset |
| | View Order | Bottom/Up | Excitation Mode | Selective |
| | # of Repetitions REST | 0 | USER CVS | |
| | # of Repetitions ACTIVE | 0 | TR Min | 120.0 |
| | SAT | | TR Max | 500.0 |
| | Tag Type | None | User CV Mask2 | 2048 |
| | TRICKS | | MULTI-PHASE | |
| | Pause On/Off | On | Seperate Series | 0 |
| | Auto Subtract | 0 | Mask Phase | 0 |
| | Auto SCIC | Off | Mask Pause | 0 |
| | OTHERS | | Preserve | 0 |
| | Protocol Notes | <p><i>Important Tip:</i></p> <p><i>Ax T1 SPGR is used as co-registration anatomy identification for Resting State fMRI. This sequences needs to be acquired prior to scanning a Resting State fMRI with all the imaging parameters (FOV, phase FOV, Slice Thickness and spacing) matching exactly.</i></p> | | |
| | | <p>DIFFUSION</p> <p>Recon All Images On</p> <p># Synthetic b-values 1</p> <p>Synthetic b-value 1000.0;</p> <p>CONTRAST</p> <p>Contrast Yes/No No</p> | | |

Ax T1 SPGR Co-registration

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| PATIENT POSITION | | IMAGING PARAMETERS | |
|-------------------------------|--|------------------------------------|-------------------------|
| Patient Entry | Head First | Imaging Mode | 2D |
| Patient Position | Supine | Pulse Sequence | Gradient Echo |
| Coil Configuration | GE48chHeadAnt;GE48chHeadPos | Imaging Options | EDR, EPI, FMRI, ARC, HB |
| Plane | OBLIQUE | Phase | 2.00 |
| Series Description | Ax GRE Ax fMRI Resting State Hyperband 4 500 | HyperBand Slice | 4 |
| SCAN TIMING | | SCAN RANGE | |
| Flip Angle | 61 | FOV | 24.0 |
| TE | 30.0 | Slice Thickness | 2.5 |
| Number of Echoes | 1 | Slice Spacing | 0.0 |
| TR | 1000.0 | Number of Slices | 55 |
| Number of Shots | 1 | ACQ TIMING | |
| IMAGE ENHANCE | | Freq | 96 |
| Filter Choice | None | Phase | 96 |
| GATING/TRIGGER | | Freq DIR | R/L |
| Pause After Navigator Prescan | 0 | NEX | 1.00 |
| FMRI | | Phase FOV | 1.00 |
| Brain Wave Real Time | 1 | Auto Shim | Auto |
| Paradigm String | <<<<<<<Resting State>BK>MB>*>*>*>* | Phase Correction | Yes |
| Paradigm UID | 1.2.840.113819.3.126830024141229.1471016114079052.48 | RF Drive Mode | Preset |
| Initial State | Control | Excitation Mode | Selective |
| PSD Trigger | Internal | USER CVS | |
| Slice Order | Interleaved | User CV0 | 1.00 |
| View Order | Top/Down | User CV4 | 1.00 |
| # of Repetitions REST | 1 | User CV Mask2 | 2048 |
| # of Repetitions ACTIVE | 1 | MULTI-PHASE | |
| # of Dummy Acquisition | 4 | Slice per Location | 500 |
| SAT | | Seperate Series | 0 |
| Tag Type | None | Delay after Acquisition without AV | 0 |
| Fat/Water Saturation | Fat | Mask Phase | 0 |
| TRICKS | | Mask Pause | 0 |
| Pause On/Off | On | Preserve | 0 |
| Auto Subtract | 0 | DIFFUSION | |
| Auto SCIC | 2 | Recon All Images | On |
| | | # Synthetic b-values | 1 |
| | | Synthetic b-value | 1000.0; |
| | | CONTRAST | |
| | | Contrast Yes/No | No |

Ax GRE Ax fMRI Resting State Hyperband 4 500

Ax GRE Ax fMRI Resting State Hyperband 4 500

| | | | | |
|-----------------------|-------------------------|--|---------------------------|------------------------------|
| Ax Quiet T2 PROPELLER | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 2D |
| | Patient Position | Supine | Pulse Sequence | PROPELLER |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR, TRF, Fast, FR, ART, ARC |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax Quiet T2 PROPELLER | SCAN RANGE | |
| | SCAN TIMING | | FOV | 20.0 |
| | Flip Angle | 142 | Slice Thickness | 3.0 |
| | Number of Echoes | 1 | Slice Spacing | 0.3 |
| | TR | 7633.0 | Number of Slices | 30 |
| | Echo Train Length | 18 | ACQ TIMING | |
| | Receiver Bandwidth | 41.67 | Freq | 384 |
| | IMAGE ENHANCE | | Freq DIR | A/P |
| | Filter Choice | None | Fat Shift DIR | Normal (A) |
| | GATING/TRIGGER | | NEX | 1.50 |
| | Auto Trigger Type | Off | Auto Shim | On |
| | FMRI | | Phase Correction | No |
| | PSD Trigger | Internal | RF Drive Mode | Preset |
| | View Order | Bottom/Up | Excitation Mode | Selective |
| | # of Repetitions REST | 0 | USER CVS | |
| | # of Repetitions ACTIVE | 0 | User CV5 | 1.00 |
| | SAT | | User CV12 | 1.00 |
| | Tag Type | None | TR Min | 400.0 |
| | TRICKS | | TR Max | 11000.0 |
| | Pause On/Off | On | User CV39 | 1.00 |
| | Auto Subtract | 0 | User CV Mask2 | 256 |
| | Auto SCIC | 3 | MULTI-PHASE | |
| | OTHERS | | Seperate Series | 0 |
| | Protocol Notes | *Adding PURE will require an calibration scan, which will increase the acoustic noise during the exam. | Mask Phase | 0 |
| | | | Mask Pause | 0 |
| | | | Acoustic Reduction Level | 2 |
| | | | Preserve | 0 |
| | | | DIFFUSION | |
| | | | Recon All Images | On |
| | | | Multi b-values | 1000.0; |
| | | | Multi NEX Values | 1.0; |
| | | | # Synthetic b-values | 1 |
| | | | Synthetic b-value | 1000.0; |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| | | | | |
|-----------------------|-------------------------|-------------------------------|---------------------------|-----------------------------------|
| Ax T1 FLAIR PROPELLER | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | 2D |
| | Patient Position | Supine | Pulse Sequence | PROPELLER |
| | Coil Configuration | GE48chHeadAnt2;GE48chHeadPos2 | Imaging Options | EDR, TRF, Fast, ART, ARC, T1flair |
| | Plane | OBLIQUE | Phase | 2.00 |
| | Series Description | Ax T1 FLAIR PROPELLER | SCAN RANGE | |
| | SCAN TIMING | | FOV | 20.0 |
| | Flip Angle | 110 | Slice Thickness | 3.0 |
| | Number of Echoes | 1 | Slice Spacing | 0.3 |
| | TR | 2202.4 | Number of Slices | 30 |
| | TI | 924 | ACQ TIMING | |
| | Echo Train Length | 12 | Freq | 320 |
| | Receiver Bandwidth | 50.00 | Freq DIR | A/P |
| | IMAGE ENHANCE | | Fat Shift DIR | Normal (A) |
| | Filter Choice | None | NEX | 2.00 |
| | GATING/TRIGGER | | # of Acq. Before Pause | 0 |
| | Auto Trigger Type | Off | Auto Shim | On |
| | FMRI | | Phase Correction | No |
| | PSD Trigger | Internal | RF Drive Mode | Quadrature (CP) |
| | View Order | Bottom/Up | Excitation Mode | Selective |
| | # of Repetitions REST | 0 | USER CVS | |
| | # of Repetitions ACTIVE | 0 | User CV5 | 1.00 |
| | SAT | | User CV12 | 1.00 |
| | Tag Type | None | User CV39 | 1.00 |
| | TRICKS | | User CV Mask2 | 256 |
| | Pause On/Off | On | MULTI-PHASE | |
| | Auto Subtract | 0 | Seperate Series | 0 |
| | Auto SCIC | 3 | Mask Phase | 0 |
| | | | Mask Pause | 0 |
| | | | Acoustic Reduction Level | 1 |
| | | | Preserve | 0 |
| | | | DIFFUSION | |
| | | | Recon All Images | On |
| | | | Multi b-values | 1000.0; |
| | | | Multi NEX Values | 1.0; |
| | | | # Synthetic b-values | 1 |
| | | | Synthetic b-value | 1000.0; |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

Ax T1 FLAIR PROPELLER

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| | | | | |
|-------------------|-------------------------------|-----------------------------|---------------------------|------------|
| PROBE-SV 35 WM Dx | PATIENT POSITION | | IMAGING PARAMETERS | |
| | Patient Entry | Head First | Imaging Mode | MRS |
| | Patient Position | Supine | Pulse Sequence | Probe-P |
| | Coil Configuration | GE48chHeadAnt;GE48chHeadPos | Imaging Options | EDR |
| | Plane | AXIAL | SCAN RANGE | |
| | Series Description | PROBE-SV 35 WM Dx | FOV | 24.0 |
| | SCAN TIMING | | Slice Thickness | 14.9 |
| | TE | 35.0 | Slice Spacing | 12.0 |
| | Number of Echoes | 1 | Location per Slab | 1 |
| | TR | 1500.0 | ACQ TIMING | |
| | IMAGE ENHANCE | | Freq | 1 |
| | Filter Choice | None | Phase | 1 |
| | GATING/TRIGGER | | Freq DIR | R/L |
| | Auto Trigger Type | Off | NEX | 8.00 |
| | Pause After Navigator Prescan | 0 | Auto Shim | Auto |
| | FMRI | | Phase Correction | No |
| | PSD Trigger | Internal | RF Drive Mode | Quadrature |
| | Slice Order | Interleaved | Excitation Mode | Selective |
| | View Order | Bottom/Up | USER CVS | |
| | # of Repetitions REST | 0 | User CV3 | 1.00 |
| | # of Repetitions ACTIVE | 0 | User CV4 | 128.00 |
| | SAT | | User CV18 | 7.00 |
| | SAT Location | R | User CV Mask2 | 0 |
| | SAT Location | A | MULTI-PHASE | |
| | SAT Location | I | Seperate Series | 0 |
| | Tag Type | None | Mask Phase | 0 |
| | TRICKS | | Mask Pause | 0 |
| | Pause On/Off | On | DIFFUSION | |
| | Auto Subtract | 0 | Recon All Images | On |
| | Auto SCIC | Off | Multi b-values | 1000.0; |
| | | | Multi NEX Values | 1; |
| | | | CONTRAST | |
| | | | Contrast Yes/No | No |

PROBE-SV 35 WM Dx

Protocol: pediatric_head_LIM STUDIE (Less is More)DSBUS

| PATIENT POSITION | | IMAGING PARAMETERS | |
|-------------------------|---|------------------------------------|------------------|
| Patient Entry | Head First | Imaging Mode | 2D |
| Patient Position | Supine | Pulse Sequence | Gradient Echo |
| Coil Configuration | GE48chHeadAnt;GE48chHeadPos | Imaging Options | EPI, Asset, FMRI |
| Plane | OBLIQUE | Phase | 2.00 |
| Series Description | fMRI Resting State | SCAN RANGE | |
| SCAN TIMING | | FOV | 23.0 |
| Flip Angle | 90 | Slice Thickness | 3.6 |
| TE | 30.0 | Slice Spacing | 0.0 |
| Number of Echoes | 1 | Number of Slices | 29 |
| TR | 4000.0 | ACQ TIMING | |
| Number of Shots | 1 | Freq | 64 |
| IMAGE ENHANCE | | Phase | 64 |
| Filter Choice | None | Freq DIR | R/L |
| GATING/TRIGGER | | NEX | 1.00 |
| Auto Trigger Type | Off | Phase FOV | 1.00 |
| Pause After Navigator | 0 | Auto Shim | Auto |
| Prescan | | Phase Correction | Yes |
| FMRI | | RF Drive Mode | Quadrature |
| Brain Wave Real Time | 1 | Excitation Mode | Selective |
| Paradigm String | jkdgasf | USER CVS | |
| Paradigm UID | 1.2.840.113819.3.169136382543.1380533354867639.11 | User CV0 | 1.00 |
| PSD Trigger | Internal | User CV Mask2 | 0 |
| Slice Order | Sequential | MULTI-PHASE | |
| View Order | Top/Down | Slice per Location | 96 |
| # of Repetitions REST | 1 | Delay after Acquisition | 0 |
| # of Repetitions ACTIVE | 1 | Seperate Series | 0 |
| # of Dummy Acquisition | 5 | Delay after Acquisition without AV | 0 |
| SAT | | Mask Phase | 0 |
| Tag Type | None | Mask Pause | 0 |
| TRICKS | | DIFFUSION | |
| Pause On/Off | On | Recon All Images | On |
| Auto Subtract | 0 | Multi b-values | 1000.0; |
| Auto SCIC | Off | Multi NEX Values | 1; |
| | | CONTRAST | |
| | | Contrast Yes/No | No |