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**\\USER\FMRIF\[XT-ID:93-M-0170]|Renzo\20230327_ptx_used\localizer_irtfl_ptx**

TA: 1:00 PM: REF Voxel size: 1.0×1.0×2.0 mmPAT: Off Rel. SNR: 1.00 : tfl

### Properties

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

### Routine

| | |
|---|---|
| Slice group | 1 |
| Slices | 6 |
| Dist. factor | 750 % |
| Position | L1.9 A5.0 F8.0 mm |
| Orientation | Sagittal |
| Phase enc. dir. | A >> P |
| Slice group | 2 |
| Slices | 4 |
| Dist. factor | 600 % |
| Position | L1.5 A1.1 H6.0 mm |
| Orientation | Transversal |
| Phase enc. dir. | A >> P |
| Slice group | 3 |
| Slices | 4 |
| Dist. factor | 800 % |
| Position | L1.5 P11.1 F7.2 mm |
| Orientation | Coronal |
| Phase enc. dir. | R >> L |
| AutoAlign | --- |
| Phase oversampling | 0 % |
| FoV read | 200 mm |
| FoV phase | 100.0 % |
| Slice thickness | 2.0 mm |
| TR | 4200.0 ms |
| TE | 3.46 ms |
| Averages | 1 |
| Concatenations | 14 |
| Filter | None |
| Coil elements | AC |

### Contrast - Common

| | |
|---|---|
| TR | 4200.0 ms |
| TE | 3.46 ms |
| TD | 0 ms |
| Magn. preparation | Slice-sel. IR |
| TI 1 | 840 ms |
| TI 2 | 2540 ms |
| Flip angle 1 | 5.0 deg |
| Flip angle 2 | 8.0 deg |
| Fat suppr. | None |
| Water suppr. | None |

### Contrast - Dynamic

| | |
|---|---|
| Averages | 1 |
| Averaging mode | Long term |
| Reconstruction | Magnitude |

### Contrast - Dynamic

| | |
|---|---|
| Measurements | 1 |
| Multiple series | Each measurement |

### Resolution - Common

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

### Resolution - iPAT

| | |
|---|---|
| PAT mode | None |

### Resolution - Filter Image

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

### Resolution - Filter Rawdata

| | |
|---|---|
| Raw filter | Off |
| Elliptical filter | Off |

### Geometry - Common

| | |
|---|---|
| Slice group | 1 |
| Slices | 6 |
| Dist. factor | 750 % |
| Position | L1.9 A5.0 F8.0 mm |
| Orientation | Sagittal |
| Phase enc. dir. | A >> P |
| Slice group | 2 |
| Slices | 4 |
| Dist. factor | 600 % |
| Position | L1.5 A1.1 H6.0 mm |
| Orientation | Transversal |
| Phase enc. dir. | A >> P |
| Slice group | 3 |
| Slices | 4 |
| Dist. factor | 800 % |
| Position | L1.5 P11.1 F7.2 mm |
| Orientation | Coronal |
| Phase enc. dir. | R >> L |
| FoV read | 200 mm |
| FoV phase | 100.0 % |
| Slice thickness | 2.0 mm |
| TR | 4200.0 ms |
| Multi-slice mode | Sequential |
| Series | Ascending |
| Concatenations | 14 |

### Geometry - AutoAlign

| | |
|---|---|
| Slice group | 1 |
| Position | L1.9 A5.0 F8.0 mm |
| Orientation | Sagittal |
| Phase enc. dir. | A >> P |
| Slice group | 2 |
| Position | L1.5 A1.1 H6.0 mm |

### Geometry - AutoAlign

| | |
|---|---|
| Orientation | Transversal |
| Phase enc. dir. | A >> P |
| Slice group | 3 |
| Position | L1.5 P11.1 F7.2 mm |
| Orientation | Coronal |
| Phase enc. dir. | R >> L |
| AutoAlign | --- |
| Initial Position | L1.9 A5.0 F8.0 |
| L | 1.9 mm |
| A | 5.0 mm |
| F | 8.0 mm |
| Initial Rotation | 0.00 deg |
| Initial Orientation | Sagittal |

### Geometry - Navigator

### Geometry - Tim Planning Suite

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

### System - Miscellaneous

| | |
|---|---|
| Positioning mode | REF |
| Table position | H |
| Table position | 0 mm |
| MSMA | S - C - T |
| Sagittal | R >> L |
| Coronal | A >> P |
| Transversal | F >> H |
| Coil Combine Mode | Adaptive Combine |
| Save uncombined | Off |
| Matrix Optimization | Off |
| AutoAlign | --- |
| Coil Select Mode | Default |

### System - Adjustments

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

### System - Adjust Volume

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

### System - pTx Volumes

| | |
|---|---|
| B1 Shim mode | TrueForm |
| Excitation | Slice-sel. |

### System - Tx/Rx

| | |
|---|---|
| Frequency 1H | 297.145077 MHz |
| Correction factor | 1 |
| Gain | High |
| Img. Scale Cor. | 1.000 |
| Reset | Off |

### System - Tx/Rx

| | |
|---|---|
| ? Ref. amplitude 1H | 0.000 V |

### Physio - Signal1

| | |
|---|---|
| 1st Signal/Mode | None |
| TR | 4200.0 ms |
| Concatenations | 14 |

### Physio - Cardiac

| | |
|---|---|
| Magn. preparation | Slice-sel. IR |
| TI 1 | 840 ms |
| TI 2 | 2540 ms |
| Fat suppr. | None |
| Dark blood | Off |
| FoV read | 200 mm |
| FoV phase | 100.0 % |
| Phase resolution | 100 % |

### Physio - PACE

| | |
|---|---|
| Resp. control | Off |
| Concatenations | 14 |

### 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 | Off |
| Distortion Corr. | Off |

### Inline - MapIt

| | |
|---|---|
| Save original images | On |
| MapIt | None |
| Flip angle 1 | 5.0 deg |
| Flip angle 2 | 8.0 deg |
| Measurements | 1 |
| TR | 4200.0 ms |
| TE | 3.46 ms |

### Sequence - Part 1

| | |
|---|---|
| Introduction | On |
| Dimension | 2D |
| Asymmetric echo | Off |
| Flow comp. | No |
| Multi-slice mode | Sequential |
| Echo spacing | 6.7 ms |
| Bandwidth | 240 Hz/Px |

### Sequence - Part 2

| | |
|---|---|
| RF pulse type | Normal |
| Gradient mode | Fast |
| Excitation | Slice-sel. |
| RF spoiling | On |
| Incr. Gradient spoiling | Off |
| Turbo factor | 192 |

**Sequence - Assistant**

| | |
|---|---|
| Mode | Off |

**\\USER\FMRIF\[XT-ID:93-M-0170]|Renzo\20230327_ptx_used\rslh_ep3d_vaso_nih5k_saggital_normal**

TA: 1:12 PM: REF Voxel size: 0.8×0.8×0.8 mmPAT: 3 Rel. SNR: 1.00 : 5k

### 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 | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| AutoAlign | --- |
| Slab Scale | -10 % |
| Slices per slab | 36 |
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |
| TE 1 | 22.90 ms |
| Averages | 1 |
| Filter | None |
| Coil elements | AC |

### Contrast - Common

| | |
|---|---|
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |
| TE 1 | 22.90 ms |
| Multi-echo spacing | 61.2 ms |
| Magn. preparation | Non-sel. HSN IR |
| TI 1 | 1750.2 ms |
| TI 2 | 4230.6 ms |
| Flip angle | 57 deg |
| Fat suppr. | Fat sat. |
| Magn. Prep. Shots | 1 |

### Contrast - Dynamic

| | |
|---|---|
| Averages | 1 |
| Averaging mode | Long term |
| Reconstruction | Magnitude |
| Measurements | 10 |
| Pause after meas. 1 | 0.0 s |
| Pause after meas. 2 | 0.0 s |
| Pause after meas. 3 | 0.0 s |
| Pause after meas. 4 | 0.0 s |
| Pause after meas. 5 | 0.0 s |
| Pause after meas. 6 | 0.0 s |
| Pause after meas. 7 | 0.0 s |
| Pause after meas. 8 | 0.0 s |
| Pause after meas. 9 | 0.0 s |

### Resolution - Common

| | |
|---|---|
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| Base resolution | 220 |
| Phase resolution | 100 % |
| Slice resolution | 100 % |
| Phase partial Fourier | 6/8 |
| Slice partial Fourier | Off |
| Interpolation | Off |

### Resolution - iPAT

| | |
|---|---|
| PAT mode | CAIPIRINHA |
| Acc. factor PE | 1 |
| Ref. lines PE | 48 |
| Acc. factor 3D | 3 |
| Ref. lines 3D | 36 |
| CAIPI 3D Shift | 1 |
| Reference Scan Mode | EPI/separate |
| CAIPI Mode (tooltip) | Skipped-CAIPI |
| Total PAT factor | 3 |

### Resolution - Filter Image

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

### Resolution - Filter Rawdata

| | |
|---|---|
| Raw filter | Off |
| Elliptical filter | Off |

### Geometry - Common

| | |
|---|---|
| Slab group | 1 |
| Slabs | 1 |
| Position | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| Slab Scale | -10 % |
| Slices per slab | 36 |
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |

### Geometry - AutoAlign

| | |
|---|---|
| Slab group | 1 |
| Position | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| AutoAlign | --- |
| Initial Position | L26.0 A0.1 F16.4 |
| L | 26.0 mm |
| A | 0.1 mm |
| F | 16.4 mm |
| Initial Rotation | -180.00 deg |
| Initial Orientation | Sagittal |

### Geometry - Saturation

| | |
|---|---|
| Saturation mode | Standard |
| Fat suppr. | Fat sat. |

### Geometry - Tim Planning Suite

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

### System - Miscellaneous

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

### System - Adjustments

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

### System - Adjust Volume

| | |
|---|---|
| ! Position | L29.1 A2.4 H7.6 mm |
| ! Orientation | Sagittal |
| ! Rotation | 0.00 deg |
| ! A >> P | 193 mm |
| ! F >> H | 124 mm |
| ! R >> L | 45 mm |
| Reset | Off |

### System - pTx Volumes

| | |
|---|---|
| B1 Shim mode | TrueForm |
| Excitation | Slab-sel. |

### System - Tx/Rx

| | |
|---|---|
| Frequency 1H | 297.145077 MHz |
| Correction factor | 1 |
| Gain | Low |
| Img. Scale Cor. | 1.000 |
| Reset | Off |
| ! Ref. amplitude 1H | 220.000 V |

### Sequence - Part 1

| | |
|---|---|
| Introduction | On |
| Dimension | 3D |
| Reordering | Linear |
| Contrasts | 1 |
| Echo spacing | 1.16 ms |
| Bandwidth | 946 Hz/Px |

### Sequence - Part 2

| | |
|---|---|
| EPI factor | 52 |
| Segmentation | 3 |

### Sequence - Part 2

| | |
|---|---|
| RF pulse type | Normal |
| Gradient mode | Fast |
| Excitation | Slab-sel. |
| RF spoiling | On |
| Turbo factor | 36 |

### Sequence - Special

| | |
|---|---|
| PATRef FA | 3 deg |
| RF duration | 2500 us |
| RF BWT product | 8 |
| Ernst T1 | 1200 ms |
| PATRef prep. shots | 10 |
| Volume dummy shots | 0 |
| Dummy Measurements | 0 |
| ETL per RTEB | 1 |
| CHECK FLIP ANGLE! | On |
| Invert PE | On |
| Min. TE if PF | On |
| Echo Time Shift | On |
| Ramp Sampling | On |
| NORDIC | Off |
| SVDPC | Off |
| Sym VASO | Off |
| Dual-pol. EPI | Off |
| Invert RO | On |
| Invert 3D | Off |
| Disable PF reco | Off |
| Disable PF reco | Off |
| Save sampling | Off |
| PE VComp | Off |
| Water Exc. | -none- |
| External PC | per Series |
| Saturation RF | per Shot |
| FIDNavs | -none- |
| EPI rise time factor | 1.10 |
| Mosaic DICOMs | On |
| Modify Ice Config | On |
| G-factor map | Off |
| GRAPPA Regularization | 10 10^-6 |
| HSN RF power scale | 2.50 |
| Inversion Delay | 500 ms |
| Relaxation Delay | 0 ms |
| Var. FA /MAGEC | 4 |

### Sequence - Assistant

| | |
|---|---|
| Mode | Off |

**\\USER\FMRIF\[XT-ID:93-M-0170]|Renzo\20230327_ptx_used\rslh_ep3d_vaso_nih5k_saggital_normal**

TA: 10:24 PM: REF Voxel size: 0.8×0.8×0.8 mmPAT: 3 Rel. SNR: 1.00 : 5k

### 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 | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| AutoAlign | --- |
| Slab Scale | -10 % |
| Slices per slab | 36 |
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |
| TE 1 | 22.90 ms |
| Averages | 1 |
| Filter | None |
| Coil elements | AC |

### Contrast - Common

| | |
|---|---|
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |
| TE 1 | 22.90 ms |
| Multi-echo spacing | 61.2 ms |
| Magn. preparation | Non-sel. HSN IR |
| TI 1 | 1750.2 ms |
| TI 2 | 4230.6 ms |
| Flip angle | 57 deg |
| Fat suppr. | Fat sat. |
| Magn. Prep. Shots | 1 |

### Contrast - Dynamic

| | |
|---|---|
| Averages | 1 |
| Averaging mode | Long term |
| Reconstruction | Magnitude |
| Measurements | 100 |
| Pause after meas. | 0.0 s |

### Resolution - Common

| | |
|---|---|
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| Base resolution | 220 |
| Phase resolution | 100 % |
| Slice resolution | 100 % |
| Phase partial Fourier | 6/8 |

### Resolution - Common

| | |
|---|---|
| Slice partial Fourier | Off |
| Interpolation | Off |

### Resolution - iPAT

| | |
|---|---|
| PAT mode | CAIPIRINHA |
| Acc. factor PE | 1 |
| Ref. lines PE | 48 |
| Acc. factor 3D | 3 |
| Ref. lines 3D | 36 |
| CAIPI 3D Shift | 1 |
| Reference Scan Mode | EPI/separate |
| CAIPI Mode (tooltip) | Skipped-CAIPI |
| Total PAT factor | 3 |

### Resolution - Filter Image

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

### Resolution - Filter Rawdata

| | |
|---|---|
| Raw filter | Off |
| Elliptical filter | Off |

### Geometry - Common

| | |
|---|---|
| Slab group | 1 |
| Slabs | 1 |
| Position | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| Slab Scale | -10 % |
| Slices per slab | 36 |
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |

### Geometry - AutoAlign

| | |
|---|---|
| Slab group | 1 |
| Position | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| AutoAlign | --- |
| Initial Position | L26.0 A0.1 F16.4 |
| L | 26.0 mm |
| A | 0.1 mm |
| F | 16.4 mm |
| Initial Rotation | -180.00 deg |
| Initial Orientation | Sagittal |

### Geometry - Saturation

| | |
|---|---|
| Saturation mode | Standard |
| Fat suppr. | Fat sat. |

### Geometry - Tim Planning Suite

| | |
|---|---|
| Set-n-Go Protocol | Off |

### Geometry - Tim Planning Suite

| | |
|---|---|
| Table position | H |
| Table position | 0 mm |
| Inline Composing | Off |

### System - Miscellaneous

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

### System - Adjustments

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

### System - Adjust Volume

| | |
|---|---|
| ! Position | L29.1 A2.4 H7.6 mm |
| ! Orientation | Sagittal |
| ! Rotation | 0.00 deg |
| ! A >> P | 193 mm |
| ! F >> H | 124 mm |
| ! R >> L | 45 mm |
| Reset | Off |

### System - pTx Volumes

| | |
|---|---|
| B1 Shim mode | TrueForm |
| Excitation | Slab-sel. |

### System - Tx/Rx

| | |
|---|---|
| Frequency 1H | 297.145077 MHz |
| Correction factor | 1 |
| Gain | Low |
| Img. Scale Cor. | 1.000 |
| Reset | Off |
| ! Ref. amplitude 1H | 220.000 V |

### Sequence - Part 1

| | |
|---|---|
| Introduction | On |
| Dimension | 3D |
| Reordering | Linear |
| Contrasts | 1 |
| Echo spacing | 1.16 ms |
| Bandwidth | 946 Hz/Px |

### Sequence - Part 2

| | |
|---|---|
| EPI factor | 52 |
| Segmentation | 3 |
| RF pulse type | Normal |
| Gradient mode | Fast |
| Excitation | Slab-sel. |
| RF spoiling | On |
| Turbo factor | 36 |

### Sequence - Special

| | |
|---|---|
| PATRef FA | 3 deg |
| RF duration | 2500 us |
| RF BWT product | 8 |
| Ernst T1 | 1200 ms |
| PATRef prep. shots | 10 |
| Volume dummy shots | 0 |
| Dummy Measurements | 0 |
| ETL per RTEB | 1 |
| CHECK FLIP ANGLE! | On |
| Invert PE | On |
| Min. TE if PF | On |
| Echo Time Shift | On |
| Ramp Sampling | On |
| NORDIC | Off |
| SVDPC | Off |
| Sym VASO | Off |
| Dual-pol. EPI | Off |
| Invert RO | On |
| Invert 3D | Off |
| Disable PF reco | Off |
| Disable PF reco | Off |
| Save sampling | Off |
| PE VComp | Off |
| Water Exc. | -none- |
| External PC | per Series |
| Saturation RF | per Shot |
| FIDNavs | -none- |
| EPI rise time factor | 1.10 |
| Mosaic DICOMs | On |
| Modify Ice Config | On |
| G-factor map | Off |
| GRAPPA Regularization | 10 10^-6 |
| HSN RF power scale | 2.50 |
| Inversion Delay | 500 ms |
| Relaxation Delay | 0 ms |
| Var. FA /MAGEC | 4 |

### Sequence - Assistant

| | |
|---|---|
| Mode | Off |

**\\USER\FMRIF\[XT-ID:93-M-0170]|Renzo\20230327_ptx_used\rslh_ep3d_vaso_nih5k_saggital_normal**

TA: 10:24 PM: REF Voxel size: 0.8×0.8×0.8 mmPAT: 3 Rel. SNR: 1.00 : 5k

### 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 | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| AutoAlign | --- |
| Slab Scale | -10 % |
| Slices per slab | 36 |
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |
| TE 1 | 22.90 ms |
| Averages | 1 |
| Filter | None |
| Coil elements | AC |

### Contrast - Common

| | |
|---|---|
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |
| TE 1 | 22.90 ms |
| Multi-echo spacing | 61.2 ms |
| Magn. preparation | Non-sel. HSN IR |
| TI 1 | 1750.2 ms |
| TI 2 | 4230.6 ms |
| Flip angle | 57 deg |
| Fat suppr. | Fat sat. |
| Magn. Prep. Shots | 1 |

### Contrast - Dynamic

| | |
|---|---|
| Averages | 1 |
| Averaging mode | Long term |
| Reconstruction | Magnitude |
| Measurements | 100 |
| Pause after meas. | 0.0 s |

### Resolution - Common

| | |
|---|---|
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| Base resolution | 220 |
| Phase resolution | 100 % |
| Slice resolution | 100 % |
| Phase partial Fourier | 6/8 |

### Resolution - Common

| | |
|---|---|
| Slice partial Fourier | Off |
| Interpolation | Off |

### Resolution - iPAT

| | |
|---|---|
| PAT mode | CAIPIRINHA |
| Acc. factor PE | 1 |
| Ref. lines PE | 48 |
| Acc. factor 3D | 3 |
| Ref. lines 3D | 36 |
| CAIPI 3D Shift | 1 |
| Reference Scan Mode | EPI/separate |
| CAIPI Mode (tooltip) | Skipped-CAIPI |
| Total PAT factor | 3 |

### Resolution - Filter Image

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

### Resolution - Filter Rawdata

| | |
|---|---|
| Raw filter | Off |
| Elliptical filter | Off |

### Geometry - Common

| | |
|---|---|
| Slab group | 1 |
| Slabs | 1 |
| Position | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| Slab Scale | -10 % |
| Slices per slab | 36 |
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |

### Geometry - AutoAlign

| | |
|---|---|
| Slab group | 1 |
| Position | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| AutoAlign | --- |
| Initial Position | L26.0 A0.1 F16.4 |
| L | 26.0 mm |
| A | 0.1 mm |
| F | 16.4 mm |
| Initial Rotation | -180.00 deg |
| Initial Orientation | Sagittal |

### Geometry - Saturation

| | |
|---|---|
| Saturation mode | Standard |
| Fat suppr. | Fat sat. |

### Geometry - Tim Planning Suite

| | |
|---|---|
| Set-n-Go Protocol | Off |

### Geometry - Tim Planning Suite

| | |
|---|---|
| Table position | H |
| Table position | 0 mm |
| Inline Composing | Off |

### System - Miscellaneous

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

### System - Adjustments

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

### System - Adjust Volume

| | |
|---|---|
| ! Position | L29.1 A2.4 H7.6 mm |
| ! Orientation | Sagittal |
| ! Rotation | 0.00 deg |
| ! A >> P | 193 mm |
| ! F >> H | 124 mm |
| ! R >> L | 45 mm |
| Reset | Off |

### System - pTx Volumes

| | |
|---|---|
| B1 Shim mode | TrueForm |
| Excitation | Slab-sel. |

### System - Tx/Rx

| | |
|---|---|
| Frequency 1H | 297.145077 MHz |
| Correction factor | 1 |
| Gain | Low |
| Img. Scale Cor. | 1.000 |
| Reset | Off |
| ! Ref. amplitude 1H | 220.000 V |

### Sequence - Part 1

| | |
|---|---|
| Introduction | On |
| Dimension | 3D |
| Reordering | Linear |
| Contrasts | 1 |
| Echo spacing | 1.16 ms |
| Bandwidth | 946 Hz/Px |

### Sequence - Part 2

| | |
|---|---|
| EPI factor | 52 |
| Segmentation | 3 |
| RF pulse type | Normal |
| Gradient mode | Fast |
| Excitation | Slab-sel. |
| RF spoiling | On |
| Turbo factor | 36 |

### Sequence - Special

| | |
|---|---|
| PATRef FA | 3 deg |
| RF duration | 2500 us |
| RF BWT product | 8 |
| Ernst T1 | 1200 ms |
| PATRef prep. shots | 10 |
| Volume dummy shots | 0 |
| Dummy Measurements | 0 |
| ETL per RTEB | 1 |
| CHECK FLIP ANGLE! | On |
| Invert PE | On |
| Min. TE if PF | On |
| Echo Time Shift | On |
| Ramp Sampling | On |
| NORDIC | Off |
| SVDPC | Off |
| Sym VASO | Off |
| Dual-pol. EPI | Off |
| Invert RO | On |
| Invert 3D | Off |
| Disable PF reco | Off |
| Disable PF reco | Off |
| Save sampling | Off |
| PE VComp | Off |
| Water Exc. | -none- |
| External PC | per Series |
| Saturation RF | per Shot |
| FIDNavs | -none- |
| EPI rise time factor | 1.10 |
| Mosaic DICOMs | On |
| Modify Ice Config | On |
| G-factor map | Off |
| GRAPPA Regularization | 10 10^-6 |
| HSN RF power scale | 2.50 |
| Inversion Delay | 500 ms |
| Relaxation Delay | 0 ms |
| Var. FA /MAGEC | 4 |

### Sequence - Assistant

| | |
|---|---|
| Mode | Off |

**\\USER\FMRIF\[XT-ID:93-M-0170]|Renzo\20230327_ptx_used\rslh_ep3d_vaso_nih5k_saggital_normal_gfactor**

TA: 0:16 PM: REF Voxel size: 0.8×0.8×0.8 mmPAT: 3 Rel. SNR: 1.00 : 5k

### 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 | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| AutoAlign | --- |
| Slab Scale | -10 % |
| Slices per slab | 36 |
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |
| TE 1 | 22.90 ms |
| Averages | 1 |
| Filter | None |
| Coil elements | AC |

### Contrast - Common

| | |
|---|---|
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |
| TE 1 | 22.90 ms |
| Multi-echo spacing | 61.2 ms |
| Magn. preparation | Non-sel. HSN IR |
| TI 1 | 1750.2 ms |
| TI 2 | 4230.6 ms |
| Flip angle | 57 deg |
| Fat suppr. | Fat sat. |
| Magn. Prep. Shots | 1 |

### Contrast - Dynamic

| | |
|---|---|
| Averages | 1 |
| Averaging mode | Long term |
| Reconstruction | Magnitude |
| Measurements | 1 |

### Resolution - Common

| | |
|---|---|
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| Base resolution | 220 |
| Phase resolution | 100 % |
| Slice resolution | 100 % |
| Phase partial Fourier | 6/8 |
| Slice partial Fourier | Off |

### Resolution - Common

| | |
|---|---|
| Interpolation | Off |

### Resolution - iPAT

| | |
|---|---|
| PAT mode | CAIPIRINHA |
| Acc. factor PE | 1 |
| Ref. lines PE | 48 |
| Acc. factor 3D | 3 |
| Ref. lines 3D | 36 |
| CAIPI 3D Shift | 1 |
| Reference Scan Mode | EPI/separate |
| CAIPI Mode (tooltip) | Skipped-CAIPI |
| Total PAT factor | 3 |

### Resolution - Filter Image

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

### Resolution - Filter Rawdata

| | |
|---|---|
| Raw filter | Off |
| Elliptical filter | Off |

### Geometry - Common

| | |
|---|---|
| Slab group | 1 |
| Slabs | 1 |
| Position | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| Slab Scale | -10 % |
| Slices per slab | 36 |
| FoV read | 186 mm |
| FoV phase | 94.5 % |
| Slice thickness | 0.84 mm |
| TR 1 | 68.9 ms |
| TR 2 | 6136 ms |

### Geometry - AutoAlign

| | |
|---|---|
| Slab group | 1 |
| Position | L26.0 A0.1 F16.4 mm |
| Orientation | Sagittal |
| Phase enc. dir. | P >> A |
| AutoAlign | --- |
| Initial Position | L26.0 A0.1 F16.4 |
| L | 26.0 mm |
| A | 0.1 mm |
| F | 16.4 mm |
| Initial Rotation | -180.00 deg |
| Initial Orientation | Sagittal |

### Geometry - Saturation

| | |
|---|---|
| Saturation mode | Standard |
| Fat suppr. | Fat sat. |

### Geometry - Tim Planning Suite

| | |
|---|---|
| Set-n-Go Protocol | Off |
| Table position | H |

### Geometry - Tim Planning Suite

| | |
|---|---|
| Table position | 0 mm |
| Inline Composing | Off |

### System - Miscellaneous

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

### System - Adjustments

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

### System - Adjust Volume

| | |
|---|---|
| ! Position | L29.1 A2.4 H7.6 mm |
| ! Orientation | Sagittal |
| ! Rotation | 0.00 deg |
| ! A >> P | 193 mm |
| ! F >> H | 124 mm |
| ! R >> L | 45 mm |
| Reset | Off |

### System - pTx Volumes

| | |
|---|---|
| B1 Shim mode | TrueForm |
| Excitation | Slab-sel. |

### System - Tx/Rx

| | |
|---|---|
| Frequency 1H | 297.145077 MHz |
| Correction factor | 1 |
| Gain | Low |
| Img. Scale Cor. | 1.000 |
| Reset | Off |
| ! Ref. amplitude 1H | 220.000 V |

### Sequence - Part 1

| | |
|---|---|
| Introduction | On |
| Dimension | 3D |
| Reordering | Linear |
| Contrasts | 1 |
| Echo spacing | 1.16 ms |
| Bandwidth | 946 Hz/Px |

### Sequence - Part 2

| | |
|---|---|
| EPI factor | 52 |
| Segmentation | 3 |
| RF pulse type | Normal |
| Gradient mode | Fast |
| Excitation | Slab-sel. |
| RF spoiling | On |
| Turbo factor | 36 |

### Sequence - Special

| | |
|---|---|
| PATRef FA | 3 deg |
| RF duration | 2500 us |
| RF BWT product | 8 |
| Ernst T1 | 1200 ms |
| PATRef prep. shots | 10 |
| Volume dummy shots | 0 |
| Dummy Measurements | 0 |
| ETL per RTEB | 1 |
| CHECK FLIP ANGLE! | On |
| Invert PE | On |
| Min. TE if PF | On |
| Echo Time Shift | On |
| Ramp Sampling | On |
| NORDIC | Off |
| SVDPC | Off |
| Sym VASO | Off |
| Dual-pol. EPI | Off |
| Invert RO | On |
| Invert 3D | Off |
| Disable PF reco | Off |
| Disable PF reco | Off |
| Save sampling | Off |
| PE VComp | Off |
| Water Exc. | -none- |
| External PC | per Series |
| Saturation RF | per Shot |
| FIDNavs | -none- |
| EPI rise time factor | 1.10 |
| Mosaic DICOMs | On |
| Modify Ice Config | On |
| G-factor map | On |
| GRAPPA Regularization | 10 10^-6 |
| HSN RF power scale | 2.50 |
| Inversion Delay | 500 ms |
| Relaxation Delay | 0 ms |
| Var. FA /MAGEC | 4 |

### Sequence - Assistant

| | |
|---|---|
| Mode | Off |

**\\USER\FMRIF\[XT-ID:93-M-0170]|Renzo\20230327_ptx_used\cstfl_wip925b_protocolfromTobi**

TA: 5:58 PM: REF Voxel size: 0.8×0.8×0.8 mmPAT: 1.0 Rel. SNR: 1.00 : WIP_cmp

### 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 | 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 | L0.0 A11.3 F27.2 mm |
| Orientation | Sagittal |
| Phase enc. dir. | A >> P |
| AutoAlign | --- |
| Phase oversampling | 0 % |
| Slice oversampling | 0.0 % |
| Slices per slab | 224 |
| FoV read | 230 mm |
| FoV phase | 94.4 % |
| Slice thickness | 0.80 mm |
| TR | 6000.0 ms |
| TE | 1.97 ms |
| Averages | 1 |
| Concatenations | 1 |
| Filter | Distortion Corr.(3D) |
| Coil elements | AC |

### Contrast - Common

| | |
|---|---|
| TR | 6000.0 ms |
| TE | 1.97 ms |
| Magn. preparation | Non-sel. IR |
| TI 1 | 800 ms |
| TI 2 | 2700 ms |
| Flip angle 1 | 4 deg |
| Flip angle 2 | 5 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 | 230 mm |
| FoV phase | 94.4 % |
| Slice thickness | 0.80 mm |
| Base resolution | 288 |
| Phase resolution | 100 % |
| Slice resolution | 100 % |
| Phase partial Fourier | Off |

### Resolution - Common

| | |
|---|---|
| Slice partial Fourier | Off |
| Interpolation | Off |

### Resolution - iPAT

| | |
|---|---|
| PAT mode | None |

### Resolution - Filter Image

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

### Resolution - Filter Rawdata

| | |
|---|---|
| Raw filter | Off |
| Elliptical filter | Off |

### Geometry - Common

| | |
|---|---|
| Slab group | 1 |
| Slabs | 1 |
| Dist. factor | 50 % |
| Position | L0.0 A11.3 F27.2 mm |
| Orientation | Sagittal |
| Phase enc. dir. | A >> P |
| Slice oversampling | 0.0 % |
| Slices per slab | 224 |
| FoV read | 230 mm |
| FoV phase | 94.4 % |
| Slice thickness | 0.80 mm |
| TR | 6000.0 ms |
| Multi-slice mode | Single shot |
| Series | Interleaved |
| Concatenations | 1 |

### Geometry - AutoAlign

| | |
|---|---|
| Slab group | 1 |
| Position | L0.0 A11.3 F27.2 mm |
| Orientation | Sagittal |
| Phase enc. dir. | A >> P |
| AutoAlign | --- |
| Initial Position | L0.0 A11.3 F27.2 |
| L | 0.0 mm |
| A | 11.3 mm |
| F | 27.2 mm |
| Initial Rotation | 0.00 deg |
| Initial Orientation | Sagittal |

### Geometry - Navigator

### Geometry - Tim Planning Suite

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

### System - Miscellaneous

| | |
|---|---|
| Positioning mode | REF |

### System - Miscellaneous

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

### System - Adjustments

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

### System - Adjust Volume

| | |
|---|---|
| ! Position | L29.1 A2.4 H7.6 mm |
| ! Orientation | Sagittal |
| ! Rotation | 0.00 deg |
| ! A >> P | 193 mm |
| ! F >> H | 124 mm |
| ! R >> L | 45 mm |
| Reset | Off |

### System - pTx Volumes

| | |
|---|---|
| B1 Shim mode | TrueForm |
| Excitation | Non-sel. |

### System - Tx/Rx

| | |
|---|---|
| Frequency 1H | 297.145077 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 | 6000.0 ms |
| Concatenations | 1 |

### Physio - Cardiac

| | |
|---|---|
| Magn. preparation | Non-sel. IR |
| TI 1 | 800 ms |
| TI 2 | 2700 ms |
| Fat suppr. | None |
| Dark blood | Off |
| FoV read | 230 mm |
| FoV phase | 94.4 % |
| 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

| | |
|---|---|
| Inline Composing | Off |
| Distortion Corr. | On |
| Mode | 3D |
| Unfiltered images | Off |

### Inline - MapIt

| | |
|---|---|
| Save original images | On |
| MapIt | None |
| Flip angle 1 | 4 deg |
| Flip angle 2 | 5 deg |
| Measurements | 1 |
| Contrasts | 1 |
| TR | 6000.0 ms |
| TE | 1.97 ms |

### Sequence - Part 1

| | |
|---|---|
| Introduction | On |
| Dimension | 3D |
| Elliptical scanning | Off |
| Reordering | Linear |
| Asymmetric echo | Allowed |
| Contrasts | 1 |
| Flow comp. | No |
| Multi-slice mode | Single shot |
| Echo spacing | 5.8 ms |
| Bandwidth | 240 Hz/Px |

### Sequence - Part 2

| | |
|---|---|
| RF pulse type | Fast |
| Gradient mode | Fast |
| Excitation | Non-sel. |
| RF spoiling | On |
| Incr. Gradient spoiling | Off |
| Turbo factor | 224 |

### Sequence - pTX Pulses

### Sequence - Special

| | |
|---|---|
| Sparse Sampling | On |
| US | 4.0 x |
| Samples/TR | 200 |
| Density | 0.50 |
| Jitter Radius | 1.2 |
| Reference Scan | External |
| No. Ref-Lines | 32 |
| Centric | Off |
| Virtual Coils | Off |
| Shift Inv Pulse | 0 Hz |
| No. Iterations | 15 |
| CSM RO Resolution | 0 |
| Regularisation INV1 | 0.00100 |
| Regularisation INV2 | 0.00100 |

### Sequence - Special

| | |
|---|---|
| Uniform | On |
| Denoised UNI | On |
| FLAWS | Off |
| FLAWS-hc | Off |
| FLAWS-hc inv. | Off |
| Division image | Off |
| T1 Map | On |
| Synthetic TI 0 | 0 ms |
| Synthetic TI 1 | 0 ms |
| Denoise Lambda | 1 |
| Scaling | 0 10^ |
| Echo Averaging | Off |
| FID Monitoring | Off |

### Sequence - Assistant

| | |
|---|---|
| Mode | Off |