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| Human |
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|                    |                          |                |
|--------------------|--------------------------|----------------|
| 3                  | Plane                    | Localizer      |
| Accelerated        | Sagittal                 | MPRAGE (MSV21) |
| Sagittal           | 3D                       | FLAIR (MSV22)  |
| Sagittal           | 3D T2                    | SPACE (MSV21)  |
| Axial              | 3D ME T2                 | GRE (MSV21)    |
| Axial              | 3D PASL 1000 (Eyes Open) | (MSV22)        |
| Axial              | 3D PASL 1500 (Eyes Open) | (MSV22)        |
| Axial              | 3D PASL 2000 (Eyes Open) | (MSV22)        |
| Axial              | 3D PASL 2510 (Eyes Open) | (MSV22)        |
| Axial              | 3D PASL 3000 (Eyes Open) | (MSV22)        |
| Axial              | MB Level 2 dMRI PA       | (MSV21)        |
| Axial              | MB Level 2 dMRI AP       | (MSV21)        |
| Axial              | MB rsfMRI (Eyes Open)    | (MSV21)        |
| HighResHippocampus |                          | (MSV21)        |

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\3 Plane Localizer

TA: 12 sec Coil Selection: Auto Voxel Size: 1.5×1.5×8.0 mm<sup>3</sup> Acc.: None Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | On                 |
| Load Images to Graphic Segments               | Off                |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |           |
|---------------------|-----------|
| Slice Group         | 1         |
| Slices              | 1         |
| Distance Factor     | 20 %      |
| Position            | Isocenter |
| Orientation         | Sagittal  |
| Phase Encoding Dir. | A >> P    |
| Slice Group         | 2         |
| Slices              | 1         |
| Distance Factor     | 20 %      |
| Position            | Isocenter |
| Orientation         | Sagittal  |
| Phase Encoding Dir. | A >> P    |
| Slice Group         | 3         |
| Slices              | 1         |
| Distance Factor     | 20 %      |
| Position            | Isocenter |
| Orientation         | Sagittal  |
| Phase Encoding Dir. | A >> P    |
| Phase Oversampling  | 0 %       |
| FoV Read            | 280 mm    |
| FoV Phase           | 100.0 %   |
| Slice Thickness     | 8.0 mm    |
| TR                  | 20.0 ms   |
| TE                  | 5.00 ms   |
| Averages            | 1         |
| Concatenations      | 3         |
| AutoAlign           | ---       |
| Coil Elements       | HC1-7;NC1 |

**Contrast - Common**

|                    |           |
|--------------------|-----------|
| TR                 | 20.0 ms   |
| TE                 | 5.00 ms   |
| TD                 | 0.00 ms   |
| MTC                | Off       |
| Magn. Preparation  | None      |
| Flip Angle         | 40 deg    |
| Fat-Water Contrast | Standard  |
| Dark Blood         | Off       |
| Contrasts          | 1         |
| SWI                | Off       |
| Reconstruction     | Magnitude |

**Contrast - Dynamic**

|              |          |
|--------------|----------|
| Dynamic Mode | Standard |
| Measurements | 1        |

**Contrast - Dynamic**

|                 |                  |
|-----------------|------------------|
| Multiple Series | Each Measurement |
|-----------------|------------------|

**Resolution - Common**

|                  |         |
|------------------|---------|
| FoV Read         | 280 mm  |
| FoV Phase        | 100.0 % |
| Slice Thickness  | 8.0 mm  |
| Base Resolution  | 192     |
| Phase Resolution | 100 %   |
| Interpolation    | Off     |

**Resolution - Acceleration**

|                       |      |
|-----------------------|------|
| Acceleration mode     | None |
| Phase Partial Fourier | Off  |
| Asymmetric Echo       | Off  |

**Resolution - Filter**

|                       |             |
|-----------------------|-------------|
| Raw Filter            | On          |
| Elliptical Filter     | Off         |
| Distortion Correction | 2D          |
| Normalize             | Image Based |
| Image Filter          | Off         |

**Geometry - Common**

|                     |            |
|---------------------|------------|
| Slice Group         | 1          |
| Slices              | 1          |
| Distance Factor     | 20 %       |
| Position            | Isocenter  |
| Orientation         | Sagittal   |
| Phase Encoding Dir. | A >> P     |
| Slice Group         | 2          |
| Slices              | 1          |
| Distance Factor     | 20 %       |
| Position            | Isocenter  |
| Orientation         | Sagittal   |
| Phase Encoding Dir. | A >> P     |
| Slice Group         | 3          |
| Slices              | 1          |
| Distance Factor     | 20 %       |
| Position            | Isocenter  |
| Orientation         | Sagittal   |
| Phase Encoding Dir. | A >> P     |
| Phase Oversampling  | 0 %        |
| FoV Read            | 280 mm     |
| FoV Phase           | 100.0 %    |
| Slice Thickness     | 8.0 mm     |
| TR                  | 20.0 ms    |
| Multi-Slice Mode    | Sequential |
| Series              | Ascending  |
| Concatenations      | 3          |

**Geometry - AutoAlign**

|                     |           |
|---------------------|-----------|
| Slice Group         | 1         |
| Position            | Isocenter |
| Orientation         | Sagittal  |
| Phase Encoding Dir. | A >> P    |
| Slice Group         | 2         |
| Position            | Isocenter |
| Orientation         | Sagittal  |
| Phase Encoding Dir. | A >> P    |
| Slice Group         | 3         |

**Geometry - AutoAlign**

|                     |           |
|---------------------|-----------|
| Position            | Isocenter |
| Orientation         | Sagittal  |
| Phase Encoding Dir. | A >> P    |
| AutoAlign           | ---       |
| Initial Position    | Isocenter |
| L                   | 0.0 mm    |
| P                   | 0.0 mm    |
| H                   | 0.0 mm    |
| Initial Orientation | Sagittal  |
| Initial Rotation    | 0.00 deg  |

**Geometry - Saturation**

|                    |          |
|--------------------|----------|
| Saturation Mode    | Standard |
| Special Saturation | None     |

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                     |                  |
|---------------------|------------------|
| Coil Selection      | Default          |
| MSMA                | S - C - T        |
| Sagittal            | R >> L           |
| Coronal             | A >> P           |
| Transversal         | F >> H           |
| Coil Combination    | Adaptive Combine |
| Matrix Optimization | Off              |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Tune up  |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

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

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |         |
|-----------------|---------|
| 1st Signal/Mode | None    |
| TR              | 20.0 ms |
| Segments        | 1       |
| Concatenations  | 3       |

**Physio - Cardiac**

|                    |          |
|--------------------|----------|
| Tagging            | None     |
| Fat-Water Contrast | Standard |
| Magn. Preparation  | None     |
| Dark Blood         | Off      |
| FoV Read           | 280 mm   |
| FoV Phase          | 100.0 %  |
| Phase Resolution   | 100 %    |
| Dynamic Mode       | Standard |

**Physio - PACE**

|                |     |
|----------------|-----|
| Resp. Control  | Off |
| Concatenations | 3   |

**Inline - Liver**

|                      |     |
|----------------------|-----|
| Liver Registration   | Off |
| Save Original Images | On  |

**Inline - Subtraction**

|                      |     |
|----------------------|-----|
| Subtract             | Off |
| Measurements         | 1   |
| StdDev               | Off |
| Save Original Images | On  |

**Inline - Cardiac**

|                      |         |
|----------------------|---------|
| Magn. Preparation    | None    |
| Save Original Images | On      |
| Contrasts            | 1       |
| TE                   | 5.00 ms |
| TR                   | 20.0 ms |

**Inline - MIP**

|                      |     |
|----------------------|-----|
| MIP Sag              | Off |
| MIP Cor              | Off |
| MIP Tra              | Off |
| MIP Time             | Off |
| Radial MIP           | Off |
| Save Original Images | On  |
| MPR Sag              | Off |
| MPR Cor              | Off |
| MPR Tra              | Off |

**Inline - Soft Tissue**

|              |     |
|--------------|-----|
| Wash-in      | Off |
| Wash-out     | Off |
| TTP          | Off |
| PEI          | Off |
| MIP Time     | Off |
| Measurements | 1   |

**Inline - Composing**

|                  |     |
|------------------|-----|
| Inline Composing | Off |
|------------------|-----|

**Sequence - Part 1**

|                   |            |
|-------------------|------------|
| Sequence Name     | fl         |
| Dimension         | 2D         |
| Excitation        | Slice-sel. |
| RF Pulse Type     | Normal     |
| Gradient Mode     | Fast       |
| Flow Compensation | None       |
| Bandwidth         | 180 Hz/Px  |
| Asymmetric Echo   | Off        |
| Segments          | 1          |

**Sequence - Part 2**

|                          |     |
|--------------------------|-----|
| Introduction             | Off |
| RF Spoiling              | On  |
| Acoustic noise reduction | Off |

**Sequence - Assistant**

|               |     |
|---------------|-----|
| SAR Assistant | Off |
| Allowed Delay | 0 s |

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Accelerated Sagittal MPRAGE (MSV21)

TA: 5:12 min Coil Selection: Auto Voxel Size: 1.0×1.0×1.0 mm<sup>3</sup> Acc.: 2 Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | On                 |
| Load Images to Graphic Segments               | Off                |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | L2.7 P42.2 F33.0 mm |
| Orientation         | Sagittal            |
| Phase Encoding Dir. | A >> P              |
| Slices per Slab     | 208                 |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 0.0 %               |
| FoV Read            | 256 mm              |
| FoV Phase           | 93.8 %              |
| Slice Thickness     | 1.0 mm              |
| TR                  | 2300.0 ms           |
| TE                  | 2.98 ms             |
| Averages            | 1                   |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |             |
|--------------------|-------------|
| TR                 | 2300.0 ms   |
| TE                 | 2.98 ms     |
| Magn. Preparation  | Non-sel. IR |
| TI                 | 900 ms      |
| Flip Angle         | 9 deg       |
| Fat-Water Contrast | Standard    |
| Dark Blood         | Off         |
| Reconstruction     | Magnitude   |

**Contrast - Dynamic**

|                 |                  |
|-----------------|------------------|
| Dynamic Mode    | Standard         |
| Measurements    | 1                |
| Multiple Series | Each Measurement |
| Reordering      | Linear           |

**Resolution - Common**

|                  |        |
|------------------|--------|
| FoV Read         | 256 mm |
| FoV Phase        | 93.8 % |
| Slice Thickness  | 1.0 mm |
| Base Resolution  | 256    |
| Phase Resolution | 100 %  |
| Slice Resolution | 100 %  |
| Interpolation    | Off    |

**Resolution - Acceleration**

|                        |            |
|------------------------|------------|
| Acceleration mode      | GRAPPA     |
| Reference Scans        | Integrated |
| Acceleration Factor PE | 2          |
| Reference Lines PE     | 32         |
| Acceleration Factor 3D | 1          |
| Phase Partial Fourier  | Off        |
| Slice Partial Fourier  | Off        |
| Asymmetric Echo        | Off        |
| Elliptical Scanning    | Off        |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | Off     |
| Elliptical Filter     | Off     |
| Distortion Correction | 3D      |
| Normalize             | Prescan |
| Image Filter          | Off     |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | L2.7 P42.2 F33.0 mm |
| Orientation         | Sagittal            |
| Phase Encoding Dir. | A >> P              |
| Slices per Slab     | 208                 |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 0.0 %               |
| FoV Read            | 256 mm              |
| FoV Phase           | 93.8 %              |
| Slice Thickness     | 1.0 mm              |
| TR                  | 2300.0 ms           |
| Multi-Slice Mode    | Single Shot         |
| Series              | Ascending           |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Position            | L2.7 P42.2 F33.0 mm |
| Orientation         | Sagittal            |
| Phase Encoding Dir. | A >> P              |
| AutoAlign           | ---                 |
| Initial Position    | L2.7 P42.2 F33.0    |
| L                   | 2.7 mm              |
| P                   | 42.2 mm             |
| F                   | 33.0 mm             |
| Initial Orientation | Sagittal            |
| Initial Rotation    | 0.00 deg            |

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

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

**System - Miscellaneous**

|                |                  |
|----------------|------------------|
| Coil Selection | Auto Coil Select |
| MSMA           | S - C - T        |
| Sagittal       | L >> R           |

**System - Miscellaneous**

|                     |                  |
|---------------------|------------------|
| Coronal             | A >> P           |
| Transversal         | F >> H           |
| Coil Combination    | Adaptive Combine |
| Matrix Optimization | Off              |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

|             |                     |
|-------------|---------------------|
| Position    | L2.7 P42.2 F33.0 mm |
| Orientation | Sagittal            |
| Rotation    | 0.00 deg            |
| A >> P      | 240 mm              |
| F >> H      | 256 mm              |
| R >> L      | 208 mm              |
| Reset       | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| TR              | 2300.0 ms |
| Concatenations  | 1         |

**Physio - Cardiac**

|                    |             |
|--------------------|-------------|
| Fat-Water Contrast | Standard    |
| Magn. Preparation  | Non-sel. IR |
| TI                 | 900 ms      |
| Dark Blood         | Off         |
| FoV Read           | 256 mm      |
| FoV Phase          | 93.8 %      |
| Phase Resolution   | 100 %       |
| Dynamic Mode       | Standard    |

**Physio - PACE**

|                |     |
|----------------|-----|
| Resp. Control  | Off |
| Concatenations | 1   |

**Inline - Subtraction**

|                      |     |
|----------------------|-----|
| Subtract             | Off |
| Measurements         | 1   |
| StdDev               | Off |
| Save Original Images | On  |

**Inline - Cardiac**

|                      |             |
|----------------------|-------------|
| Magn. Preparation    | Non-sel. IR |
| Save Original Images | On          |
| TE                   | 2.98 ms     |
| TR                   | 2300.0 ms   |

**Inline - MIP**

|                      |     |
|----------------------|-----|
| MIP Sag              | Off |
| MIP Cor              | Off |
| MIP Tra              | Off |
| MIP Time             | Off |
| Radial MIP           | Off |
| Save Original Images | On  |
| MPR Sag              | Off |
| MPR Cor              | Off |
| MPR Tra              | Off |

**Inline - Composing**

|                  |     |
|------------------|-----|
| Inline Composing | Off |
|------------------|-----|

**Sequence - Part 1**

|                   |           |
|-------------------|-----------|
| Sequence Name     | tfl       |
| Dimension         | 3D        |
| Excitation        | Non-sel.  |
| RF Pulse Type     | Fast      |
| Gradient Mode     | Normal    |
| Flow Compensation | None      |
| Reordering        | Linear    |
| Bandwidth         | 240 Hz/Px |
| Echo Spacing      | 7.14 ms   |
| Asymmetric Echo   | Off       |
| Turbo Factor      | 208       |

**Sequence - Part 2**

|                         |     |
|-------------------------|-----|
| Introduction            | On  |
| RF Spoiling             | On  |
| Incr. Gradient Spoiling | Off |

**Sequence - Assistant**

|               |     |
|---------------|-----|
| SAR Assistant | Off |
|---------------|-----|

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Sagittal 3D FLAIR (MSV22)

TA: 6:37 min Coil Selection: Auto Voxel Size: 1.0×1.0×1.0 mm<sup>3</sup> Acc.: 2 Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | On                 |
| Load Images to Graphic Segments               | On                 |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Position            | L2.7 P42.2 F33.0 mm |
| Orientation         | Sagittal            |
| Phase Encoding Dir. | A >> P              |
| Slices per Slab     | 208                 |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 0.0 %               |
| FoV Read            | 256 mm              |
| FoV Phase           | 93.8 %              |
| Slice Thickness     | 1.00 mm             |
| TR                  | 5000.0 ms           |
| TE                  | 393.00 ms           |
| Averages            | 1.0                 |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |                      |
|--------------------|----------------------|
| TR                 | 5000.0 ms            |
| TE                 | 393.00 ms            |
| MTC                | Off                  |
| Magn. Preparation  | Non-sel. T2 prep. IR |
| T1                 | 1700 ms              |
| T2 Prep. Duration  | 125 ms               |
| Flip Angle Mode    | T2 Var               |
| Fat-Water Contrast | Fat Saturation       |
| Fat Saturation     | Strong               |
| Dark Blood         | Off                  |
| Blood Suppression  | Off                  |
| Wrap-up Magn.      | None                 |
| Reconstruction     | Magnitude            |

**Contrast - Dynamic**

|                 |                  |
|-----------------|------------------|
| Dynamic Mode    | Standard         |
| Measurements    | 1                |
| Multiple Series | Each Measurement |
| Reordering      | Linear           |

**Resolution - Common**

|                  |         |
|------------------|---------|
| FoV Read         | 256 mm  |
| FoV Phase        | 93.8 %  |
| Slice Thickness  | 1.00 mm |
| Base Resolution  | 256     |
| Phase Resolution | 100 %   |

**Resolution - Common**

|                  |       |
|------------------|-------|
| Slice Resolution | 100 % |
| Interpolation    | Off   |

**Resolution - Acceleration**

|                        |            |
|------------------------|------------|
| Acceleration mode      | GRAPPA     |
| Total Factor           | 2          |
| Reference Scans        | Integrated |
| Acceleration Factor PE | 2          |
| Reference Lines PE     | 28         |
| Acceleration Factor 3D | 1          |
| Phase Partial Fourier  | Allowed    |
| Slice Partial Fourier  | 7/8        |
| Elliptical Scanning    | Off        |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | On      |
| Elliptical Filter     | Off     |
| Distortion Correction | 3D      |
| Normalize             | Prescan |
| Image Filter          | Off     |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Position            | L2.7 P42.2 F33.0 mm |
| Orientation         | Sagittal            |
| Phase Encoding Dir. | A >> P              |
| Slices per Slab     | 208                 |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 0.0 %               |
| FoV Read            | 256 mm              |
| FoV Phase           | 93.8 %              |
| Slice Thickness     | 1.00 mm             |
| TR                  | 5000.0 ms           |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Position            | L2.7 P42.2 F33.0 mm |
| Orientation         | Sagittal            |
| Phase Encoding Dir. | A >> P              |
| AutoAlign           | ---                 |
| Initial Position    | L2.7 P42.2 F33.0    |
| L                   | 2.7 mm              |
| P                   | 42.2 mm             |
| F                   | 33.0 mm             |
| Initial Orientation | Sagittal            |
| Initial Rotation    | 0.00 deg            |

**Geometry - Navigator****Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

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

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

|             |                     |
|-------------|---------------------|
| Position    | L2.7 P42.2 F33.0 mm |
| Orientation | Sagittal            |
| Rotation    | 0.00 deg            |
| A >> P      | 240 mm              |
| F >> H      | 256 mm              |
| R >> L      | 208 mm              |
| Reset       | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| Trigger Delay   | 0 ms      |
| TR              | 5000.0 ms |
| Concatenations  | 1         |

**Physio - Cardiac**

|                    |                      |
|--------------------|----------------------|
| Fat-Water Contrast | Fat Saturation       |
| Magn. Preparation  | Non-sel. T2 prep. IR |
| T1                 | 1700 ms              |
| T2 Prep. Duration  | 125 ms               |
| Dark Blood         | Off                  |
| FoV Read           | 256 mm               |
| FoV Phase          | 93.8 %               |
| Phase Resolution   | 100 %                |
| Dynamic Mode       | Standard             |

**Physio - PACE**

|                |     |
|----------------|-----|
| Resp. Control  | Off |
| Concatenations | 1   |

**Inline - Subtraction**

|                      |     |
|----------------------|-----|
| Subtract             | Off |
| Measurements         | 1   |
| StdDev               | Off |
| Save Original Images | On  |

**Inline - Cardiac**

|                   |                      |
|-------------------|----------------------|
| Magn. Preparation | Non-sel. T2 prep. IR |
|-------------------|----------------------|

**Inline - Cardiac**

|                      |           |
|----------------------|-----------|
| T2 Prep. Duration    | 125 ms    |
| Save Original Images | On        |
| TE                   | 393.00 ms |
| TR                   | 5000.0 ms |

**Inline - MIP**

|                      |     |
|----------------------|-----|
| MIP Sag              | Off |
| MIP Cor              | Off |
| MIP Tra              | Off |
| MIP Time             | Off |
| Radial MIP           | Off |
| Save Original Images | On  |
| MPR Sag              | Off |
| MPR Cor              | Off |
| MPR Tra              | Off |

**Inline - Composing**

|                  |     |
|------------------|-----|
| Inline Composing | Off |
|------------------|-----|

**Sequence - Part 1**

|                     |           |
|---------------------|-----------|
| Sequence Name       | spcir     |
| Dimension           | 3D        |
| Excitation          | Non-sel.  |
| RF Pulse Type       | Normal    |
| Gradient Mode       | Fast      |
| Flow Compensation   | None      |
| Reordering          | Linear    |
| Bandwidth           | 781 Hz/Px |
| Echo Spacing        | 3.42 ms   |
| Turbo Factor        | 312       |
| Echo Train Duration | 923 ms    |

**Sequence - Part 2**

|              |    |
|--------------|----|
| Introduction | On |
|--------------|----|

**Sequence - Assistant**

|               |      |
|---------------|------|
| SAR Assistant | Off  |
| Allowed Delay | 30 s |



\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Sagittal 3D T2 SPACE (MSV21)

TA: 4:53 min Coil Selection: Auto Voxel Size: 1.0×1.0×1.0 mm<sup>3</sup> Acc.: 2 Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | On                 |
| Load Images to Graphic Segments               | On                 |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Position            | L2.7 P42.2 F33.0 mm |
| Orientation         | Sagittal            |
| Phase Encoding Dir. | A >> P              |
| Slices per Slab     | 208                 |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 0.0 %               |
| FoV Read            | 256 mm              |
| FoV Phase           | 93.8 %              |
| Slice Thickness     | 1.00 mm             |
| TR                  | 3200.0 ms           |
| TE                  | 564.00 ms           |
| Averages            | 1.0                 |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |           |
|--------------------|-----------|
| TR                 | 3200.0 ms |
| TE                 | 564.00 ms |
| MTC                | Off       |
| Magn. Preparation  | None      |
| Flip Angle Mode    | T2 Var    |
| Fat-Water Contrast | Standard  |
| Dark Blood         | Off       |
| Blood Suppression  | Off       |
| Wrap-up Magn.      | None      |
| Reconstruction     | Magnitude |

**Contrast - Dynamic**

|                 |                  |
|-----------------|------------------|
| Dynamic Mode    | Standard         |
| Measurements    | 1                |
| Multiple Series | Each Measurement |
| Reordering      | Linear           |

**Resolution - Common**

|                  |         |
|------------------|---------|
| FoV Read         | 256 mm  |
| FoV Phase        | 93.8 %  |
| Slice Thickness  | 1.00 mm |
| Base Resolution  | 256     |
| Phase Resolution | 100 %   |
| Slice Resolution | 100 %   |
| Interpolation    | Off     |

**Resolution - Acceleration**

|                        |            |
|------------------------|------------|
| Acceleration mode      | GRAPPA     |
| Total Factor           | 2          |
| Reference Scans        | Integrated |
| Acceleration Factor PE | 2          |
| Reference Lines PE     | 32         |
| Acceleration Factor 3D | 1          |
| Phase Partial Fourier  | Allowed    |
| Slice Partial Fourier  | Off        |
| Elliptical Scanning    | Off        |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | Off     |
| Elliptical Filter     | Off     |
| Distortion Correction | 3D      |
| Normalize             | Prescan |
| Image Filter          | Off     |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Position            | L2.7 P42.2 F33.0 mm |
| Orientation         | Sagittal            |
| Phase Encoding Dir. | A >> P              |
| Slices per Slab     | 208                 |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 0.0 %               |
| FoV Read            | 256 mm              |
| FoV Phase           | 93.8 %              |
| Slice Thickness     | 1.00 mm             |
| TR                  | 3200.0 ms           |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Position            | L2.7 P42.2 F33.0 mm |
| Orientation         | Sagittal            |
| Phase Encoding Dir. | A >> P              |
| AutoAlign           | ---                 |
| Initial Position    | L2.7 P42.2 F33.0    |
| L                   | 2.7 mm              |
| P                   | 42.2 mm             |
| F                   | 33.0 mm             |
| Initial Orientation | Sagittal            |
| Initial Rotation    | 0.00 deg            |

**Geometry - Navigator****Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                |                  |
|----------------|------------------|
| Coil Selection | Auto Coil Select |
| MSMA           | S - C - T        |
| Sagittal       | L >> R           |

**System - Miscellaneous**

|                     |                  |
|---------------------|------------------|
| Coronal             | A >> P           |
| Transversal         | F >> H           |
| Coil Combination    | Adaptive Combine |
| Matrix Optimization | Off              |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Tune up  |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

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

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| Trigger Delay   | 0 ms      |
| TR              | 3200.0 ms |
| Concatenations  | 1         |

**Physio - Cardiac**

|                    |          |
|--------------------|----------|
| Fat-Water Contrast | Standard |
| Magn. Preparation  | None     |
| Dark Blood         | Off      |
| FoV Read           | 256 mm   |
| FoV Phase          | 93.8 %   |
| Phase Resolution   | 100 %    |
| Dynamic Mode       | Standard |

**Physio - PACE**

|                |     |
|----------------|-----|
| Resp. Control  | Off |
| Concatenations | 1   |

**Inline - Subtraction**

|                      |     |
|----------------------|-----|
| Subtract             | Off |
| Measurements         | 1   |
| StdDev               | Off |
| Save Original Images | On  |

**Inline - Cardiac**

|                      |           |
|----------------------|-----------|
| Magn. Preparation    | None      |
| Save Original Images | On        |
| TE                   | 564.00 ms |
| TR                   | 3200.0 ms |

**Inline - MIP**

|                      |     |
|----------------------|-----|
| MIP Sag              | Off |
| MIP Cor              | Off |
| MIP Tra              | Off |
| MIP Time             | Off |
| Radial MIP           | Off |
| Save Original Images | On  |
| MPR Sag              | Off |
| MPR Cor              | Off |
| MPR Tra              | Off |

**Inline - Composing**

|                  |     |
|------------------|-----|
| Inline Composing | Off |
|------------------|-----|

**Sequence - Part 1**

|                     |           |
|---------------------|-----------|
| Sequence Name       | spc       |
| Dimension           | 3D        |
| Excitation          | Non-sel.  |
| RF Pulse Type       | Fast      |
| Gradient Mode       | Fast      |
| Flow Compensation   | None      |
| Reordering          | Linear    |
| Bandwidth           | 751 Hz/Px |
| Echo Spacing        | 3.46 ms   |
| Turbo Factor        | 314       |
| Echo Train Duration | 1083 ms   |

**Sequence - Part 2**

|              |    |
|--------------|----|
| Introduction | On |
|--------------|----|

**Sequence - Assistant**

|               |      |
|---------------|------|
| SAR Assistant | Off  |
| Allowed Delay | 30 s |

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Axial 3D ME T2 GRE (MSV21)

TA: 8:44 min Coil Selection: Auto Voxel Size: 0.5×0.5×1.8 mm<sup>3</sup> Acc.: 2 Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | On                 |
| Load Images to Graphic Segments               | On                 |
| Graphic segment                               | 3rd Segment        |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 20 %                |
| Position            | R4.0 P29.9 F33.7 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | R >> L              |
| Slices per Slab     | 88                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 9.1 %               |
| FoV Read            | 200 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 1.8 mm              |
| TR                  | 37.0 ms             |
| TE 1                | 6.71 ms             |
| TE 2                | 10.62 ms            |
| TE 3                | 14.53 ms            |
| TE 4                | 18.44 ms            |
| TE 5                | 22.35 ms            |
| Averages            | 1                   |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1           |

**Contrast - Common**

|                    |             |
|--------------------|-------------|
| TR                 | 37.0 ms     |
| TE 1               | 6.71 ms     |
| TE 2               | 10.62 ms    |
| TE 3               | 14.53 ms    |
| TE 4               | 18.44 ms    |
| TE 5               | 22.35 ms    |
| MTC                | Off         |
| Magn. Preparation  | None        |
| Flip Angle         | 15 deg      |
| Fat-Water Contrast | Standard    |
| Dark Blood         | Off         |
| Contrasts          | 5           |
| SWI                | Off         |
| Reconstruction     | Magn./Phase |

**Contrast - Dynamic**

|                 |                  |
|-----------------|------------------|
| Dynamic Mode    | Standard         |
| Measurements    | 1                |
| Multiple Series | Each Measurement |

**Resolution - Common**

|                  |         |
|------------------|---------|
| FoV Read         | 200 mm  |
| FoV Phase        | 100.0 % |
| Slice Thickness  | 1.8 mm  |
| Base Resolution  | 384     |
| Phase Resolution | 70 %    |
| Slice Resolution | 100 %   |
| Interpolation    | Off     |

**Resolution - Acceleration**

|                        |            |
|------------------------|------------|
| Acceleration mode      | GRAPPA     |
| Reference Scans        | Integrated |
| Acceleration Factor PE | 2          |
| Reference Lines PE     | 24         |
| Acceleration Factor 3D | 1          |
| Phase Partial Fourier  | Off        |
| Slice Partial Fourier  | Off        |
| Asymmetric Echo        | Off        |
| Elliptical Scanning    | Off        |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | Off     |
| Elliptical Filter     | Off     |
| Distortion Correction | 3D      |
| Normalize             | Prescan |
| Image Filter          | Off     |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 20 %                |
| Position            | R4.0 P29.9 F33.7 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | R >> L              |
| Slices per Slab     | 88                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 9.1 %               |
| FoV Read            | 200 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 1.8 mm              |
| TR                  | 37.0 ms             |
| Multi-Slice Mode    | Sequential          |
| Series              | Ascending           |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Position            | R4.0 P29.9 F33.7 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | R >> L              |
| AutoAlign           | ---                 |
| Initial Position    | R4.0 P29.9 F33.7    |
| R                   | 4.0 mm              |
| P                   | 29.9 mm             |
| F                   | 33.7 mm             |
| Initial Orientation | Transversal         |
| Initial Rotation    | 90.00 deg           |

**Geometry - Saturation**

|                    |            |
|--------------------|------------|
| Saturation Mode    | Standard   |
| Special Saturation | Tracking F |

**Geometry - Saturation**

|           |          |
|-----------|----------|
| Gap       | 11.00 mm |
| Thickness | 40.00 mm |

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

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

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

|             |                     |
|-------------|---------------------|
| Position    | R4.0 P29.9 F33.7 mm |
| Orientation | Transversal         |
| Rotation    | 90.00 deg           |
| R >> L      | 200 mm              |
| A >> P      | 200 mm              |
| F >> H      | 159 mm              |
| Reset       | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |         |
|-----------------|---------|
| 1st Signal/Mode | None    |
| TR              | 37.0 ms |
| Segments        | 1       |
| Concatenations  | 1       |

**Physio - Cardiac**

|                    |          |
|--------------------|----------|
| Tagging            | None     |
| Fat-Water Contrast | Standard |
| Magn. Preparation  | None     |
| Dark Blood         | Off      |
| FoV Read           | 200 mm   |
| FoV Phase          | 100.0 %  |
| Phase Resolution   | 70 %     |
| Dynamic Mode       | Standard |

**Physio - PACE**

|                |     |
|----------------|-----|
| Resp. Control  | Off |
| Concatenations | 1   |

**Inline - Liver**

|                      |     |
|----------------------|-----|
| Liver Registration   | Off |
| Save Original Images | On  |

**Inline - Subtraction**

|                      |     |
|----------------------|-----|
| Subtract             | Off |
| Measurements         | 1   |
| StdDev               | Off |
| Save Original Images | On  |

**Inline - Cardiac**

|                      |          |
|----------------------|----------|
| Magn. Preparation    | None     |
| Save Original Images | On       |
| Contrasts            | 5        |
| TE 1                 | 6.71 ms  |
| TE 2                 | 10.62 ms |
| TE 3                 | 14.53 ms |
| TE 4                 | 18.44 ms |
| TE 5                 | 22.35 ms |
| TR                   | 37.0 ms  |

**Inline - MIP**

|                      |     |
|----------------------|-----|
| MIP Sag              | Off |
| MIP Cor              | Off |
| MIP Tra              | Off |
| MIP Time             | Off |
| Radial MIP           | Off |
| Save Original Images | On  |
| MPR Sag              | Off |
| MPR Cor              | Off |
| MPR Tra              | Off |

**Inline - Soft Tissue**

|              |     |
|--------------|-----|
| Wash-in      | Off |
| Wash-out     | Off |
| TTP          | Off |
| PEI          | Off |
| MIP Time     | Off |
| Measurements | 1   |

**Inline - Composing**

|                  |     |
|------------------|-----|
| Inline Composing | Off |
|------------------|-----|

**Sequence - Part 1**

|                     |           |
|---------------------|-----------|
| Sequence Name       | fl_r      |
| Dimension           | 3D        |
| Excitation          | Slab-sel. |
| RF Pulse Type       | Fast      |
| Readout Mode        | Bipolar   |
| Gradient Mode       | Normal    |
| Flow Compensation 1 | On        |
| Flow Compensation 2 | None      |
| Flow Compensation 3 | None      |
| Flow Compensation 4 | None      |
| Flow Compensation 5 | None      |
| Bandwidth 1         | 280 Hz/Px |
| Bandwidth 2         | 280 Hz/Px |
| Bandwidth 3         | 280 Hz/Px |
| Bandwidth 4         | 280 Hz/Px |
| Bandwidth 5         | 280 Hz/Px |
| Asymmetric Echo     | Off       |
| Segments            | 1         |

**Sequence - Part 2**

|                          |     |
|--------------------------|-----|
| Introduction             | On  |
| RF Spoiling              | On  |
| Acoustic noise reduction | Off |

**Sequence - Assistant**

|                |            |
|----------------|------------|
| SAR Assistant  | Flip Angle |
| Min Flip Angle | 90 deg     |
| Allowed Delay  | 30 s       |

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Axial 3D PASL 1000 (Eyes Open) (MSV22)

TA: 1:40 min Coil Selection: Manual Voxel Size: 1.9×1.9×4.5 mm<sup>3</sup> Acc.: None Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | Off                |
| Load Images to Graphic Segments               | Off                |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| TE                  | 21.80 ms            |
| Averages            | 1                   |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |                |
|--------------------|----------------|
| TR                 | 4000.0 ms      |
| TE                 | 21.80 ms       |
| Flip Angle         | 180 deg        |
| Fat-Water Contrast | Fat Saturation |
| Reconstruction     | Magnitude      |

**Contrast - Dynamic**

|                 |          |
|-----------------|----------|
| Dynamic Mode    | Standard |
| Measurements    | 2        |
| Multiple Series | Off      |
| Delay in TR     | 0.00 ms  |
| Reordering      | Centric  |

**Contrast - ASL**

|                      |            |
|----------------------|------------|
| Perfusion Mode       | FAIR Q2T   |
| Suppression          | Gray-White |
| Bolus Duration       | 800.00 ms  |
| Inversion Time       | 1000.00 ms |
| Inversion Array Size | 1          |

**Resolution - Common**

|                 |         |
|-----------------|---------|
| FoV Read        | 240 mm  |
| FoV Phase       | 100.0 % |
| Slice Thickness | 4.5 mm  |
| Base Resolution | 64      |

**Resolution - Common**

|                  |      |
|------------------|------|
| Phase Resolution | 97 % |
| Interpolation    | On   |

**Resolution - Acceleration**

|                       |      |
|-----------------------|------|
| Acceleration mode     | None |
| Phase Partial Fourier | Off  |
| Slice Partial Fourier | Off  |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | On      |
| Elliptical Filter     | Off     |
| Hamming               | Off     |
| Distortion Correction | 3D      |
| Normalize             | Prescan |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| Multi-Slice Mode    | Interleaved         |
| Series              | Ascending           |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| AutoAlign           | ---                 |
| Initial Position    | R4.7 P41.4 F37.2    |
| R                   | 4.7 mm              |
| P                   | 41.4 mm             |
| F                   | 37.2 mm             |
| Initial Orientation | Transversal         |
| Initial Rotation    | -180.00 deg         |

**Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                |           |
|----------------|-----------|
| Coil Selection | Manual    |
| MSMA           | S - C - T |
| Sagittal       | L >> R    |
| Coronal        | P >> A    |

**System - Miscellaneous**

|                     |                |
|---------------------|----------------|
| Transversal         | F >> H         |
| Coil Combination    | Sum of Squares |
| Matrix Optimization | Off            |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

|             |                     |
|-------------|---------------------|
| Position    | R4.7 P41.4 F37.2 mm |
| Orientation | Transversal         |
| Rotation    | 180.00 deg          |
| A >> P      | 240 mm              |
| R >> L      | 240 mm              |
| F >> H      | 144 mm              |
| Reset       | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| TR              | 4000.0 ms |
| Segments        | 6         |
| Concatenations  | 1         |

**Sequence - Part 1**

|               |             |
|---------------|-------------|
| Sequence Name | tgse        |
| Dimension     | 3D          |
| Excitation    | Standard    |
| RF Pulse Type | Normal      |
| Gradient Mode | Performance |
| Reordering    | Centric     |
| Bandwidth     | 2442 Hz/Px  |
| Echo Spacing  | 0.54 ms     |
| Turbo Factor  | 16          |
| Segments      | 6           |
| EPI Factor    | 31          |

**Sequence - Part 2**

|              |     |
|--------------|-----|
| Introduction | Off |
|--------------|-----|

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Axial 3D PASL 1500 (Eyes Open) (MSV22)

TA: 1:40 min Coil Selection: Manual Voxel Size: 1.9×1.9×4.5 mm<sup>3</sup> Acc.: None Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | Off                |
| Load Images to Graphic Segments               | Off                |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| TE                  | 21.80 ms            |
| Averages            | 1                   |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |                |
|--------------------|----------------|
| TR                 | 4000.0 ms      |
| TE                 | 21.80 ms       |
| Flip Angle         | 180 deg        |
| Fat-Water Contrast | Fat Saturation |
| Reconstruction     | Magnitude      |

**Contrast - Dynamic**

|                 |          |
|-----------------|----------|
| Dynamic Mode    | Standard |
| Measurements    | 2        |
| Multiple Series | Off      |
| Delay in TR     | 0.00 ms  |
| Reordering      | Centric  |

**Contrast - ASL**

|                      |            |
|----------------------|------------|
| Perfusion Mode       | FAIR Q2T   |
| Suppression          | Gray-White |
| Bolus Duration       | 800.00 ms  |
| Inversion Time       | 1500.00 ms |
| Inversion Array Size | 1          |

**Resolution - Common**

|                 |         |
|-----------------|---------|
| FoV Read        | 240 mm  |
| FoV Phase       | 100.0 % |
| Slice Thickness | 4.5 mm  |
| Base Resolution | 64      |

**Resolution - Common**

|                  |      |
|------------------|------|
| Phase Resolution | 97 % |
| Interpolation    | On   |

**Resolution - Acceleration**

|                       |      |
|-----------------------|------|
| Acceleration mode     | None |
| Phase Partial Fourier | Off  |
| Slice Partial Fourier | Off  |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | On      |
| Elliptical Filter     | Off     |
| Hamming               | Off     |
| Distortion Correction | 3D      |
| Normalize             | Prescan |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| Multi-Slice Mode    | Interleaved         |
| Series              | Ascending           |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| AutoAlign           | ---                 |
| Initial Position    | R4.7 P41.4 F37.2    |
| R                   | 4.7 mm              |
| P                   | 41.4 mm             |
| F                   | 37.2 mm             |
| Initial Orientation | Transversal         |
| Initial Rotation    | -180.00 deg         |

**Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                |           |
|----------------|-----------|
| Coil Selection | Manual    |
| MSMA           | S - C - T |
| Sagittal       | L >> R    |
| Coronal        | P >> A    |



**System - Miscellaneous**

|                     |                |
|---------------------|----------------|
| Transversal         | F >> H         |
| Coil Combination    | Sum of Squares |
| Matrix Optimization | Off            |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

|               |                     |
|---------------|---------------------|
| ! Position    | R4.7 P41.4 F37.2 mm |
| ! Orientation | Transversal         |
| ! Rotation    | 180.00 deg          |
| ! A >> P      | 240 mm              |
| ! R >> L      | 240 mm              |
| ! F >> H      | 144 mm              |
| Reset         | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| TR              | 4000.0 ms |
| Segments        | 6         |
| Concatenations  | 1         |

**Sequence - Part 1**

|               |             |
|---------------|-------------|
| Sequence Name | tgse        |
| Dimension     | 3D          |
| Excitation    | Standard    |
| RF Pulse Type | Normal      |
| Gradient Mode | Performance |
| Reordering    | Centric     |
| Bandwidth     | 2442 Hz/Px  |
| Echo Spacing  | 0.54 ms     |
| Turbo Factor  | 16          |
| Segments      | 6           |
| EPI Factor    | 31          |

**Sequence - Part 2**

|              |     |
|--------------|-----|
| Introduction | Off |
|--------------|-----|

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Axial 3D PASL 2000 (Eyes Open) (MSV22)

TA: 1:40 min Coil Selection: Manual Voxel Size: 1.9×1.9×4.5 mm<sup>3</sup> Acc.: None Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | Off                |
| Load Images to Graphic Segments               | Off                |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| TE                  | 21.80 ms            |
| Averages            | 1                   |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |                |
|--------------------|----------------|
| TR                 | 4000.0 ms      |
| TE                 | 21.80 ms       |
| Flip Angle         | 180 deg        |
| Fat-Water Contrast | Fat Saturation |
| Reconstruction     | Magnitude      |

**Contrast - Dynamic**

|                 |          |
|-----------------|----------|
| Dynamic Mode    | Standard |
| Measurements    | 2        |
| Multiple Series | Off      |
| Delay in TR     | 0.00 ms  |
| Reordering      | Centric  |

**Contrast - ASL**

|                      |            |
|----------------------|------------|
| Perfusion Mode       | FAIR Q2T   |
| Suppression          | Gray-White |
| Bolus Duration       | 800.00 ms  |
| Inversion Time       | 2000.00 ms |
| Inversion Array Size | 1          |

**Resolution - Common**

|                 |         |
|-----------------|---------|
| FoV Read        | 240 mm  |
| FoV Phase       | 100.0 % |
| Slice Thickness | 4.5 mm  |
| Base Resolution | 64      |

**Resolution - Common**

|                  |      |
|------------------|------|
| Phase Resolution | 97 % |
| Interpolation    | On   |

**Resolution - Acceleration**

|                       |      |
|-----------------------|------|
| Acceleration mode     | None |
| Phase Partial Fourier | Off  |
| Slice Partial Fourier | Off  |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | On      |
| Elliptical Filter     | Off     |
| Hamming               | Off     |
| Distortion Correction | 3D      |
| Normalize             | Prescan |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| Multi-Slice Mode    | Interleaved         |
| Series              | Ascending           |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| AutoAlign           | ---                 |
| Initial Position    | R4.7 P41.4 F37.2    |
| R                   | 4.7 mm              |
| P                   | 41.4 mm             |
| F                   | 37.2 mm             |
| Initial Orientation | Transversal         |
| Initial Rotation    | -180.00 deg         |

**Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                |           |
|----------------|-----------|
| Coil Selection | Manual    |
| MSMA           | S - C - T |
| Sagittal       | L >> R    |
| Coronal        | P >> A    |

**System - Miscellaneous**

|                     |                |
|---------------------|----------------|
| Transversal         | F >> H         |
| Coil Combination    | Sum of Squares |
| Matrix Optimization | Off            |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

|               |                     |
|---------------|---------------------|
| ! Position    | R4.7 P41.4 F37.2 mm |
| ! Orientation | Transversal         |
| ! Rotation    | 180.00 deg          |
| ! A >> P      | 240 mm              |
| ! R >> L      | 240 mm              |
| ! F >> H      | 144 mm              |
| Reset         | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| TR              | 4000.0 ms |
| Segments        | 6         |
| Concatenations  | 1         |

**Sequence - Part 1**

|               |             |
|---------------|-------------|
| Sequence Name | tgse        |
| Dimension     | 3D          |
| Excitation    | Standard    |
| RF Pulse Type | Normal      |
| Gradient Mode | Performance |
| Reordering    | Centric     |
| Bandwidth     | 2442 Hz/Px  |
| Echo Spacing  | 0.54 ms     |
| Turbo Factor  | 16          |
| Segments      | 6           |
| EPI Factor    | 31          |

**Sequence - Part 2**

|              |     |
|--------------|-----|
| Introduction | Off |
|--------------|-----|

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Axial 3D PASL 2510 (Eyes Open) (MSV22)

TA: 1:40 min Coil Selection: Manual Voxel Size: 1.9×1.9×4.5 mm<sup>3</sup> Acc.: None Rel. SNR: 1.00

### Properties

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | Off                |
| Load Images to Graphic Segments               | Off                |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

### Routine

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| TE                  | 21.80 ms            |
| Averages            | 1                   |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

### Contrast - Common

|                    |                |
|--------------------|----------------|
| TR                 | 4000.0 ms      |
| TE                 | 21.80 ms       |
| Flip Angle         | 180 deg        |
| Fat-Water Contrast | Fat Saturation |
| Reconstruction     | Magnitude      |

### Contrast - Dynamic

|                 |          |
|-----------------|----------|
| Dynamic Mode    | Standard |
| Measurements    | 2        |
| Multiple Series | Off      |
| Delay in TR     | 0.00 ms  |
| Reordering      | Centric  |

### Contrast - ASL

|                      |            |
|----------------------|------------|
| Perfusion Mode       | FAIR Q2T   |
| Suppression          | Gray-White |
| Bolus Duration       | 800.00 ms  |
| Inversion Time       | 2510.00 ms |
| Inversion Array Size | 1          |

### Resolution - Common

|                 |         |
|-----------------|---------|
| FoV Read        | 240 mm  |
| FoV Phase       | 100.0 % |
| Slice Thickness | 4.5 mm  |
| Base Resolution | 64      |

### Resolution - Common

|                  |      |
|------------------|------|
| Phase Resolution | 97 % |
| Interpolation    | On   |

### Resolution - Acceleration

|                       |      |
|-----------------------|------|
| Acceleration mode     | None |
| Phase Partial Fourier | Off  |
| Slice Partial Fourier | Off  |

### Resolution - Filter

|                       |         |
|-----------------------|---------|
| Raw Filter            | On      |
| Elliptical Filter     | Off     |
| Hamming               | Off     |
| Distortion Correction | 3D      |
| Normalize             | Prescan |

### Geometry - Common

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| Multi-Slice Mode    | Interleaved         |
| Series              | Ascending           |
| Concatenations      | 1                   |

### Geometry - AutoAlign

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| AutoAlign           | ---                 |
| Initial Position    | R4.7 P41.4 F37.2    |
| R                   | 4.7 mm              |
| P                   | 41.4 mm             |
| F                   | 37.2 mm             |
| Initial Orientation | Transversal         |
| Initial Rotation    | -180.00 deg         |

### Geometry - Saturation

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

### Geometry - Tim Planning Suite

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

### System - Miscellaneous

|                |           |
|----------------|-----------|
| Coil Selection | Manual    |
| MSMA           | S - C - T |
| Sagittal       | L >> R    |
| Coronal        | P >> A    |

**System - Miscellaneous**

|                     |                |
|---------------------|----------------|
| Transversal         | F >> H         |
| Coil Combination    | Sum of Squares |
| Matrix Optimization | Off            |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

|               |                     |
|---------------|---------------------|
| ! Position    | R4.7 P41.4 F37.2 mm |
| ! Orientation | Transversal         |
| ! Rotation    | 180.00 deg          |
| ! A >> P      | 240 mm              |
| ! R >> L      | 240 mm              |
| ! F >> H      | 144 mm              |
| Reset         | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| TR              | 4000.0 ms |
| Segments        | 6         |
| Concatenations  | 1         |

**Sequence - Part 1**

|               |             |
|---------------|-------------|
| Sequence Name | tgse        |
| Dimension     | 3D          |
| Excitation    | Standard    |
| RF Pulse Type | Normal      |
| Gradient Mode | Performance |
| Reordering    | Centric     |
| Bandwidth     | 2442 Hz/Px  |
| Echo Spacing  | 0.54 ms     |
| Turbo Factor  | 16          |
| Segments      | 6           |
| EPI Factor    | 31          |

**Sequence - Part 2**

|              |     |
|--------------|-----|
| Introduction | Off |
|--------------|-----|

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Axial 3D PASL 3000 (Eyes Open) (MSV22)

TA: 1:40 min Coil Selection: Manual Voxel Size: 1.9×1.9×4.5 mm<sup>3</sup> Acc.: None Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | Off                |
| Load Images to Graphic Segments               | Off                |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| TE                  | 21.80 ms            |
| Averages            | 1                   |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |                |
|--------------------|----------------|
| TR                 | 4000.0 ms      |
| TE                 | 21.80 ms       |
| Flip Angle         | 180 deg        |
| Fat-Water Contrast | Fat Saturation |
| Reconstruction     | Magnitude      |

**Contrast - Dynamic**

|                 |          |
|-----------------|----------|
| Dynamic Mode    | Standard |
| Measurements    | 2        |
| Multiple Series | Off      |
| Delay in TR     | 0.00 ms  |
| Reordering      | Centric  |

**Contrast - ASL**

|                      |            |
|----------------------|------------|
| Perfusion Mode       | FAIR Q2T   |
| Suppression          | Gray-White |
| Bolus Duration       | 800.00 ms  |
| Inversion Time       | 3000.00 ms |
| Inversion Array Size | 1          |

**Resolution - Common**

|                 |         |
|-----------------|---------|
| FoV Read        | 240 mm  |
| FoV Phase       | 100.0 % |
| Slice Thickness | 4.5 mm  |
| Base Resolution | 64      |

**Resolution - Common**

|                  |      |
|------------------|------|
| Phase Resolution | 97 % |
| Interpolation    | On   |

**Resolution - Acceleration**

|                       |      |
|-----------------------|------|
| Acceleration mode     | None |
| Phase Partial Fourier | Off  |
| Slice Partial Fourier | Off  |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | On      |
| Elliptical Filter     | Off     |
| Hamming               | Off     |
| Distortion Correction | 3D      |
| Normalize             | Prescan |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Slabs               | 1                   |
| Distance Factor     | 50 %                |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Slices per Slab     | 32                  |
| Phase Oversampling  | 0 %                 |
| Slice Oversampling  | 25.0 %              |
| FoV Read            | 240 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 4.5 mm              |
| TR                  | 4000.0 ms           |
| Multi-Slice Mode    | Interleaved         |
| Series              | Ascending           |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slab Group          | 1                   |
| Position            | R4.7 P41.4 F37.2 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| AutoAlign           | ---                 |
| Initial Position    | R4.7 P41.4 F37.2    |
| R                   | 4.7 mm              |
| P                   | 41.4 mm             |
| F                   | 37.2 mm             |
| Initial Orientation | Transversal         |
| Initial Rotation    | -180.00 deg         |

**Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                |           |
|----------------|-----------|
| Coil Selection | Manual    |
| MSMA           | S - C - T |
| Sagittal       | L >> R    |
| Coronal        | P >> A    |

**System - Miscellaneous**

|                     |                |
|---------------------|----------------|
| Transversal         | F >> H         |
| Coil Combination    | Sum of Squares |
| Matrix Optimization | Off            |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

|               |                     |
|---------------|---------------------|
| ! Position    | R4.7 P41.4 F37.2 mm |
| ! Orientation | Transversal         |
| ! Rotation    | 180.00 deg          |
| ! A >> P      | 240 mm              |
| ! R >> L      | 240 mm              |
| ! F >> H      | 144 mm              |
| Reset         | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| TR              | 4000.0 ms |
| Segments        | 6         |
| Concatenations  | 1         |

**Sequence - Part 1**

|               |             |
|---------------|-------------|
| Sequence Name | tgse        |
| Dimension     | 3D          |
| Excitation    | Standard    |
| RF Pulse Type | Normal      |
| Gradient Mode | Performance |
| Reordering    | Centric     |
| Bandwidth     | 2442 Hz/Px  |
| Echo Spacing  | 0.54 ms     |
| Turbo Factor  | 16          |
| Segments      | 6           |
| EPI Factor    | 31          |

**Sequence - Part 2**

|              |     |
|--------------|-----|
| Introduction | Off |
|--------------|-----|

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Axial MB Level 2 dMRI PA (MSV21)

TA: 11:35 min Coil Selection: Manual Voxel Size: 2.0x2.0x2.0 mm<sup>3</sup> Acc.: 6 Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | On                 |
| Load Images to Graphic Segments               | On                 |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Slices              | 81                  |
| Distance Factor     | 0 %                 |
| Position            | R9.3 P27.4 F32.7 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Phase Oversampling  | 0 %                 |
| FoV Read            | 232 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 2.0 mm              |
| TR                  | 6500.0 ms           |
| TE                  | 91.00 ms            |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |                |
|--------------------|----------------|
| TR                 | 6500.0 ms      |
| TE                 | 91.00 ms       |
| MTC                | Off            |
| Magn. Preparation  | None           |
| Fat-Water Contrast | Fat Saturation |
| Fat Saturation     | Strong         |
| Reconstruction     | Magnitude      |

**Contrast - Dynamic**

|                 |          |
|-----------------|----------|
| Dynamic Mode    | Standard |
| Multiple Series | Off      |
| Delay in TR     | 0.00 ms  |

**Resolution - Common**

|                  |         |
|------------------|---------|
| FoV Read         | 232 mm  |
| FoV Phase        | 100.0 % |
| Slice Thickness  | 2.0 mm  |
| Base Resolution  | 116     |
| Phase Resolution | 100 %   |
| Interpolation    | Off     |

**Resolution - Acceleration**

|                        |              |
|------------------------|--------------|
| Acceleration mode      | SMS          |
| Reference Scans        | EPI/Separate |
| Acceleration Factor PE | 2            |
| Reference Lines PE     | 12           |
| SMS Factor             | 3            |
| Phase Partial Fourier  | 6/8          |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | On      |
| Elliptical Filter     | Off     |
| Distortion Correction | Off     |
| Normalize             | Prescan |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Slices              | 81                  |
| Distance Factor     | 0 %                 |
| Position            | R9.3 P27.4 F32.7 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Phase Oversampling  | 0 %                 |
| FoV Read            | 232 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 2.0 mm              |
| TR                  | 6500.0 ms           |
| Multi-Slice Mode    | Interleaved         |
| Series              | Interleaved         |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Position            | R9.3 P27.4 F32.7 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| AutoAlign           | ---                 |
| Initial Position    | R9.3 P27.4 F32.7    |
| R                   | 9.3 mm              |
| P                   | 27.4 mm             |
| F                   | 32.7 mm             |
| Initial Orientation | Transversal         |
| Initial Rotation    | -180.00 deg         |

**Geometry - Navigator****Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                     |                  |
|---------------------|------------------|
| Coil Selection      | Manual           |
| MSMA                | S - C - T        |
| Sagittal            | R >> L           |
| Coronal             | A >> P           |
| Transversal         | F >> H           |
| Coil Combination    | Adaptive Combine |
| Matrix Optimization | Performance      |

**System - Adjustments**

|                      |          |
|----------------------|----------|
| Adjustment Strategy  | Standard |
| B0 Shim              | Standard |
| B1 Shim              | TrueForm |
| CoilShim             | Off      |
| Adjustment Tolerance | Auto     |



**System - Adjustments**

|                       |       |
|-----------------------|-------|
| Adjust with Body Coil | Off   |
| Confirm Frequency     | Never |
| Assume Silicone       | Off   |

**Sequence - Part 2**

|                  |          |
|------------------|----------|
| Phase Correction | Internal |
|------------------|----------|

**System - Adjust Volume**

|             |                     |
|-------------|---------------------|
| Position    | R9.3 P27.4 F32.7 mm |
| Orientation | Transversal         |
| Rotation    | -180.00 deg         |
| A >> P      | 232 mm              |
| R >> L      | 232 mm              |
| F >> H      | 162 mm              |
| Reset       | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 3.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| TR              | 6500.0 ms |
| Concatenations  | 1         |

**Physio - PACE**

|                |     |
|----------------|-----|
| Resp. Control  | Off |
| Concatenations | 1   |

**Diff**

|                          |                        |
|--------------------------|------------------------|
| Diffusion Mode           | Free                   |
| Diff. Directions         | 99                     |
| Diffusion Scheme         | Bipolar                |
| Diff. Weightings         | 2                      |
| b-value 1                | 0 s/mm <sup>2</sup>    |
| b-value 2                | 2000 s/mm <sup>2</sup> |
| Averages 1               | 1                      |
| Averages 2               | 1                      |
| Dynamic Field Correction | Off                    |
| Invert Gray Scale        | Off                    |
| Diff. Weighted Images    | On                     |
| Trace Weighted Images    | On                     |
| Tensor                   | On                     |
| FA Maps                  | On                     |
| ADC Maps                 | On                     |
| Exponential ADC Maps     | Off                    |
| ADC Noise Threshold      | 10                     |
| Noise Masking            | Off                    |
| Calculated Image         | Off                    |

**Sequence - Part 1**

|                   |            |
|-------------------|------------|
| Sequence Name     | epse       |
| Excitation        | Standard   |
| RF Pulse Type     | Normal     |
| Gradient Mode     | Fast       |
| Bandwidth         | 1724 Hz/Px |
| Echo Spacing      | 0.66 ms    |
| Free Echo Spacing | Off        |
| Optimization      | None       |
| EPI Factor        | 116        |

**Sequence - Part 2**

|              |     |
|--------------|-----|
| Introduction | Off |
|--------------|-----|

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Axial MB Level 2 dMRI AP (MSV21)

TA: 1:16 min Coil Selection: Manual Voxel Size: 2.0×2.0×2.0 mm<sup>3</sup> Acc.: 6 Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | On                 |
| Load Images to Graphic Segments               | On                 |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Slices              | 81                  |
| Distance Factor     | 0 %                 |
| Position            | R9.3 P27.4 F32.7 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | A >> P              |
| Phase Oversampling  | 0 %                 |
| FoV Read            | 232 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 2.0 mm              |
| TR                  | 6500.0 ms           |
| TE                  | 91.00 ms            |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |                |
|--------------------|----------------|
| TR                 | 6500.0 ms      |
| TE                 | 91.00 ms       |
| MTC                | Off            |
| Magn. Preparation  | None           |
| Fat-Water Contrast | Fat Saturation |
| Fat Saturation     | Strong         |
| Reconstruction     | Magnitude      |

**Contrast - Dynamic**

|                 |          |
|-----------------|----------|
| Dynamic Mode    | Standard |
| Multiple Series | Off      |
| Delay in TR     | 0.00 ms  |

**Resolution - Common**

|                  |         |
|------------------|---------|
| FoV Read         | 232 mm  |
| FoV Phase        | 100.0 % |
| Slice Thickness  | 2.0 mm  |
| Base Resolution  | 116     |
| Phase Resolution | 100 %   |
| Interpolation    | Off     |

**Resolution - Acceleration**

|                        |              |
|------------------------|--------------|
| Acceleration mode      | SMS          |
| Reference Scans        | EPI/Separate |
| Acceleration Factor PE | 2            |
| Reference Lines PE     | 12           |
| SMS Factor             | 3            |
| Phase Partial Fourier  | 6/8          |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | On      |
| Elliptical Filter     | Off     |
| Distortion Correction | Off     |
| Normalize             | Prescan |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Slices              | 81                  |
| Distance Factor     | 0 %                 |
| Position            | R9.3 P27.4 F32.7 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | A >> P              |
| Phase Oversampling  | 0 %                 |
| FoV Read            | 232 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 2.0 mm              |
| TR                  | 6500.0 ms           |
| Multi-Slice Mode    | Interleaved         |
| Series              | Interleaved         |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Position            | R9.3 P27.4 F32.7 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | A >> P              |
| AutoAlign           | ---                 |
| Initial Position    | R9.3 P27.4 F32.7    |
| R                   | 9.3 mm              |
| P                   | 27.4 mm             |
| F                   | 32.7 mm             |
| Initial Orientation | Transversal         |
| Initial Rotation    | 0.00 deg            |

**Geometry - Navigator****Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                     |                  |
|---------------------|------------------|
| Coil Selection      | Manual           |
| MSMA                | S - C - T        |
| Sagittal            | R >> L           |
| Coronal             | A >> P           |
| Transversal         | F >> H           |
| Coil Combination    | Adaptive Combine |
| Matrix Optimization | Performance      |

**System - Adjustments**

|                      |          |
|----------------------|----------|
| Adjustment Strategy  | Standard |
| B0 Shim              | Standard |
| B1 Shim              | TrueForm |
| CoilShim             | Off      |
| Adjustment Tolerance | Auto     |

**System - Adjustments**

|                       |       |
|-----------------------|-------|
| Adjust with Body Coil | Off   |
| Confirm Frequency     | Never |
| Assume Silicone       | Off   |

**Sequence - Part 2**

|                  |          |
|------------------|----------|
| Phase Correction | Internal |
|------------------|----------|

**System - Adjust Volume**

|             |                     |
|-------------|---------------------|
| Position    | R9.3 P27.4 F32.7 mm |
| Orientation | Transversal         |
| Rotation    | 0.00 deg            |
| A >> P      | 232 mm              |
| R >> L      | 232 mm              |
| F >> H      | 162 mm              |
| Reset       | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 3.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| TR              | 6500.0 ms |
| Concatenations  | 1         |

**Physio - PACE**

|                |     |
|----------------|-----|
| Resp. Control  | Off |
| Concatenations | 1   |

**Diff**

|                          |                        |
|--------------------------|------------------------|
| Diffusion Mode           | Free                   |
| Diff. Directions         | 6                      |
| Diffusion Scheme         | Bipolar                |
| Diff. Weightings         | 2                      |
| b-value 1                | 0 s/mm <sup>2</sup>    |
| b-value 2                | 2000 s/mm <sup>2</sup> |
| Averages 1               | 1                      |
| Averages 2               | 1                      |
| Dynamic Field Correction | Off                    |
| Invert Gray Scale        | Off                    |
| Diff. Weighted Images    | On                     |
| Trace Weighted Images    | On                     |
| Tensor                   | On                     |
| FA Maps                  | On                     |
| ADC Maps                 | On                     |
| Exponential ADC Maps     | Off                    |
| ADC Noise Threshold      | 10                     |
| Noise Masking            | Off                    |
| Calculated Image         | Off                    |

**Sequence - Part 1**

|                   |            |
|-------------------|------------|
| Sequence Name     | epse       |
| Excitation        | Standard   |
| RF Pulse Type     | Normal     |
| Gradient Mode     | Fast       |
| Bandwidth         | 1724 Hz/Px |
| Echo Spacing      | 0.66 ms    |
| Free Echo Spacing | Off        |
| Optimization      | None       |
| EPI Factor        | 116        |

**Sequence - Part 2**

|              |     |
|--------------|-----|
| Introduction | Off |
|--------------|-----|

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\Axial MB rsfMRI (Eyes Open) (MSV21)

TA: 5:00 min Coil Selection: Auto Voxel Size: 2.5×2.5×2.5 mm<sup>3</sup> Acc.: 8 Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | Off                |
| Load Images to Graphic Segments               | Off                |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Slices              | 64                  |
| Distance Factor     | 0 %                 |
| Position            | R4.7 P24.1 F34.1 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Phase Oversampling  | 0 %                 |
| FoV Read            | 220 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 2.5 mm              |
| TR                  | 607.0 ms            |
| TE                  | 32.00 ms            |
| Averages            | 1                   |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1,2         |

**Contrast - Common**

|                    |                |
|--------------------|----------------|
| TR                 | 607.0 ms       |
| TE                 | 32.00 ms       |
| MTC                | Off            |
| Flip Angle         | 50 deg         |
| Fat-Water Contrast | Fat Saturation |
| Reconstruction     | Magnitude      |

**Contrast - Dynamic**

|              |          |
|--------------|----------|
| Dynamic Mode | Standard |
| Measurements | 482      |
| Delay in TR  | 0.00 ms  |

**Resolution - Common**

|                  |         |
|------------------|---------|
| FoV Read         | 220 mm  |
| FoV Phase        | 100.0 % |
| Slice Thickness  | 2.5 mm  |
| Base Resolution  | 88      |
| Phase Resolution | 100 %   |
| Interpolation    | Off     |

**Resolution - Acceleration**

|                        |              |
|------------------------|--------------|
| Acceleration mode      | SMS          |
| Reference Scans        | EPI/Separate |
| Acceleration Factor PE | 1            |
| SMS Factor             | 8            |
| Phase Partial Fourier  | Off          |

**Resolution - Filter**

|                       |     |
|-----------------------|-----|
| Raw Filter            | Off |
| Elliptical Filter     | Off |
| Hamming               | Off |
| Distortion Correction | Off |
| Normalize             | Off |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Slices              | 64                  |
| Distance Factor     | 0 %                 |
| Position            | R4.7 P24.1 F34.1 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| Phase Oversampling  | 0 %                 |
| FoV Read            | 220 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 2.5 mm              |
| TR                  | 607.0 ms            |
| Multi-Slice Mode    | Interleaved         |
| Series              | Interleaved         |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Position            | R4.7 P24.1 F34.1 mm |
| Orientation         | Transversal         |
| Phase Encoding Dir. | P >> A              |
| AutoAlign           | ---                 |
| Initial Position    | R4.7 P24.1 F34.1    |
| R                   | 4.7 mm              |
| P                   | 24.1 mm             |
| F                   | 34.1 mm             |
| Initial Orientation | Transversal         |
| Initial Rotation    | -180.00 deg         |

**Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                     |                  |
|---------------------|------------------|
| Coil Selection      | Auto Coil Select |
| MSMA                | S - C - T        |
| Sagittal            | L >> R           |
| Coronal             | P >> A           |
| Transversal         | F >> H           |
| Coil Combination    | Sum of Squares   |
| Matrix Optimization | Performance      |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |

**System - Adjustments**

|                   |       |
|-------------------|-------|
| Confirm Frequency | Never |
| Assume Silicone   | Off   |

**System - Adjust Volume**

|             |                     |
|-------------|---------------------|
| Position    | R4.7 P24.1 F34.1 mm |
| Orientation | Transversal         |
| Rotation    | 180.00 deg          |
| A >> P      | 220 mm              |
| R >> L      | 220 mm              |
| F >> H      | 160 mm              |
| Reset       | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |          |
|-----------------|----------|
| 1st Signal/Mode | None     |
| TR              | 607.0 ms |
| Concatenations  | 1        |

**BOLD**

|                         |         |
|-------------------------|---------|
| GLM Statistics          | Off     |
| Ignore Meas. at Start   | 0       |
| Ignore After Transition | 0       |
| Model Transition States | On      |
| Temp. Highpass Filter   | On      |
| Threshold               | 4.00    |
| Paradigm Size           | 20      |
| Meas[1]                 | Active  |
| Meas[2]                 | Active  |
| Meas[3]                 | Active  |
| Meas[4]                 | Active  |
| Meas[5]                 | Active  |
| Meas[6]                 | Active  |
| Meas[7]                 | Active  |
| Meas[8]                 | Active  |
| Meas[9]                 | Active  |
| Meas[10]                | Active  |
| Meas[11]                | Active  |
| Meas[12]                | Active  |
| Meas[13]                | Ignore  |
| Meas[14]                | Ignore  |
| Meas[15]                | Ignore  |
| Meas[16]                | Ignore  |
| Meas[17]                | Ignore  |
| Meas[18]                | Ignore  |
| Meas[19]                | Ignore  |
| Meas[20]                | Ignore  |
| Motion Correction       | Off     |
| Spatial Filter          | Off     |
| Measurements            | 482     |
| Delay in TR             | 0.00 ms |

**Sequence - Part 1**

|               |             |
|---------------|-------------|
| Sequence Name | epfid       |
| Excitation    | Standard    |
| RF Pulse Type | Normal      |
| Gradient Mode | Performance |
| Bandwidth     | 2368 Hz/Px  |
| Echo Spacing  | 0.57 ms     |

**Sequence - Part 1**

|                   |     |
|-------------------|-----|
| Free Echo Spacing | Off |
| EPI Factor        | 88  |

**Sequence - Part 2**

|              |     |
|--------------|-----|
| Introduction | Off |
|--------------|-----|

\\Research\ADNI4\_Vida\_XA20\_20220901\ADNI4\Human\HighResHippocampus (MSV21)

TA: 4:18 min Coil Selection: Auto Voxel Size: 0.4×0.4×2.0 mm<sup>3</sup> Acc.: 2 Rel. SNR: 1.00**Properties**

|   |                    |
|---|--------------------|
| Start measurement without further preparation | On                 |
| Wait for User to Start                        | Off                |
| Start measurements                            | Single Measurement |
| Prio Recon                                    | Off                |
| Auto Open Inline Display                      | Off                |
| Auto Close Inline Display                     | Off                |
| Load Images to MR View&GO                     | On                 |
| Auto Store Images                             | On                 |
| Load Images to Stamp Segments                 | Off                |
| Load Images to Graphic Segments               | Off                |
| Graphic segment                               | Default            |
| Inline Movie                                  | Off                |

**Routine**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Slices              | 30                  |
| Distance Factor     | 0 %                 |
| Position            | L2.7 P50.1 F32.1 mm |
| Orientation         | C > T-25.0          |
| Phase Encoding Dir. | R >> L              |
| Phase Oversampling  | 100 %               |
| FoV Read            | 175 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 2.0 mm              |
| TR                  | 8020.0 ms           |
| TE                  | 50.00 ms            |
| Averages            | 1                   |
| Concatenations      | 1                   |
| AutoAlign           | ---                 |
| Coil Elements       | HC1-7;NC1           |

**Contrast - Common**

|                    |           |
|--------------------|-----------|
| TR                 | 8020.0 ms |
| TE                 | 50.00 ms  |
| MTC                | Off       |
| Magn. Preparation  | None      |
| Flip Angle         | 122 deg   |
| Fat-Water Contrast | Standard  |
| Dark Blood         | Off       |
| Contrasts          | 1         |
| Wrap-up Magn.      | None      |
| Reconstruction     | Magnitude |

**Contrast - Dynamic**

|                 |                  |
|-----------------|------------------|
| Dynamic Mode    | Standard         |
| Measurements    | 1                |
| Multiple Series | Each Measurement |

**Resolution - Common**

|                  |           |
|------------------|-----------|
| FoV Read         | 175 mm    |
| FoV Phase        | 100.0 %   |
| Slice Thickness  | 2.0 mm    |
| Base Resolution  | 448       |
| Phase Resolution | 100 %     |
| Trajectory       | Cartesian |
| Interpolation    | Off       |

**Resolution - Acceleration**

|                   |        |
|-------------------|--------|
| Acceleration mode | GRAPPA |
|-------------------|--------|

**Resolution - Acceleration**

|                        |            |
|------------------------|------------|
| Reference Scans        | Integrated |
| Acceleration Factor PE | 2          |
| Reference Lines PE     | 34         |
| Phase Partial Fourier  | Off        |

**Resolution - Filter**

|                       |         |
|-----------------------|---------|
| Raw Filter            | Off     |
| Elliptical Filter     | On      |
| Distortion Correction | 3D      |
| Normalize             | Prescan |
| Image Filter          | Off     |

**Geometry - Common**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Slices              | 30                  |
| Distance Factor     | 0 %                 |
| Position            | L2.7 P50.1 F32.1 mm |
| Orientation         | C > T-25.0          |
| Phase Encoding Dir. | R >> L              |
| Phase Oversampling  | 100 %               |
| FoV Read            | 175 mm              |
| FoV Phase           | 100.0 %             |
| Slice Thickness     | 2.0 mm              |
| TR                  | 8020.0 ms           |
| Multi-Slice Mode    | Interleaved         |
| Series              | Interleaved         |
| Concatenations      | 1                   |

**Geometry - AutoAlign**

|                     |                     |
|---------------------|---------------------|
| Slice Group         | 1                   |
| Position            | L2.7 P50.1 F32.1 mm |
| Orientation         | C > T-25.0          |
| Phase Encoding Dir. | R >> L              |
| AutoAlign           | ---                 |
| Initial Position    | L2.7 P50.1 F32.1    |
| L                   | 2.7 mm              |
| P                   | 50.1 mm             |
| F                   | 32.1 mm             |
| Initial Orientation | C > T               |
| C > T               | -25.00              |
| > S                 | 0.00                |
| Initial Rotation    | 0.00 deg            |

**Geometry - Navigator****Geometry - Saturation**

|                    |      |
|--------------------|------|
| Special Saturation | None |
|--------------------|------|

**Geometry - Tim Planning Suite**

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

**System - Miscellaneous**

|                |                  |
|----------------|------------------|
| Coil Selection | Auto Coil Select |
| MSMA           | S - C - T        |
| Sagittal       | R >> L           |
| Coronal        | A >> P           |
| Transversal    | F >> H           |

**System - Miscellaneous**

|                     |                  |
|---------------------|------------------|
| Coil Combination    | Adaptive Combine |
| Matrix Optimization | Off              |

**System - Adjustments**

|                       |          |
|-----------------------|----------|
| Adjustment Strategy   | Standard |
| B0 Shim               | Standard |
| B1 Shim               | TrueForm |
| CoilShim              | Off      |
| Adjustment Tolerance  | Auto     |
| Adjust with Body Coil | Off      |
| Confirm Frequency     | Never    |
| Assume Silicone       | Off      |

**System - Adjust Volume**

|             |                     |
|-------------|---------------------|
| Position    | L2.7 P50.1 F32.1 mm |
| Orientation | C > T-25.0          |
| Rotation    | 0.00 deg            |
| R >> L      | 175 mm              |
| F >> H      | 175 mm              |
| A >> P      | 60 mm               |
| Reset       | Off                 |

**System - Tx/Rx**

|                     |                |
|---------------------|----------------|
| Frequency 1H        | 123.216973 MHz |
| ? Ref. Amplitude 1H | 0.000 V        |
| Reset               | Off            |
| Correction Factor   | 1.00           |
| Image Scaling       | 1.000          |

**Physio - Signal**

|                 |           |
|-----------------|-----------|
| 1st Signal/Mode | None      |
| TR              | 8020.0 ms |
| Concatenations  | 1         |

**Physio - Cardiac**

|                    |           |
|--------------------|-----------|
| Fat-Water Contrast | Standard  |
| Magn. Preparation  | None      |
| Dark Blood         | Off       |
| FoV Read           | 175 mm    |
| FoV Phase          | 100.0 %   |
| Phase Resolution   | 100 %     |
| Trajectory         | Cartesian |
| Dynamic Mode       | Standard  |

**Physio - PACE**

|                |     |
|----------------|-----|
| Resp. Control  | Off |
| Concatenations | 1   |

**Inline - Subtraction**

|                      |     |
|----------------------|-----|
| Subtract             | Off |
| Measurements         | 1   |
| StdDev               | Off |
| Save Original Images | On  |

**Inline - Cardiac**

|                      |           |
|----------------------|-----------|
| Magn. Preparation    | None      |
| Save Original Images | On        |
| Contrasts            | 1         |
| TE                   | 50.00 ms  |
| TR                   | 8020.0 ms |

**Inline - MIP**

|         |     |
|---------|-----|
| MIP Sag | Off |
|---------|-----|

**Inline - MIP**

|                      |     |
|----------------------|-----|
| MIP Cor              | Off |
| MIP Tra              | Off |
| MIP Time             | Off |
| Radial MIP           | Off |
| Save Original Images | On  |
| MPR Sag              | Off |
| MPR Cor              | Off |
| MPR Tra              | Off |

**Inline - Composing**

|                  |     |
|------------------|-----|
| Inline Composing | Off |
|------------------|-----|

**Sequence - Part 1**

|                       |              |
|-----------------------|--------------|
| Sequence Name         | tse          |
| Dimension             | 2D           |
| RF Pulse Type         | Fast         |
| Gradient Mode         | Normal       |
| Flow Compensation     | None         |
| Bandwidth             | 100 Hz/Px    |
| Echo Spacing          | 16.5 ms      |
| Free Echo Spacing     | Off          |
| Define                | Turbo Factor |
| Turbo Factor          | 15           |
| Echo Trains per Slice | 31           |

**Sequence - Part 2**

|                          |           |
|--------------------------|-----------|
| Introduction             | On        |
| Phase Correction         | Automatic |
| Compensate T2 Decay      | Off       |
| Hyperecho                | Off       |
| WARP                     | Off       |
| Red. EC Sensitivity      | Off       |
| Acoustic noise reduction | Off       |
| Reduce Motion Sens.      | Off       |

**Sequence - Assistant**

|                |            |
|----------------|------------|
| SAR Assistant  | Flip Angle |
| Min Flip Angle | 130 deg    |
| Allowed Delay  | 180 s      |