# $\verb|\NSI_MR_Research| final\_studies | 3D_EPI\_Spielplatz| Dec_2020 | ma4a\_fatsat\_slab\_Fa60| | 100 | ma4a\_fatsat\_slab_fa60| | 100 | ma4a\_fa60| | 100 | ma4a\_fa60$

TA: 8:56 PM: REF Voxel size: 0.8×0.8×0.8 mmPAT: 3 Rel. SNR: 1.00: 0c0b7b7

#### **Properties**

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

#### **Routine**

| •                |                      |
|------------------|----------------------|
| Slab group       | 1                    |
| Slabs            | 1                    |
| Position         | Isocenter            |
| Orientation      | Transversal          |
| Phase enc. dir.  | A >> P               |
| AutoAlign        |                      |
| Slab Scale       | -10 %                |
| Slices per slab  | 26                   |
| FoV read         | 177 mm               |
| FoV phase        | 100.0 %              |
| Slice thickness  | 0.82 mm              |
| TR 1             | 81.5 ms              |
| TR 2             | 5225 ms              |
| TE 1             | 28.90 ms             |
| Averages         | 1                    |
| Multi-echo Shots | 1                    |
| Filter           | Distortion Corr.(3D) |
| Coil elements    | HC3-6                |

#### **Contrast - Common**

| TR 1               | 81.5 ms         |
|--------------------|-----------------|
| TR 2               | 5225 ms         |
| TE 1               | 28.90 ms        |
| Multi-echo spacing | 76.83 ms        |
| Magn. preparation  | Non-sel. HSN IR |
| TI 1               | 1719.5 ms       |
| TI 2               | 3838.5 ms       |
| Flip angle         | 60 deg          |
| Fat suppr.         | Fat sat.        |
| Magn. Prep. Shots  | 1               |

#### **Contrast - Dynamic**

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

#### **Resolution - Common**

| 177 mm  |
|---------|
| 100.0 % |
| 0.82 mm |
| 216     |
| 100 %   |
| 100 %   |
| 6/8     |
|         |

#### **Resolution - Common**

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

#### **Resolution - iPAT**

| PAT mode            | CAIPIRINHA   |
|---------------------|--------------|
| Acc. factor PE      | 3            |
| Ref. lines PE       | 45           |
| Acc. factor 3D      | 1            |
| Ref. lines 3D       | 24           |
| CAIPI 3D Shift      | 0            |
| Reference Scan Mode | GRE/separate |
| CAIPIRINHA mode     | Free         |

#### **Resolution - Filter Image**

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

#### **Resolution - Filter Rawdata**

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

#### **Geometry - Common**

| acometry - common |             |
|-------------------|-------------|
| Slab group        | 1           |
| Slabs             | 1           |
| Position          | Isocenter   |
| Orientation       | Transversal |
| Phase enc. dir.   | A >> P      |
| Slab Scale        | -10 %       |
| Slices per slab   | 26          |
| FoV read          | 177 mm      |
| FoV phase         | 100.0 %     |
| Slice thickness   | 0.82 mm     |
| TR 1              | 81.5 ms     |
| TR 2              | 5225 ms     |
| Multi-slice mode  | Interleaved |
| Series            | Ascending   |
| Multi-echo Shots  | 1           |

# Geometry - AutoAlign

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

# **Geometry - Saturation**

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

# **Geometry - Tim Planning Suite**

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

#### **System - Miscellaneous**

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

# **System - Adjustments**

| B0 Shim mode             | Standard |
|--------------------------|----------|
| B1 Shim mode             | TrueForm |
| Adjust with body coil    | Off      |
| Confirm freq. adjustment | Off      |
| Assume Dominant Fat      | Off      |
| Assume Silicone          | Off      |
| Adjustment Tolerance     | Auto     |

#### **System - Adjust Volume**

| ! Position    | Isocenter   |
|---------------|-------------|
| ! Orientation | Transversal |
| ! Rotation    | 0.00 deg    |
| ! A >> P      | 150 mm      |
| ! R >> L      | 150 mm      |
| ! F >> H      | 24 mm       |
| Reset         | Off         |

# System - pTx Volumes

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

# System - Tx/Rx

| Frequency 1H        | 123.247819 MHz |
|---------------------|----------------|
| Correction factor   | 1              |
| Gain                | Low            |
| Img. Scale Cor.     | 1.000          |
| Reset               | Off            |
| ? Ref. amplitude 1H | 0.000 V        |

# Sequence - Part 1

| Introduction     | On          |
|------------------|-------------|
| Dimension        | 3D          |
| Reordering       | Linear      |
| Asymmetric echo  | Off         |
| Contrasts        | 1           |
| Multi-slice mode | Interleaved |
| Echo spacing     | 1.4 ms      |
| Bandwidth        | 772 Hz/Px   |

### Sequence - Part 2

| EPI factor    | 54     |
|---------------|--------|
| Segmentation  | 1      |
| RF pulse type | Normal |

# Sequence - Part 2

| Gradient mode | Fast      |
|---------------|-----------|
| Excitation    | Slab-sel. |
| RF spoiling   | On        |
| Turbo factor  | 26        |

# Sequence - Special

| PATRef FA            | 3 deg      |
|----------------------|------------|
| RF duration          | 1100 us    |
| RF BWT product       | 8          |
| Ernst T1             | 1200 ms    |
| PATRef prep. shots   | 10         |
| Volume dummy shots   | 0          |
| Dummy Measurements   | 0          |
| PATRef averages      | 2          |
| ETL per RTEB         | 1          |
| Invert PE            | Off        |
| Min. TE if PF        | On         |
| Echo Time Shift      | On         |
| Invert 3D            | Off        |
| Invert RO            | Off        |
| Alternate RO         | Off        |
| Disable PF reco      | Off        |
| Ramp Sampling        | On         |
| Disable PF reco      | Off        |
| Save sampling        | Off        |
| PE VComp             | Off        |
| Water Exc.           | -none-     |
| External PC          | per Series |
| Saturation RF        | per Shot   |
| FIDNavs              | -none-     |
| EPI rise time factor | 1.10       |
| Mosaic DICOMs        | On         |
| Modify IcePAT        | Off        |
| HSN RF power scale   | 3.00       |
| Inversion Delay      | 650 ms     |
| Relaxation Delay     | 0 ms       |
| Var. FA /MAGEC       | 4          |
|                      |            |

# **Sequence - Assistant**

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