# CHEST MR ANGIOGRAPHY 3T

## INSTRUCTIONS AND PATIENT PREPARATION

| | |
|---|---|
| **Instructions** | • Establish clear communication with the patient prior to the procedure regarding breath hold instructions<br>• Position arms close by the side to minimize the required field of view in the right-left direction |
| **Common Indications** | Thoracic aortic aneurysm, dissection, embolism |
| **Position** | Supine, head first |
| **Coil** | Body Array Coil (two in tandem if available) |
| **Landmark** | Mid-chest |

## CONTRAST AGENT PARAMETERS

| Contrast Agents | Dose | Injection Rate | Dose Timing Method and Scan Delay |
|---|---|---|---|
| **Gadopiclenol (VUEWAY)** | 0.05 mmol/kg | 1.5 mL/sec | Fluoro trigger to peak arterial opacification of thoracic aorta |
| **Saline Flush** | 20 mL | 1.5 mL/sec | Immediately following gadolinium |
| **Comments** | • Report agent administered and dose<br>• Use minimal dose for patients with a GFR <30 mL/sec | | |

## IMAGING PARAMETERS

| Scan Description | CORONAL HASTE | AXIAL HASTE | AXIAL IN/OUT | Pre CORONAL VIBE | Pre AXIAL VIBE | Pre CORONAL Angio | Dynamic CORONAL CARE BOLUS | Post CORONAL Angio | Post AXIAL VIBE 60 sec | Post AXIAL VIBE 180 sec | Post CORONAL VIBE 180 sec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Sequence Name** | h | h | fl | fl | fl | fl | fl | fl | fl | fl | fl |
| **Dimension** | 2D | 2D | 2D | 3D | 3D | 3D | 2D | 3D | 3D | 3D | 3D |
| **Acceleration mode** | GRAPPA | GRAPPA | GRAPPA | CAIPIRINHA | CAIPIRINHA | GRAPPA | None | GRAPPA | CAIPIRINHA | CAIPIRINHA | CAIPIRINHA |
| **CAIPIRINHA Mode** | — | — | — | Body Cor | Body Tra | — | — | — | Body Tra | Body Tra | Body Cor |
| **Total Factor** | — | — | — | 4 | 4 | — | — | — | 4 | 4 | 4 |
| **Acceleration Factor PE** | 2 | 2 | 2 | 2 | 2 | 3 | — | 3 | 2 | 2 | 2 |
| **Acceleration Factor 3D** | — | — | — | 2 | 2 | 1 | — | 1 | 2 | 2 | 2 |

## SCAN PARAMETERS

| Scan Description | CORONAL HASTE | AXIAL HASTE | AXIAL IN/OUT | Pre CORONAL VIBE | Pre AXIAL VIBE | Pre CORONAL Angio | Dynamic CORONAL CARE BOLUS | Post CORONAL Angio | Post AXIAL VIBE 60 sec | Post AXIAL VIBE 180 sec | Post CORONAL VIBE 180 sec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **TR** | 1300.0 ms | 1200.0 ms | 228.0 ms | 4.6 ms | 4.2 ms | 2.89 ms | 37.87 ms | 2.89 ms | 4.2 ms | 4.2 ms | 4.6 ms |
| **TE** | 91.00 ms | 228.00 ms | TE 1: 1.23 ms<br>TE 2: 2.46 ms | 2.20 ms | 2.01 ms | 0.99 ms | 1.30 ms | 0.99 ms | 2.01 ms | 2.01 ms | 2.20 ms |
| **Flip Angle** | 164 deg | 159 deg | 44 deg | 10 deg | 9 deg | 24 deg | 30 deg | 24 deg | 9 deg | 9 deg | 10 deg |
| **Turbo Factor** | 256 | 198 | — | — | — | — | — | — | — | — | — |
| **Bandwidth** | 698 Hz/Px | 698 Hz/Px | 1060 Hz/Px | 350 Hz/Px | 400 Hz/Px | 570 Hz/Px | 400 Hz/Px | 570 Hz/Px | 400 Hz/Px | 400 Hz/Px | 350 Hz/Px |
| **Fat-Water Contrast** | Standard | Standard | Standard | Fast Fat Saturation | Fast Fat Saturation | Standard | Standard | Standard | Fast Fat Saturation | Fast Fat Saturation | Fast Fat Saturation |
| **Gradient Mode** | Fast | Fast | Fast | Fast | Fast | Fast | Fast | Fast | Fast | Fast | Fast |
| **RF Pulse Type** | Fast | Fast | Optimized | Fast | Fast | Normal | Normal | Normal | Fast | Fast | Fast |
| **Asymmetric Echo** | — | — | Allowed | Off | Off | Allowed | Allowed | Allowed | Off | Off | Off |

Disclaimer: The MR Protocols information is provided by independent physicians and technologists and is not intended to provide definitive or complete medical instructional or treatment information. Products referenced herein should be used consistently with their package inserts, and any devices referenced herein should be used consistently with the operation instructions provided by their respective manufactures. Northwest Imaging Forums, Inc. and Bracco Diagnostics Inc. do not offer medical advice and shall not be responsible for any person's reliance on this protocol.

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**MR Gadopiclenol (VUEWAY®) Protocol for Siemens MRI Scanners**
**MR Angiography**

IMAGING FORUMS, INC.

**ACQUISITION PARAMETERS**

| Scan Description | CORONAL HASTE | AXIAL HASTE | AXIAL IN/OUT | Pre CORONAL VIBE | Pre AXIAL VIBE | Pre CORONAL Angio | Dynamic CORONAL CARE BOLUS | Post CORONAL Angio | Post AXIAL VIBE 60 sec | Post AXIAL VIBE 180 sec | Post CORONAL VIBE 180 sec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Base Resolution** | 256 | 256 | 224 | 320 | 320 | 384 | 256 | 384 | 320 | 320 | 320 |
| **Phase Resolution** | 100% | 95% | 90% | 75% | 75% | 70% | 88% | 70% | 75% | 75% | 75% |
| **Slice Resolution** | — | — | — | 50% | 50% | 63% | — | 63% | 50% | 50% | 50% |
| **Averages** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| **Concatenations** | 2 | 3 | 1 | 1 | 1 | — | — | — | 1 | 1 | 1 |
| **FoV Read** | 370 mm | 380 mm | 380 mm | 400 mm | 380 mm | 500 mm | 475 mm | 500 mm | 380 mm | 380 mm | 400 mm |
| **FoV Phase** | 100% | 81% | 80% | 81% | 81% | 81% | 81% | 81% | 81% | 81% | 81% |
| **Phase Encoding Dir.** | R >> L | A >> P | A >> P | R >> L | A >> P | R >> L | A >> P | R >> L | A >> P | A >> P | R >> L |
| **Phase Oversampling** | 50% | 0% | 20% | 50% | 30% | 30% | 0% | 30% | 30% | 30% | 50% |
| **Slice Oversampling** | — | — | — | 33% | 33% | 13% | — | 13% | 33% | 33% | 33% |
| **Phase Partial Fourier** | 5/8 | Off | 7/8 | Off | Off | 6/8 | Off | 6/8 | Off | Off | Off |
| **Slice Partial Fourier** | — | — | — | 6/8 | 7/8 | 6/8 | — | 6/8 | 7/8 | 7/8 | 7/8 |
| **Flow Compensation** | None | None | None | — | — | — | — | — | — | — | — |

**SCANNING RANGE**

| Scan Description | CORONAL HASTE | AXIAL HASTE | AXIAL IN/OUT | Pre CORONAL VIBE | Pre AXIAL VIBE | Pre CORONAL Angio | Dynamic CORONAL CARE BOLUS | Post CORONAL Angio | Post AXIAL VIBE 60 sec | Post AXIAL VIBE 180 sec | Post CORONAL VIBE 180 sec |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Raw Filter** | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| **Elliptical Filter** | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| **Distortion Correction** | 2D | 2D | 2D | 2D | 2D | 2D | 2D | 2D | 2D | 2D | 2D |
| **Normalize** | Prescan | Prescan | Prescan | Prescan | Prescan | Prescan | Prescan | Prescan | Prescan | Prescan | Prescan |
| **Image Filter** | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off | Off |
| **Distance Factor** | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% |
| **Slice Thickness** | 6.0 mm | 6.0 mm | 6.0 mm | 3.0 mm | 3.0 mm | 1.2 mm | 21.0 mm | 1.2 mm | 3.0 mm | 3.0 mm | 3.0 mm |
| **Slices** | 30 Slices | 35 Slices | 45 Slices | 72 Slices per Slab | 72 Slices per Slab | 128 Slices per Slab | 1 Slice | 128 Slices per Slab | 72 Slices per Slab | 72 Slices per Slab | 72 Slices per Slab |
| **Time of Acquisition** | 49 sec | 1:04 min | 22 sec | 17 sec | 15 sec | 20 sec | 1:01 min | 20 sec | 15 sec | 15 sec | 17 sec |

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