Cardiac CTA without and with IV Contrast

Canon Aquilion PRIME

Protocol name in scanner: Cardiac CTA/CFA

| Patient Position | Supine, Feet First into Gantry  
|                 | Heart Isocenter  
| Scanogram       | AP and Lateral  
| **A** Non-Contrast -Calcium Score | ECG Gated Wide Volume Mode Scan  
|                  | Start 2 cm Above Carina  
|                  | End Bottom of Heart  
| **A** Non-Contrast -Calcium Score | ECG Gated Wide Volume Mode Scan  
|                  | Start 2 cm Above Carina  
|                  | End Bottom of Heart  
| **For calcium score > 600** | Contact the cardiac team resident or the radiology resident on call to determine need for contrast scan.  
| **BT** Monitor position | Carina  
| **HU** | 180  
| **B** Contrast Scan -Cardiac CTA | ECG Gated Helical Scan  
| Injection Rate | 5 ml / sec preferred  
| IV Size and Location | 18g, 20g min  
|                     | RT AC preferred  
| Contrast Saline | 80 ml Omniproque 350  
| Saline | 80 ml  
| Respiration | Breath Hold  
| **B** Start | 2 cm Above Carina  
|                  | End Bottom of Heart  
| Scan FOV | 220 mm  

**A** Non-Contrast Calcium Score

Calcium Score Exposure and Reconstruction:
Heart Rate ≤ 70 bpm, images will be reconstructed 75%.
Heart Rate ≥ 71 bpm, images will be reconstructed 40%.
Calcium Score calculated on Visage. See instructions below.

**B** CTA -Contrast Scan for Coronary Arteries  
Retrospectively Gated Scan

Protocol built as a continual helical gated scan.
Images will automatically reconstruct at 75% and “Best Phase” of the R to R.
Images will automatically reconstruct for CFA-Cardiac Functional Analysis.

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Reconstruction - Volumes and Images

A  Non-Contrast Calcium Score

Calcium Score Exposure and Auto Reconstruction:
Images will be reconstructed 75% or 40% depending on patient heart rate.
Post processing done at fX workstation or on Visage.

<table>
<thead>
<tr>
<th>Built in protocol-reconstructs automatically</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong></td>
</tr>
<tr>
<td><strong>R1</strong></td>
</tr>
<tr>
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</tbody>
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**Reminder:** Always check ECG for proper R indicators prior to programming reconstructions.

B  Contrast CTA Coronary Arteries

75% and “Best Phase” are programmed in the protocol and will reconstruct automatically.

<table>
<thead>
<tr>
<th><strong>B</strong></th>
<th>Algorithm</th>
<th>Cardiac CTA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R1</strong></td>
<td>Thickness</td>
<td>0.5 mm</td>
</tr>
<tr>
<td></td>
<td>Spacing</td>
<td>0.25 mm</td>
</tr>
<tr>
<td></td>
<td>FOV</td>
<td>220 mm</td>
</tr>
<tr>
<td></td>
<td>Phase</td>
<td>Best Phase + Window</td>
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<tr>
<td></td>
<td>Transfer</td>
<td>PACS and PACS_CARD</td>
</tr>
</tbody>
</table>

For Functional Analysis

<table>
<thead>
<tr>
<th><strong>B</strong></th>
<th>Algorithm</th>
<th>Cardiac CTA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R2</strong></td>
<td>Thickness</td>
<td>1.0 mm</td>
</tr>
<tr>
<td></td>
<td>Spacing</td>
<td>1.0 mm</td>
</tr>
<tr>
<td></td>
<td>FOV</td>
<td>220 mm</td>
</tr>
<tr>
<td></td>
<td>Phase</td>
<td>CFA 0% - 90% Every 10%</td>
</tr>
<tr>
<td></td>
<td>Transfer</td>
<td>PACS and PACS_CARD</td>
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</tbody>
</table>

Images for Large DFOV- must type Large DFOV or LDFOV in comment box.

<table>
<thead>
<tr>
<th><strong>B</strong></th>
<th>Algorithm</th>
<th>Cardiac CTA</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>R3</strong></td>
<td>Thickness</td>
<td>1 mm</td>
</tr>
<tr>
<td></td>
<td>Spacing</td>
<td>1 mm</td>
</tr>
<tr>
<td></td>
<td>FOV</td>
<td>320 mm</td>
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<tr>
<td></td>
<td>Phase</td>
<td>80%</td>
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<tr>
<td></td>
<td>Transfer</td>
<td>PACS and PACS_CARD</td>
</tr>
<tr>
<td>Series Description</td>
<td>Large DFOV</td>
<td></td>
</tr>
</tbody>
</table>
Generating Calcium Score using Visage

**For calcium scores > 600**
Contact the cardiac team resident or the radiology resident on call to determine if the contrasted scan will be beneficial.

- Open the patient folder in the directory.
- Load the Calcium Score series.
- Single click on this series and click View. (Or double click on series.)

*Note:*
If the calcium scoring tool card does not automatically open, click on the Protocol tab on the top tool bar, and click on CT Cardiac.

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Click on the Calcium Scoring button in the Calcium tool card. Make sure that Multi Slice Mode is checked.

- Click on the appropriate vessel name in column.
- Left click on calcium in that vessel.
- Scroll through images making sure that all calcium is identified.
- Repeat this process for each coronary artery with calcium.

When all calcium is identified,
- Check that score in “Score (1)” column is below 600.
- If score is above 600, contact the cardiac team or the resident on call to determine need for contrast scan.
Key:

- **LM**  Left Main
- **LAD**  Left Anterior Descending
- **CX**   Circumflex
- **RCA**  Right Coronary Artery
- **PDA**  Posterior Descending Artery