Computed Tomography (CT) Protocol for Heart

Heart Structures

(Examples: aortic and pulmonary valves, coronaries, LAA …)
General rule: standard ECG-triggered diastolic protocol with good contrast, more specifically:

- 100-120kV, 550-700mAs
- Slice distance: 0.3-0.7mm (0.5mm most common)
- Slice increment (at least) equal to slice distance
- 64 or more slice CT scanner to avoid motion and misalignment artifacts
- Contrast medium on left or right heart side as for diagnostic imaging
- Heartbeat below 65
- For the access route (if required): see vessel structure details below
- Preferably with breath-holding

Vessel Structures

(Examples: TAA, AAA, coarctation …)
General rule: standard vascular protocol with good contrast, more specifically:

- 100-120kV, 550-700mAs
- Slice distance: 0.7-1mm
- Slice increment (at least) equal to slice distance
- 16 or more slice CT scanner to avoid long scan
- No ECG triggering required
- Contrast medium on left or right heart side as for diagnostic imaging

Magnetic Resonance Imaging (MRI) for Heart

Heart Structures

(Examples: aortic and pulmonary valves, coronaries, LAA …)
General rule: standard diastolic protocol with good contrast, more specifically:

- Slice distance: 0.3-0.7mm (0.5mm most common)
- Slice increment (at least) equal to slice distance
- The higher the spatial resolution the better (as long as the signal-to-noise ratio permits)
- Preferably with breath-holding
- Contrast medium (e.g. Ablavar®) on left or right heart side as for diagnostic imaging
- For full heart: preferably obtain 3D volume data (at least) three times and merge them into one file so that all cardiovascular structures contain contrast medium
- Important rule: nearly isotropic voxels (not standard)

Vessel Structures

(Examples: TAA, AAA, coarctation …)
General rule: standard vascular protocol with good contrast, more specifically:

- Slice distance: 0.7-1mm
- Slice increment (at least) equal to slice distance
- The higher the spatial resolution the better (as long as the signal-to-noise ratio permits)
- Contrast medium (e.g. Abalavar®) on left or right heart side as for diagnostic imaging
- Important rule: nearly isotropic voxels (not standard)