

IVUSS Standard Echo Imaging Protocol

Right parasternal long axis views:

Four chamber

- M-mode mitral valve with EPSS

- M-mode LV – calculate the normalized LVIDd from the value measured in this view

- 2D LA diameter at the end of systole, just before the mitral valve opens

- Color flow across mitral valve with appropriate PRF/scale

- Color flow across tricuspid valve with appropriate PRF/scale

Five chamber

- M-mode LA/Ao

- Color flow across LVOT and aortic valve with appropriate PRF/scale

Right parasternal short axis views:

Heart base pulmonary artery

- Color flow with appropriate PRF/scale

- PW above and below pulmonary valve¹

- CW with Vmax measurement of normal flow and regurgitant flow if present

Heart base LA/Ao

- 2D (Rishniw or Swedish methods accepted)

- M-mode measurements of LA/Ao

Mitral

- M-mode with EPSS

LV

- M-mode – calculate the normalized LVIDd from the value measured in this view

Left apical

Four chamber²

- Color flow across MV and TV with appropriate PRF/scale

- PW mitral inflow profile with identification of E and A waves and measurement of E and A wave velocities

- CW mitral valve with Vmax measurement of normal flow and regurgitant flow if present

Five chamber

- Color flow LVOT with appropriate PRF/scale

- PW above and below aortic valve

- CW aortic valve with Vmax measurement of normal flow and regurgitant flow if present

Sub-xiphoid of LVOT and Aorta³

- CW across LVOT and aortic root with Vmax measurement of normal flow and regurgitant flow if present

Left parasternal cranial long axis

RVOT/pulmonic valve/main pulmonary artery⁴

Color flow with appropriate PRF/scale

Spectral Doppler if recordings were suboptimal on the right side

LVOT/Aorta/Aortic root

Tricuspid valve/right auricle

Color flow with appropriate PRF/scale

PW tricuspid inflow profile with identification of E and A waves and measurement of E and A wave velocities

CW tricuspid valve with Vmax measurement of normal flow and regurgitant flow if present

When indicated:

Left parasternal cranial short axis left auricle

Left parasternal cranial short axis view of the heart base⁵

Footnotes:

1. When indicated
2. This view can be used for Spectral Doppler measurements of velocities across the tricuspid valve if the other views are suboptimal.
3. Include this view if the proper alignment of the aorta to measure velocity could not be obtained on the left apical five chamber view.
4. Include this view if the proper alignment of the pulmonary artery to measure velocity could not be obtained on the right parasternal short axis view.
5. This is a good view for obtaining the Vmax of tricuspid regurgitation if the other views were sub optimal.

Additional notes:

1. An ECG recording should be included on all images.
2. When multiple views are suggested above, only include the views with the optimal measurements.
3. Do not use the first cardiac cycle on the m-mode recording.
4. M-mode measurements can be obtained from either the right parasternal long axis or short axis views, only include the optimal measurements.