Tips for echocardiography scanning

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Brief Echocardiography Protocol to screen for cardiac disease

1. Parasternal long axis view (PSLAX) – 2D
2. PSLAX – color Doppler (For quantifying AI & MR)
3. Parasternal short axis view (PSAX) at aortic valve level – 2D
4. PSAX at aortic valve level – Color
5. PSAX at Mitral Valve level
6. Apical 4 Chamber view – 2D
7. Apical 4 Chamber view – color of mitral valve for mitral regurgitation
8. Apical 4 Chamber view – color of tricuspid valve for tricuspid regurgitation
9. Apical 5 Chamber view – color of left ventricular outflow tract and aortic valve for Aortic regurgitation
10. Apical 2 chamber view – 2D
11. Apical 2 chamber view – color of mitral valve
12. Subcostal 4 chamber view – 2D
13. Subcostal of IVC – 2D

Standard Views & Technique
Normal Parasternal Long Axis (PS LAX) transducer position

Patient is in a left lateral decubitus position with the probe in the 4th intercostal space. The indicator is towards the patient's right shoulder.

Normal Long Axis (LAX) transducer position and view

Normal Long Axis (LAX)
Wide sector width  Narrow width

Parasternal LAX with color Doppler

PS LAX with bad color box position
Parasternal Short Axis (PS SAX) transducer position

Transducer is rotated 90° clockwise from the LAX view. Indicator is towards the patient’s left shoulder. Transducer tilted or moved up for AV and MV and tilted or moved down for mid LV level (papillary muscles).

Short axis (SAX) - papillary muscle level (mid LV)

From: Advanced Diagnostic Ultrasound System, Henry Ford Health System & NASA
Good SAX

Off-centered

Normal Apical 4 chamber transducer position

Transducer is positioned at the apex (PMI). Indicator is towards the patient's left shoulder.

Normal Apical 4 chamber transducer position and view

From: Advanced Diagnostic Ultrasound System, Henry Ford Health System & NASA
Normal Apical 4 chamber view

Apical 4 chamber with color of MV

Apical 4 chamber with color of TV severe tricuspid regurgitation
Apical 5 chamber view
tilt transducer upward from apical 4 chamber position

Apical 5 chamber with color of AV

Subcostal 4 chamber transducer position

Transducer is positioned in the subcostal position. Indicator is towards the patient's left side. Slight downward pressure and superior angulation of the beam is usually required.

From: Advanced Diagnostic Ultrasound System, Henry Ford Health System & NASA
Subcostal 4 chamber transducer position and view

From: Advanced Diagnostic Ultrasound System, Henry Ford Health System & NASA

Subcostal 4 chamber view

Normal Inferior Vena Cava from subcostal transducer position