



Sonographer Scanning Cheat Sheet: Abdominal Aorta Iliac US

Procedure Overview: An abdominal aorta iliac arterial duplex ultrasound assessment can be utilized to detect the presence, severity, and location of an abdominal aortic aneurysm and atherosclerotic disease.

Required Pre-Procedure Prep:

- NPO for 4 hours (recommended).
- Obtain patient verbal consent.
- Obtain patient and family history of cardiovascular disease and symptoms.
- Instruct the patient to lie supine.

Proper Probe: Convex or sector probe with a frequency of 2.5 - 5 MHz that has tri-duplex capabilities.

Protocol for Abdominal Aorta Iliac Duplex Ultrasound (93978 and 93979)

Note: This protocol can be utilized for the complete as well as the limited procedure. Due to a patient's body habitus, surgical intervention, and/or overlying bowel, a sonographer may be unable to capture all images required for a complete study.

This protocol aligns with the Mindray I-Works protocol: Imagen Aorta Duplex Exam

You may "Suspend" the protocol at any time to take additional images or handle pathology, then restart I-Works.

Cine Clips should be taken to help prove pathology and provide context for Remote Radiologists when appropriate. Please be mindful of not taking too many cine clips, just show what's most important.



1. Prox Aorta Sag (above the SMA)
2. Prox Aorta Sag with A/P measurements (be sure to INCLUDE WALL in measurement)
3. Prox Aorta Sag w/Color
4. Prox Aorta Sag w/Color and Doppler (be sure stick is parallel to anterior wall and 45-60 degrees)
5. Mid Aorta Sag (between SMA and Renal Arteries)
6. Mid Aorta Sag with A/P measurements (be sure to INCLUDE WALL in measurement)
7. Mid Aorta Sag w/Color
8. Mid Aorta Sag w/Color and Doppler (be sure stick is parallel to anterior wall and 45-60 degrees)
9. Distal Aorta Sag
10. Distal Aorta Sag with A/P measurements (be sure to INCLUDE WALL in measurement)
11. Distal Aorta Sag w/Color
12. Distal Aorta Sag w/Color and Doppler (be sure stick is parallel to anterior wall and 45-60 degrees)
13. Prox Aorta Trv (above SMA)
14. Prox Aorta Trv w/color
15. Prox Aorta Trv w/measurements (be sure to Include wall in measurement)
16. Mid Aorta Trv
17. Mid Aorta Trv w/color
18. Mid Aorta Trv w/measurements (be sure to include wall in measurement)
19. Distal Aorta Trv
20. Distal Aorta TRV w/color
21. Distal Aorta Trv w/measurement (be sure to include wall in measurement)
22. Distal Aortic Trv Bifurcation/Rt and left Iliac arteries
23. Distal Bifurcation Trv w/color
24. Distal Bifurcation Trv w/measurements (be sure to include wall in measurements)
25. Sag Rt Common Iliac
26. Sag Rt Common Iliac w/color
27. Sag Rt Common Iliac w/Color and Doppler (be sure stick is parallel to anterior wall and 45-60 degrees)
28. Sag Lt Common Iliac
29. Sag Lt Common Iliac w/color
30. Sag Lt Common Iliac w/Color and Doppler (be sure stick is parallel to anterior wall and 45-60 degrees)

If (AAA) Aneurysm Abdominal Aorta Seen:

- Transverse with and without width measurements x 2
- Sagittal with and without length and height measurements x 2
- Color flow Doppler in transverse and sagittal
- Note any internal debris and/or thrombus formation
- Any pathology cine loop for the reader to see in real time.
- Document pathology with and without measurement in three planes (Length, width, & AP) and with and without color Doppler.

Anatomy	Normal Measurements
Abdominal Aortic Aneurysm	>3 cm
Critical Abdominal Aortic Aneurysm (STAT case)	>5 cm or >4 cm with thrombus formation
Aorta Stenosis	If velocity of flow more than doubles, this is indicative of more than 50% stenosis.

Common Pathologies

- **Abdominal Aortic Aneurysm:** A large bulge in the vessel consisting of a dilation of all three walls of the artery measuring 50% larger than the normal proximal diameter or 3.0cm in AP diameter.
 - **Fusiform aneurysm:** This is the most common aneurysm and appears as a symmetrical bulge around the circumference of the aorta.
 - **Saccular aneurysm:** Appears asymmetrical and one side of the aorta.
 - **Pseudoaneurysm:** Often visualized after a heart catheterization. Appears similar to a fusiform aneurysm; however, a pseudoaneurysm only bulges 1-2 layers of the vessel, not all three vessel layers.
- **Aortic Dissection:** The presence of an intimal flap that appears as a linear, hyperechoic structure separating the aorta into true and false lumens with bidirectional color flow. This is an emergent finding.
- **Aortic Atherosclerosis:** Plaque formation within the arterial lining of the vessel. If present, classify as one of the following and note texture, surface, and location.
 - **Homogeneous:** Soft plaque, uniform echo pattern
 - **Heterogeneous:** Complex echo pattern with multiple echoes and different densities
 - **Calcified:** High density echoes with posterior shadowing