



## CardioRisk Laboratories AAA Protocol

### 1. The Abdominal Aorta:

- Longitudinal images (along the long axis of the vessel):
  - Proximal (below diaphragm, near the celiac artery)
  - Mid (near the level of the renal arteries)
  - Distal (above the iliac bifurcation)
- Transverse images (perpendicular to the long axis of the vessel):
  - Proximal (below diaphragm near the celiac artery);
  - Mid (near the level of the renal arteries);
  - Distal (above the iliac bifurcation).
- Measurements:
  - Anteroposterior and transverse measurements of the aorta Proximal, Mid and Distal, sufficient to determine if an aortic aneurysm exists.
- A "Diagnostic Examination" should be obtained. If an aneurysm is present, its greatest dimension should be reported. However, if no aneurysm is identified, the largest diameter of the abdominal aorta should be reported.

Interpretation of the screening examination should include at least 3 categories:  
(performed by the Clinical Director)

1. Positive—Infrarenal abdominal aortic aneurysm greater than or equal to 3 cm in diameter or greater than or equal to 1.5 times the diameter of the more proximal infrarenal aorta.<sup>6</sup> The latter definition is particularly important in women and small adults.
2. Negative—No infrarenal abdominal aortic aneurysm.
3. Indeterminate—Aneurysmal status not defined because of non-visualization or partial visualization of the infrarenal abdominal aorta.
4. The report should also state whether or not the suprarenal aorta was seen and, if seen, should reflect whether or not it is normal. The report should also state whether dilation of the aorta above the celiac artery is noted. For the area above the celiac artery, an aneurysm may be reported if the diameter is greater than 3.9 cm for males or 3.1 cm for females.





## Diagnostic Examination

The examination includes the following, when feasible:

### 1. Abdominal aorta:

- Longitudinal images (along the long axis of the vessel):
  - Proximal (below diaphragm, near the celiac artery),
  - Mid (near the level of the renal arteries),
  - Distal (above the iliac bifurcation),
  - The aorta should be imaged in the plane that is parallel to the long axis of the lumen (for measurement of the anteroposterior [AP] dimension) and perpendicular to the long axis of the lumen (for measurement of the transverse dimension). The transverse measurement may also be obtained in the coronal plane.
- Transverse images (perpendicular to the long axis of the vessel):
  - Proximal (below diaphragm, near the celiac artery),
  - Mid (near the level of the renal arteries),
  - Distal (above the iliac bifurcation).
- Measurements:
  - Measurements of the proximal, mid, and distal aorta should be obtained using predominantly the long axis view to measure the AP dimension. Transverse or coronal views should also be obtained to measure the width. Measurements are taken at the greatest diameter of the aorta from outer edge to outer edge.
  - If an aneurysm is present, the maximal size and location of the aneurysm should be documented and recorded. The relationship of the dilated segment to the renal arteries and to the aortic bifurcation should be determined if possible.
- At a minimum, the largest measurement should be recorded and reported. A measurement of the length of the aneurysm is not necessary.

## 2. Common Iliac Arteries:

- Longitudinal images of the proximal right and left common iliac arteries (along the long axis of the vessel).
- Transverse images (perpendicular to the long axis of the vessel) of the proximal common iliac arteries just below the bifurcation.
- Measurement of the widest visualized portion of each common iliac artery from outer edge to outer edge.
- Color Doppler and/or spectral Doppler imaging with waveform analysis of the aorta and iliac arteries may be helpful to demonstrate patency and the presence of intraluminal thrombus.





## Condensed AAA Screening Protocol Reference

- B Mode
  - LONG AO
    - Prox
    - Mid
    - Dist
  - TRV AO
    - Prox with Measurements AP & TRV
    - Mid with Measurements AP & TRV
    - Dist with Measurements AP & TRV

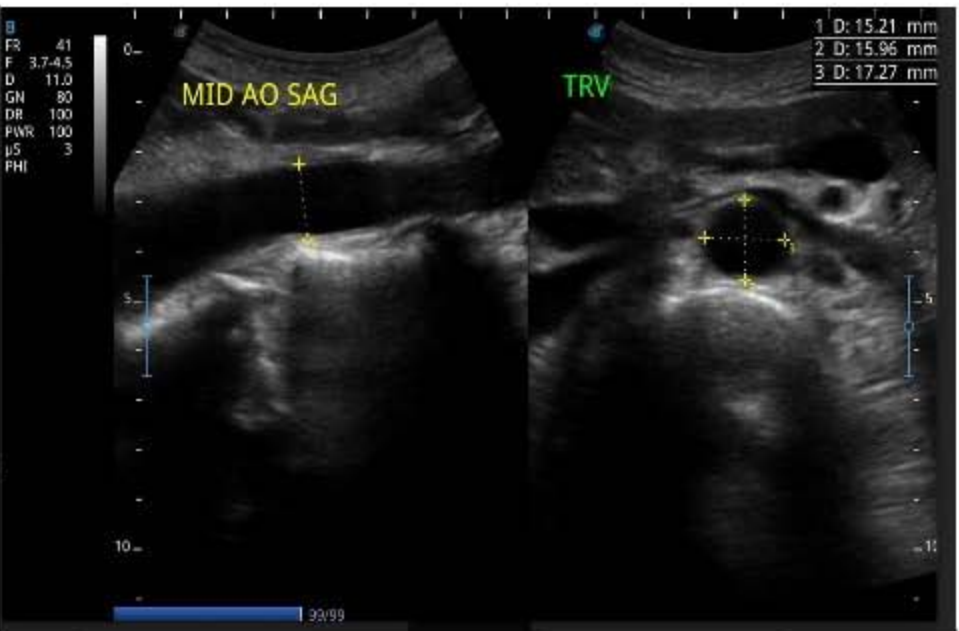
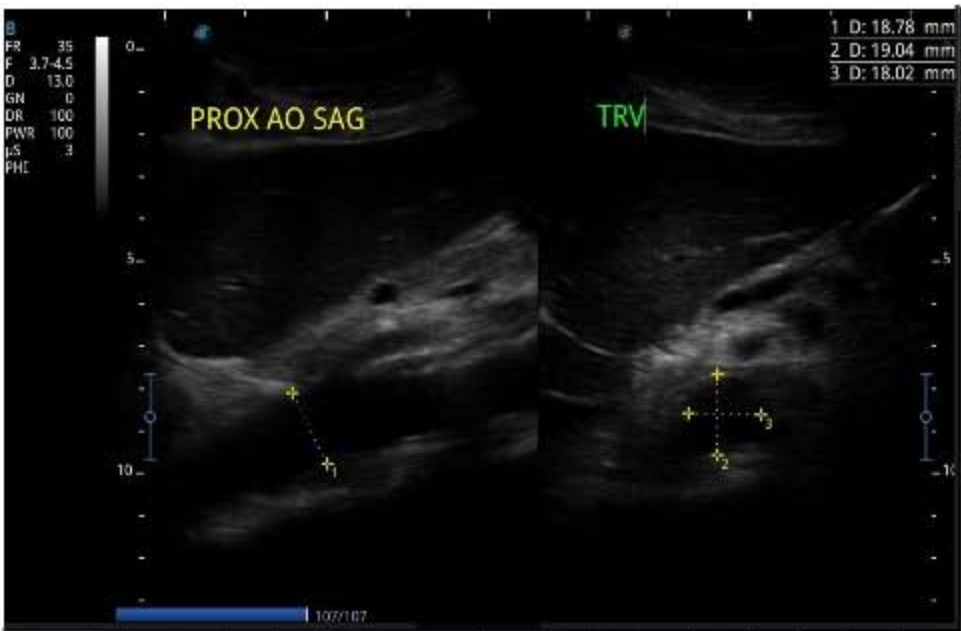
If positive for AAA ( $\geq 3.0$ cm) proceed with diagnostic protocol.

If negative for AAA (all measurements  $< 3.0$  cm) no further imaging required.

## Condensed AAA Diagnostic Protocol Reference

- Add measurement to the LONG AO
  - Prox Measure AP
  - Mid Measure AP
  - Dist Measure AP
- Image the bifurcation of the aorta in TRV with Measurements AP & TRV
- Image the Right and Left Common Iliac Arteries TRV (Can demonstrate both on same image)
  - Measure RCIA AP & TRV
  - Measure LCIA AP & TRV
- Color Doppler and/or spectral Doppler imaging with waveform analysis of:
  - Long AO Prox
  - Long AO Mid
  - Long AO Dist
  - Long AO Bif

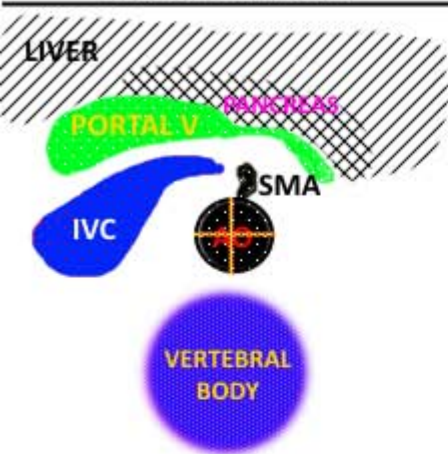




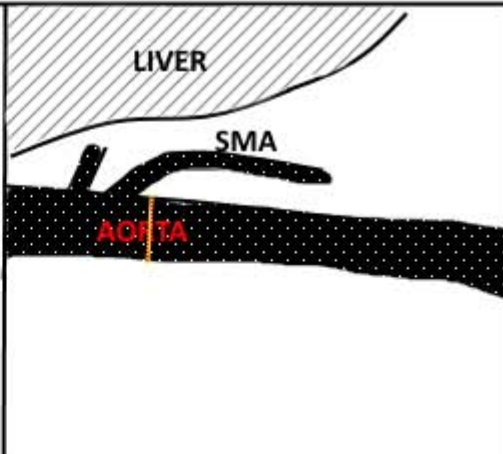
TRANSVERSE PROX AO

IMAGE 1

LONGITUDINAL PROX AO



MEASURE TRANSVERSE  
AND AP



MEASURE AP

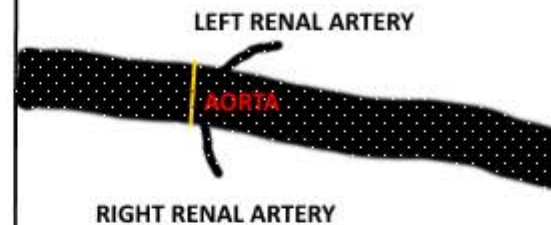
TRANSVERSE MID AO

IMAGE 2

LONGITUDINAL MID AO



MEASURE TRANSVERSE  
AND AP



MEASURE AP

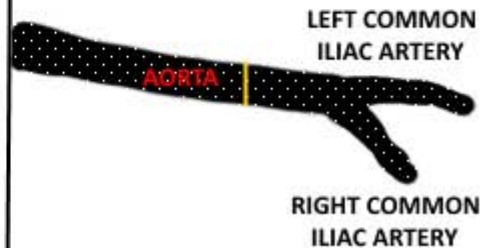
TRANSVERSE DIST AO

IMAGE 3

LONGITUDINAL DIST AO



MEASURE TRANSVERSE  
AND AP



MEASURE AP

MEASUREMENTS ARE TAKEN FROM OUTER WALL TO OUTER WALL

THREE MEASUREMENTS IN EACH SEGMENT

SEGMENTS DESCRIBED

PROXIMAL: CELIAC AXIS, SMA

MID: RENAL ARTERIES

DISTAL: JUST BEFORE BIFURCATION