

Kahoot: Vascular Sonography Fundamentals

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CVSG1640 Echocardiography I and CVSG2370 Vascular II • Concorde Career College Portland

A 15-question Kahoot covering vascular sonography fundamentals: aorta, IVC, carotid, peripheral arteries and veins. Cross-references CVSG2370 lab protocols.

1. The standard upper limit for normal abdominal aortic diameter (AP) in adults is:

- A. 1.5 cm
- B. 2.0 cm
- C. 3.0 cm (**correct**)
- D. 4.5 cm

Answer: C. A diameter of 3.0 cm or greater meets the AAA threshold.

2. The recommended transducer for an abdominal aorta study is:

- A. Linear high-frequency (10 to 18 MHz)
- B. Curvilinear low-frequency (2 to 5 MHz) (**correct**)
- C. Phased-array cardiac
- D. Endocavitary

Answer: B.

3. A normal IVC respiratory variation in a healthy patient on a “sniff” maneuver is:

- A. Collapses less than 10 percent
- B. Collapses greater than 50 percent (**correct**)
- C. Increases in diameter on inspiration
- D. Remains completely unchanged

Answer: B.

4. By ASE 2015, an IVC measuring less than or equal to 2.1 cm that collapses greater than 50 percent suggests RAP of:

- A. 3 mmHg (**correct**)
- B. 8 mmHg
- C. 15 mmHg
- D. 20 mmHg

Answer: A.

5. The single best diagnostic maneuver to identify acute DVT in the femoral or popliteal vein is:

- A. Color Doppler patency
- B. Spectral Doppler waveform analysis
- C. Direct probe compression of the vein (**correct**)
- D. Augmentation by calf squeeze

Answer: C. A normal vein collapses completely under compression; a vein with thrombus does not.

6. By SVU/IAC velocity criteria, an ICA PSV greater than 230 cm/s corresponds to:

- A. Normal carotid
- B. 50 to 69 percent stenosis
- C. Greater than or equal to 70 percent stenosis (**correct**)
- D. Near-occlusion only

Answer: C.

7. ICA-to-CCA PSV ratio greater than 4.0 is consistent with:

- A. Normal
- B. Less than 50 percent stenosis
- C. Greater than or equal to 70 percent stenosis (**correct**)
- D. Complete occlusion

Answer: C.

8. Normal vertebral artery flow direction (with the head in neutral position) is:

- A. Cranial (toward the head) (**correct**)
- B. Caudal (toward the feet)
- C. Bidirectional
- D. Absent

Answer: A. Reversed (caudal) vertebral flow suggests subclavian steal.

9. The ankle-brachial index (ABI) is calculated as:

- A. Brachial systolic / ankle systolic
- B. Ankle systolic / higher brachial systolic (**correct**)
- C. Mean arterial pressure / 80
- D. Ankle diastolic / brachial diastolic

Answer: B.

10. An ABI of 0.4 indicates:

- A. Normal
- B. Mild PAD
- C. Moderate PAD
- D. Severe PAD (**correct**)

Answer: D. ABI less than 0.5 is consistent with severe peripheral arterial disease.

11. A normal lower-extremity arterial Doppler waveform is:

- A. Monophasic
- B. Biphasic
- C. Triphasic (**correct**)
- D. Continuous

Answer: C. Triphasic = forward in systole, brief reversal in early diastole, low forward in late diastole.

12. A monophasic, dampened arterial waveform downstream of a stenosis is called:

- A. Tardus-parvus (**correct**)
- B. Hyperemic
- C. Resistive
- D. Pulsatile

Answer: A. “Tardus” = slow upstroke; “parvus” = small amplitude.

13. Color Doppler aliasing happens when the measured velocity exceeds:

- A. 0.5 m/s
- B. The Nyquist limit (one-half the pulse repetition frequency) **(correct)**
- C. The Bernoulli threshold
- D. The angle correction limit

Answer: B.

14. To assess venous flow with color Doppler, you typically use a LOWER Nyquist setting than for arterial flow because:

- A. Veins are deeper
- B. Venous velocities are slower than arterial velocities **(correct)**
- C. Veins are more echogenic
- D. Color Doppler doesn't work on arteries

Answer: B.

15. The best Doppler angle for accurate peripheral arterial spectral velocity measurement is:

- A. 0 degrees
- B. 30 degrees
- C. 60 degrees or less **(correct)**
- D. 90 degrees

Answer: C. Above 60 degrees, the cosine error makes velocity measurements unreliable; 90 degrees is the worst case.

Suggested Kahoot settings: 20 seconds per question; 30 seconds for #4, #6, #7, #9.

Source: CVSG2370 Vascular II lab protocols (Aorta 1/2, IVC 1/2, Carotid 1/2); SVU 2019 Extracranial Cerebrovascular Guidelines; ASE 2015 Chamber Quantification (Lang et al.); IAC 2020 Extracranial Cerebrovascular Exam Protocol; Kupinski, *Diagnostic Medical Sonography: The Vascular System*, 2nd ed.

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