

# Ultrasound Guidance for Central Venous Catheter Placement

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This month's quiz is based on the article "Ultrasound Guidance for Central Venous Catheter Placement," which begins on page 23 of this issue. Choose the single best answer for each question.

- Which of the following groups has a relative indication for using ultrasound guidance for vascular access instead of the landmark-guided technique?**
  - Patients with distorted anatomy, possibly secondary to radiation therapy or prior surgical intervention at the access site
  - Patients who are not coagulopathic due to illness or medications
  - Patients who are unconscious
  - Patients without hypovolemia or respiratory difficulty
  - Patients with normal body habitus and long necks
- Most of the studies in the literature have explored and supported the utility of ultrasound guidance for which approach to central venous access?**
  - The femoral vein
  - The supraclavicular approach to the subclavian vein
  - The infraclavicular approach to the subclavian vein
  - The internal jugular vein
  - The saphenous vein
- What is the most common sonographic appearance of the lumen of a vessel?**
  - White, or hyperechoic
  - Black, or anechoic
  - White, or hypoechoic
  - Black, or hyperechoic
  - Grey, or hypoechoic
- What is a key sonographic characteristic that helps differentiate vein from artery when interrogating a prospective vessel to access?**
  - Ability to visualize compression and collapse of the vessel
  - Arterial and venous pulsations
  - Size of the vessel's image
  - Thick hyperechoic venous walls
  - Thin anechoic arterial walls
- Which transducer type and frequency range are most useful in performing ultrasound-guided catheter placement?**
  - A curvilinear transducer with a 2–5 MHz frequency
  - A curvilinear transducer with a 10–13 MHz frequency
  - A linear transducer with a 2–5 MHz frequency
  - A linear transducer with a 6–10 MHz frequency
  - A sector transducer with a 6–10 MHz frequency
- Which statement best describes the short-axis approach to vessel visualization?**
  - The length of the probe is placed parallel to the long axis of the vessel, and the vessel image should appear circular or oval
  - The length of the probe is placed parallel to the long axis of the vessel, and the vessel should be visualized along its length
  - The length of the probe is placed perpendicular to the long axis of the vessel, and the vessel image should appear circular or oval
  - The length of the transducer is placed perpendicular to the long axis of the vessel, and the vessel should be visualized along its length
  - The length of the transducer is placed oblique to the long axis of the vessel, and the vessel should be visualized along its length

For answers, see page 38.

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**Answers to the quiz on page 32. The article on ultrasound-guided central venous catheter placement appears on page 23.**

1. (A) Patients with distorted anatomy, possibly secondary to radiation therapy or prior surgical intervention at the access site
2. (D) The internal jugular vein
3. (B) Black, or anechoic
4. (A) Ability to visualize compression and collapse of the vessel
5. (D) A linear transducer with a 6–10 MHz frequency
6. (C) The length of the probe is placed perpendicular to the long axis of the vessel, and the vessel image should appear circular or oval

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