

# Port Navigation: Let the Journey Begin

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Central venous access plays an important role in modern medical patient assessment and treatment. The use of central venous access devices has become routine in the oncology setting. Clinical oncology nurses need to know how the devices function, how to provide proper care, and how to manage potential side effects. The focus of this article will be on the navigation of implanted, skin-tunneled ports.

In the oncology setting, central venous access devices (CVADs) most often are used to administer chemotherapy. CVADs also are used for blood draws; hydration; administration of blood products, total parenteral nutrition (TPN), or medications (long-term, intermittent, and continuous); peripheral access; hemodynamic monitoring; and simultaneous administration of multiple complex fluids.

## Types of Devices and Their Usage

**Nontunneled CVADs** are made of polyurethane, have three to five lumens, and come in various diameters and lengths (Hamilton, 2006). Typical use is for short periods of time (5–10 days), and the internal jugular, subclavian, or femoral veins are used as insertion sites.

**Skin-tunneled CVADs** also are placed in the jugular and subclavian veins. The femoral vein is used less frequently. The catheters come in varying diameters and have multiple lumens. A Dacron® (Invista, Inc.) cuff stabilizes the catheter by creating fibrosis with the subcutaneous tissues. The cuff also provides an antimicrobial barrier between the skin and the vascular system, allowing the catheter to remain in place for months or even years.

**Peripherally inserted central catheters (PICCs)** have peripheral insertion sites in the basilic, median, cubital, or cephalic veins. The catheters are considered CVADs because their tips terminate in the lower third of the superior vena cava (Hamilton, 2006). PICCs may be used for months.

For long-term oncology use, skin-tunneled, implanted, subcutaneous CVADs are recommended. The devices are placed surgically in the subcutaneous tissue of the chest, arm, or abdominal wall (see Figure 1). They should be considered only for patients requiring long-term IV

therapy. The implanted port consists of a self-sealing septum covering a metal or plastic reservoir (the body) and a catheter



*Note.* Surgeons are placing a port chamber for chemotherapy infusion. The port chamber is placed in a subcutaneous pocket, which is closed with sutures. The white silastic (silicone) catheter attached to the port chamber will feed into the superior vena cava over a guidewire.

### Figure 1. Surgeons Placing an Implanted Port

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