

vein. The catheter is threaded either with or without a guidewire into the superior vena cava. PICCs can be trimmed before insertion, and the decision can be made to insert the catheter midline, which is considered between the insertion site and the axilla. If the catheter is threaded midline, total parenteral nutrition (TPN) or any other drug known to irritate a peripheral vein (e.g., chemotherapy drugs) should not be administered. The high concentration of glucose in TPN makes it irritating to the vessel; it should be infused through a central catheter.

The decision to insert a PICC needs to be made before several attempts at IV insertion are done. When the antecubital veins have been punctured repeatedly, they are not considered candidates for this type of catheter. Because this catheter is the least costly and has less chance of complications than other CVADs, it is an excellent choice for many pediatric patients.

Nursing Alert

Most peripherally inserted central catheter (PICC) lines are not sutured into place, so care is needed when changing the dressing.

Long-term CVADs include tunneled catheters and implanted infusion ports (Table 20-8 and Fig. 20-12). They may have single, double, or triple lumens. Several lumens (multilumen) catheters allow more than one therapy to be administered at the same time. Reasons to use multilumen catheters include repeated blood sampling, TPN, administration of blood products or infusion of large quantities or concentrations of fluids, administration of incompatible drugs or fluids at the same time (through different lumens), and central venous pressure monitoring.

TABLE 20-8
Comparison of Long-Term Central Venous Access Devices

Description	Benefits	Care Considerations
Tunneled Catheter (e.g., Hickman or Broviac Catheter)		
Silicone, radiopaque, flexible catheter with open ends or VitaCuffs (biosynthetic material impregnated with silver ions) on catheter(s) enhances tissue ingrowth May have more than one lumen	Reduced risk of bacterial migration after tissue adheres to cuff One or two Dacron	Requires daily heparin flushes Must be clamped or have clamp nearby at all times Must keep exit site dry Heavy activity restricted until tissue adheres to cuff