Central Lines and Fistulas Procedure & Protocol (ALS Only)

A pre-existing vascular access device is an indwelling catheter placed into a central vein to provide vascular access for those patients requiring long term intravenous therapy or hemodialysis.

Central Lines

A central line is an indwelling catheter that provides access to large central veins:

1. **May be used if unable to establish a peripheral IV in patients with a systolic BP < 80mmHg.**
2. **May be used if the patient is in cardiac arrest.**
3. Do NOT administer benzodiazepines (*i.e.* Valium or Versed) via central line.
4. A **10mL syringe** or larger must be used when accessing any central line to prevent excess infusion pressure that could damage the internal wall of the catheter.
5. Always aspirate 5mL of blood from the central line and discard **prior to** administration of medications or IV fluids to remove Heparin from the line.
6. Strictly adhere to aseptic technique when handling a central line:
   - Cleanse injection port **twice** with an alcohol prep (using a new alcohol prep each time) prior to accessing.
7. Do not remove the injection cap.
8. Do not allow IV fluids to run dry.
9. Always expel **all** air from syringes and IV tubing prior to administration.
10. Should damage occur to the external catheter, immediately clamp the catheter between the skin and the damaged area.

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Fistulas ("Shunts")

A fistula ("shunt") is a surgically created subcutaneous arterio-venous vessel *anastomosis* used for patients requiring hemodialysis and should **NOT** be routinely accessed by prehospital personnel.

1. **May only be used if the patient is in cardiac arrest and peripheral IV, IO or external jugular access cannot be established.**
2. Access must be made using a **14g or 16g IV catheter**. Do not use anything smaller.
3. **Do not** use an arm with a fistula, shunt or arterio-venous (AV) graft to obtain a blood pressure.
4. **Do not** use an arm with a fistula, shunt or AV graft to establish peripheral IV access.
5. In the event the shunt tubing is pulled out of the entrance site: apply direct pressure, elevate the arm and transport immediately to the hospital.

Internal Medi-Ports

Access requires a specialized needle and **cannot be used** by prehospital personnel.

Critical Thinking Elements

- **Patients with advanced renal disease requiring dialysis have special medical needs that may require specific attention in the prehospital setting. These patients are prone to complications such as fluid overload & electrolyte imbalances, especially if they miss a scheduled dialysis treatment.**
- **Fluid overload may lead to pulmonary edema.**
- **Hyperkalemia may lead to arrhythmias and cardiac arrest. Monitor dialysis patients closely.**
- ***Anastomosis* is the surgical connection of two tubular structures.**
- **Use of the EZ-IO is strongly encouraged over accessing a fistula / shunt.**