

Self-Cannulation of Vascular Access Procedure Example

September 25, 2006

Purpose:

To promote self-care for those of you who have mature accesses; to reduce your anxiety regarding needle insertions, infiltrations and infections. Note: You must learn sterile technique and needle safety training before beginning self-cannulation.

Supplies:

- **Correct doctor-ordered needle gauge (2) – remove from package but leave capped**
- **A clean, protective pad for under the access**
- **Two (2) 10cc syringes**
- **Tourniquet (either Velcro or Latex)**
- **Antimicrobial (70% povidone iodine or 2% chlorhexidine) – unless allergic; alternative – alcohol**
- **Tape – 1" paper and ½" plastic**
- **Clean gloves (2 pair: one for needle insertion; one for needle removal)**
- **Scissor clamp (if using a tourniquet without Velcro)**
- **Alcohol wipes**
- **Normal Saline**
- **Gauze for needle removal**
- **Band-Aids (2)**
- **Sharps container for needle removal**

Insertion Procedure:

1. Check access for signs of infection (redness, swelling, tenderness or abnormal drainage), bruising and prior needle sites.
2. Verify that your access is working by feeling the thrill (pulsation or vibration) or listening for a "whooshing" sound using a stethoscope.

3. Wash hands and access with soap and warm water. Dry hands and access thoroughly.
4. Using sterile technique, draw up 5ccs of Normal Saline into each 10cc syringe and attach the syringes to the needle tubing.
5. Push saline into needle lines until saline reaches the tip of the needles, and then clamp the needle lines.
6. Select sites for access cannulation – avoid curves, aneurysms, and flat spots. Needles should be at least 2 inches from the anastomosis (fistula incision), and should be at least 1 inch apart.
7. Cut all tape necessary before cannulating.
8. Apply an antibacterial cleaning agent in a circular outward direction and follow the manufacturer’s recommendation (example: povidone iodine - wait 3-5 minutes for it to completely dry).
9. Apply a tourniquet – either have a staff member, helper apply the tourniquet or follow the directions below. A tourniquet serves two purposes: to enlarge the fistula so you can feel and see it better; and, to prevent the vein from rolling while cannulating.

- a. When using a tourniquet with Velcro™ edges: wrap the tourniquet above and around the fistula arm, pull tight, and secure with the Velcro™ tab.
- b. When using a tourniquet with no Velcro™: wrap tourniquet above and around the fistula arm, pull both ends straight up with the non-fistula hand. This action will create tension under the fistula arm. Twist tourniquet ends twice, close to the skin, and apply a scissor clamp close to the skin.

10. Put on clean gloves.
11. With your thumb and forefinger, grasp the needle wings together so the needle has the opening (bevel) facing upward.

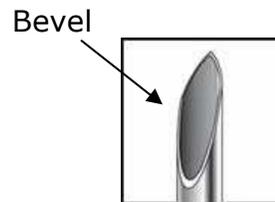


Fig. 1 **

12. Starting with the arterial needle, remove the cap from the needle being careful not to touch it against anything. If the needle accidentally touches anything but where you will stick **do not use** - put it in the red sharps container and open a new needle.
13. Using the hand that is holding the needle, pull back on the skin with light pressure below where you will be placing your needle using the “pinkie” side of your hand – this will keep the vein from rolling and decrease the pain that occurs from needle insertion.
14. Holding the needle at approximately a 25° angle, insert the needle into the skin until you see blood enter the needle tubing.

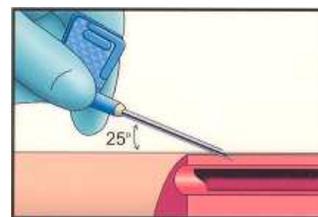


Fig. 2 **

15. Lower the angle of your needle and move the needle forward into the access until the entire needle is under the skin.

16. If you have trouble advancing the needle, **STOP** and call for help.
17. Once the needle is in, place a piece of paper tape over the wings. This will keep the needle from moving side-to-side in the access.
18. Unclamp the needle clamp and pull blood into the syringe. Flush the line making sure no air enters the needle tubing.
19. Clamp the line.
20. Have your helper or staff apply the ½" chevron ("V") to prevent the needle from falling out during the dialysis procedure.

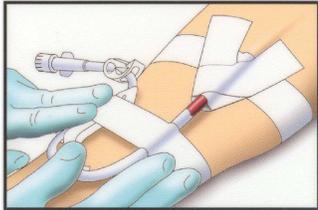


Fig. 3 **

21. Repeat steps 9 through 18 to insert the venous needle.
22. Checking to make sure the needle clamp is closed, remove syringe and attach machine tubing to the arterial needle.
23. Repeat step 20 for venous needle.

Removal Procedure:

1. At the completion of dialysis, clamp both needles.
2. Place pad under arm.
3. Open gauze package.
4. Have your helper or staff carefully remove the chevrons.
5. Hold needle while helper or staff remove remaining tape.

6. Place the gauze over the needle site without applying pressure.
7. After the helper or staff removes the needle, immediately apply pressure until the bleeding stops.
8. Place a band-aid over each site.
9. Place needles in a sharps container.
10. Remove band-aids in 2-4 hours.

Important points:

- **ALWAYS USE A TOURNIQUET – NO EXCEPTIONS!**
- **If you experience pain and/or a sudden swelling (infiltration) around the needle, STOP advancing or flushing the needle and notify your helper or staff. If the needle must be removed, apply pressure to puncture site with 2x2 gauze until bleeding stops. Examine access to determine the location of a new needle site, if appropriate.**
- **Placing needles too close together or in the wrong area can cause you to receive poor dialysis and/or damage your access.**
- **Placement of needles:**
 - Needle tips should ideally be placed 1½ inches apart.
 - Needle placements can depend upon direction of blood flow in your access. CHECK WITH YOUR TRAINER.
 - Arterial needle can be placed either toward the hand or toward the heart.
 - Venous needle must be placed in the direction of flow to prevent turbulence.
- **Always notify your nurse for any problems with needle insertion or when infiltrations occur.**
- **Home patients – keep an extra set of supplies nearby in case you drop or contaminate the supplies you are using.**

** Figures courtesy of Medisystems