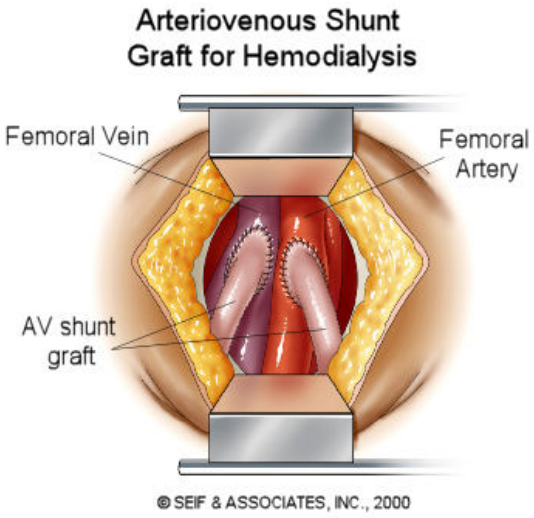
A-V Access (Arterio-Venous Access) for Dialysis

An A-V access is a surgically placed tube that permits repeated access to the blood. This access is required for dialysis. *Dialysis* or *hemodialysis* is a process that filters and cleans the blood in order to eliminate toxic wastes from the body when the kidneys fail to do this on their own. There are different access methods used for dialysis.



METHODS USED IN DIALYSIS

- Double Lumen Catheter - A long, narrow, hollow tube *(double lumen catheter*) is used either temporarily or long term. Those used long term are generally cuffed, tunneled under the skin, and surgically placed. They are often placed when dialysis is needed in an emergency.
- A-V Grafts - A synthetic material, such as a type of Teflon, connects an artery and vein in the arm. It takes around 2 weeks to mature and is often placed a few weeks prior to use.
- A-V Fistula - The A-V fistula is a surgical connection between an artery and vein. It takes around 12 weeks to mature and must be placed several months before dialysis is anticipated. The A-V fistula can last for years.

RISKS & COMPLICATIONS OF THE PROCEDURE

- Catheters may develop serious infections or may clot *(thrombose*) and fail. The catheter can stimulate the clotting in the vein they are placed in. The catheter is placed either into the large vein under your collarbone *(subclavian vein*) or the large vein in your neck *(jugular vein*). Sometimes they are temporarily placed in the large vein in your groin *(femoral vein)*. The subclavian vein catheters are most likely associated with venous thrombosis or clotting.
- A-V grafts can stop working properly because the diameter of the tube can get smaller. As a result, the tube eventually becomes blocked (*stenosis*). A partial block can be found relatively early. However, if left untreated, the stenosis will progress until the vessel is completely blocked. Infection may also occur. An A-V graft will last between 1 and 2 years. This is much shorter than an A-V fistula.
- As with catheters and grafts, infection and clotting are the biggest risks with an A-V fistula. Frequent clotting may require creating a back-up fistula at another site. This will allow for dialysis when one access is blocked. Although an A-V fistula is the most desirable access to use for hemodialysis, it may not be possible. If the veins are not large enough or there is no time to wait for a mature fistula to develop, a graft or a catheter must be used. The infection and narrowing rate, however, is less than the other 2 methods.

HOME CARE INSTRUCTIONS

- Handle the shunt and dressings **CAREFULLY**.
- **DO NOT** use sharp instruments or scissors to remove the dressing. A scissor could accidentally cut the shunt.
- **DO NOT** remove the tape securing the AV junction during dressing changes.
- Use each gauze pad **ONLY ONCE** when cleaning shunt exit sites.
- Avoid wiping any area more than once to lessen the risk of infection.
- Be careful that the tape does not kink or block the shunt when re-dressing the area.
- If exit sites develop a lot of crusting, place a gauze pad with hydrogen peroxide over the area. Do this for an hour to help loosen the crust.
- Keep the incision site clean and dry to prevent infection.
- Clean the site daily until it heals completely. Stitches will be removed (usually about 10-14 days after the

shunt has been placed).

- Practice (1) using a stethoscope to listen for a special noise called a "bruit", and (2) gently feeling the site to detect a vibration referred to as a "thrill".
- Use the arm freely after the site heals. Keep the following in mind:
  - Avoid pressure on the arm.
  - Avoid lifting heavy objects with the arm.
  - Avoid sleeping on the arm with the shunt.
  - Avoid wearing tight-sleeved shirts.
- **DO NOT** allow blood pressure monitoring or needle punctures on the side where the shunt is located.
- Avoid getting the dialysis site wet for several hours after dialysis.
- With permission from your caregiver, you may do exercises to help with blood flow through the shunt. These exercises involve squeezing a rubber ball or other soft objects, as instructed.

SEEK MEDICAL CARE IF:

- Fever develops.
- Swelling around the shunt gets worse.
- New pain develops.
- Unusual bleeding develops at the location of the shunt or from any other area.
- Pus or other drainage is seen at the shunt location.
- Skin redness and/or red streaking is seen on the skin around, above, or below the shunt location.

SEEK IMMEDIATE MEDICAL CARE IF:

- Pain, numbness, or an unusual pale skin color develops in the hand on the side of your shunt.
- Dizziness or weakness develops that you have not had before.
- Shortness of breath develops.
- Chest pain develops.
- The shunt disconnects or breaks with bleeding that cannot be easily controlled.

Wear a medic alert bracelet so health care workers will know you are a dialysis patient so they can care for your veins appropriately.

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