DIALYSIS SHUNT (ARTERIOVENOUS SHUNT)

△ GENERAL INFORMATION
Dialysis is the mechanical removal of waste products from the body. Hemodialysis is a type of dialysis to clean the blood. It is a medical procedure by which a very thin tube is placed in a blood vessel and used to take blood and pass it through a machine that cleans it of waste products usually removed by normal kidneys. The clean blood is then returned to the bloodstream.

WHY DIALYSIS IS DONE
Dialysis is done for persons whose kidneys are not well enough to remove waste products from their bodies. If dialysis is not performed, these people go into kidney failure and eventually die from the buildup of poisonous waste products. Alternative therapy may include placing a catheter into the abdominal cavity and using it to instill a special cleansing fluid into the abdominal cavity. After a short while, the fluid is removed and it brings some of the waste products with it. This form of dialysis is called peritoneal dialysis.

HOW DIALYSIS WORKS
To do a hemodialysis, it is necessary to take blood from a vessel that has a lot of blood flowing through it. The artery in the wrist is such a vessel. Unfortunately, it is very difficult to safely stick the artery with a needle too many times. The vein is such a vessel that a technician can easily see and stick with a needle. Unfortunately, the blood does not flow through it fast enough to perform the dialysis procedure. Besides, if the vein is stuck too often, the blood in it will clot.

The solution is to connect the artery directly to the vein so that the vein now has a lot of blood flowing through it (Fig. 1). This is called a shunt; the medical term is arteriovenous shunt, or arteriovenous fistula.

TYPES OF SHUNTS
There are two types of shunt: A shunt can be made by connecting the artery to the vein directly. This is a natural shunt. If for some reason the artery and vein cannot be connected directly, a small plastic tube is used to make the connection. This is a graft shunt.

When a shunt needs to be used (whichever type you have), a special needle is placed into the vein or plastic connection so that blood can be taken swiftly and sent to the cleaning (dialysis) machine. After the blood has been cleansed, it is returned to the same vein by another needle (Fig. 2). A surgical operation is necessary to make a shunt.

Figure 1. Shunts for use in dialysis can be placed in a number of areas of the body. The most common is just above the wrist between the artery (radial) and the vein (cephalic).

Figure 2. After the anastomosis is made, the flow of blood in the vein is greatly increased. The needle for use during the dialysis is placed in the vein anywhere along the area marked with an asterisk.
PREOPERATIVE PREPARATION

- Do not eat or drink anything for 8 hours before the operation.
- Shower as usual on the morning of the operation.
- You may be given medicine that will make you feel drowsy before you are brought to the operating room.
- The doctor will tell you if you have to make any changes in your medicines before the operation.

**OPERATION**

- On the morning of the operation, some blood may be taken to be examined for the level of chemicals in it.
- A fine needle will be used to place an anesthetic in the skin of the wrist area to make it numb. Also, you may be given medicine that will make you feel drowsy during the operation.
- You may feel some tugging during the operation but not pain.
- The operation usually takes about 2 hours.

**POSTOPERATIVE CARE**

- You will be taken to a recovery room. When your blood pressure, pulse, and breathing are stable and you are completely alert, you should be able to go home that same day with a responsible adult.
- Arrangements will be made for your medicine, follow-up office visit, and stitch removal.

**HOME CARE**

- Keep the dressings dry until the stitches are removed. If the dressings get wet, replace them with sterile dry ones.
- Do not use dressings that place pressure on the shunt or completely encircle the arm or wrist.
- Exercise your natural shunt by squeezing a rubber ball 10 times, four times a day. This is not necessary if you have a graft shunt.

**HOW TO PROTECT YOUR SHUNT**

All of the following are to help prevent cutting off the flow in your shunt because that would cause the shunt to clot and stop the flow permanently.

- Do not sleep on your shunt.
- Do not wear jewelry or tight sleeves on the arm that has the shunt.
- Do not carry anything hanging over the arm with the shunt.
- Do not let anyone take your blood pressure or take blood from the arm with the shunt.
- Check the shunt for any problems every morning and evening:
  - Loss of the “thrill” over the shunt.
  - Loss of pulsation over the shunt.
  - Pain or hardness in the area of the shunt.
  - A red or swollen incision, or one that is draining.
- If any of the above are present, do not pick at your shunt. Use the telephone number given to you to contact the doctor or nurse promptly. If this is not possible, go to a hospital emergency room.
- If there is bleeding from the needle puncture site, keep continuous gentle pressure on the puncture site for 30 minutes with a piece of sterile gauze. If it still bleeds when you remove the pressure, reapply the pressure and call the doctor or go to a hospital emergency room.

The shunt you have is very important to your health. If it is properly taken care of, it can last you quite a long while.