

## Procedure Information Sheet - Arteriovenous Fistula

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### **Introduction**

Creation of Arteriovenous (AV) Fistula is necessary for patients on long-term hemodialysis treatment. It usually takes 6-8 weeks for the fistula to 'mature'. On maturity, the vein becomes stronger and can better withstand repeated needle punctures. Success of the surgery is therefore very important to the patient who can contribute to the success of the procedure in many ways.

### **Procedure**

1. Arteriovenous fistula creation is a minor surgery. To create a fistula, the surgeon will join artery and a vein on a patient's forearm with local anaesthesia.
2. The patient will remain conscious throughout the surgery. Under certain circumstances (e.g. the patient is a child); the surgery will be done under general anaesthesia.

### **Pre-procedural preparation**

1. You will need to sign a consent form and your doctor will explain to you the reason, procedure and possible complications.
2. The surgeon will evaluate the distribution of blood vessels in the patient's hand and determine which arm is more suitable for the operation. Do not draw blood, take blood pressure, or administer intravenous injection and infusion on the arm chosen for the operation.
3. The patient should exercise the arms 4 times daily to increase blood flow and develop stronger veins. Each exercise should last for 10-15 minutes. Do the exercise by lowering one arm and clenching the fist (with or without a ball) and use the other hand to grasp the upper arm tightly. Hold for 10 seconds and relax. Repeat the procedure for 10-15 minutes.

### **Possible risks and complications**

1. Stenosis of fistula, leading to decreased blood flow or thrombosis
2. Thrombosis of the fistula
3. Ischemia of the hand
4. Swelling of the hand
5. Aneurysm and pseudo-aneurysm formation
6. Infection of the fistula
7. Heart failure

### **Post-procedural information**

#### ***A. Hospital care***

1. If the operation is successful, blood from the artery will flow to the vein and vibrations can be felt at the site of operation.
2. The site of operation and the vibrations will be monitored and checked by a renal nurse, who will change the dressing when necessary.

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3. The patient's arm will become distended after operation. Placing the arm on a pillow helps relieve swelling. Be careful not to put the pillow on the site of operation; otherwise blood flow may be affected.
4. If patient feels pain at the site of operation, he/she can ask the health care professionals for painkillers. If things go well, the patient can be discharged on the same day.

### ***B. Home care after discharge***

1. The patient should take good care of the fistula, which is his/her 'lifeline'. Check the blood flow at three different times of a day (morning, afternoon and night) by feeling for vibration. If vibration has weakened or stopped, inform the health care professionals immediately.
2. Don't do anything that may affect blood flow:
  - (a) Do not wear clothes with elasticized sleeves at the cuff.
  - (b) Do not draw blood, take blood pressure, or administer intravenous injection or infusion on the fistula arm.
  - (c) Do not wear jewelry, watches or bracelets on the fistula arm.
  - (d) Do not sleep with the pillow on the fistula arm.
  - (e) Do not carry anything heavy with the fistula arm or do any vigorous physical exercises.
3. Check for inflammation at fistula site, such as redness, a feeling of excess warmth or pain.
4. In case of dehydration, clotting consequential to slow blood flow can block the fistula. If experience diarrhea, vomiting or profuse sweating, the patient has to drink more water and inform the renal nurse immediately.
5. Check the blood pressure. When blood pressure is low, lie down and inform the renal nurse immediately.
6. The patient should take good care of the fistula to prevent excessive bleeding. If there is injury to the fistula with bleeding, use the other hand to press on it. Raise your arm and inform the health care professionals.
7. If everything is normal 10 days after the operation, the patient may exercise the arm 4-5 times every day to increase blood flow in the fistula. Do the exercise by clenching the fist (with or without a ball). Hold for 10 seconds and relax. Repeat the procedure for 10-15 minutes.
8. If fistula heals in 14 days, sutures will be removed and the patient can wash hands as usual.

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### C. Care after using the fistula

1. Fistula is ready for use. To prevent infection, always wash both hands up to the elbow with warm water and soap before hemodialysis.
2. On completion of hemodialysis, apply pressure to the needle site with a sterile gauze pad until bleeding stops. If it starts to bleed again after returning home, calmly apply pressure to the needle site with a gauze pad until bleeding stops. The pad can be removed the next day (do not apply non-allergic tapes tightly to the needle site).
3. Inform health care professionals prior to any minor surgeries (such as tooth extraction) so antibiotics can be given to prevent infection.
4. Should there be any discomfort of the fistula arm, such as redness, a feeling of excess warmth, swelling or numbness, inform the renal staff immediately for early treatment.
5. Check the fistula at different times of day (morning, afternoon and night). If vibration has weakened, inform the renal staff immediately. If blood flow is too low, the fistula will not be used for hemodialysis. Instead, a temporary venous dialysis catheter will be inserted to the internal jugular vein or femoral vein for hemodialysis until blood flow of the fistula becomes normal or a new fistula has matured.
6. Maintain good personal hygiene. Use warm water to clean your body and the access arm. If the access arm becomes dirty, clean it with non-corrosive soap immediately.

### **Remark**

- A good fistula is crucial to the success and safety of hemodialysis. Patient should always take good care of the fistula.
- The above mentioned procedural information is not exhaustive, other unforeseen complication may occur in special patient groups or different individual. Please contact your physician for further enquiry.

**Reference:** [http://www21.ha.org.hk/smartpatient/tc/operationstests\\_procedures.html](http://www21.ha.org.hk/smartpatient/tc/operationstests_procedures.html)

I acknowledge that the above information concerning my operation/procedure has been explained to me by Dr. \_\_\_\_\_. I have also been given the opportunity to ask questions and receive adequate explanations concerning my condition and the doctor's treatment plan.

**Name:**

Pt No.:

Case No.:

Sex/Age:

Unit Bed No.:

Case Reg Date & Time:

Attn Dr:

Patient / Relative Signature: \_\_\_\_\_

Patient / Relative Name: \_\_\_\_\_

Relationship (if any): \_\_\_\_\_

Date: \_\_\_\_\_