



# Vein Preservation in Patients with Chronic Kidney Disease

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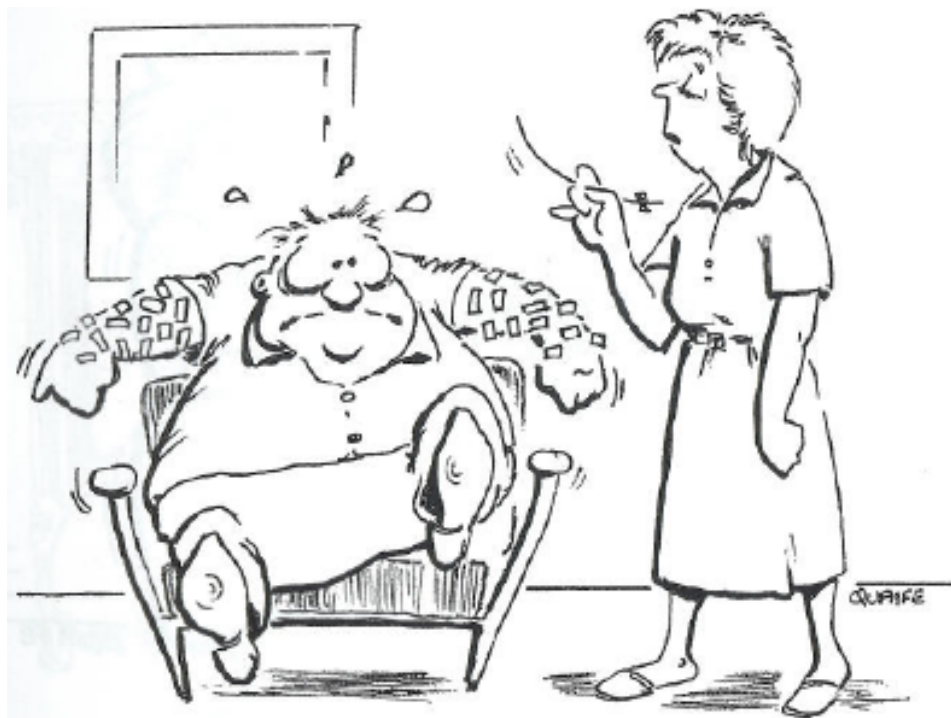
# Outline

1. Why is vein preservation SO important in patients with chronic kidney disease?
2. What can be done to preserve veins in these patient?

# Why is vein preservation SO important?

- Patients with chronic kidney disease (CKD) may be on hemodialysis (HD) or may need HD in the future.
- The best way for administering HD is through a fistula (1<sup>st</sup> choice) or graft (2<sup>nd</sup> choice). A fistula or graft has a much lower rate of complications than a catheter.
- Creation of a successful fistula is dependent on having patent peripheral arm veins and a healthy venous circuit back to the heart.
- Venipuncture, peripheral IVs or PICC lines can damage veins and jeopardize future fistula construction or function.
- Preservation of arm and central veins needs to start before the patient needs an access. If already on HD, need to preserve all remaining veins.

*A fistula is a CKD patient's lifeline!*



Don't worry, I'll find a good site soon.

# Fistula/Graft: the Lifeline!



# Vein preservation: Provincial guideline

- Led by BC Provincial Renal Agency.
- Input provided by vascular access (renal) nurses and doctors and IV therapists from across BC.
- Available on the BC Renal website at [www.bcrenal.ca](http://www.bcrenal.ca).
- All centres are encouraged to implement the guideline.

# Vein preservation: Target group

Patients with known stage 4 or 5 (eGFR<30) CKD, including patients currently on dialysis (HD or PD) or with a functional kidney transplant.

Stage	Description	eGFR (mL/min/1.73 m <sup>2</sup> )
1	“Normal” renal function	≥90
2	“Mild” renal dysfunction	60-89
3	“Moderate” renal dysfunction	30-59
4	“Severe” renal dysfunction	15-29
5	“End-Stage” renal disease	<15



# Phlebotomy &/or peripheral venous access



## 1<sup>st</sup> choice:

- Dorsal veins of the hand (either hand)



## 2<sup>nd</sup> choice: Forearm veins:

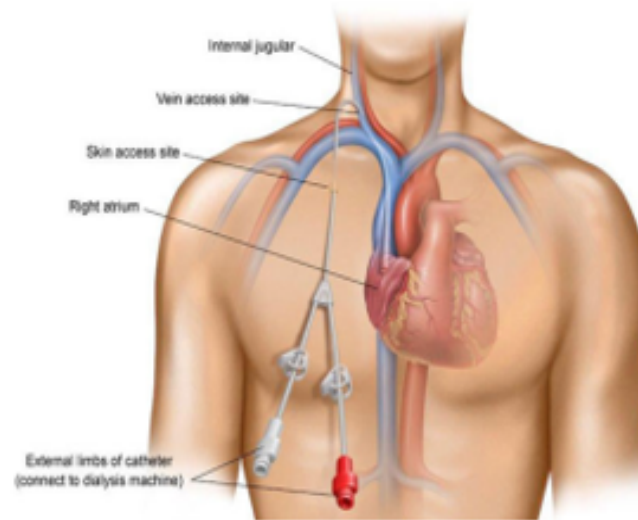
- If access in place, forearm veins of the non-access arm
- If no access in place, forearm veins of the dominant arm

## Last resort: Forearm veins:

- If access in place, forearm veins of the access arm
- If no access in place, forearm veins of the non-dominant arm

DO NOT USE THE CEPHALIC VEINS.

# Central venous access (small bore, tunneled CVC or port)



**1<sup>st</sup> choice:** Internal jugular veins (right IJ preferred)

**2<sup>nd</sup> choice:** External jugular veins

Other options:

- Subclavian veins (only when jugular options are not available)
- Femoral veins
- Translumbar or transhepatic access to the inferior vena cava

# Vein preservation: Important Points

## **Phlebotomy &/or peripheral venous access**

1. Use as small a needle as possible (general rule: 22 gauge or smaller)
2. Rotate venipuncture sites.

*In, addition, if on hemodialysis & have fistula/graft:*

3. Never use tourniquets on or above the access during blood draws.
4. Draw labs at time of hemodialysis, when possible.
5. For blood pressure readings, use the non-access limb.
6. For diagnostic studies or treatments, use the non-access limb.
7. The use of clotting devices (e.g., tourniquets or straps) to assist clotting are not recommended.

## **Central venous access**

1. If long-term access is required, use a small (<8 French) tunneled internal jugular line.
2. DO NOT use a peripherally inserted central catheter (PICC) unless it is known for certain that the patient will never be a candidate for a fistula/graft. PICC lines can damage veins that may be needed in the future for a fistula or graft.

# Vein preservation: “Flagging” patients in target group

- Suggest patient wear a purple wristband & carry a wallet card (available from VA RN in each HA)
- Stamp lab requisitions or enter with lab orders in computer “RENAL PATIENT: Try to use hand veins for venipuncture”.
- If computer system allows, flag patients in hospital/office computer.
- Inpatient: Put poster at the patient’s bedside (sample on BC Renal website, Vein Preservation)

## Patient Handout: Save My Veins



### Why protect your veins?

Your arm veins provide the best access to your bloodstream if you need a fistula or graft for hemodialysis.

Placing an IV or having blood taken from your arm veins can damage the veins and make it difficult to create a fistula or graft in the future.

It is important that you save your fistula arm for dialysis and let others know this.



### Tools to help remind you and your healthcare providers to save your veins:

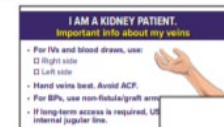
#### Purple wristband

- Your kidney care team will tell you which arm to wear this wristband. Keep it on this arm.
- Show this arm band to healthcare providers before they take blood or start an IV.
- It will be available to healthcare providers in an emergency.



#### Wallet card

- Carry this card in your wallet or purse.
- Show this card to healthcare providers before they take blood or start an IV.
- It will be available to healthcare providers in an emergency.



# Questions?

