Vein Preservation and Hemodialysis Fistula Protection

People with chronic kidney disease (CKD) or a disease like diabetes, hypertension, lupus, or polycystic kidney disease that can damage the kidneys could develop kidney failure requiring dialysis. Hemodialysis is done with a vascular access—an arteriovenous fistula (usually in an arm), an arteriovenous graft (in an arm or leg), or a central venous catheter. Patients have only a few sites where an access can be created. The dialysis access is a patient’s lifeline and must be protected.

Patients with CKD will be taught to protect their veins. A patient who comes for blood draws or tests may ask you to use the dorsum of their hand (unless emergency IV access is needed). Please respect this request and look for another site, because in people with CKD:
- Veins in both arms that could be used for hemodialysis vascular access MUST be preserved.
- Venipuncture or IV placement could damage these veins so they can’t be used for hemodialysis access.
- Subclavian vein catheterization can cause central venous stenosis, which can make it impossible to use that side of the body for hemodialysis access—cutting the patient’s access choices in half.

If a CKD patient has a working hemodialysis access:
- DO rotate venipuncture sites
- DO use the dorsum of the hand of the non-access arm for venipuncture and IV infusions
- DO draw labs at the time of hemodialysis when possible
- DO coordinate with the surgeon and anesthesiologist when the non-access arm is the primary surgical site, to avoid using the patient’s hemodialysis vascular access.
- DO NOT use the hemodialysis access limb for blood pressure readings (use the other arm or a thigh or ankle cuff for blood pressure readings)
- DO NOT use the hemodialysis access limb for blood draws, IV therapy, or an arterial line
- DO NOT use the hemodialysis access for diagnostic studies or treatments
- DO NOT use the cephalic veins of either arm for blood draws, IV fluids, or IV drug infusions
- DO NOT place a subclavian catheter or a PICC line (place an internal jugular line, instead)

If the patient has CKD or is at risk for CKD, whether or not he/she is on dialysis:
- DO use the dorsum of the hand for venipuncture and IV infusions
- DO rotate venipuncture sites
- DO use a manual blood pressure device
- DO NOT use the cephalic veins of either arm for blood draws, IV fluid therapy, or drug infusions
- DO NOT place a subclavian catheter or a PICC line (place an internal jugular line, instead)

If you are unsure whether a patient with CKD has a hemodialysis access:
- Ask the patient or family member who is with them
- Call their referring nephrologist or primary care physician
- Perform a nursing assessment including both upper extremities to see if the patient has a hemodialysis access. Look for the access (surgical anastomosis site), feel for a thrill and listen for a bruit.

1 If you do not know whether a patient has CKD, check with the patient or a family member, ask the referring physician, or determine an estimated glomerular filtration rate (GFR), which is a measure of kidney function. You can find a GFR calculator online on the website of the National Kidney Disease Education Program: www.nkdep.nih.gov. A GFR <60 suggests CKD. Serum creatinine alone should not be used to determine kidney function.

This educational item was produced through the AV Fistula First Breakthrough Initiative Coalition, sponsored by the Centers for Medicare and Medicaid Services (CMS), Department of Health and Human Services (DHHS). The content of this publication does not necessarily reflect the views or policies of the DHHS, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. Government. The author(s) assume full responsibility for the accuracy and completeness of the ideas presented, and welcome any comments and experiences with this product.

Revised 08-11