

What is an AV fistula?

An AV fistula is a type of internal hemodialysis vascular access surgically created by connecting a vein to an artery. This anastomosis enables arterialization (thickening and strengthening) of the vein wall to accommodate insertion of the hemodialysis needles. The patency and suitability of the arteries and veins are evaluated through physical examination and duplex ultrasound studies. The cephalic and basilic veins, and the radial and brachial arteries are the preferred AVF vessels. Common AVF sites are the arm and forearm.

Other hemodialysis vascular access options include an arteriovenous graft (AVG), which requires a synthetic conduit between the artery and vein; and a central venous catheter (CVC), which is a temporary or last-resort access option.

Why is an AV fistula preferred to other vascular access types?

AV fistulas are associated with lower rates of infection, hospitalization and death when compared to grafts and CVCs. An AV fistula has greater longevity, requires fewer surgical repairs, clots less frequently and is cost effective.

Is Vessel Preservation Important in Earlier Stages of CKD?

Yes it is, to improve the likelihood of successful AV fistula creation. Some effective strategies to prevent central or peripheral venous stenosis and thrombosis of potential fistula vessels include:

- Avoiding intravenous therapy or venipuncture from the cephalic veins - use hand veins instead.
- Avoiding PICC lines or other catheterization of the subclavian vein.
- Educating and encouraging patients to tell clinicians that they have CKD and must not have these veins cannulated except in an emergency.
- Implementing early referral to a nephrologist for consultation and vascular access planning.

CKD has 5 stages that are delineated by glomerular filtration rate (GFR); actions to preserve veins are recommended for any patient with moderate (stage 3) to severe (stage 4) CKD (GFR < 60 mL/min/1.73 m²), in case hemodialysis becomes necessary to treat kidney failure (stage 5).

Why should I have my patient evaluated early for an AV fistula?

AV fistulas are the gold standard for vascular access. The National Kidney Foundation's Kidney Disease Outcomes Quality Initiative (KDOQI) clinical practice guidelines recommend that at least 65% of prevalent hemodialysis patients should have a functioning AV fistula. Currently, only about 45% of hemodialysis patients in the United States have one, compared with 70% to 90% in Europe and Japan.

What if an AV fistula isn't right for my patient?

AV fistulas are the first, but not the only vascular access choice. A successful, long-term AV fistula may not be feasible in every patient. Severe vasculopathy, for example, could preclude AV fistula creation and maturity. The next best choice would be an AV graft. A CVC should be considered a last option for long-term vascular access.

What is AV Fistula First?

AV Fistula First began in 2003 as a breakthrough initiative of the Centers for Medicare and Medicaid Services (CMS) in collaboration with numerous organizations from the renal community. This coalition is working to increase the rate of functional AV fistulas in every suitable hemodialysis patient, and also to promote education and training for health care professionals who care for people at any stage of CKD.

What are AV Fistula First's goals?

We are working to meet the KDOQI guideline and the CMS stretch goal of increasing the nationwide percentage of patients on hemodialysis using AV fistulas to at least 66% by the year 2009.

What is AV Fistula First doing to achieve its goals?

The activities of our coalition include:

- Identifying, evaluating and spreading evidence-based strategies for advancing care and improving clinical outcomes in individuals with CKD, in particular, those who are approaching hemodialysis.
- Identifying and addressing system barriers that prevent early identification of CKD, early referral to nephrology care and timely evaluation for fistula creation in all suitable hemodialysis patients.
- Development of a comprehensive video and slide training resource for hemodialysis staff that provides theoretical and practical instruction about fistula care, cannulation, infection control, and recognizing, treating and reducing complications associated with AV fistulas.
- Providing information and resources to non-dialysis and non-nephrology clinicians who care for people with CKD. This is a major element of our efforts to build more integrated CKD care among disciplines and settings.

Where can I get more information?

Learn more about the AV Fistula First breakthrough initiative, locate information and resources to improve care for hemodialysis patients, and find additional clinical FAQs on the website at www.fistulafirst.org.

www.fistulafirst.org

"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."