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Dr. John Duch is an interventional nephrologist with Lincoln Nephrology and Hypertension. He received his medical degree from

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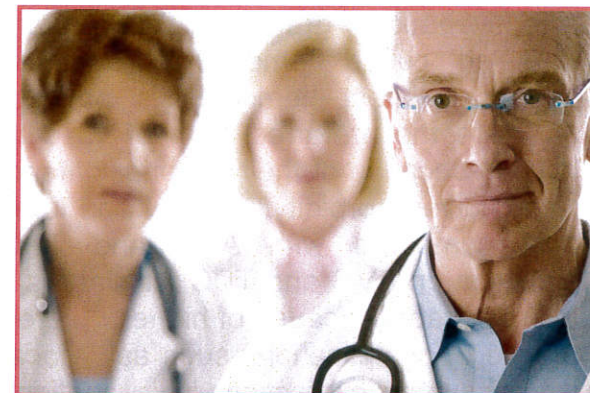
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**Why the Fistula  
Should be First**

**Nebraska Kidney Association**  
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# **Doctor to Doctor**

## **Why the Fistula Should be First**



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# Why the Fistula Should be First

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Lincoln Nephrology and Hypertension

Successful creation and maintenance of functional vascular access is critically important to hemodialysis patients. Common types of vascular access include autogenous arteriovenous fistulae (AVF), prosthetic or bioprosthetic arteriovenous grafts (AVG), and tunneled, cuffed hemodialysis catheters (TDC). In most hemodialysis patients, AVF are the preferred form of vascular access because of their superior patency rates, lower morbidity/mortality and lower cost compared with AVG and TDC. Reliance on AVG and TDC for dialysis is less desirable because of higher prevalence of complications such as localized or systemic infections in patients with these accesses. In fact, recent research indicates higher cardiovascular morbidity and all-cause mortality in patients dialyzing with TDC. Despite this knowledge, which has been widely disseminated throughout the nephrology community, over 70% of incident and 20% of prevalent hemodialysis patients are currently dialyzed using TDC in the United States.

Establishment of a low-maintenance, well-functioning AVF requires adequate arterial inflow, a sufficiently superficial, straight venous conduit, and unimpeded draining and central venous outflow. Consequently, preservation of superficial and central veins is of paramount

importance. Unfortunately, the increasing prevalence of venous access devices (including PICC, pacemakers and AICD) poses a substantial threat to achieving these goals in patients with chronic kidney disease (CKD) in whom these procedures are often contemplated or performed. Canulation of veins for the purpose of insertion of these devices has the potential to cause injury through phlebitis, thrombosis, stenosis, sclerosis or occlusion, thereby limiting options to successfully create AVF for vascular access in the event of progression to ESRD (end-stage renal disease).

Accordingly, the Centers for Medicare and Medicaid Services (CMS) and the 18 regional ESRD networks developed and launched a nationwide National Vascular Access Improvement Initiative (NVAII) in 2003-2004 also known as the "Fistula First" initiative. The main objective of Fistula First is to maximize the chance that all hemodialysis patients will have the most optimal vascular access, which in most cases will be an AVF. The basic construct of "Fistula First" is an 11-point package containing organizational concept changes designed to increase the percentage of AVF in incident and prevalent hemodialysis patients. The initial goal, to increase AVF use in prevalent hemodialysis patients to 40%, was reached in 2005. A new "stretch goal" of 60% has been targeted for 2009.

In March of 2008, the American Society of Diagnostic and Interventional Nephrology Clinical Practice Committee and the Association for Vascular Access published a joint position statement containing guidelines for venous access in patients with CKD to reduce unnecessary damage to peripheral and central veins. Primary recommendations include avoidance of PICC and subclavian central lines in patients with CKD stages 3-5 (eGFR < 60 ml/min) and renal transplant patients. In these patients, internal jugular veins are the preferred location for central venous access and dorsal hand veins are preferred for phlebotomy and peripheral venous access.

In summary, an AVF is the best option for long-term hemodialysis vascular access, as it provides the best patient outcomes. Identifying CKD patients at risk and implementing a protocol to protect their veins and refer them early to an experienced vascular surgeon will optimize their chances of success.

## FOR MORE INFORMATION

Contact Dr. Duch at 402.484.5600 or via e-mail at [jdduch@alltel.net](mailto:jdduch@alltel.net)  
Another resource is [www.fistulafirst.org](http://www.fistulafirst.org)