How the Test is Done

Remove all jewelry. For an arm scan, the arm is turned outward. Gel is put on the skin to help carry the sound waves. The transducer is moved along the arm and sounds from the blood flowing in the vessels may be heard. You may be asked to remain still during this procedure.

How the Test Feels

There is normally no pain or discomfort with the test. The gel may feel cold when applied, unless it is warmed by a warmer. If your blood pressure is taken during the test, you will feel pressure when the cuff inflates.

Checking Arteries in the Arms

This test is often performed on both arms for comparison. Blood pressure may be taken from several different places on your arm. Usually, blood pressure is taken in your lower arm and then in your upper arm.

Checking Veins in the Arms

For this test, you may be asked to lie still or hold your arm still. Changes in blood flow are noted in response to your breathing patterns.

Heartland Kidney Network

We're Here For You.

Heartland Kidney Network

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Patient Information Series

Promoting and facilitating high quality care standards for dialysis and kidney transplant patients in Iowa, Kansas, Missouri and Nebraska.

Heartland Kidney Network

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Doppler Studies & Vessel Mapping

PATIENT EDUCATION SERIES

arteriovenous FISTULA FIRST
AVF — The first choice for hemodialysis

What You Should Know

A pain-free test may be ordered before a fistula is placed, or if it fails to develop. This brochure explains the test, how to prepare and what toexpect when going in for a Doppler exam.

INSIDE!

- **What is a Doppler Study**
- **Types of Doppler Tests**
- **What to Expect**

This publication has been approved as appropriate community education by the Centers for Medicare & Medicaid Service's Fistula First Breakthrough Initiative Members. Feel free to copy this resource in its entirety for educational purposes. 2006.

www.fistulafirst.org

Doppler Testing & Vessel Mapping

A Doppler study may be ordered before a fistula is placed to help the doctor evaluate the flow of blood through your veins and arteries. The test uses ultrasound waves to make a picture of the blood going through your blood vessels. The doctor can then make a "road map" of your veins and arteries. The picture below was drawn by the doctor and is a "road map" of this person's vessels.

During a Doppler test, a handheld instrument (transducer) is passed lightly on the skin above a blood vessel. The transducer sends and receives sound waves. The sound waves bounce off solid objects, including blood cells. The movement of blood cells causes a change in the pitch of the sound waves. If no blood flows through an area, the pitch does not change. The sound waves are sent to a computer, which changes the sound waves into pictures.

This is a picture of a Doppler machine.

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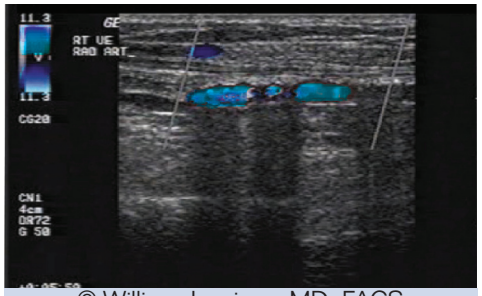
This is a picture of a Doppler study being performed.

This is a picture made by sound waves from the ultrasound. A computer interprets the sound waves and creates a picture. Doppler studies usually have shades of red to blue. This is a modified example only.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Different Doppler Tests

A Duplex Doppler makes a picture of a blood vessel and organs around the blood vessels. A computer changes the sounds into a graph that tells the doctors about the speed and direction the blood flows through your veins and arteries.

A Color Doppler makes a picture of the blood vessels. A computer changes the sounds into colors that are laid over the picture of a blood vessel. The colors show the speed and direction blood flows through your veins and arteries. The picture on the bottom of the center column is a Color Doppler picture modified for this brochure.

Regardless of which Doppler is used, there are no known risks for having a Doppler test done.

How to Prepare

Nicotine causes blood vessels to narrow. A doctor may ask that cigarettes, chewing tobacco or nicotine gum not be used from 30 minutes to an hour before the test. If you smoke or chew tobacco, ask if you need to stop before the test is done.