

Non-invasive Vascular Diagnosis

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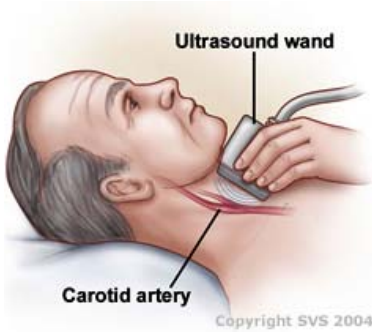
One of the major assets of the vascular specialist is the ability to diagnose vascular disease using non-invasive techniques, including ultrasound, blood pressures and plethysmography. These techniques utilize sound waves or blood pressure cuffs to evaluate arteries and veins. The studies are termed non-invasive because these technologies do not require incisions, catheters or needles.

Ultrasound can diagnose stenotic vessels, aneurysms and clots in arteries or veins. It is an effective tool for screening an undiagnosed population because it is inexpensive, fast and accurate. Ultrasound can also be used to determine whether a patient should receive surgery. Another common use of ultrasound is for monitoring the status of previous surgeries. Blood pressure measurements and plethysmography can determine whether blood flow in an extremity is normal or decreased and where the abnormality may be located. These methods reliably predict when bypass grafts or other treatments of artery disease are in jeopardy and require further treatment.

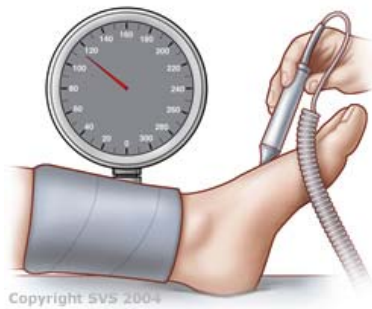
Noninvasive vascular studies are performed in vascular laboratories that may be located in a doctor's office, a multi-specialty clinic or in a hospital. Vascular laboratories are accredited by the International Commission for the Accreditation of Vascular Laboratories (ICAVL). This group is composed of representatives from medical specialties with an interest in noninvasive vascular diagnosis and includes radiologists, vascular surgeons, cardiologists, vascular technologists and others. The ICAVL establishes standards for vascular laboratory testing and reviews the processes and quality of work for each lab that receives accreditation. ICAVL approval assures the patient the laboratory has met rigorous standards for quality and accuracy of noninvasive vascular testing. Technologists performing studies in ICAVL accredited vascular laboratories are encouraged to take and pass an examination attesting to their knowledge and skills in performing vascular laboratory studies. At least one technologist in an ICAVL approved laboratory must have passed this examination. Physicians that interpret the studies and render their impressions also are required to meet specified high levels of experience and continuing education in the field of noninvasive vascular diagnosis.



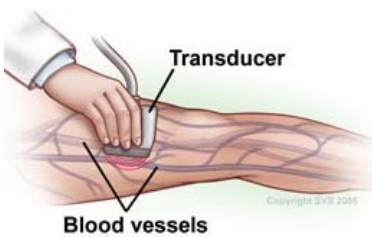
The vascular laboratory experience for the patient should be comfortable. Most examinations are performed with the patient lying down. When ultrasound is used a warm gel is applied to the area that will be examined.



An instrument (probe) is used by the technologist to collect the information. Gentle pressure is applied, but this does not typically cause discomfort. Given the minimal time, low cost, and no risk of vascular laboratory examinations the quality and quantity of information obtained is extremely valuable and cost effective. Ultrasound is accurate enough to determine whether a narrowing of the carotid artery should be treated with an operation.



Examinations measuring blood pressures or using plethysmography are performed by applying a series of blood pressure cuffs to the extremity being examined and information is collected following inflation of the cuffs. Studies can generally be completed in 30 to 60 minutes.



Ultrasound is also the standard diagnostic test for evaluation of possible blood clots in veins of the upper and lower extremities. Arteries supplying blood to the kidneys and intestines can also be evaluated by ultrasound in the noninvasive vascular laboratory for potential blockages producing high blood pressure, kidney failure or pain with eating. Interventions for varicose veins can in most cases be completely planned using ultrasound testing.

Outcomes after surgery and interventions are routinely monitored using vascular laboratory testing. With monitoring of vascular interventions in the vascular laboratory problems with these interventions that develop after the operation can be detected even before symptoms develop. When such a problem is

detected treatment can be instituted before the problem causes the intervention to fail. Treatments performed for a failing, but not actually failed, intervention are generally much less complicated than treatments required for a failed intervention.

Non-invasive evaluation of vascular disease has been a mainstay of diagnosis and treatment decisions for patients with vascular disease of their arteries or veins for decades. Improvements in technology continue to make these methods even more valuable to vascular specialists and their patients. Noninvasive vascular studies safely provide accurate and important information during a brief and comfortable experience for the patient.

To learn more about your vascular health and find a vascular surgeon visit VascularWeb.org.