

ULTRASOUND PROTOCOLS



Reviewed: 1/5/2026; 1/10/2025; 01/11/2024; 01/12/23; 01/29/22; 10/30/20

Venous Mapping Ultrasound

Indication	Varicose veins
Prep	Patient Supine with leg externally rotated and knee slightly bent and upright
Special Instruction	None
Procedure	<p>Deep Venous Study</p> <ul style="list-style-type: none"> • Transverse grayscale images with and without transducer compressions of the affected lower extremity of the CFV, SFJ, mid FV, popliteal vein, GSV, and LSV. Demonstrate patency with color and spectral Doppler. Document the presence, location, severity, and age of thrombosis (acute v. chronic). <p>Superficial Vein Mapping</p> <ul style="list-style-type: none"> • Measure diameter and vessel depth of the GSV at the proximal, mid, and distal thigh, and 5cm distal to the knee. Measure diameter and vessel depth of the LSV at the proximal and mid-calf. <ul style="list-style-type: none"> ○ Inner-to-inner wall vessel measurements must be obtained in the transverse plane ○ Document the presence and location of any major tributaries, varicosities, tortuosity, or aneurysmal segments of the GSV and LSV <p>Competency</p> <ul style="list-style-type: none"> • Reflux is treatable if the vein refluxes for more than 3 seconds (< 0.5 seconds reflux is normal). Patency and competency should be demonstrated with color and spectral Doppler in the following veins with the patient upright and bearing weight on the unaffected leg (or in steep reverse Trendelenburg if the patient is unable to stand). Competency should be tested using the Valsalva maneuver and/or distal augmentation. If vein is competent proximally, then distal augmentation should be used to test for reflux. <ul style="list-style-type: none"> ○ SFJ (w/ Valsalva) ○ GSV ○ SPJ (Note: This is absent in 25% of the population) ○ LSV <p>Perforating Veins</p> <ul style="list-style-type: none"> • If indicated, examine perforating veins located in the medial calf (begin by scanning transversely along the posterior tibial veins). If flow is observed going from deep to superficial, the perforator is incompetent. Document incompetent perforators and their diameter, depth, and distance from medial malleolus.