

The Lower Extremity Vein Evaluation For Reflux

Nicos Labropoulos
 Professor of Surgery and Radiology
 Director, Vascular Laboratory
 Division of Vascular Surgery
 Stony Brook University Medical Center
 Stony Brook, NY
 nlabrop@yahoo.com

Superficial veins

- GSV
- SSV
- Accessory veins
- Saphenous tributaries
- Nonsaphenous

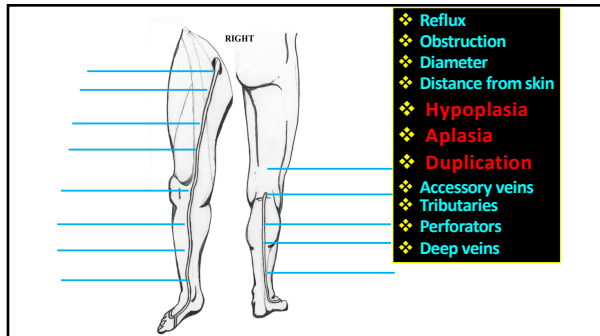
Perforator veins

Thigh, knee, calf, ankle, foot

Deep veins

- Axial
- Muscular

- Skin
- Fascia
- Fat
- Muscles
- Ligaments
- Bones
- Arteries
- Lymphatics
- Nerves

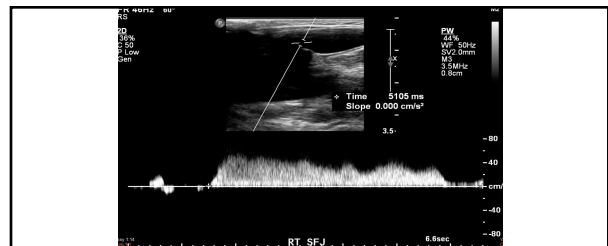


Labropoulos N et al. J Vasc Surg 2003;38:793-8

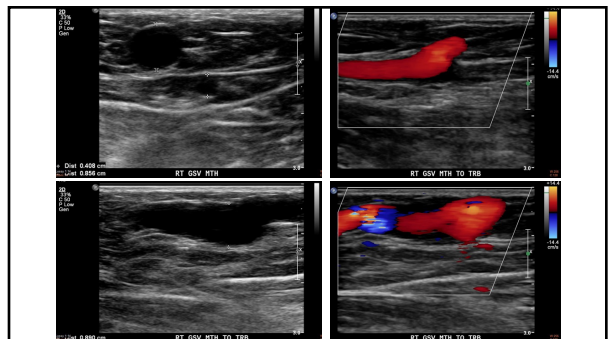
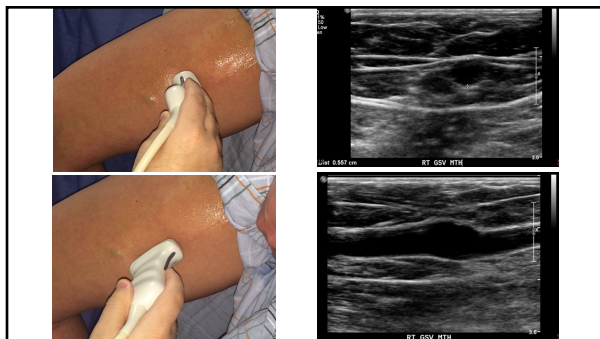
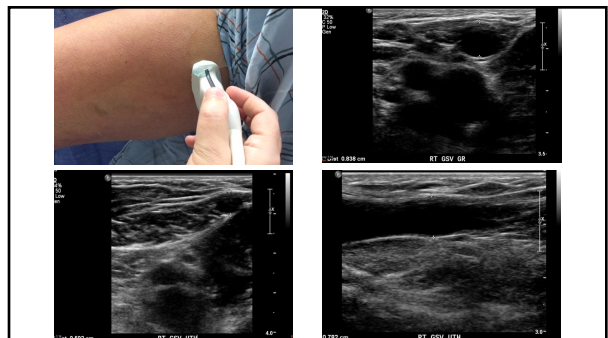
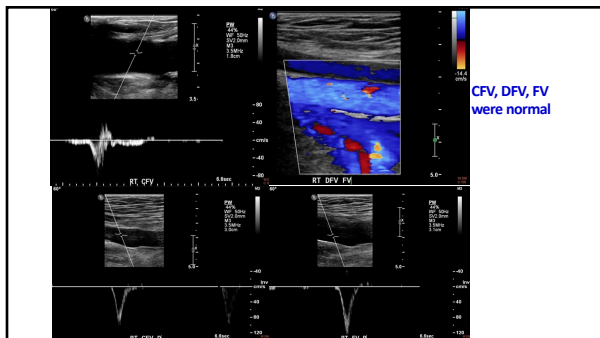
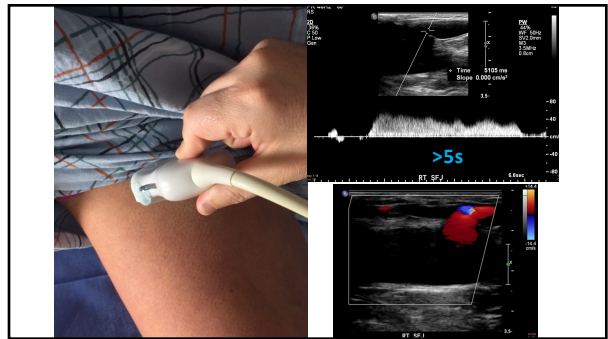
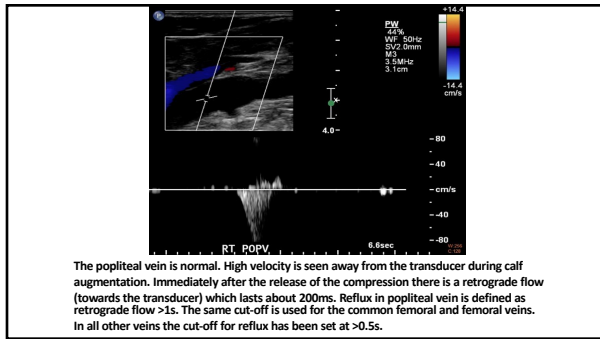
Cut-off values for reflux

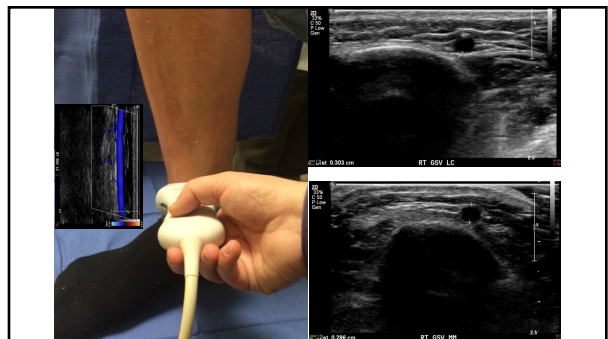
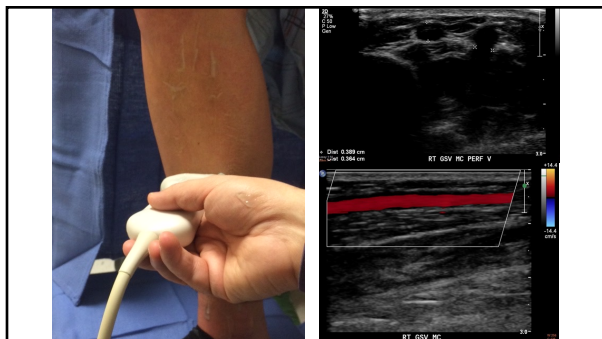
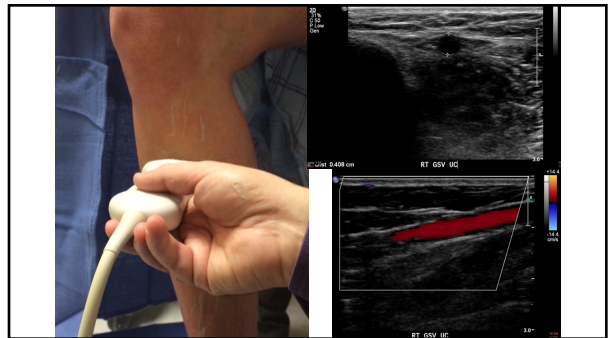
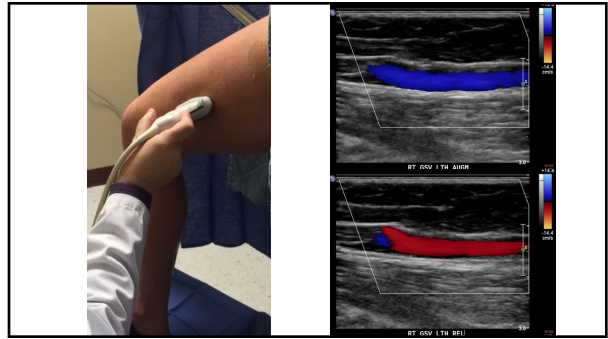
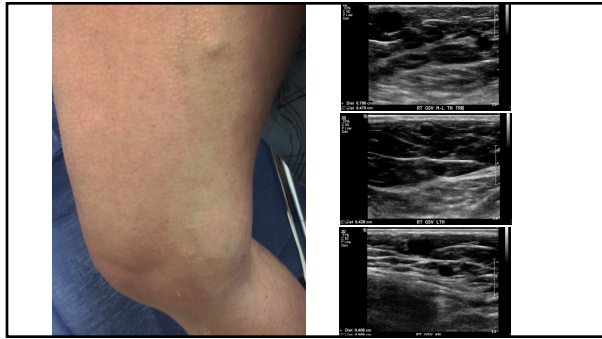
Fem-pop	>1000ms
Calf + DFV	>500ms
Superficial	>500ms
Perforator	>350ms

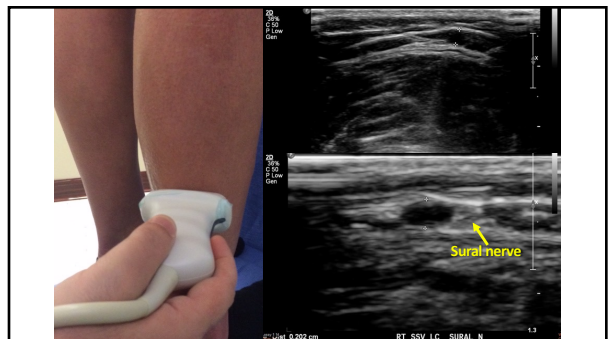
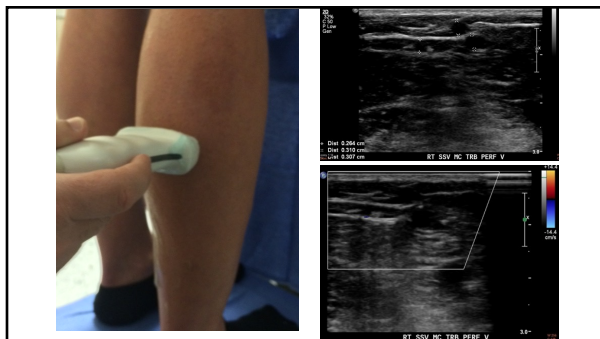
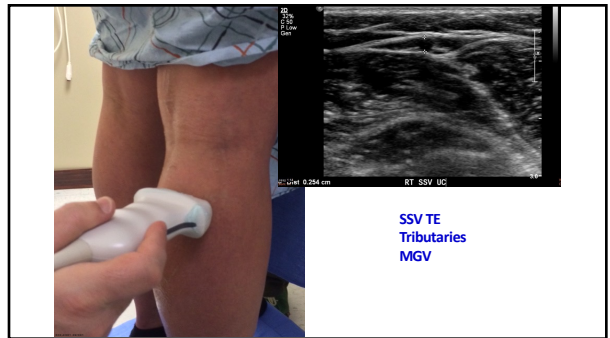
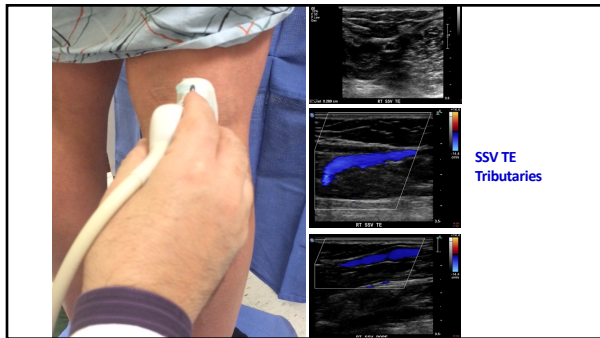
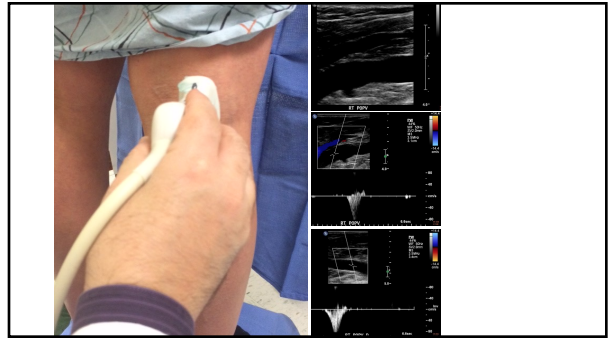
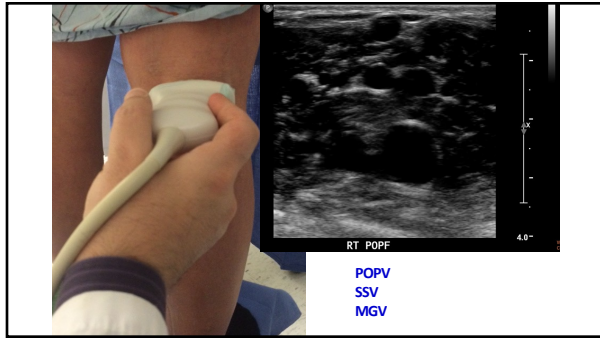
For practical purposes perforator vein reflux cut-off is set at **>500ms**

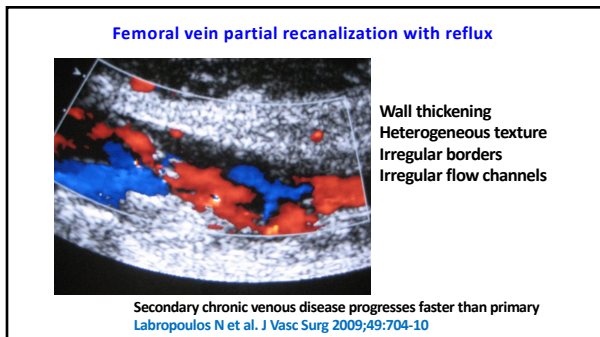
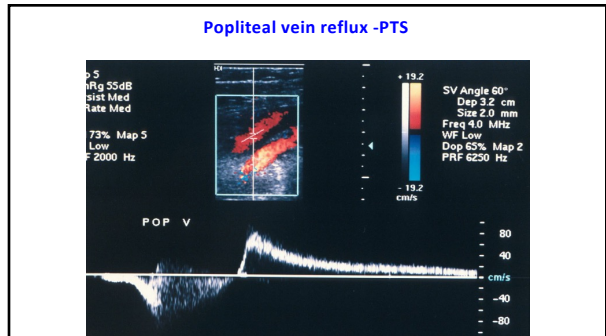
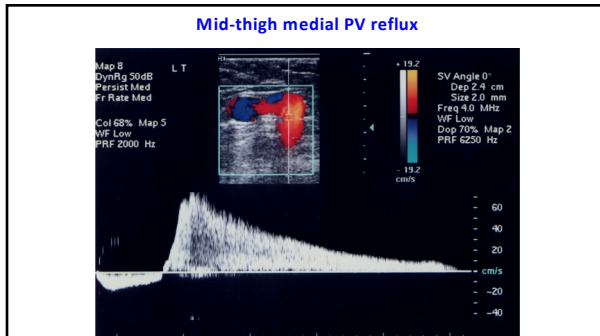
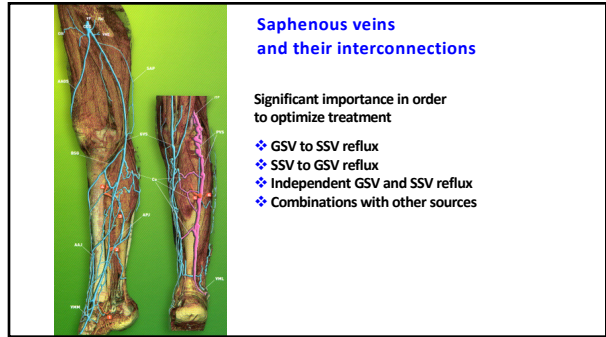
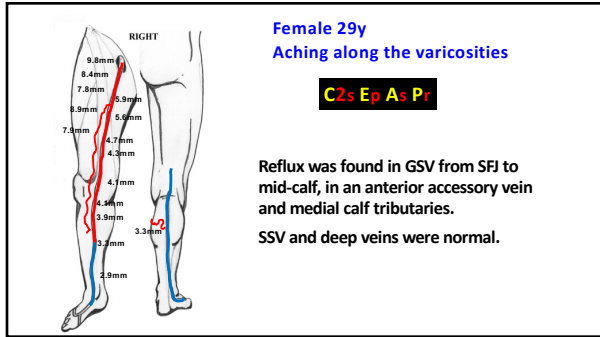


SFJ reflux of high reflux velocity and long duration >5s during Valsalva maneuver. The scale has been set to contain the waveform. The Doppler gain has been optimized to demonstrate a clear trace without over or underestimating the velocity and reflux duration. The angle of insonation has been set at 60 degrees and the beam has been steered appropriately. Usually, the velocity is not measured and therefore an angle at 0 degrees may be used.









INVEST: Investigating Venous Disease Evaluation and Standardization of Testing
Multicenter assessment of venous reflux by duplex ultrasound.
Lurie F, et al. J Vasc Surg 2012;55:437-45 - Initiated by the AVF

17 healthy volunteers, 57 patients with primary CVD

Prospective, multicenter study showed **high repeatability of duplex ultrasound** in the detection of venous reflux

Alternations of the time of the duplex scan, the patient's position, and the reflux-provoking maneuver significantly decreased reliability.