



Ultrasound Guided Vascular Access

Faculty: Shawn Shanmuganathan BS, RDMS, RVT

Course Schedule

Lecture 8am-11am | Scan Lab 11am-12pm | Lunch 12pm-1pm | Scan Lab 1pm-5pm

Lecture

8am – 9:30am

Orientation to Ultrasound Equipment and Function

- Transducers, output, depth, focusing, real time imaging, Doppler imaging

9:30am – 11am

Venous Anatomy and the Ultrasound Appearance of DVT

- Basic sonographic techniques to evaluate for DVT
- Common femoral vein
- Greater saphenous vein
- Popliteal vein
- Normal morphology and Doppler appearance
- Veins with abnormal morphology
- Veins with Sonographic signs of DVT
- Compressible and non-compressible veins
- Normal and abnormal Doppler flow patterns

Scan Lab

11am-12pm and 1pm-5pm

Ultrasound Guided Procedures

- Central line placement (Jugular and Subclavian veins)

Sonographic probe position to identify the thoracic cavity, jugular vein, and subclavian vein

- Successful cannulation of a practice phantom using ultrasound guidance and needle
- Obtain images of the chest cavity and abdominal cavity
 - Lower quadrant windows
 - Hepatic and supra-splenic windows
 - Sub-costal window
 - Image the lower thoracic cavity



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Skills Checklist

The participant will demonstrate an understanding of the following controls to optimize the image:

- ☐ Physics and Instrumentation
- ☐ On/Off
- ☐ Output/Power
- ☐ Depth
- ☐ Master Gain
- ☐ TGC/DGC
- ☐ Focal Zones
- ☐ Dynamic Range
- ☐ Presets
- ☐ Calipers
- ☐ Freeze/Cine
- ☐ Color/Power Doppler
- ☐ Zoom

The participant will identify and be able to image the following anatomy with measurements where applicable:

- ☐ Views of Subclavian Vein
- ☐ Views of Jugular Vein
- ☐ Views of CFV
- ☐ Identify Basilic and Brachial Veins
- ☐ Correlate the sound beam to the aspiration needle with a phantom
- ☐ Soft Tissue Applications