

SBUS Course: Introduction to US
Learning objectives

Vascular access & Vascular diagnostics

Objectives:

- ✓ Understand basics of US physics
- ✓ Be able to manipulate US machine and optimize the image
- ✓ Identify clinical circumstances where US is indicated and advantageous
- ✓ Use US to enhance vascular access guidance
 - Tip Tracking
- ✓ Use US to improve safety in procedures
- ✓ Identify No-Go sites; re-orient to appropriate site for access
- ✓ Identify lower extremity deep vein anatomy
- ✓ Perform limited effective bedside DVT study
- ✓ Utilize new skill set in clinical scenario
- ✓ Submit images for review

The Chest: Lung, Pleura, Diaphragm, Airway

Objectives:

- ✓ Understand what characteristics of the thorax make it amenable to US
- ✓ Learn technique, image acquisition and interpretation for lung, pleura and diaphragm scanning
- ✓ Identify clinical circumstances where lung pleural and diaphragm US are highly applicable
- ✓ Understand how to use US for airway management
- ✓ Procedural control: Identifying a safe site for pleural access
- ✓ Utilize new skill set in clinical scenarios

Abdomen, Retroperitoneum, Hemodynamic monitoring

Objectives:

Abdominal scanning technique

- ✓ Identify anatomy
 - Hepatorenal recess
 - Splenorenal recess
 - Right and left paracolic gutters
 - Bladder
 - Kidney
- ✓ Abdominal aorta
 - Transverse plane
 - Longitudinal plane
- ✓ The FAST Exam: Understand where fluid/blood will accumulate
- ✓ Procedural control: Identify safe site for abdominal access
- ✓ Evaluation for pneumoperitoneum
- ✓ The IVC: Evaluate for fluid responsivity in shock state
- ✓ Introduction to bedside echocardiography:

- Objectives of the bedside echo
- The 5 basic views

Bedside Echocardiography

Objectives:

- ✓ Identify anatomy and clinical utility at basic echo views
- ✓ Evaluate LV, RV function
- ✓ Identify applicable views for common clinical scenarios
- ✓ Understand the role for bedside US for emergent airway control

Advanced Bedside Echocardiography

- ✓ LV functional assessment: EPSS, Fractional shortening, MAPSE, VTI
- ✓ RV functional assessment: RVSP, TAPSE, RIMP
- ✓ Valvular assessment: AI, AS, MR, MS
- ✓ Pericardial assessment: Tricuspid inflow; Mitral inflow

US Protocols

- ✓ Become proficient in a protocolised approach to the role of US for diagnosis and management of:
 - Respiratory failure
 - Shock
 - LV Shock
 - RV shock
 - Diuresis and fluid management
 - Cardiac arrest
 - Heart- Lung interactions