



Look Listen Feel Scan

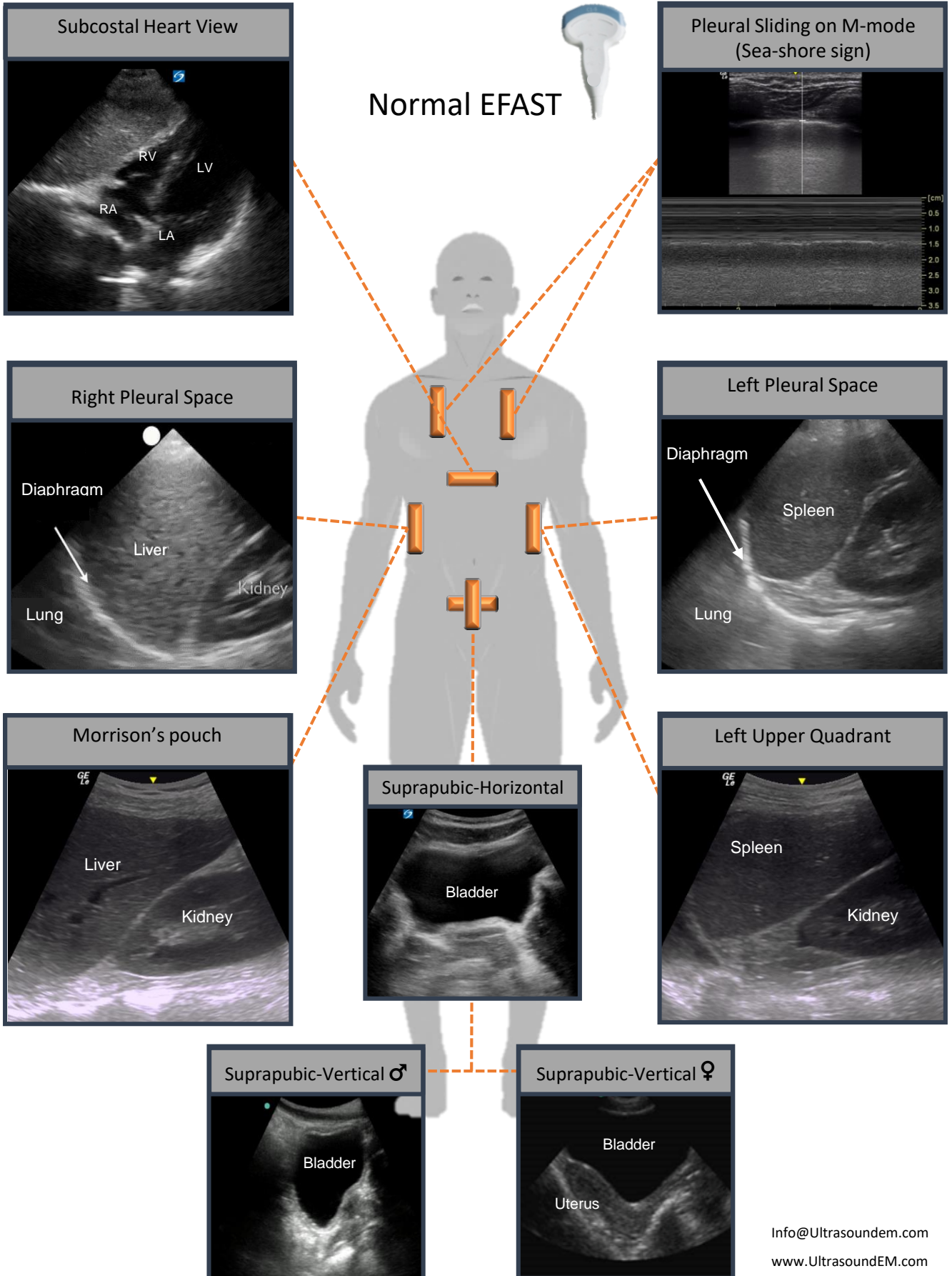
Your Pocus Cards For Your Every Day Scanning



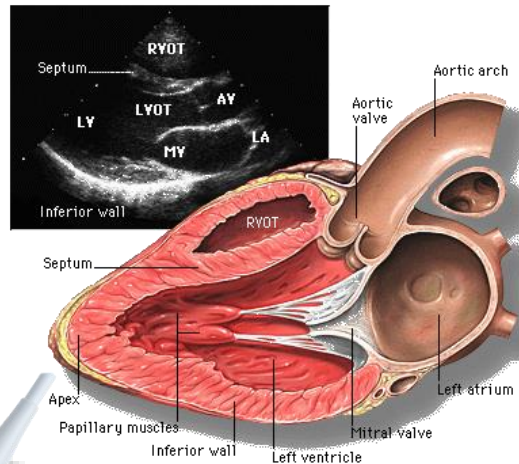
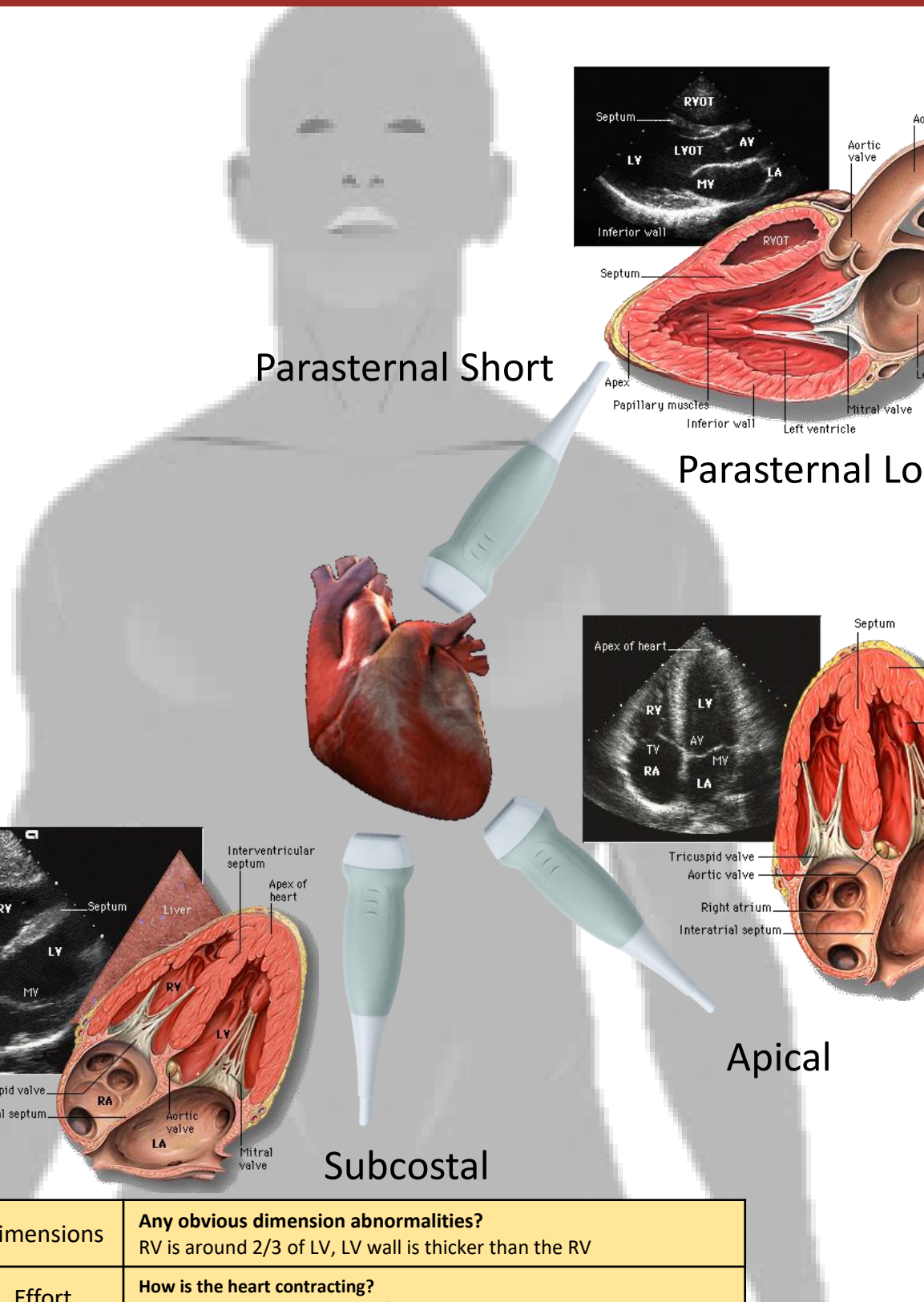
www.UltrasoundEM.com

E-FAST

Extended Focused Assessment by Sonography in Trauma

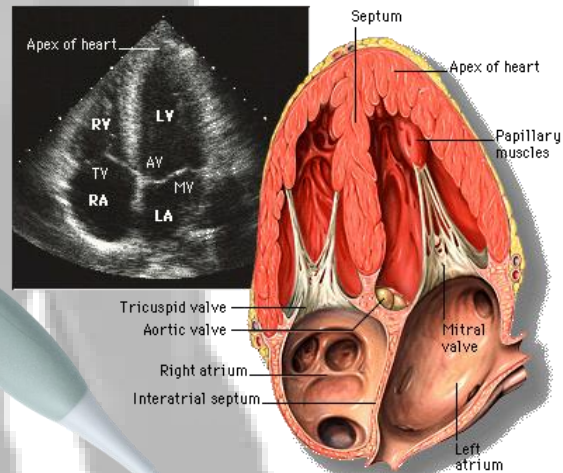


Heart Ultrasound

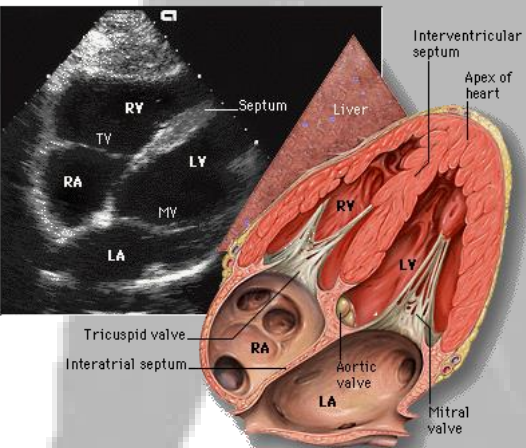


Parasternal Short

Parasternal Long



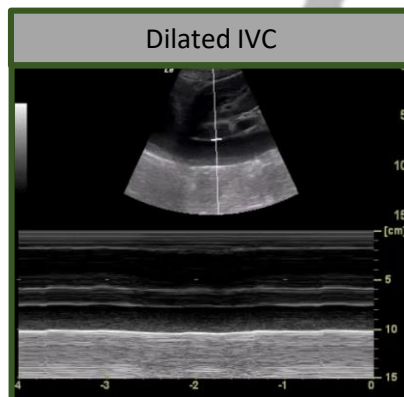
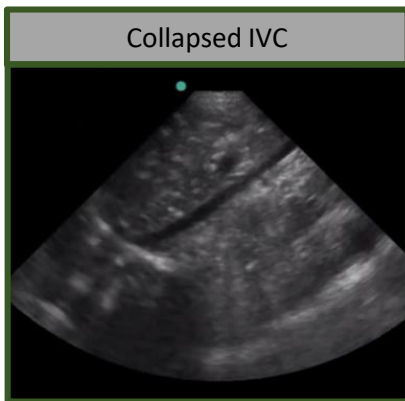
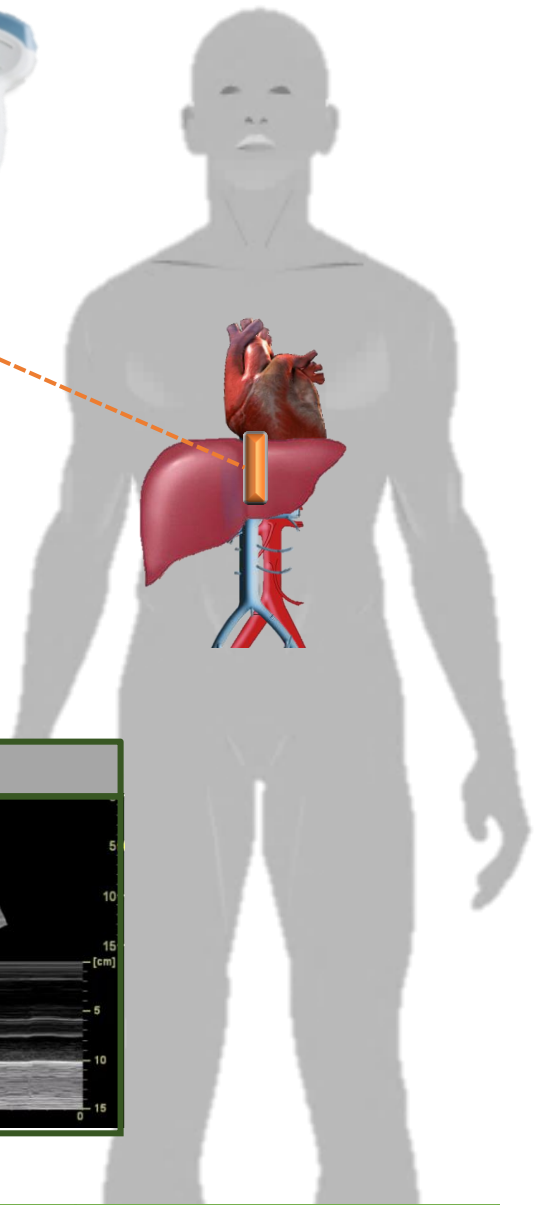
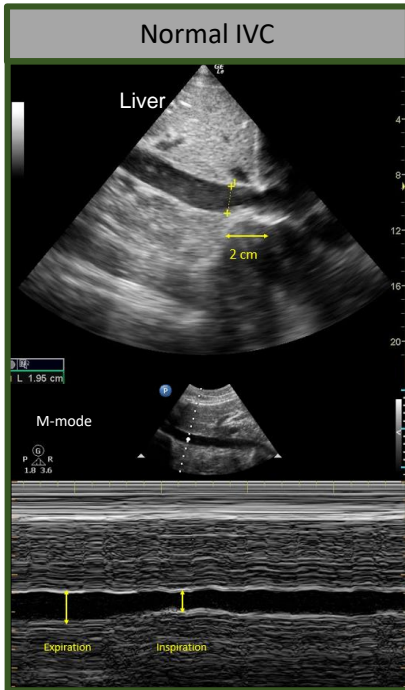
Apical



Subcostal

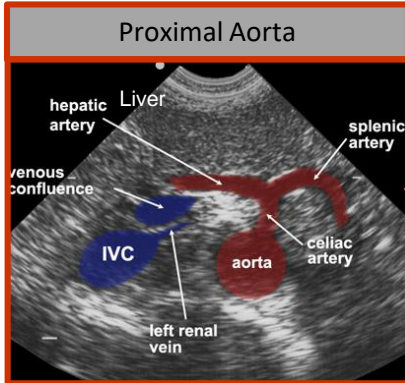
D	Dimensions	Any obvious dimension abnormalities? RV is around 2/3 of LV, LV wall is thicker than the RV
E	Effort	How is the heart contracting? LV should contract by at least 1/3. All the walls should contract equally
F	Fluid	Is there fluid around the heart? Small < 1cm, moderate 1-2cm, large > 2cm
G	Gradients	Pressure gradients cause blood flow across valves: Do the valves look normal? Are they opening and closing normally?

IVC assessment

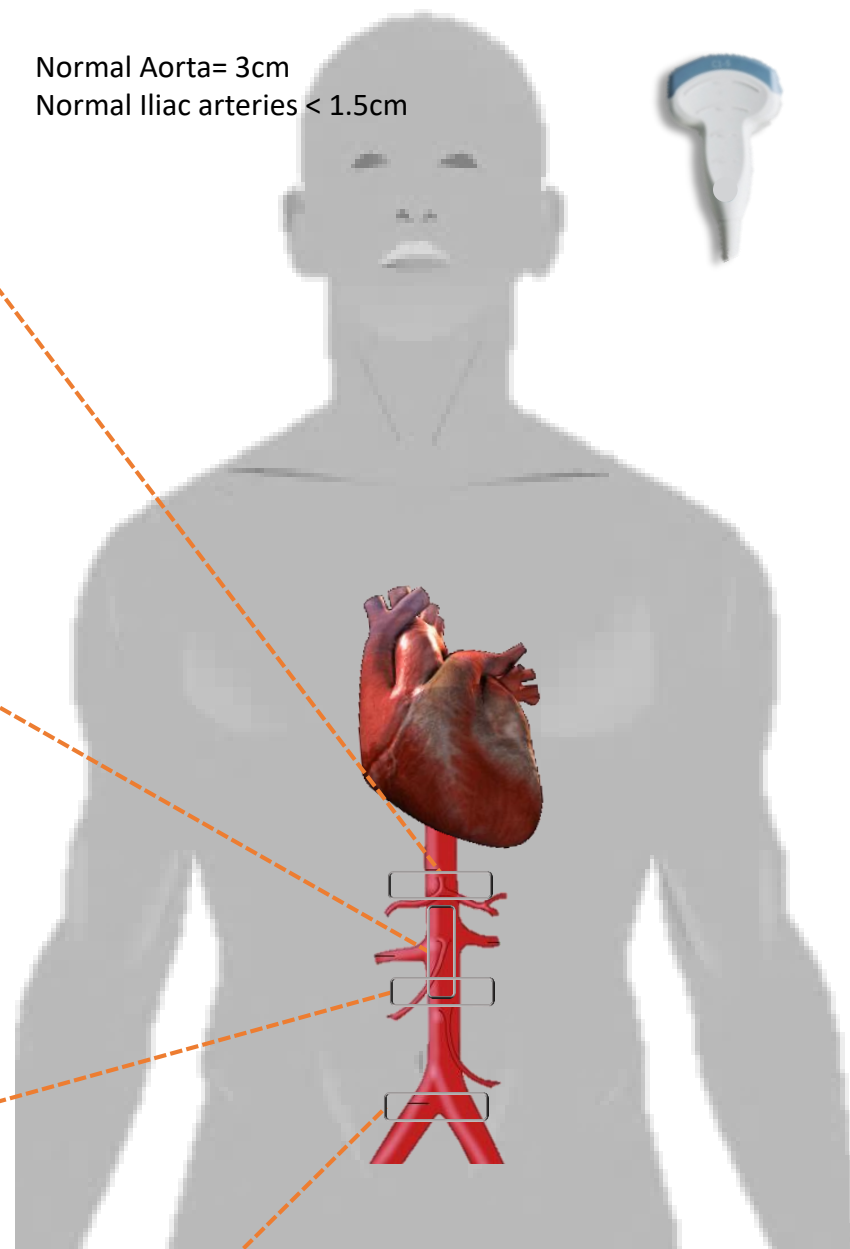
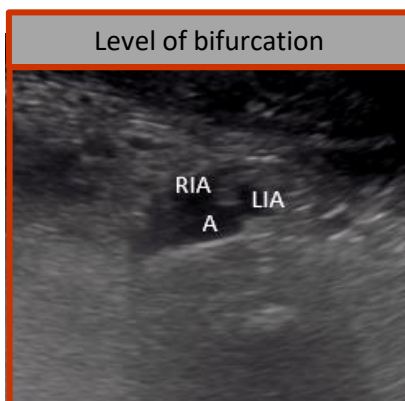
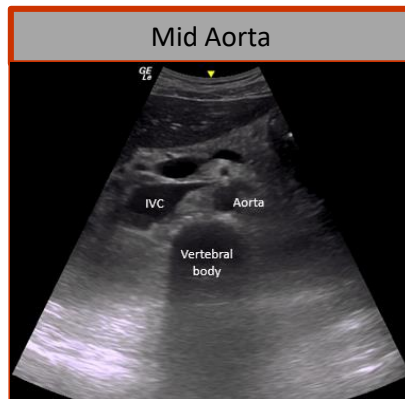
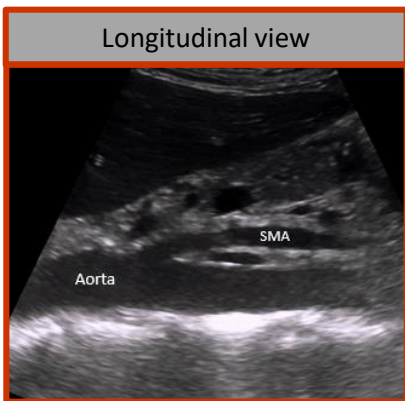


Small <1.5cm	Collapsing completely	Tank is empty	Fluids should be given
Large >2.5cm	Minimally collapsing	Tank is probably not empty	Fluids may not help Look for non-hypovolemic causes of shock

Abdominal Aorta

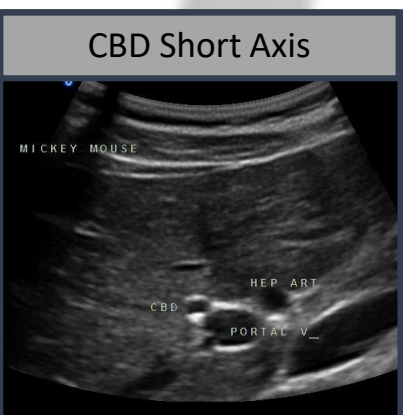
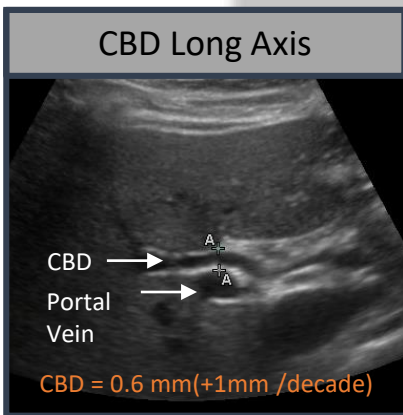
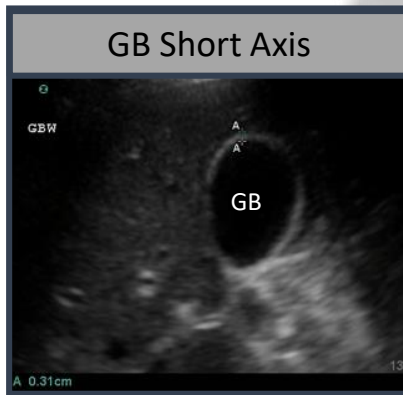
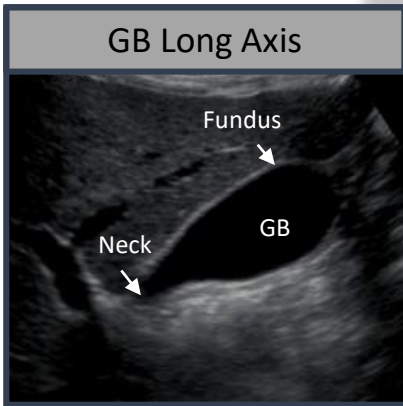


Normal Aorta= 3cm
Normal Iliac arteries < 1.5cm

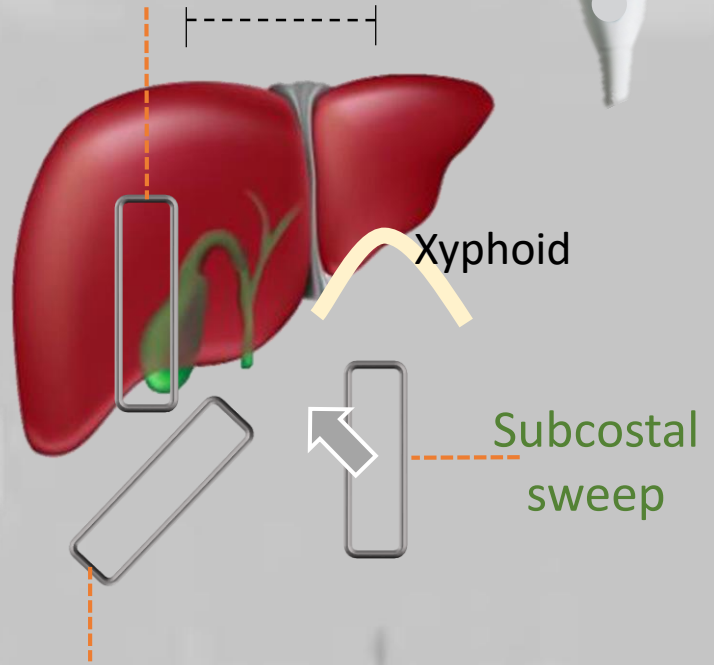


IVC	Aorta
On patient's right	On patient's left
Compressible	Non-compressible
Thinner walls	Thick walls
Not pulsatile (or displays 'double-pulsatile swing' = transmitting the cardiac atrial and ventricular pressure wave)	Pulsatile (simple)
Usually larger (can depend on hydration status)	Usually smaller (unless AAA)

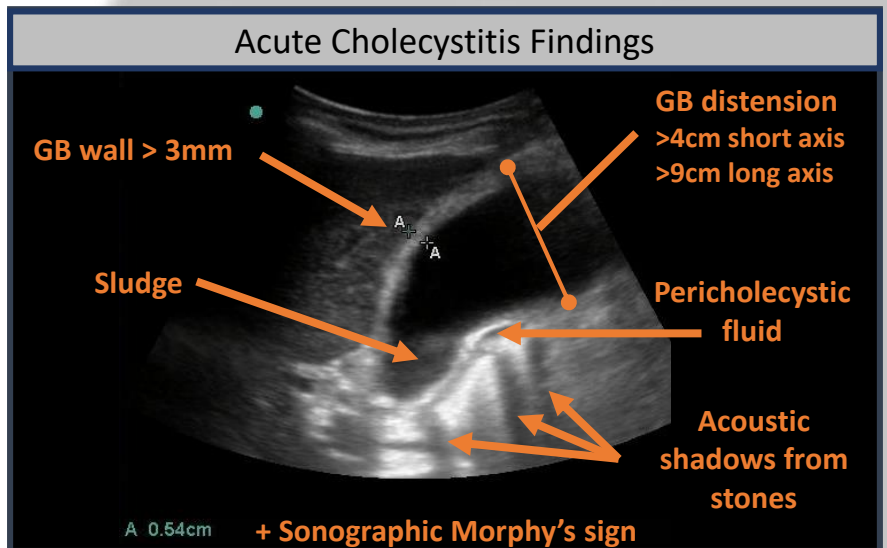
Biliary Ultrasound



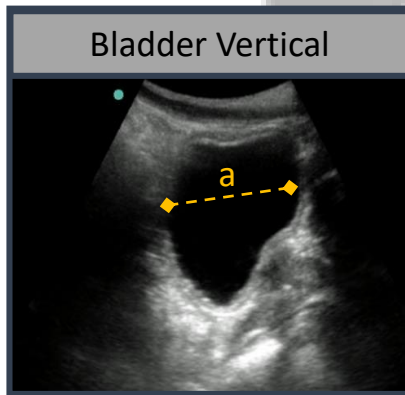
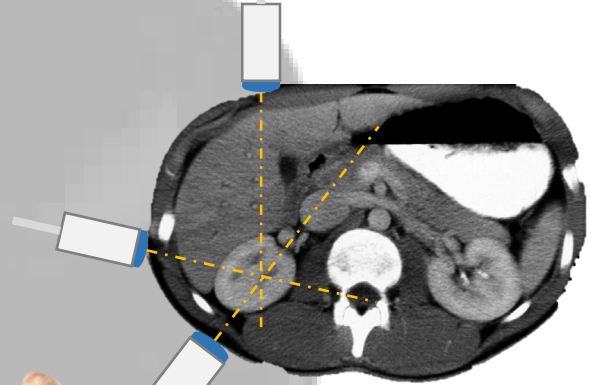
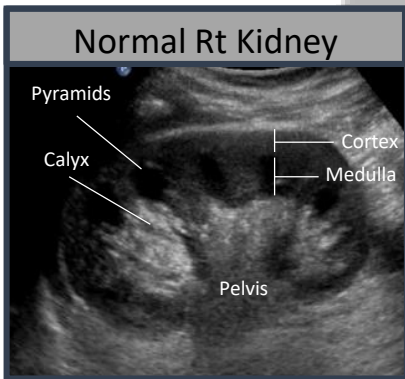
X-minus 7cm



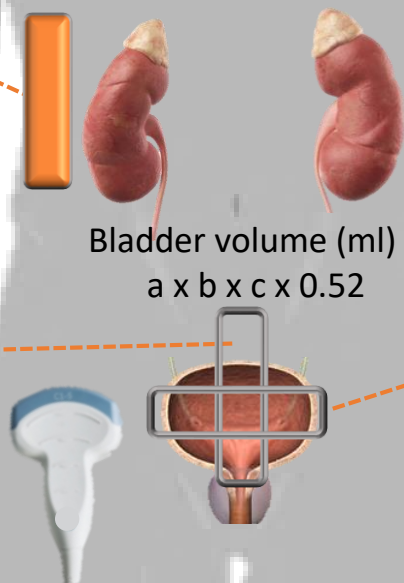
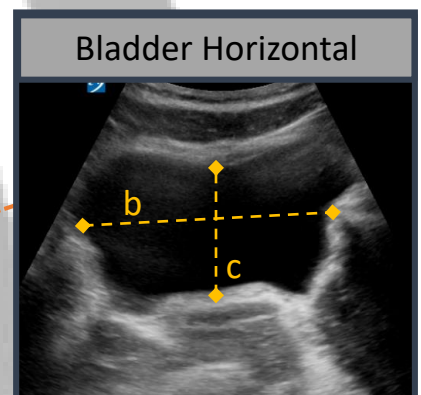
Flattening the probe



Renal Ultrasound



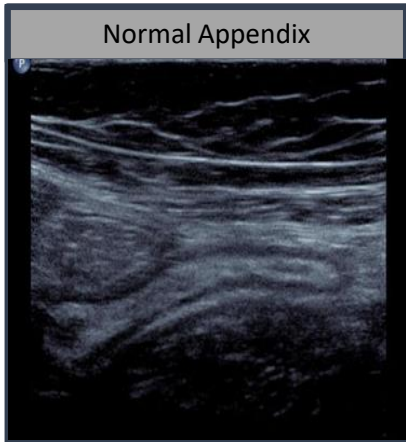
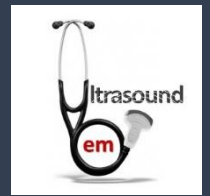
Bladder volume (ml) =
 $a \times b \times c \times 0.52$



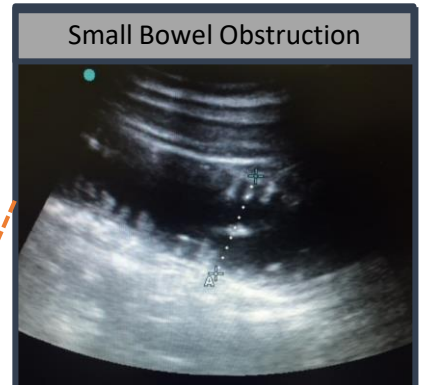
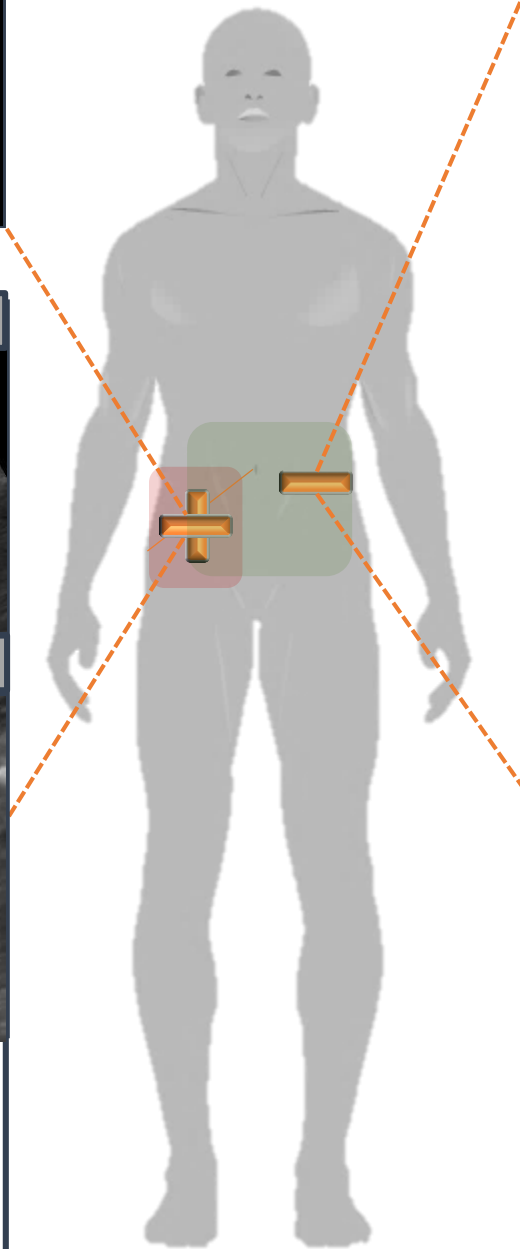
Hydronephrosis			
Mild	Moderate	Severe	
Urine barely splits sinus	Full pelvis, major calyces dilated	Uniformly dilated minor calyces, parenchyma spared	Parenchymal compromise

Timberlake, Matthew D., and C.D. Anthony Herndon. "Mild to moderate postnatal hydronephrosis --grading systems and management." *Nature Reviews Urology*, vol. 10, no. 11, 2013, p. 649+. *Academic OneFile*, Accessed 23 Apr. 2017

Bowel Ultrasound



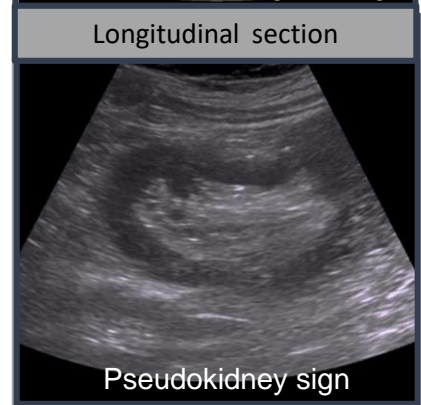
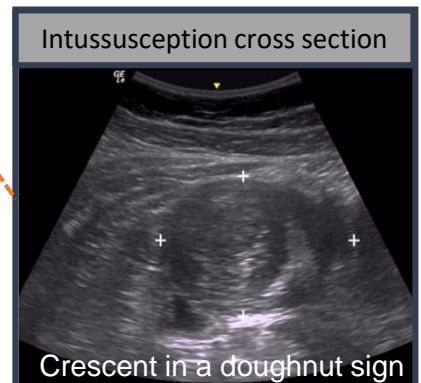
- Outer Diameter > 6mm
- Non-compressible
- No peristalsis
- Appendicolith
- Target sign in short axis
- Increased vascularity with Color Flow Doppler
- Periappendiceal Fluid Collection



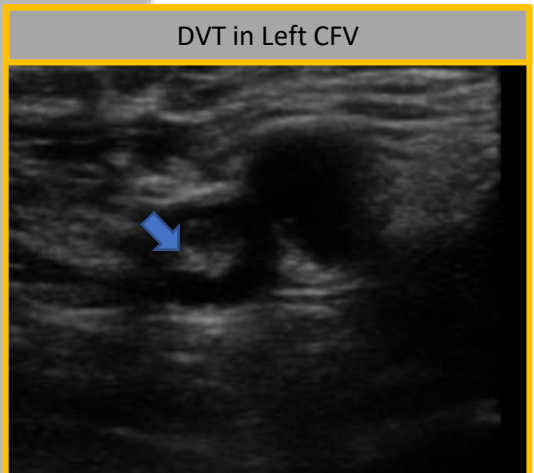
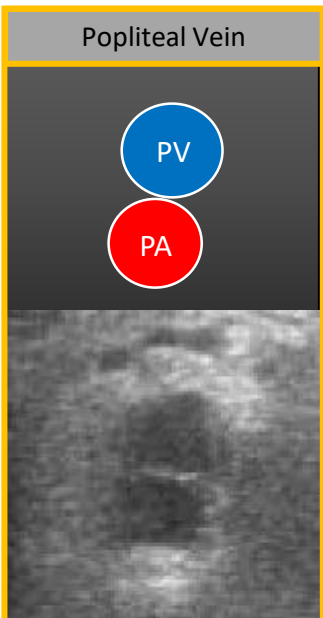
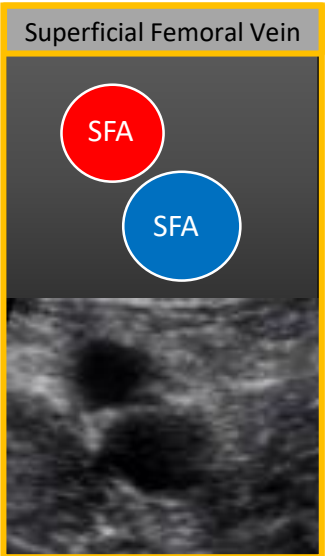
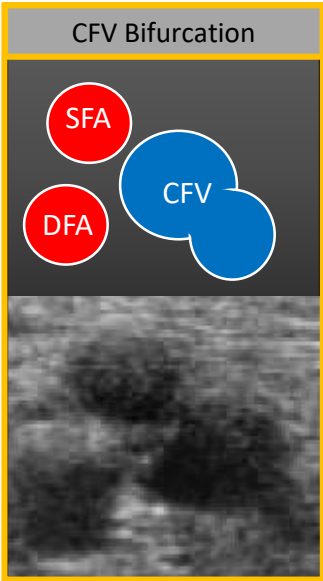
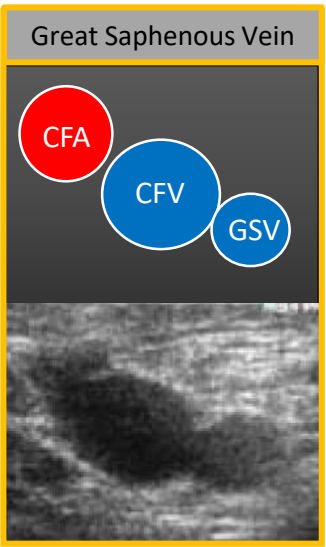
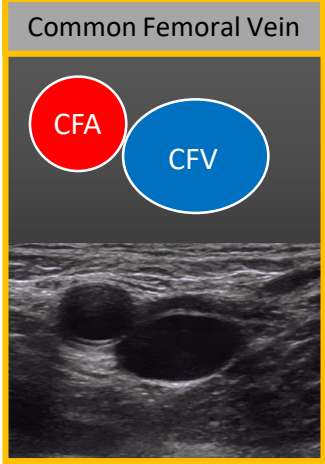
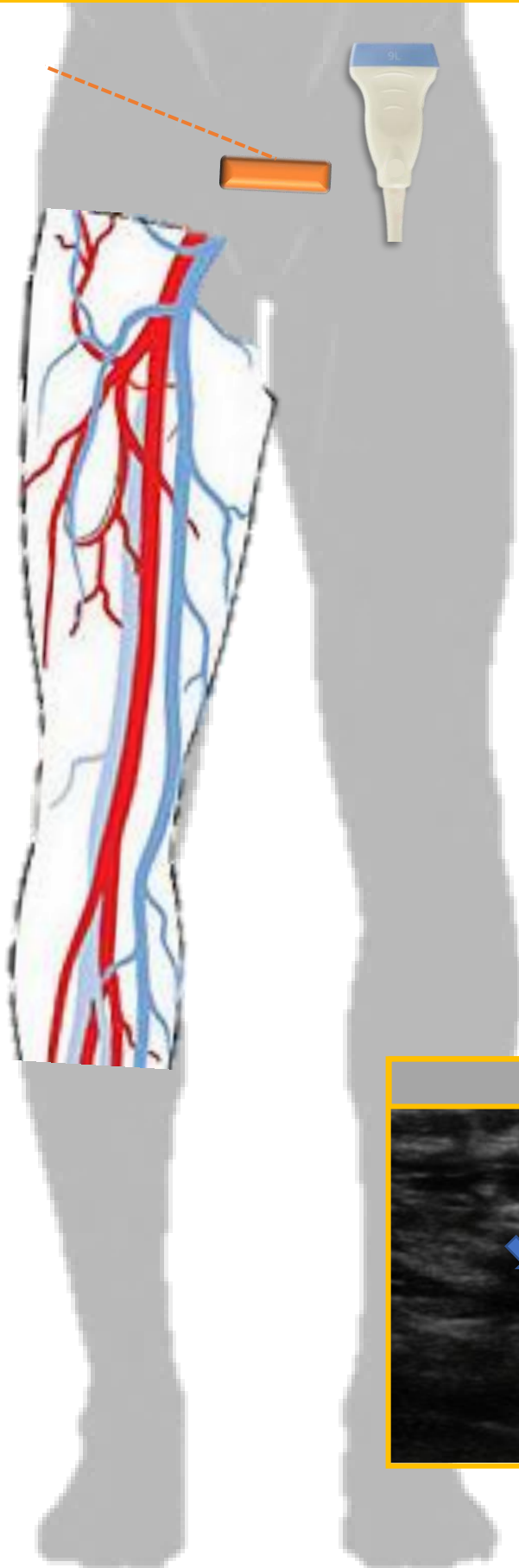
ABCD-EF mnemonic

- A. Activity (Ileus Vs Mechanical)
- B. Bowel Thickness > 3mm
- C. Colour Doppler
- D. Diameter > 3 cm
- EF. Extraintestinal Fluid

by Dr. Hadiel Azzam



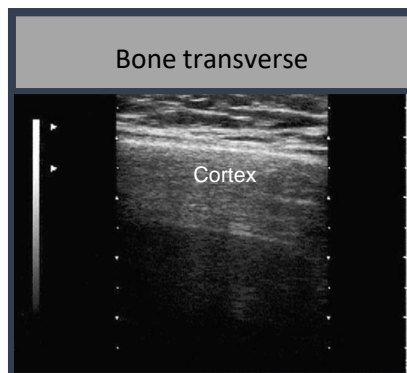
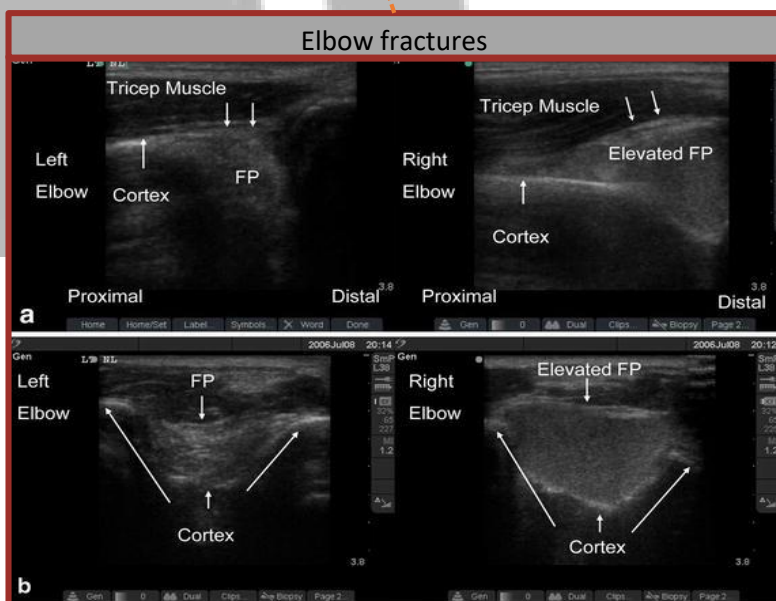
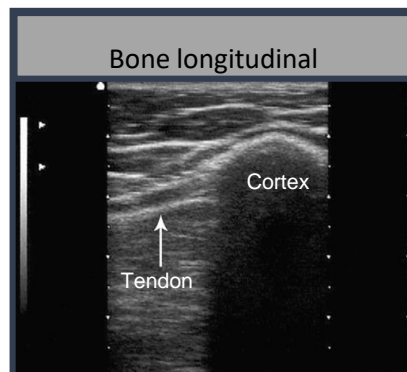
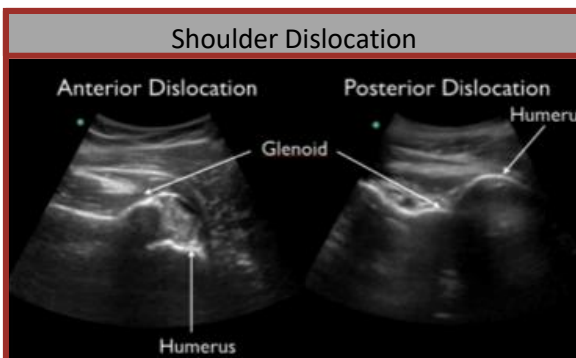
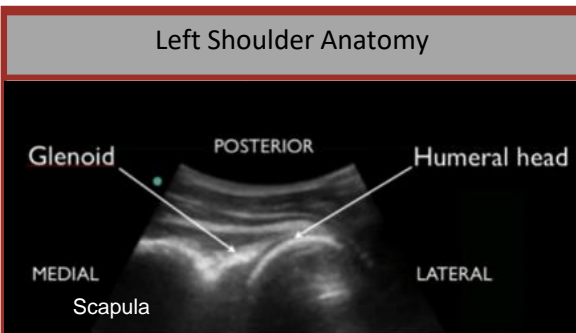
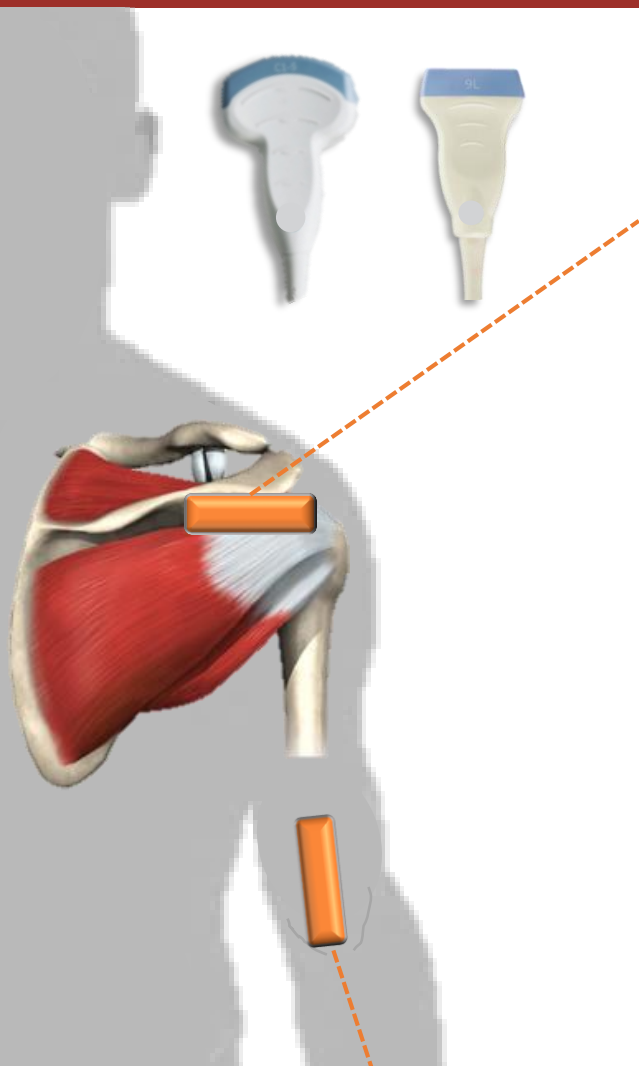
DVT Assessment



Musculoskeletal US



Fractures and Dislocations



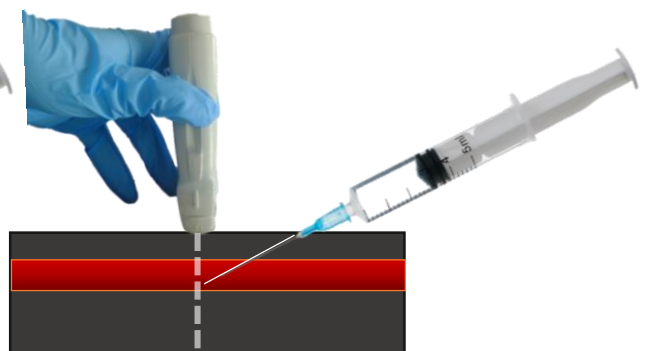
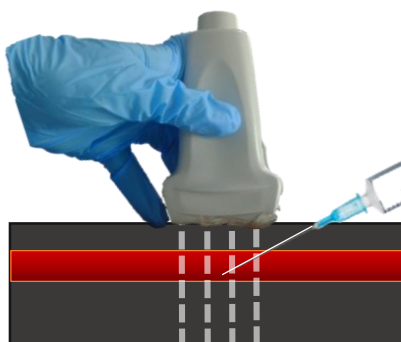
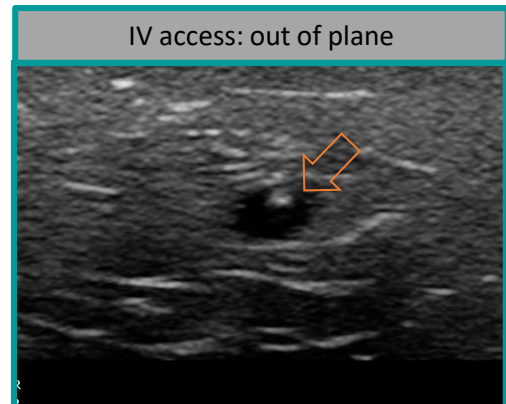
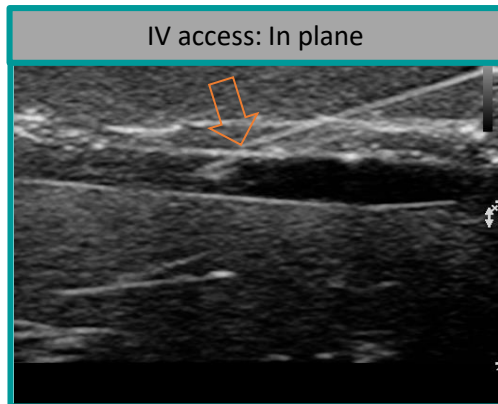
<https://www.researchgate.net/publication/225175785>

IV Access



Differences between artery and vein

Artery	Vein
Smaller diameter	Larger diameter
Thicker walls (although difficult to appreciate by US)	Thinner walls
Pulsatile (pulses seen clearly and are sustained)	Can transmit pulses (pulses are more wavy may not be sustained)
Color Doppler: pulsatile flow	Flow may not be seen in smaller veins, and can be enhanced by squeezing calf muscles



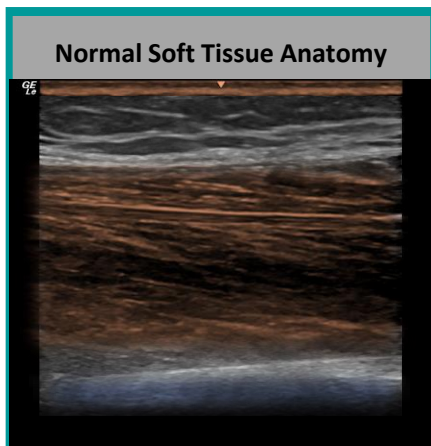
Soft Tissue Scan

Foreign Bodies and Infections

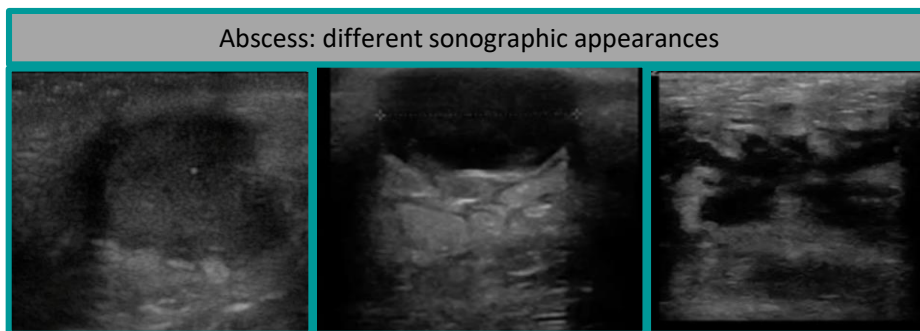
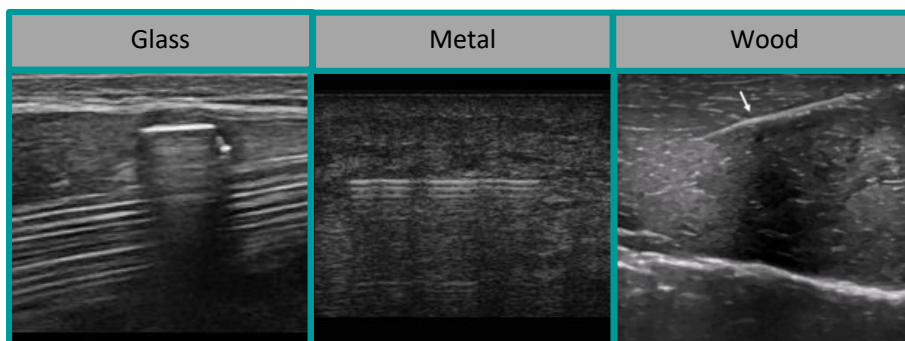


Tips

- Scan from normal to normal area
- Apply Doppler when needed



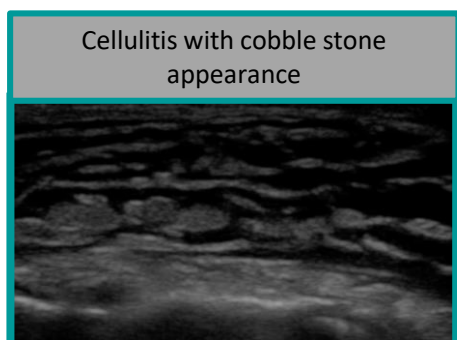
Skin: Epidermis + Dermis
 Subcutaneous tissue
 ← Fascia
 Muscles
 Bone



Hypoechoic collection

Anechoic collection with posterior acoustic enhancement

Diffuse collection



Cellulitis with cobble stone appearance



Necrotizing fasciitis (STAFF)

Subcutaneous thickening
 Air shadowing

← Fascial disruption & Sub-Fascial fluid

Images courtesy of Josef Minardi