Cardiac

- ***Global Cardiac Function***
  - End point septal separation (EPSS) > 7 mm sensitive but not specific for severe LV dysfunction (EF < 30%)
  - LVEF eyeball method:

Severely reduced	Moderately reduced	Normal	Hyperdynamic
< 30%	30-50%	> 50%	> 70%

- ***Pericardial effusion***
  - Size - Small (< 0.5 cm), moderate (0.5-2.0 cm), large (> 2cm)
  - Signs of Tamponade
    - Right atrial collapse during systole
    - Right ventricular collapse during diastole
    - Plethoric IVC without respiratory variation
    - Mitral valve inflow velocity change during respiration > 25%
- ***Right ventricle***
  - TAPSE (Tricuspid annular plane systolic excursion)
    - Mild RV dysfunction if < 1.6 cm
    - Severe RV dysfunction if < 1.0 cm
  - RV/LV ratio - RV dilation suggested if > 0.9
  - Flattening of septum or septal bowing into LV suggests elevated RV pressure
- ***Right atrial pressure:***

IVC diameter	Collapse	RA pressure (mmHg)
< 22 mm	> 50%	3 (0-5)
Intermediate	Intermediate	8 (5-10)
> 21 mm	<50%	15 (10-20)

Aorta

- Abnormal if external diameter (outer wall to outer wall) > 3 cm

Appendix

- Suspect appendicitis if diameter > 6 mm + non compressible +/- appendicolith

Bowel

- Enlarged small bowel = > 2.5 cm
- Abnormal bowel wall thickness = > 3 mm
- Free fluid between enlarged bowel = Tanga sign (high grade obstruction)

Biliary

- Thickened gallbladder wall: > 4 mm
- Common bile duct dilation: > 6 mm or > 1mm/decade of life if 60 or older
- In patients without a gallbladder, < 10 mm CBD diameter is acceptable

Bladder

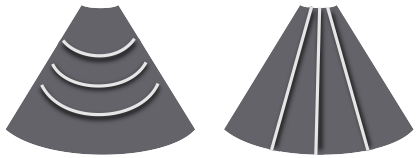
- Volume = Length x Width x Height x 0.52
- Consider urinary retention if post void residual volume > 100 ml

FAST Exam

- The minimum amount of free fluid the FAST exam can detect is ~ 400 ml
- 1 cm of fluid in Morrison's pouch = Approximately 1L of intra-abdominal fluid

Lung

- **Common lung finding patterns:**
  - **Normal Lung**: Bilateral a-lines + lung sliding, without any other pathological signs
  - **Pulmonary Edema**: Bilateral b-lines (>2 per intercostal space) + lung sliding
  - **Pneumothorax:** Absent lung sliding + lung point (pathognomonic)



A-lines B-lines

  - **Pneumonia:** Consolidation of lung tissue (hepatization) and/or unilateral b-lines +/- lung sliding (Note sliding is abolished when inflammation causes adherences or plural symphysis.)
  - **Asthma:** A-lines + lung sliding
  - **COPD**: A-lines +/- lung sliding (Blebs = no lung sliding)

Ocular

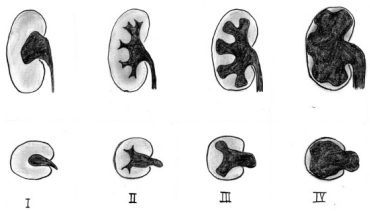
- The optic nerve should be measured at 3 mm behind the globe
- An optic nerve sheath diameter of > 5 mm is suggestive of increased intracranial pressure (high sensitivity, low specificity)

Pregnancy

- Normal fetal heart tones = 120-160 bpm
- A definite IUP can be confirmed by the presence of a gestational sac inside the uterus with equal circumferential myometrium containing either a yolk sac or a fetal pole
- A blighted ovum = gestational sac > 2 cm without yolk sac or fetal pole
- ***You should see:***
  - 4-6 weeks - Gestational sac
  - 5-7 weeks - Yolk sac
  - > 7 weeks- Fetal pole

Renal

- Grading of hydronephrosis:



UCSD

ULTRASOUND

QUICK REFERENCE TOOL