

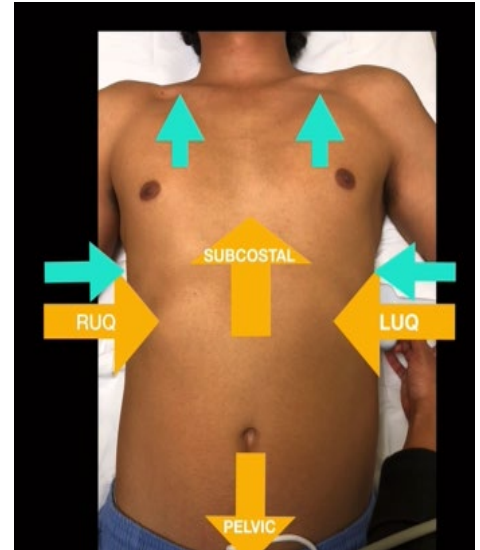
**Basic Science and Literature: (List any important one liners from literature)**

**FAST = Focused Assessment with Sonography in Trauma**, injuries account for the leading cause of death for patients ages 1- 44.

Developed in 1970's, in 1990 part of the ATLS and has replaced diagnostic peritoneal lavage.

Studies: RCT Benefits: fewer CT, faster time to OR, less time in hospital, 100% survival with POCUS, 57% without, In children 2017 study: No benefit of CT over POCUS FAST, less CT is FAST was negative

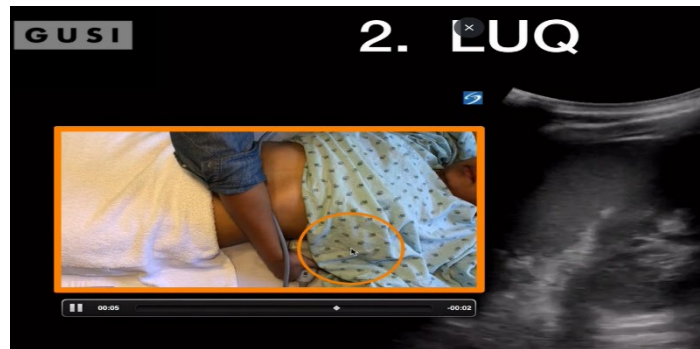
Extended FAST exam: Variable sensitivity and good specificity, if high risk injury CT should be considered in FAST is negative.



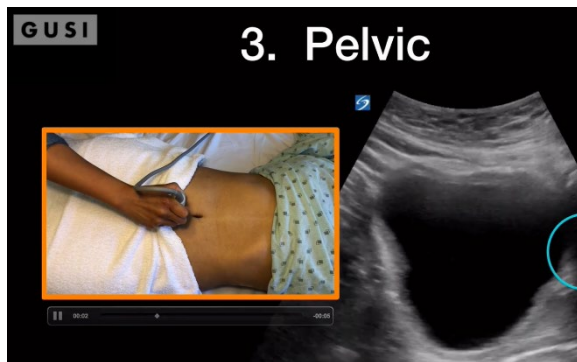
**Focused ?'s: (List the focused questions to answer Yes or No)**

- Is there free fluid in the abdomen? Hemoperitoneum
- Is there free fluid in the pericardium? Hemopericardium

**Technique: (describe how to find structures, where do you start the scan, how to align direction of the probe)**

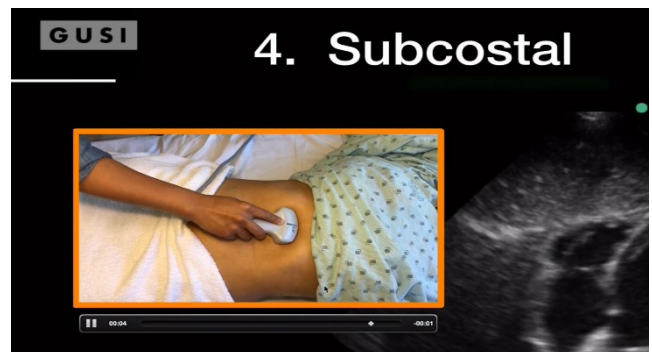


1. RUQ: Begin in the RUQ, coronal plane with marker towards patient's head, look for free fluid between the kidney and the liver, and above the liver just underneath the diaphragm and slide to the caudate lobe of liver (most sensitive area)
2. LUQ with the kidneys and spleen with "knuckles" on the bed with probe indicator pointing towards the head, rib shadows can obscure view. and look between the kidney and spleen (look above the spleen under the diaphragm)



3. Pelvic: Place above pubic symphysis and probe pointing to patient's left and then rotate towards patients head, look for free fluid between the bladder wall and intraabdominal space, pelvic structures (uterus in female and the pouch of Douglas).

Don't angle the probe too much



4. Subcostal View – tilt probe just below the Xiphoid process and see the liver and the heart. Look for free fluid between the R ventricle and liver or free fluid around the heart

**E- fast Exam adds: 2 more questions for the Extended Fast**

**Is there a Pneumothorax ? and Is there Free fluid in the chest cavity?**

- 5. Mid-Clavicular looking for Lung Sliding (Ants on a Log or Shimmering – Sandy Beach on M Mode) or Not - Bar Code on Bar Code) : Review to Pulmonary Exam.**
- 6. Bilateral Flanks just above the diaphragm and looking for mirror artifact of liver and no spine sign above the diaphragm.**

**Pathology and Pitfalls:**

- Hemoperitoneum –
  - #1 Look into Paracolic gutter near caudal edge of the liver - the most sensitive area
  - #2- look at inferior pole of the kidney as well,
  - #3 - look in the subdiaphragmatic space,
  - #4 - Look behind the uterus in the pouch of Douglas.
  - # 5 - Don't mistake free fluid as fluid in the bladder
- Hemothorax – free fluid above diaphragm and spine sign
- Hemopericardium – look for free fluid in subcostal view.
- Pneumothorax – absence of lung sliding, lung point normal sliding and then no long sliding

**Troubleshooting: (if you can't get a good image try this!)**

**Focus on Patient - Probe and - Machine**

**Patient: Rib Shadows block view, ask patient to take a deep breath and inhale – pushing down the diaphragm**

**Probe: Rotate the Probe slightly, Knuckles on the bed for the LUQ view. For subcostal scoop down**

**Machine: Adjust depth appropriately and the gain.**

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**Bob Gobbo: 6/28/23**