

UTHSCSA ULTRASOUND MINIMAL IMAGE CRITERIA

Aorta

- The aorta should be imaged from as superior in the abdomen as possible until the bifurcation of the aorta into the iliac arteries.
- The aorta should also be visualized in the longitudinal plane

MINIMAL CRITERIA FOR AORTA

1. Video clips of the proximal, mid, distal, and bifurcation of the aorta.
2. Still images LABELED to include:
 1. Proximal aorta (at the level of the Celiac Trunk) with an AP measurement
 2. Mid aorta (just distal to SMA) with an AP measurement
 3. Distal aorta (just proximal to the bifurcation) with an AP measurement
 4. Iliac arteries with an AP measurement

Aorta	Diameter	< 3 cm (outer-to-outer)
	Common iliac artery diameter	≤ 1.5 cm

Cardiac

- Bedside ultrasound of the heart should be directed at detecting a pericardial effusion/ tamponade and for gross estimation of systolic cardiac function
- Bedside TTE should include as many views as possible
- Additional images of the IVC should be part of the routine cardiac exam
- EPSS should be used as an adjunct for determination of ejection fraction

MINIMAL CRITERIA FOR CARDIAC

1. Video clip of the parasternal long axis
2. Video clip of the parasternal short axis
3. Video clip of the subxiphoid view

*Should also include apical 4 chamber view, but credit will be given in the event of inadequate apical view

DVT

- Rapid bedside ultrasound of the lower extremity venous system using compression is a rapid and easy test for diagnosis of DVT.

MINIMAL CRITERIA FOR DVT

1. Video clip of the Common Femoral Vein (CFV) above the Saphenofemoral Junction (SFJ) with and without compression.
2. Video clip of the Greater Saphenous Vein (GSV) at the SFJ with and without compression.

3. Video clips of the Femoral Vein (FV) tracking distally with and without compression.
4. Video clip of the popliteal vein (Pop) with and without compression.
5. Video clip of the popliteal trifurcation (Pop Trif) with and without compression.

*Additional clips can be performed with color doppler demonstrating augmentation

Focused Assessment with Sonography for Trauma (FAST)

- FAST exam should be performed in all patients with penetrating trauma, blunt trauma, or patients with unstable vital signs or hypotension without clear etiology.
- FAST exam should be a RULE IN examination rather than a RULE OUT examination.
- In patients with blunt abdominal trauma for which a CT scan is not performed, serial FAST exams should be performed.
- EFAST should be routinely performed with additional lung views for detection of lung sliding to rule out pneumothorax, and the right and left posterior costophrenic recesses should be assessed for fluid in the dependent pleural space to rule out hemothorax.

MINIMAL CRITERIA FOR FAST

1. Video clip fanning through the right subdiaphragmatic space, including the right posterior costophrenic pleural recess
2. Video clip fanning through the hepatorenal space (Morison's pouch)
3. Video clip fanning through the right paracolic gutter (inferior pole of kidney)
4. Video clip fanning through the left subdiaphragmatic space, including the left posterior costophrenic pleural recess
5. Video clip fanning through the splenorenal space
6. Video clip fanning through the left paracolic gutter (inferior pole of kidney)
7. Video clip fanning through the bladder in the transverse and sagittal planes
8. Video clip of the subxiphoid view and/or parasternal long axis view of the heart
9. Video clip (using the linear transducer) of the first three intercostal spaces just inferior to the clavicle and 1-2cm lateral to the sternum looking for lung sliding.

Gallbladder

- Bedside ultrasound of the right upper quadrant (RUQ) should be performed for patients presenting with upper abdominal pain, and/or nausea and vomiting.
- RUQ US should be focused on the presence or absence of gallstones and the presence or absence of a sonographic Murphy's sign.

MINIMAL CRITERIA FOR GALLBLADDER

1. Video clip fanning through the entire GB in the long axis
2. Video clip fanning through the entire GB in the short axis
3. Still image measuring the Anterior Gallbladder Wall (AGW)

Wall thickness	≤ 3-4 mm
Common bile duct diameter	≤ 4-7 mm (Up to 8-9 mm if elderly or post-cholecystectomy patient)
Gallbladder dimensions on short axis view	< 4x10 cm

4. Still image or video clip demonstrating the GB neck

*Should also include CBD measurement, but credit will still be given in the absence of this measurement

Pelvic US (For IUP)

- Depending on gestational age, transabdominal or transvaginal technique should be used
- Emergency ultrasound should be aimed at detection of intrauterine pregnancy (IUP) and a determination of fetal viability by fetal heart rate (FHR)
- If there is a suspicion for ectopic or no IUP is found, proceed with consultative radiology ultrasound

MINIMAL CRITERIA FOR OBSTETRIC ULTRASOUND

1. Video clips of the sagittal and transverse views of the uterus
2. Video clip of IUP with special focus on fetal heart
3. Still image using M-Mode documenting FHR

Pelvic US (Non-pregnant)

- Transvaginal pelvic ultrasound should be performed with females with acute lower abdominal pain, vaginal bleeding, hypotension, or adnexal masses or tenderness.
- Goal of pelvic ultrasound is for determination of free fluid, detection of masses or cysts
- If high suspicion for torsion, please also obtain consultative radiology ultrasound

MINIMAL CRITERIA FOR PELVIC ULTRASOUND

1. Video clips of the sagittal and transverse views of the uterus
 2. Video clips of the right and left adnexa with views of the ovaries
 3. If free fluid (FF) is present, also perform FAST exam
- *Color or power doppler of the ovaries can also be performed to detect flow

Renal

- Renal ultrasound should be performed for patients presenting with acute flank pain, urinary retention, or acute kidney injury.
- Bedside renal ultrasound is aimed at the detection of hydronephrosis

MINIMAL CRITERIA FOR RENAL ULTRASOUND

1. Video clips fanning through the right kidney in the longitudinal and transverse plane
 2. Video clips fanning through the left kidney in the longitudinal plane and transverse plane
 3. Video clips of the bladder in the transverse and longitudinal plane
- *Additional views demonstrating presence of ureteral jets is recommended

Thoracic

- Lung or thoracic ultrasound is used for the diagnosis of pneumothorax, pleural effusion, and determination of other lung pathology (pulmonary edema, pneumonia).
- Documentation of the presence of B-lines or A-lines can aid in the diagnosis of lung pathology

MINIMAL CRITERIA FOR LUNG ULTRASOUND

1. Video clips of the entire anterior right lung field demonstrating lung sliding
2. Video clips of the entire anterior left lung field demonstrating lung sliding
3. Video clips of the right diaphragm
4. Video clips of the left diaphragm

*Additional views should also include right and left mid axillary line for increased sensitivity

Ocular

- Ocular ultrasound should be performed on patients with acute vision loss, flashers/floaters, or suspected foreign body.
- Ultrasound can be performed for the detection of retinal and vitreous detachments, vitreous hemorrhage, or ocular foreign bodies.
- Ultrasound can also be valuable in trauma when the eyelid is swollen shut and direct visualization of the pupillary reflex and extraocular movements cannot be evaluated by direct visualization.

MINIMAL CRITERIA FOR OCULAR ULTRASOUND

1. Video clips of the affected eye in two dimensions, making sure to visualize all surfaces of the retina, by having the patient look in different directions, the entire globe and ~1-2cm deep to the posterior globe should be visible on all video clips
2. Video clips of the unaffected eye

*For suspected elevated intracranial pressure Optic Nerve Sheath Diameter (ONSD) can be performed by measuring the ONSD 3mm posterior to the neural retina.

Soft Tissue/MSK

- Ultrasound can be valuable in the detection of abscess and cellulitis, as well as tendon ruptures, joint effusions, etc.

MINIMAL CRITERIA FOR SOFT TISSUE/MSK ULTRASOUND

1. Video clips of the affected area
2. Video clips of a similar unaffected area