

PAEDIATRIC eFAST EXAM

Extended Focused Assessment with Sonography in Trauma: Paediatric

Variances in body habitus in children may influence the way you perform a standard Extended Focused Assessment with Sonography in Trauma (eFAST) exam. This guide will demonstrate probe placement, views, and tips on how to perform this potentially life-saving diagnostic exam on Paediatric patients.

RECOMMENDED TRANSDUCERS:

- Small child: Phased array P10 or Curved array C11
- Larger child: Phased Array P21

Transducers used may vary depending on patient's habitus

CLINICAL INDICATIONS:

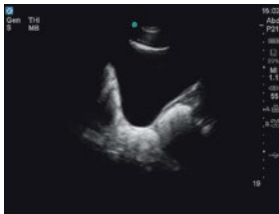
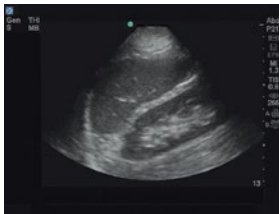
- Blunt trauma
- Unexplained hypotension
- Penetrating trauma

CLINICAL APPLICATIONS:

- Pericardial effusion
- Hemothorax
- Abdominal and/or pelvic free fluid
- Pneumothorax



Probe Placements Clinical images



CARDIAC SUBCOSTAL VIEW:

Identify the liver and cardiac structures, including RV, LV, RA, LA and posterior pericardium. Aim the transducer towards the patient's left shoulder, keeping the orientation marker towards the patient's right side. Look for free fluid in the pericardial space. The parasternal long axis view is used if the subcostal view is not optimal.

Paediatric Tip: Be sure to adjust the depth, the heart is more superficial than in adult patients.

RUQ VIEW:

Identify the liver, kidney, and diaphragm. Place the transducer along the mid-axillary line at approximately the 10th to 12th rib space, keeping the orientation marker toward the patient's head, angled posteriorly, in the plane of the kidney. Sweep the transducer anterior and posterior making sure to see all potential spaces. Look for free fluid in the abdomen, within Morison's pouch, paracolic gutter, and around both poles of the kidney. Look for free fluid in the pleural cavity, above the diaphragm.

Paediatric Tip: Right upper quadrant (RUQ), or Morison's pouch, is the most common place to identify free fluid in older or larger Paediatric patients.

LUQ VIEW:

Identify the spleen, kidney, and diaphragm. Place the transducer along the posterior-axillary line at approximately the 9th or 10th rib space, keeping the orientation marker towards the patient's head angled posteriorly approximately 10°. Sweep the transducer anterior and posterior making sure to see all potential spaces. Look for free fluid in the abdomen between the spleen, kidney, paracolic gutter, and around both poles of the kidney. Particularly look for fluid above the spleen and in the pleural cavity above the diaphragm.

Paediatric Tip: The LUQ longitudinal view can be difficult to obtain due to rib shadows. Make sure you're scanning more posteriorly. When compared with the RUQ view, transducer placement is more superior and more posterior.

PELVIC VIEW:

Start with the transverse view and ensure the probe indicator is oriented towards the patient's right side. Identify the bladder wall and surrounding bowel. Sweep through the bladder inferior to superior looking for free fluid anterior, posterior, and lateral to the bladder. Then rotate the probe with the indicator towards the patient's head in order to obtain the sagittal view. Sweep through the bladder laterally and medially to look for surrounding free fluid.

Paediatric Tip: The pelvic space is the most common area to identify free fluid in young Paediatric patients.

PLEURAL VIEW:

For improved frame rate and resolution, consider switching to a Cardiac or Lung exam type. Starting at first rib space, with orientation marker towards the patients head, look for lung sliding, or movement of the visceral and parietal pleura surfaces, and associated comet tails artifacts. In order to evaluate for the presence of a pneumothorax, place the transducer at the midclavicular line bilaterally. In order to evaluate for the presence of a pleural effusion, evaluate above the diaphragms on the RUQ and LUQ views of the FAST.

Paediatric Tip: Ultrasound waves easily penetrate the cartilaginous ribs of younger children. While scanning, the ribs may appear circular and the pleural line can be seen posteriorly. In small children, consider using the L25 linear transducer to better visualize the plural interface.

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