

Updates on the use of EFAST in Trauma

Michael Del Valle, MD



Disclosures

No relevant financial relationships that create a conflict of interest for CME purposes.

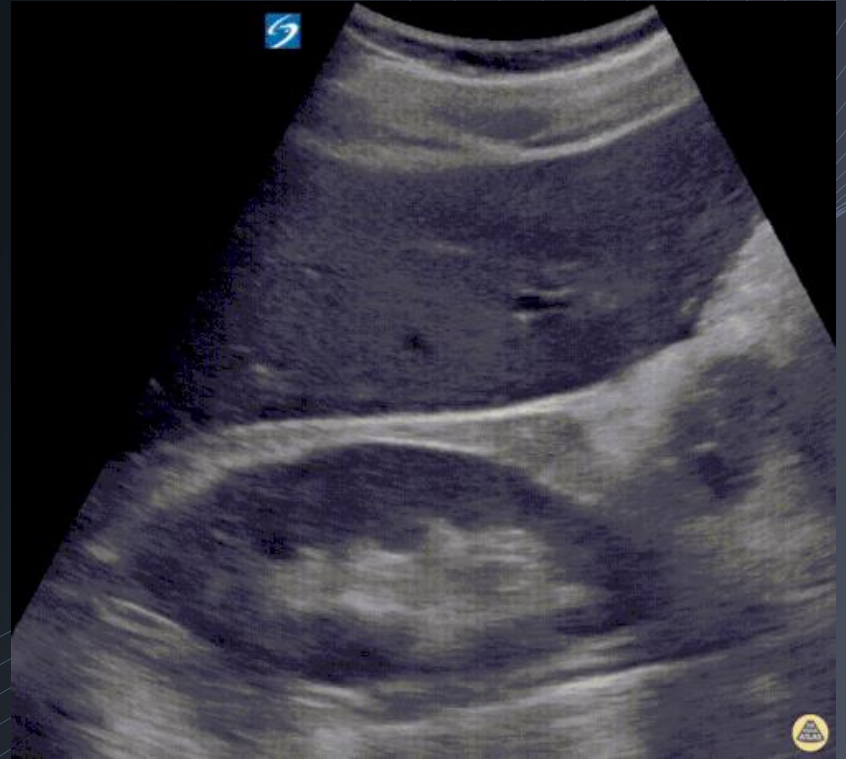
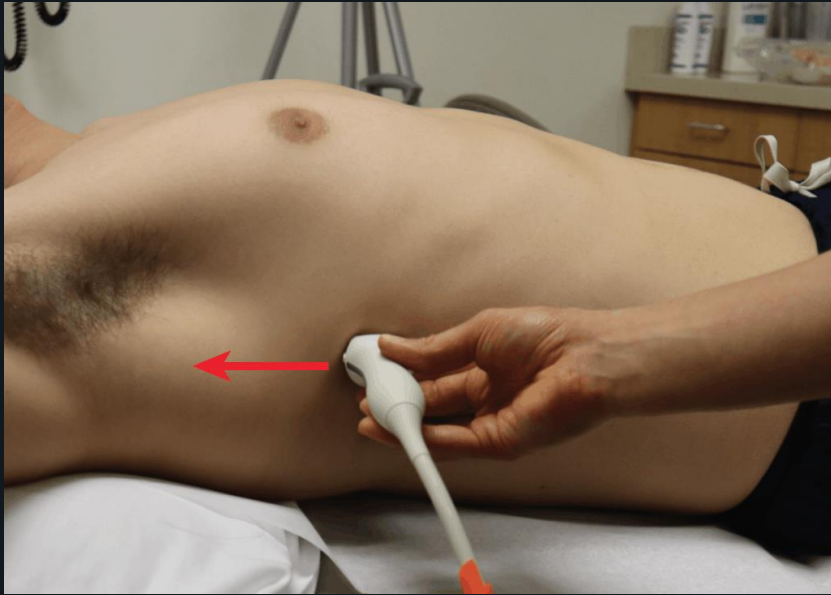
Learning Objectives

1. Review basics of image acquisition
2. Highlight essential views
3. Discuss clinical integration
4. Discuss controversies in evidence-based EFAST
5. Overview of pearls and pitfalls of pediatric EFAST

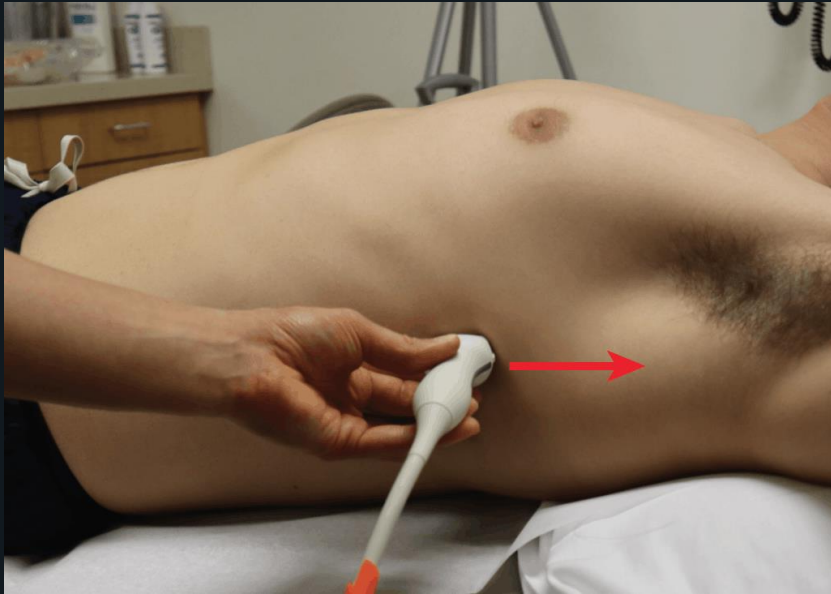
**Extended
Focused
Assessment with
Sonography in
Trauma**



Right Upper Quadrant



Left Upper Quadrant



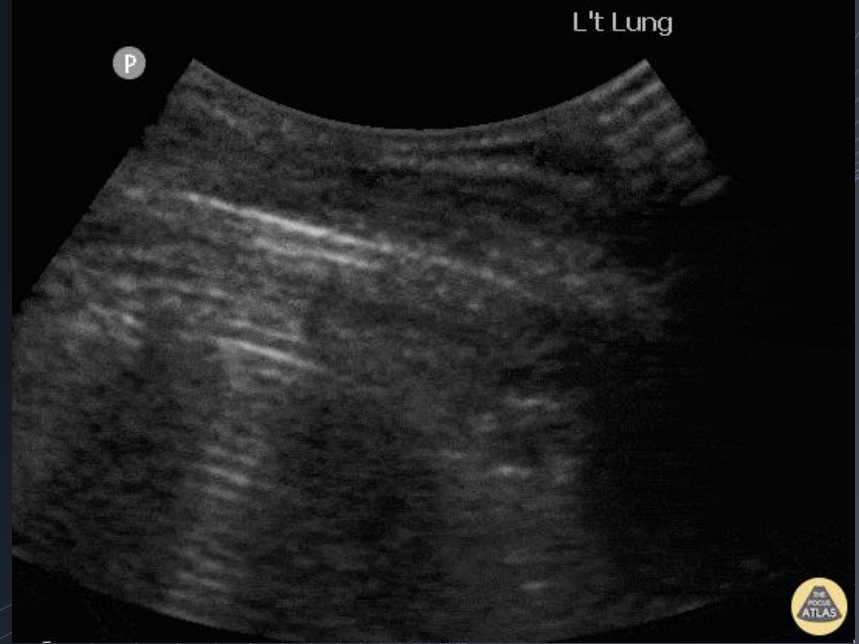
Cardiac



Pelvic



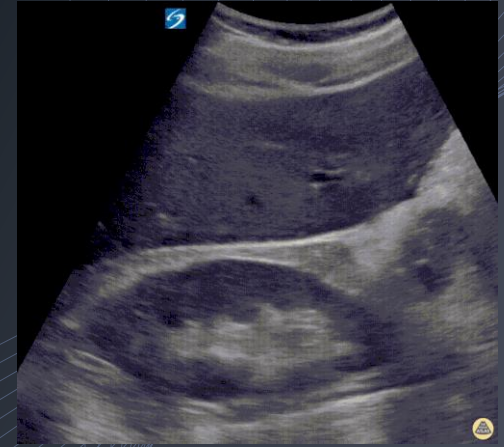
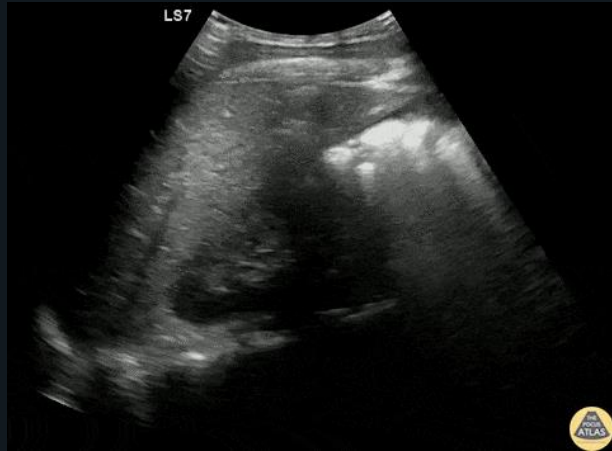
Lung



Essential **Views**

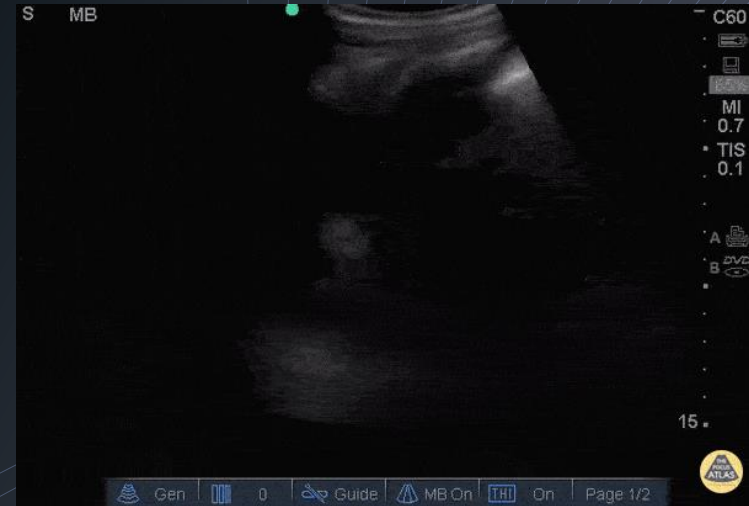
Most Sensitive Views

Right Upper Quadrant



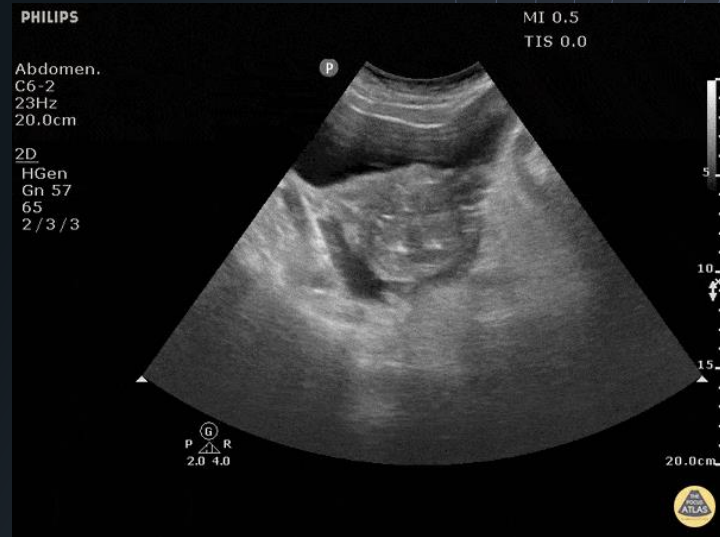
Most Sensitive Views

Left Upper Quadrant



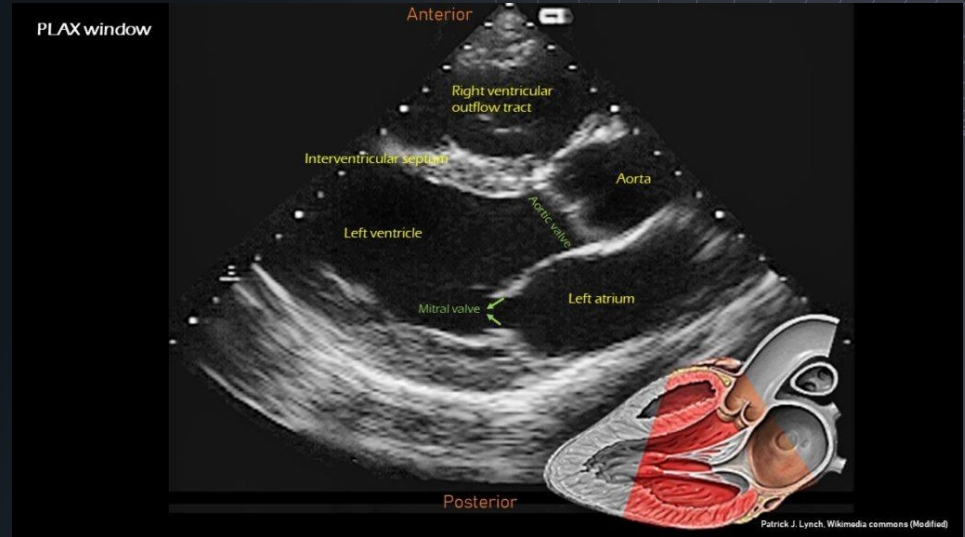
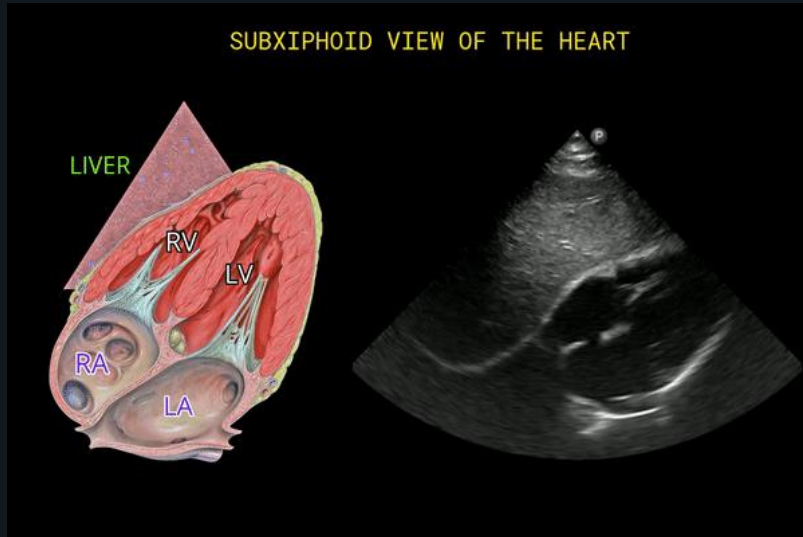
Most Sensitive Views

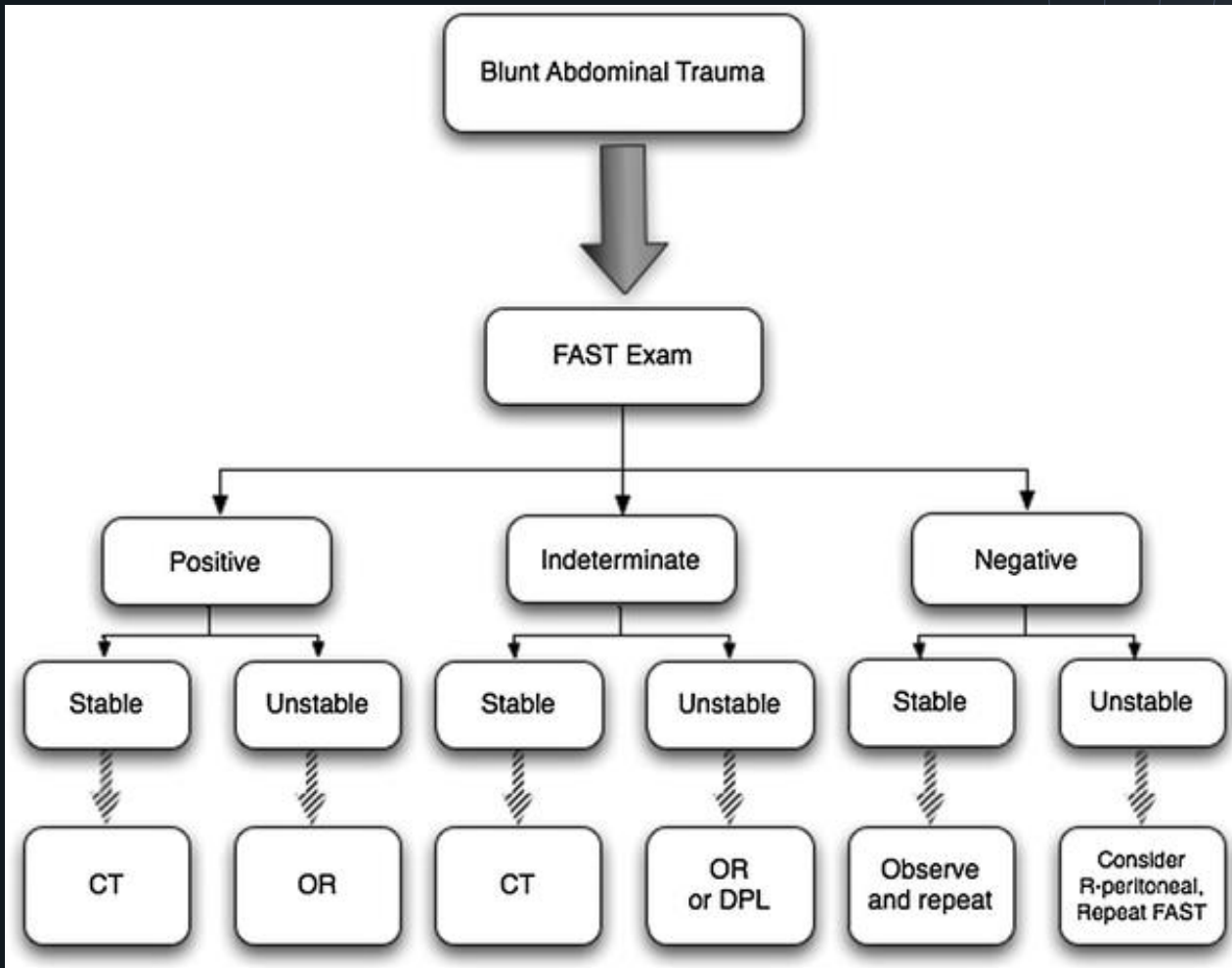
Pelvis



Most Sensitive Views

Cardiac





So where's the **evidence**?

Udobi et al (2001)

Penetrating Abdominal Trauma

+ Free Fluid

Sensitivity	46%
Specificity	94%
Positive Predictive Value	90%
Negative Predictive Value	60%

Nishijima et al (2012)

Positive FAST for Detecting Intra-abdominal Injury	
+ Free Fluid	
Sensitivity	74
Specificity	96
Positive LR	30
Negative LR	0.26

Detecting Pneumothorax

Pneumothorax		
Absence of lung sliding (4) and comet tail artifacts (3)		
Bedside POCUS	Sensitivity	Specificity
	86-98%	97-100%
AP CXR	28-75%	100%

Wilkerson et al (2010)

Pneumothorax	
No Lung Sliding and Lack of Comet Tails	
Sensitivity	90.9
Specificity	98.2
Positive LR	50.5
Negative LR	0.09

Alrajhi et al (2012)

Pneumothorax	
No Lung Sliding and Lack of Comet Tails	
Sensitivity	81%
Specificity	98%
Positive LR	67.9
Negative LR	0.18

Staub et al (2018)

Pneumothorax	
Absence of lung sliding	
CUST	Sensitivity 35%
Supine CXR	43%

Santorelli et al (2021)



Stop at one?

Blackbourne et al (2004)

Repeat FAST in Blunt Trauma		
+ Free Fluid		
	Initial	Secondary
Sensitivity	31%	72%
Specificity	100%	100%
Positive Predictive Value	95%	98%
Negative Predictive Value	92%	97%

Pediatric **FAST**

Holmes et al (2017)



Liang et al (2021)

Positive FAST for Detecting Intra-abdominal Injury (Pediatric)	
+ Free Fluid	
Sensitivity	35
Specificity	96
Positive LR	10.8
Negative LR	0.65

Consider the use of the
PECARN Abdominal
Trauma Rule

Summary

1. Positioning is key
2. Be sure to obtain the essential views
3. EFAST is effective for detection of pneumothorax
4. Limited utility in stable pediatric patients
5. High specificity and low sensitivity in pediatric patients



Questions?