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Famous FAST Words

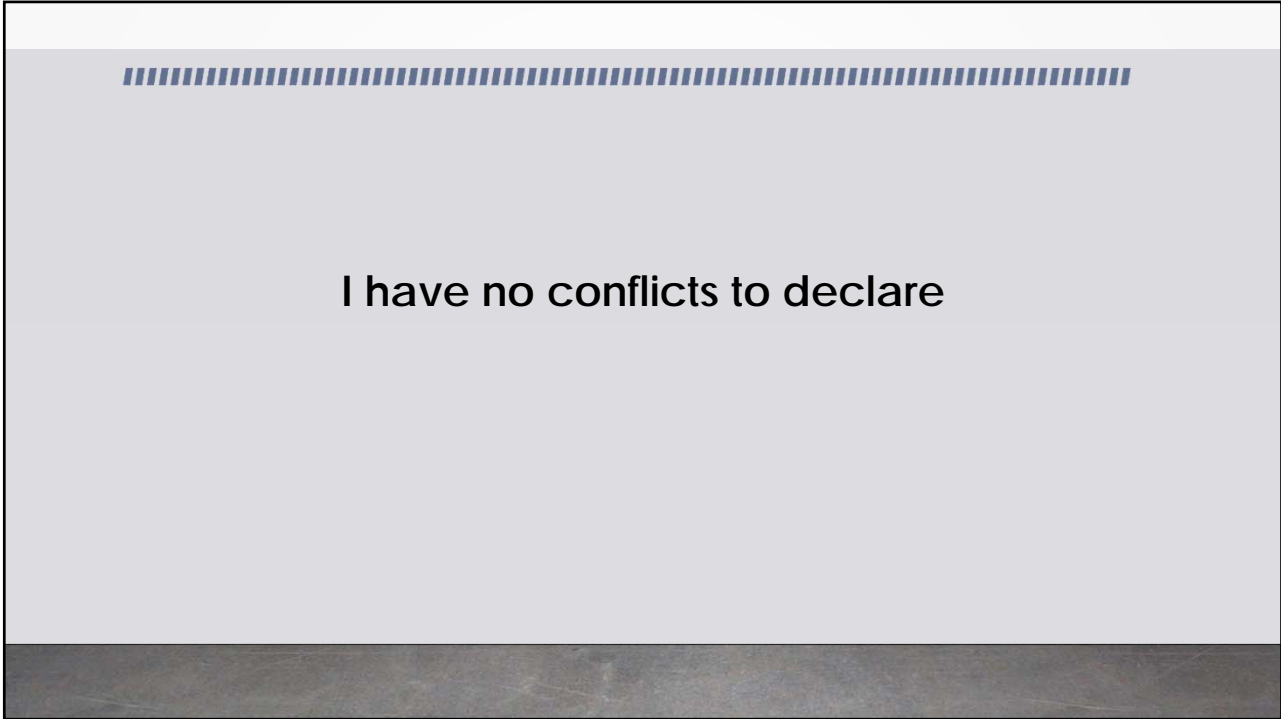
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The Society of Rural Physicians of Canada : 27th Annual Rural and Remote
Medicine Course
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FAMOUS LAST WORDS
TRUST ME...
I DO THIS ALL THE TIME
mottfakoo.com

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FAST is...

- F – Focused
- A – Assessment
- S – Sonography
- T – Trauma



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FAST is...

- Bedside ultrasound examination to determine if a patient has free intraabdominal or pelvic fluid
- Areas to scan
 1. Morison's pouch
 2. Sub-diaphragmatic space and spleno-renal space
 3. Pelvis??

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Indications

- Abdominal trauma of any kind...
 - Search for free fluid

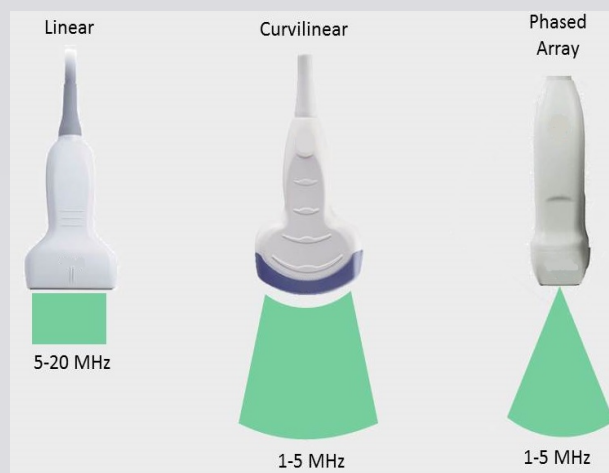
- ...that's all

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Probe selection

- Low frequencies for scans of the abdomen

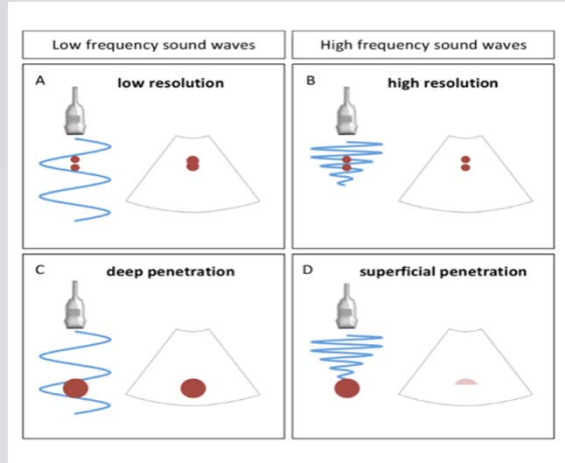
- **For FAST:**
Curvilinear almost always the correct choice



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Probe frequency review

- Low frequency sound waves have **low** resolution but **deep** penetration
- A low frequency probe is necessary to image deep structures such as the liver and kidneys



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Probe position (RUQ/LUQ)

- Indicator:** cephalad
- Probe position:** mid-axillary line at level of the xyphoid
- Tip:** "Knuckles to the bed"
- View:** coronal plane



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Patient position

- Supine
- Raise the ipsilateral arm to facilitate scanning
- Make sure you're comfortable!
 - No bending!
 - Raise the bed
 - Clear clothing, leads



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What do things look like?

- Areas that do not reflect ultrasound waves are **black**
 - Are "anechoic"
 - Fluid, fresh blood, urine, vessels, bile, cysts
- Areas that reflect nearly all ultrasound waves are **white and bright and may cast a shadow**
 - Are "hyperechoic"
 - Bone, nerves, vessel walls, stones, clotted blood, fascia
- Areas in between are various degrees of grey
 - Are "hypoechoic"
 - Organs, muscle, tumours

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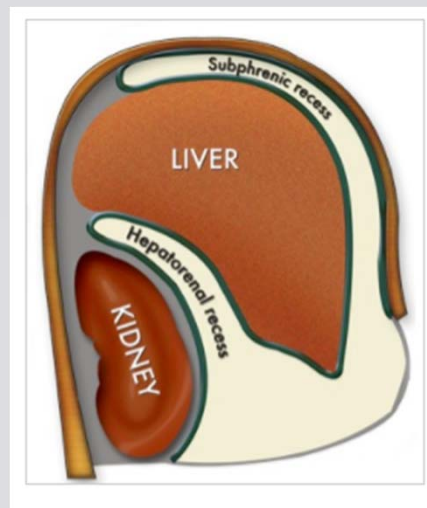
What are we looking for?

- Free fluid is **black** (anechoic) and....
 - Contained but **not** membrane-bound
 - Often has pointy ends or serrated edges
 - Can be distinguished from gas and rib shadows
 - Can be distinguished from perinephric fat
 - Is often subtle...so sweep slowly!

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1. Morison's pouch

- Potential space between right kidney and liver
- Most **specific** site for pathological intraabdominal free fluid
- Again, look for anechoic, "crescent-shaped" fluid that is NOT membrane bound



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Technique

- Find hepatorenal interface
- Sweep Morison's pouch until the kidney disappears in BOTH directions
- Sweep SLOWLY!

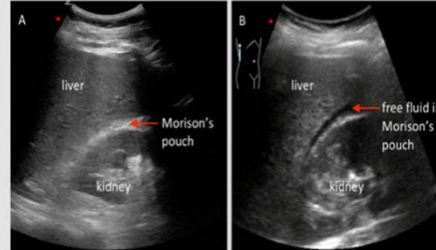


Figure 6.2 Fluid in Morison's pouch revealed by a right posterolateral abdominal scan.

A. The normal appearance of Morison's pouch. There is no anechoic (black) area between the liver and the right kidney.

B. Free fluid in Morison's pouch appears anechoic (black).

Red circle denotes orientation marker.

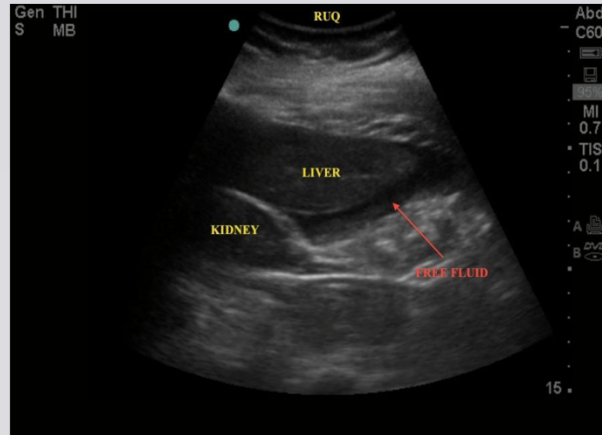
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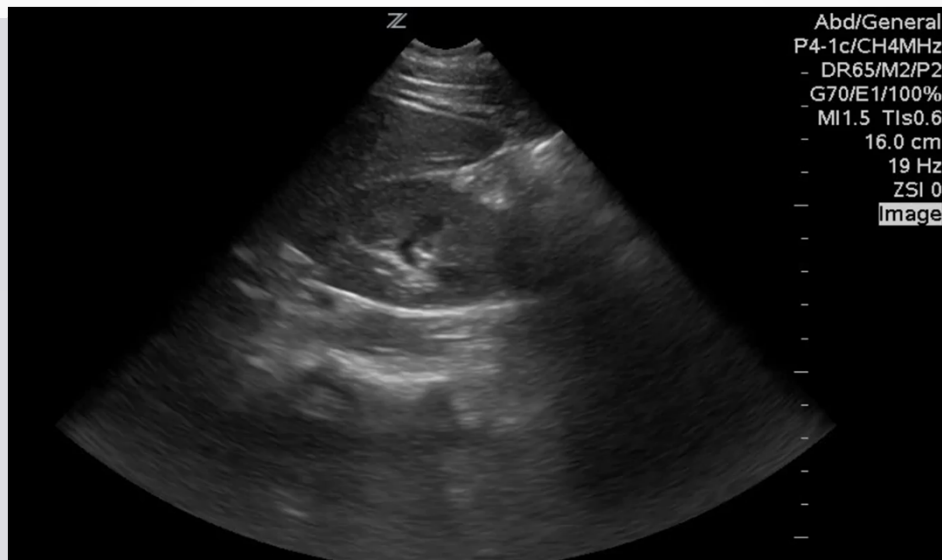
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Liver tip

- The same applies to the liver tip
- Identify the liver tip with the kidney in view
- Sweep the liver tip until the kidney disappears in BOTH directions



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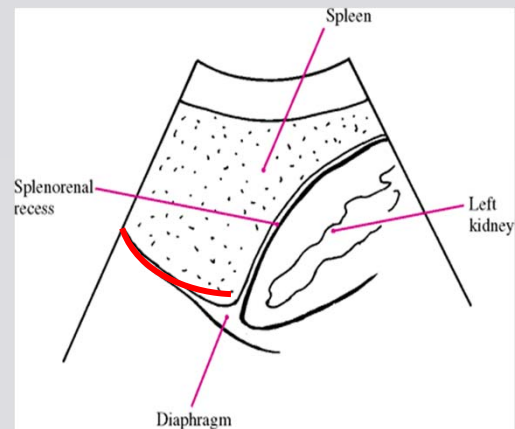
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2. Spleno-diaphragmatic recess

- Must see the diaphragm "6-9 o'clock"
- Diaphragm is the focus; the kidney guides the sweep
- Sweep the space until the kidney disappears in BOTH directions



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Spleno-renal space and splenic tip

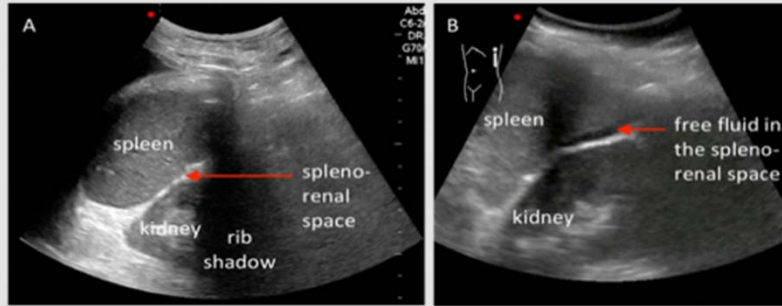


Figure 6.3 Fluid in the spleno-renal space revealed by a left posterolateral abdominal scan.

A. The normal appearance of the spleno-renal space.
B. Free fluid between the spleen and the left kidney appears anechoic (black).
 Red circle denotes orientation marker.

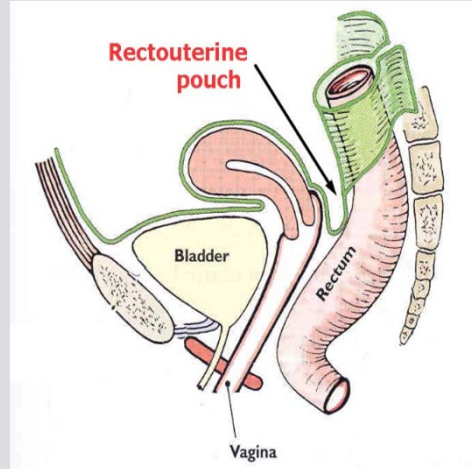
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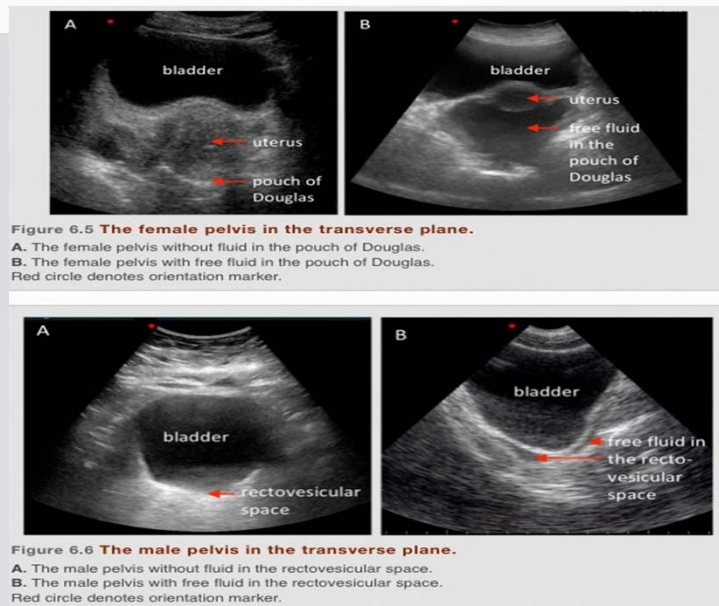
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3. The Pelvis

- Females have physiologic fluid in Pouch of Douglas
- Pelvic fluid in males is always pathological
- Probe in transverse or sagittal plane, superior to the symphysis pubis
- Look for the bladder and sweep it!



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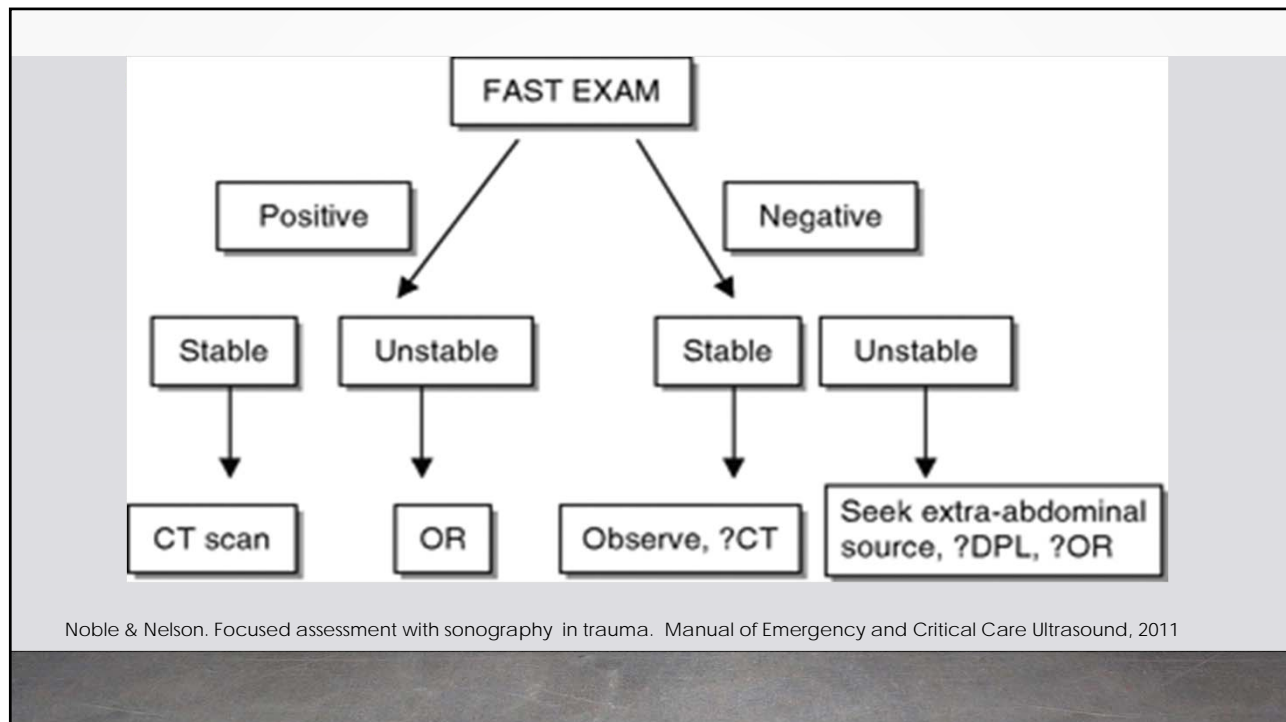


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Significance of positive FAST?

- If a trauma patient has free fluid in any one of these three areas, suspect intraperitoneal bleeding!
- If they have a negative scan but your clinical suspicion is high, clinical impression always trumps
- Pitfalls
 - Adhesions and clotted blood may alter the flow of free fluid in the abdomen
 - If clinical suspicion is high, always repeat a negative scan

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Technique and troubleshooting

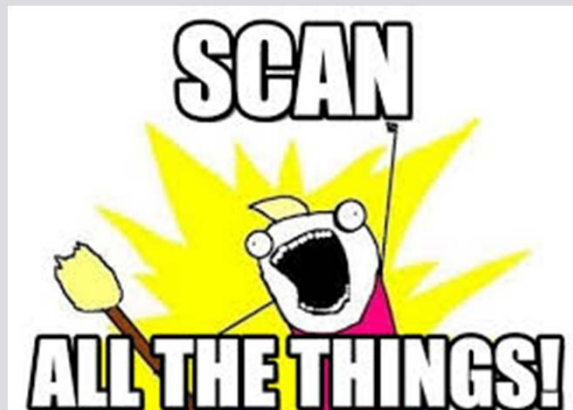
- Do everything slowly – especially sweeping!
- Make sure all movements are small and separate
- Search systematically
- Make use of the patient (breathing?)
- When in doubt, reposition and repeat
- Never be afraid to call indeterminate

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Acknowledgements/References

- Dr Peter Steinmetz – Bedside Ultrasound: Level 1
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- Memorial University Faculty of Medicine
- All the people who post pictures online without obvious copyright stipulations

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