

Introduction to Ultrasound Anatomy and Injections



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Linear (Straight) Array

Higher Frequency for shallow targets,
Good resolution, little inherent
distortion.



Curved Array

Low Frequency for deep targets.
Worse resolution, curved trapezoidal
shaped display more distorting.

Choosing the Probe



Ultrasound Beam

*Transverse Scan Aligns
Probe across Short Axis
of the Target Nerve*

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JACK VANDER BEEK

It depends on how you look at it.



It depends on how you look at it.

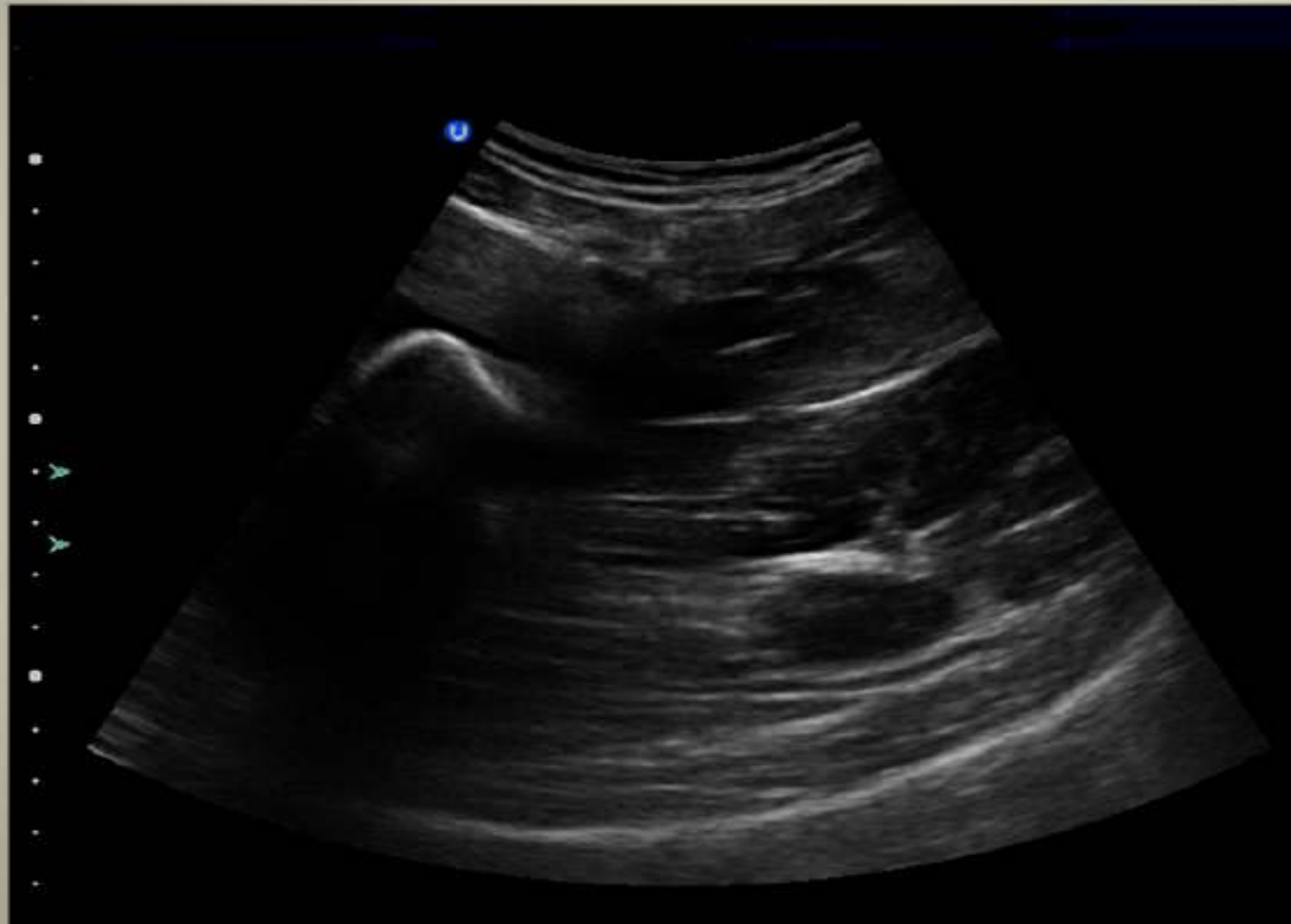


Have a Reasoned Needle Approach



Have a Reasoned Needle Approach

- **Hyperechoic** - Boundary producing a strong ultrasound reflection
- **Hypoechoic** – Boundary that produces a weak echo.



Buzzwords

Diagnostic US Learning Curve

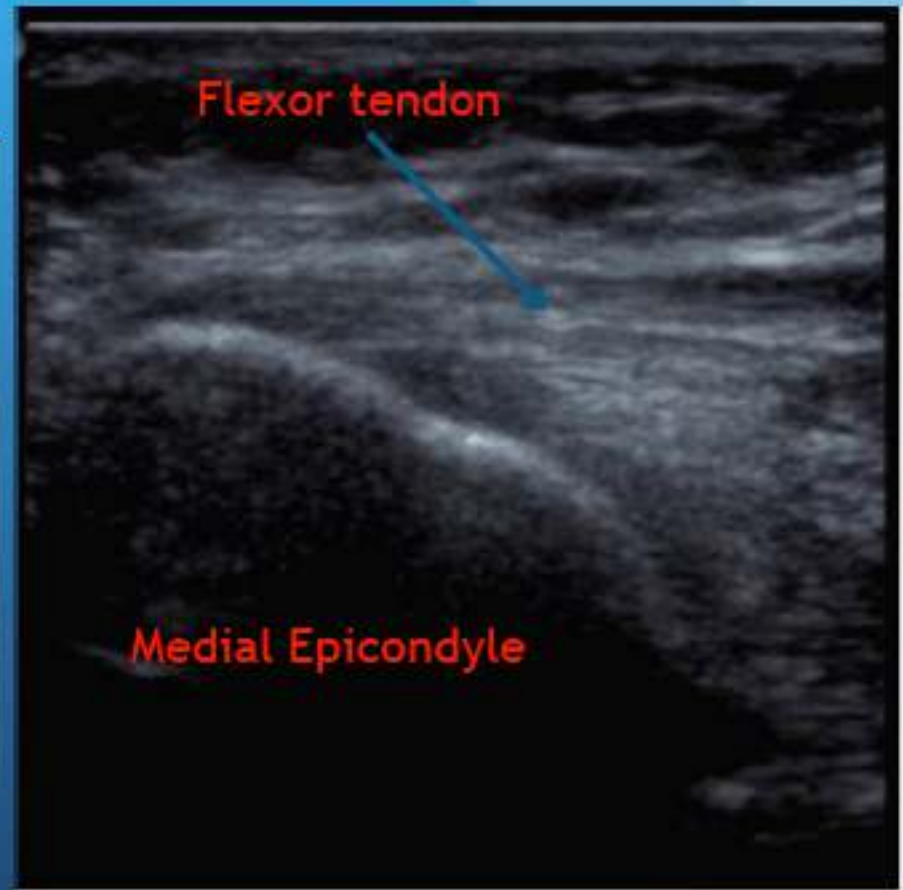
Training Your Eyes



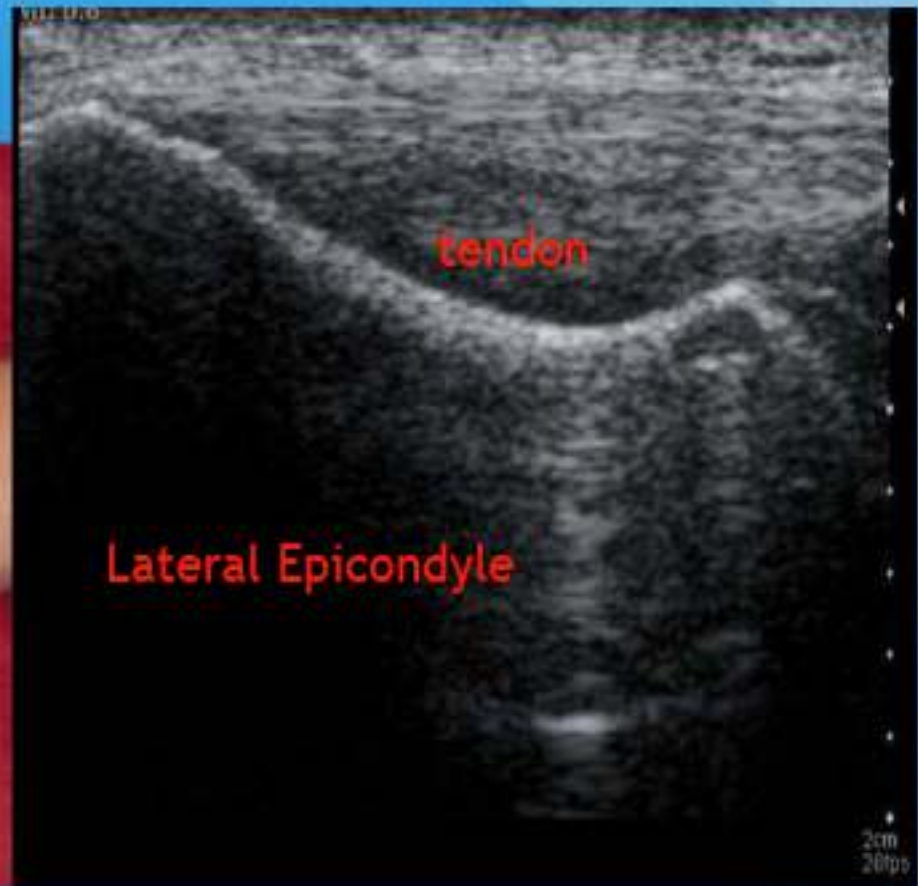
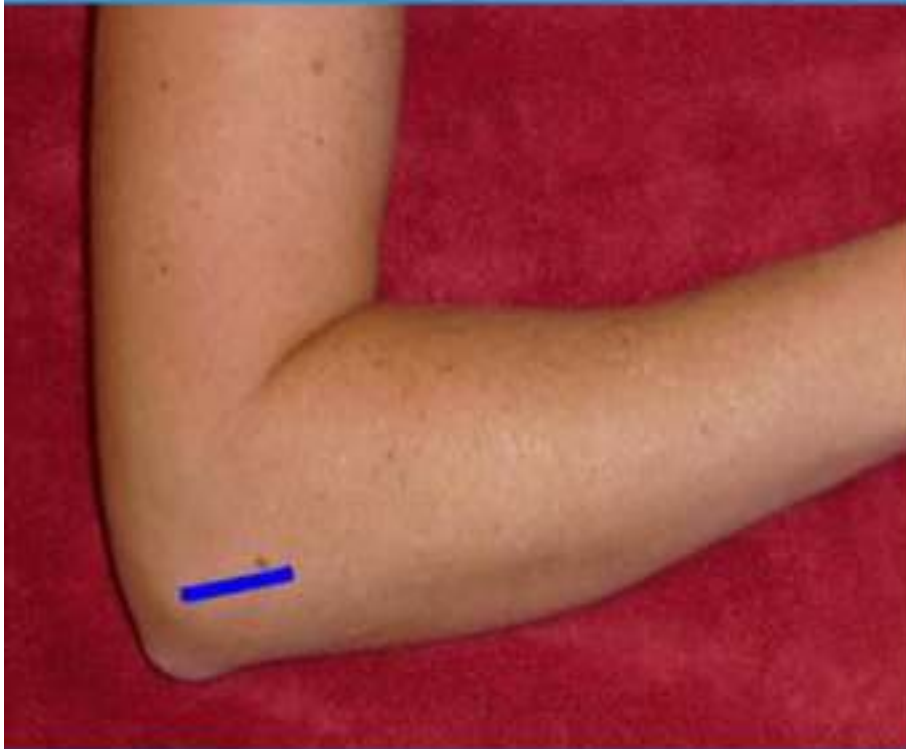
Maybe special 50 Shades of....



Common Flexors Tendon



Lateral Common Extensor Tendon



HIP JOINT

■ Indications

- DJD
- Labral tears, etc.

■ Fluoro

- Both accurate
- US: No radiation
- US: able to visualize soft tissue



Scanning Technique Anterior Hip



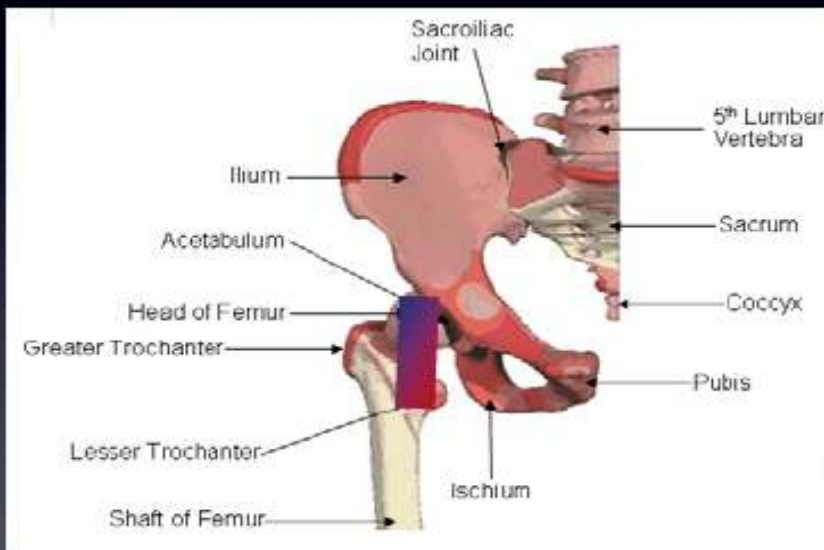
Linear Array



Curved Array

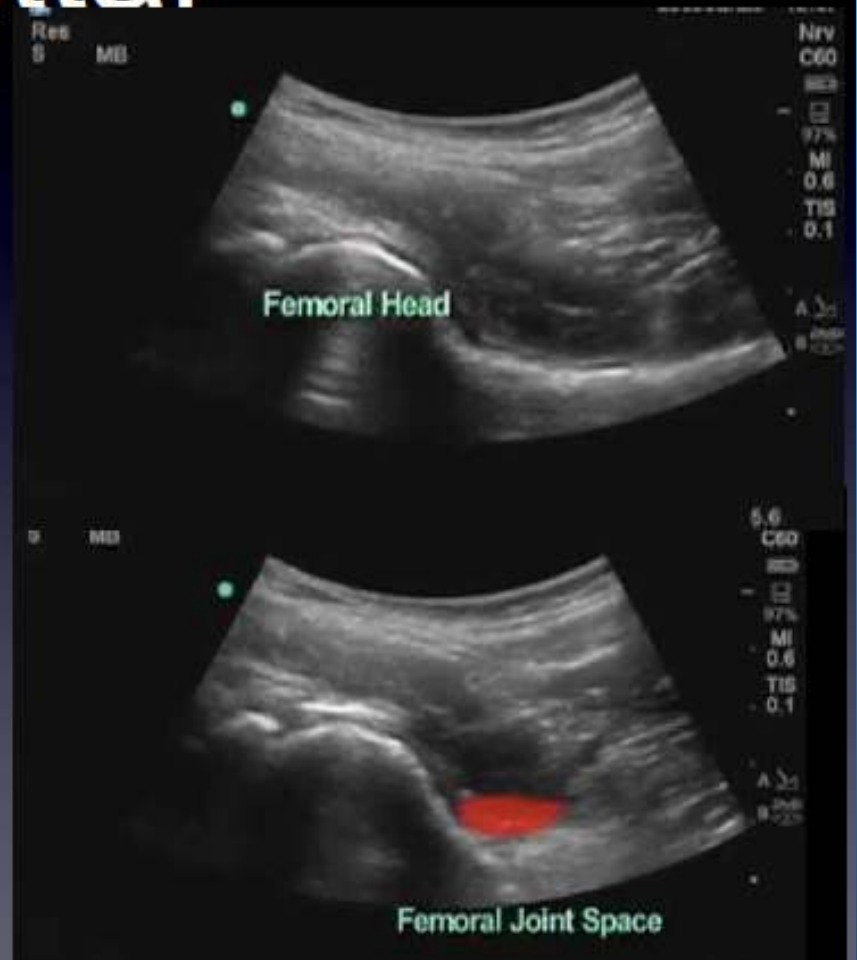


Tightly Curved Array



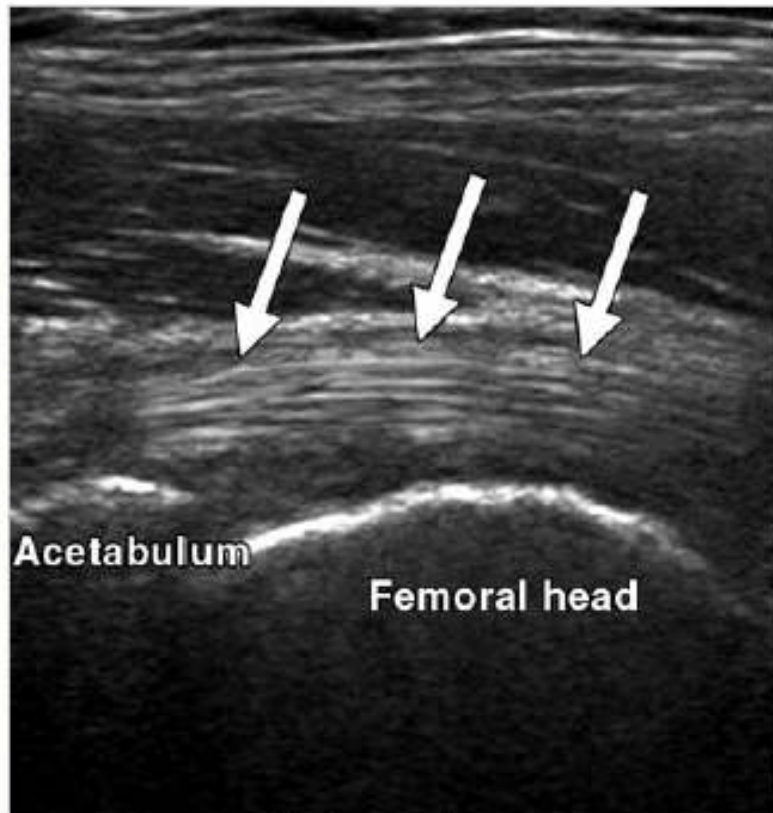
= Transducer position
relative to anatomic
structures

Long Axis View - Sagittal



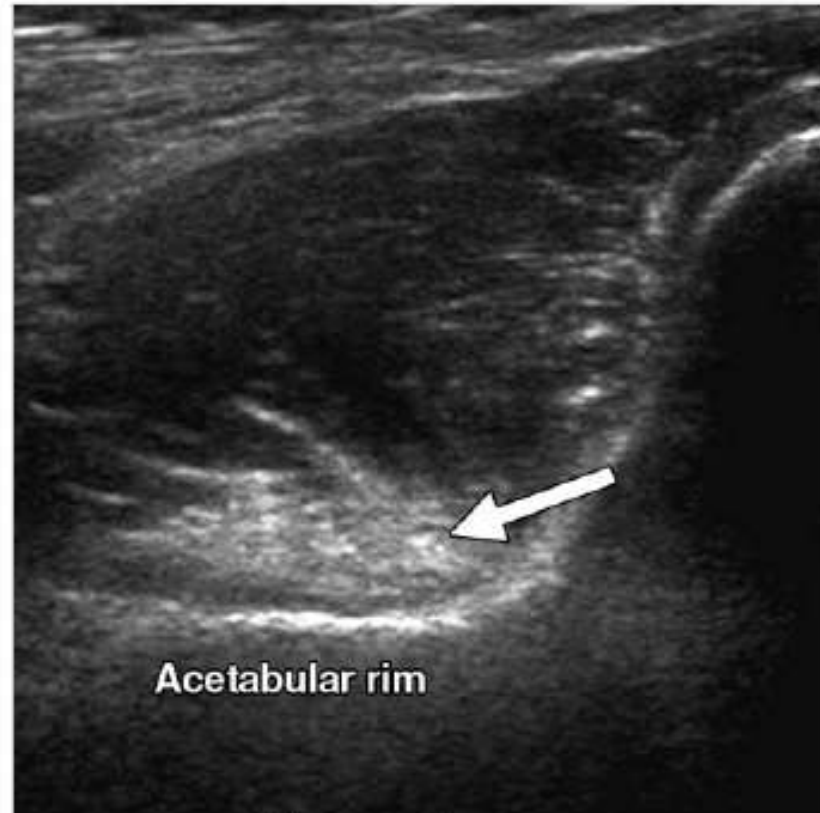


Ileopsoas Tendon over femoral head, inserts medially at lesser trochanter



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Fig. 2B —Normal iliopsoas tendon on sonography of 38-year-old woman. Transverse (A) and longitudinal (B) sonographic images of iliopsoas tendon show normal echogenic fibrillar pattern (arrows). Distal portion of iliopsoas tendon often cannot be visualized near attachment onto lesser trochanter.



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Fig. 2A —Normal iliopsoas tendon on sonography of 38-year-old woman. Transverse (A) and longitudinal (B) sonographic images of iliopsoas tendon show normal echogenic fibrillar pattern (arrows). Distal portion of iliopsoas tendon often cannot be visualized near attachment onto lesser trochanter.

Biceps Tendon

Scan 1.1 and 1.2 Patient Positioning

- Patient Seated in a neutral position.
- External rotation of the palm.
- Elbow approximating the rib cage as close as comfortable.



Biceps Tendon

Scan 1.1 and 1.2 Probe Placement

- Transducer central beam transverse to the bicipital groove / long head of biceps tendon.
- Scan Biceps tendon proximal to the labrum junction and distal to the myotendinous junction.
- Note: Proximal biceps tendon curves to the labrum.
- Note The toe of the probe (cord end angle caudally for better image).

Toe of
Probe.

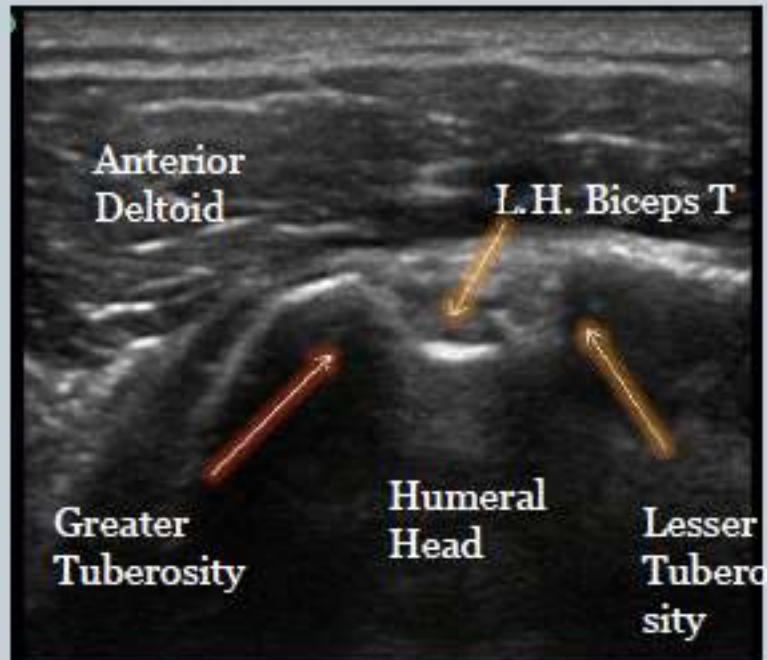


Nose of
Probe

Biceps Tendon

Shoulder Structures (Rotator Cuff)

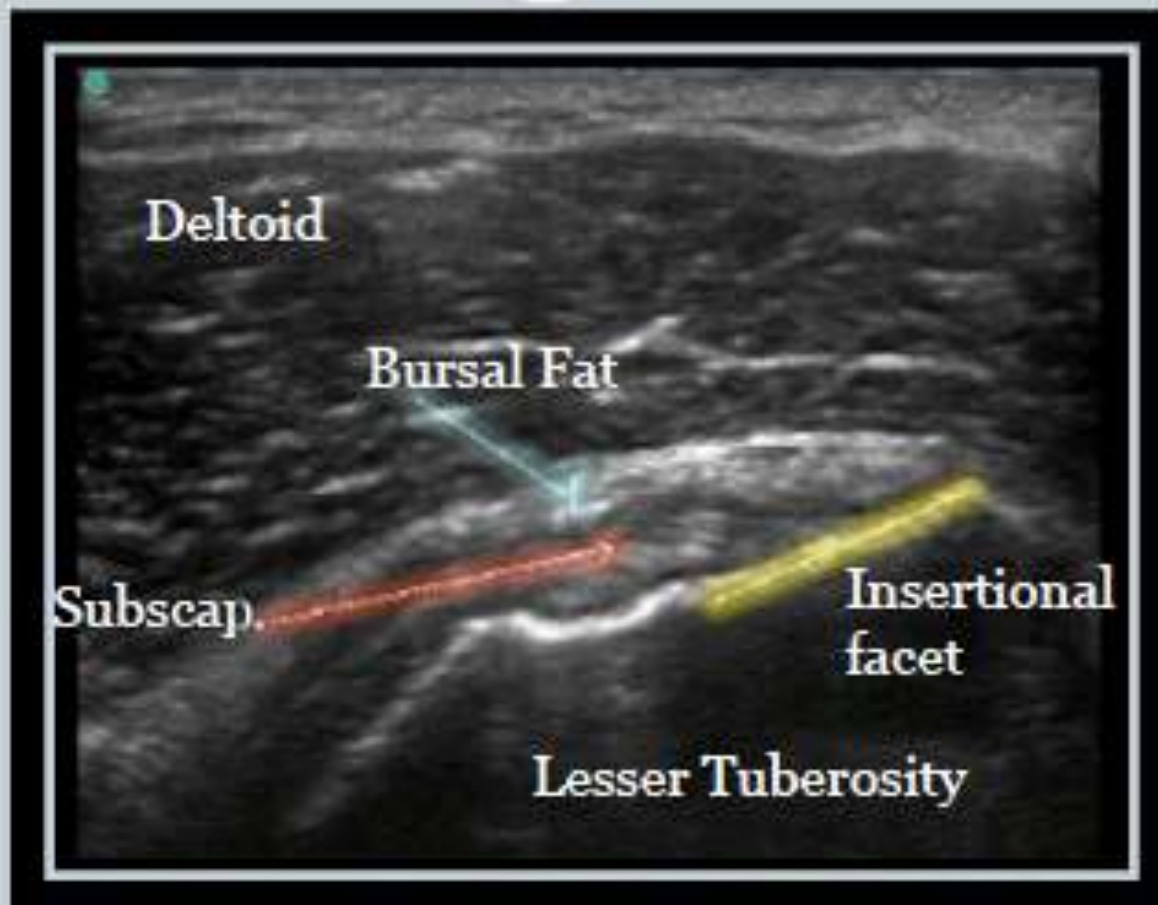
- Major Landmark (Intertubercular Sulcus, “bicipital groove”)



Scan 2.1 – Longitudinal Subscapularis



Scan 2.1 – Long. Subscapularis



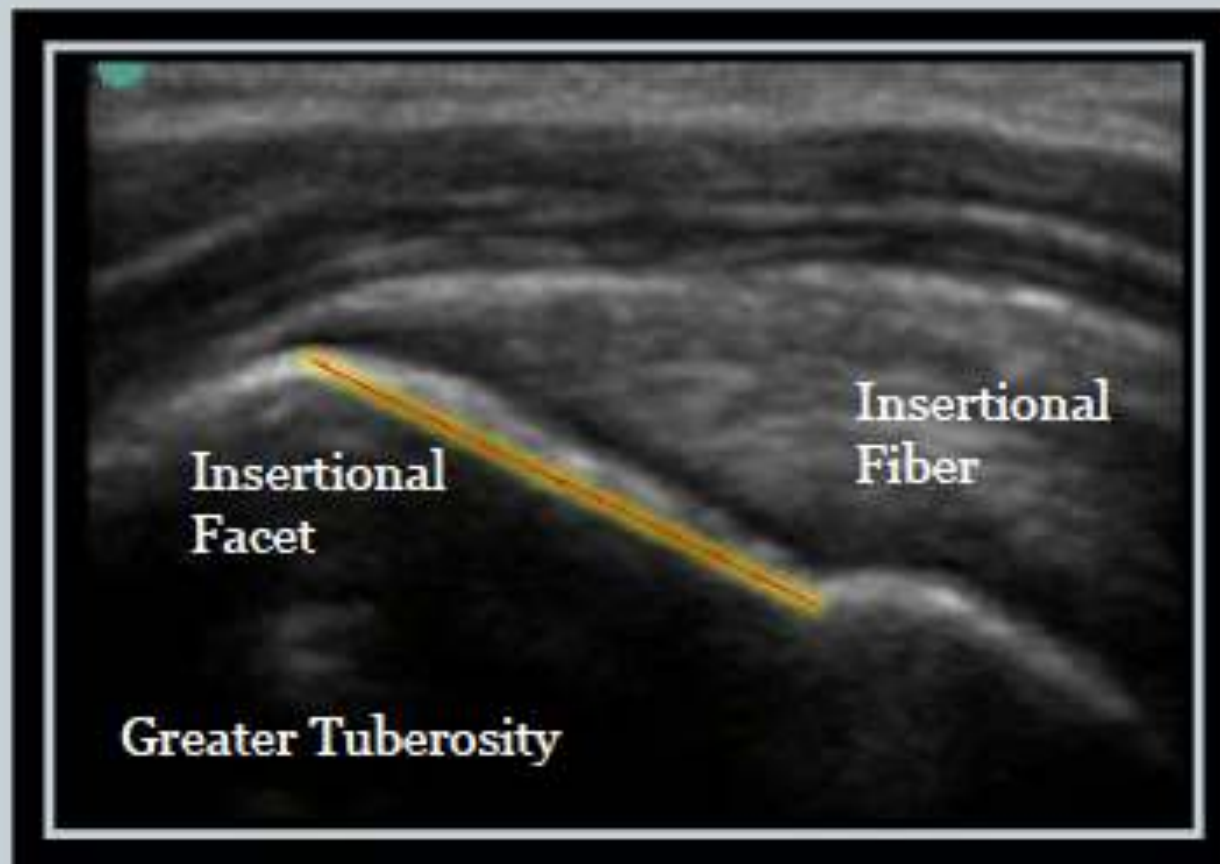
Scan 3.1 and 3.2 Supraspinatus

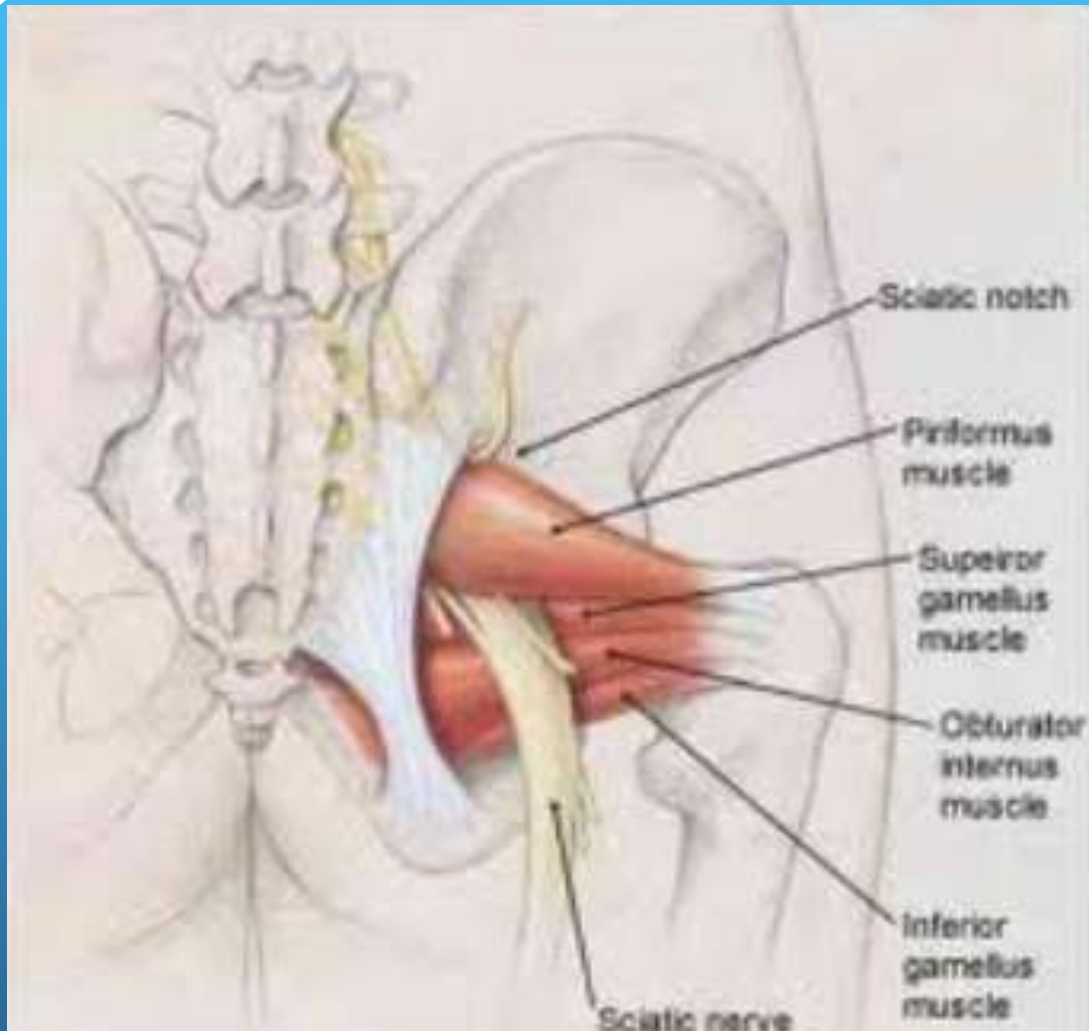


Scan 3.1 – Longitudinal Supraspinatus



Scan 3.1 Longitudinal Supraspinatus





Apply curvilinear probe
Across PSIS and greater
Trochanter and sweep
Caudad to find sciatic
notch

Piriformis Left

PAIN

2011Jan21 16:47

Gen MB

Nrv

C60

99%

MI

0.8

TIS

0.1

Patient

Auto Gain

Gen

Clip

Page 1/3

Greater troch

Gluteus Maximus

Piriformis

Medial

Gain

Depth

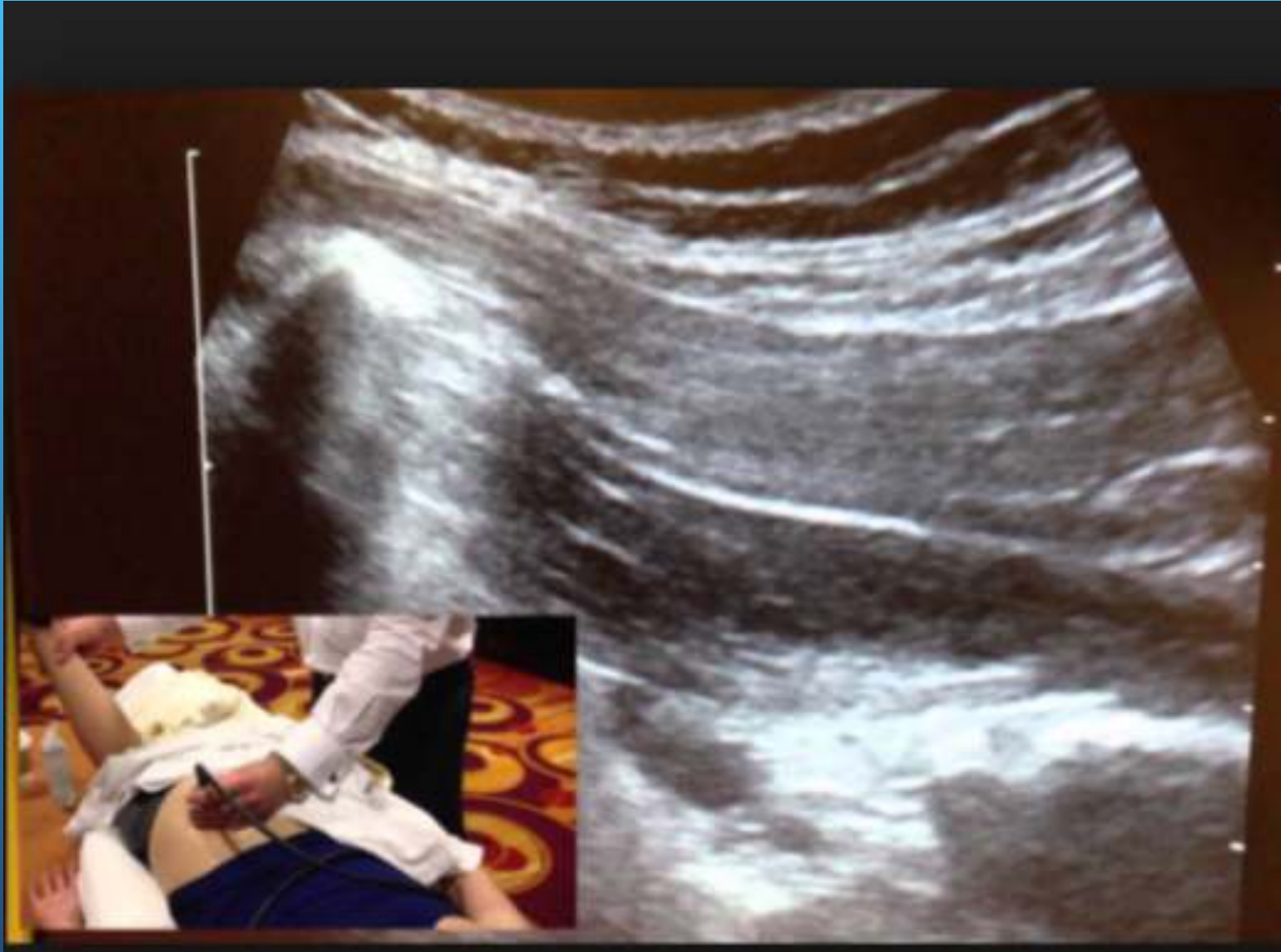
Freeze

Save

Options

Color

Rotation of the hip with knee flexed reveals Piriformis Muscle



Come in First Place! Start using
Ultrasound in your practice.

