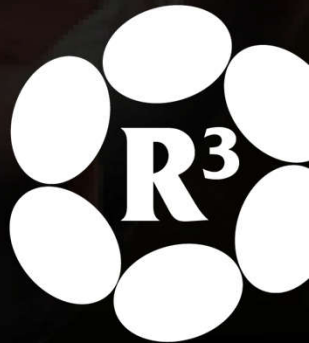




10-POINT MUSCULOSKELETAL ULTRASOUND OF THE KNEE



MEDICAL TRAINING

10 POINT KNEE EVALUATION



MEDICAL TRAINING

1. Anterior knee joint superior Sagittal

2. Anterior knee joint superior Axial

3. Anterior knee inferior Sagittal

4. Anterior knee inferior Axial

5. Medial knee anterior

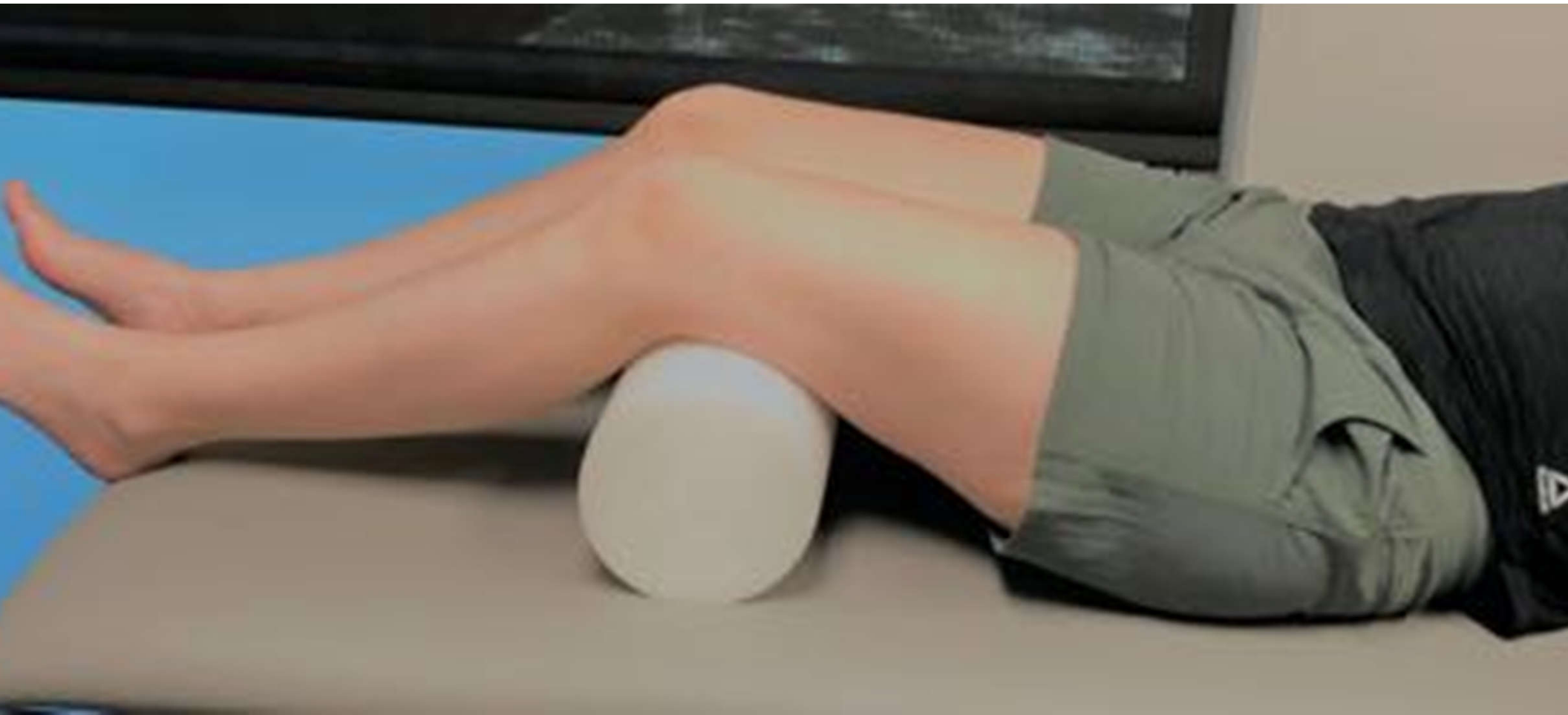
6. Medial knee posterior

7. Lateral knee anterior

8. Lateral knee posterior

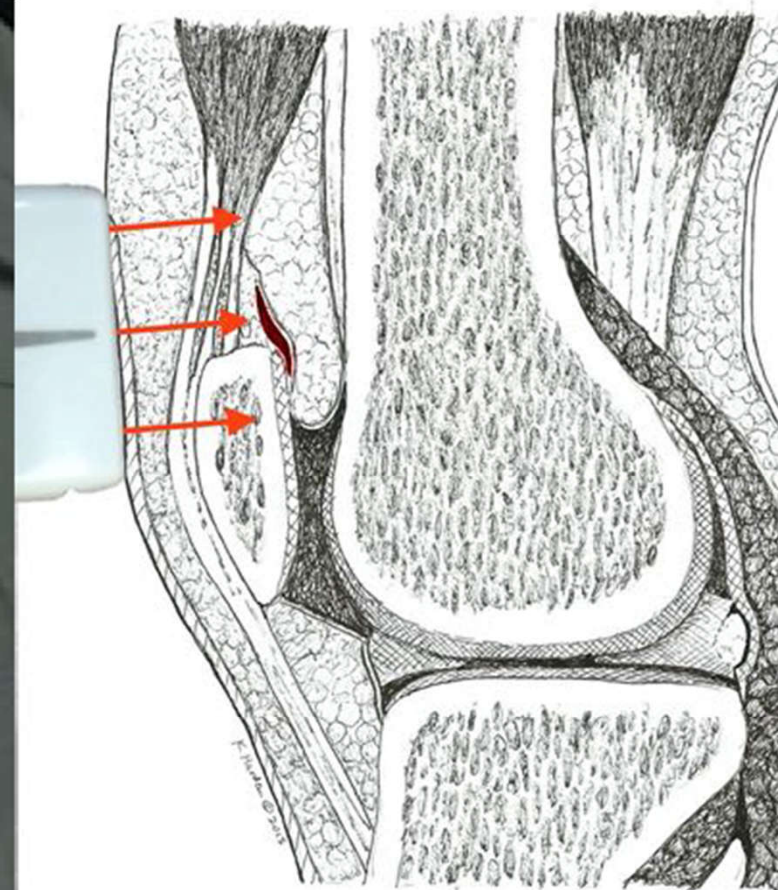
9. Posterior knee Sagittal

10. Posterior knee Axial



KNEE POSITION

ANTERIOR, MEDIAL AND LATERAL SCANS CAN BE PERFORMED IN SUPINE POSITION WITH KNEE FLEXION AROUND 15-20 DEGREES OF FLEXION ON A BOLSTER



ANTERIOR KNEE SUPERIOR LAX

STARTING POSITION MIDSAGITTAL ALONG THE QUAD WITH THE
PROBE ANGLED PARALLEL TO THE QUAD AND FEMUR

REGIONS OF SUPRAPATELLAR SPACE



MEDICAL TRAINING

1. Prefemoral Fat Pad

2. Simple Synovial Fluid

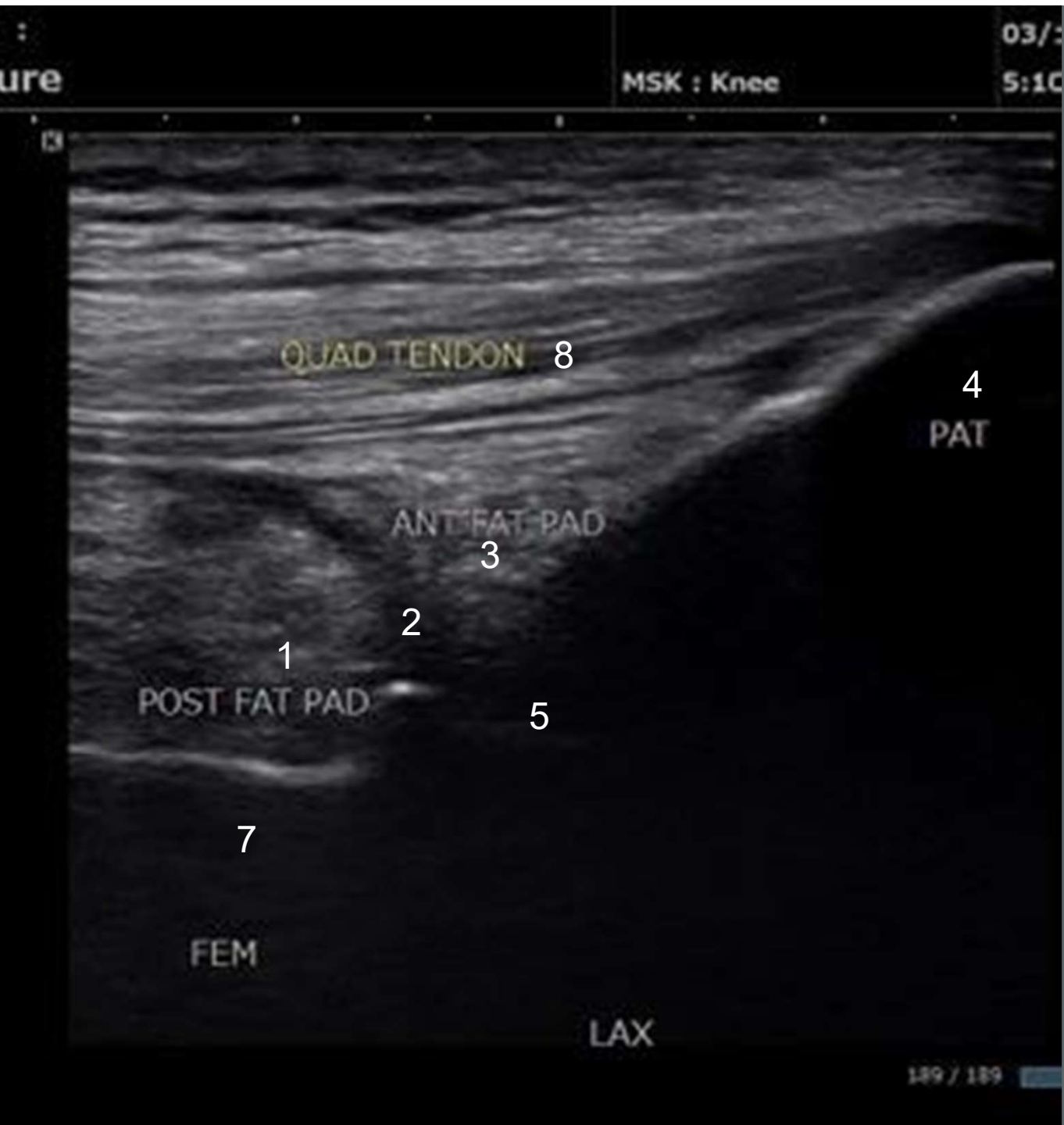
3. Quad Fat Pad

4. Proximal Patella

5. Trochlear Articular Cartilage

6. Distal Femur

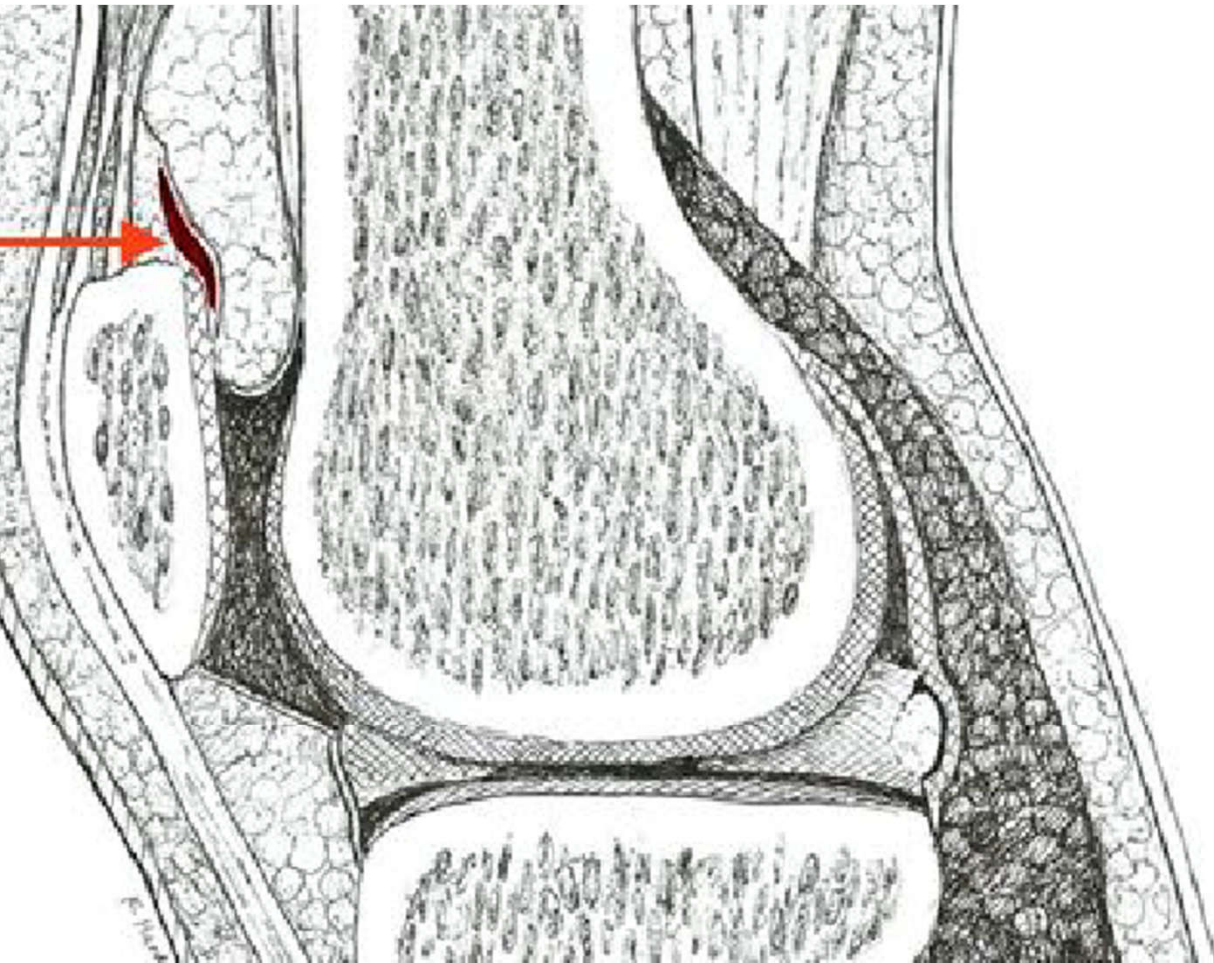
7. Quadriceps tendon



ANTERIOR SUPRAPATELLAR SPACE LAX



MEDICAL TRAINING



2. ANTERIOR KNEE SUPERIOR SAX

STARTING POSITION MIDSAGITTAL ALONG THE QUAD WITH THE
PROBE ANGLED PERPENDICULAR TO THE QUAD AND FEMUR

MSK : Knee

03/19/2019

5:13:41 PM



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ANTERIOR
SUPRAPATELLAR
SPACE SAX

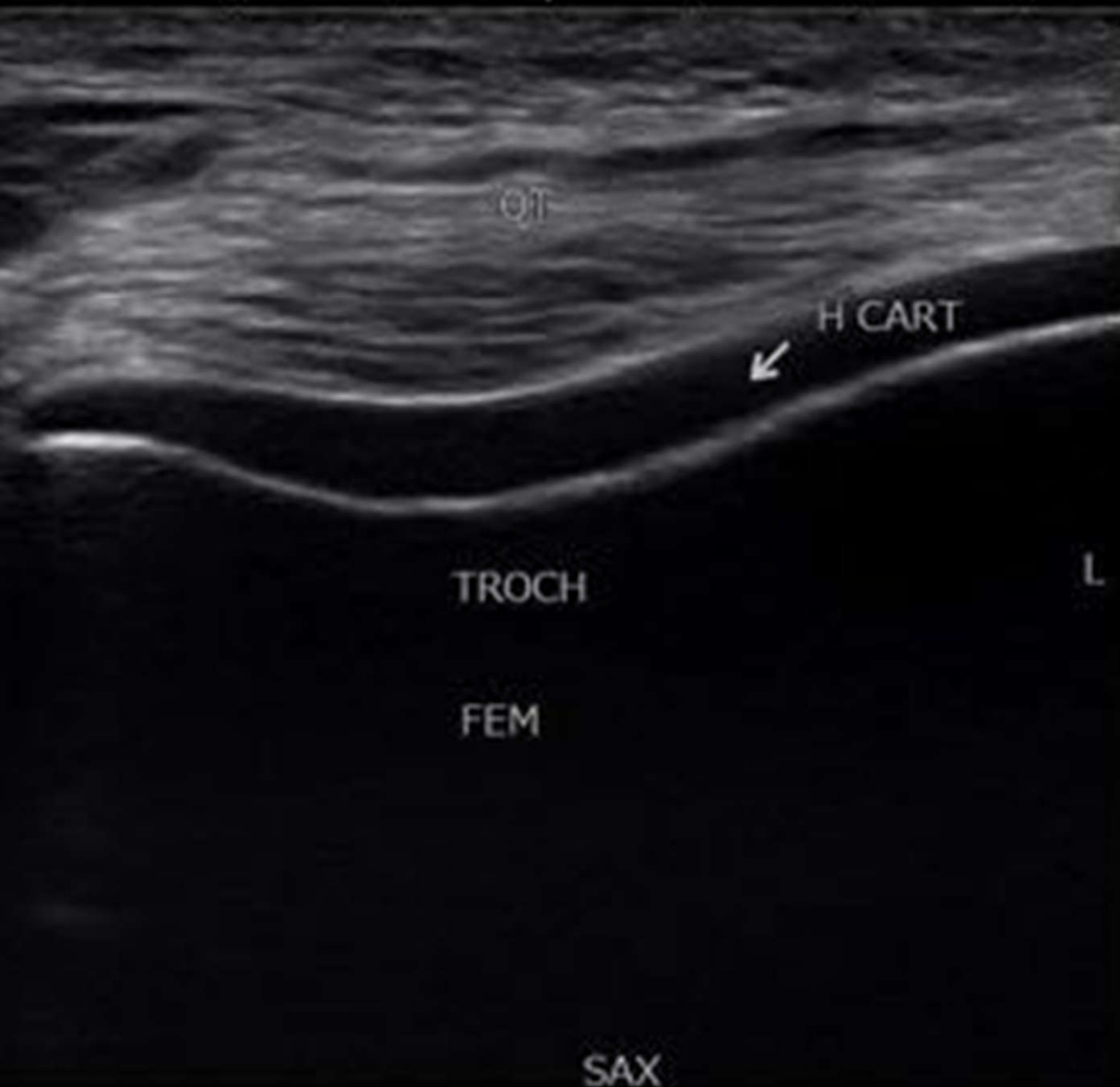


MEDICAL TRAIN

MSK : Knee

03/19/201

5:14:26 PM



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ANTERIOR SUPRAPATELLAR SPACE SAX

TROCHLEAR VIEW AT 90 DEG KNEE FLEXION

- View of trochlear groove is best visualized with knee in 90 deg of flexion
- Hypoechoic signal adjacent to femur is hyaline cartilage



MEDICAL TRA

TROCHLEAR GROOVE DYNAMIC EVALUATION

- Sweeping the probe lateral to medial with knee in various degrees of flexion looking for loose body formation



MEDICAL TRAINING





QUAD MUSCLE GROUP SAX

KEEPING THE PROBE IN SAX OF THE QUAD, AND FEMUR, TRANSLATE THE PROBE PROXIMAL, AND MAINTAIN RECTUS AND VASTUS INTERMEDIUS, AND SWEEP MEDIAL TO LATERAL AS NEEDED. *DEPENDING ON BODY HABITUS, POSSIBLY USE CURVILINEAR OR TRAPEZOIDAL VIEW FOR DEEPER STRUCTURES.



MEDICAL TRAINING

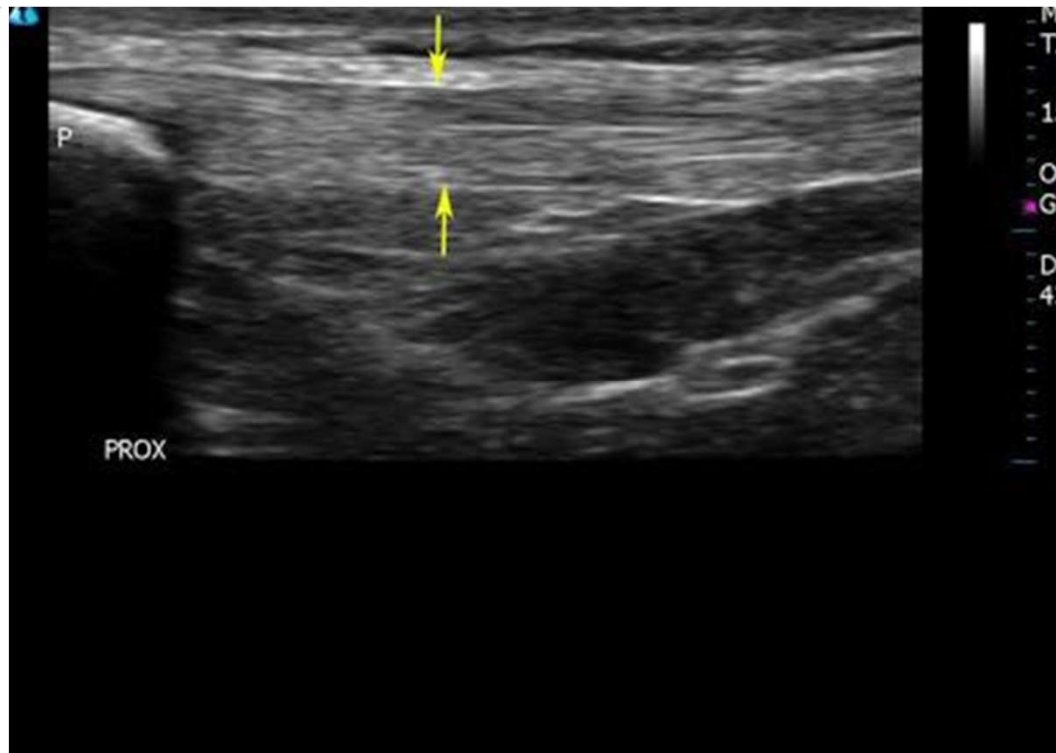
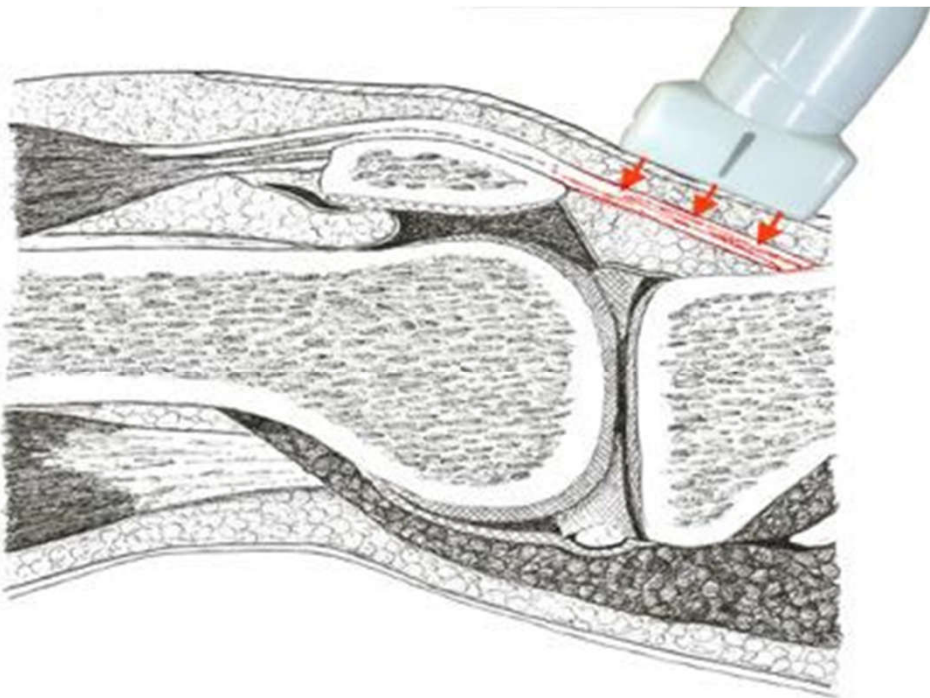


ANTERIOR KNEE INFERIOR LAX

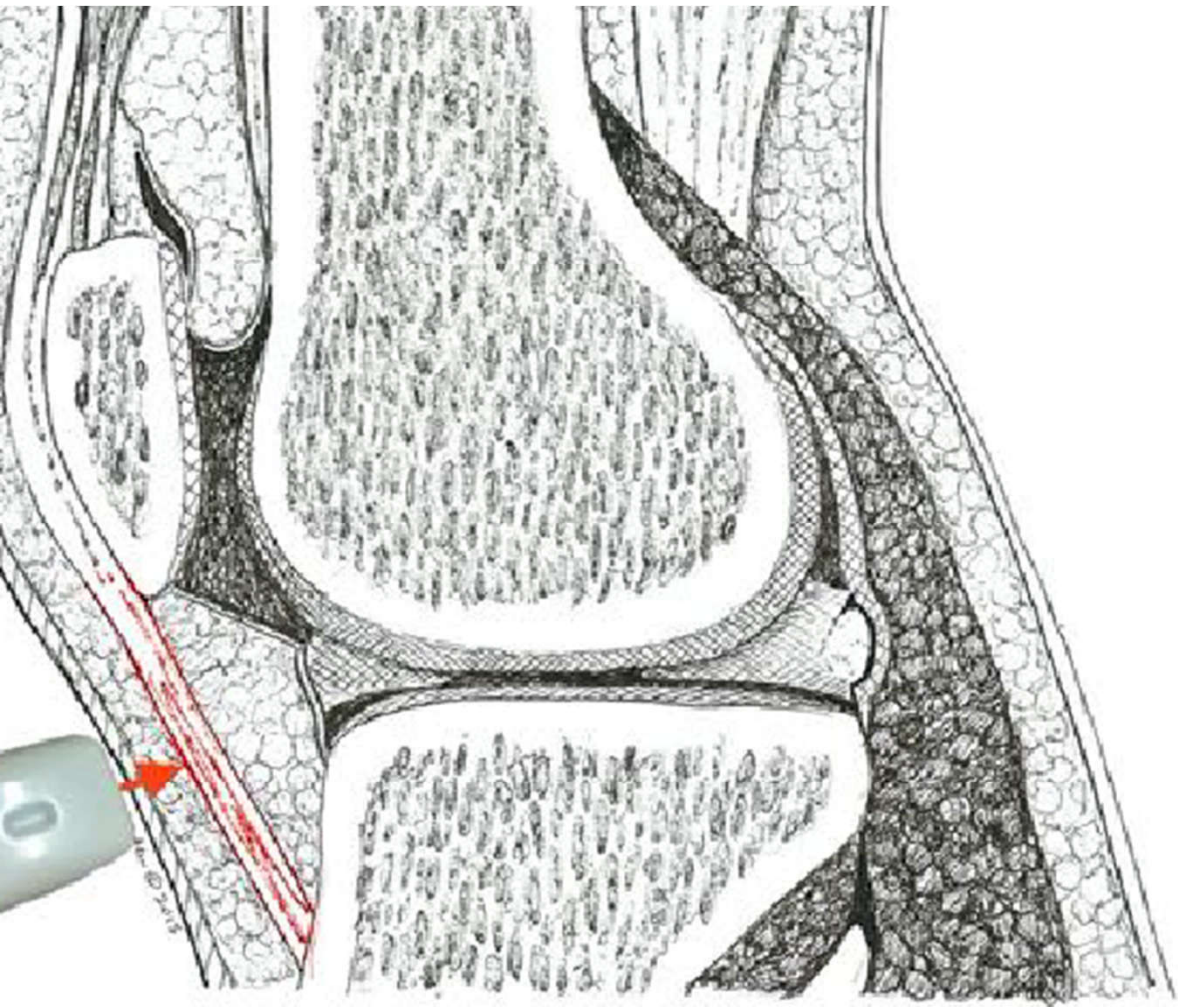
STARTING POSITION MID SAGIT TAL WITH THE PROBE
PARALLEL TO THE PATELLAR TENDON



MEDICAL TRA

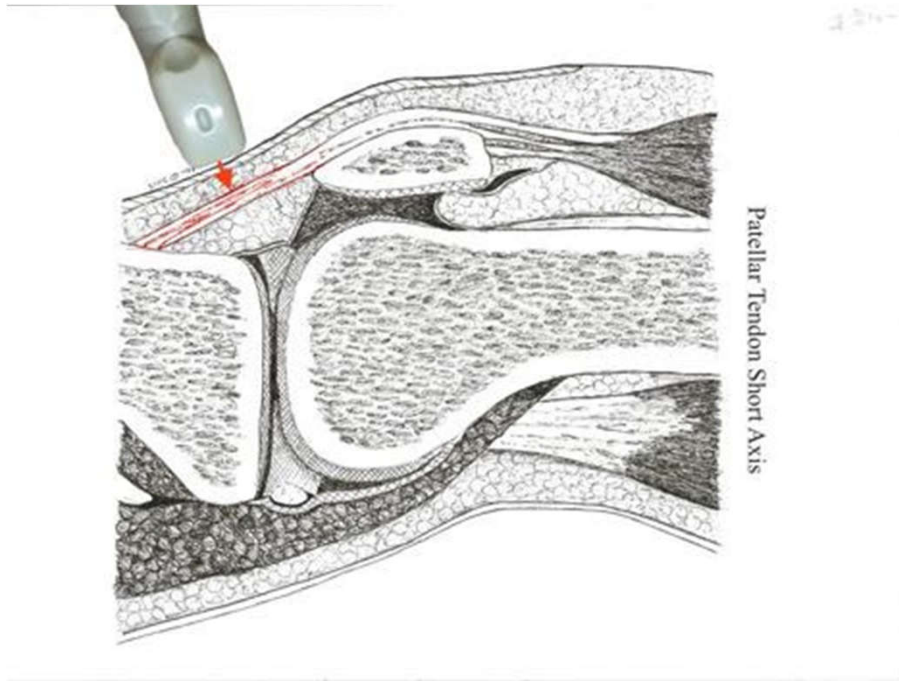


PATELLA TENDON



ANTERIOR KNEE INFERIOR SAX

STARTING POSITION PERPENDICULAR TO THE PATELLAR
TENDON AND SWEEP FROM PROXIMAL TO DISTAL



Patellar tendon in SAX will have oval shape.
Be sure to sweep from inferior patellar pole to tibial tuberosity

PATELLAR TENDON TRANSVERSEVIEW

MEDIAL

- Medial collateral ligament
- Medial meniscus
- PesAnserine

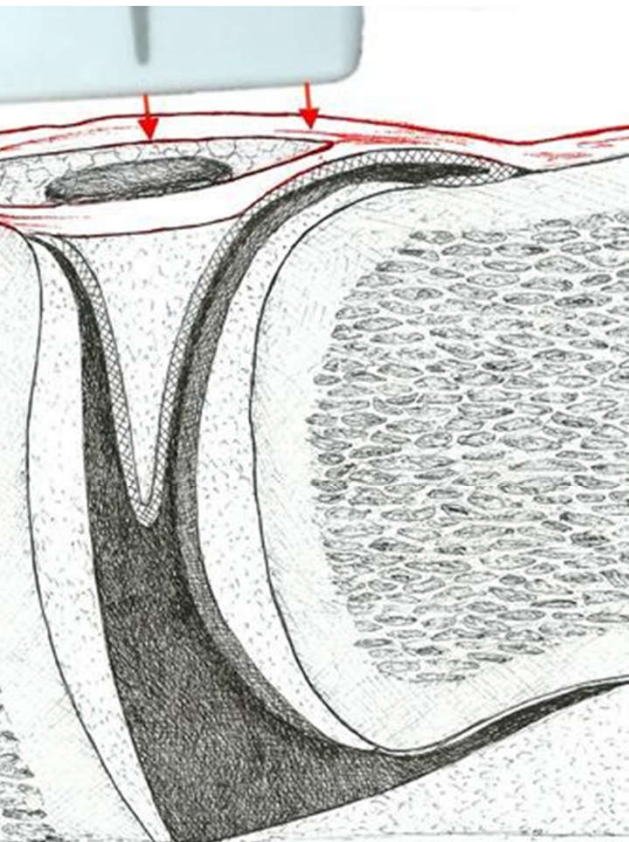


5. MEDIAL KNEE ANTERIOR

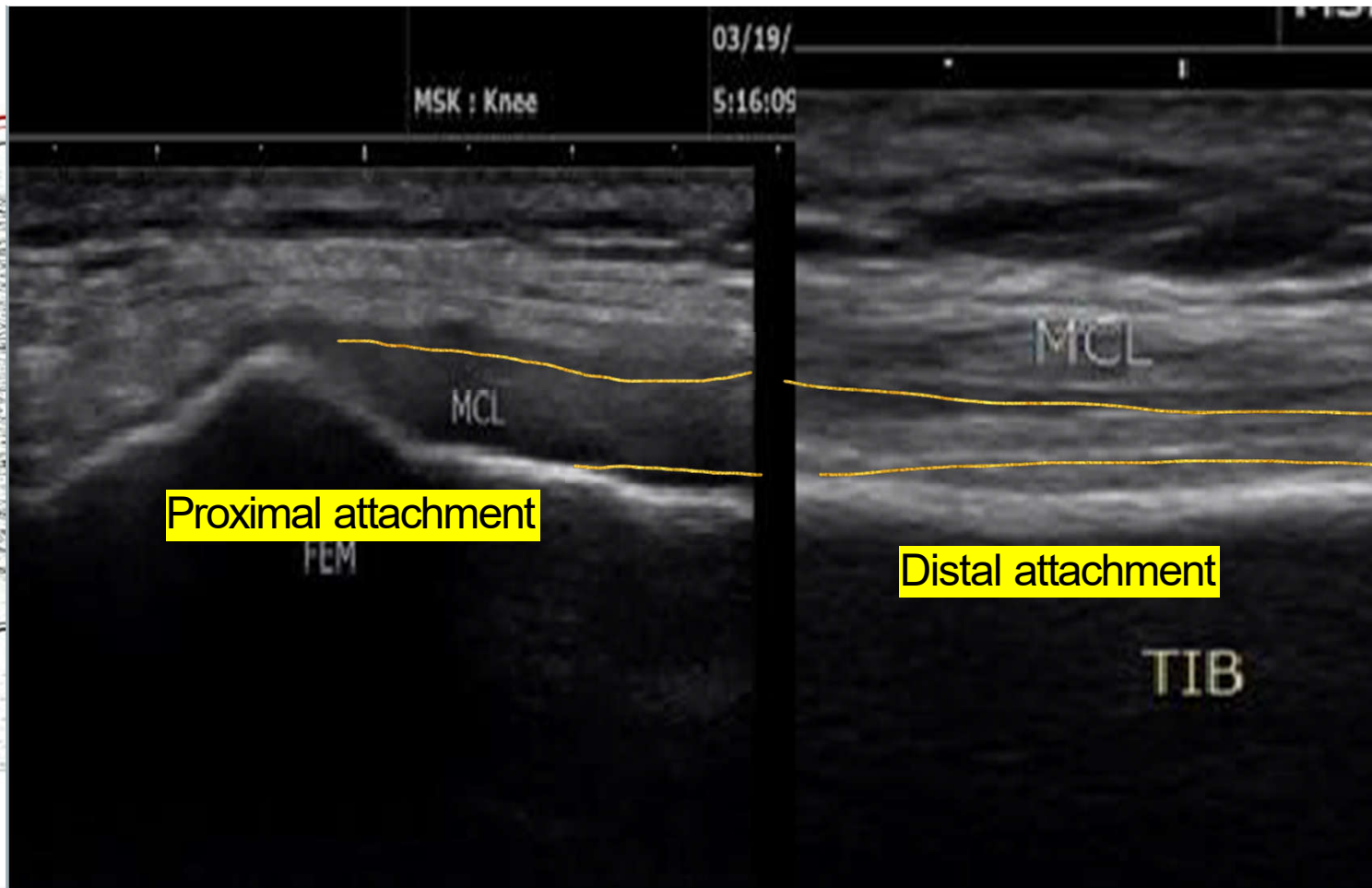
STARTING
POSITION
PARALLEL TO
THE FEMORAL
CONDYLE AND
SWEEP
PROXIMAL TO
DISTAL



MEDICAL TRAINING



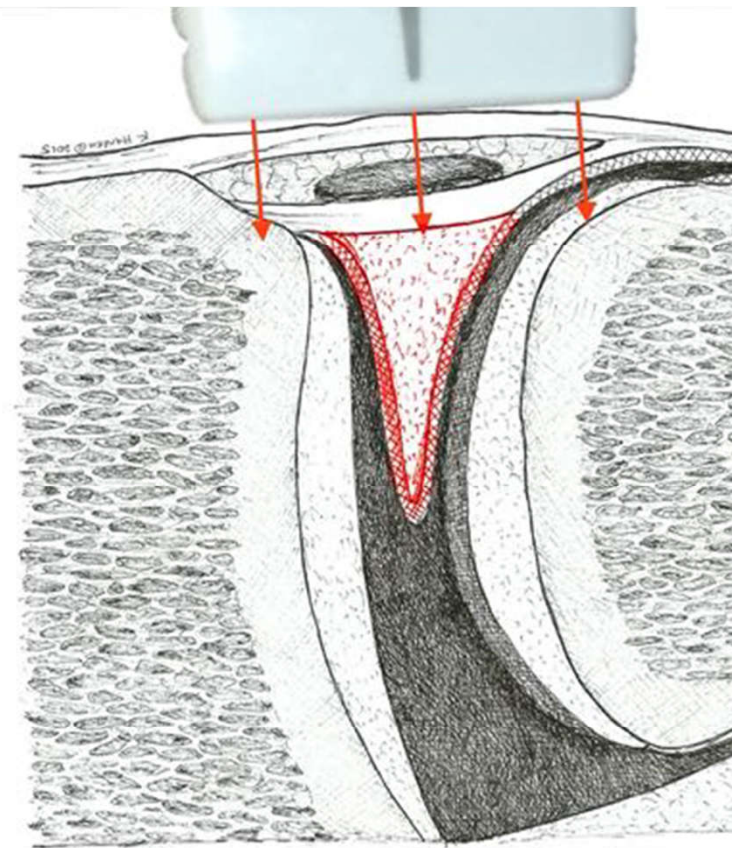
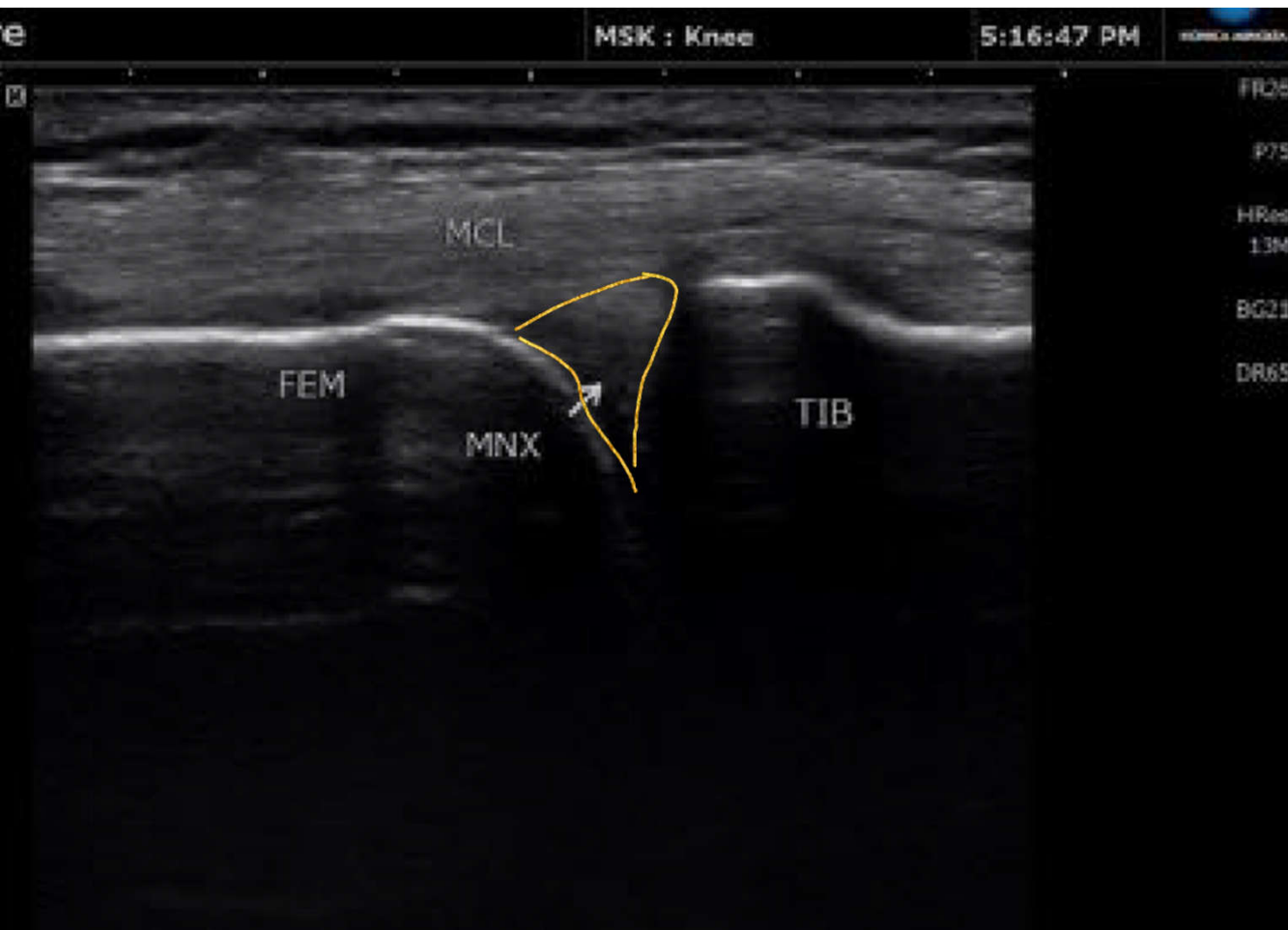
Medial Collateral Ligament Long Axis



MEDIAL MCL LAX



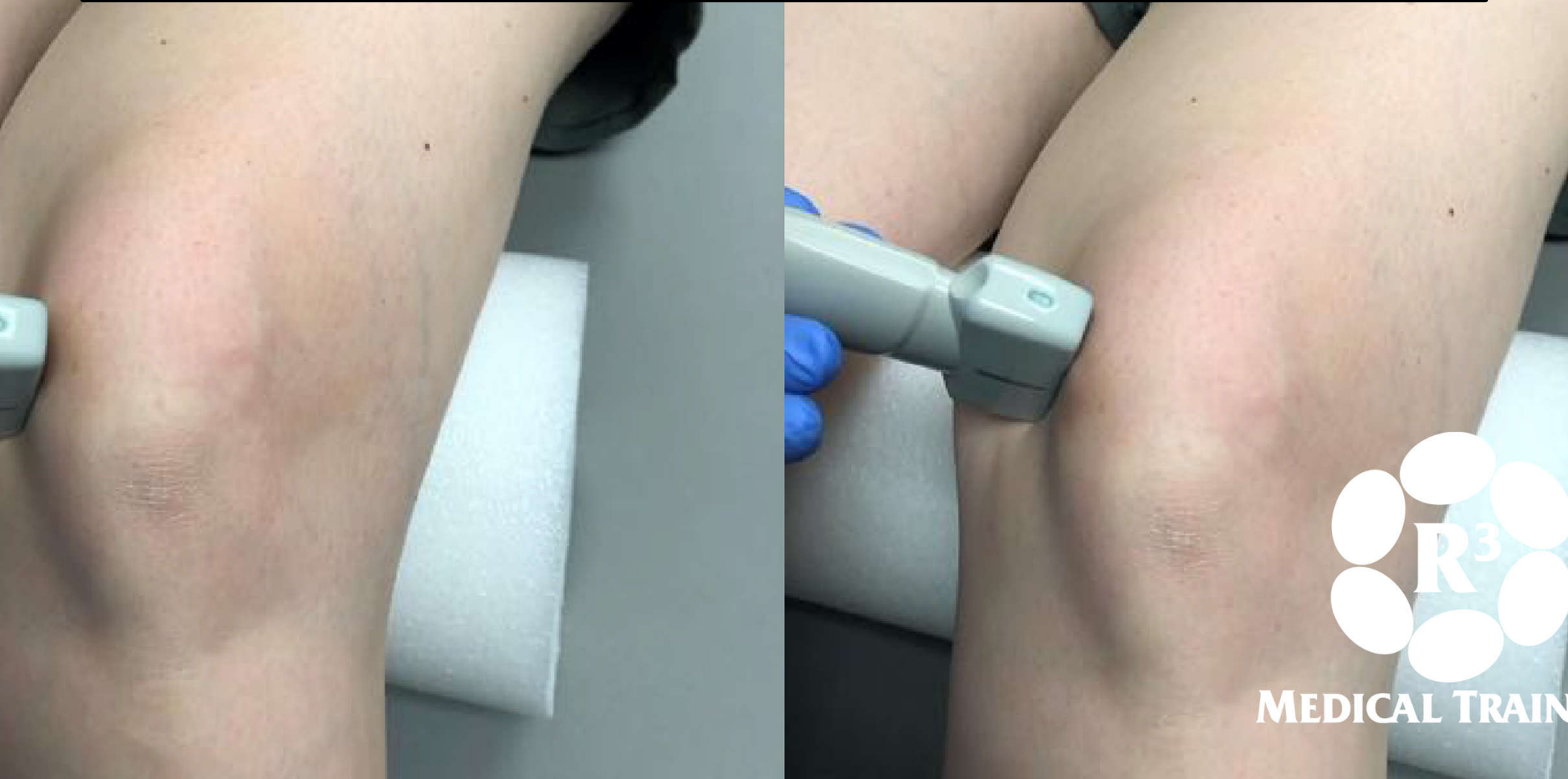
MEDICAL TRAINING



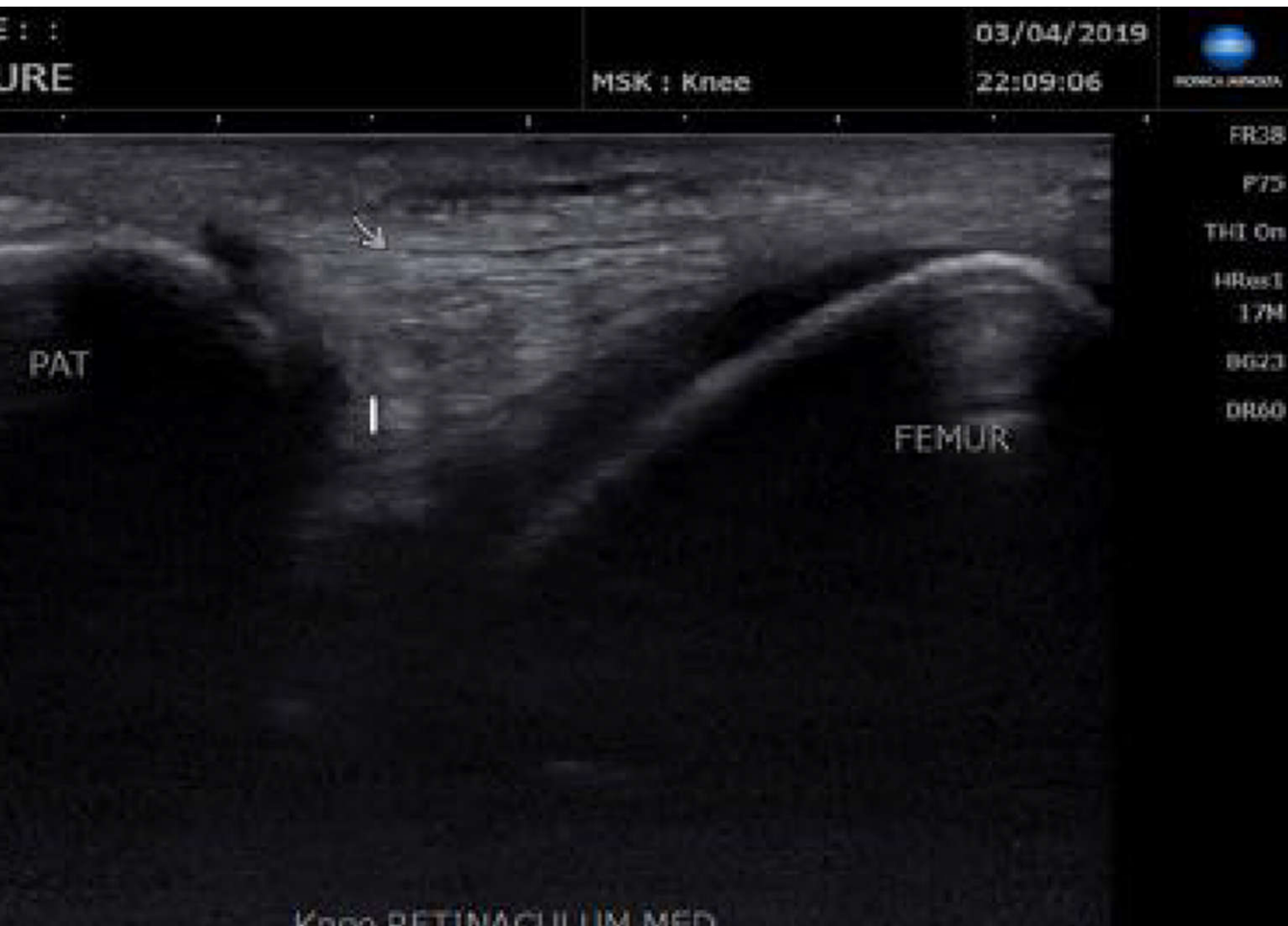
MEDIAL MENISCUS LAX

MEDIAL KNEE; MEDIAL PATELLAR FEMORAL LIGAMENT AND
RETINACULUM

PROBE PLACEMENT PERPENDICULAR TO FEMUR STARTING AT
PROXIMAL PATELLA AND SWEEPING DISTAL

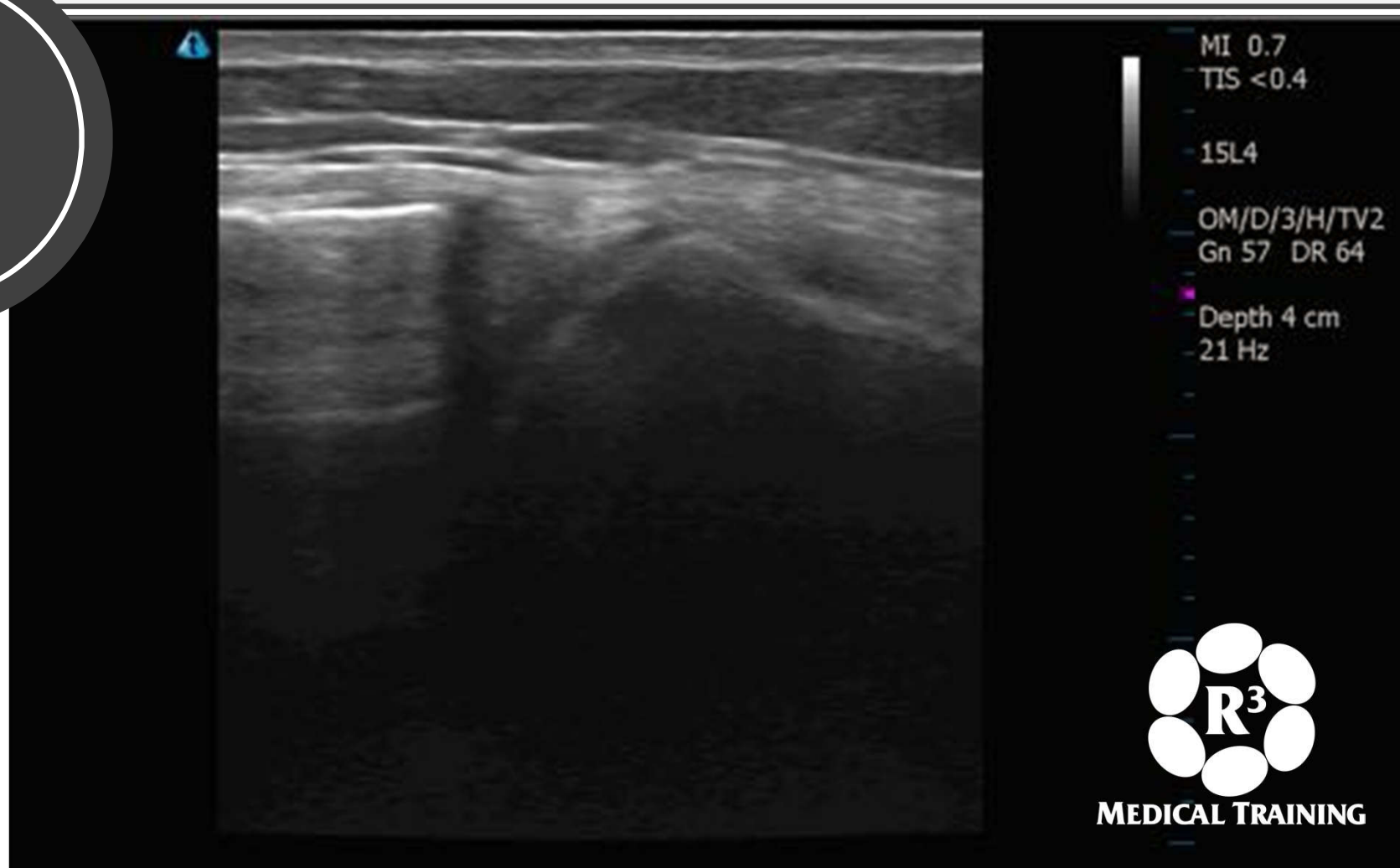


MEDICAL TRAINING

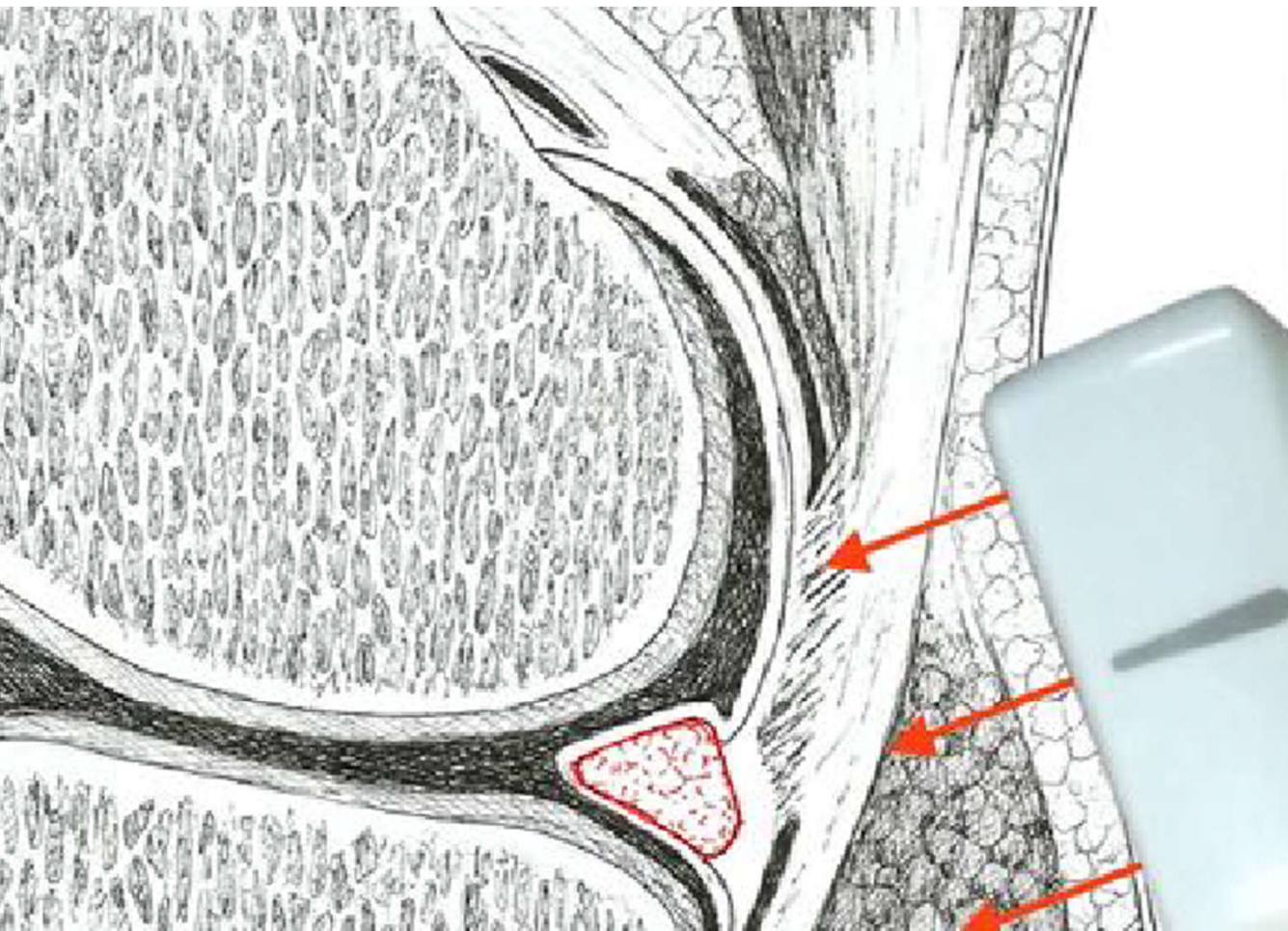


MEDIAL RETINACULUM

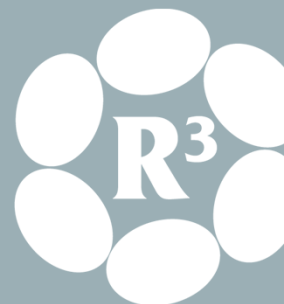
MC L
DYNAMIC



Common dynamic motions include varus, valgus and extension, flexion



6. MEDIAL KNEE POSTERIOR
STARTING POSITION PARALLEL TO
FEMUR, ALONG POSTERIOR ASPECT



MEDICAL TRAINING

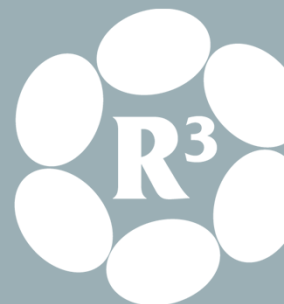


Pes Anserinus
Long Axis

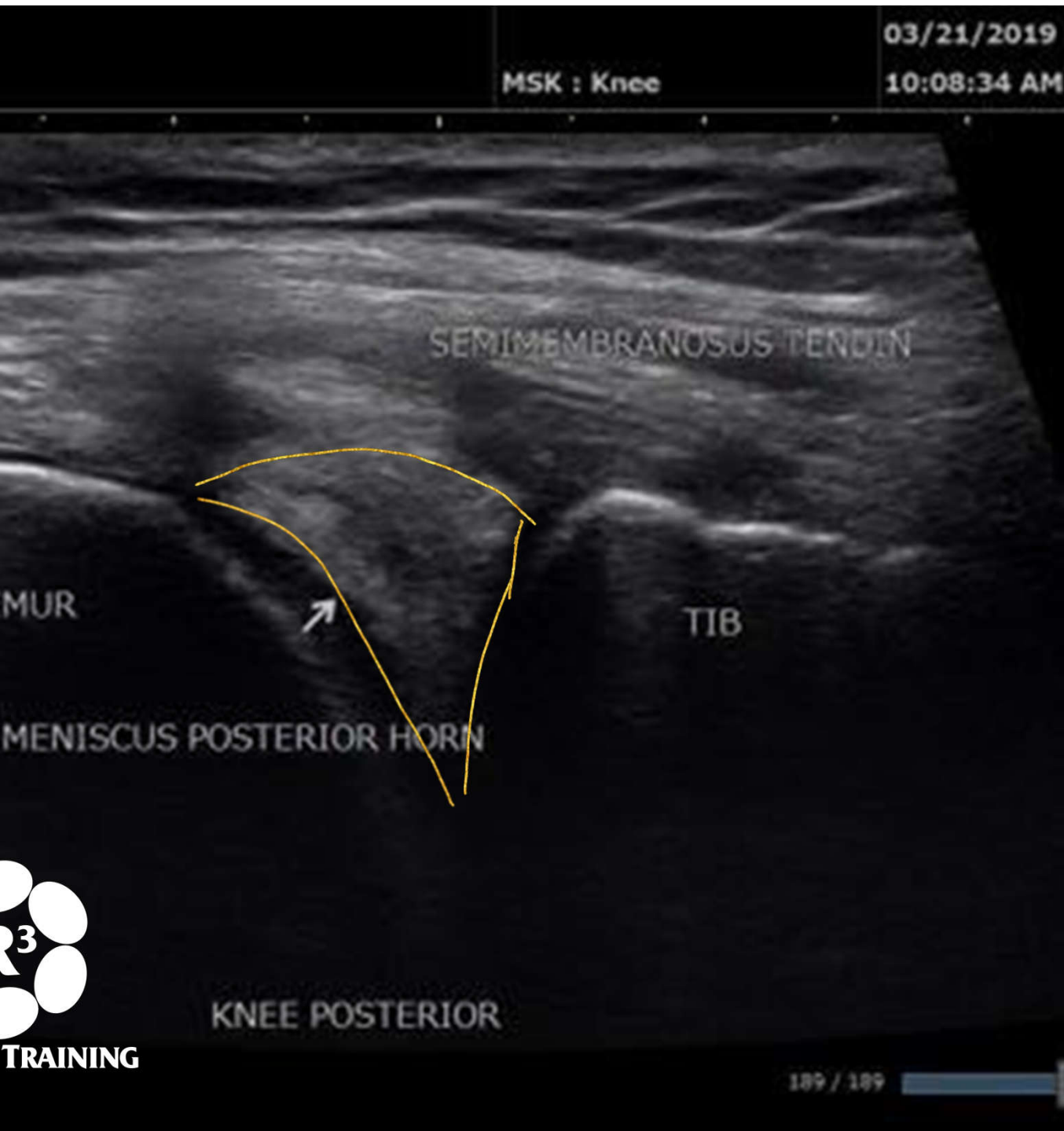


MEDIAL KNEE; PES ANSERINE SARTORIUS GRACILIS 3. SEMITENDINOSUS

THE MUSCULOTENDINOUS JUNCTION IS LOCATED POSTERIOR MEDIAL KNEE, AND IN SECTION IS ANTERIOR ON THE TIBIA



MEDICAL TRAINING

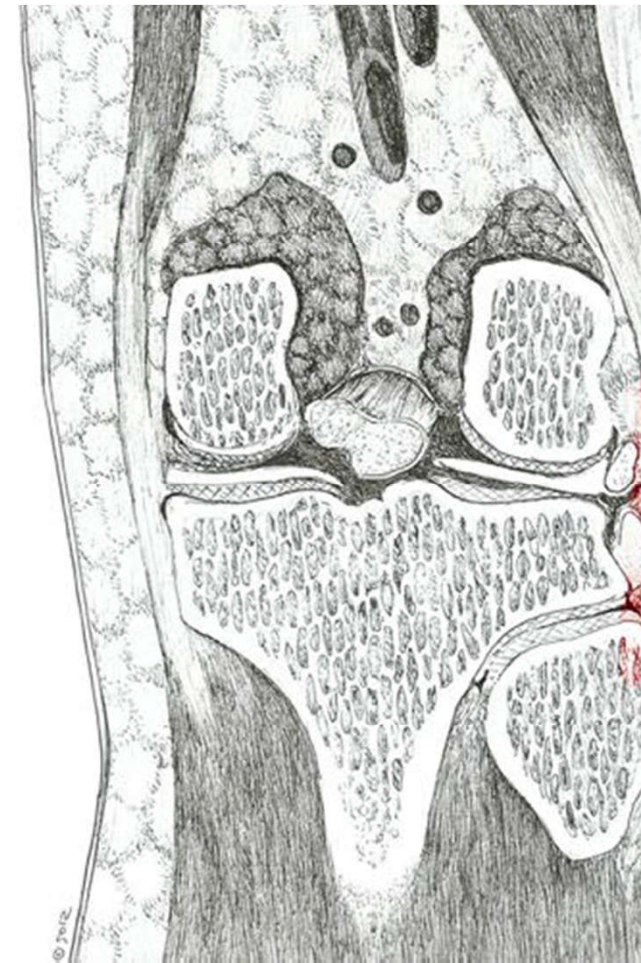


MEDIAL MENISCUS
POSTERIOR HORN
WITH VISUALIZATION
OF
SEMIMEMBRANOSUS
INSERTION

NOTE: THIS REGION
CAN BE PART OF YOUR
POSTERIOR
EVALUATION AS WELL

LATERAL

- Lateral meniscus and joint line
- Popliteus
- Iliotibial tract
- Lateral collateral ligament
- Bicep Femoris
- Common peroneal nerve

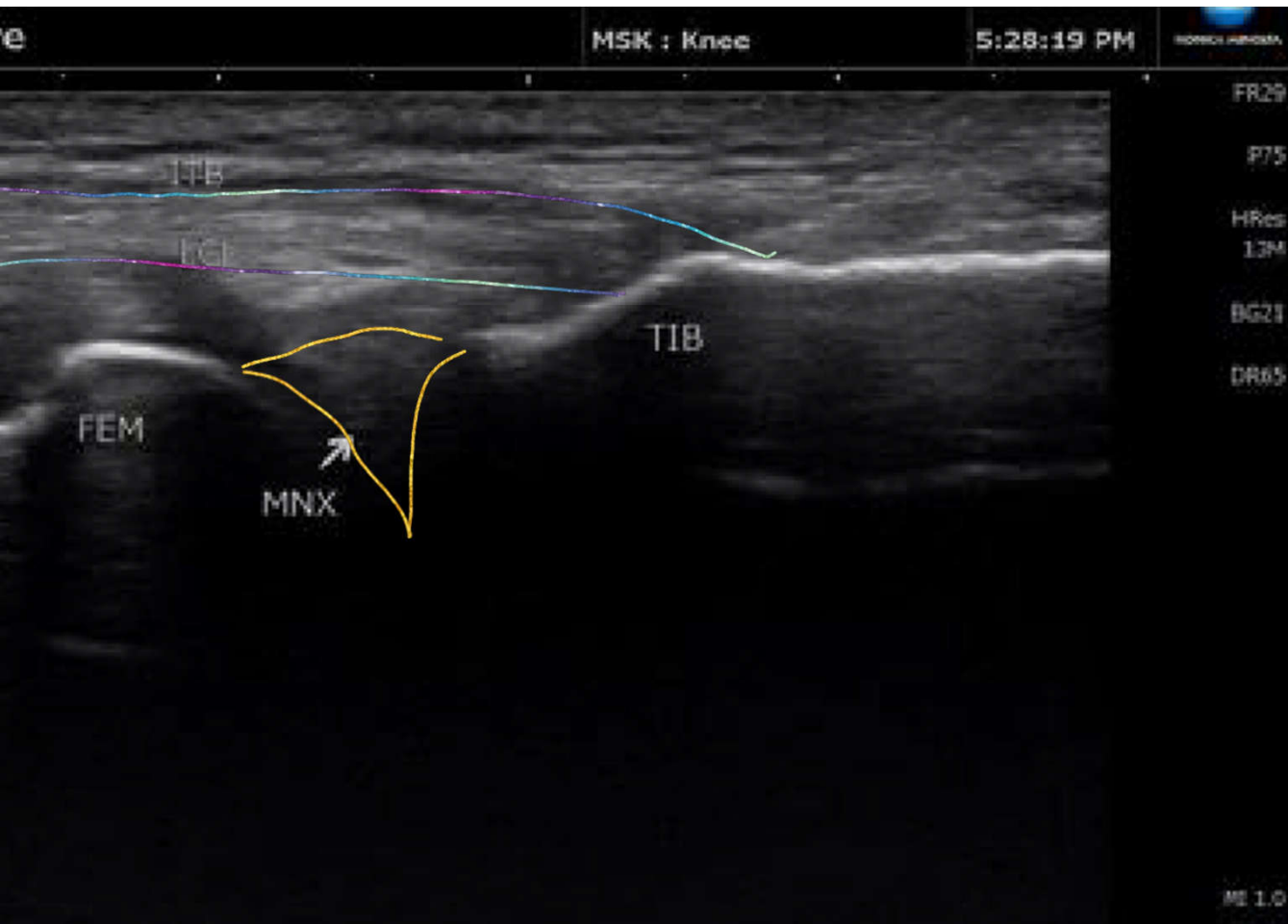


7. LATERAL KNEE ANTERIOR

STARTING POSITION PARALLEL TO LATERAL FEMORAL
CONDYLE, AND SWEEP DISTAL ACROSS THE JOINT LINE



MEDICAL TRAINING



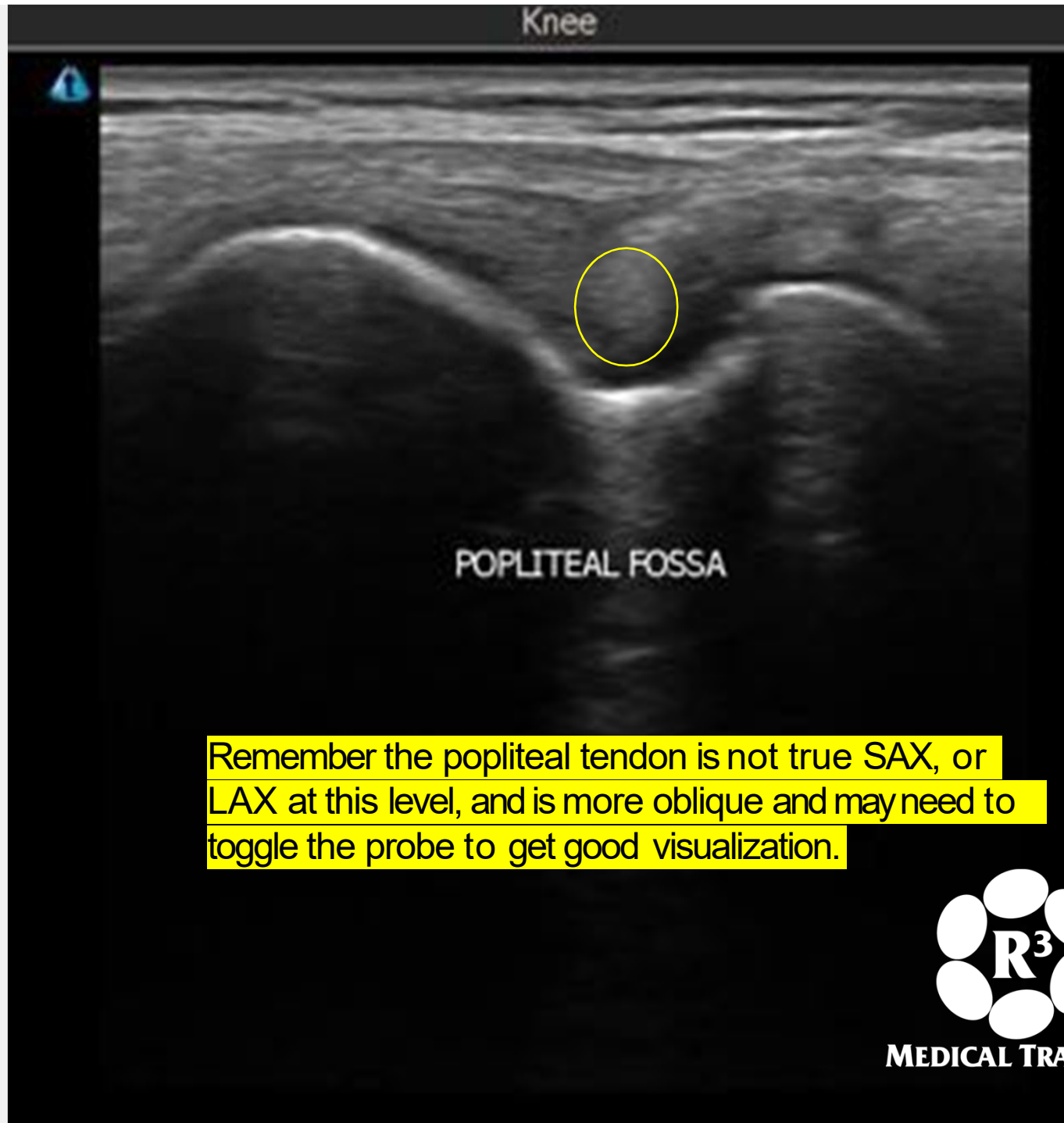
LATERAL KNEE MENISCUS AND JOINT LINE

POPLITEAL TENDON IN SHORT AXIS

Popliteal fossa → popliteal
tendon in short axis visualized
within

Left is proximal

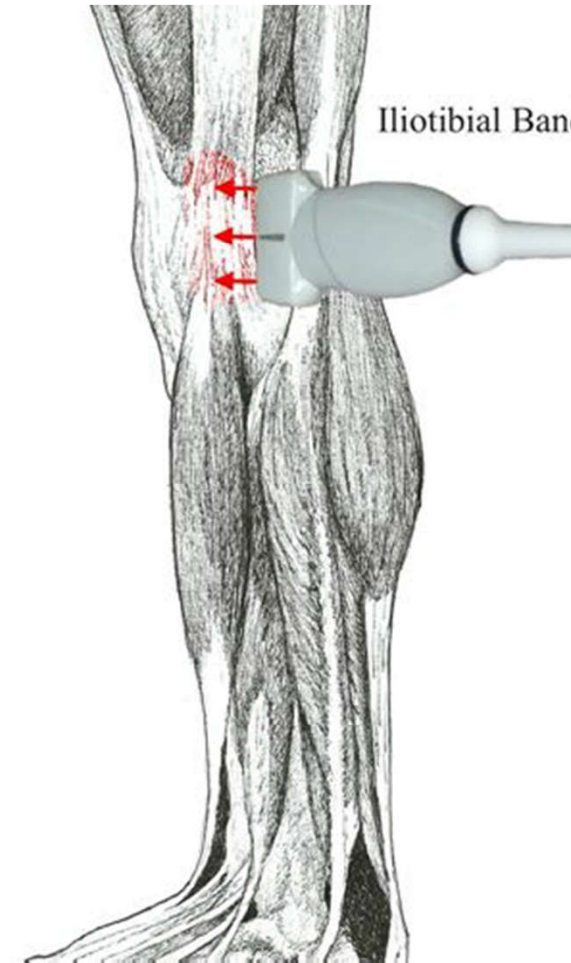
Right is distal





LATERAL KNEE; RETINACULUM

STARTING POSITION PERPENDICULAR TO FEMUR, WITH PROBE
TOUCHING PATELLA AND CONDYLAR RIDGE AND SWEEP
PROXIMAL TO DISTAL

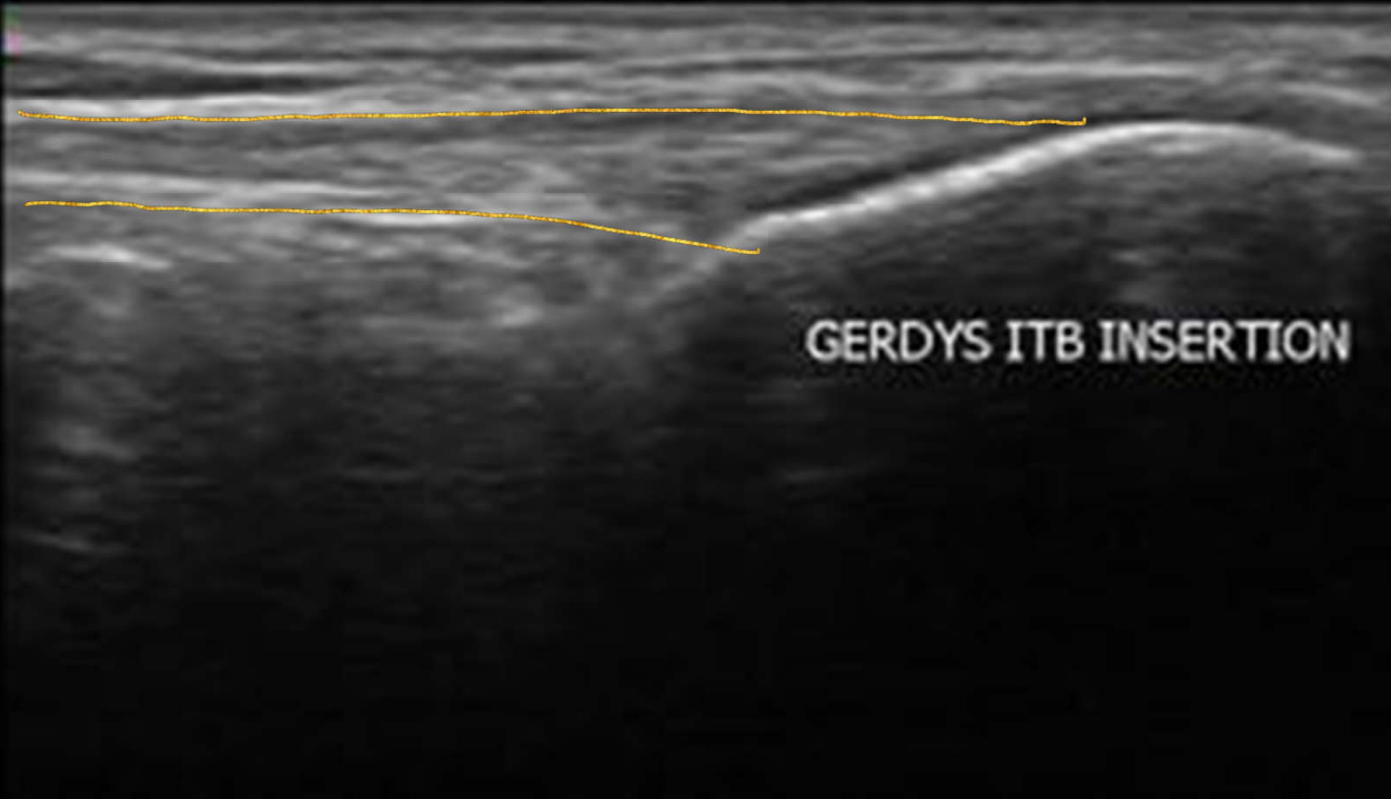


LATERAL KNEE ILIOTIBIAL BAND; GERDY'S TUBERCLE

CATETHEPROXIMAL TIBIA IN LAX AND SWEEP FROM ANTERIOR TO POSTERIOR

Knee

09:39:18 A



MI 0.7

TIS 0.4

15L4

OM/D/

Gn 50

Depth

19 Hz

ILIOTIBIAL BAND INSERTION



MEDICAL TRAIN



8. LATERAL KNEE POSTERIOR

STARTING POSITION ; PALPATE FIBULAR HEAD AND PLACE DISTAL
PROBE HEAD PARALLEL TO FIBULA, AND PROXIMAL HEAD
PARALLEL TO FEMUR



MEDICAL TRAIN

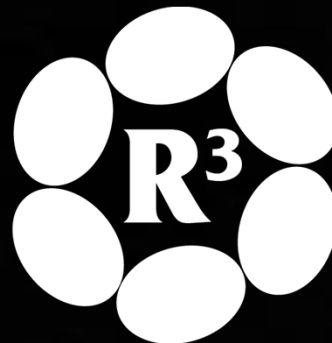
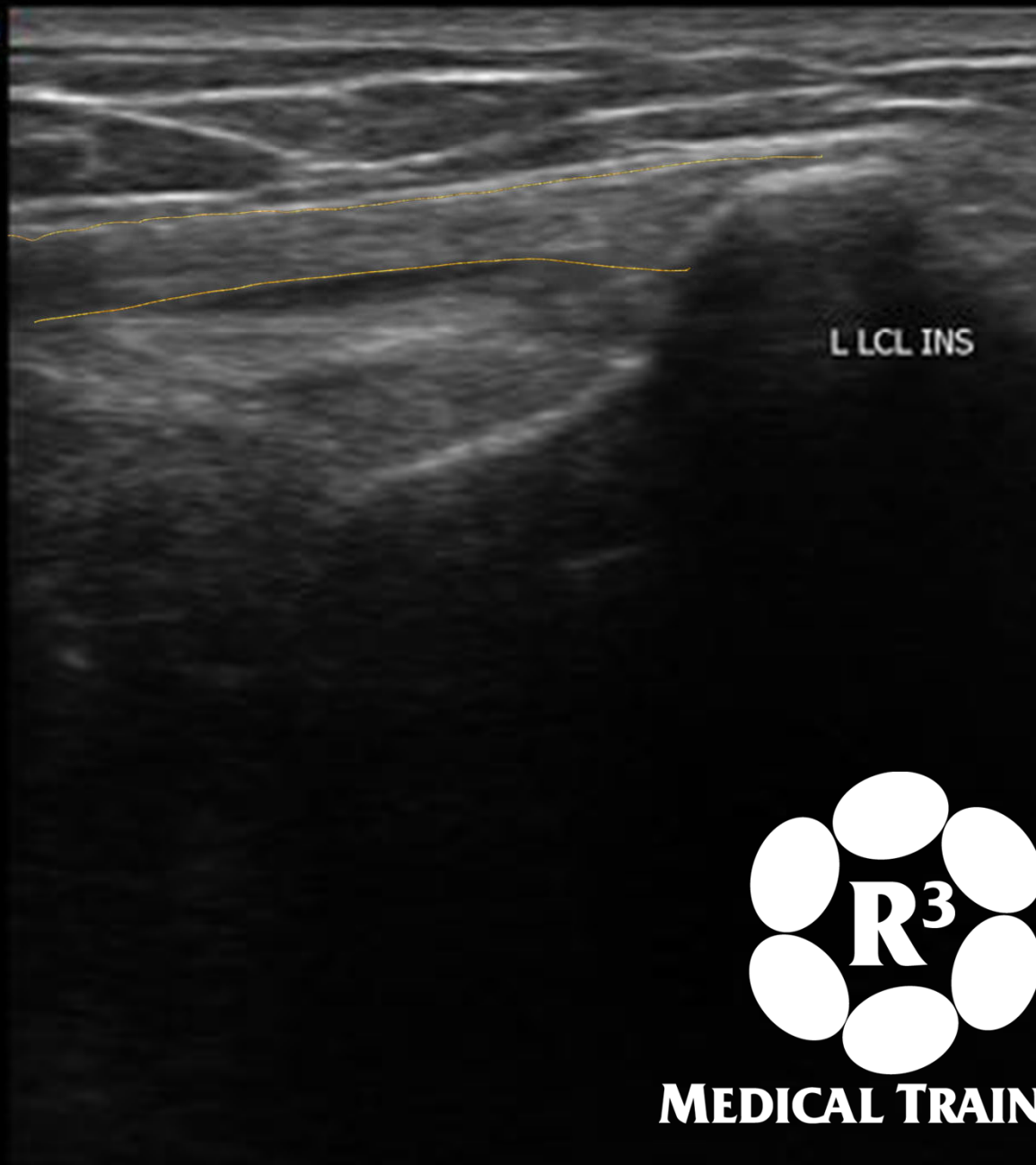
LCL INSERTION

Fibular attachment of LCL.

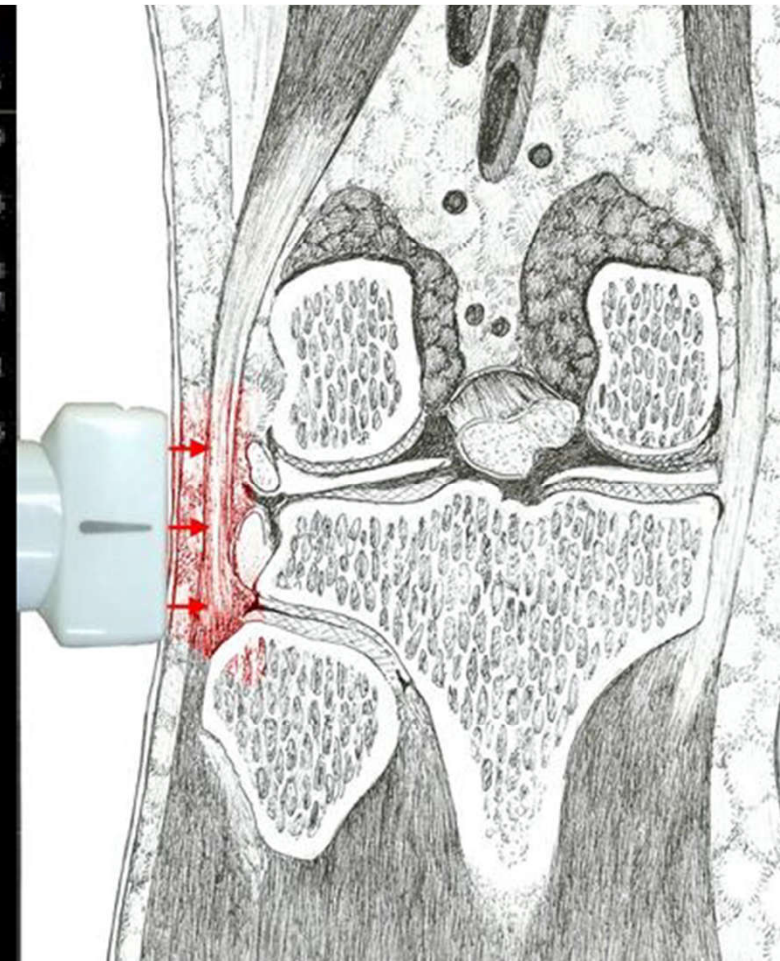
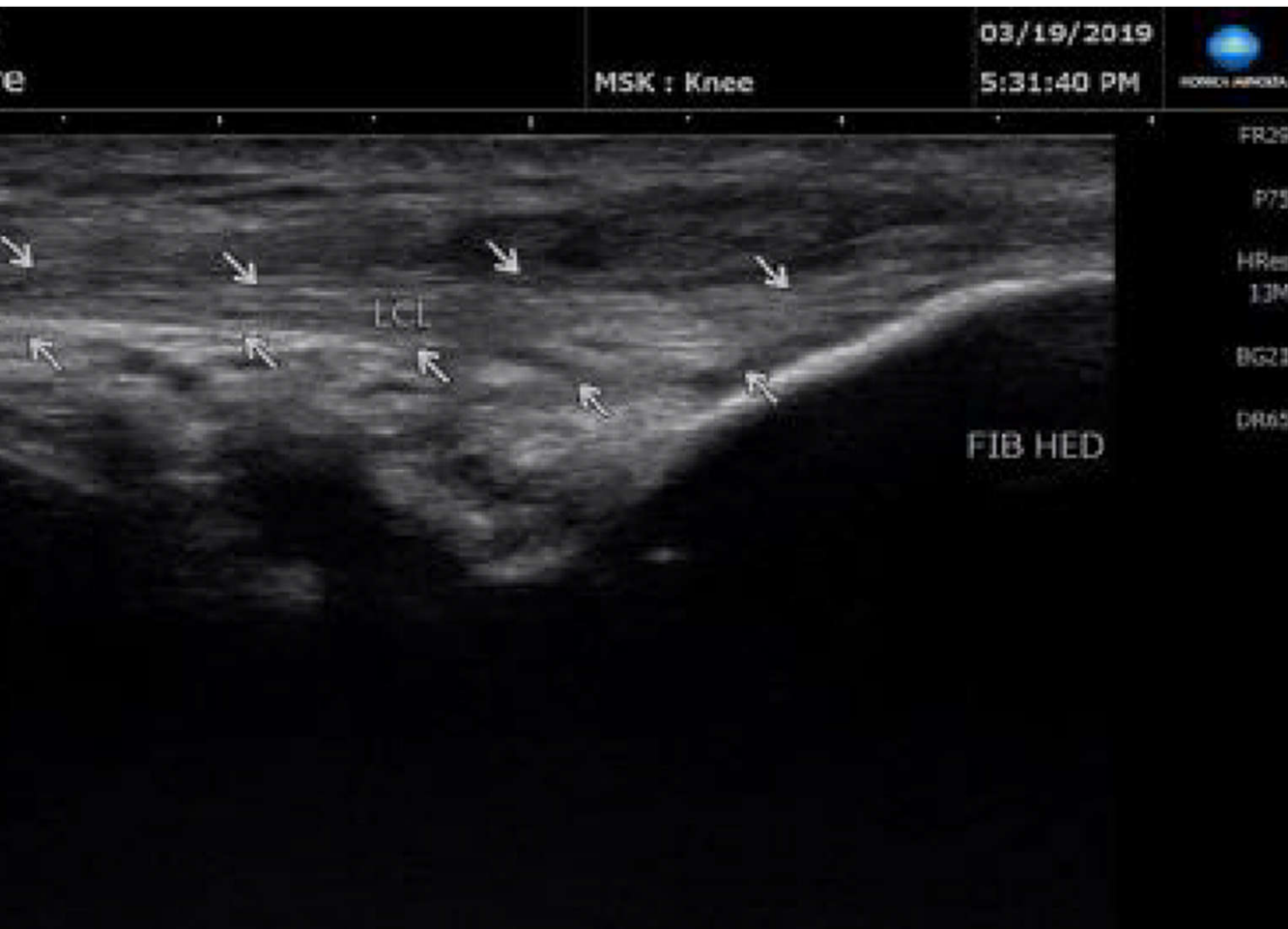
Biceps femoris is on top

LCL is the dense, hyperechoic structure deep to biceps femoris in parallel with labeling in the image

terason



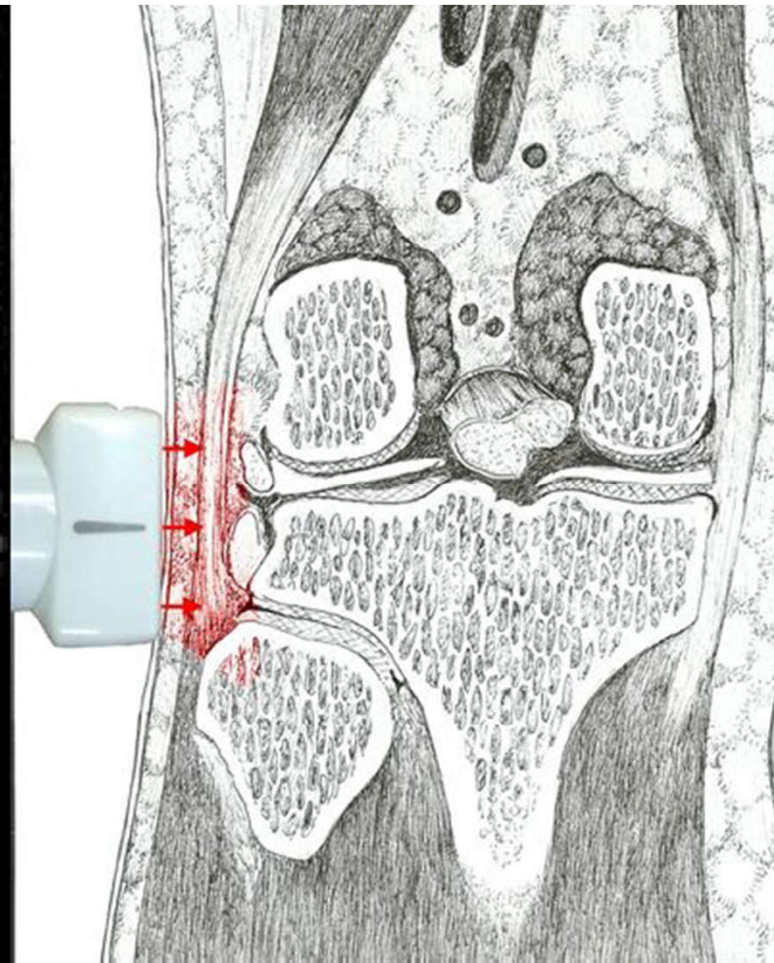
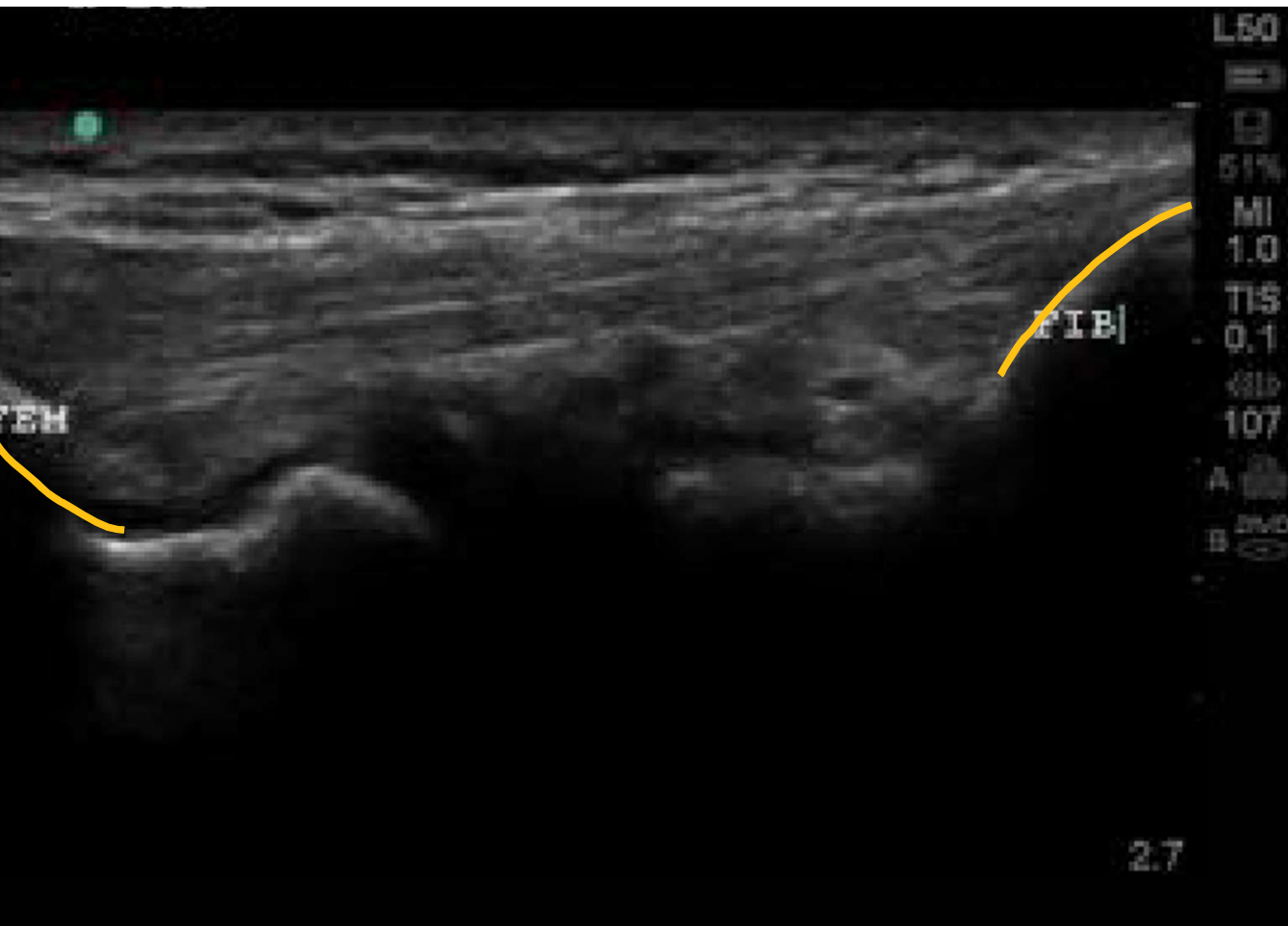
MEDICAL TRAIN



LCL FIBULA ATTACHMENT



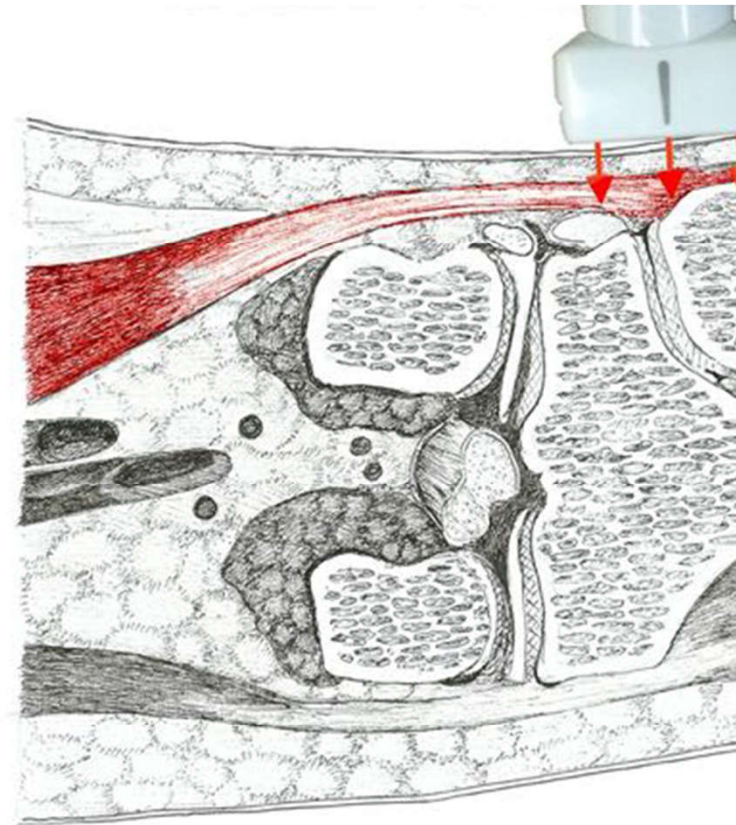
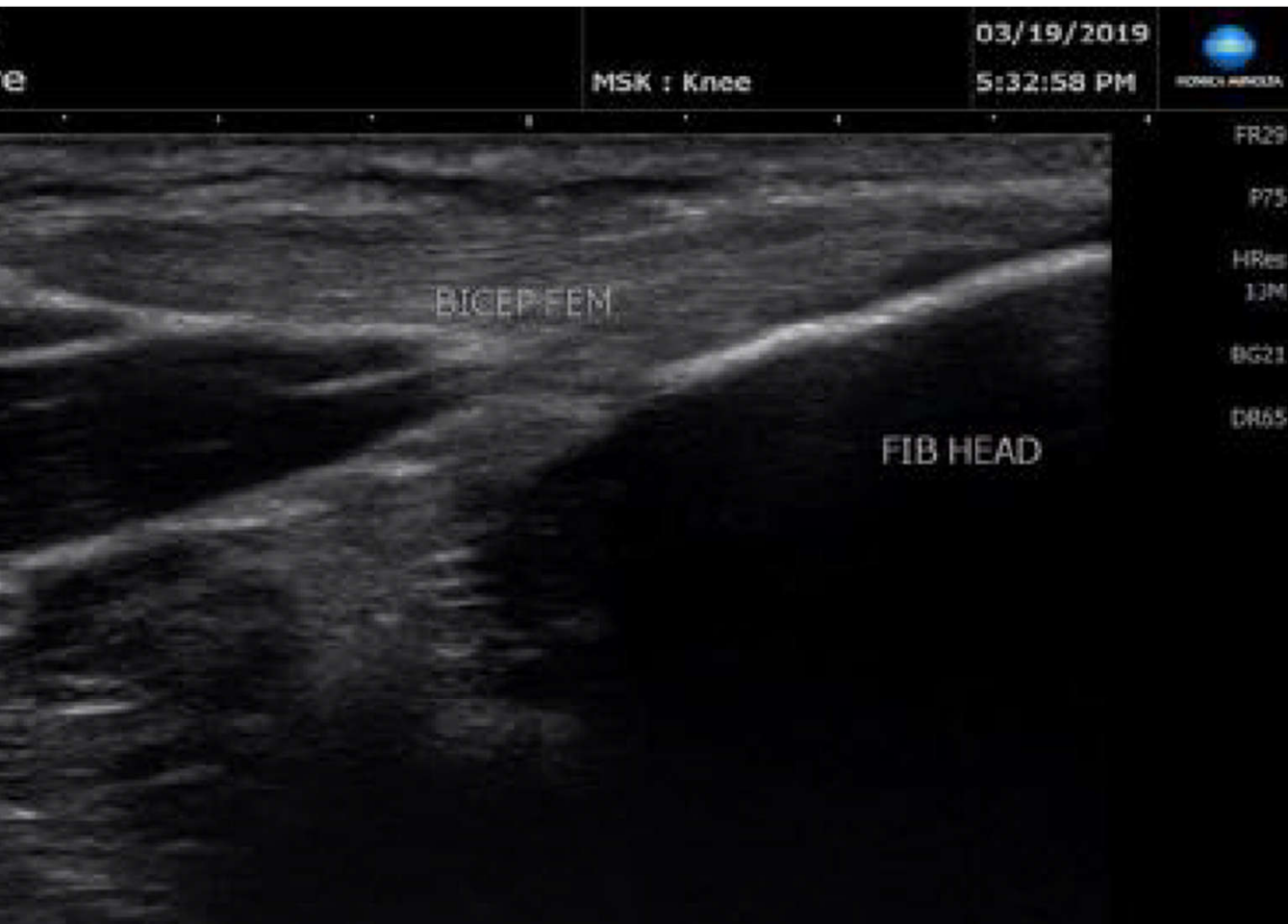
MEDICAL TRAIN



LCL FIBULA ATTACHMENT



MEDICAL TRAIN

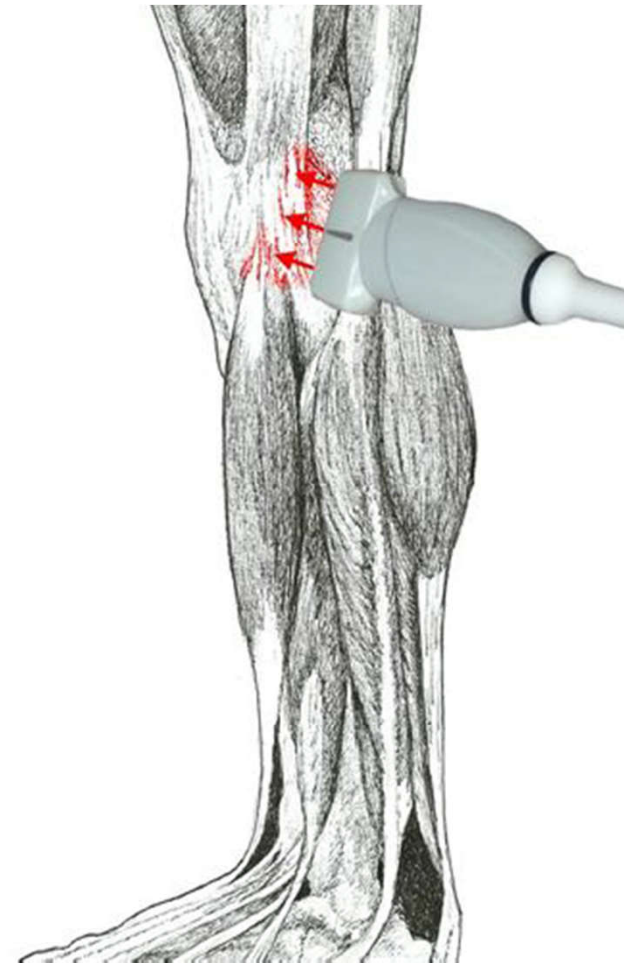
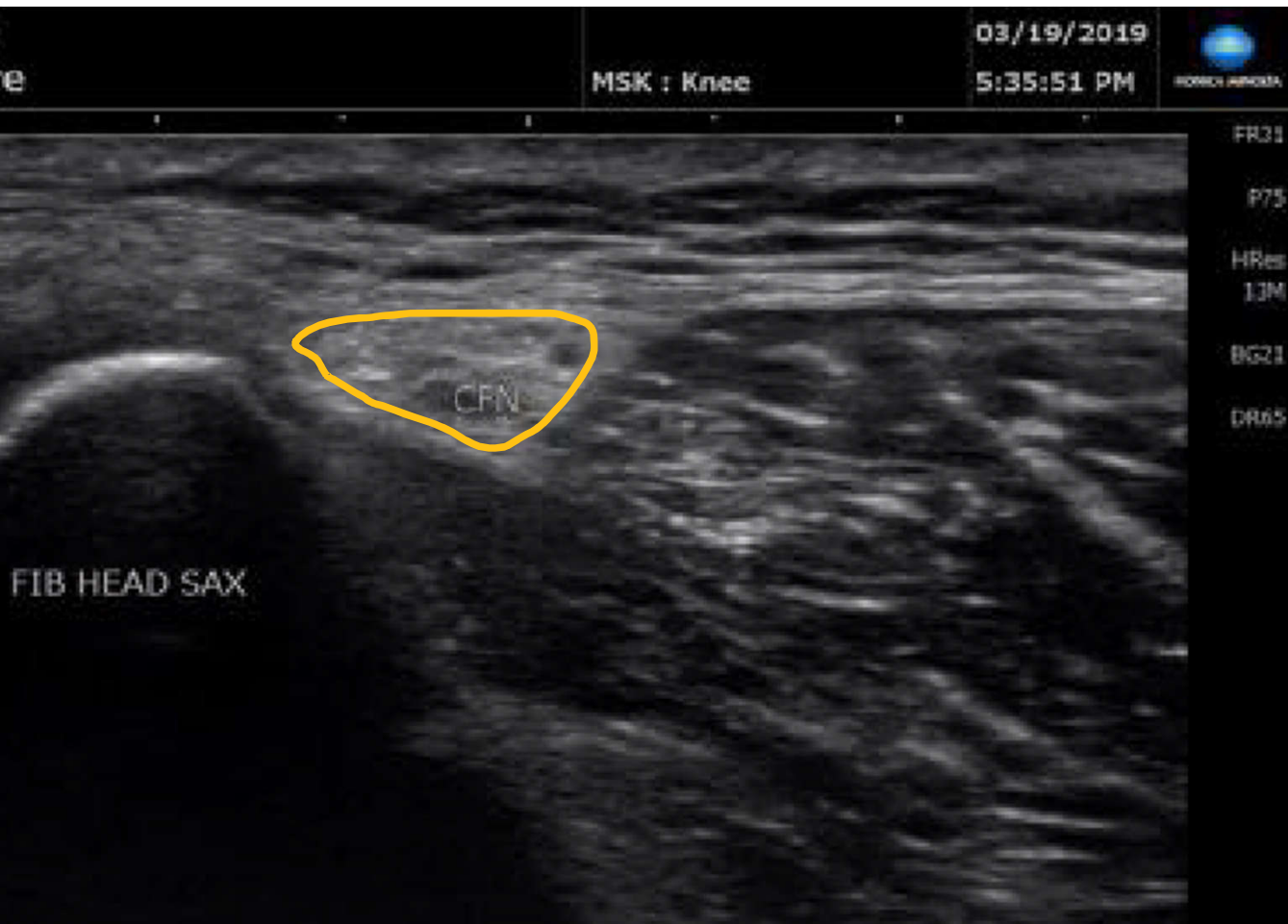


BICEP FEMORIS DISTAL ATTACHMENT

WITH THE DISTAL PROBE HEAD ON FIBULAR HEAD PARALLEL TO FIBULA, ROTATE PROXIMAL HEAD POSTERIOR UNTIL BICEPS FEMORIS IS SEEN



MEDICAL TRAINING



COMMON FIBULAR (PERONEAL) NERVE SAX AT PROX FIB HEAD

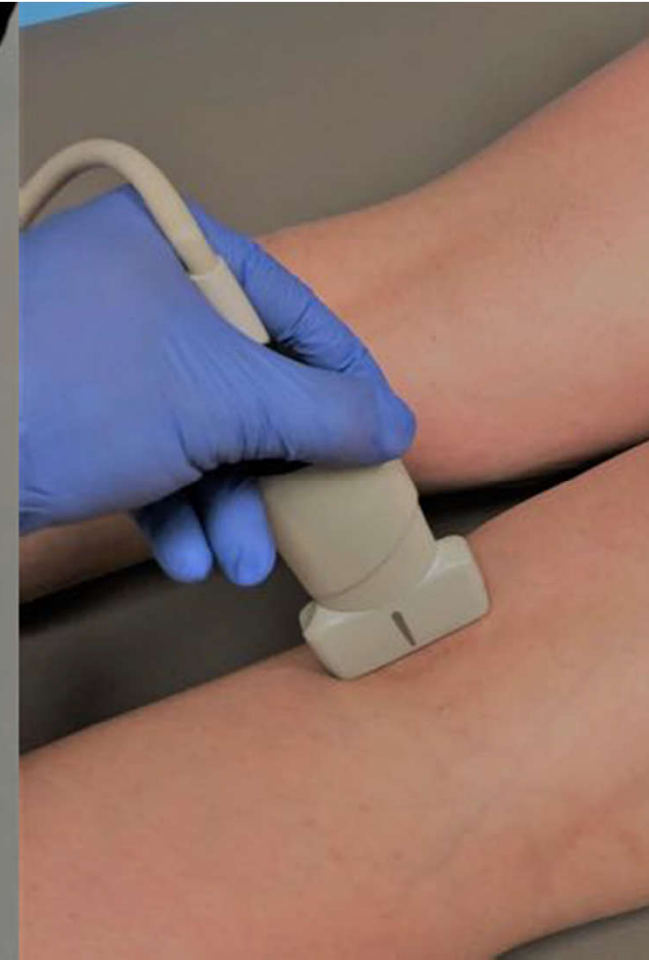
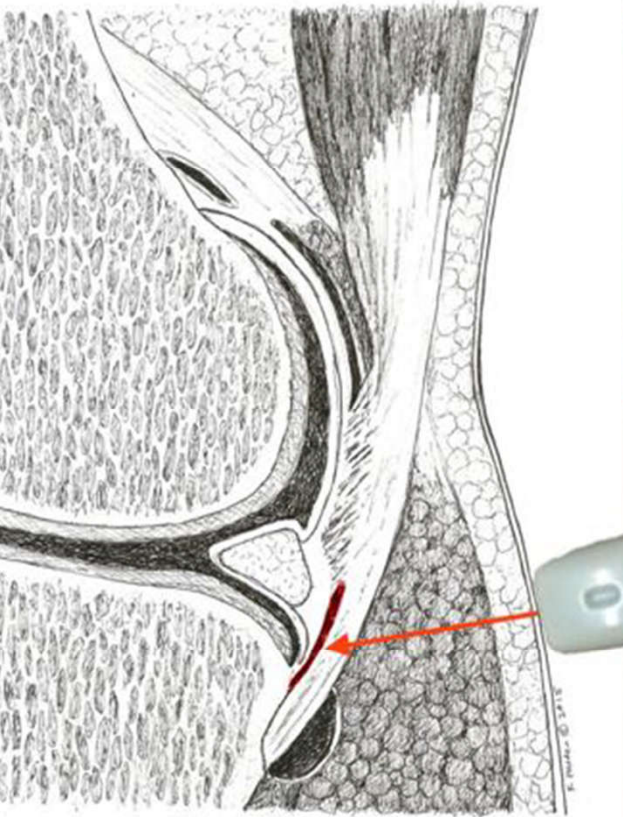
BEST VISUALIZATION IS POSTERIOR TO THE FIBULAR HEAD
PERPENDICULAR TO FIBULA IN SAX.



MEDICAL TRAINING

POSTERIOR

- Medial and lateral gastric/semimembranosus
- Baker's cyst
- Menisci
 - Posterior horn
- Posterior joint
- Neurovascular structures

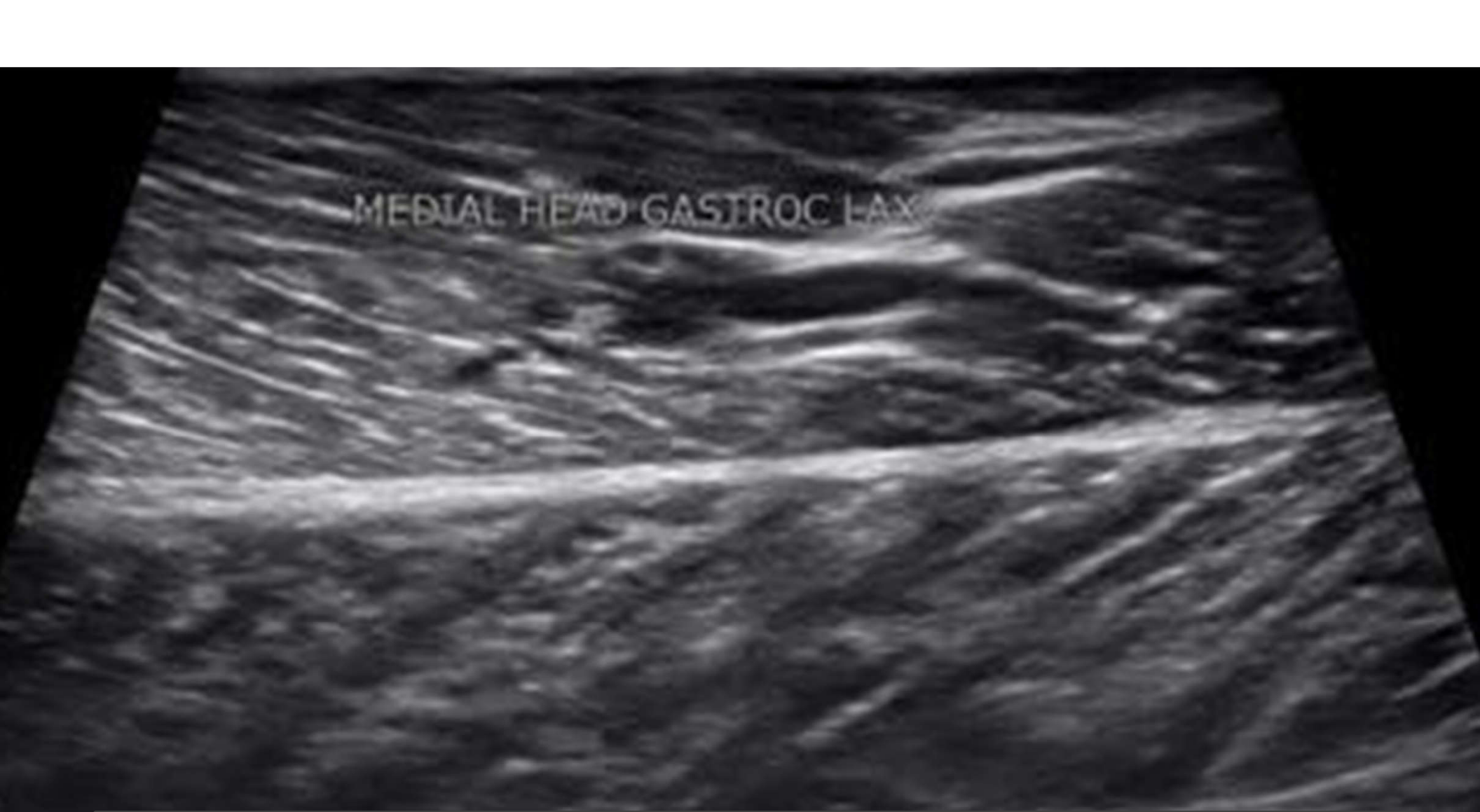


POSTERIOR KNEE
PATIENT POSITION IN PRONE OR
ALTERNATIVELY SIDE LYING



9. POSTERIOR KNEE LAX

BAKER CYST, WILL BE FOUND ALONG THE MEDIAL COMPARTMENT
OF THE POSTERIOR KNEE

A grayscale ultrasound image showing a longitudinal view of a muscle. The muscle fibers are oriented diagonally from the top-left to the bottom-right. A bright, curved line is visible in the upper-middle portion of the image, representing the medial head of the gastrocnemius. The text "MEDIAL HEAD GASTROCNEMUS" is overlaid in white, capital letters.

MEDIAL HEAD GASTROCNEMUS

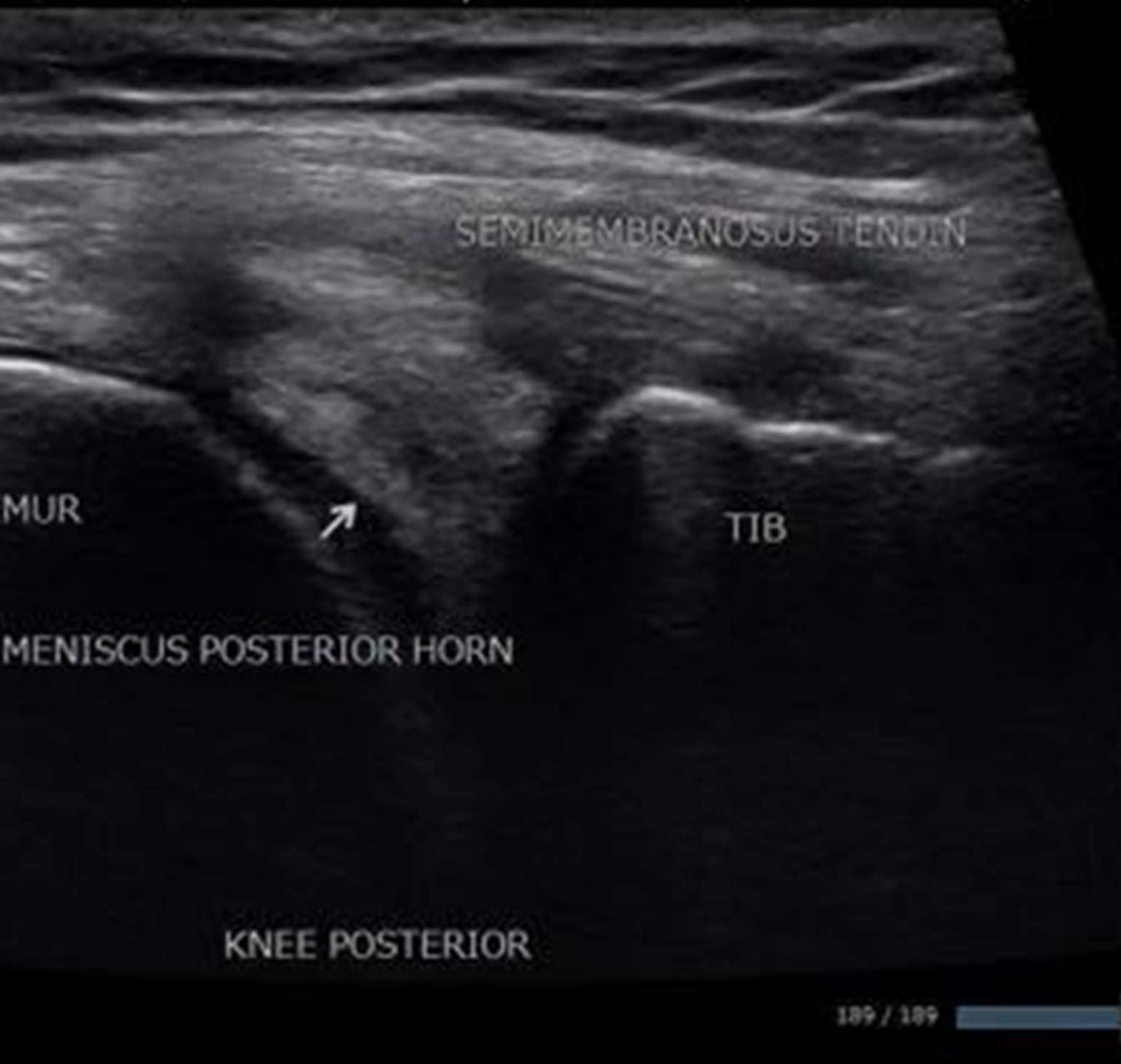
MEDIAL HEAD GASTROCNEMUS

A GOOD STARTING POINT IS DISTAL TO THE KNEE JOINT AT THE MUSCLE BELLY OF THE MEDIAL CALF, AND TRANSLATE THE PROBE PROXIMAL UNTIL THE JOINT AND JUNCTION OF MEDIAL GASTRIC AND SEMIMEMBRANOSUS IS LOCATED

MSK : Knee

03/21/2019

10:08:34 AM



MEDIAL MENISCUS
POSTERIOR HORN
WITH VISUALIZATION
OF
SEMIMEMBRANOSUS
INSERTION

NOTE: THIS REGION
CAN BE PART OF THE
POSTERIOR MEDIAL
EVALUATION



MEDICAL TRAIN



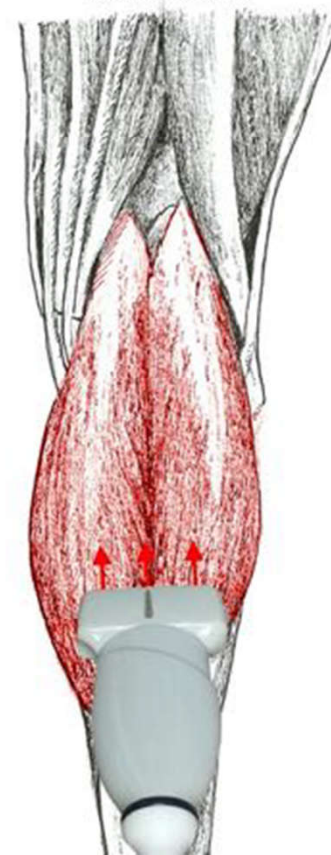
10. POSTERIOR KNEE SAX



MEDICAL TRAIN



Medial and Lateral Gastrocnemius Head
Short Axis



POSTERIOR KNEE SAX
MEDIAL HEAD OF GASTRCONEMIUS AND
SEMIMEMBRANOSUS SAX
LANDMARK FOR BAKER CYST



MEDICAL TRAIN

MSK : Knee

03/21/2019

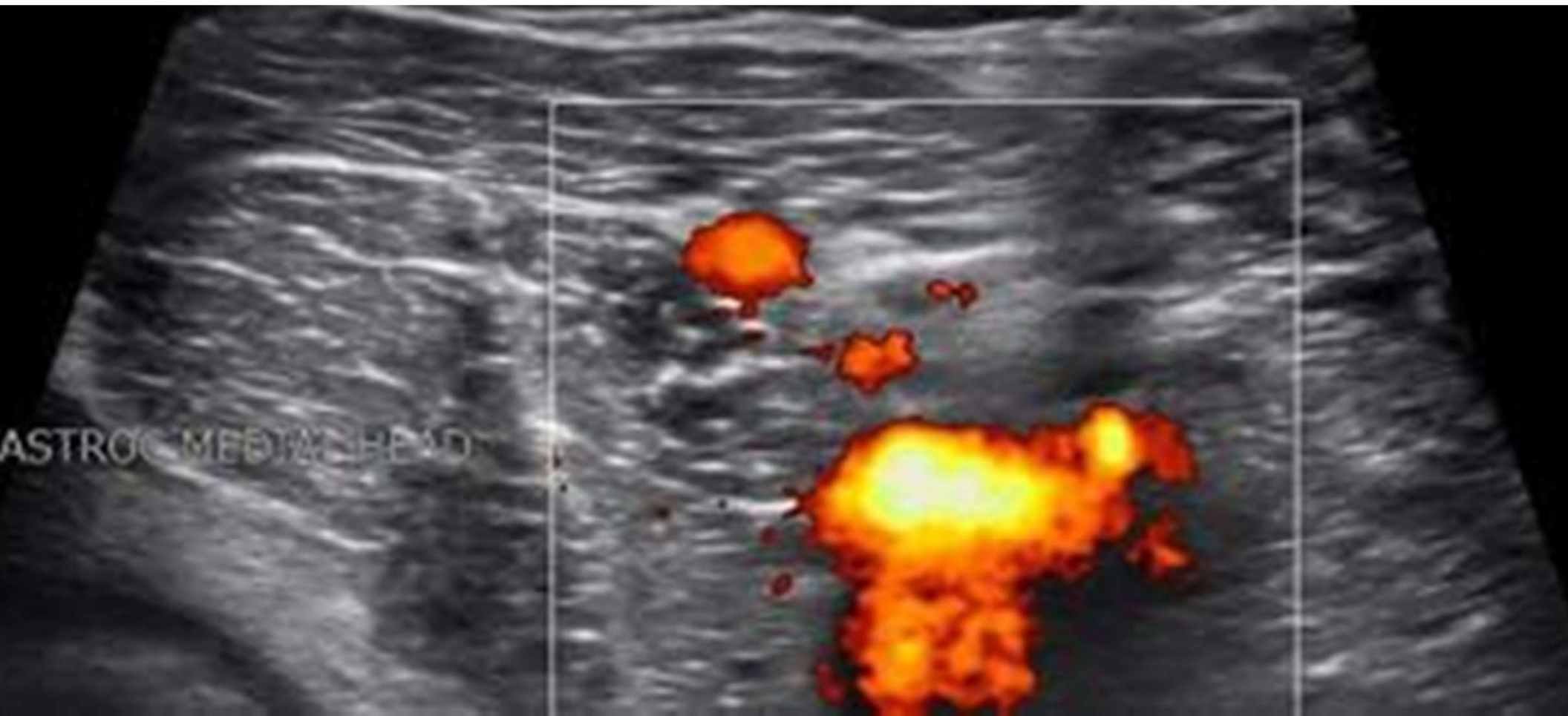
9:51:30 AM



POSTERIOR
KNEE JOINT SAX



MEDICAL TRAINING



POSTERIOR KNEE VASCULAR SAX



MEDICAL TRAIN

THANK YOU

