



# Sports Medicine

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# This is what I do.....





# Sports Medicine Is:

- Caring for people of all ages and all levels of activity and expertise
- Returning people to sport, work, or lifestyle as quickly and as safely as possible after injury or illness
- Promoting fitness and wellness, and encouraging illness and injury prevention

# Universal Sports Medicine Principles

- Restore function
- Maximize function
- Preserve function





# What types of patients we see

- 10 year old with knee pain
- 15 year old runner with shin pain
- 21 year old college student playing intramural soccer with hamstring pain
- 39 year old retired minor league baseball player with shoulder pain
- 40 year old weekend warrior with foot pain
- 45 year old surfer and architect with elbow pain
- 50 year old construction worker with knee pain
- 60 year old female who competes in dragon boat races with hip pain
- 73 year old grandmother who wants to keep up with her grand children



# Services Provided

- Health promotion
- Disease and injury prevention
- Musculoskeletal evaluation
- Treatment planning
- Return to play decision making
- Exercise prescription



# My Journey

- Completed Undergraduate with a BS in Health Science
- Worked 5 years as a Certified Athletic Trainer
- Attended Medical School
- Residency at ChristianaCare in Family Medicine
- Fellowship at South Bend
- Career



# Case: Knee Pain

- While covering a college basketball game, an 18 year-old female injured her knee
- Running, then planted her foot and pivoted to change direction
- She fell, feeling a “pop”, though was able to hobble off the court





# Anatomy

- **Anterior**

- Patella
- Patella Tendon

- **Posterior**

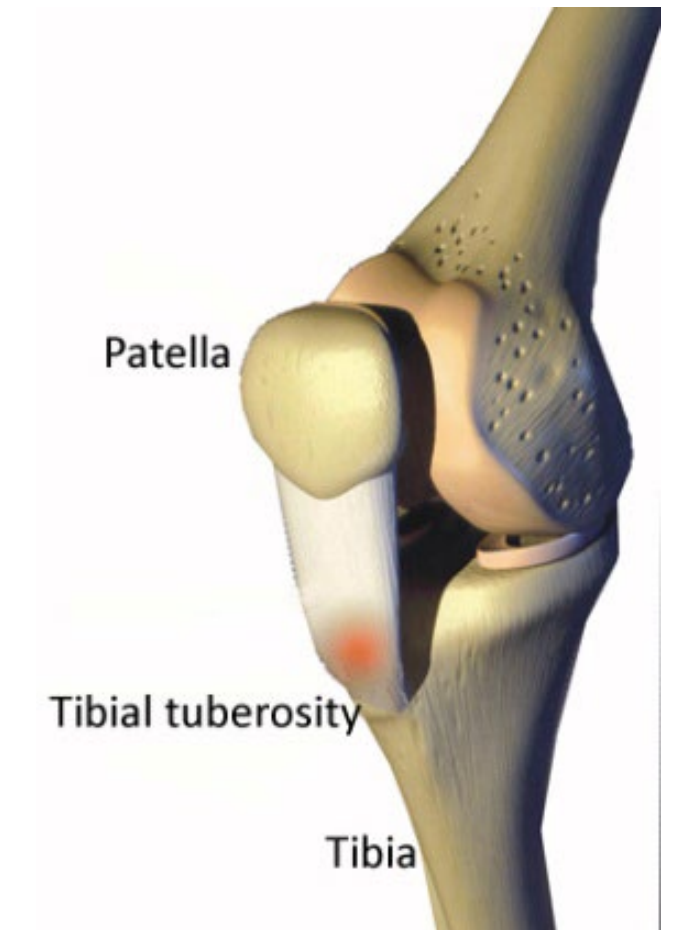
- Gastrocnemius
- Popliteal vessels

- **Medial**

- Medial collateral ligament
- Medial meniscus

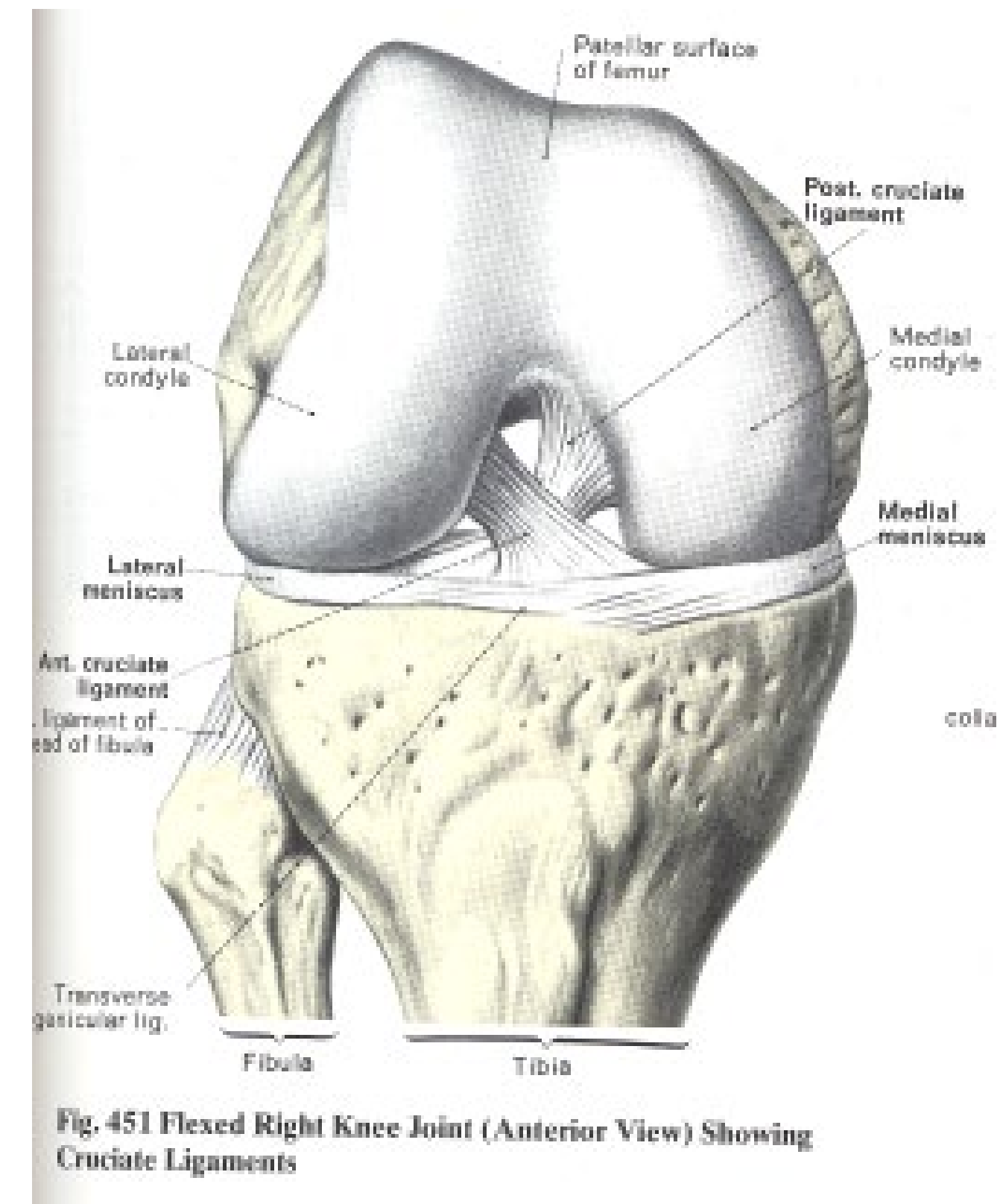
- **Lateral**

- Lateral collateral ligament
- Lateral meniscus



# Anatomy

- Ligaments
  - Anterior cruciate ligament
  - Posterior cruciate ligament
  - Medial collateral ligament
  - Lateral collateral ligament
- Cartilage
  - Menisci
  - Articular





# Sideline evaluation

- She had moderate pain and was not able to return to the game
- By the time she got home 20-30 minutes later, the knee had significantly swelled
- She rested the knee and apply ice



# In the office the next day

- Time for a much more detailed history
  - Present injury
  - Previous history
- Full physical exam
  - Knee exam
  - Gait analysis
- Diagnostic testing
  - Imaging studies
  - Procedures

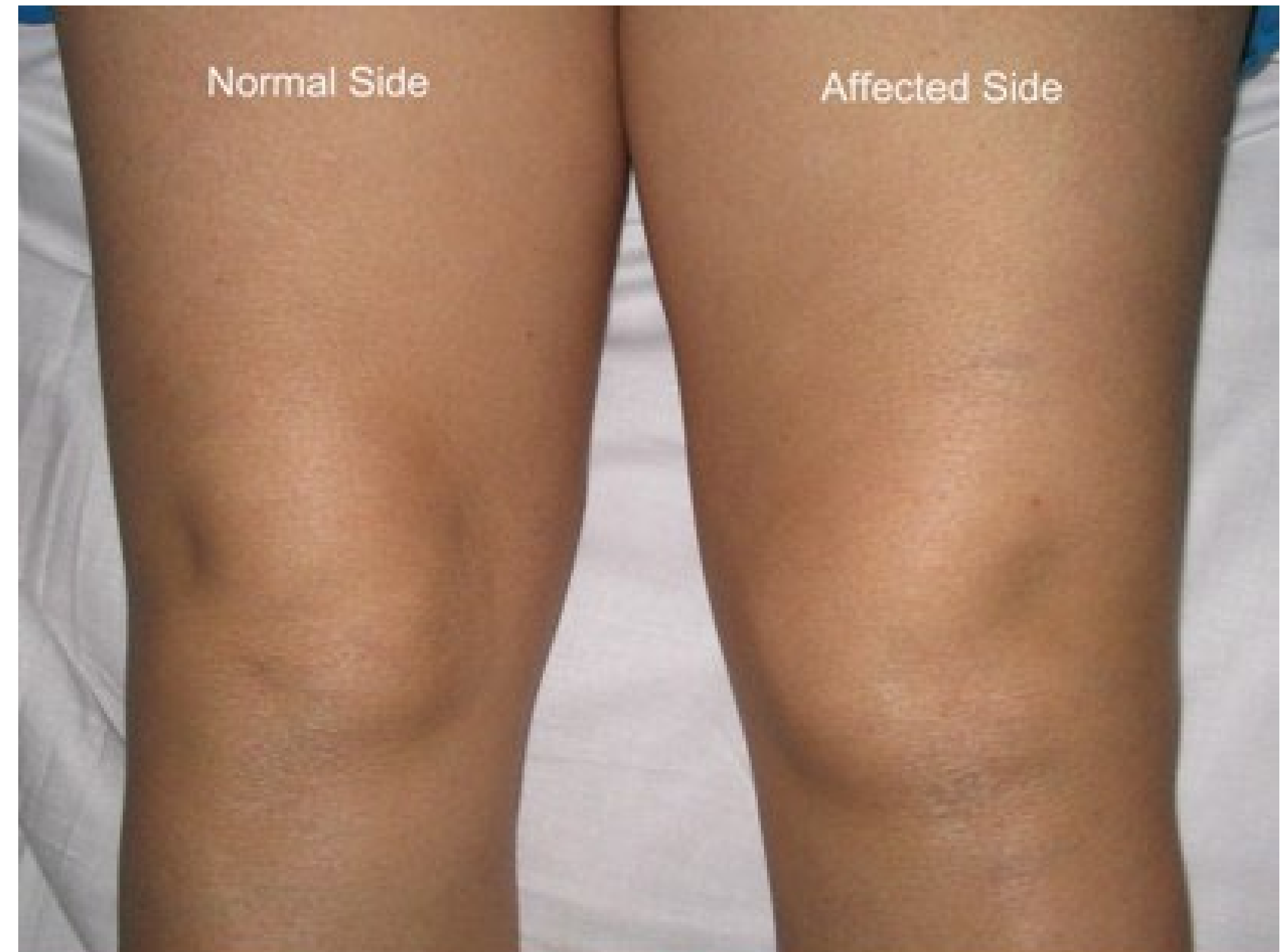


# History

- Mechanism
  - Acute vs. chronic pain
- Unilateral vs. bilateral
- Swelling / effusion
- Worse with activity vs. prolonged sitting
  - Stairs
- Mechanical symptoms
  - Giving way
  - Locking / catching

# Physical exam

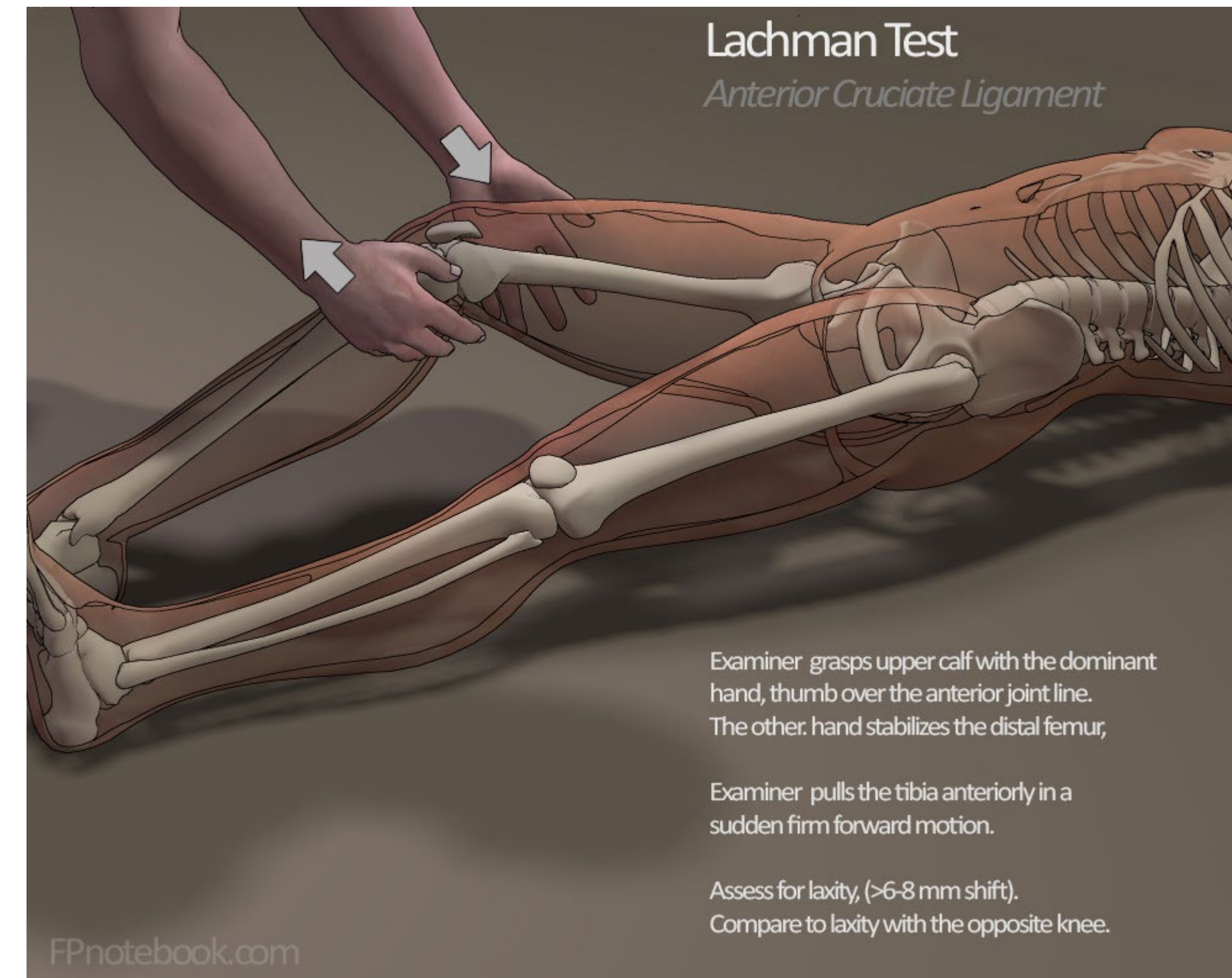
- Tenderness along the lateral joint line
- A large effusion
- Positive lachman



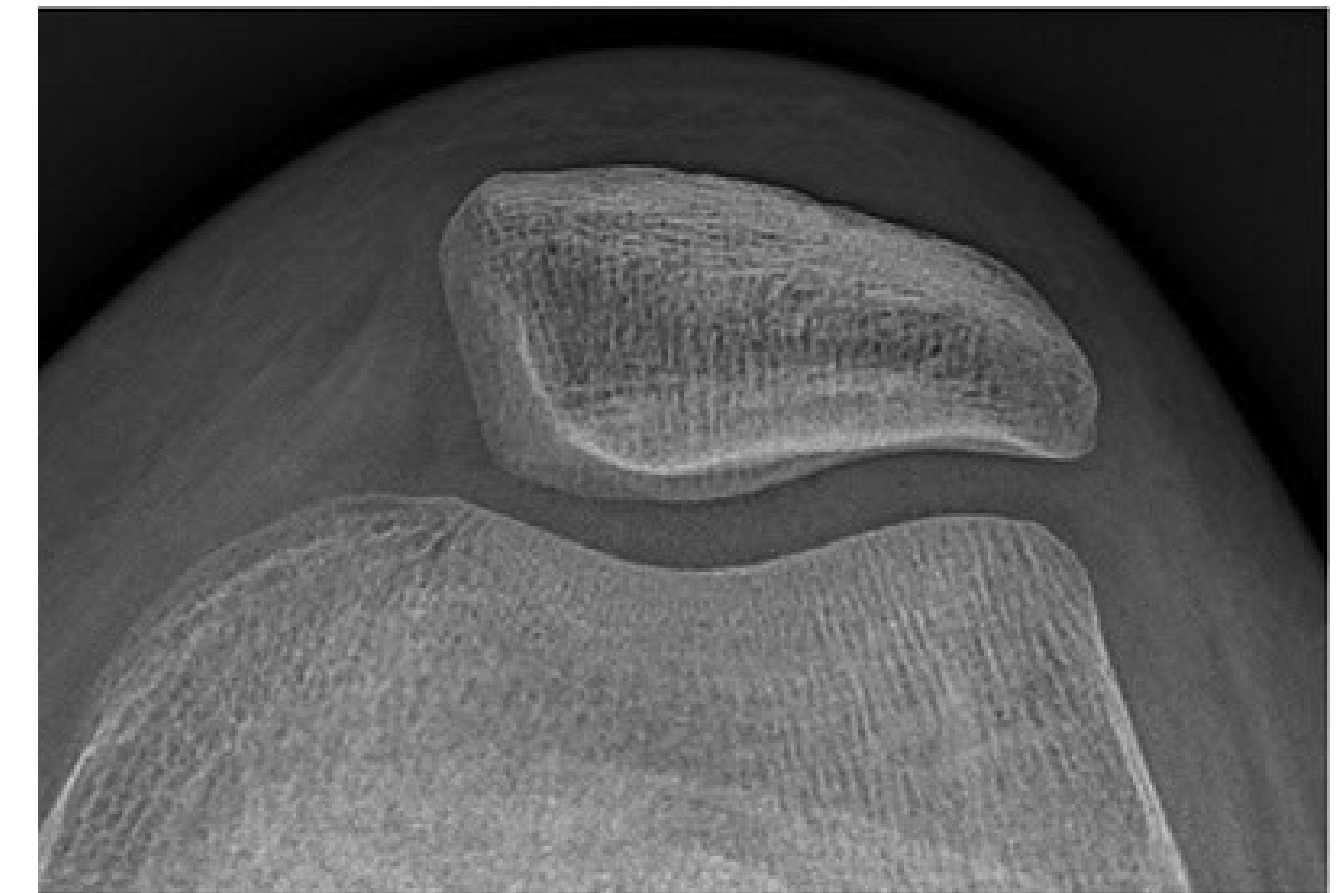


# Lachman knee test

- Knee held in 25-30 degrees of flexion
- Stabilize the distal femur and pull forward on proximal tibia
- Assess for anterior translation of the tibia on the femur and a firm endpoint



# Imaging Studies



- the plain films were negative for pathology





# Differential Diagnosis

- Ligament sprain
- Meniscal tear
- Osteochondral defect
- Muscle strain
- Fracture
- Patella dislocation

# Aspiration



- The acute hemarthrosis was aspirated



# Differential Diagnosis

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- Meniscal tear
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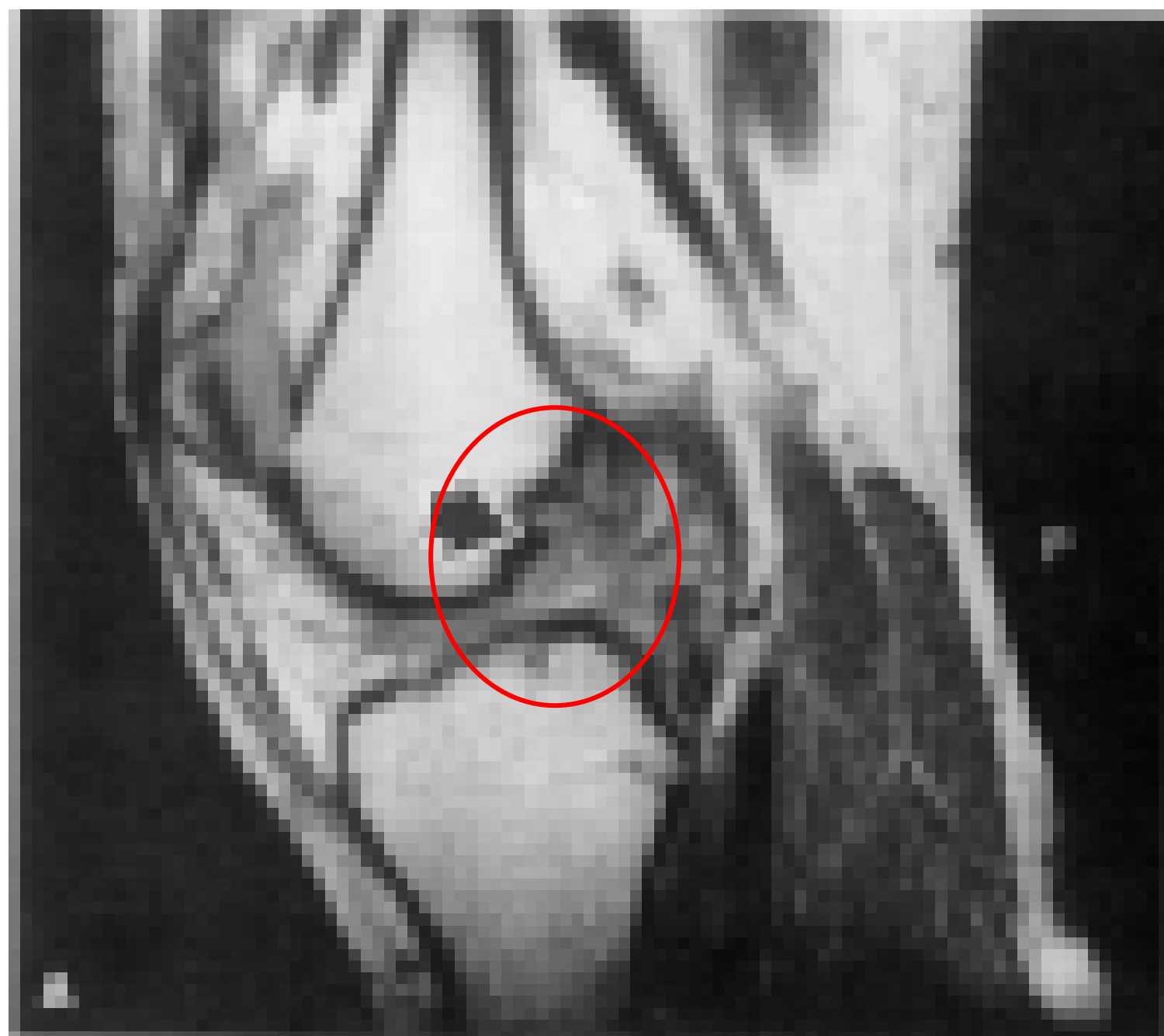
# Plan and work-up

- Pt referred for an MRI
- Placed in a post-op hinge brace for immobilization
- Anti-inflammatory medication
- Compression wrap
- Ice





# MRI





# Differential Diagnosis

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# Diagnosis and treatment

- Anterior Cruciate Ligament tear
- Treatment options
  - Surgical reconstruction
  - Physical therapy
  - Bracing

# Surgery





# Physical Therapy

- Strength training
  - Quadriceps – hamstring ratio
- Flexibility
  - Quadriceps and hamstring
- Proprioception

# Bracing?

- No evidence that pain, range of motion, graft stability, or protection from subsequent injury were affected by brace use.





# Physical therapy after Surgery





# Sports Medicine Role after Surgery

- Return to play decisions
- Caring for the whole patient
  - Physical health
  - Mental health
- Nutrition
- Exercise prescription



# Prognosis

- Full return to sports





# Prevention

- Proper training – proprioception and neuromuscular training exercises
- Decelerate in a more controlled fashion by taking smaller steps than one sudden step
- Round off turns when pivoting, keeping legs inside body shape
- Concentrate on core strength



# Questions

