Joint Examination and Injection Course

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KNEE

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History & Physical Exam of the Injured Knee

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Assessing a knee injury

- Components of the assessment include
  - Focused history
  - Attentive physical examination
  - Thoughtfully ordered tests/studies

Focused History

Differential Diagnosis of Knee Haemarthrosis

ACL tear

Meniscal Tear

Fracture

Focused History Questions

- **Onset of Pain**
  - Date of injury or when symptoms started

- **Location of pain***
  - *Anterior*
  - *Medial*
  - *Lateral*
  - *Posterior*

Focused History Questions

- **<u>Mechanism of Injury</u>** ***-helps predict injured structure***
  - **Contact or noncontact injury?***
    - **If contact, what part of the knee was contacted?**
      - Anterior blow?
      - Valgus force?
      - Varus force?
  - **Was foot of affected knee planted on the ground?****

Focused History Questions

- **Injury-Associated Events***
  - *Pop* heard or felt?
  - *Swelling* after injury (immediate vs delayed)
  - *Catching / Locking*
  - *Buckling / Instability* (“giving way”)

Instability - Example

Patellar dislocation

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Historical Clues to Knee Injury Diagnoses

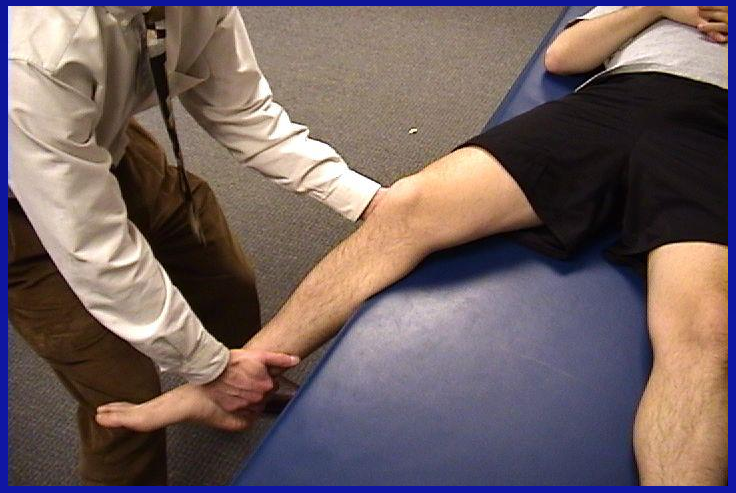
Noncontact injury with “pop”	ACL tear
Contact injury with “pop”	MCL or LCL tear, meniscus tear, fracture
Acute swelling	ACL tear, PCL tear, fracture, knee dislocation, patellar dislocation
Lateral blow to the knee	MCL tear
Medial blow to the knee	LCL tear
Knee “gave out” or “buckled”	ACL tear, patellar dislocation
Fall onto a flexed knee	PCL tear

Physical Exam - General

- Develop a standard routine*
- Alleviate the patient's fears

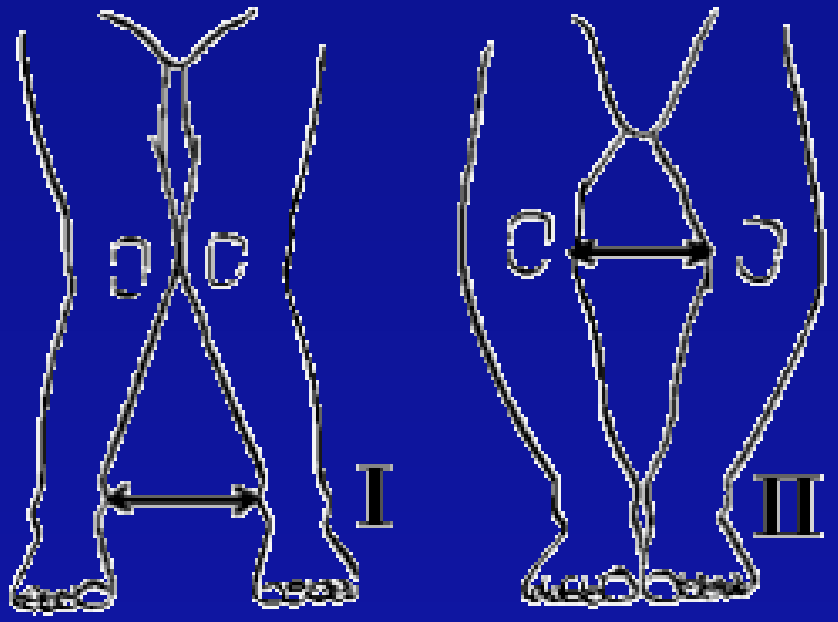
GENERAL STEPS

Inspection	Look
Palpation	Feel
Range of motion	Move
Strength testing	
Special tests	



Observe – Static Alignment

- Patient then brings medial aspects of knees and ankles in contact



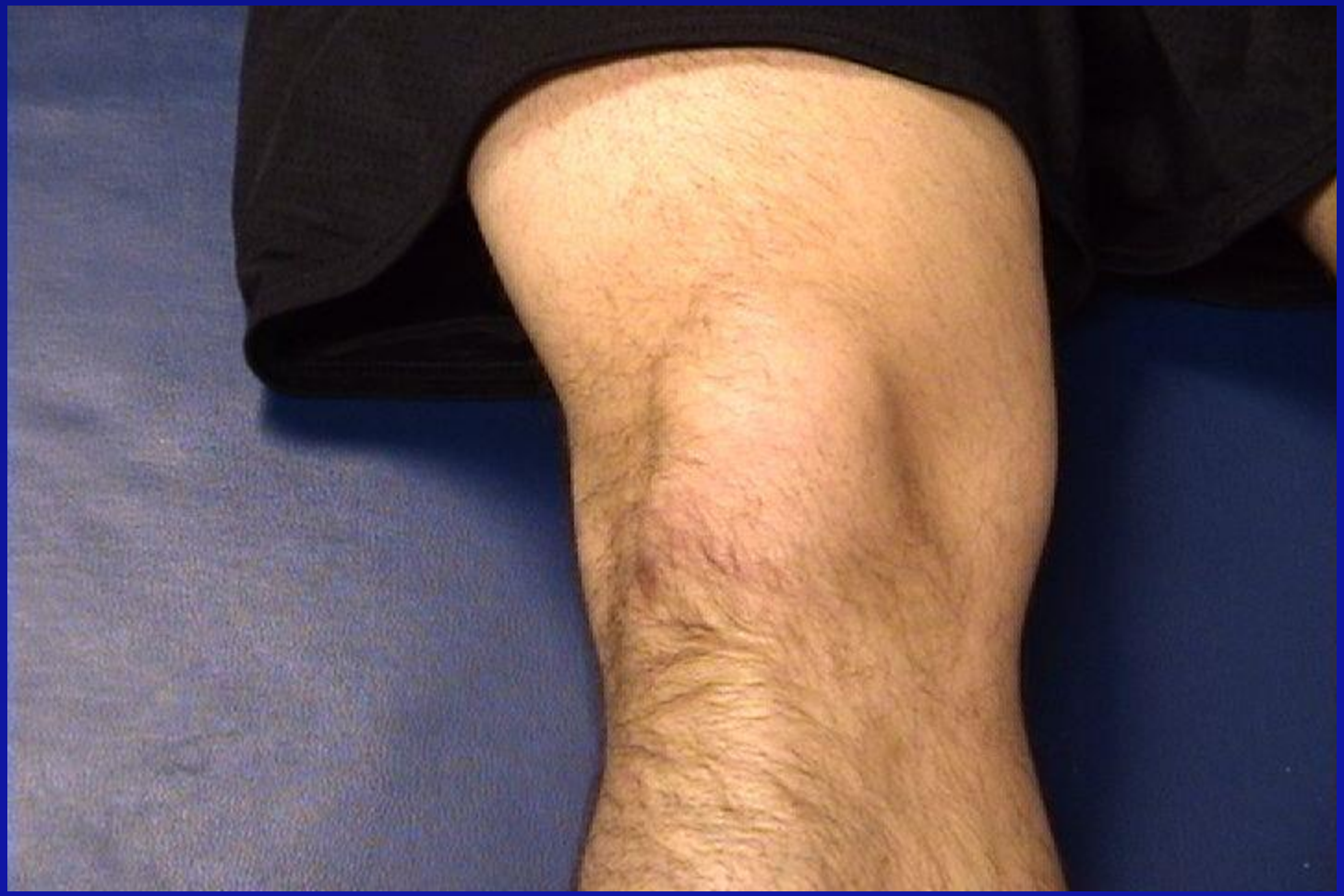
Genu valgum

Genu varum

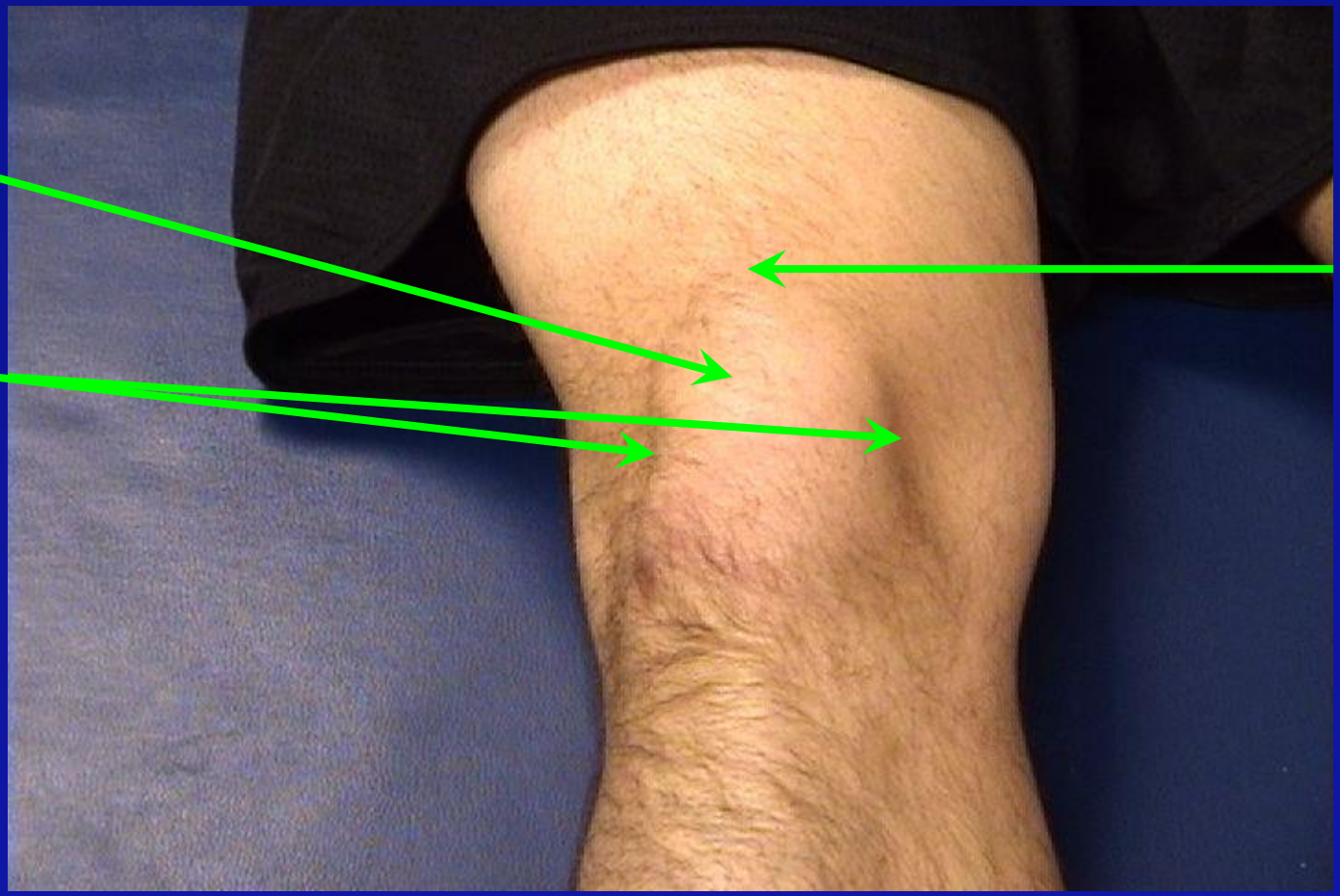
Inspect Knee

- Evidence of local trauma
  - Abrasions
  - Contusions
  - Lacerations
- Patella position
- Muscle atrophy
- Warmth
- Erythema
- Effusion*

Normal Knee – Anterior, Extended



Surface Anatomy - Anterior, Extended*



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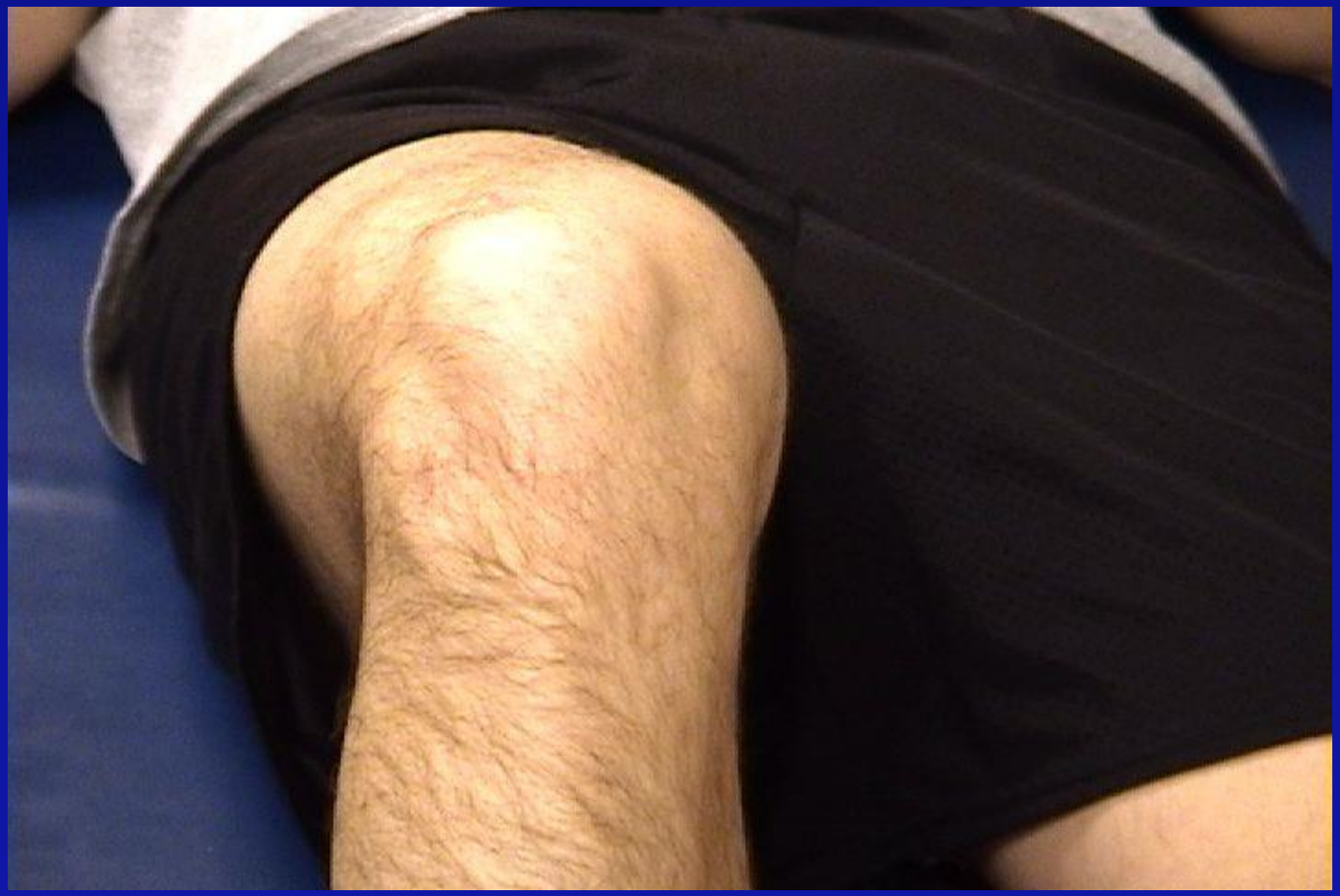
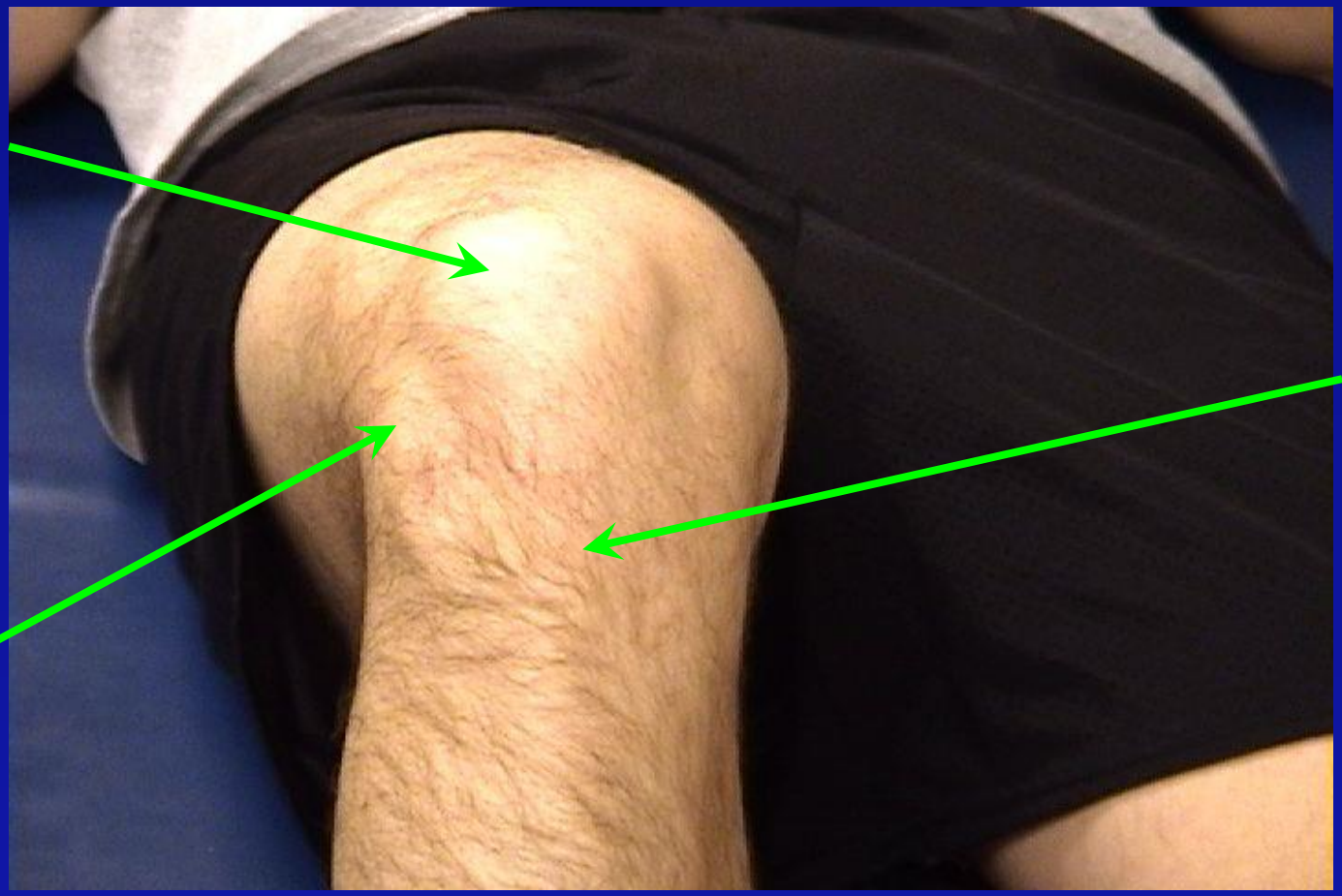
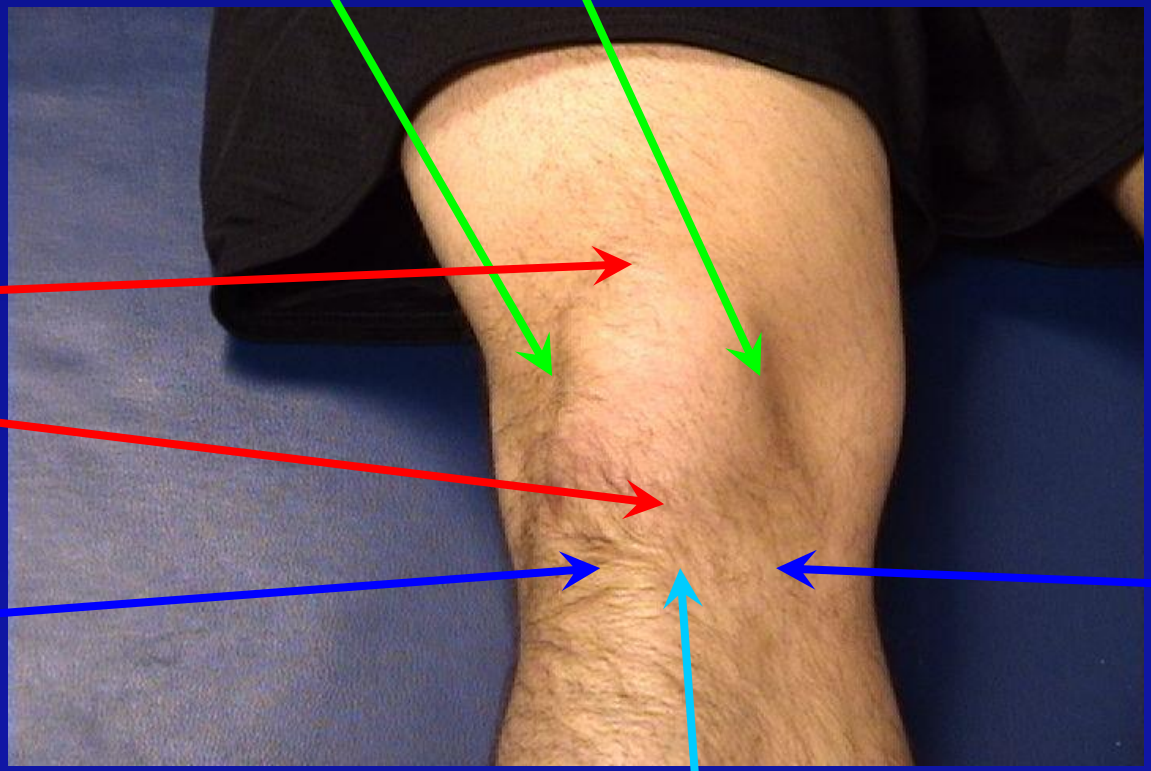
Normal Knee – Anterior, Flexed



Surface Anatomy - Anterior, Flexed



Palpation – Anterior*



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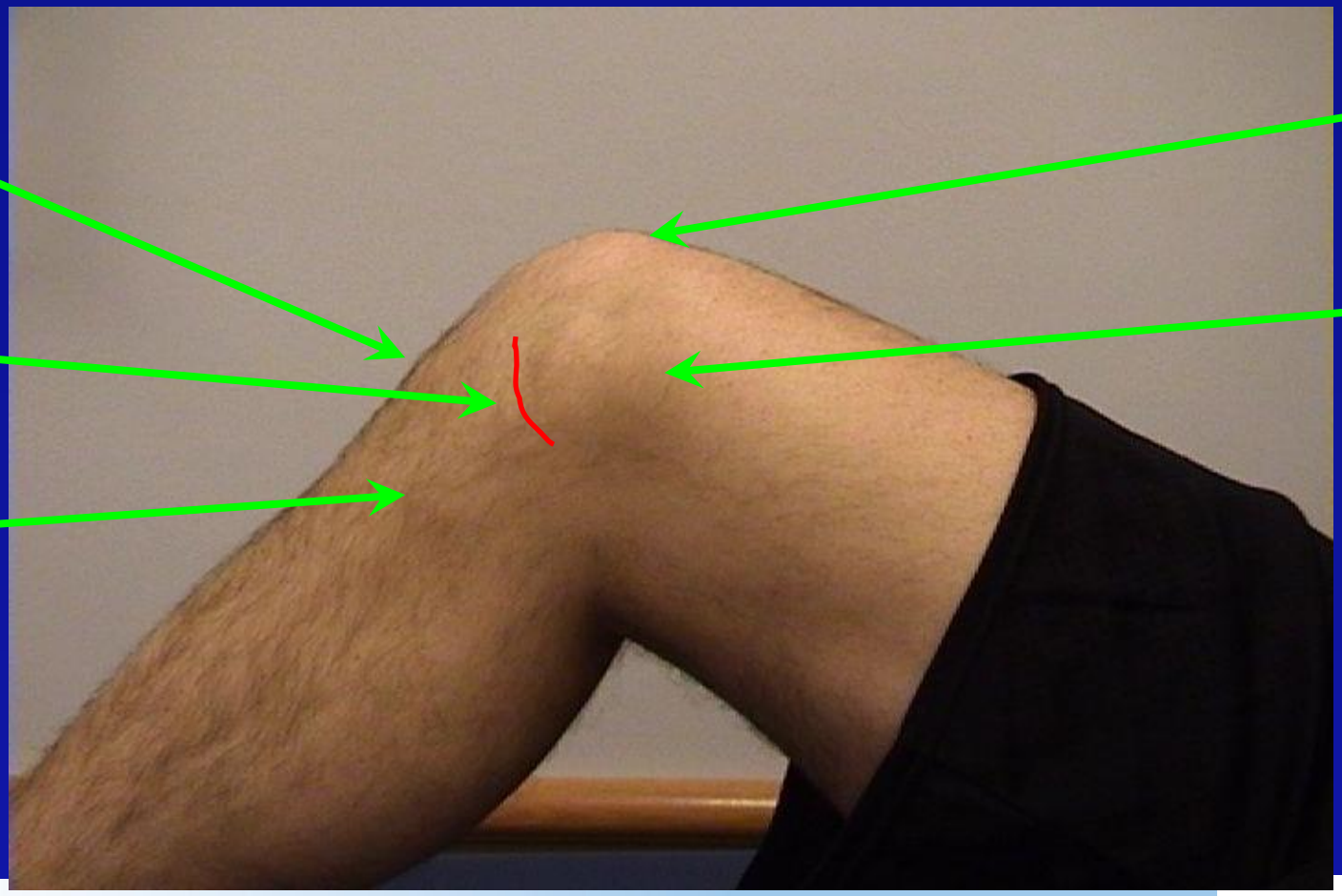
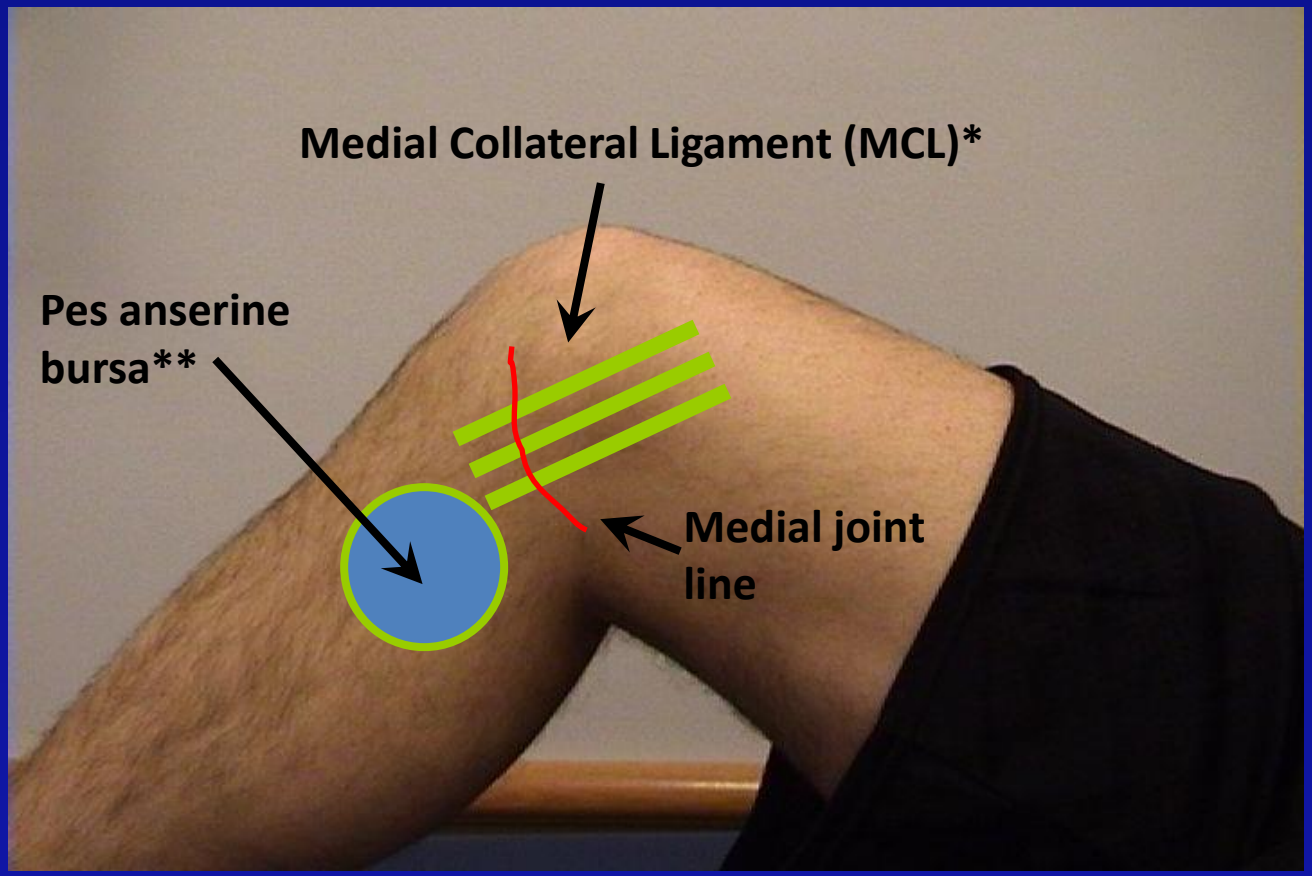
Surface Anatomy - Medial



Palpation - Medial



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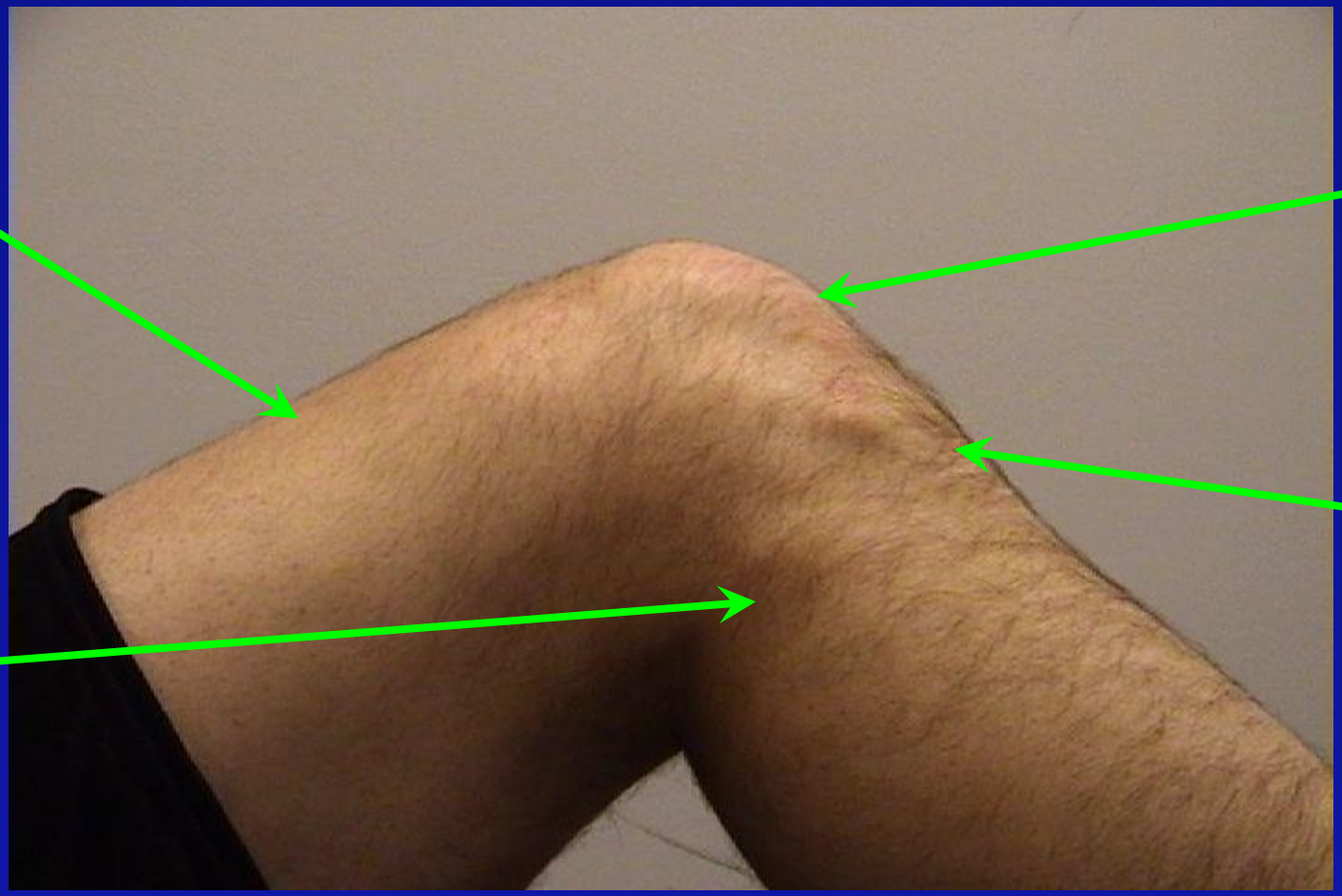
Surface Anatomy – Lateral



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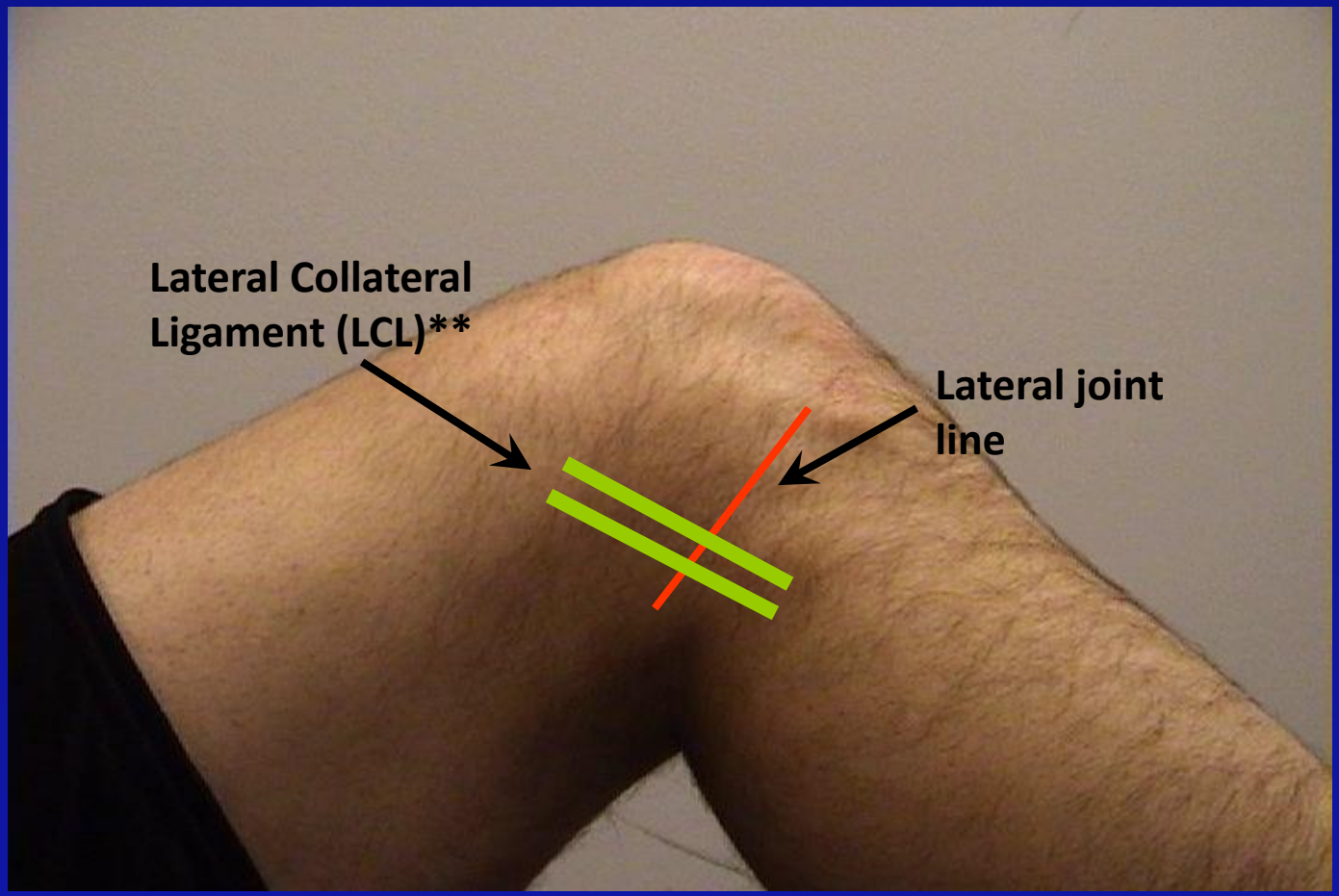
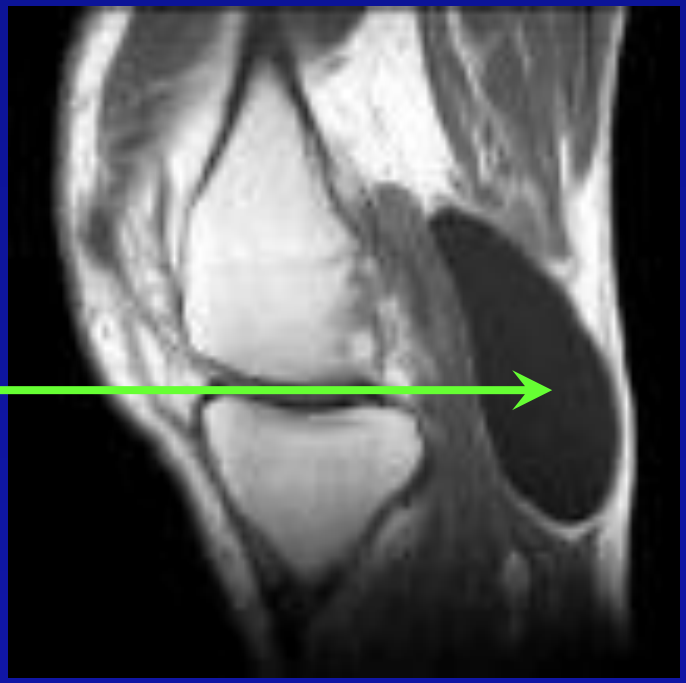
Palpation – Lateral*

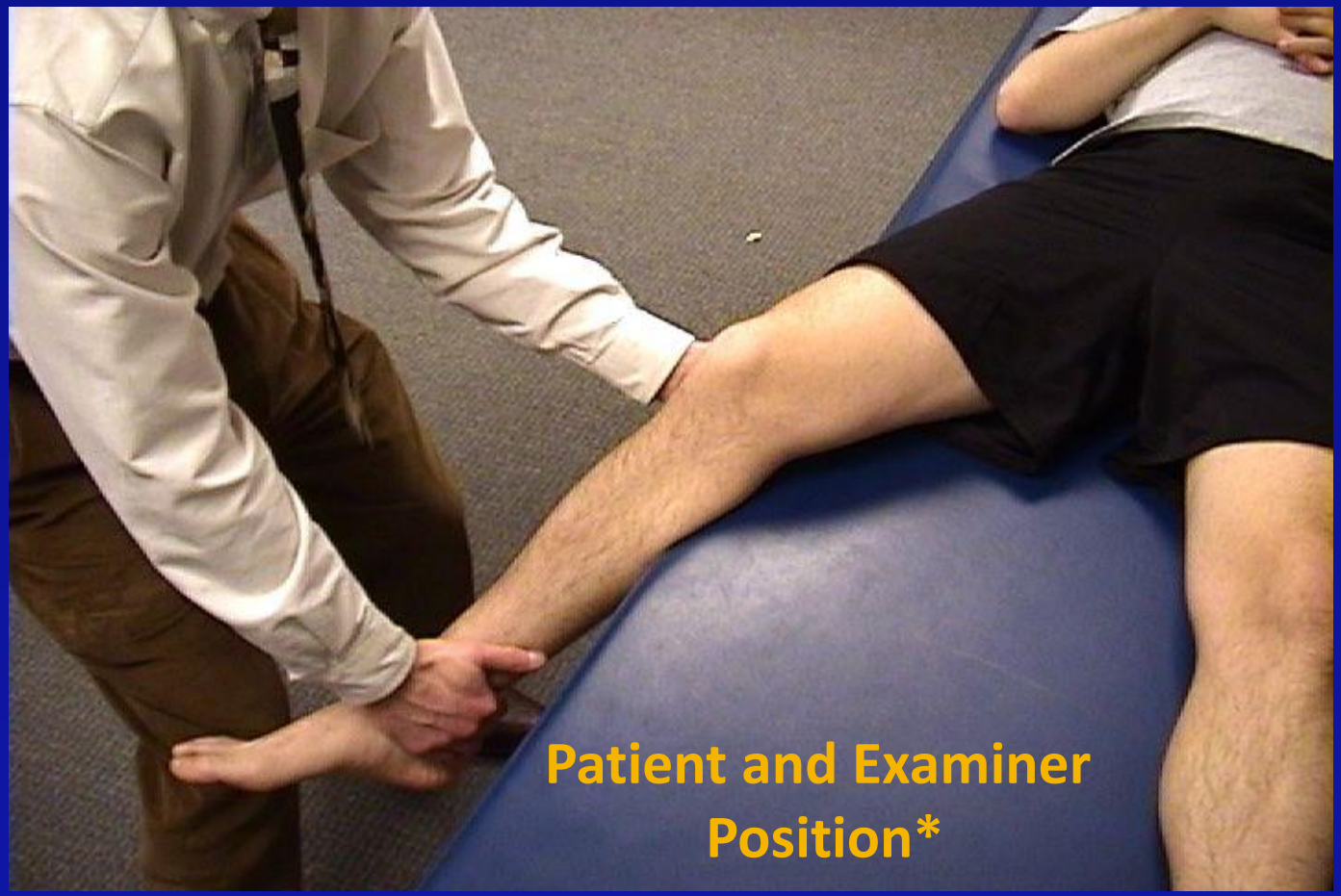


Palpation - Posterior

- Popliteal fossa*
- Abnormal bulges
  - Popliteal artery aneurysm
  - Popliteal thrombophlebitis
  - Baker's cyst



Collateral Ligament Assessment



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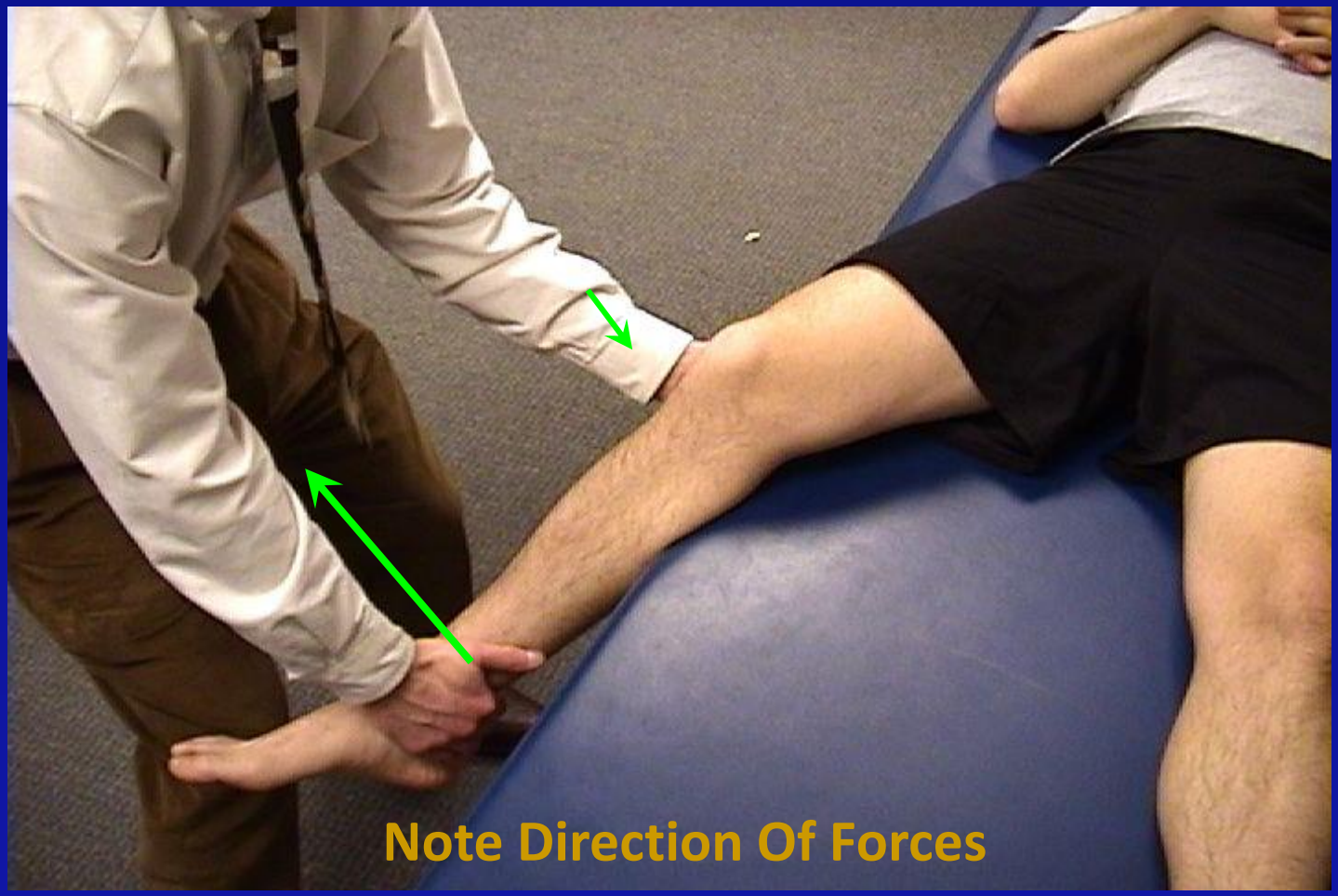
Valgus Stress Test for MCL*



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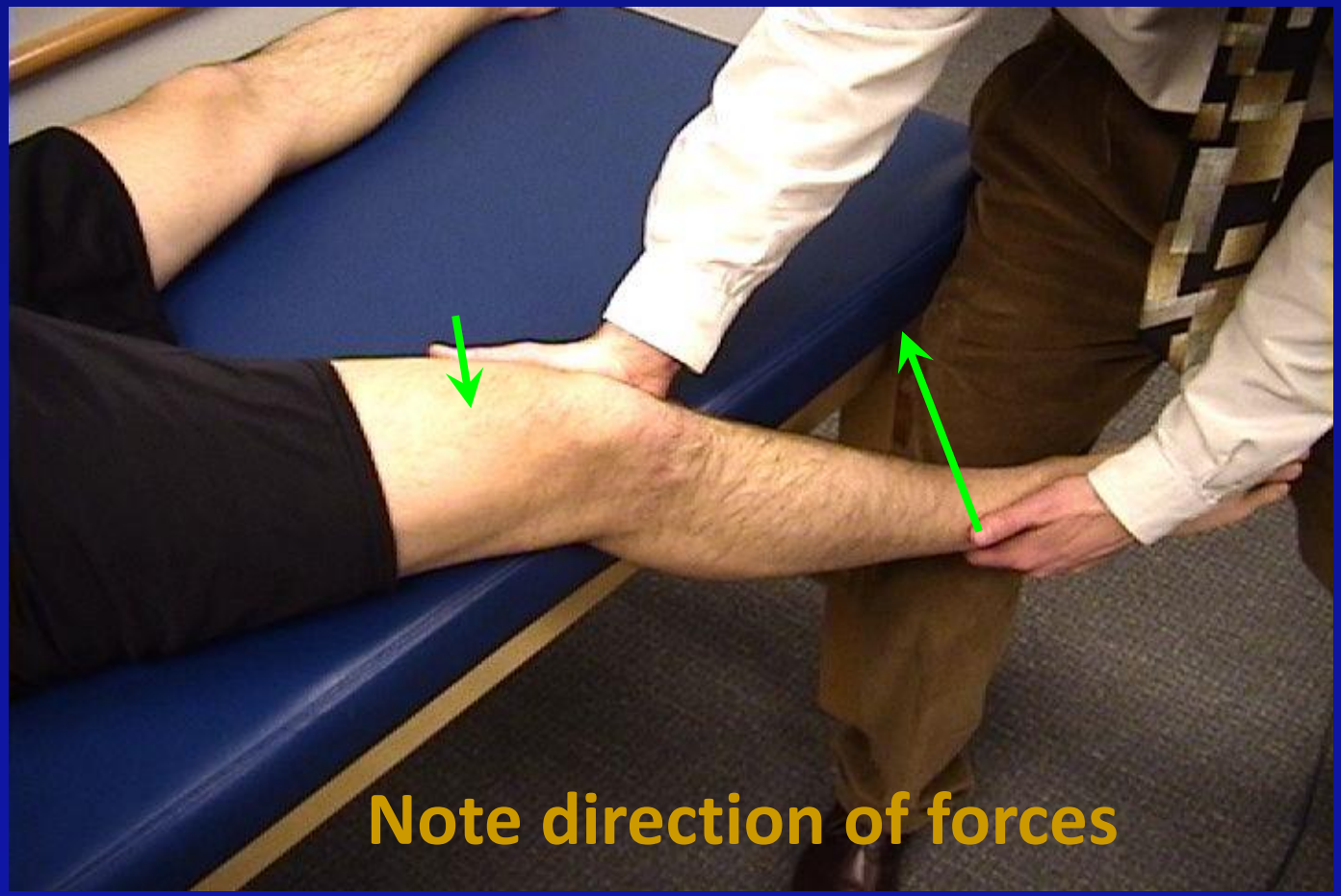
Varus Stress Test for LCL*



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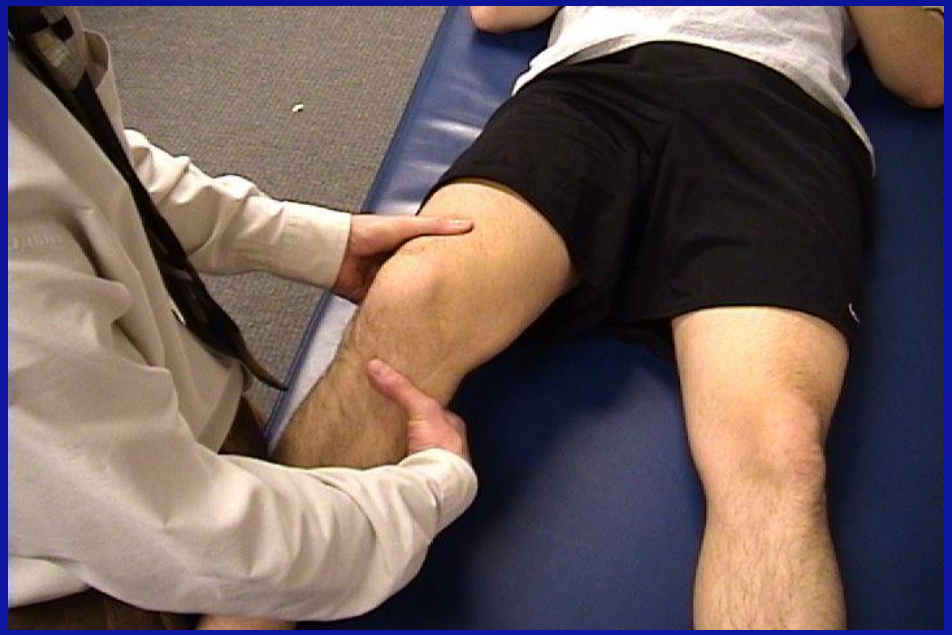
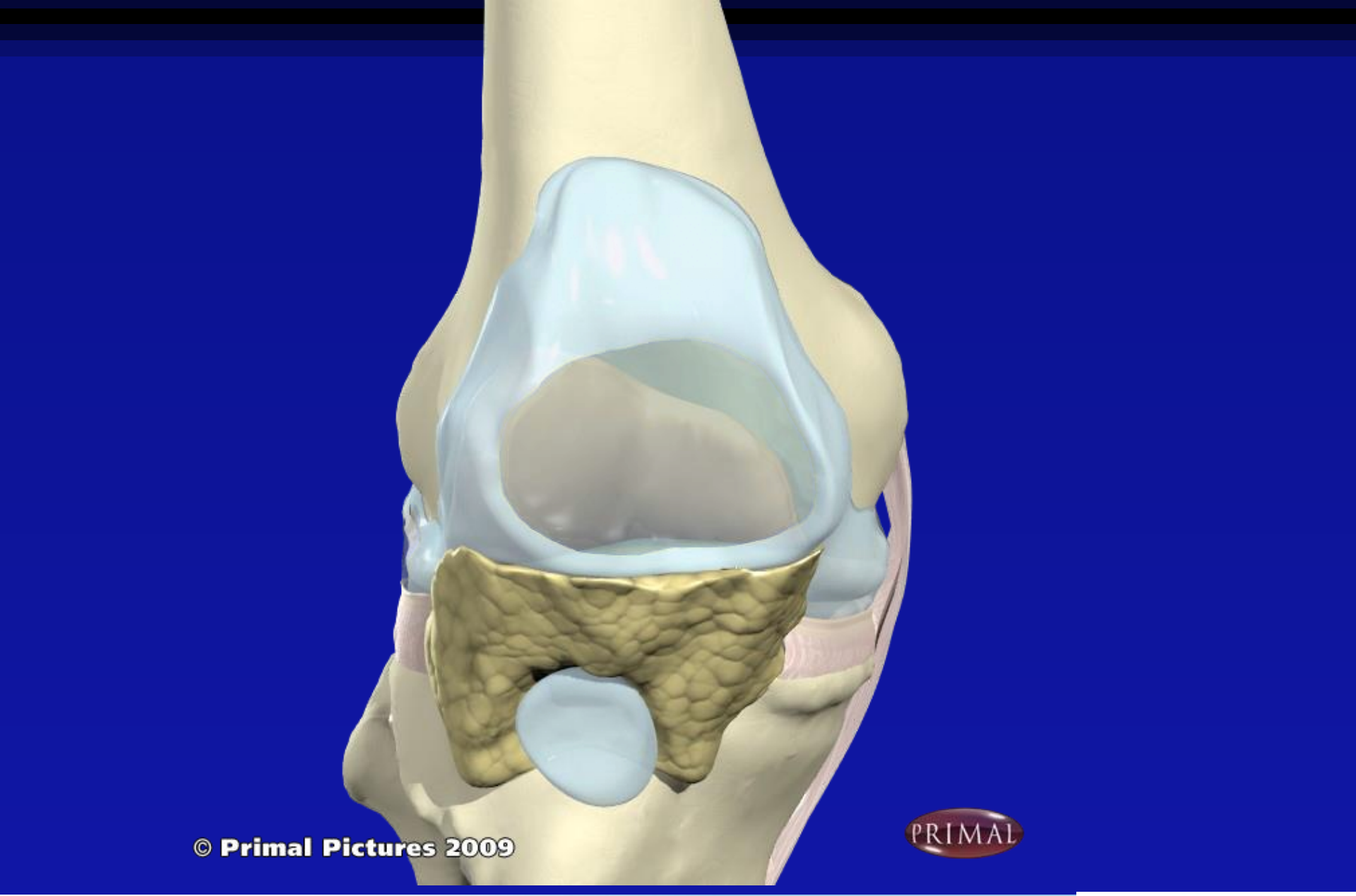
Lachman Test*

- Patient Position
- Physician hand placement



KNEE PROBLEMS

- OA
- RA
- Gout
- Pyrophosphate disease
- Inflammatory arthropathies
- Pre patella bursitis
- Infra patella bursitis
- Pes Anserinus inflammation
- Popliteal cyst (Bakers)
- Referred from hip



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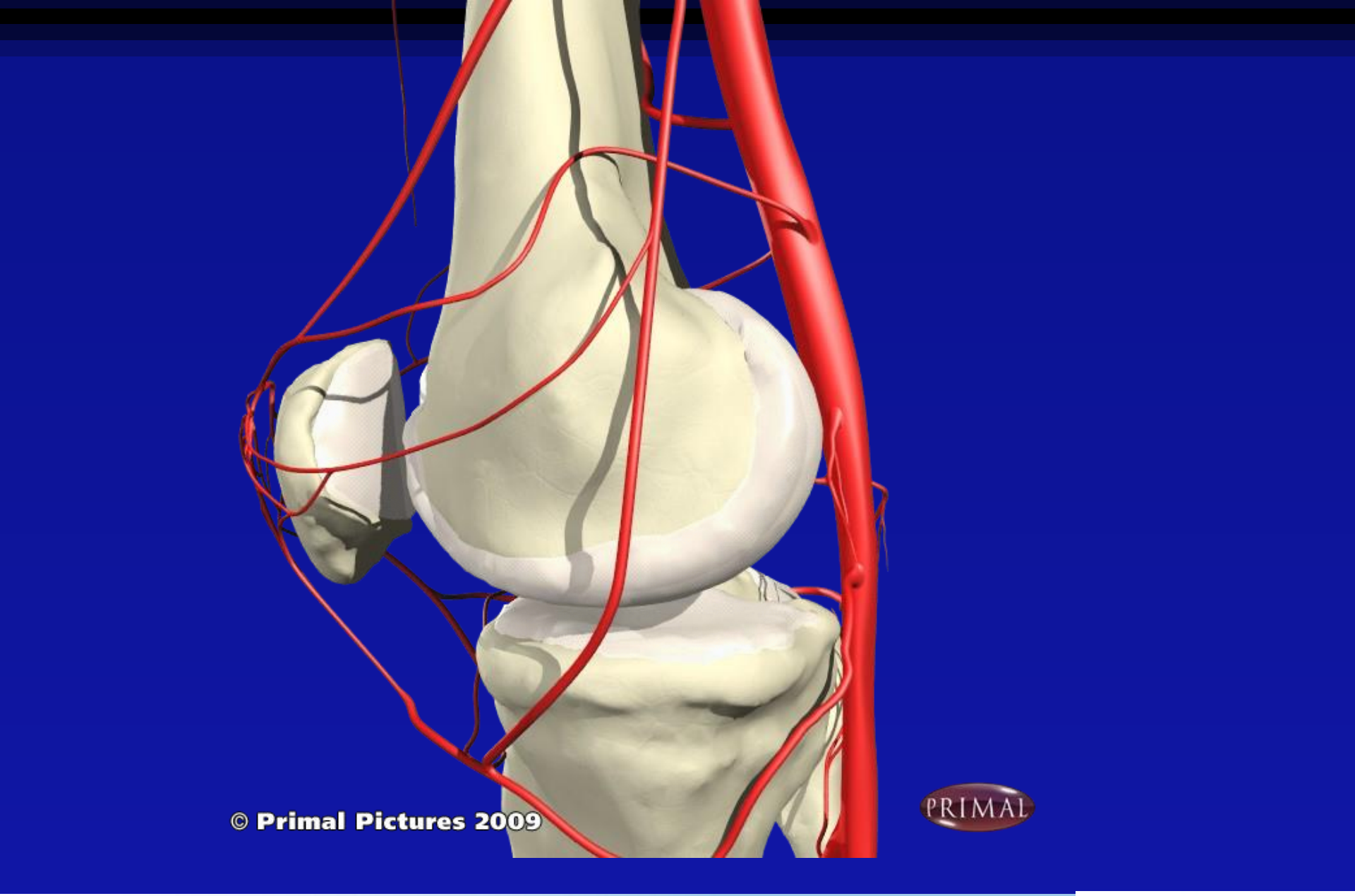

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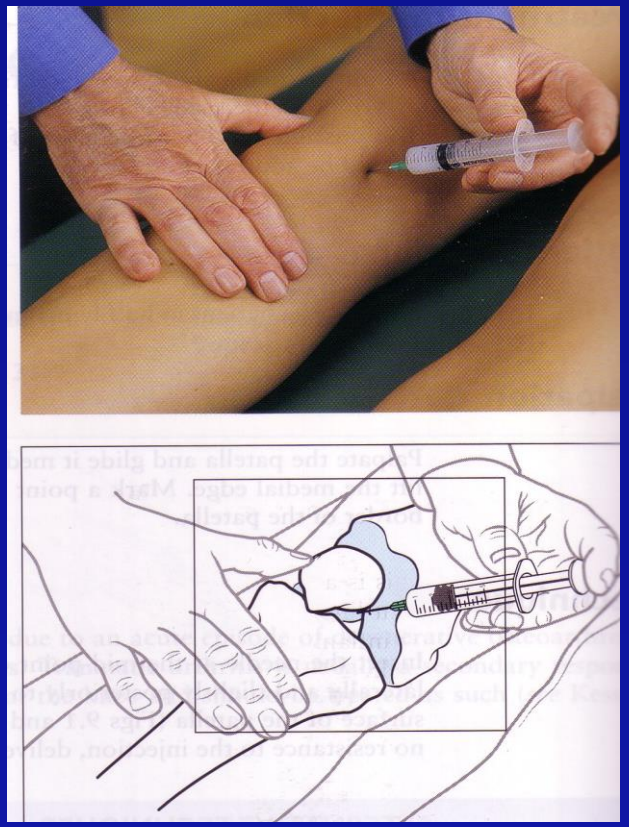
Knee Injection Sites

- Medial or lateral approach, aim upper 1/3 patella towards suprapatella pouch.
- Pull patella towards you so the gap between the patella and femur can be felt
- Aspirate confirms correct position, absence in a swollen joint usually indicates incorrect position.
- You do not need to go directly into knee, the SP pouch is part of knee joint and is less painful than piercing capsule.

Knee Joint
Medial Approach



- Landmarks:
- Midpoint/upper third medial patellar border – push patella medially to identify medial edge. Insert needle under patella
- Position: Lying with knee extended. Milk fluid into joint space - aspirate then inject
- Needle: Blue
- Steroid: 40mg
- LA: 8-9mls

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Knee Injection

- If you are in the wrong place DO NOT DIG AROUND LOOKING FOR THE GAP. Main pain caused by needling the periosteum

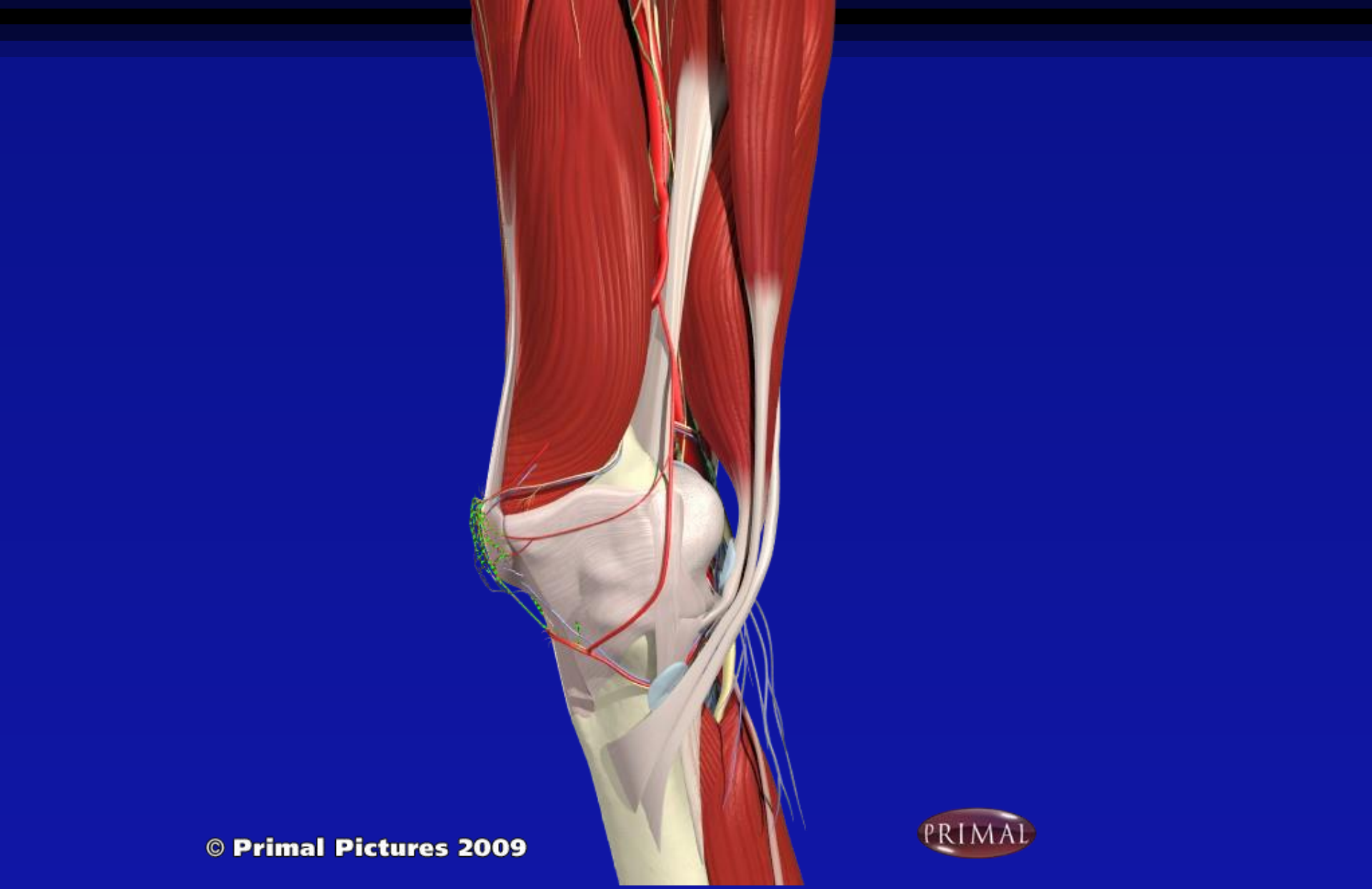
- Come out re-examine your landmarks and try again after re-cleaning skin and change needle.

Bursae around the knee

- Pre-patella bursa (housemaids knee)
- Infra-patella bursa (preachers knee)
- Popliteal bursa (Bakers ‘cyst’)
- Anserine bursa

Anserine bursa

- Common in OA especially with valgus knee. Also RA.
- Patient localises pain to site and tender
- Inject 40mg Depomedrone and Lidocaine



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Politeal cyst/bursa

- Directly connected to knee joint
- Fluid comes from knee
- One way valve, cannot return to knee,
- No need to aspirate bursa will refill.
- After injection, bursa will settle with time (months)
- Rarely requires surgery, only if chronic and obstructing movement significantly.

Referred pain to knee

- If the knee looks normal the pain is persistent remember to check the rotation of the hip (can the patient reach shoe or sock by laterally rotating and flexing hip)
- If reduced, need to xray of hip.
- Knee pain may be the only symptom of significant OA in the hip.