

Anatomy of the Knee Ligaments

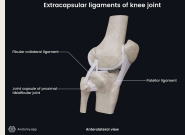
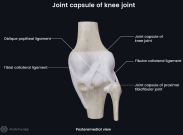
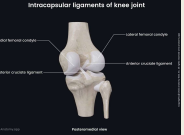
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Knee Ligaments Introduction






- Extracapsular ligaments: outside the capsule
- Capsular ligaments: Thicken parts of the capsule
- Intracapsular ligaments: Lie within the capsule

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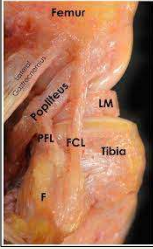
Knee Ligaments Ligamentum Patellae

- Continuation of the central portion of the common tendon of the 4iceps muscle.
- Attached:
 - Above: lower border of the patella
 - Below: tibial tuberosity
- Rupture: when a sudden flexing force is applied to the knee joint > 4iceps actively contracting



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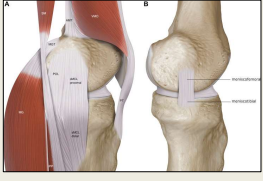
Knee Ligaments Lateral Collateral Ligament



- Cordlike, = Fibular Collat Lig
- ¼ mm prox and 3.1 mm post to the lateral epicondyle of the femur
- 28.4 mm distal to the fibular styloid tip
- The tendon of the popliteus m intervenes btw the lig and the lat meniscus
- Primary restrain of varus in all degrees of flexion

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Knee Ligaments Medial Collateral Ligament



- Flat band
- **Superficial (sMCL):**
 - Medial epicondyle
 - Blends into SM tendon
 - Posteromedial crest of the tibia
- **Deep (dMCL):**
 - Menisfemoral ligt (medial meniscus)
 - Meniscotibial ligt (distal edge of tibial articular surface)

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Knee Ligaments Medial Collateral Ligament

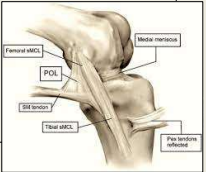


- Primary static stabiliser, and passive stabiliser
- **sMCL:**
 - Resists **valgus** forces through all degrees of flexion
 - Stabilizes **external rot** at 30° flexion
- **dMCL:**
 - Stabilizes **internal rot** from full ext to 90° flexion
 - No role in medial meniscus stability

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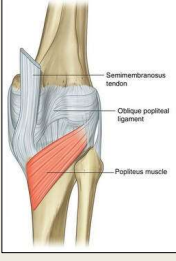
Knee Ligaments Posterior Oblique Ligament

- Posterior to the MCL
- Intermediate and deep capsular layer
- Adductor tubercle
- Insertions:
 - Blends with the post part of the MCL
 - Medial meniscus
 - Posteromedial joint capsule
- Primary stabilizer for **internal rotation**, secondary stabilizer for **valgus and external rotation**



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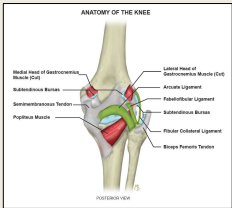
Knee Ligaments Oblique Popliteal Ligament



- Flat ligmt of the post joint
- 30° inclination
- Prevents **hyperextension and excessive external rotation**

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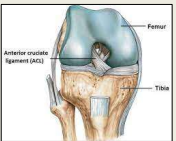
Knee Ligaments Arcuate Popliteal Ligament



- **65%** of knees
- Y-shaped thickening of the posterolateral capsule
- Medial limb over the popliteus muscle
- Lateral limb ascends to blend with the capsule

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Knee Ligaments Anterior Cruciate Ligament




- O: Intercondylar notch, posteromedial corner of medial aspect of lat femcondyle
- I: in front and lateral to the anterior spine of the tibia
- Resists **anterior tibial translation and rotational loads**

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Knee Ligaments Posterior Cruciate Ligament

- Strongest and largest intra-articular ligt in the knee
- O: anterolateral aspect of the medial femoral condyle
- I: along the post tibial plateau, 1 cm distal to the joint line
- Resists excessive **post translation** of the tibia on the femur

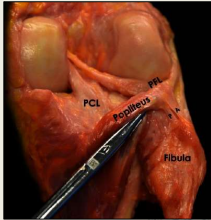


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Knee Ligaments Posterolateral Corner

LaPrade, 2016:

- 3 major static stabilizers:
 - Lateral Collateral Ligament
 - Popliteus Tendon
 - Popliteofibular Ligament

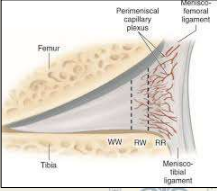


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Knee Ligaments Posterolateral Corner

LaPrade, 2016:

- **Secondary stabilizers (static & dynamic):**
 - Lateral capsular thickening of the lateral capsular ligt (meniscomfemoral and meniscotibial ligts)
 - Coronary ligt (post lat meniscus on the tibia)

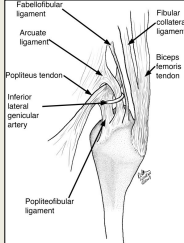


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Knee Ligaments Posterolateral Corner

LaPrade, 2016:

- **Secondary stabilizers (static & dynamic):**
 - Lateral gastrocnemius tendon fusion distally with the medial gastrocnemius and the soleus (sural triceps)
 - Fabellofibular ligt (fabella: 30% of individuals)

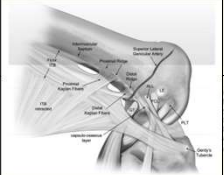


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Knee Ligaments Posterolateral Corner

LaPrade, 2016:

- **Secondary stabilizers (static & dynamic):**
 - Direct and ant arms of the biceps insertion on the fibular head (enclose the LCL attachment)
 - IT band: most superficial (attachments to Gerdy's tbc, tibia, patella, lat intermuscular septum and capsule)

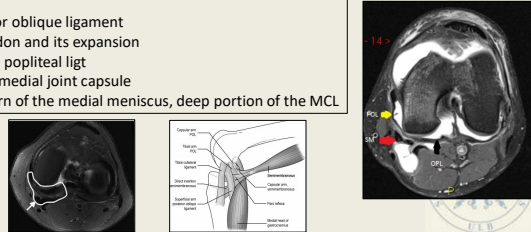


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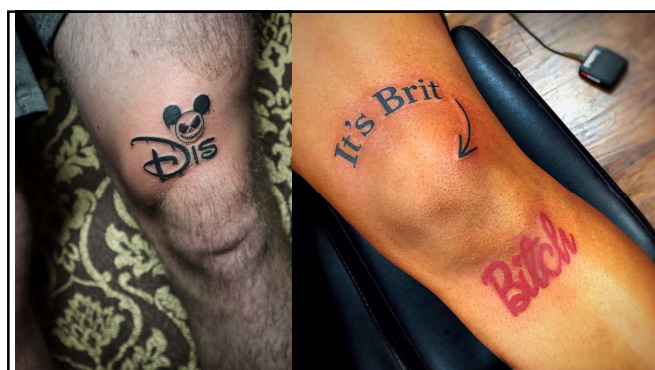
Knee Ligaments Posteromedial Corner

5 major components:

- Posterior oblique ligament
- SM tendon and its expansion
- Oblique popliteal ligt
- Posteromedial joint capsule
- Post horn of the medial meniscus, deep portion of the MCL



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