



Anterior Cruciate Ligament:

- **Function:** Stabilizes the knee joint. Prevents anterior translation of the tibia relative to the femur. Restrains against tibial rotation and varus and valgus stress.
- **Anatomy:** Originates from the anterior intercondylar area and extends posterolateral to the posteromedial aspect of the lateral femoral condyle.



PRESENTATION

RISK FACTORS	PHYSICAL EXAM
▪ Age: Peak incidence 16-18 years ▪ Females ▪ Neuromuscular and biomechanical factors (e.g., quadriceps dominance, core weakness, external hip rotator weakness)	Look ▪ Effusion Feel ▪ Effusion ▪ Lateral joint line tenderness Move ▪ Limited due to pain or swelling Special tests ▪ Lachman's Test (Most sensitive and specific) ▪ Patient lies supine, flex knee to 20-30°, stabilize distal femur with one hand and pull proximal tibia anteriorly with other hand ▪ Positive Test: Lack of endpoint and/or increased anterior translation ▪ Anterior Drawer Test ▪ Patient lies supine, flex knee to 90°, grip proximal tibia with both hands and pull anteriorly ▪ Positive Test: Increased anterior translation ▪ Pivot Shift Test ▪ Patient lies supine, extend knee, internally rotate tibia, place valgus stress on knee and flex knee ▪ Positive Test: Clunk felt by practitioner. Gait Analysis ▪ Any abnormalities  Lachman's Test
HISTORY	
▪ Acute event ▪ Mechanism of action: ▪ Non-contact (more common): Sudden deceleration with a change in direction ▪ Contact: Direct hit to the lateral side of knee ▪ Heard a "pop" ▪ Immediate large amount of swelling ▪ Unable to continue activity post injury ▪ Knee instability (in chronic setting) Red Flags ▪ Obvious deformity/fracture/dislocation ▪ Neurovascular compromise ▪ Signs of compartment syndrome ▪ Signs of infection or septic arthritis 	

DIAGNOSIS

- **Clinical diagnosis:** History + suspicious mechanism of action
- **Definitive diagnosis:** With MRI imaging



INVESTIGATIONS//MANAGEMENT

ACUTE	ONGOING
▪ X-ray: Rule out bony injuries (May see a second fracture which are associated with ACL injuries) ▪ Acute management: RICE (Rest, Ice, Compression and Elevation) and pain control (analgesics, NSAIDS)	▪ Order additional investigations if needed (e.g. MRI) ▪ Refer to Specialist (Orthopedic Surgeon/Sports Medicine Physician) ▪ Based on imaging results, symptoms, functional ability and desired lifestyle specialist will recommend surgical management or non operative management ▪ Physiotherapy/rehabilitation is crucial for recovery

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