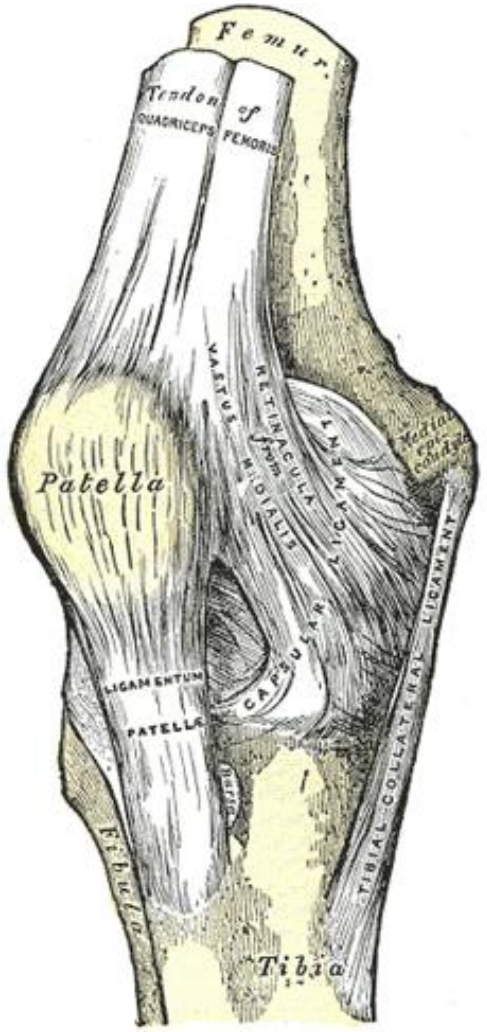
The Knee Joint PART I

PRESENTED BY

DR.FADHIL SAHIB

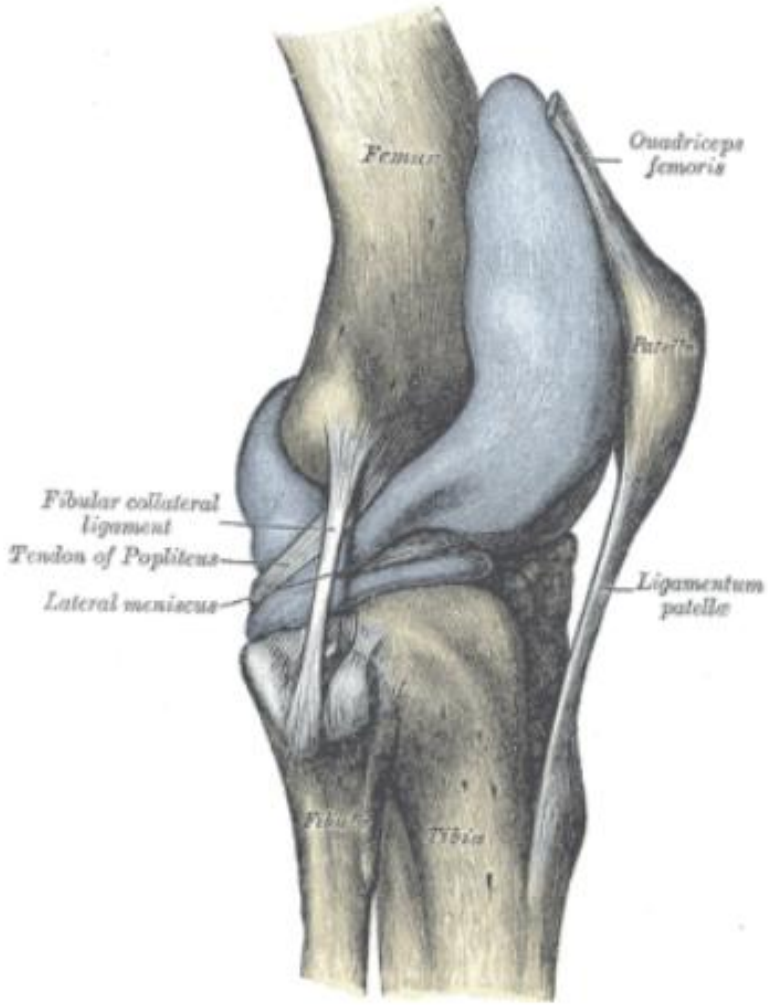
The knee joint

- The knee joint is a synovial hinge joint
- **Articular surfaces** These are the condyles and the patellar surfaces of the femur, the tibial articular surfaces on the tibial plateau, and the deep surface of the patella
- **Capsule** This is attached at the margins of the articular surface, **except** superiorly where the joint cavity communicates with the suprapatellar bursa (between quadriceps femoris muscle and the femur) and posteriorly where it communicates with the bursa under the medial head of gastrocnemius (semimembranosus bursa)
- The synovium lines the capsule and its associated bursae



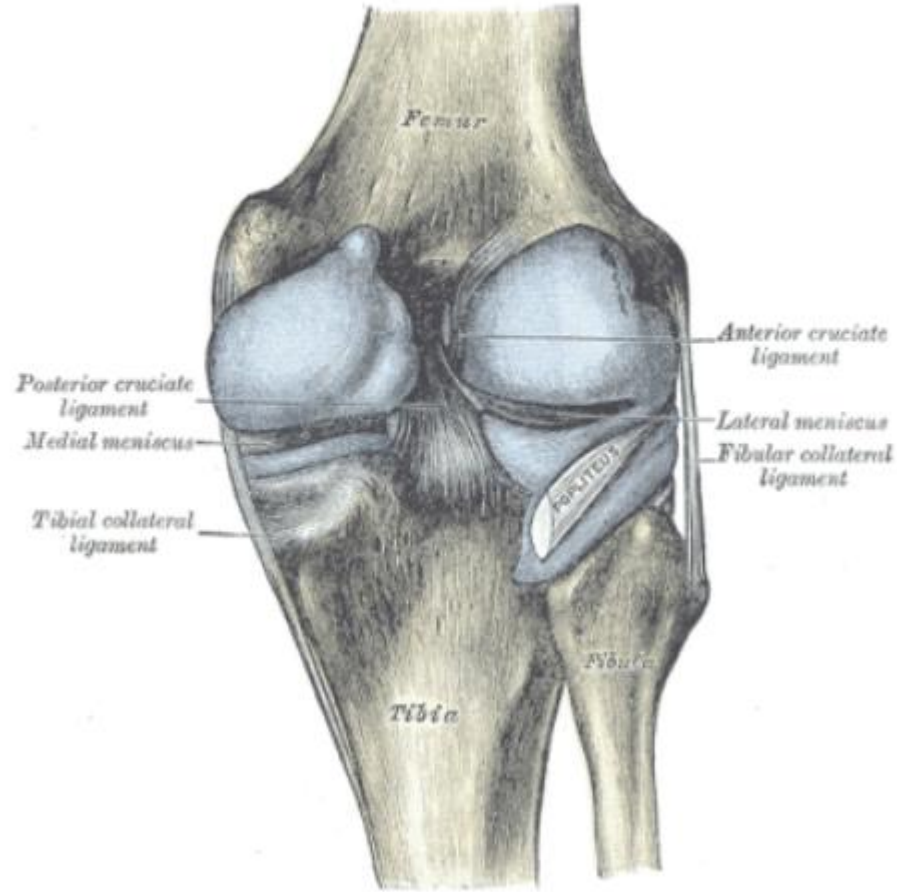
Knee joint capsule

lateral view



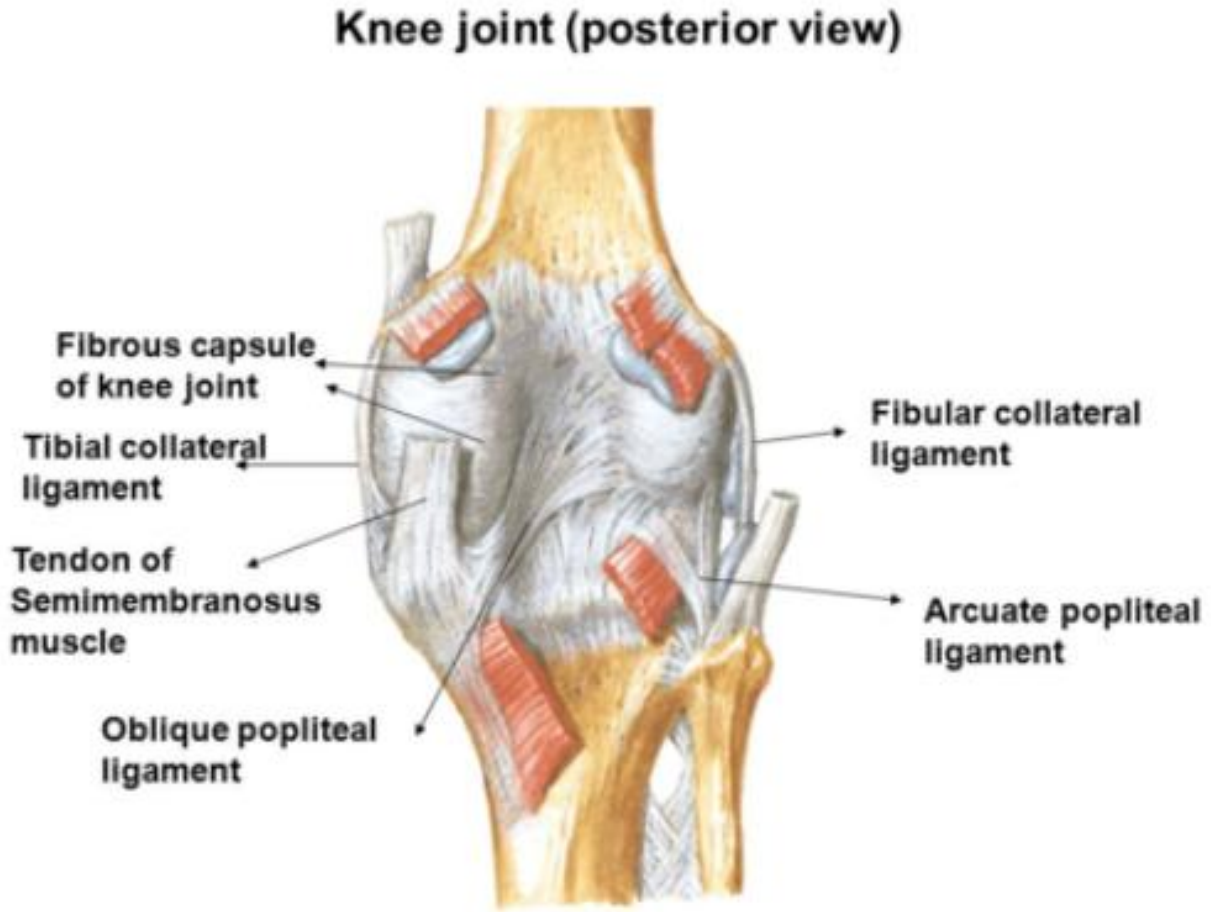
Knee joint capsule

posterior view



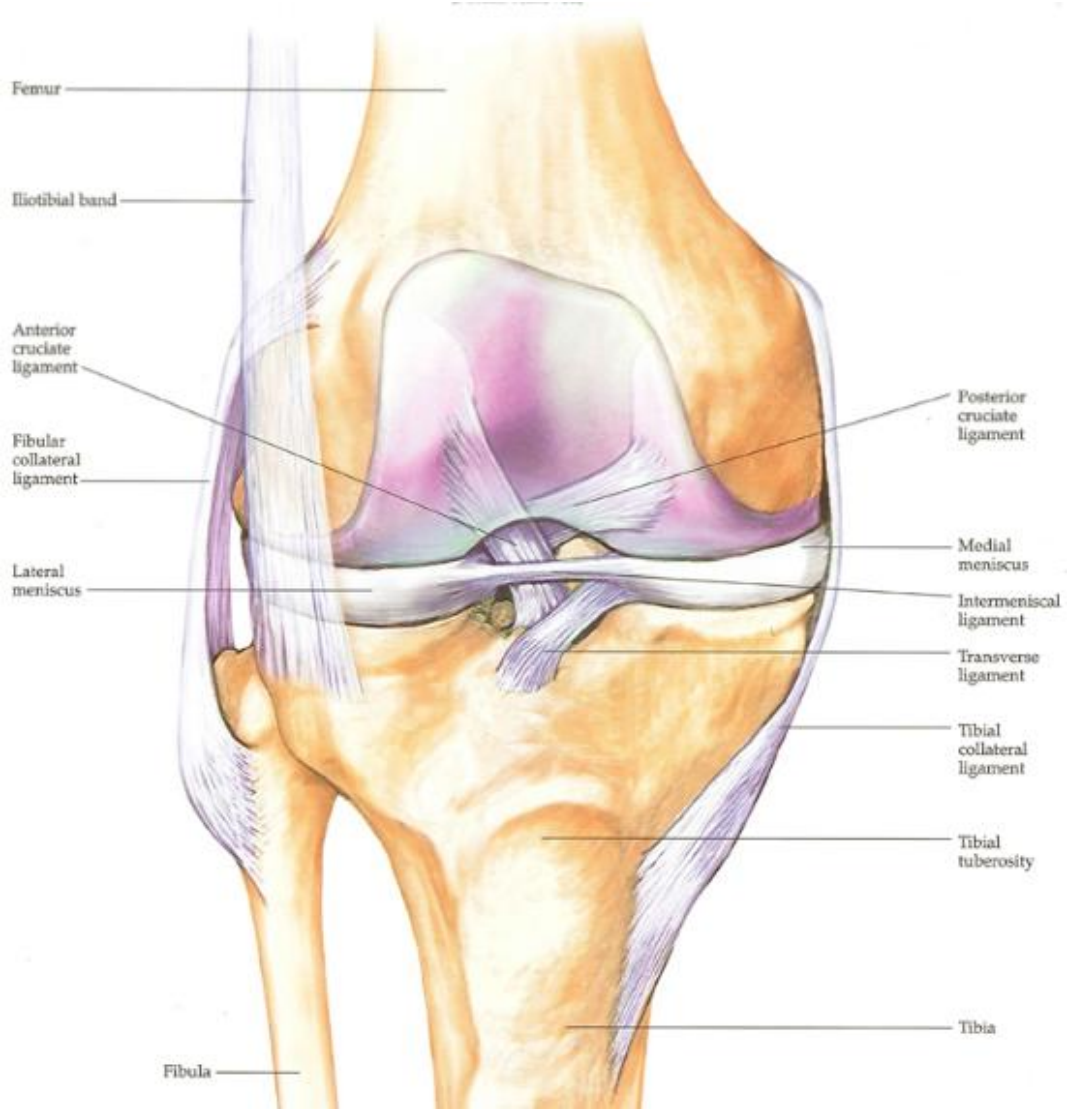
Ligaments

- These are as follows:
- • The medial (tibial) collateral ligament
- • The lateral collateral ligament is attached to the fibula
- • The ligamentum patellae and medial and lateral patellar retinacula
- • The oblique popliteal ligament posteriorly



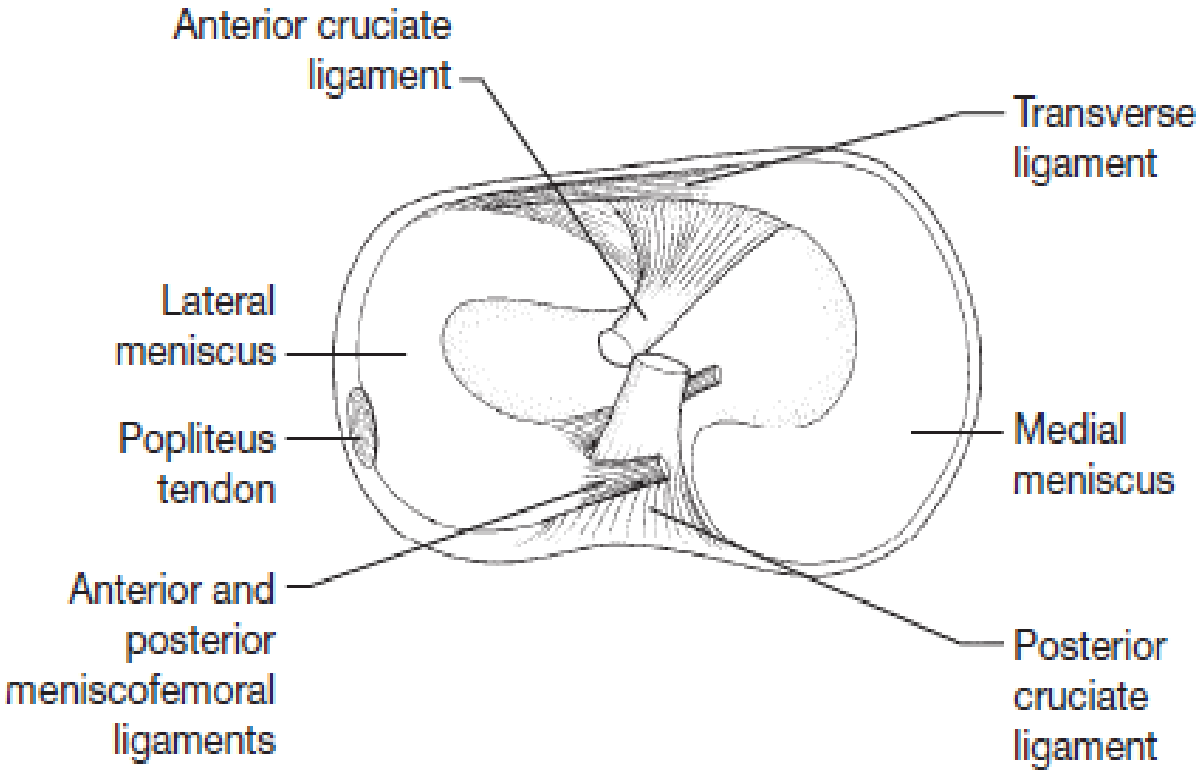
Anterior and posterior cruciate ligaments

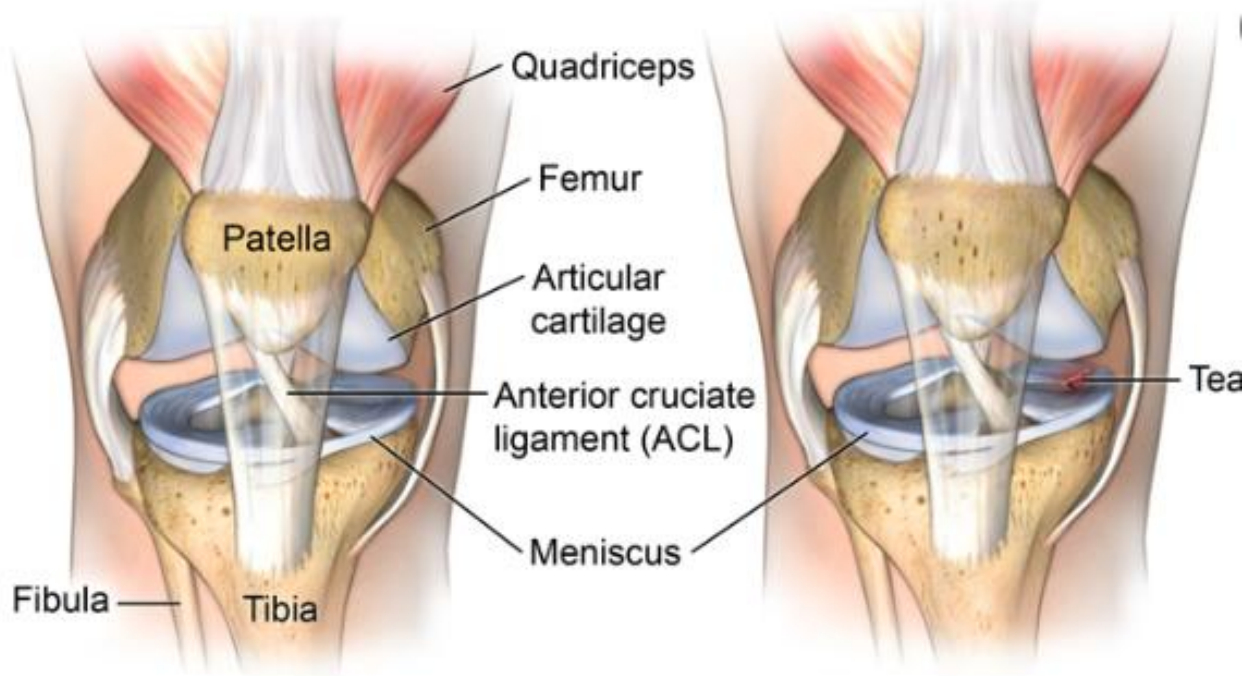
- arise from the anterior and posterior parts of the intercondylar area of the tibia and are named by their tibial origin
- They are inserted into the inner aspect of the lateral and medial femoral condyles, respectively.
- The anterior cruciate ligament resists hyperextension of the knee and the posterior cruciate resists hyperflexion



The medial and lateral menisci (or semilunar cartilages)

- are two crescentic structures, triangular in cross-section, which slightly deepen the articular surface of the tibia
- Each is attached peripherally to the tibia and to the capsule
- The upper and lower surfaces of the menisci are free Each is described as having an anterior and posterior horn attached to the intercondylar area of the tibia
- The medial meniscus is bigger, less curved and thinner
- The lateral meniscus is smaller, more curved (nearly circular rather than semicircular) and more uniform in thickness
- The lateral meniscus is less well attached to the capsule than the medial .

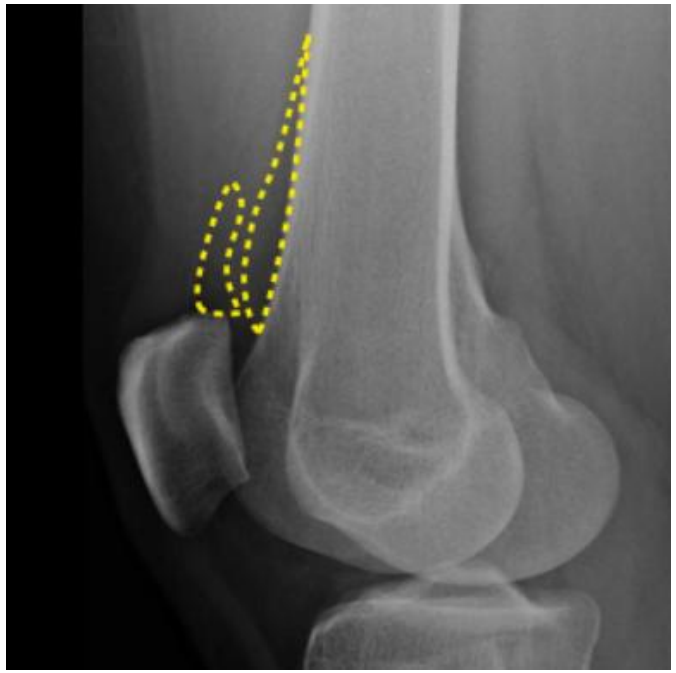




Normal meniscus **Torn meniscus**

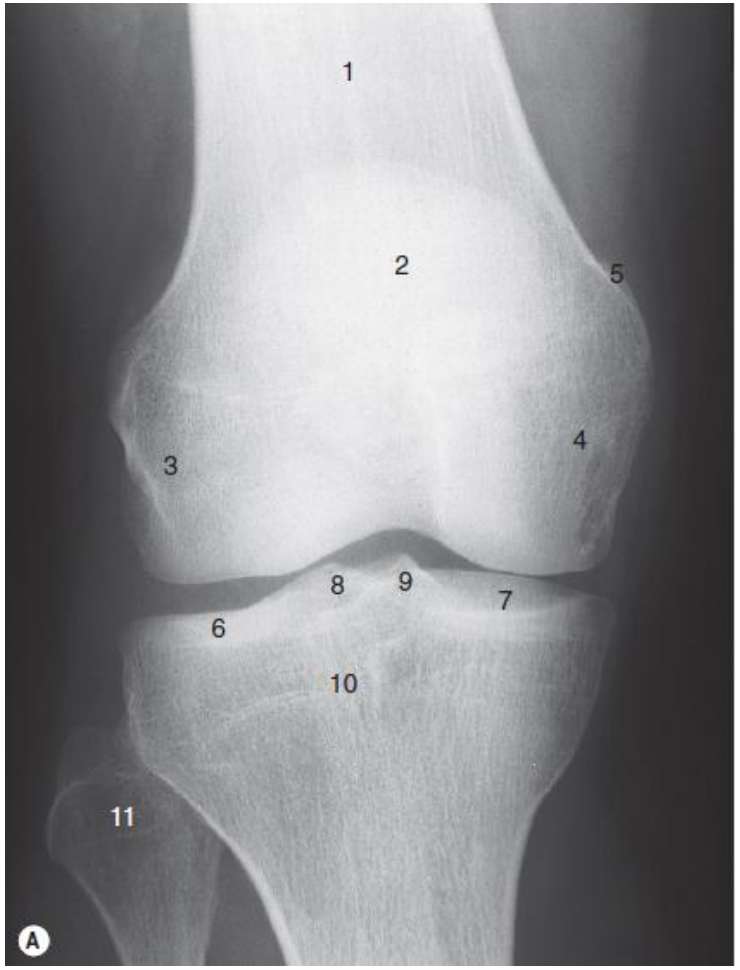
Plain radiographs of the knee joint

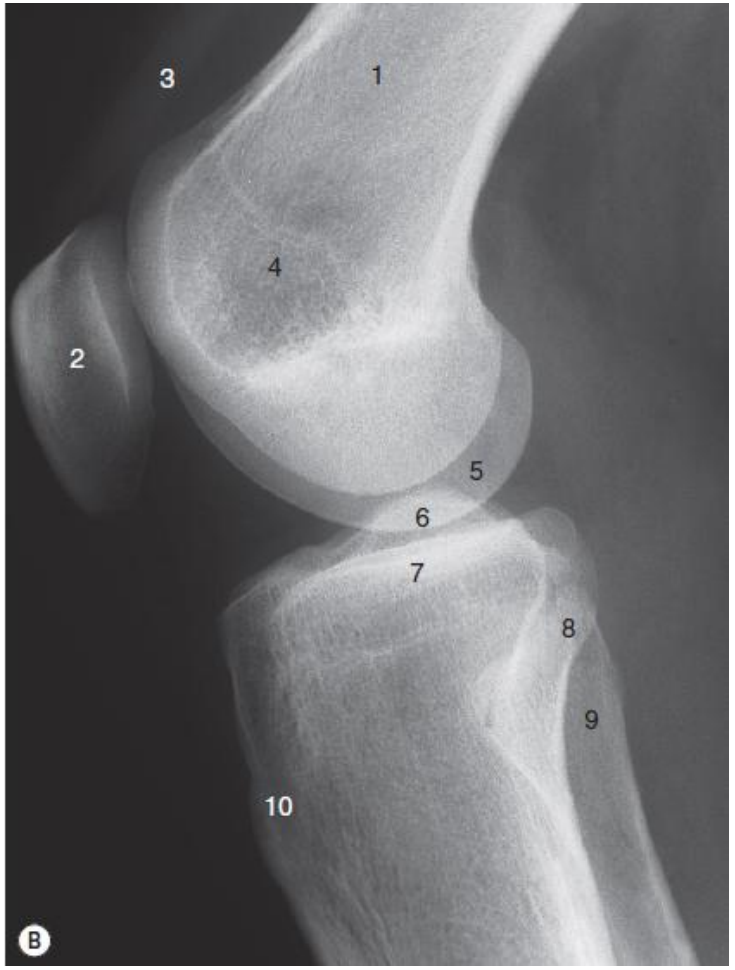
- The suprapatellar bursa is best seen on radiographs when distended with fluid.
- Routine imaging includes AP, semiflexed lateral, tunnel and skyline views



(A)

1. Femur
2. Patella
3. Lateral epicondyle
4. Medial epicondyle
5. Adductor tubercle
6. Lateral tibial plateau
7. Medial tibial plateau
8. Lateral tibial spine (intercondylar eminence)
9. Medial tibial spine (intercondylar eminence)
10. Fused growth plate, proximal tibia
11. Head of fi bula

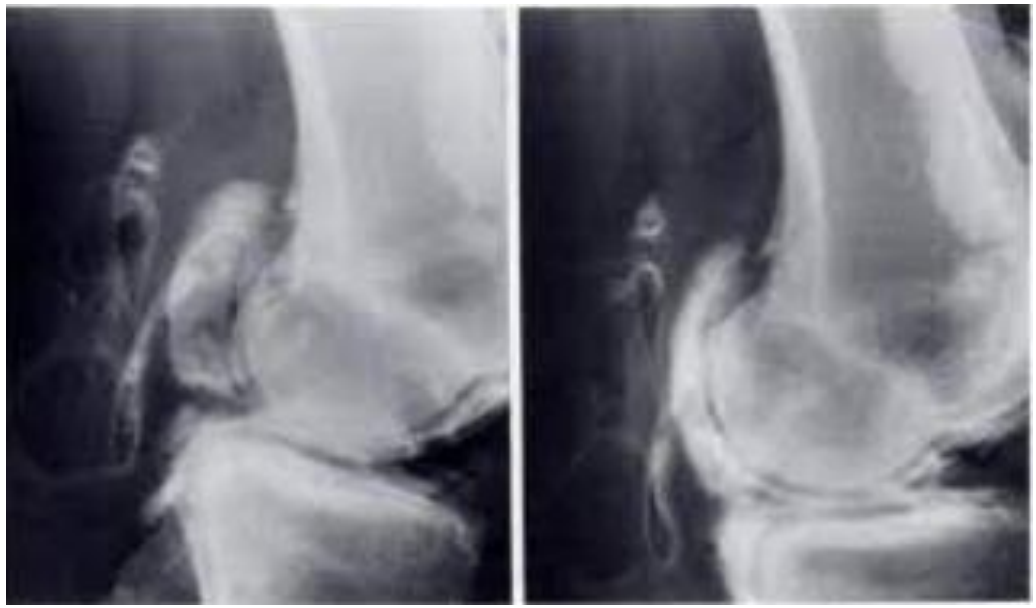


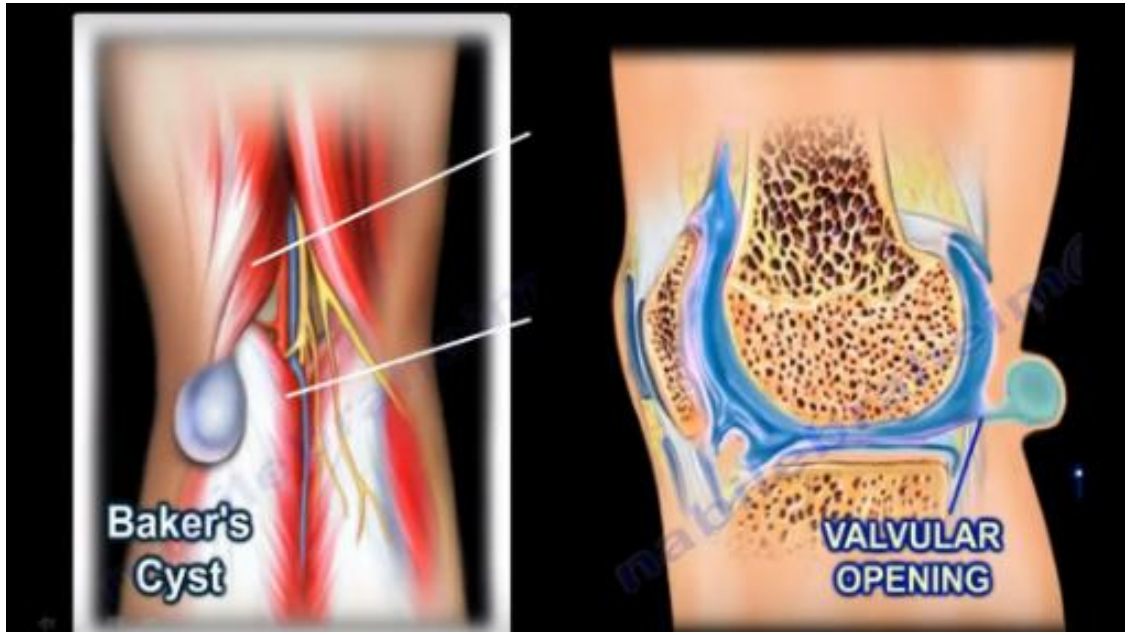


(B) 1. Distal femur 2. Patella 3. Quadriceps tendon 4. Epicondyles (superimposed) 5. Femoral condyle 6. Tibial spines (superimposed) 7. Tibial plateaux (superimposed) 8. Head of fi bula 9. Neck of fi bula 10. Tibial tuberosity

Arthrography of the knee joint

- Contrast medium and air are introduced into the joint deep to the patella and allow visualization of the synovial cavity and some or all of the associated bursae.
- Baker ’ s cyst represents a medial outpouching between the medial head of the gastrocnemius and thesemimembranosus and semitendinosus tendons





THANK YOU
THE END