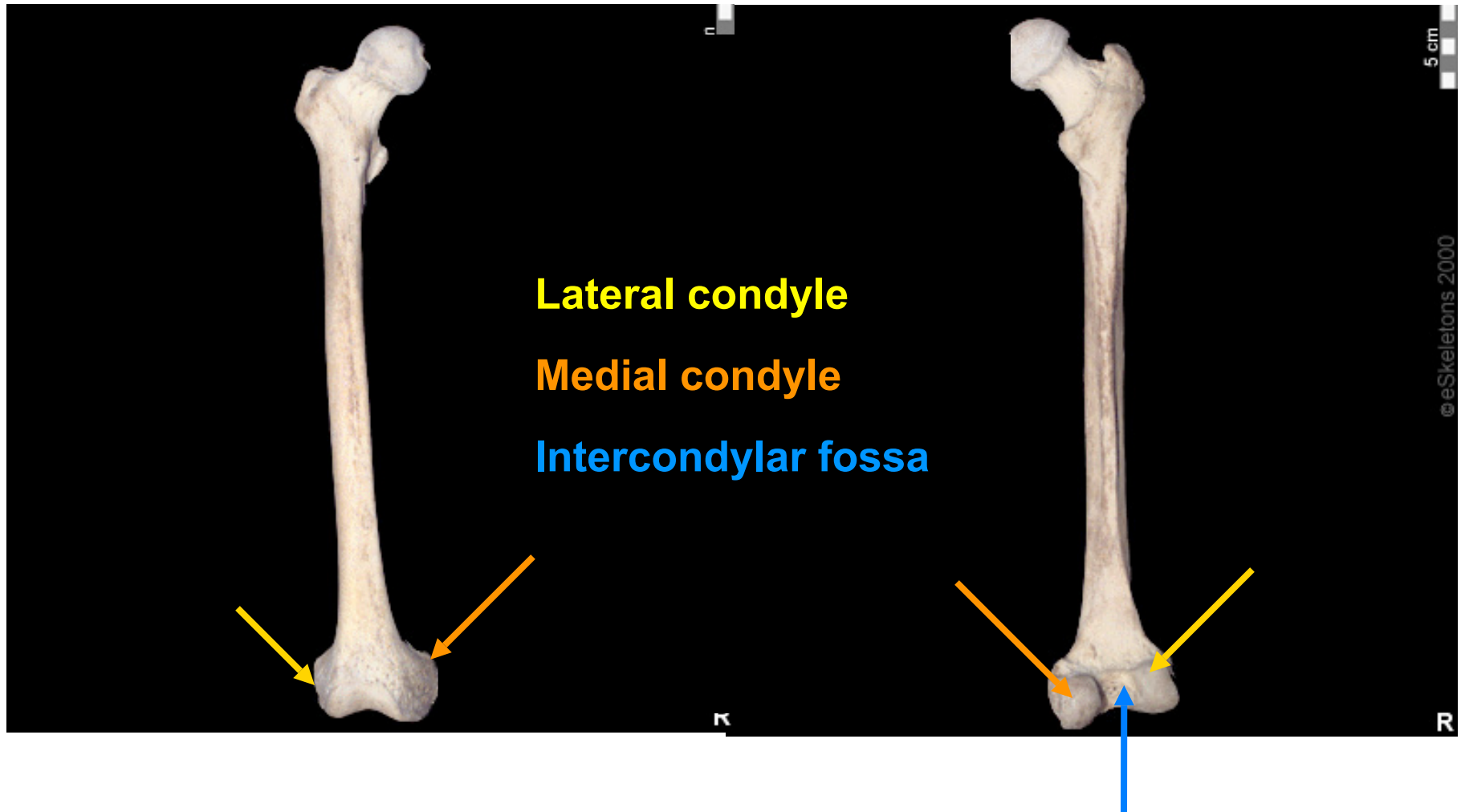


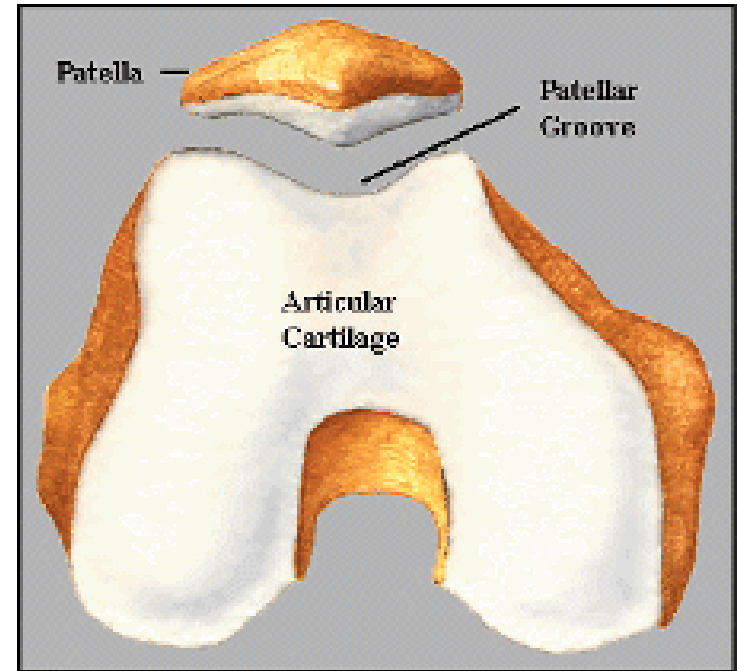
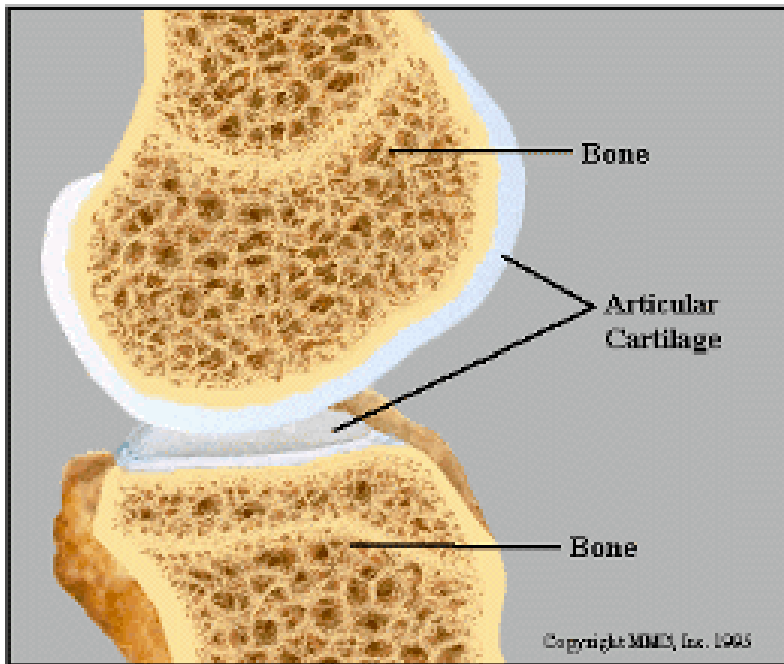
The Knee Joint



FEMUR



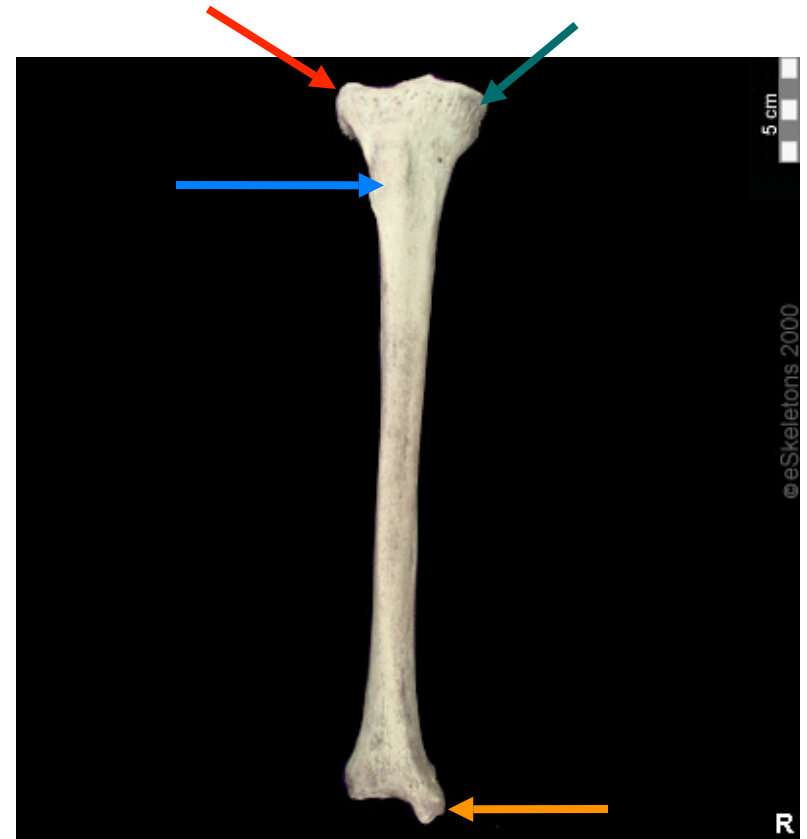
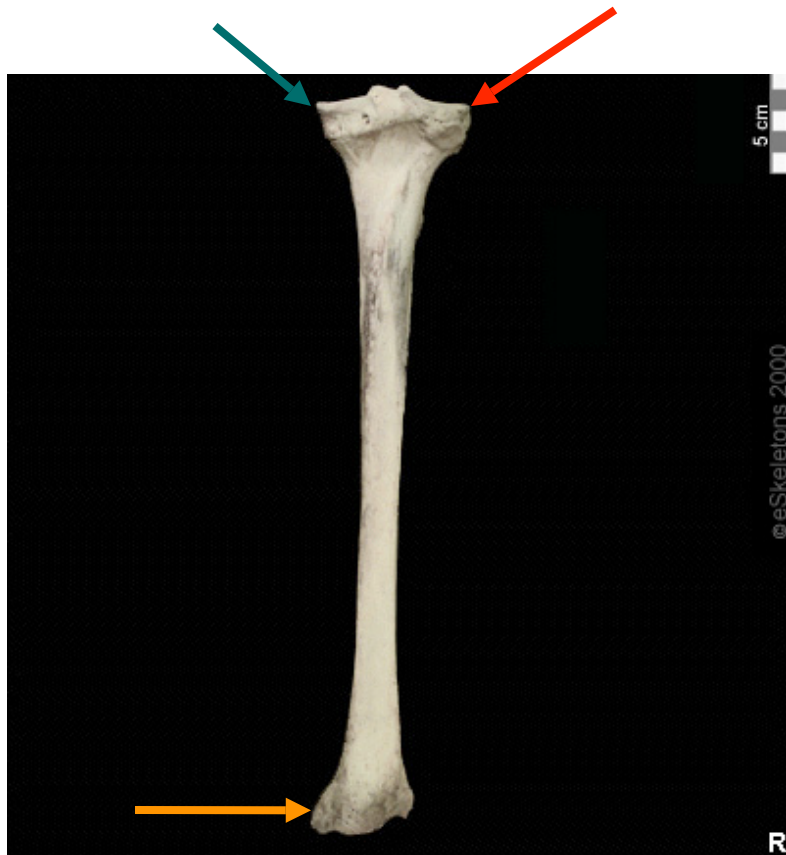
FEMUR



TIBIA

Medial condyle

Lateral condyle



Tibial Tuberosity

Medial Malleolus

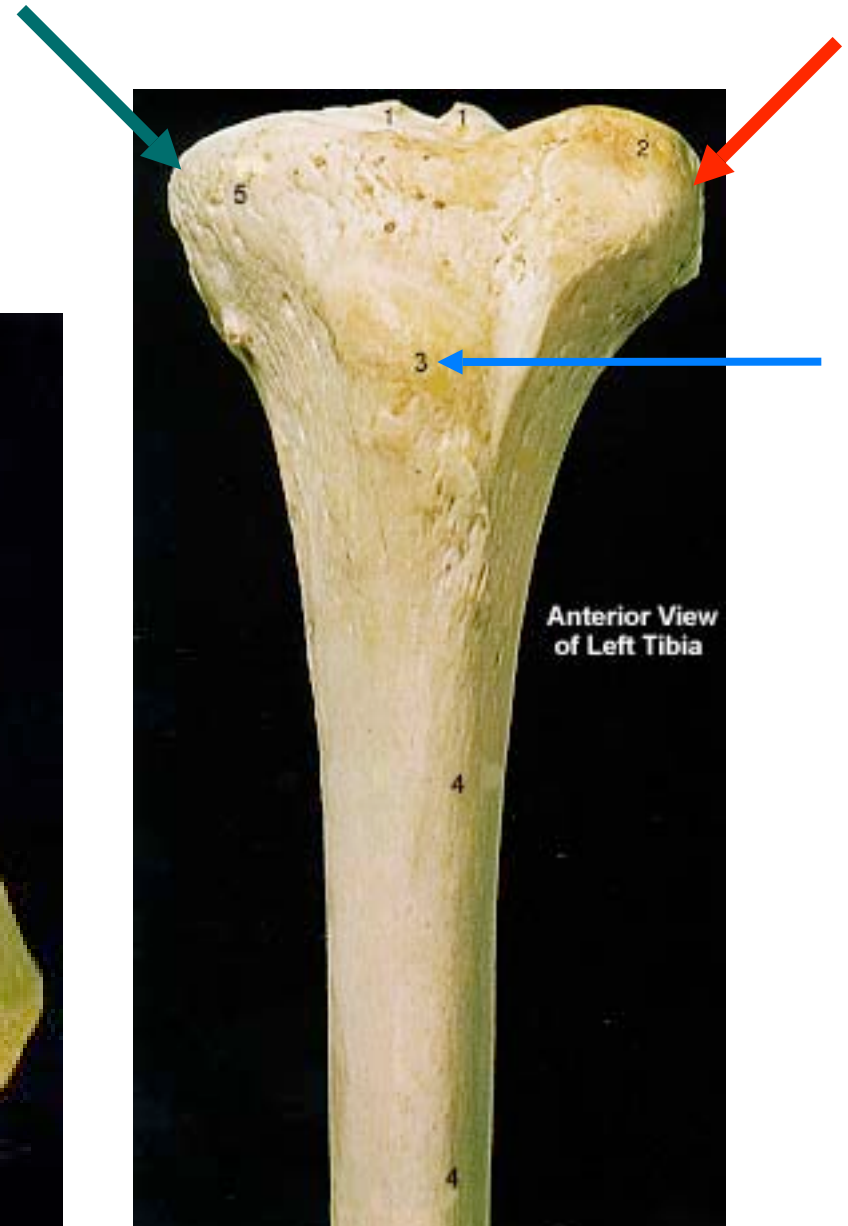
TIBIA

Medial condyle

Lateral condyle

Tibial Tuberosity

Medial Malleolus



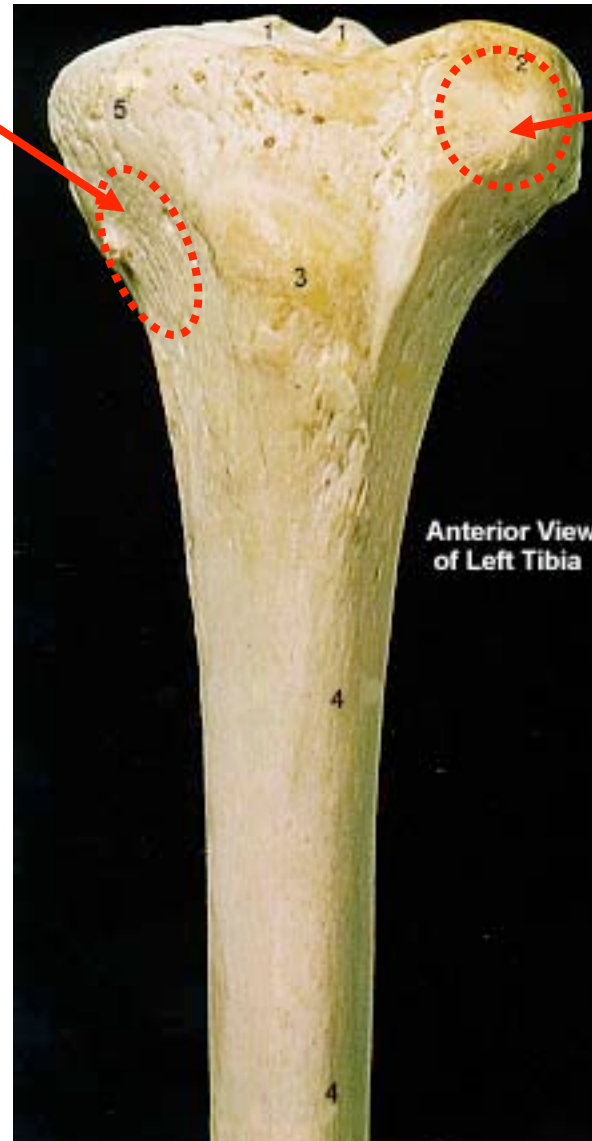
TIBIA

Anterior
medial
surface

Insertion for
semitendonsis,
semimembranosis,
gracilis, and sartorius

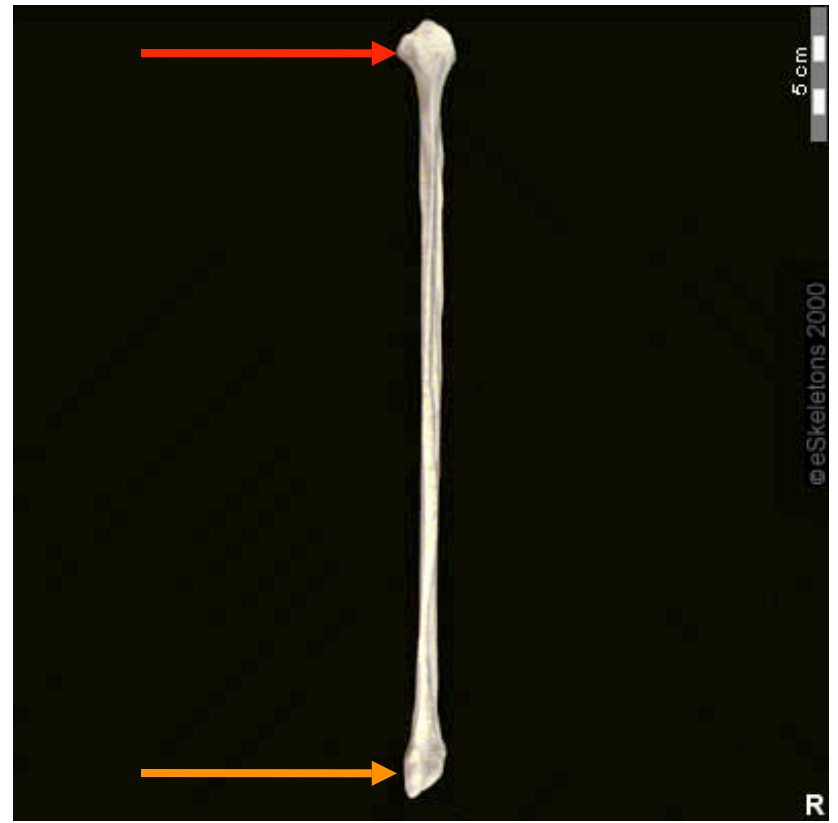
Gerdy's
tubercle

Iliotibial band
insertion



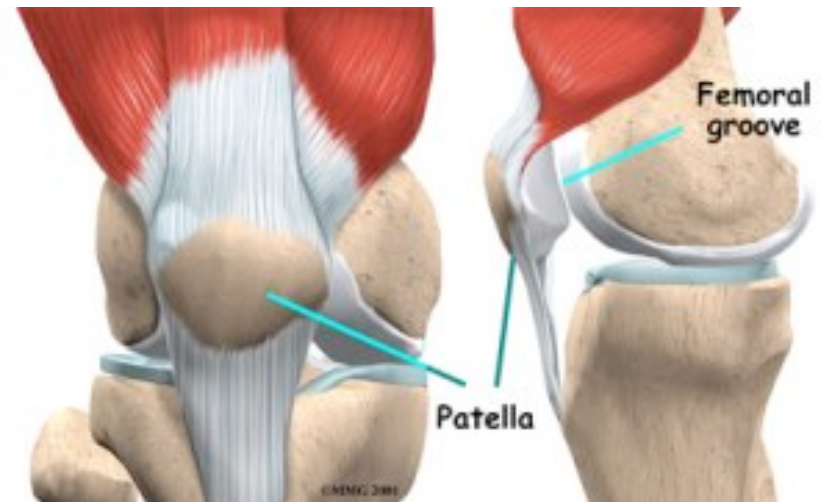
FIBULA

- Head
- Lateral malleolus



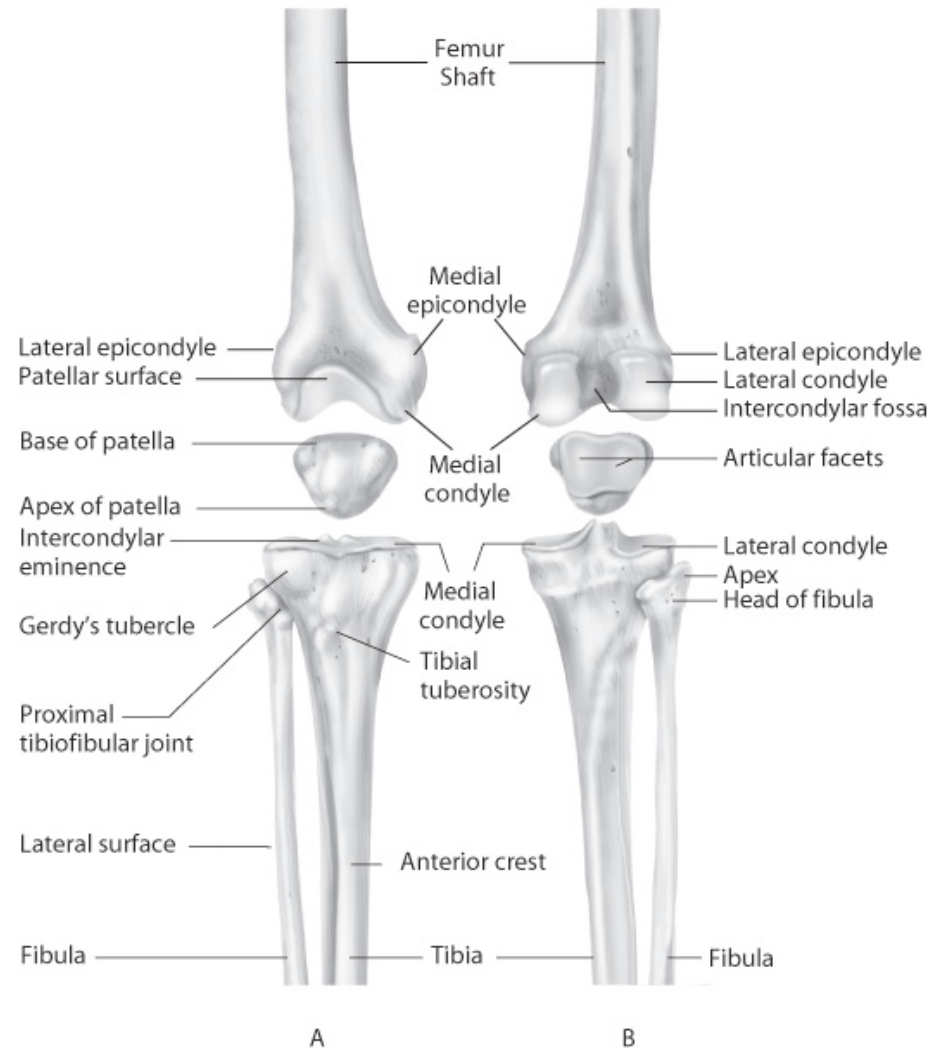
PATELLA

- A 'sesamoid' (floating) bone
- Protection
- Mechanical advantage to quads.
- Without the patella, 30% more force would be required by the quads

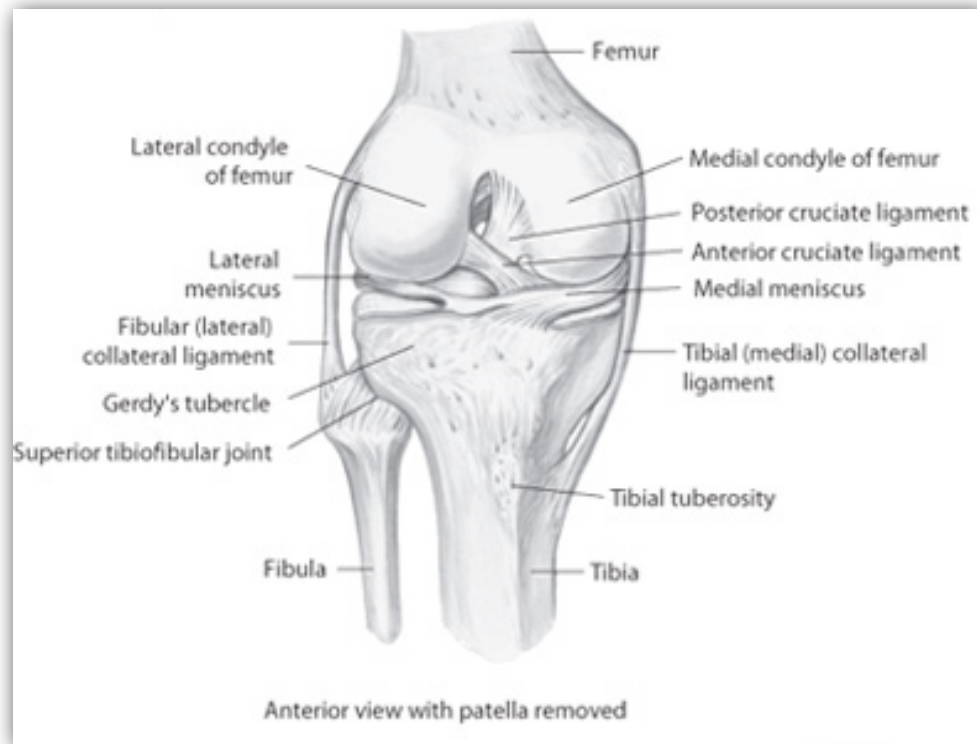


The Knee

- Femur
 - medial condyle
 - lateral condyle
- Tibia
 - medial condyle
 - lateral condyle
 - tibial tuberosity
 - Gerdy's tubercle
- Fibula - head
- Patella

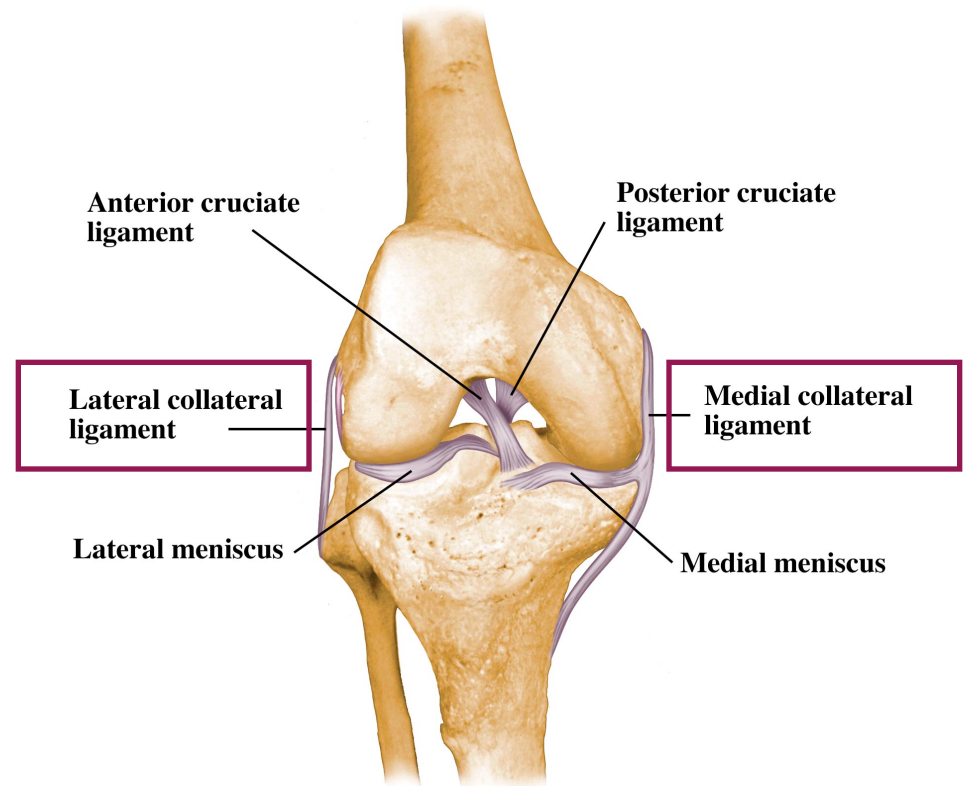


Knee Ligaments and Cartilage

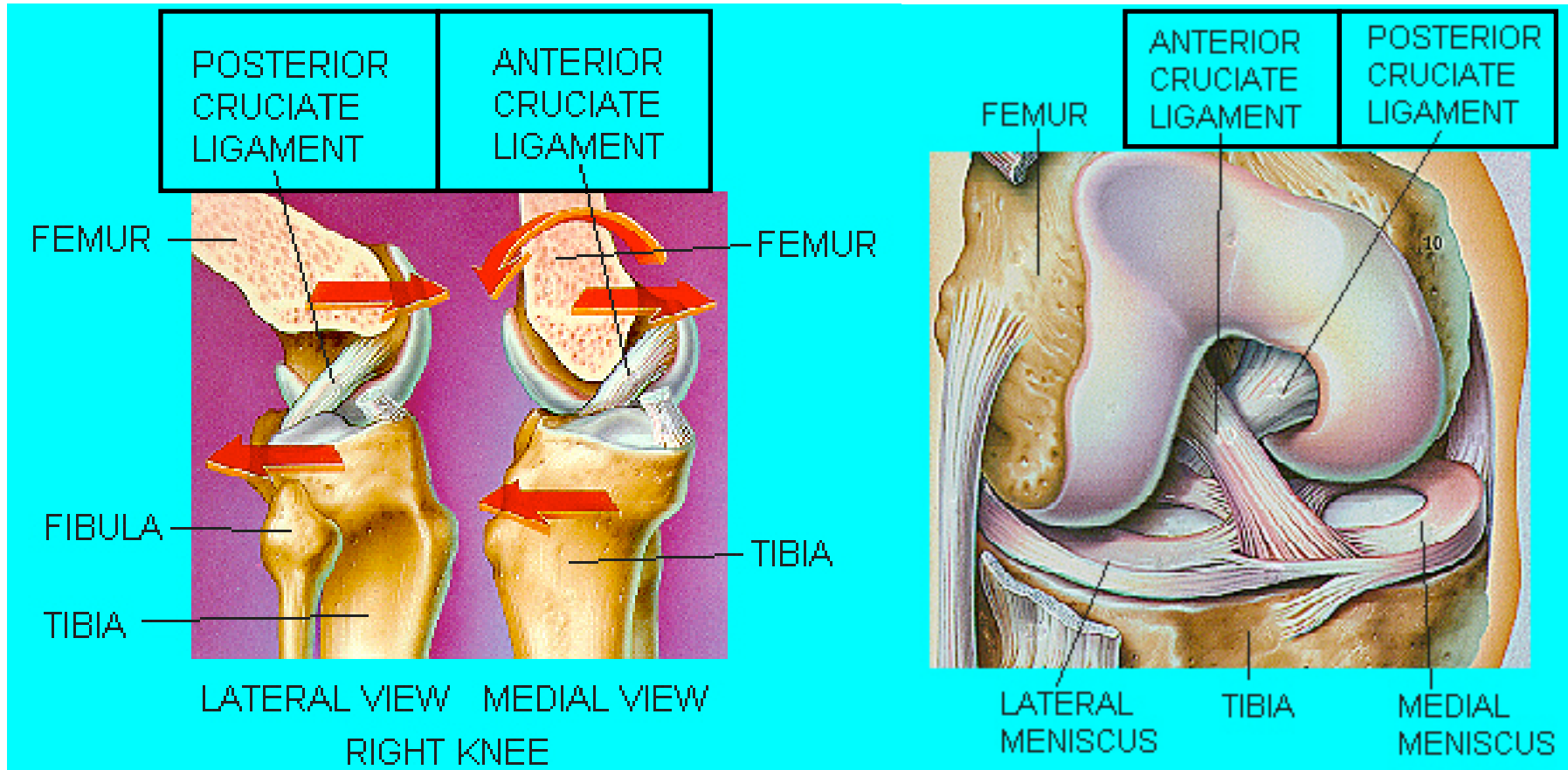


Collateral Ligaments

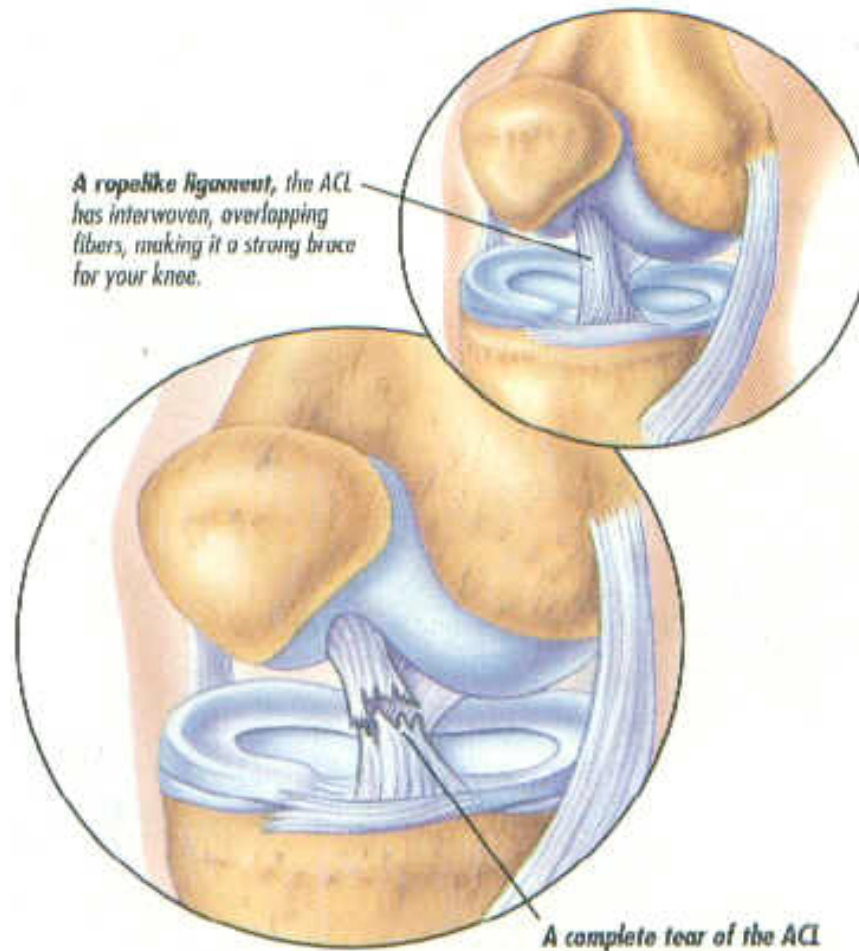
- Lateral
- Medial
- attached to medial meniscus



Cruciate Ligaments



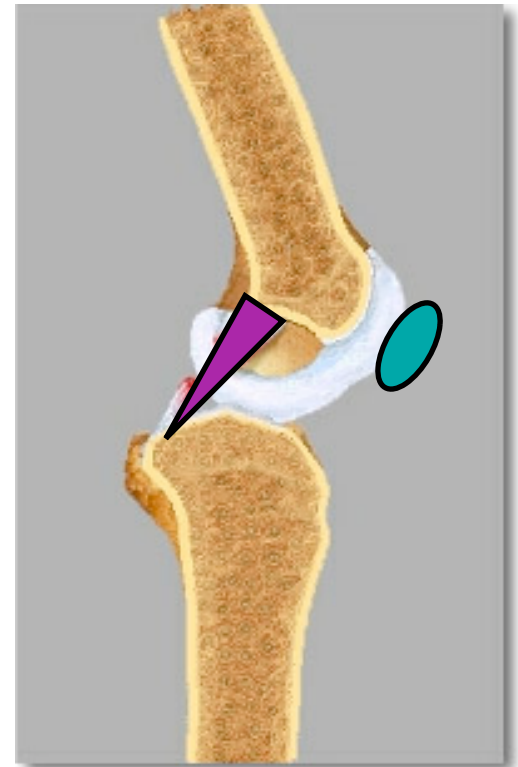
Anterior Cruciate Ligament



Posterior Cruciate Ligament

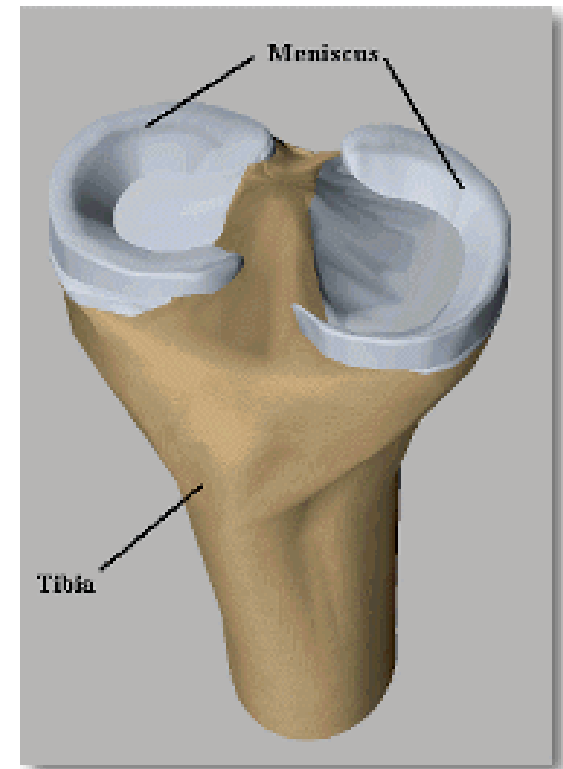
- Inferior end: proximal posterior tibia
- Superior end: distal posterior to middle femur

Posterior Anterior



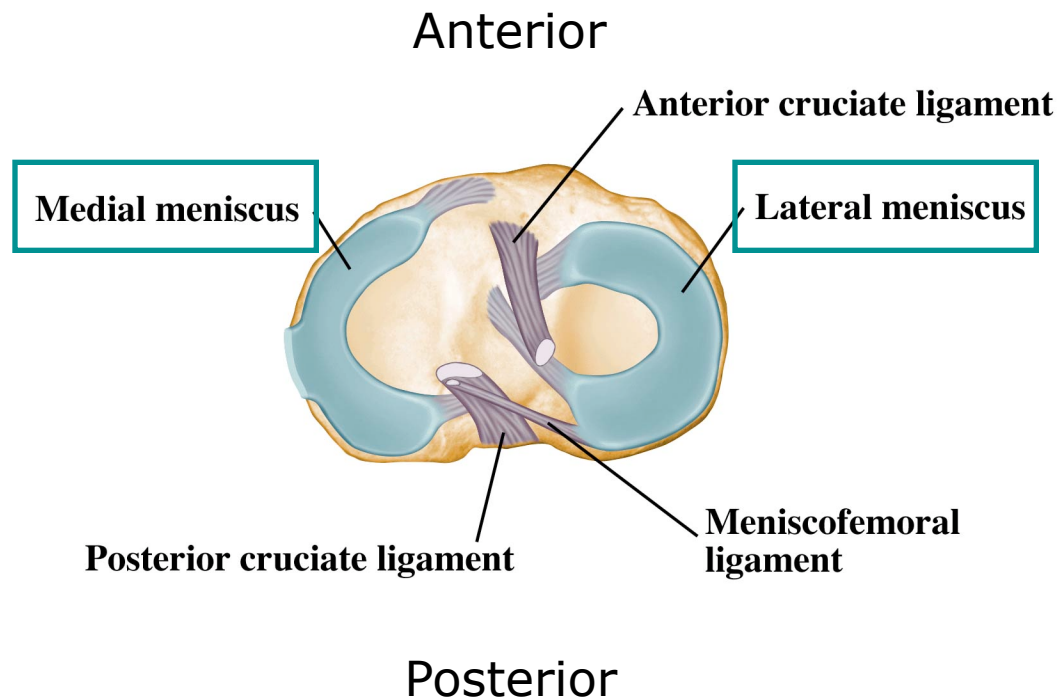
Menisci

- Two on each of the tibia, loosely attached, thicker to the outside.
- Functions:
 1. Stabilization
 2. Shock absorption
 3. Lubrication

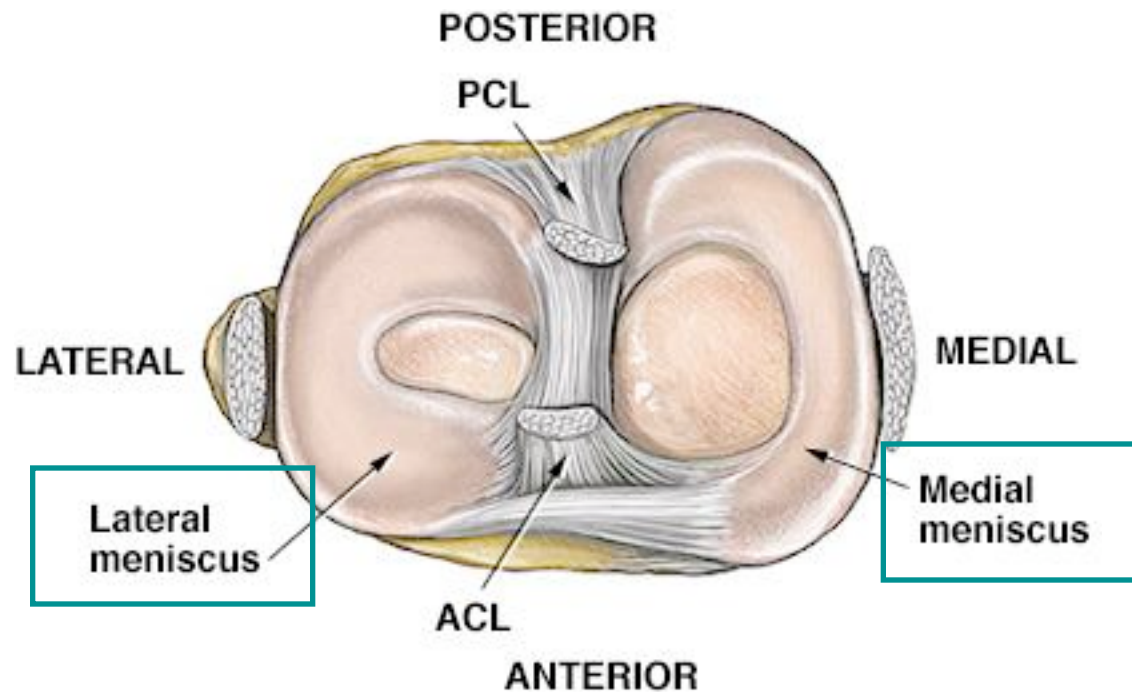


Menisci

- Medial meniscus is “C” shaped.
- Lateral meniscus is “O” shaped.



Menisci





The lateral collateral ligament (LCL) runs on the outside of your knee and limits sideways motion.



The anterior cruciate ligament (ACL) connects the femur to the tibia in the center of your knee, limiting rotation and the forward motion of the tibia.



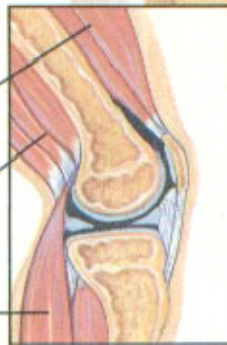
The meniscus is cartilage that absorbs shock in your joint.

Muscles move and help stabilize your joint.

Quadriceps
(thigh) muscles

Hamstring
(thigh) muscles

Gastrocnemius
(calf) muscles



Femur
(thigh bone)

Patella
(kneecap)

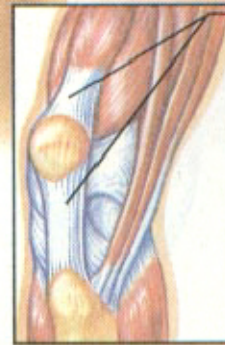
Tibia
(shin bone)

Articular cartilage lines the bones, cushioning your joint.

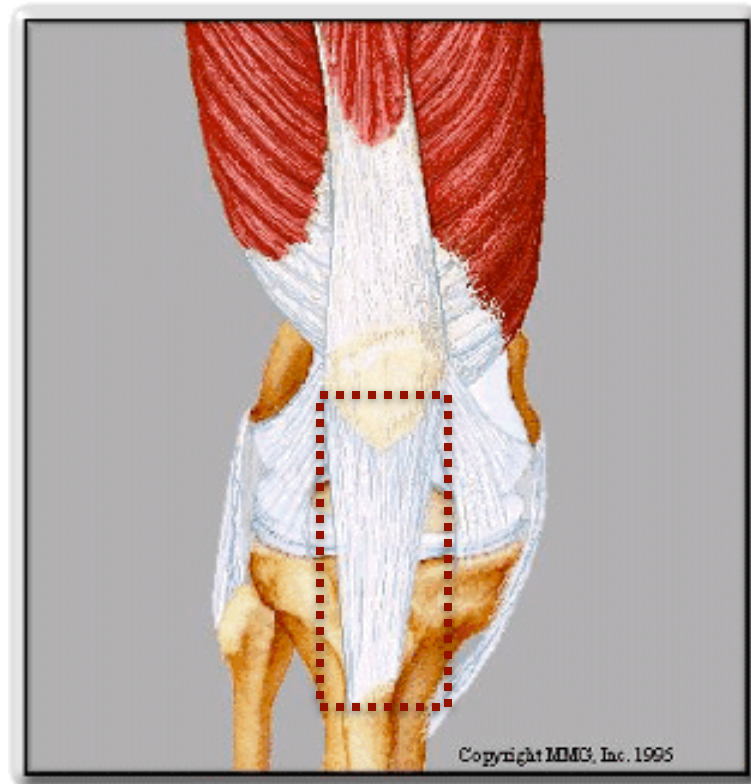
The medial collateral ligament (MCL) runs down the inside of your knee joint, connecting the femur to the tibia and limiting the sideways motion of your knee.

The posterior cruciate ligament (PCL) also connects the femur and tibia, limiting the backward motion of the tibia.

Tendons join muscle to bone.



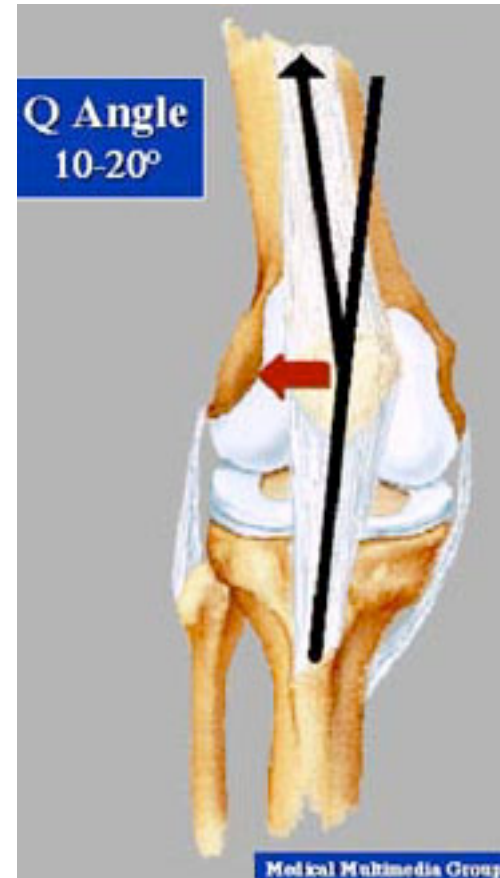
Patellar ligament



What landmark of the tibia does the patella tendon insert on?

The Q-Angle

The deviation between the line of pull of the rectus femoris and the patellar ligament.



Movements of the Knee



Flexion



Extension

Movements of the Knee

- Internal Rotation
- External Rotation