

Oxford Knee Group

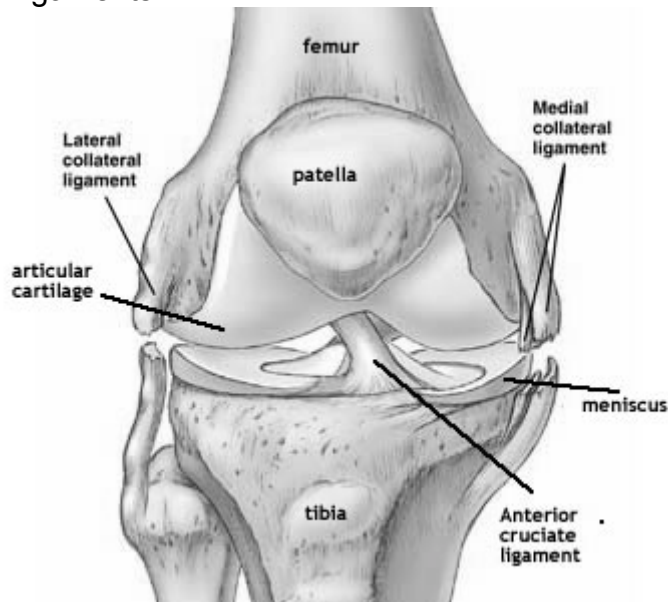
Knee Anatomy

Bones

The knee is the joint between the thigh bone (femur) and the shin bone (tibia) and includes the joint between the knee cap (patella) and the front of the femur. The joint surfaces on the ends of the bones are covered by smooth articular cartilage.

Ligaments

The knee is held together by ligaments which stabilise the joint and control motion. There are four major ligaments.



- i. Medial collateral ligament
- ii. Lateral collateral ligament
- iii. Anterior cruciate ligament
- iv. Posterior cruciate ligament

The medial collateral ligament and the lateral collateral ligament, which are on the sides of the knee joint and control side to side movement.

The anterior and posterior cruciate ligaments are in the center of the knee and control forward and backward movement of the knee, they are also involved in controlling abnormal rotation movements.

Menisci

Between the two bones there are two C-shaped shock absorbers called the menisci or cartilages (sports cartilages). They are the medial meniscus and the lateral meniscus.

Joint Surfaces

Over the surface of the bones is the articular cartilage that protects the ends of the bones where they rub against other structures. Like the shinny gristle on the end of chicken bones.

Muscles & Tendons

The knee is surrounded by several muscles, the largest of which are the quadriceps (front of thigh), the hamstrings (back of thigh), gastrocnemius and soleus (calf) muscles.

The quadriceps is connected to the knee cap (patella) by the quadriceps tendon. The knee cap is then connected to the shin bone (tibia) by the patella tendon. This mechanism is involved in straightening the knee.

The hamstrings are a group of 4 separate muscles. Three are connected to the shin bone at the back and inside, and the other is connected to the fibula (at the back and outside of the knee). These muscles are involved in bending the knee.