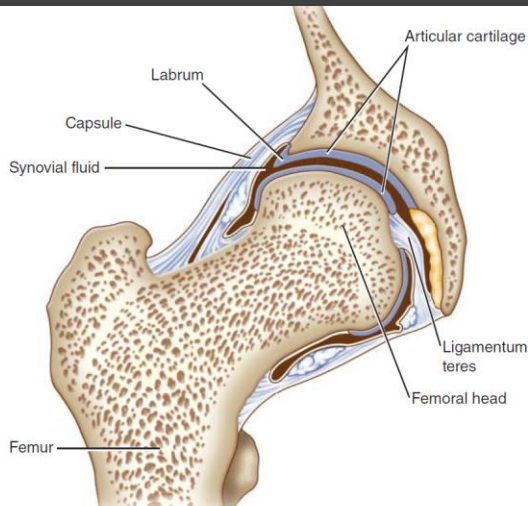




Hip Joint Anatomy

- hip joint connects the leg to the body
- ball-and-socket joint made up of **femoral head** (ball) and **acetabulum** (socket)
- ball rotates within the socket with hip motion
- joint surface lined with **cartilage** to provide cushion and allow frictionless motion
- rim of socket lined with **labrum** that acts like a gasket to create a seal around the femoral head and facilitate joint motion and lubrication
- thick fibrous joint **capsule** surrounds and stabilizes joint
- 24 muscles cross the hip joint and move the hip and stabilize the pelvis
- every hip is shaped different, and shape abnormalities may increase risk of dysfunction

Hip Joint Function and Dysfunction

- all lower extremity motion initiated from the hip joint and is in constant motion the hip contributes to the alignment of the leg and spine
- forces across hip joint up to 4 times body weight with routine activities (running, stair-climbing, squatting)
- hip at risk with certain activities (sports, weight-lifting, squats, prolonged sitting)
- hip dysfunction may disrupt pelvic balance and lead to secondary problems including muscle strains, tendonitis, low back pain, knee pain, etc.
- cumulative damage to the hip may lead to cartilage / labral damage and arthritis

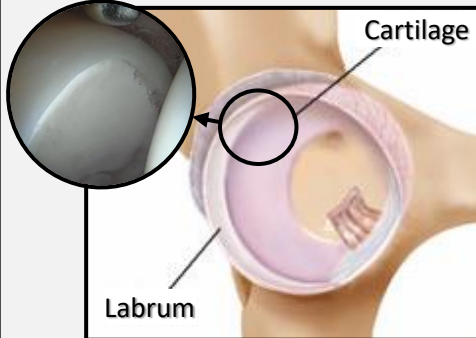


Normal hip function



Hip dysfunction

What about the labrum?



- soft ring of fibrocartilage that lines the rim of the socket and helps seal and cushion the joint
- numerous nerve fibers that may generate pain with labral damage
- labrum can tear from acute injury or repetitive microtrauma from bony abnormalities
- *asymptomatic labral tears are common and not always a source of pain and do not need to be repaired*
- *all hips with arthritis have labral tearing*



Hip Morphology (Shape of the Hip)

- all hips are shaped differently – the socket may be shallow or deep.... the ball may be round or out-of-round (aspherical)
- **Hip dysplasia** refers to a shallow hip socket and may cause hip instability
- **Femoroacetabular impingement** or **FAI** refers to a misshapen joint that causes abnormal contact between the ball and socket
- in many cases, dysplasia and FAI morphology do not cause symptoms and do not require treatment
- some cases may lead to hip damage, symptoms, and ultimately early hip arthritis



Shallow Socket
(Hip Dysplasia)



Deep Socket
(Pincer FAI)



Round Ball



Out-Of-Round Ball
(Cam FAI)



Hip Arthritis