

Hip, Thigh, Knee

Class Preparation: Anatomy Review Guide

- While patients will often point to the buttock when describing “hip” pain, as clinicians we must remember that pain in this area may not involve the hip *joint*, and indicates the need to assess the lumbo-sacral spine.
- A useful study and reference is: *Trail Guide to the Body: A Hands-On Guide to Locating Muscles, Bones, and More*, Andrew Biel.
- **Bony landmarks.** Know anatomy, and in those cases indicated below, also know how to locate by palpation. Know which muscles attach to bony landmarks, if applicable.
 - **Ilium**
 - Anterior superior iliac spine (locate by palpation)
 - Tensor fascia lata attachment
 - Sartorius attachment
 - Anterior inferior iliac spine (know anatomy; difficult to palpate)
 - Quadriceps attachment
 - **Ischium**
 - Ischial tuberosity (locate by palpation)
 - Hamstrings attachment
 - **Femur**
 - Greater trochanter (locate by palpation)
 - Gluteal attachments
 - Maximus
 - Medius
 - Minimus
 - External rotator attachments
 - Piriformis
 - Quadratus femoris
 - Lesser trochanter (know anatomy; difficult to palpate)
 - Iliopsoas tendon attachment
 - **Knee joints**
 - Tibio-femoral joints
 - Medial compartment, tibio-femoral joint line
 - Medial femoral condyle
 - Gastrocnemius medial head attachment
 - Pes anserinus
 - Attachment of sartorius, semitendinosus,

gracilis

- Tibial plateau, medial (cannot be palpated; know anatomy only)
 - Tibial spine (cannot be palpated; know anatomy only)
 - Lateral compartment, tibio-femoral joint line
 - Lateral femoral condyle
 - Gastrocnemius lateral head attachment
 - Tibial plateau, lateral (cannot be palpated; know anatomy only)
 - Tubercle of Gerdy
 - Iliotibial band distal attachment
 - Patello-femoral joint
 - Patella
 - Base
 - Apex
 - Medial facet (cannot be palpated; know anatomy only)
 - Lateral facet (cannot be palpated; know anatomy only)
 - Tibial tuberosity
 - Quadriceps muscles and tendon attachment
 - Superior tibio-fibular jointline (*In strict anatomical terms, this joint is part of the calf, however, as it presents clinically as lateral knee pain, it is covered in this class*)
 - Fibular head
- **Myofascial structures that move and stabilize the hip and knee joints.** Be able to locate by palpation; know attachments and primary functions.
 - Multi-joint muscles (focus on actions on hip and knee joints)
 - Iliopsoas
 - Hamstring group
 - Biceps femoris
 - Semimembranosus
 - Semitendinosus
 - Rectus femoris
 - Sartorius
 - Gracilis
 - Gastrocnemius
 - Hip adductors
 - Magnus

- Longus
 - Brevis
 - Pectineus
 - Hip flexors (single joint)
 - Tensor fascia lata
 - Hip extensors (single joint)
 - Gluteal group
 - Maximus
 - Medius
 - Minimus
 - Knee extensors (single joint)
 - Vastus
 - Lateralis
 - Medialis
 - Intermedius
 - Knee flexors and rotators (single joint)
 - Popliteus
- **Neurovascular tracts and critical structures. Be able to locate by anatomical landmarks.**
 - Femoral artery
 - Popliteal artery
 - Sciatic and tibial nerves: course through hamstrings and popliteal fossa