Musculoskeletal Anatomy

Knee & Leg

Leg

- The tibia and fibula form the skeleton of the leg
- They are connected to each other by the interosseous membrane
- They articulate with the femur proximally and with the ankle bones distally
- They also articulate with each other via the immovable tibiofibular joints
Tibia

- Receives the weight of the body from the femur and transmits it to the foot

- Major markings include medial and lateral epicondyles, tibial eminence, the tibial tuberosity, anterior crest, medial malleolus, and fibular notch
Fibula

• Sticklike bone with slightly expanded ends located laterally to the tibia

• Major markings include the head and lateral malleolus

Movements at the knee?
Movements of the Knee Joint

The sole extensor of the knee is the quadriceps femoris.

The hamstring muscles flex the knee, and are antagonists to the quadriceps femoris.

Fascia of the Leg

- A deep fascia of the leg is continuous with the fascia lata.
- This fascia segregates the leg into three compartments: anterior, lateral, and posterior.
- Distally, the fascia thickens and forms the flexor, extensor, and fibular retinaculæ.
From: Stone & Stone, Atlas of Musculoskeletal Anatomy

VASTUS MEDIALIS (One of Quadriceps Femoris)

Hip, thigh, and leg—anterior view

- Origin
  Intertrochanteric line, medial by of three planes of femur, medial transverse section of adductor magnus and adductor longus, medial supracondylar ridge

- Insertion
  Medial and posteromedial to tibia, then by patellar ligament to tibial tuberosity, medially to patella

- Action
  Extends leg, draws patella laterally

- Nerve
  Femoral nerve (L2-L4)

Note: Although not necessarily apparent, the lower portion of the vastus medialis, to the adductor magnus and adductor longus, its anterior surface is covered by the rectus femoris, quadriceps femoris, vastus lateralis, vastus intermedius, vastus medialis, and vastus intermedius. The adductor magnus muscle is located in the adductor compartment of the thigh. The adductor magnus muscle is also known as the adductor magnus muscle.
From: Stone & Stone, Atlas of Musculoskeletal Anatomy
PECTINEUS

Hip and thigh—anterior view

- Origin: Pectineal line on superior ramus of pubis
- Insertion: From ischium to linea aspera of femur
- Action: Opens hip, assists in adduction when hip is flexed
- Nerve: Pelvic plexus (L2-L3); Supplies a branch of obturator nerve

Note: The adductor component of the hip muscles often overlaps in sharing the same origin and insertion, but the pectineus is a distinct muscle that helps in hip opening. It is important to recognize the function and origin of the hip muscles to understand their role in hip movement and stability.

From: Stone & Stone, Atlas of Musculoskeletal Anatomy

ADDUCTOR LONGUS

Hip and thigh—posterior view

- Origin: Arches of body of pubis
- Insertion: Medial lip of ischial spine
- Action: Adducts, flexes hip, rotates in medial rotation
- Nerve: Obturator nerve (L2-L4)

From: Stone & Stone, Atlas of Musculoskeletal Anatomy
**ADDUCTOR BREVIS**

- **Origin**: Upper two-thirds of anterior surface of greater trochanter
- **Insertion**: Posterior surface of lesser trochanter
- **Action**: Adducts hip, rotates hip in flexion, medial rotation
- **Nerve**: Sciatic nerve

*See note on p. 145.

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**ADDUCTOR MAGNUS**

- **Origin**: Interior surface of pubis, rectus and lower part of adductor tubercles
- **Insertion**: Lower part of adductor tubercle
- **Action**: Adducts hip, rotates hip, flexes knee
- **Nerve**: Sciatic nerve

*See note on p. 146.

From: Stone & Stone, Atlas of Musculoskeletal Anatomy
Origin: 
Superior margin of body and inferior ramus of pubis

Insertion: 
Upper part of medial surface of shaft of femur

Action: 
Adducts thigh at hip joint and flexes leg, with leg
Hanging on trunk it adducts and flexes leg

Nerve: 
Sciatic nerve (L4-S4)

See related tables earlier on p. 975.