

THE HIP

I. MAJOR BONES

* No new bones, look at bone orientation

- A. TIBIA
- B. FIBULA
- C. FEMUR
- D. PELVIS

II. BONY LANDMARKS

A. PELVIS

1. Ilium

- a. Iliac Crest
- b. Greater Sciatic Notch
- c. Anterior Inferior Iliac Spine
- d. Anterior Superior Iliac Spine
- e. Iliopubic Eminence : *raised area at junction, iliopectineal eminence*
- f. Iliac Fossa : *posterior side*
- g. Gluteal Lines (ant, sup, inf, post)

2. Ischium

- a. Ischial Spine : *bottom of greater sciatic notch*
- b. Ramus of Ischium
- c. Ischial Tuberosity : *posterior rounded bottom*

3. Pubis

- a. Pubic Crest: *medial to tubercle, attachment site of rectus abdominis*
- b. Pubic Tubercle

- c. Superior Ramus of Pubis
- d. Inferior Ramus of Pubis : *fuses with ramus of ischium*
- e. Iliopectineal eminence
- f. Symphysis : *cartilage that fuses the 2 pubic bones together*
- g. Pecten : *ridge on posterior side*

4. Acetabulum: *junction of all 3 pelvic bones*

- a. Acetabular Fossa
- b. Lunate Surface: *half moon in acetabulum*
- c. Obturator Foramen : *large hole*

B. FEMUR

- 1. Greater Trochanter
- 2. Lesser Trochanter
- 3. Head : *30 % smaller in females*
- 4. Trochanteric fossa
- 5. Quadratic Tubercle : *on intertrochanteric crest*
- 6. Intertrochanteric Crest : *posterior*
- 7. Linear Aspera
- 8. Gluteal Tuberosity: *up toward greater trochanter from linea aspera*
- 9. Pectineal Line *up from linea aspera toward lesser trochanter*

C. OTHER BONES related to muscle origins and insertions (covered in other labs)

- 1. Sacrum/coccyx
 - a. Ala
 - b. Foramina
- 2. Vertebrae
 - a. Bodies
 - b. Transverse Processes
- 3. Tibia

a. PES area

b.

III. JOINTS

A. HIP JOINT

1. CLASSIFICATION: *diarthrodial, ball & socket*

2. ARTICULATING SURFACES

proximal: *acetabulum (lined with fibrocartilage labrum to deepen socket & increase stability as well as protect bone edges, similar to meniscus in knees)*

distal: *head of femur*

3. MOVEMENTS

a. Flexion (140 deg) /Extension (15 deg)

1. PLANE: *sagittal*

2. AXIS: *medial/lateral*

b. Abduction (30 deg) /Adduction (25 deg)

1. PLANE: *frontal*

2. AXIS: *anterior/posterior*

c. Internal (70 deg) / External (90 deg) Rotation

1. PLANE: *horizontal/transverse*

2. AXIS: *longitudinal*

d. Horizontal Abduction / Adduction

1. PLANE: *horizontal/transverse*

2. AXIS: *longitudinal*

e. Circumduction

1. PLANE: *oblique*

2. AXIS: *oblique*

IV. MUSCLES:

*Know origins, insertions, function, and one example of an activity it performs

A. Rectus Femoris

Proximal:

Reflected: Groove Above Rim Acetabulum

Distal: Proximal Border Patella; Through Patellar Ligament to Tibial Tuberosity

Straight: Anterior Inferior Iliac Spine

B. Iliacus

Proximal: Superior 2/3 Iliac Fossa; Internal Lip Iliac Crest; Iliolumbar and Ventral Sacroiliac Ligaments; Ala Sacrum

Distal: Lateral Side of Tendon Psoas Major; Distal to Lesser Trochanter

C. Psoas

Proximal: Ventral Surfaces Transverse Processes Lumbar Vertebrae; Sides of Bodies and Corresponding Intervertebral Discs of Last Thoracic and All Lumbar Vertebrae

Distal: Lesser Trochanter Femur

D. Hamstrings

1. Semitendinosus

Proximal: Ischial Tuberosity; Proximal & Lateral to Proximal Attachment of Biceps Femoris & Semitendinosus

Distal: Posteromedial Aspect Medial Condyle Tibia

2. Semimembranosus

Proximal: Ischial Tuberosity

Distal: Proximal Medial Body Tibia

3. Biceps Femoris

Proximal: Distal Sacrotuberous Ligament; Posterior Ischial Tuberosity

Distal: Lateral Head Fibula; Lateral Condyle Tibia

E. Gluteus Maximus

Proximal: Posterior Gluteal Line Ilium; Portion Bone Superior and Posterior to Posterior Gluteal Line Ilium; Posterior Surface Lower Part Sacrum; Side of Coccyx

Distal: Larger Proximal Portion and Superficial Fibers of Distal Portion of Muscle into Iliotibial Tract Fascia Lata; Deep Fibers of Distal Portion

of Muscle into Gluteal Tuberosity Femur

F. Gluteus Minimus

Proximal: External Surface Ilium between Anterior and Inferior Gluteal Lines; Margin Greater Sciatic Notch

Distal: Anterior Border greater Trochanter Femur

G. Gluteus Medius

Proximal: External Surface Ilium between Iliac Crest and Posterior Gluteal Line Dorsally; Anterior Gluteal Line Ventrally

Distal: Oblique Ridge Lateral Surface Greater Trochanter Femur

H. Piriformis

Proximal: Pelvic Surface of Sacrum between 1,2,3, & 4 Sacral Foramina; Margin of Greater Sciatic Foramen; Pelvic Surface of Sacrotuberous Ligament

Distal: Superior Border of Greater Trochanter of Femur

I. Gracilis

Proximal: Inferior 1/2 Symphysis Pubis; Medial Margin Inferior Ramus Pubic Bone

Distal: Medial Tibia; Distal to Condyle, Proximal to Insertion Semitendinosus, Lateral to Insertion Sartorius

J. Adductor Magnus

Proximal: Inferior Pubic Ramus; Ischial Ramus; Ischial Tuberosity

Distal: Medial to Gluteal Tuberosity; Middle Linea Aspera; Medial Supracondylar Line; Adductor Tubercle Medial Condyle Femur

K. Adductor Longus

Proximal: Anterior Surface Pubis at Junction Crest and Symphysis

Distal: Middle 1/3 Medial Lip Linea Aspera

L. Adductor Brevis

Proximal: Outer Surface Inferior Pubic Ramus

Distal: Distal 2/3 Pectineal Line; Proximal 1/2 Medial Lip Linea Aspera

M. Pectineus

Proximal: Surface Superior Ramus Pubis, Ventral to Pecten between Iliopectineal Eminence and Pubic Tubercle

Distal: Pectineal Line Femur

N. Sartorius

Proximal: Anterior Superior Iliac Spine; Superior 1/2 Notch Distal to Spine

Distal: Proximal Medial Tibia Near Anterior Border

O. Tensor Fascia Lata

Proximal: Anterior External Lip Iliac Crest; Outer Surface Anterior Superior Iliac Spine

Distal: Iliotibial Tract Fascia Lata at Junction Proximal and Middle 1/3 Thigh

V. SUPPORTING STRUCTURES

A. LIGAMENTS

1. Transverse Acetabular Ligament (A p. 297 #7)

- a. **ATTACHMENTS:** *completes the circle of the acetabular labrum at the acetabular notch, goes from end to end of the labrum*
- b. **FUNCTIONS:**
 1. *holds head of femur in acetabulum & bridges the notch*
 2. *converts the acetabular notch into a foramen to allow vessels to pass*

2. Iliofemoral - Y Shaped Ligament (A p. 296 #8)

- a. **ATTACHMENTS:** *from the ilium at the AIIS to the acetabular rim down to the intertrochanteric line of the femur*
- b. **FUNCTIONS:**
 1. *resists extension of the hip*
 2. *limits inward/outward rotation*

3. Teres Femoris Ligament (A p.297, #8)

- a. **ATTACHMENTS:** *base of transverse acetabular ligament to fovea capitis to head of femur*
- b. **FUNCTIONS:**
 1. *reinforce acetabulum*

2. *prevents dislocation*
3. *supplies blood to femur*

4. Outer Reinforcement Ligaments

a. Iliofemoral Ligament

b. Ischiofemoral Ligament (A p. 296 #12)

1. ATTACHMENTS: *from body of ischium behind acetabulum to femoral neck, fibers spiral up and out to femur*
2. FUNCTIONS:
 - a. *prevents hyperextension of the hip due to shape of fibers*
 - b. *limits adduction & internal rotation*

c. Pubofemoral Ligament (A p. 296 #7)

1. ATTACHMENTS: *from body of pubis & adjacent superior pubic ramus passing anterior to the femoral neck*
2. FUNCTIONS:
 - a. *prevents hyperextension & over-abduction*
 - b. *limits external rotation*

B. OTHER STRUCTURES

1. Acetabular Labrum: (A p.298, #19) *fibrocartilage rim that deepens socket & protects bone edges*