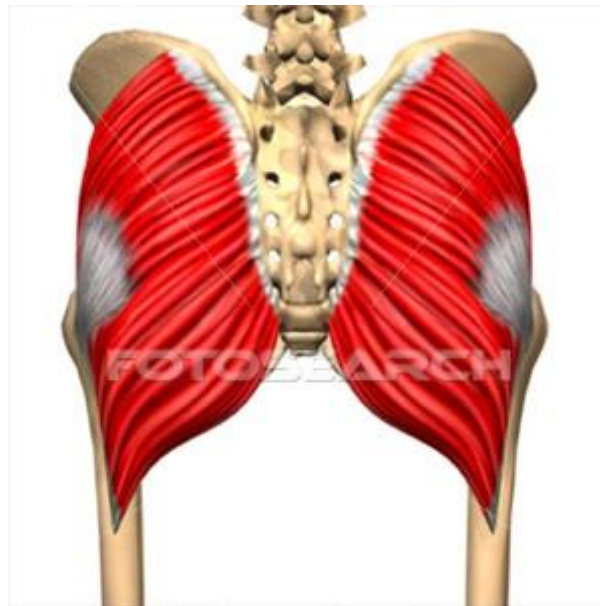


Gluteal region



- What will study in the gluteus region ?
- Fascia
- Ligaments
- Foramens
- Muscles
- Arteries
- Nerves

Ligaments

Sacrotuberous ligament

- From : posterior inferior iliac spine, lateral part of sacrum & coccyx
- To : ischial **tuberosity**

Sacrospinous ligament

- From : lateral part of sacrum & coccyx
- To : ischial **spine**

The arrangement of these particular way divides the pelvic cavity into two foramens :

- greater sciatic foramen
- Lesser sciatic foramen

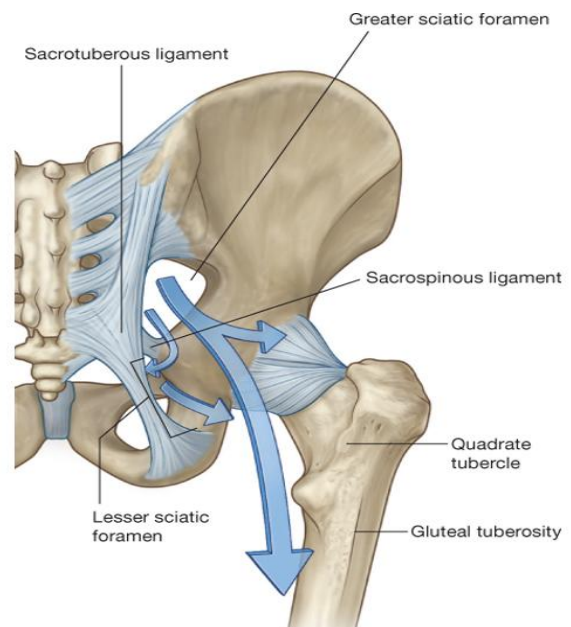
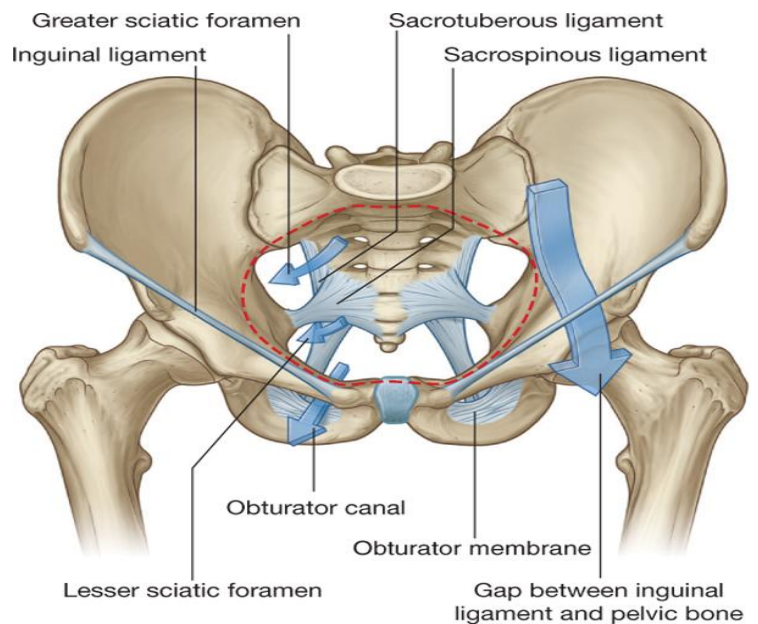
Foramens

Greater sciatic foramen :

- It is transformed from the greater sciatic notch of the hip bone into greater sciatic foramen by the ligament

Structers passing through :

- **Superior gluteal nerve and vessels**
- **Piriformis muscle**
- Inferior gluteal nerve and vessels
- Sciatic nerve
- Posterior cutaneous **nerve** of thigh
- **Nerve** to quadratus femoris
- Pudendal **nerve**
- Internal pudendal vessels
- **Nerve** to obturator internus



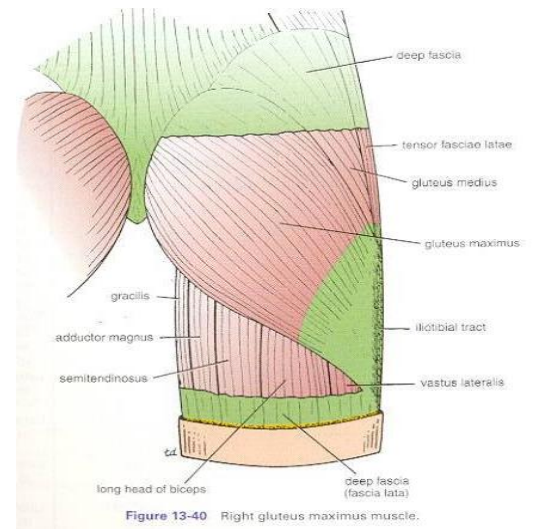
Lesser sciatic foramen

structures passing through :

- Tendon of obturator internus
- Nerve to obturator internus
- **Pudendal nerve**
- Internal pudendal **vessels**

Fascia

- **Superficial fascia** is Thick , thus it is prone for the formation of very painful abscesses
- Deep fascia is continuous below with deep fascia of the thigh



3 Arteries & 7 Nerves

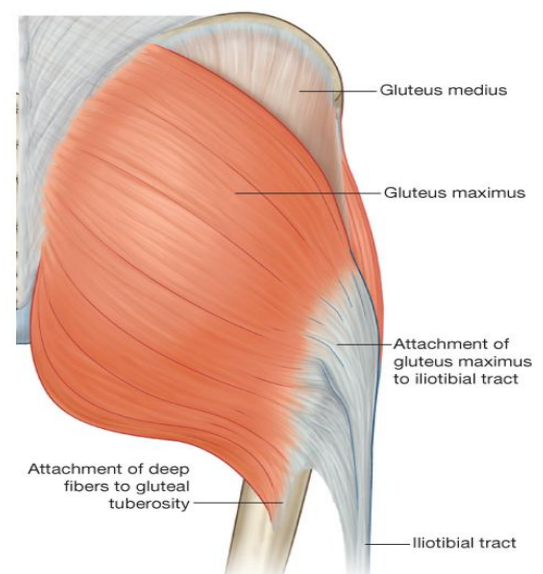
- Arising in the pelvis
- **Superior and inferior gluteal arteries , internal pudendal artery** branching from the **internal iliac artery**
- Sciatic nerve : arises from the sacral plexus (L4,L5,S1,S2,S3)
- Posterior cutaneous of thigh
- Superior gluteal
- Inferior gluteal
- Pudendal
- N. to obturator internus
- N. quadratus femoris

Muscles

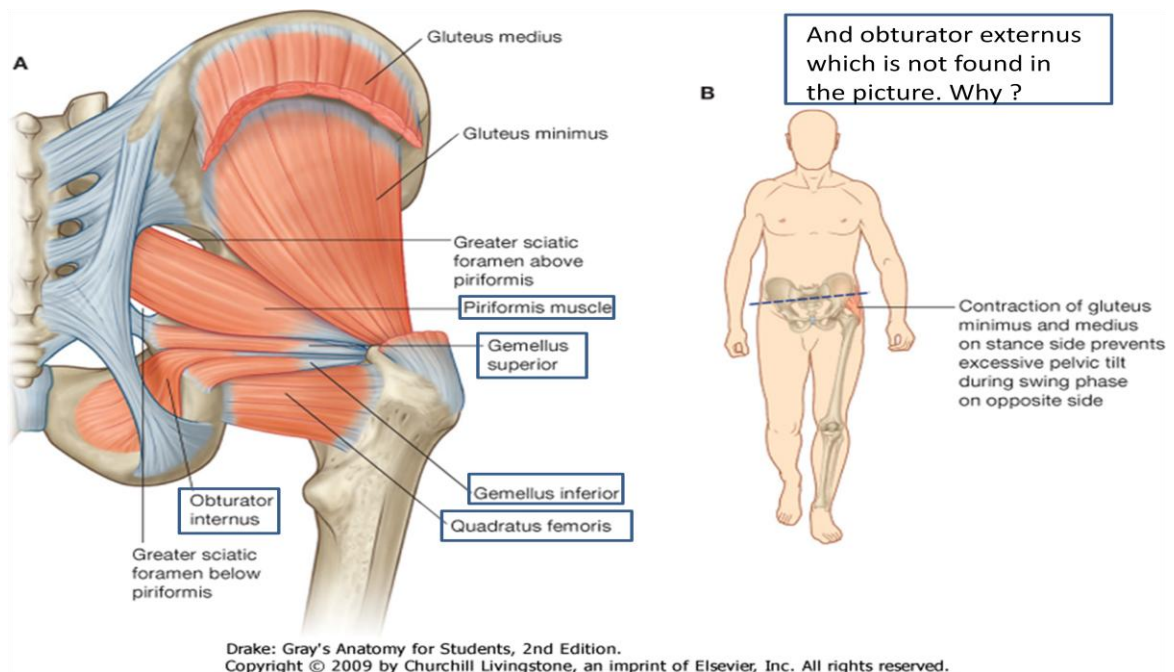
- The muscles in the gluteal region are classified into superficial and deep
 - Deep layer (Lateral Rotators of the Thigh) : 6 muscles
- Piriformis
- Obturator internus
- Superior gemellus
- Inferior gemellus
- Quadratus femoris
- Obturator externus <<< medial compartment of thigh

Superficial layer :

- Gluteus maximus
- Gluteus medius
- Gluteus minimus



Drake: Gray's Anatomy for Students, 2nd Edition.
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Muscle name	Origin	Insertion	N.S	action
Gluteus Maximus	Outer surface of ilium, sacrum, coccyx, sacrotuberous ligament	Iliotibial tract and gluteal tuberosity of femur	Inferior gluteal	Extension and lateral rotation of the HIP joint
Gluteus Medius	Outer surface of ilium	Lateral surface of greater trochanter of femur	Superior Gluteal	Abduct thigh at hip joint
Glutues Minimus	Outer surface of ilium	Anterior surface of greater trochanter of femur	Superior Gluteal	Abduct thigh at hip joint
Tensor fasciae latae	Iliac crest	Iliotibial tract	Superior gluteal nerve	

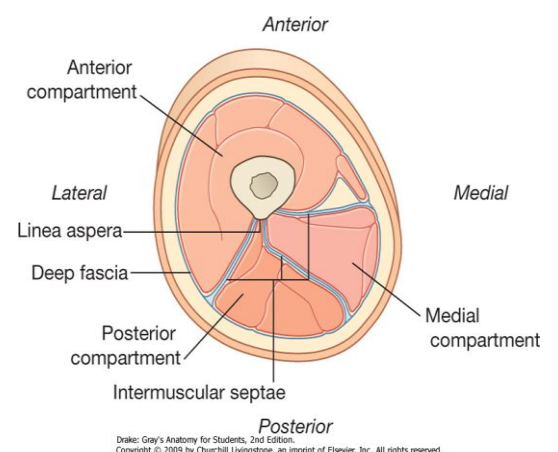
The tensor fasciae latae runs downward and backward to its insertion in the iliotibial tract and thus assists the gluteus maximus muscle in maintaining the knee in the extended position

Muscle name	Origin	Insertion	N.S	Action
Piriformis	Anterior surface of sacrum	Upper border of greater trochanter of femur	First and second sacral nerves	Lateral rotator of thigh at hip joint
Obturator internus	Inner surface of obturator membrane	Upper border of greater trochanter of femur	Sacral plexus	
Gemellus superior	Spine of ischium	Upper border of greater trochanter of femur	Sacral plexus	
Gemellus inferior	Ischial tuberosity	Upper border of greater trochanter of femur	Sacral plexus	
Quadratus femoris	Lateral border of ischial tuberosity	Quadrate tubercle of femur	Sacral plexus	

All attach into the Upper border of greater trochanter of femur except the Q. Femoris

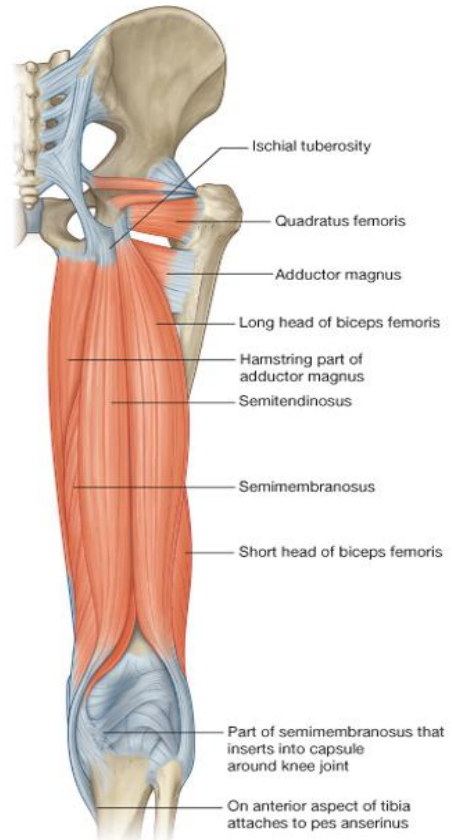
Thigh

- It is separated by the deep fascia into 3 compartments.
- The fascial septa extends from the INNER aspect of the deep fascia and attaches into linea aspera of the femur
- anterior compartment(quad) : femoral **nerve** and **artery**
- Medial compartment (adductor) : **obturator nerve**
- Posterior compartment(hamstring) : **sciatic nerve**



Posterior compartment

- Hamstring group :
- Biceps femoris
- Semimembranosus
- Semitendinosus
- Ischial part of Adductor magnus

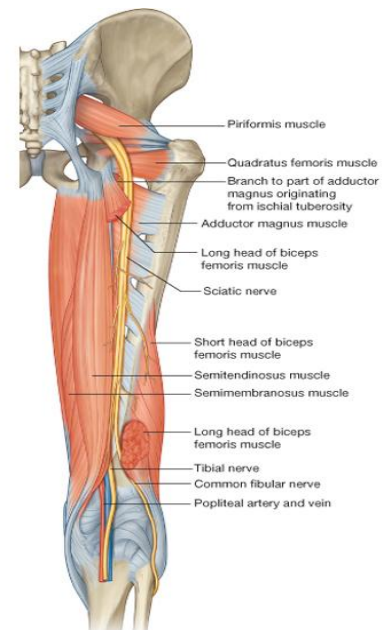


Consider them all to have the same origin

Muscle name	Origin	Insertion	N.S	action
Biceps femoris	Long head : ischial tuberosity	Head of fibula	tibial portion of sciatic nerve	
	Short head : linea aspera, lateral supracondylar ridge of shaft of femur		common peroneal portion of sciatic nerve	Flexes and laterally rotates leg at knee joint; long head also extends thigh at hip joint
Semitendinosus	Ischial tuberosity	Upper part of medial surface of shaft of tibia	Tibial portion of sciatic nerve	same
Semimembranosus	Ischial tuberosity	Medial condyle of tibia	Tibial portion of sciatic nerve	Same
Adductor magnus (ischial)	Ischial tuberosity	Adductor tubercle of femur	Tibial portion of sciatic nerve	Extends thigh at hip joint

Sciatic nerve

- Largest nerve in the body
- It arises from sacral plexus (L4,5,S1,2,3) in pelvis
- It doesn't branch in the gluteal region
- Branches to :
 - Hamstring group
 - Hip joint
- Terminal branches : In the lower 1/3 of back of thigh, it ends by dividing into :
 - tibial
 - common peroneal nerves



Hip joint

- Ball and socket synovial joint
- Formed by head of femur and acetabulum
- Horseshoe in shape
- deficient inferiorly at acetabular notch
- Its cavity is deepened by a fibrocartilaginous rim called Acetabular Labrum, which bridges as Transverse Acetabular Ligament across the acetabular notch.

Capsule

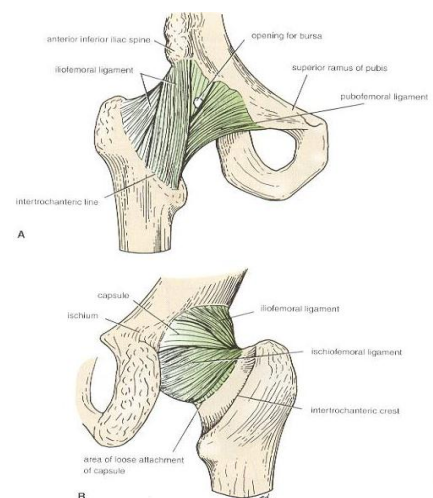
- **At hip joint (medially)** : it is attached to acetabular labrum.
- **At femur (laterally)** : it is attached to :
 - 1-Anterior : intertrochanteric line.
 - 2-Posteriorly : the middle of back of neck.

You should know that it lines the outer parts of the articulation

Ligaments of hip joint

3 ligaments :

- Iliofemoral ligament
- Spiral
- Posterior part of capsule
- Limits extension
- Pubofemoral ligament:
 - limits extension & abduction
 - Anterior and lower part of capsule
 - Triangle
- Iliofemoral ligament
 - It prevents overextension during standing
 - Y shaped
 - In front of capsule



Synovial membrane lines the capsule and attached to margins of articular surfaces

- Nerve supply ?
- Femoral
- Obturator
- Sciatic
- N. To quadratus femoris

Movement

Extensors are more powerful than flexor groups/ lateral rotators are more powerful than medial rotators.

Flexion :

- Iliopsoas
- Rectus femoris
- Adductor muscle
 - **Limited : contact of front thigh with abdominal wall**

Extension :

- Gluteas maximus
- Hamstring
 - **Limited by : ligaments (all 3)**

Adduction

- Adductors (longus + brevis + pubic part of magnus)
- gracilis
- Pectineus
 - **limited :contact with the opposite limb and by tension in ligament of head of femur.**

Abduction

- Gluteas maximus
- Gluteas medius
- Sertorius
- Tensor fascia lata
 - **Limited by : pubofemoral ligament**

Lateral rotation :

- Piriformis
- obturator internus
- obturator externus
- inferior gemellus
- Superior gemellus
- Quadratus femoris

Limited by :

- iliofemoral
- pubofemoral ligaments

Medial rotation :

- anterior fibres of gluteus medius
- anterior fibres of gluteus minimus
- tensor fascia latae

Limited by : ischiofemoral ligament