



# *Muscles of the Hip Joint*

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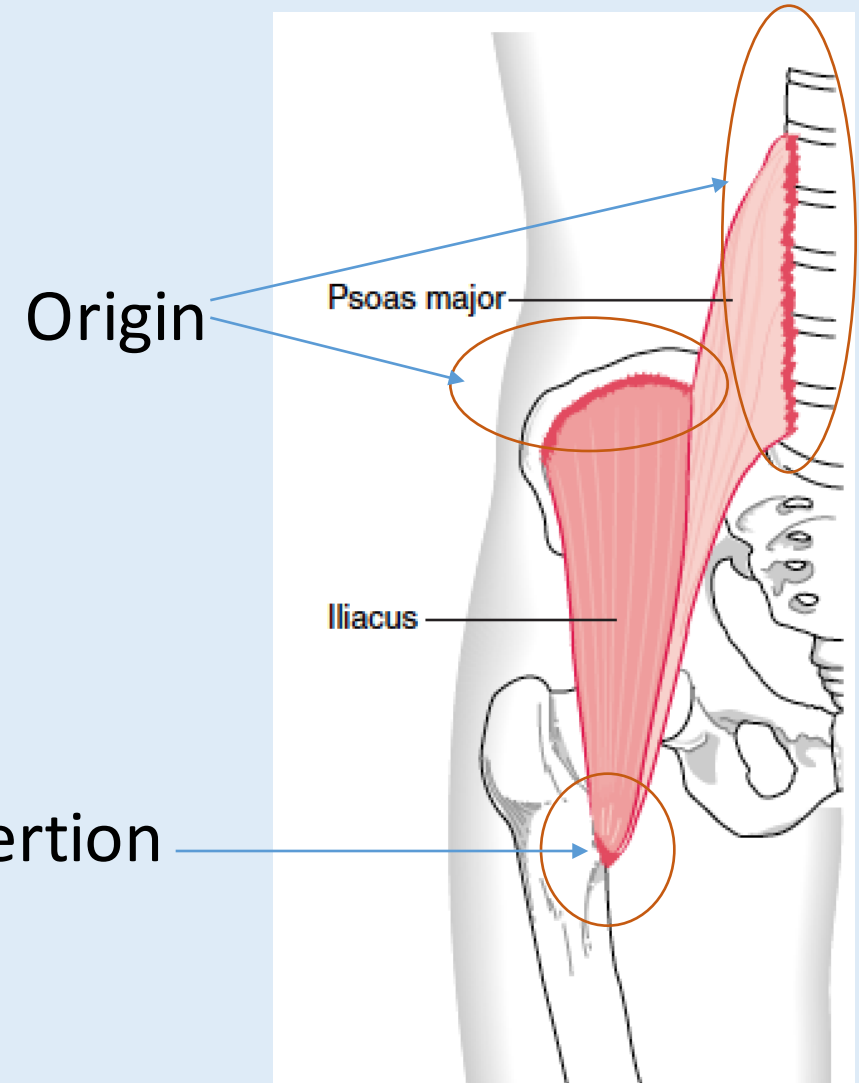
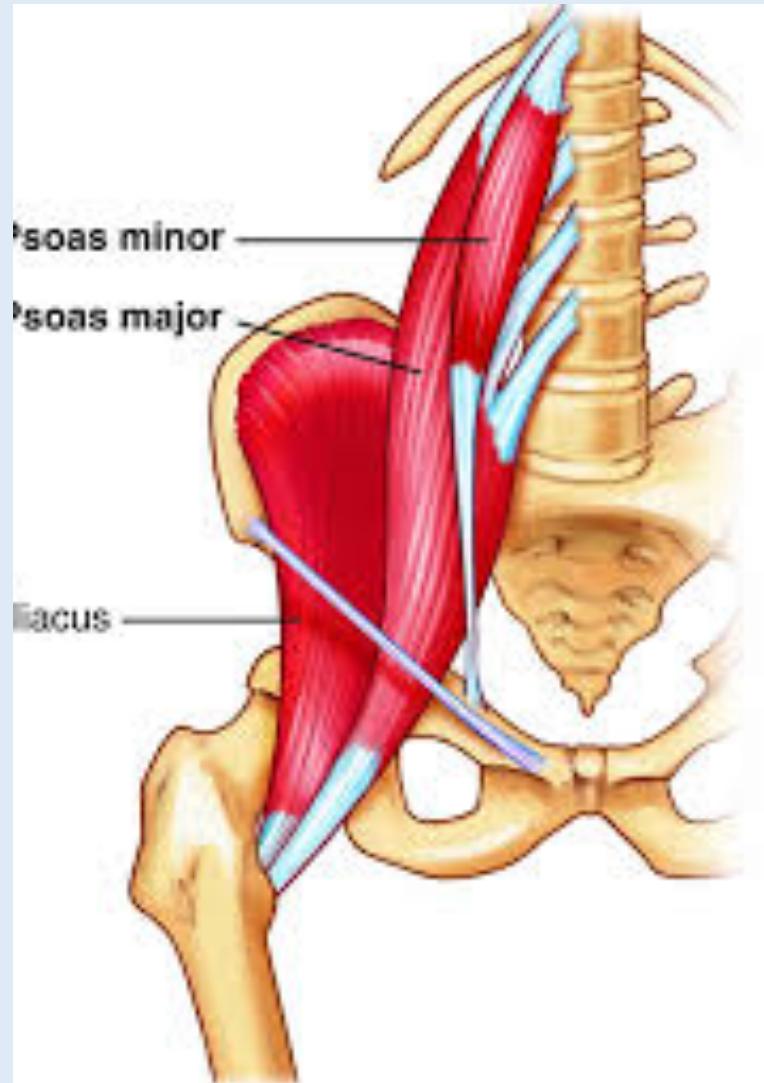
*Department of Physiotherapy*

## *Learning objectives*

After the lecturer, the students will be able to:

- ❖ Describe the anatomy of muscles of the hip joint
- ❖ Describe the actions of the muscles of the hip joint
- ❖ Palpate the muscles of the hip joint

# *Iliopsoas Muscle*



## *Iliopsoas Muscle*

Origin	Iliac fossa, anterior & lateral surfaces of T12 through L5
Insertion	Lesser trochanter
Action	Hip flexion
Nerve Supply	Iliacus portion: Femoral nerve (L2, L3) Psoas major portion: L2 and L3

## *Gluteus Maximus*

Large, one-joint, quadrilateral-shaped,  
thick muscle

Located superficially on the posterior  
buttock

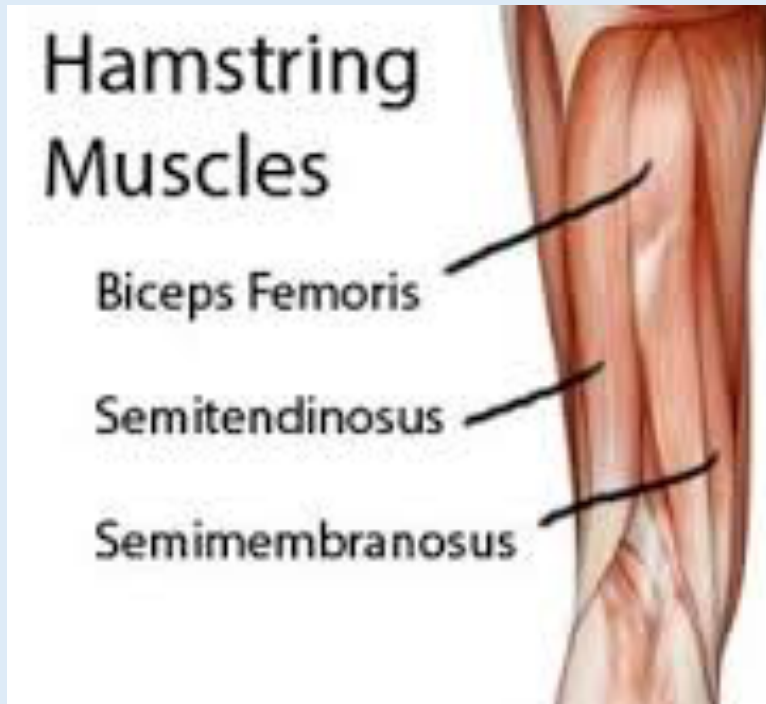


## *Gluteus Maximus Cont.*

Origin	Posterior sacrum and ilium
Insertion	Posterior femur distal to greater trochanter and to iliotibial band
Action	Hip extension, hyperextension, lateral rotation
Nerve Supply	Inferior gluteal nerve (L5, S1, S2)

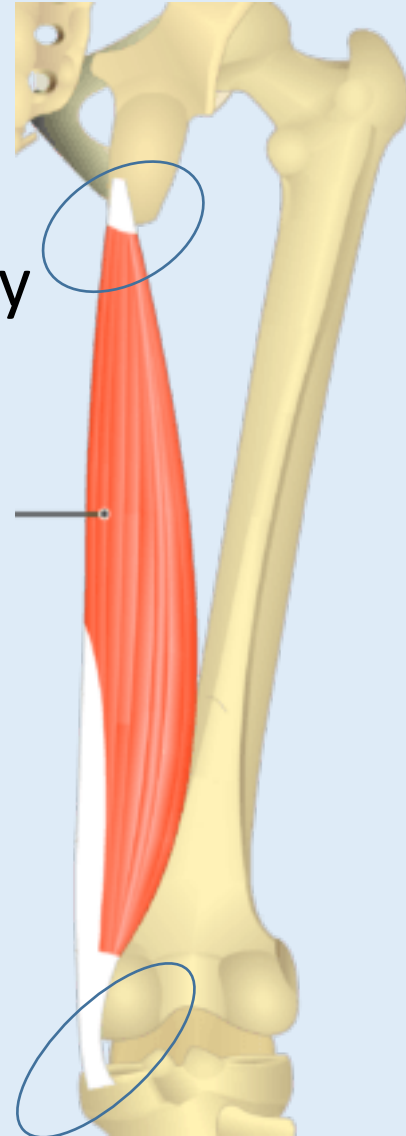
## *Hamstring Muscles*

- Semitendinosus Muscle
- Semimembranosus Muscle
- Biceps Femoris Muscle



## *Semimembranosus Muscle*

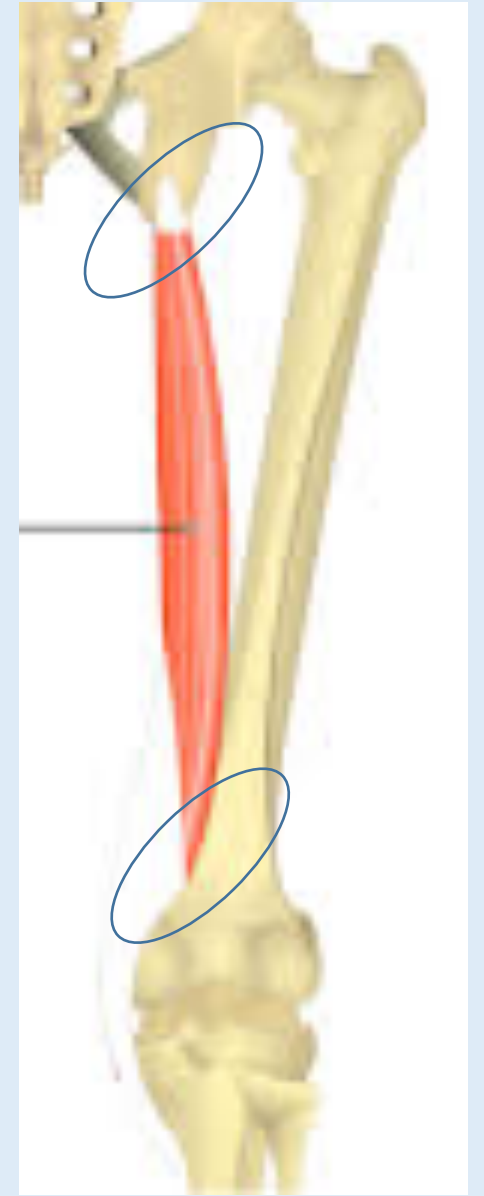
Origin	Proximal & lateral impression on ischial tuberosity
Insertion	Posterior surface of medial condyle of tibia
Action	Hip Extension & Knee Flexion
Nerve Supply	Sciatic nerve (L5, S1, S2)





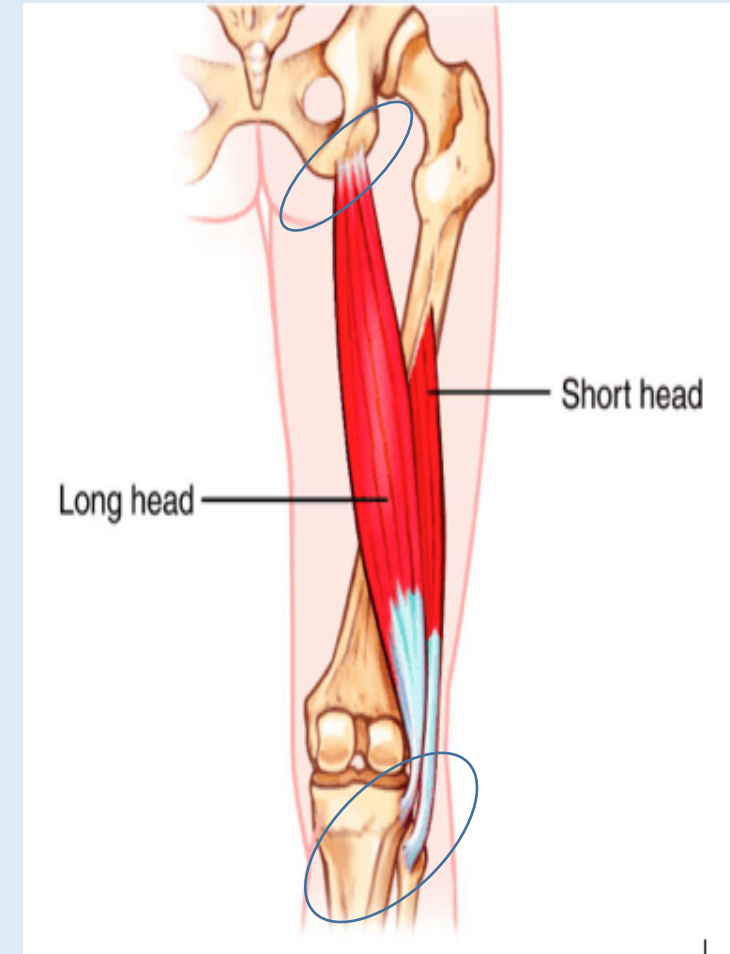
## *Semitendinosus Muscle*

Origin	Ischial tuberosity
Insertion	Anteromedial surface of proximal tibia
Action	Hip Extension & Knee Flexion
Nerve Supply	Sciatic nerve (L5, S1, S2)



## ***Biceps Femoris Muscle***

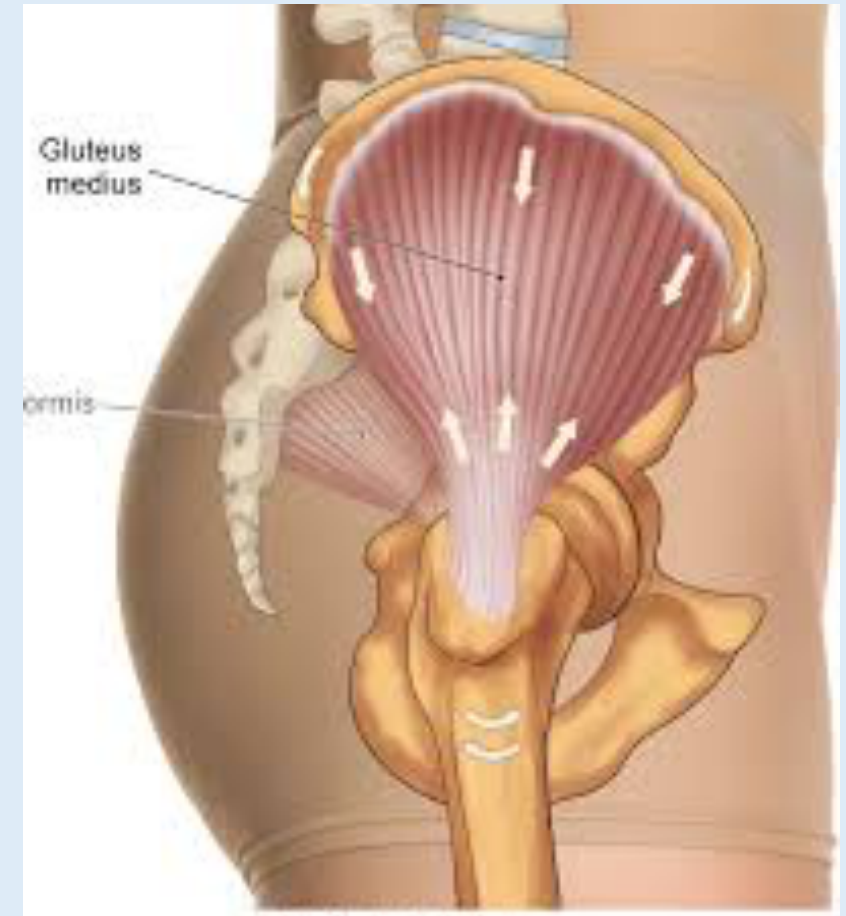
Origin	Long head: ischial tuberosity Short head: lateral lip of linea aspera
Insertion	Lateral side of fibular head Slip to lateral condyle of the tibia
Action	Long head: Hip extension & Knee flexion Short head: flex knee
Nerve Supply	Long head: sciatic nerve (S1, S2, S3) Short head: common peroneal nerve (L5, S1, S2)



## *Hip Abductors (Gluteus Medius Muscle)*

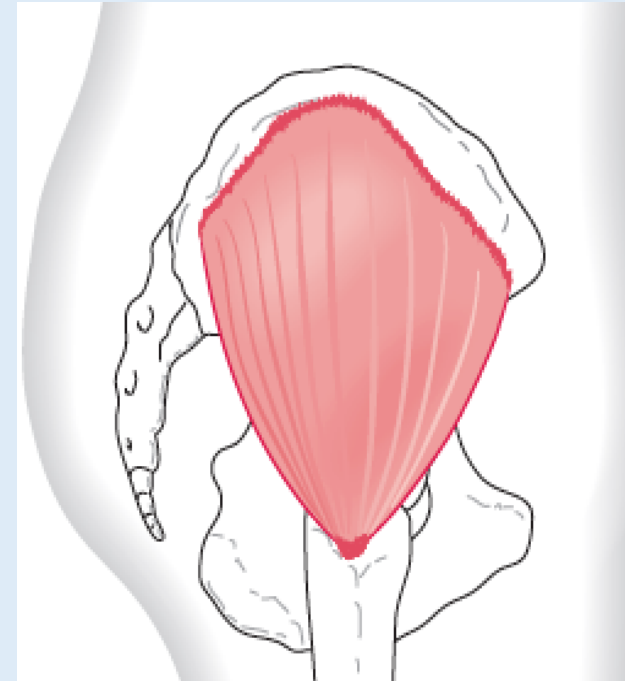
Prime Mover: Gluteus Medius Muscle

Accessory : Gluteus Minimus Muscle  
:Tensor Fascia Latae Muscle  
: Gluteus maximus (upper fibers)



## *Gluteus Medius Muscle*

Origin	Outer surface of the ilium
Insertion	Lateral surface of the greater trochanter
Action	Hip abduction
Nerve Supply	Superior gluteal nerve (L4, L5, S1)



## *Hip Abduction in hip flexed position (Tensor Fascia Latae Muscle)*

- ❖ A very short muscle with a very long tendinous attachment
- ❖ It arises from the ASIS, crosses the hip laterally and slightly anteriorly, then attaches to the long fascial band called the iliotibial band, which proceeds down the lateral thigh and attaches into the tibia.
- ❖ Strongest when performing a combination of flexion and abduction
- ❖ Most efficient when abducting in a slightly anterior direction.

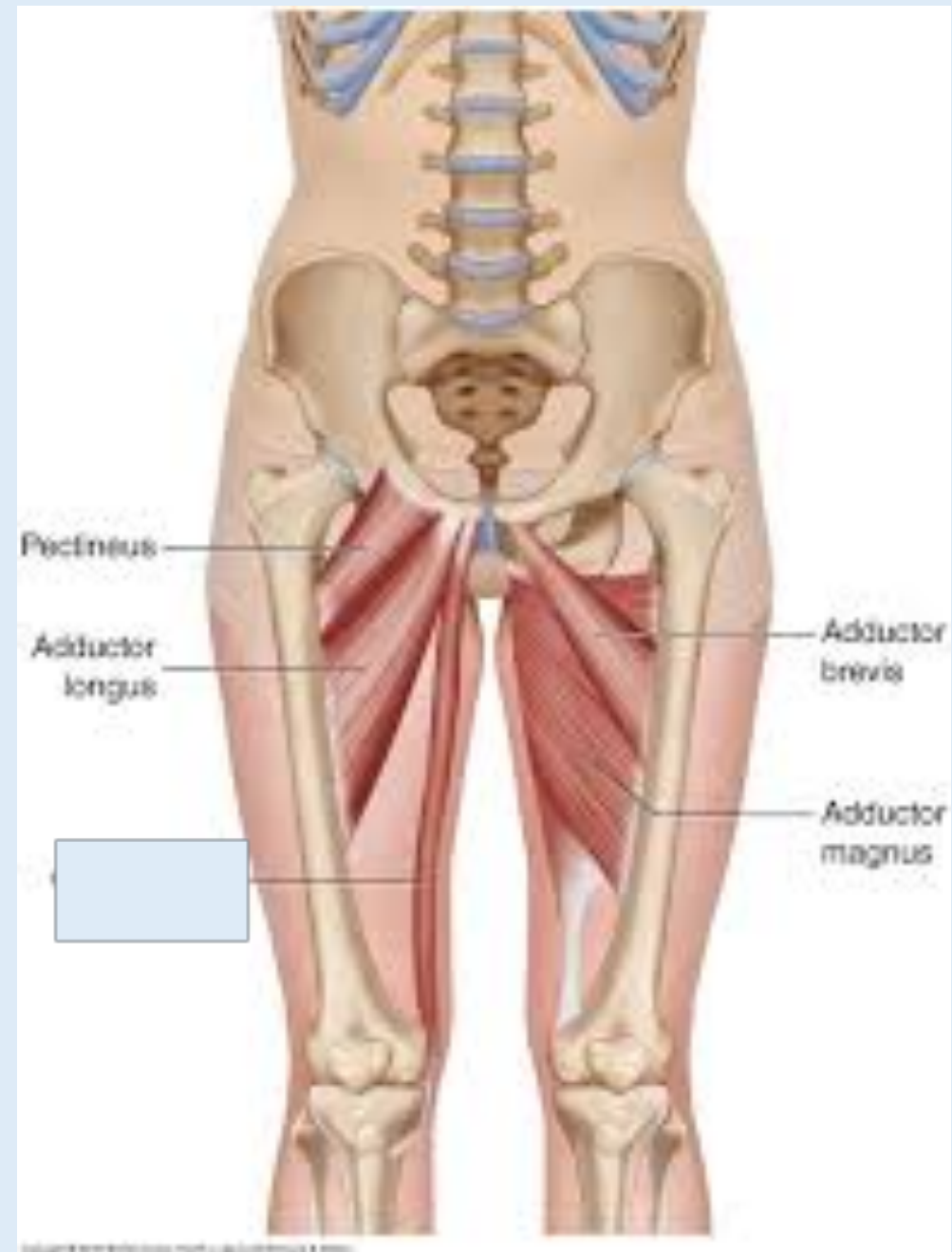
## *Tensor Fascia Latae Muscle*

Origin	Anterior superior iliac spine
Insertion	Lateral condyle of tibia
Action	Combined hip flexion and abduction
Nerve Supply	Superior gluteal nerve (L4, L5)



## *Hip Adductors*

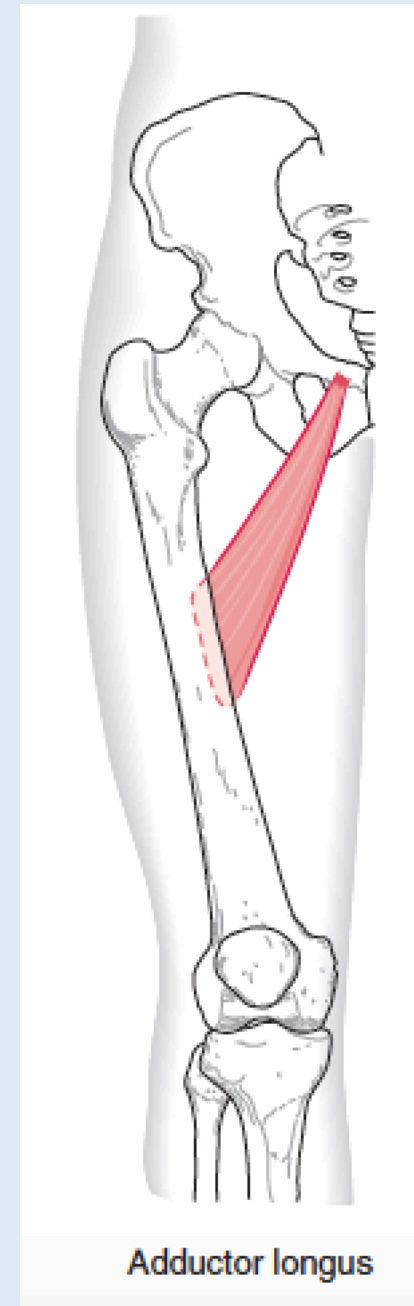
- Adductor Longus MUscle
- Adductor Brevis Muscle
- Adductor Magnus Muscle
- Pectineus Muscle
- Gracilis Muscle



## *Adductor Longus Muscle*

The most superficial and longest of the three.

Origin	Anterior surface of the pubis near the tubercle
Insertion	Middle third of the linea aspera
Action	A prime mover in Hip adduction
Nerve Supply	Obturator nerve (L3, L4)



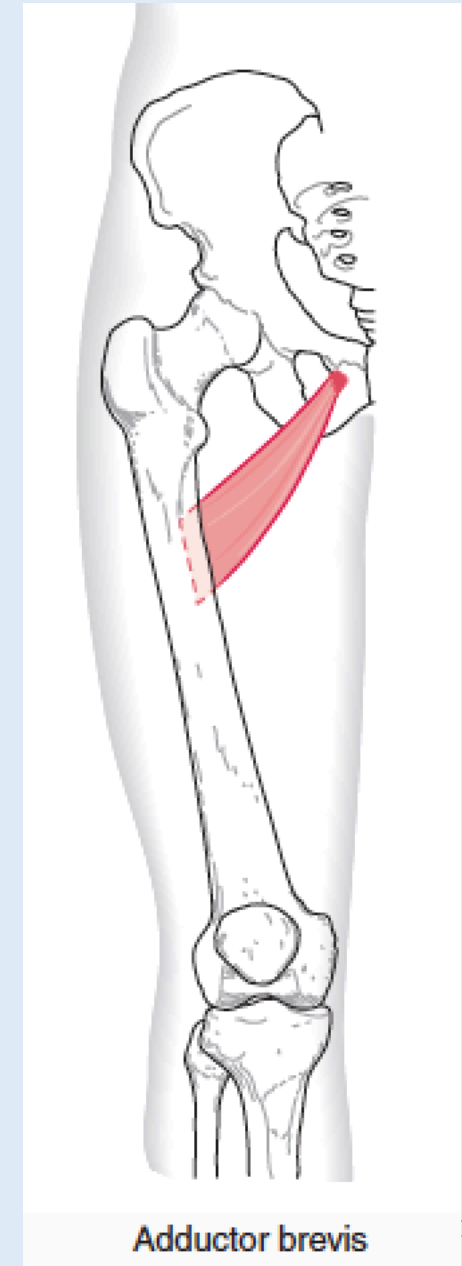


## ***Adductor Brevis Muscle***

- ❖ Shorter.
- ❖ Lies deep to the adductor longus muscle, but superficial to the adductor magnus.
- ❖ Its tendon can easily be felt in the anterior-medial groin.

## ***Adductor Brevis Muscle Cont.***

Origin	inferior ramus of the pubis
Insertion	Pectineal line and proximal linea aspera
Action	A prime mover in Hip adduction
Nerve Supply	Obturator nerve (L3, L4)

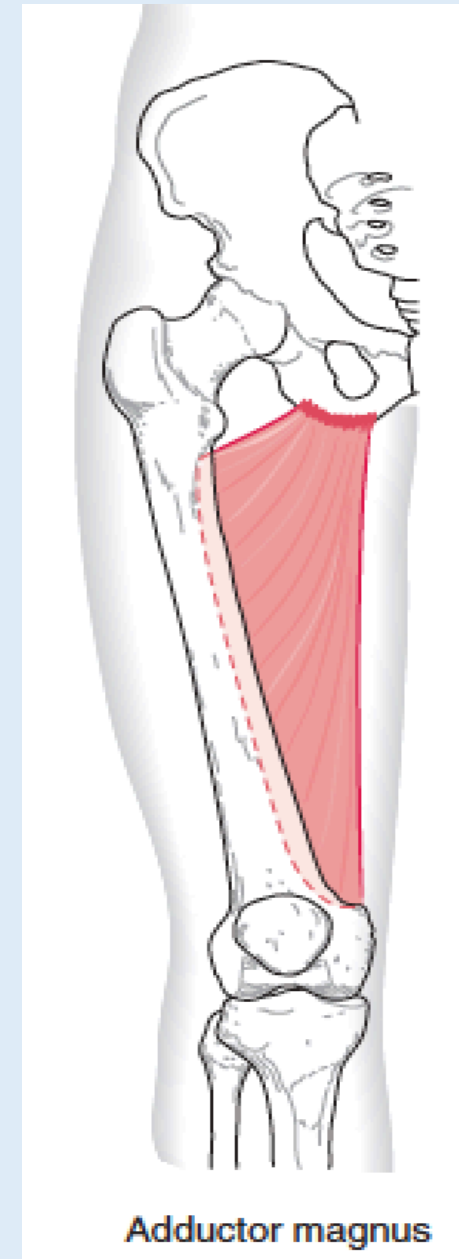


## *Adductor Magnus Muscle*

- Largest, most massive, and deepest of the adductors
- It makes up most of the bulk on the medial thigh
- Because of its size, the adductor magnus muscle is a very strong hip adductor

## *Adductor Magnus Muscle Cont...*

Origin	Ischial tuberosity and ramus of the ischium & inferior ramus of the pubis
Insertion	Entire linea aspera and adductor tuercle
Action	Hip adduction
Nerve Supply	Obturator nerve (L3, L4)



## ***Pectineus Muscle***

Origin	Superior ramus of pubis
Insertion	Pectineal line of femur
Action	<b>Hip adduction &amp; flexion</b>
Nerve Supply	Femoral nerve (L2, L3, L4)



## *Gracilis Muscle*

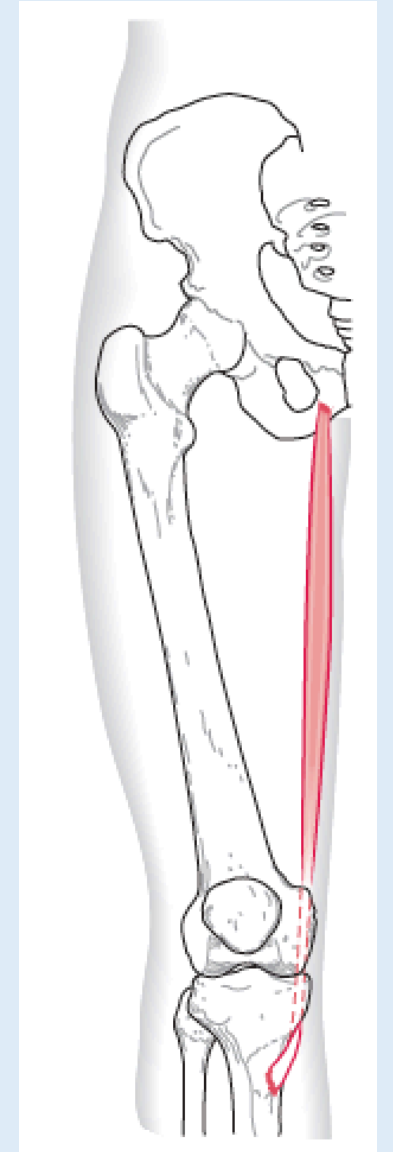
Only hip adductor that is a two-joint muscle

Origin                      symphysis and inferior ramus of the pubis

Insertion                Anterior medial surface of proximal  
end of tibia

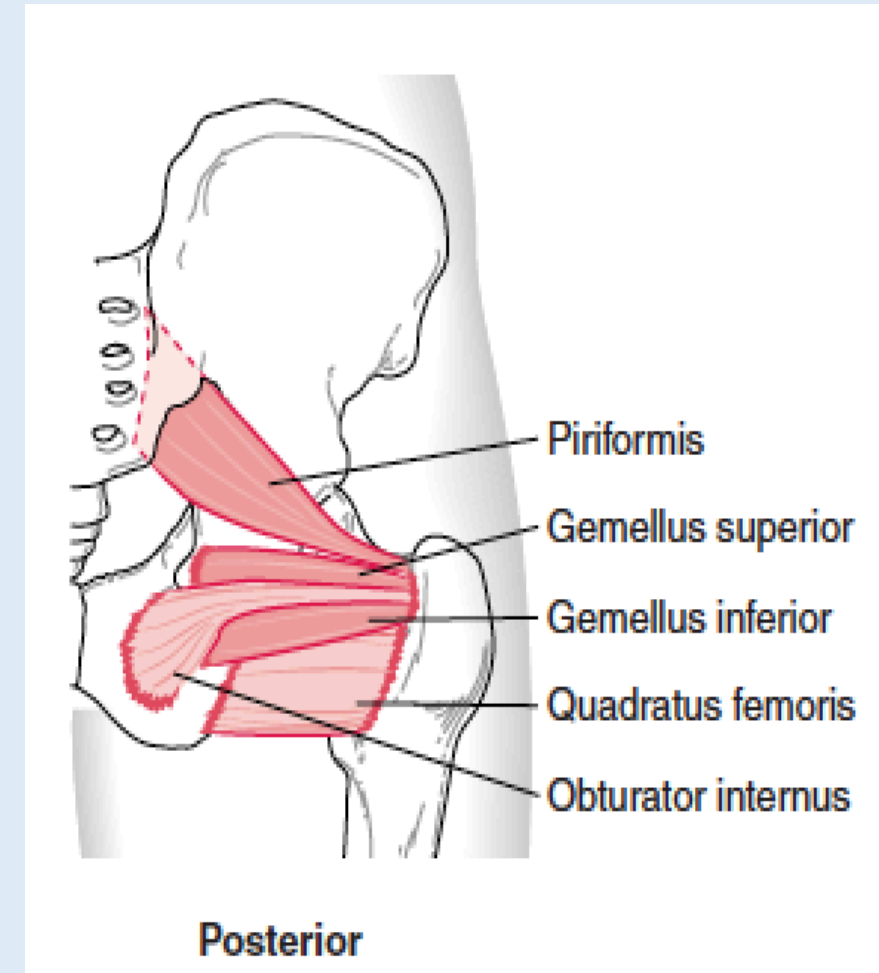
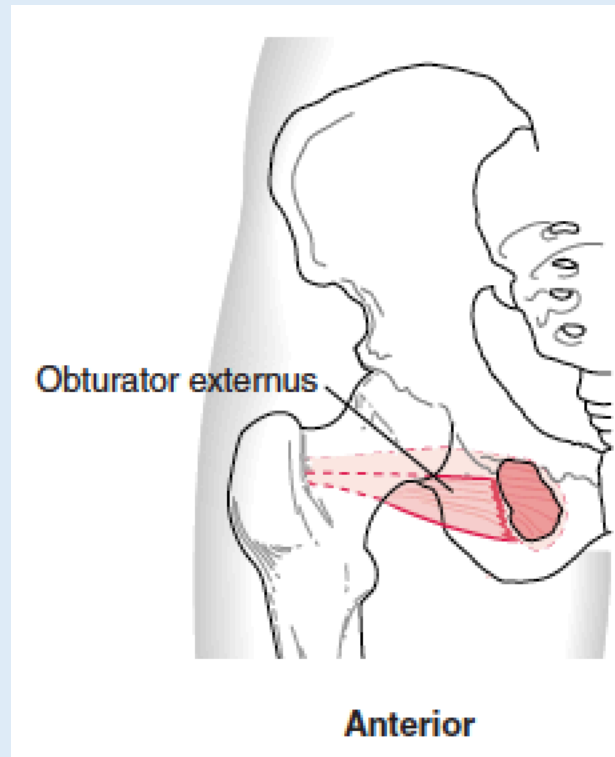
Action                    Hip adduction

Nerve Supply    Obturator nerve (L2, L3)



## *Six Deep Outward Rotators*

1. Obturator externus
2. Obturator internus
3. Quadratus femoris
4. Piriformis
5. Gemellus superior
6. Gemellus inferior



## 1. *Obturator externus*

Origin	Medial side of bony margin of obturator foramen Medial two-thirds of outer surface of obturator membrane Rami of pubis and ischium
Insertion	Posterior surface of NOF to trochanteric fossa of femur
Action	Hip ER
Nerve Supply	Obturator nerve (L <sub>3</sub> , L <sub>4</sub> )



## 2. *Obturator internus*

Origin	Internal surface superior & inferior rami of the pubis  Ramus of ischium  Pelvic surface of superior part of greater sciatic foramen & inferior and anterior obturator foramen
Insertion	Through lesser sciatic notch to anterior part of medial surface of greater trochanter proximal to trochanteric fossa
Action	Hip ER
Nerve Supply	Nerve to Obturator Internus (L <sub>5</sub> , S <sub>1,2</sub> )

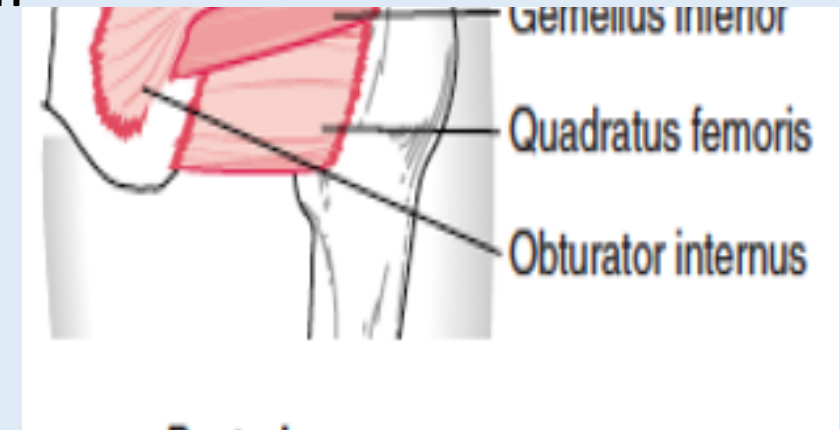
### 3. *Quadratus femoris*

Origin                      Proximal portion of external border of ischial tuberosity

Insertion                  Proximal part of linea quadra of femur

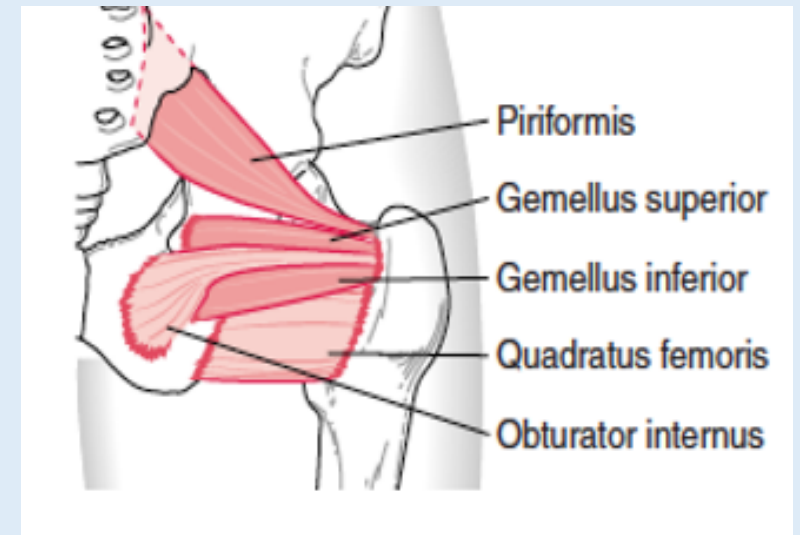
Action                    Hip ER

Nerve Supply            Nerve to *Quadratus femoris* ( $L_{4,5}$ ,  $S_1$ )



## 4. Piriformis

Origin	Anterior surface of sacrum between 1 <sup>st</sup> & 4 <sup>th</sup> anterior sacral foramina
Insertion	Superior border of greater trochanter
Action	Hip Lateral Rotation
Nerve Supply	S <sub>1,2</sub>



## 5. *Gemellus superior*

Origin

Outer surface of ischial spine

Insertion

Upper margin of tendon of obturator internus

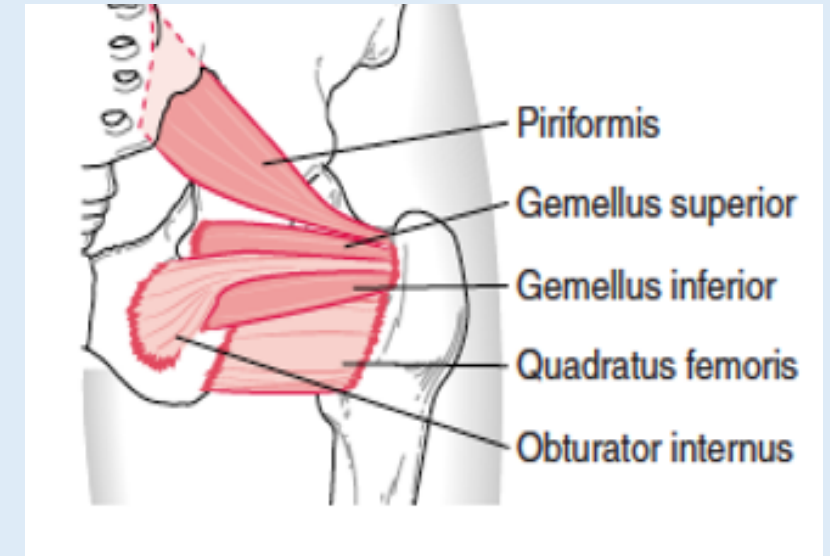
Medial surface of the greater trochanter

Action

Hip Lateral Rotation

Nerve  
Supply

Nerve to obturator internus (L<sub>5</sub>, S<sub>1,2</sub>)



## 6. Gemellus inferior

### Origin

Superior part of ischial tuberosity

### Insertion

Lower margin of tendon of obturator internus

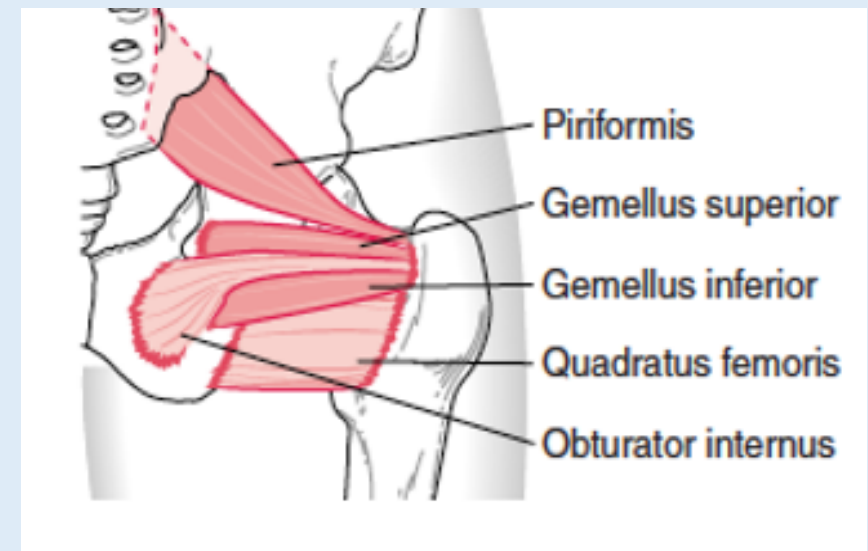
Medial surface of the greater trochanter

### Action

Hip Lateral Rotation

### Nerve Supply

Nerve to obturator internus ( $L_{4,5}$ ,  $S_1$ )



# Medial Rotators of the Hip (Gluteus minimus & Tensor Fascia Latae)

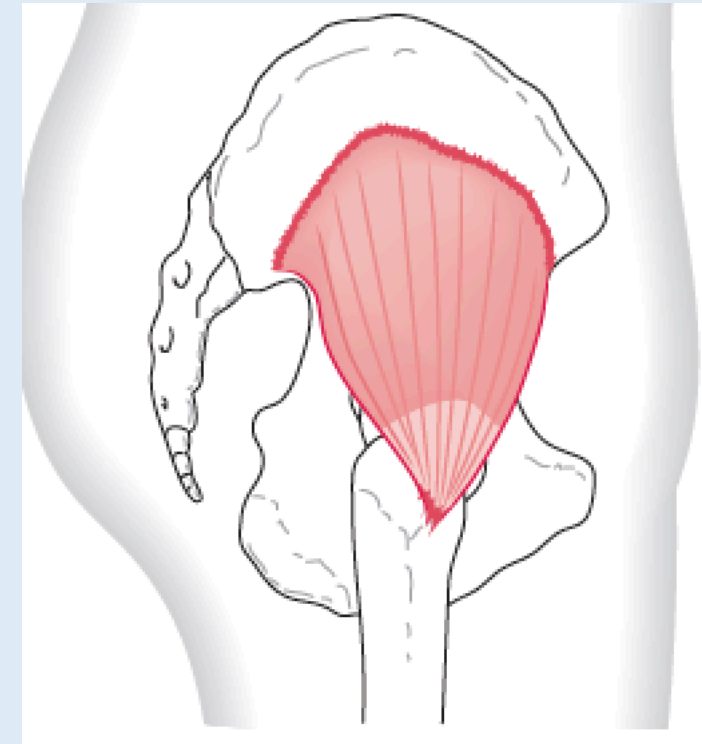
## *Gluteus minimus*

**Origin** Outer surface of the ilium between anterior & inferior gluteal line

**Insertion** Anterior aspect of the greater trochanter

**Action** Hip Medial Rotation

**Nerve Supply** Superior Gluteal ( $L_{4,5}$ ,  $S_1$ )



**Any  
questions**



## Reference

- Smith, L.K., Weiss, E.L. and Lehmkuh, L.D. (1996) *Brunnstorm's Clinical Kinesiology*. 5<sup>th</sup> ed. Jaypee Brothers in India.
- Houghlum, P.A. and Bertoti, D.B. (2012) *Brunnstorm's Clinical Kinesiology*. 5<sup>th</sup> ed. Jaypee Brothers in India.