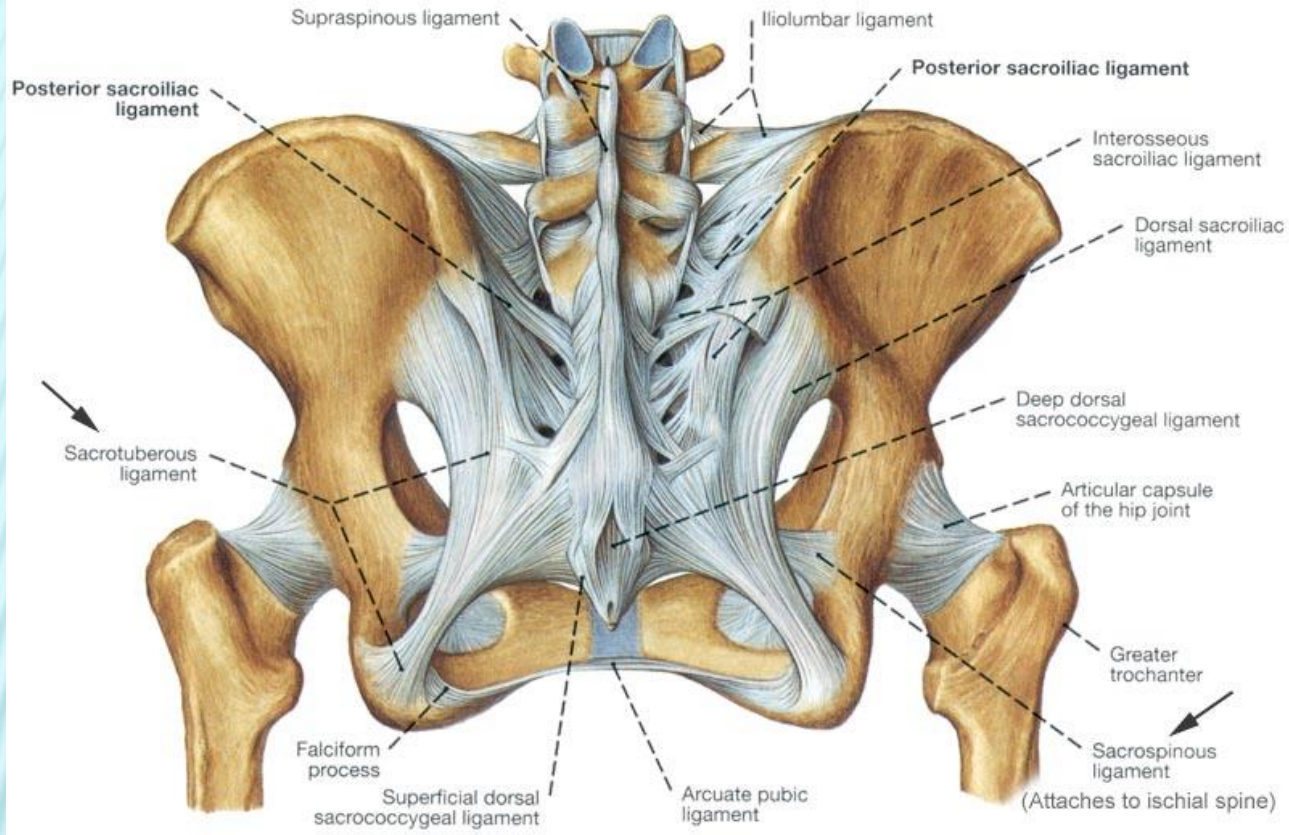


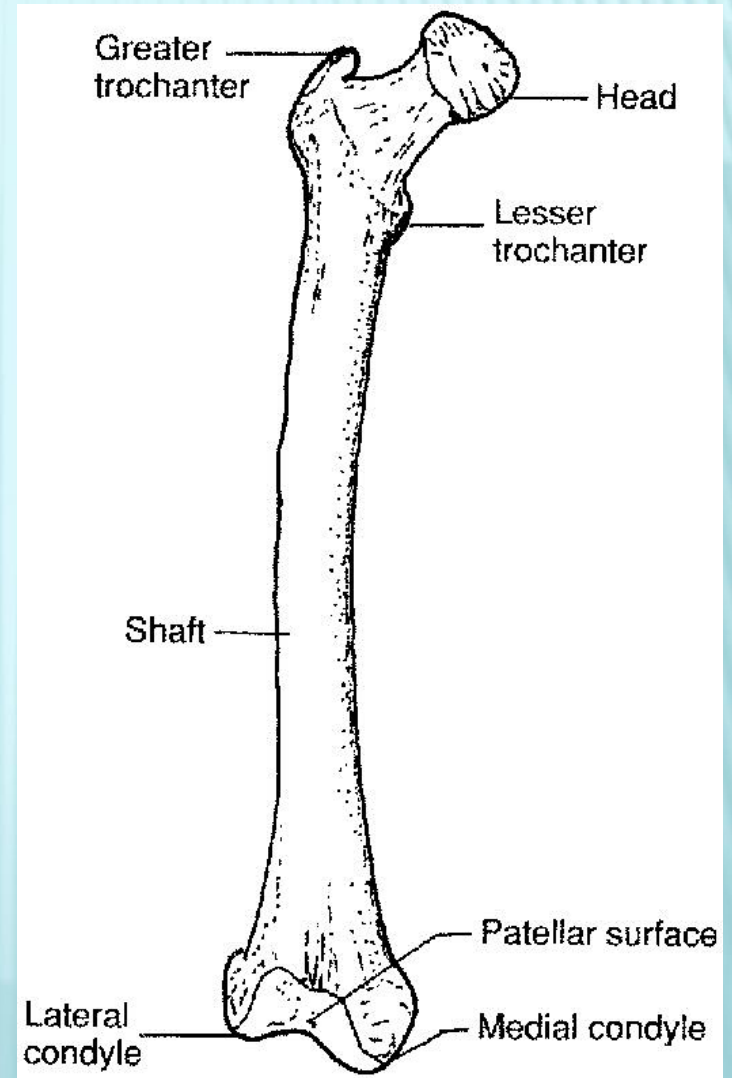
Pelvis and Ligaments, Rear View, Female



HIP, THIGH, GROIN, AND PELVIS

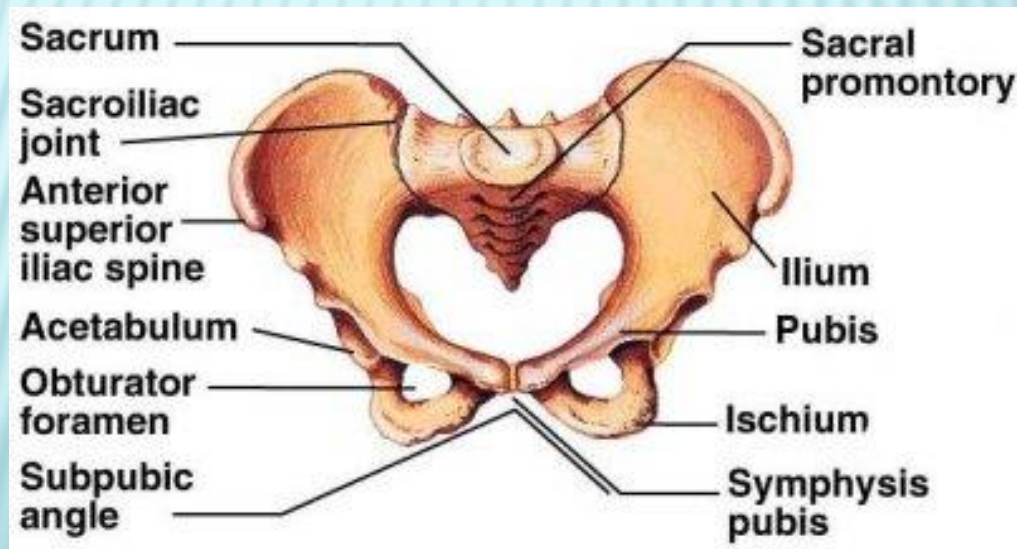
BONES

- Femur
 - i. The femur is the longest bone in the body
 - ii. At the hip joint the head of the femur makes up the ball of this ball and socket joint



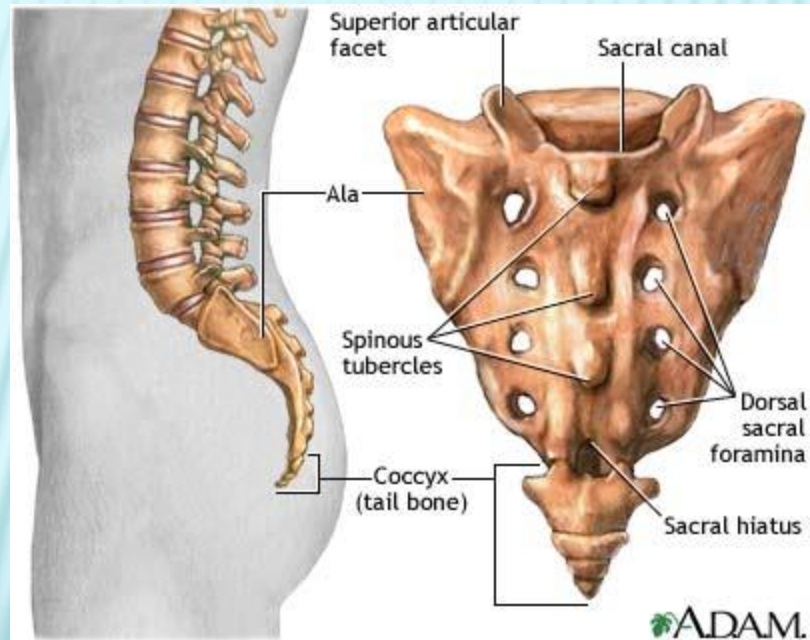
BONES (CONT.)

- Pelvis (Hip)
 - i. The pelvis is made up of 2 paired coxal bones
 - ii. Each coxal bone is made up of 3 fused bones; Ilium, Ischium, and Pubis



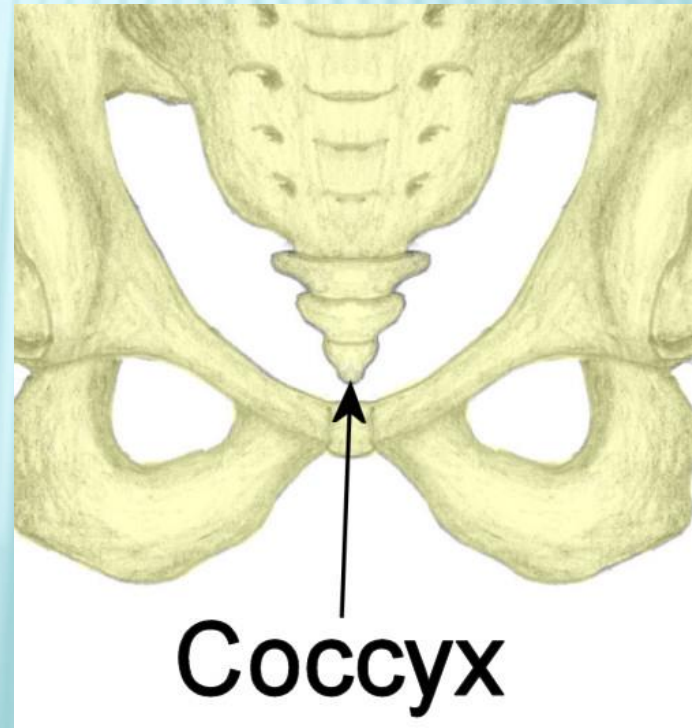
BONES (CONT.)

- Sacrum
 - i. The sacrum is the base of the spine and is made up of 5 fused vertebrae.



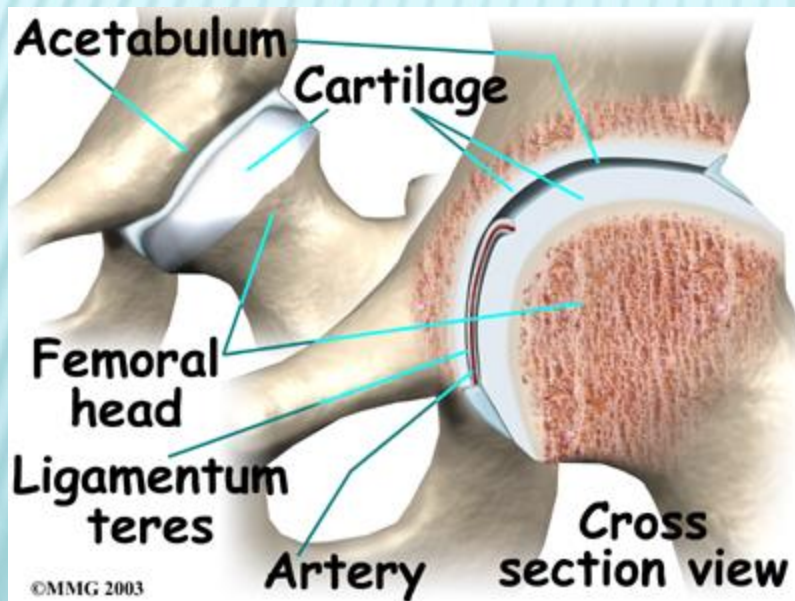
BONES (CONT.)

- Coccyx
 - i. The coccyx is also known as the tail bone. It is at the very tip of the spine and is made up of 4 fused vertebrae



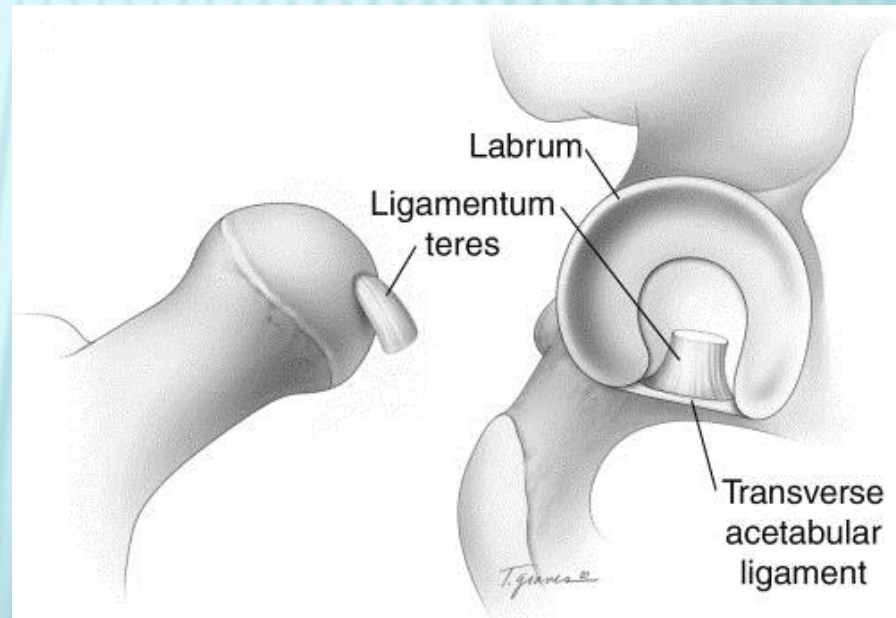
LIGAMENTS

- Ligamentum teres
 - i. Also known as the ligament of the head. It lies inside of the hip joint and attaches to the head of the femur and to the acetabulum (hip socket).



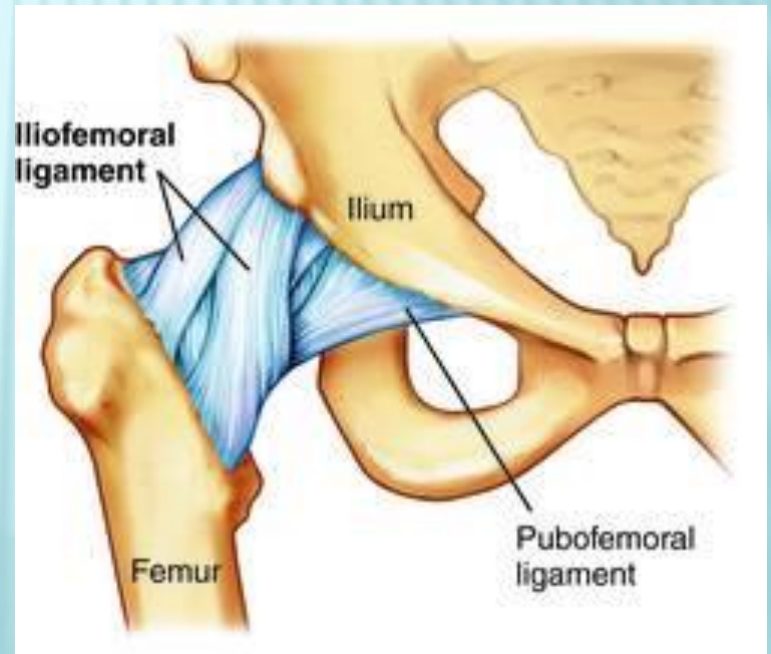
LIGAMENTS (CONT.)

- Transverse acetabular
 - i. Lies on the inferior aspect of the hip joint. It helps to stabilize the hip joint.



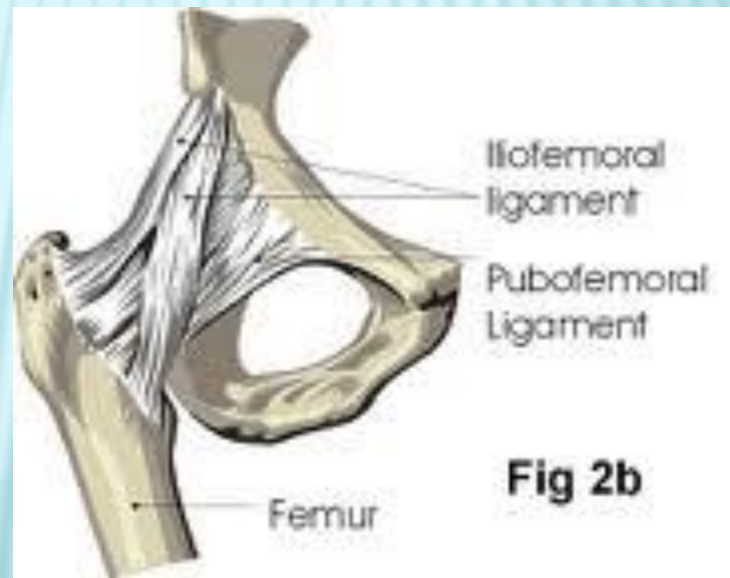
LIGAMENTS (CONT.)

- Iliofemoral
 - i. A very strong “Y” shaped ligament that lies at the anterior aspect of the hip joint.



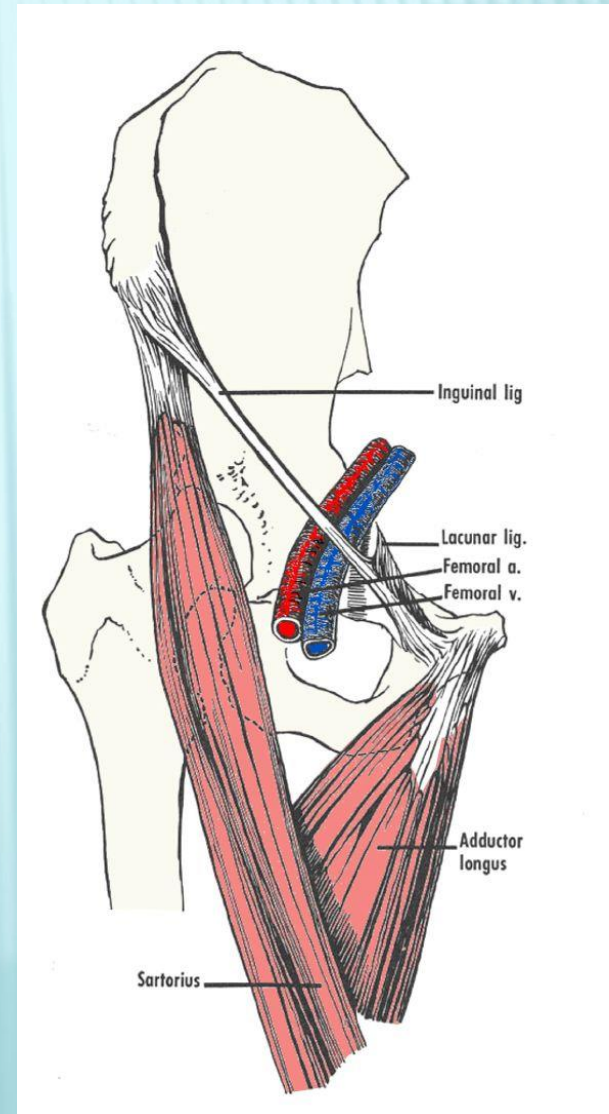
LIGAMENTS (CONT.)

- Pubofemoral
 - i. Lies at the antero-inferior aspect of the hip joint. It arises from the acetabular rim and attaches to the femur.



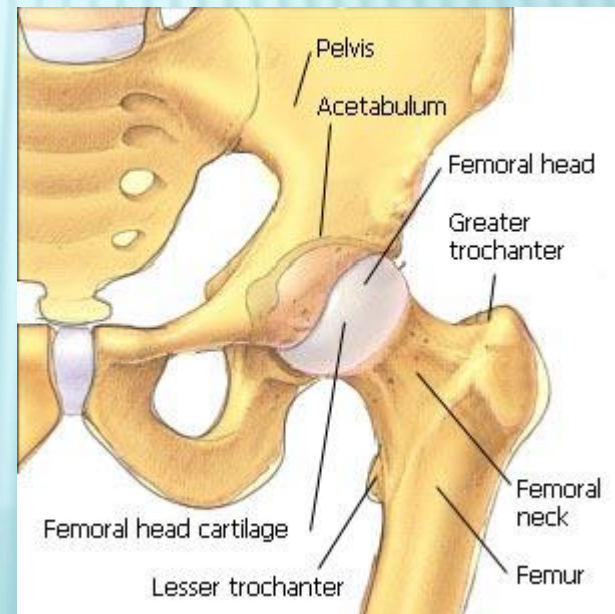
LIGAMENTS (CONT.)

- Inguinal
 - i. Arises from the Ilium and attaches to the pubis. Its function is to separate the abdomen from the thigh.



JOINTS

- Hip Joint
 - i. A ball and socket joint. It has great stability provided by its bone structure as well as its strong ligament support.



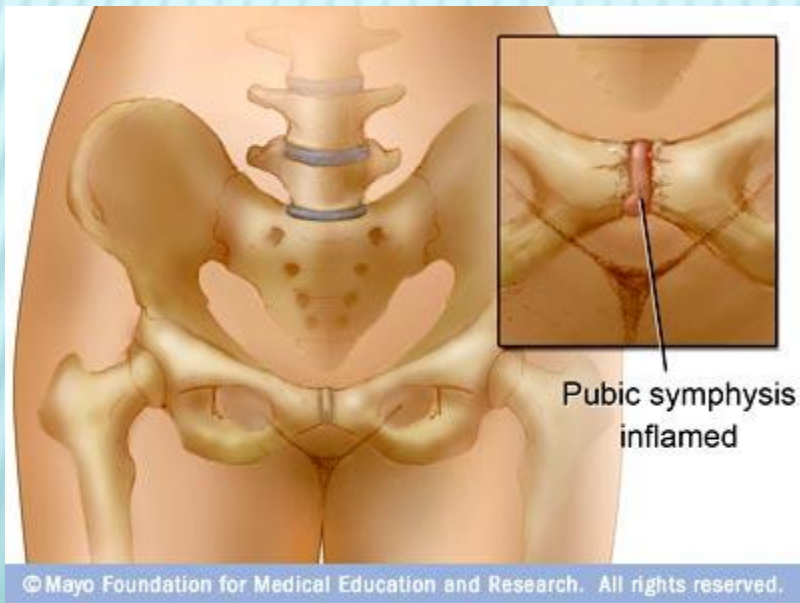
JOINTS (CONT.)

- Sacroiliac Joint
 - i. The articulation of the sacrum and the ilium on each side. It is a very strong joint that has very little movement.



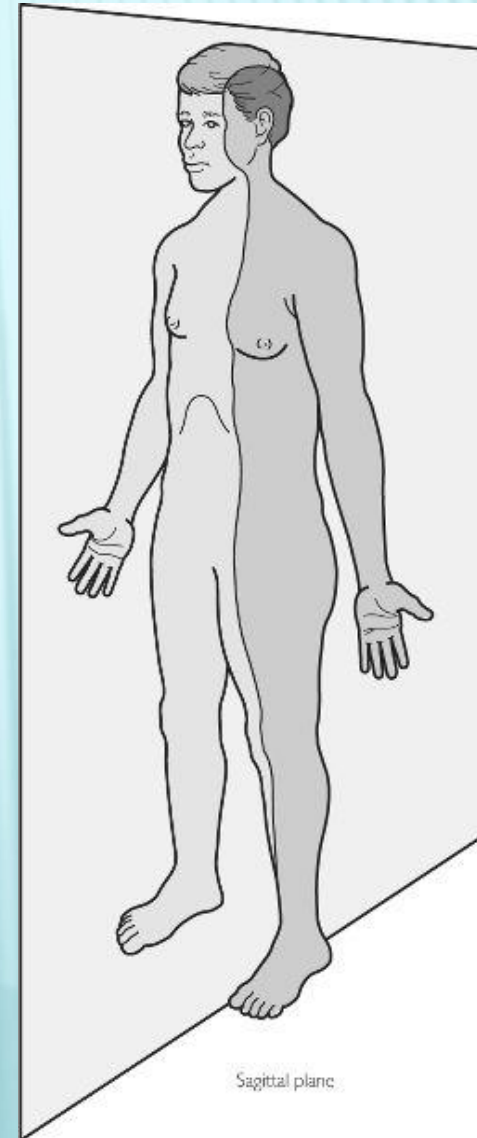
JOINTS (CONT.)

- Pubic Symphysis
 - i. The articulation of the pubic bones at the anterior aspect of the pelvis. It is barely movable except during child birth in women.



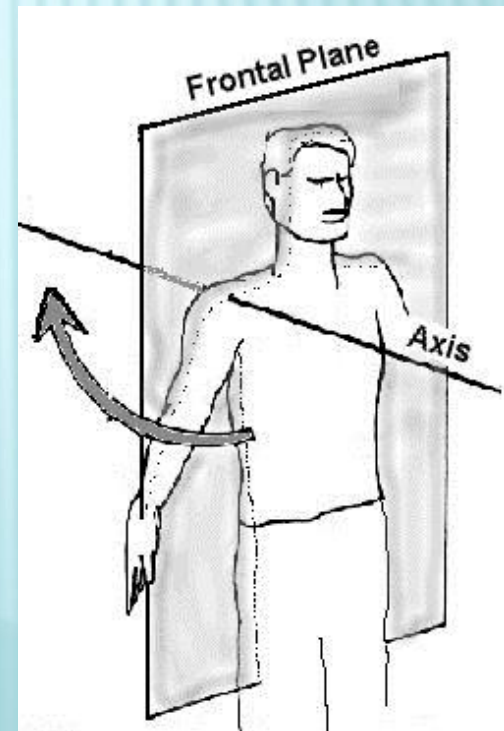
ANATOMICAL PLANES

- Median or Sagittal Plane
 - i. Bisects the body into right and left halves



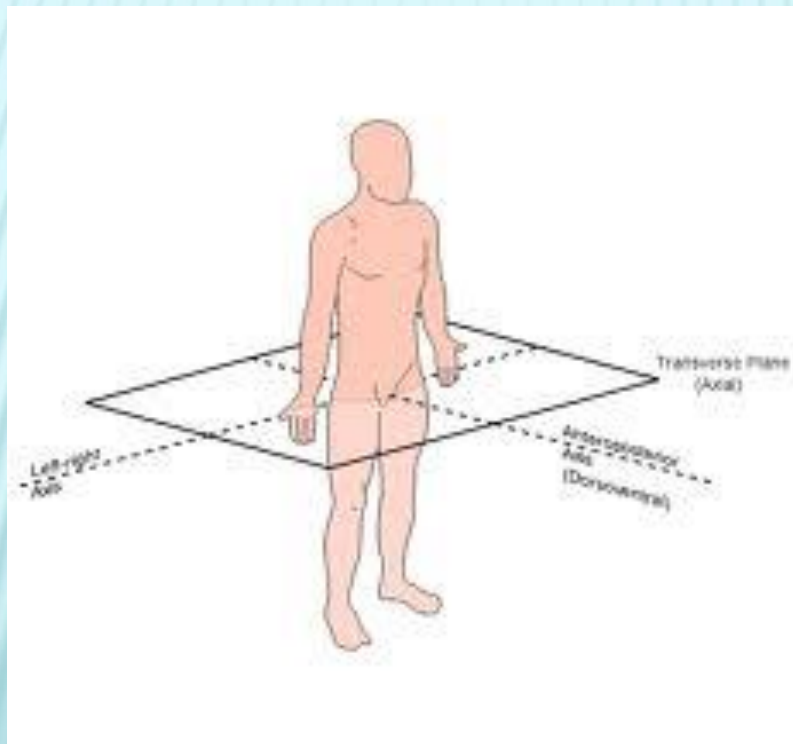
ANATOMICAL PLANES (CONT.)

- Coronal or Frontal Plane
 - i. Bisects the body into front and back planes



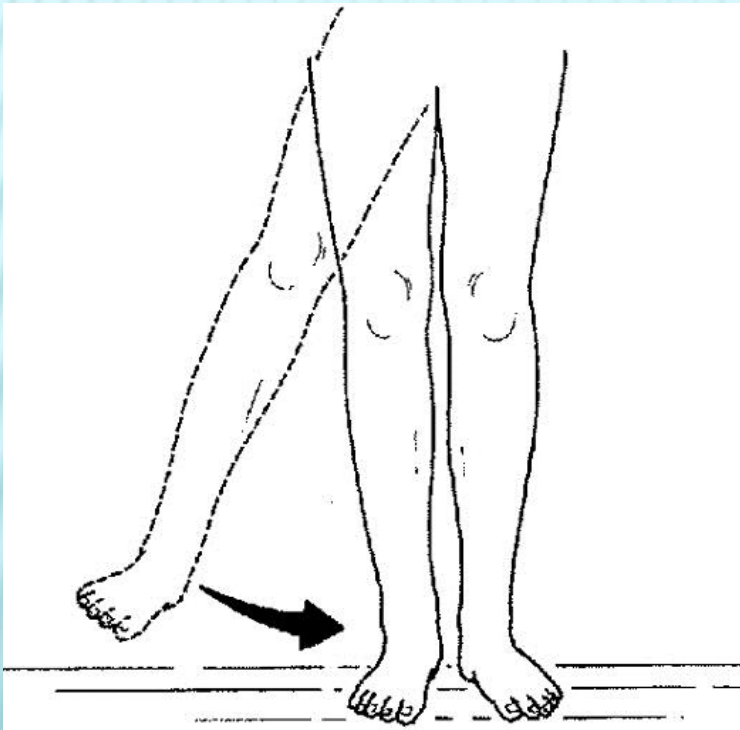
ANATOMICAL PLANES (CONT.)

- Horizontal or Transverse Plane
 - i. Bisects the body into upper and lower planes



RANGE OF MOTION

- Adduction
 - i. Moving leg toward the midline in frontal plane



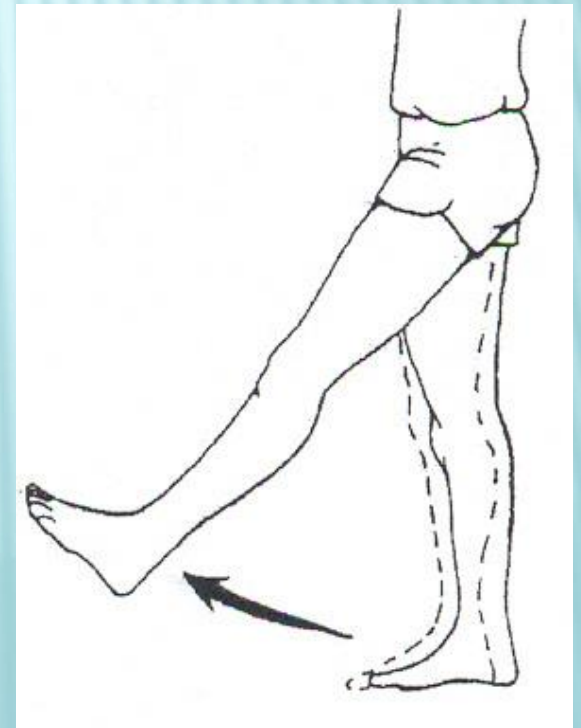
RANGE OF MOTION (CONT.)

- Abduction
 - i. Moving leg away from the midline of the body in a frontal



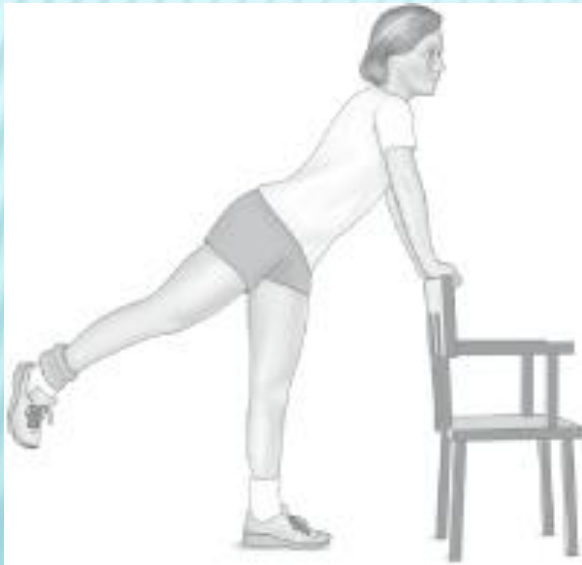
RANGE OF MOTION (CONT.)

- Flexion
 - i. Decreasing angle between anterior thigh and abdomen through the Sagittal plane



RANGE OF MOTION (CONT.)

- Extension
 - i. Increasing angle between anterior thigh and abdomen through the Sagittal plane



RANGE OF MOTION (CONT.)

- Internal Rotation
 - i. Rotation of femur toward the midline



RANGE OF MOTION (CONT.)

- External Rotation
 - i. Rotation of the femur away from the midline



RANGE OF MOTION (CONT.)

- Torso Flexion
 - i. Moving the torso forward through the sagittal plane



RANGE OF MOTION (CONT.)

- Torso Extension
 - i. Moving the torso forward through the sagittal plane



RANGE OF MOTION (CONT.)

- Torso Lateral Flexion
 - i. Moving the torso laterally (side to side) in the frontal planes



RANGE OF MOTION (CONT.)

- Torso Rotation
 - i. Rotating the torso in the transverse plane



LET'S MAKE FLASH CARDS!!

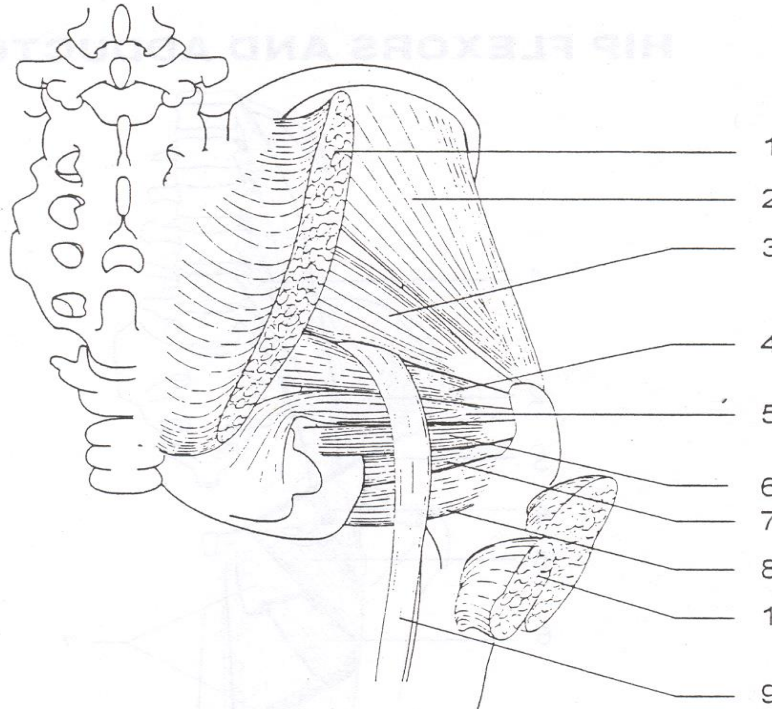
1 Function	2 Functions	3 Functions
<p>External Rotation (ER) Green</p>	<p>Abduction Internal Rotation (ABD/IR) Yellow</p>	<p>Abduction External Rotation Extension (ABD/ER/Ext) Brown</p>
<p>Flexion (Flex) Blue</p>	<p>Flexion Internal Rotation (Flex/IR) Red</p>	<p>Flexion Abduction External Rotation (FABER) Purple</p>
<p>Extension (Ext) Pink</p>	<p>Adduction Internal Rotation (ADD/IR) Black</p>	<p>Flexion Adduction Internal Rotation (FADIR) Orange</p>

COLOR CODED BASED ON MUSCLE ACTION

1 Function	2 Functions	3 Functions
Piriformis Gemellus Superior Obturator Internus Gemellus Inferior Obturator Externus Quadratus Femoris (GREEN)	Gluteus Medius Gluteus Minimus (YELLOW)	Gluteus Maximus (BROWN)
Rectus Femoris Iliacus Psoas Major/Minor (BLUE)	Pectineus Tensor Fasciae Latae (TFL) (RED)	Sartorius (PURPLE)
Biceps Femoris (Pink)	Adductor Longus Adductor Brevis Adductor Magnus (BLACK)	Gracilis (ORANGE)

MUSCLES AND FUNCTIONS

MUSCLES OF THE HIP



Hip—posterior view

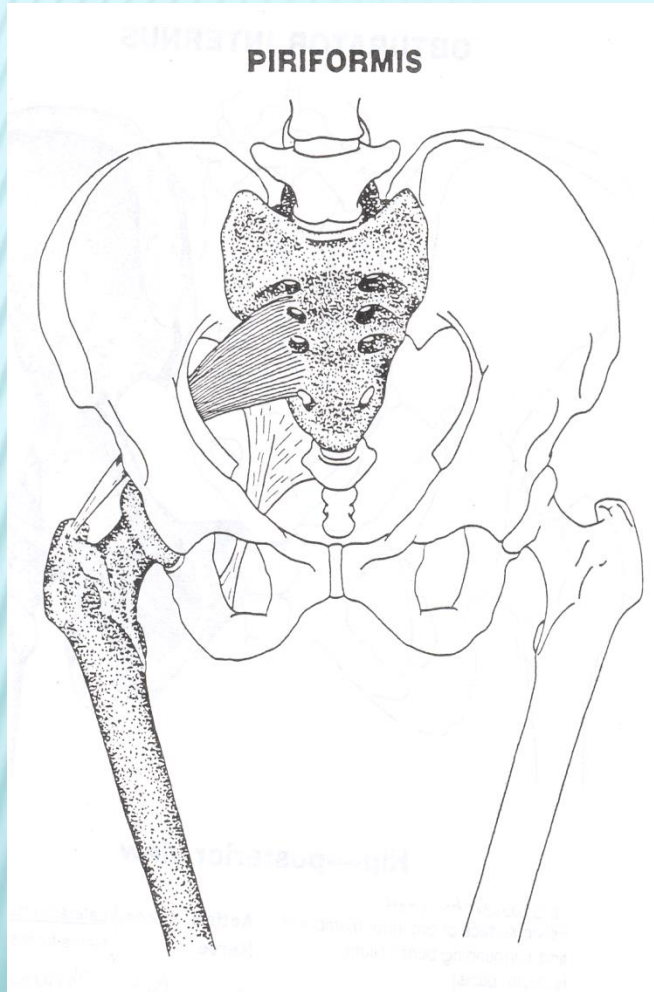
1. Gluteus maximus (cut)
2. Gluteus medius
3. Piriformis
4. Gemellus superior
5. Obturator internus
6. Gemellus inferior

7. Obturator externus
8. Quadratus femoris
9. Sciatic nerve

Note: Gemellus inferior and quadratus femoris have been shown separated to expose the deeply placed obturator externus.

Piriformis
Sciatic Nerve
Gemellus Superior
Obturator Internus
Gemellus Inferior
Obturator Externus
Quadratus Femoris

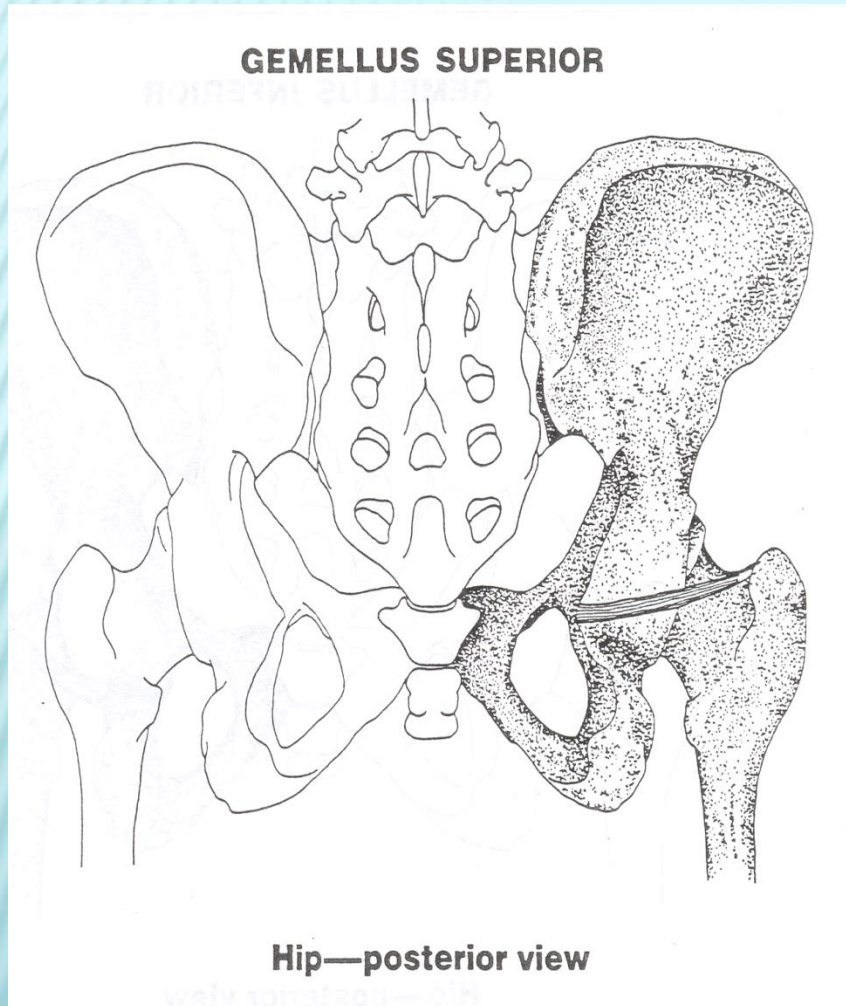
PIRIFORMIS= EXTERNAL ROTATION



- × Piriformis
- × Action: External Rotation

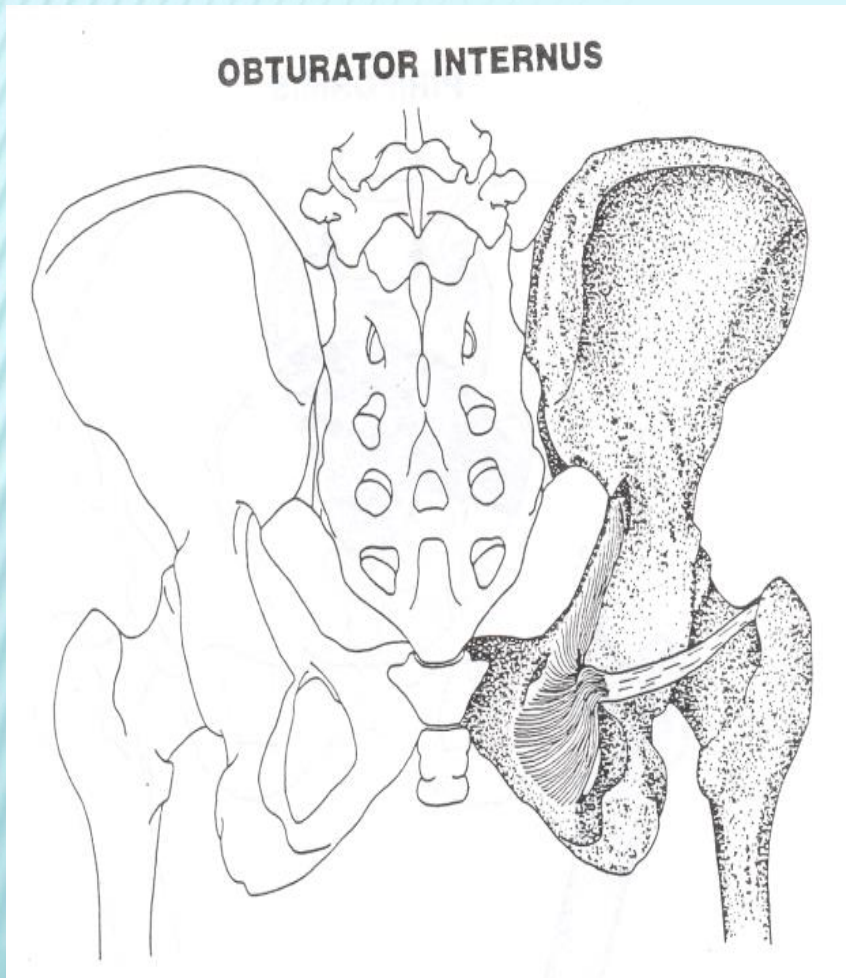
- × Piriformis
+ Sciatic Nerve
- × G
- × O
- × G
- × O
- × Q

GEMELLUS SUPERIOR=EXTERNAL ROTATION



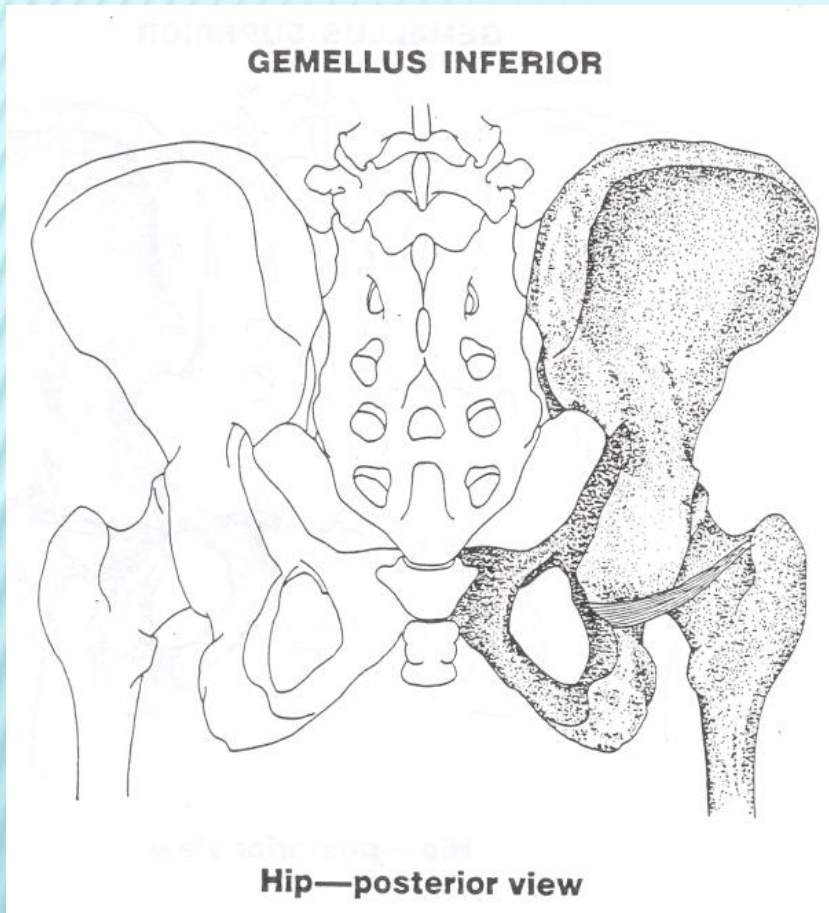
- × Gemellus Superior
- × Action: External Rotation
- × P
+ Sciatic Nerve
- × Gemellus Superior
- × O
- × G
- × O
- × Q

OBTURATOR INTERNUS=EXTERNAL ROTATION



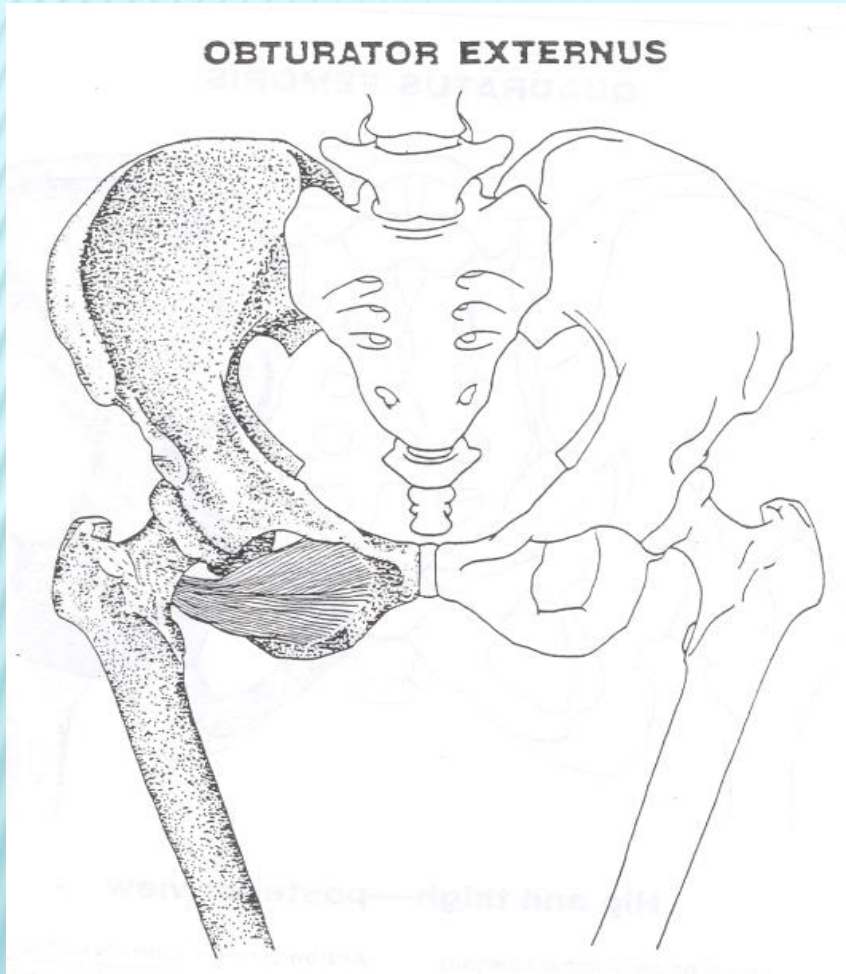
- × Obturator Internus
- × Action: External Rotation
- × P
+ Sciatic Nerve
- × G
- × Obturator Internus
- × G
- × O
- × Q

GEMELLUS INFERIOR=EXTERNAL ROTATION



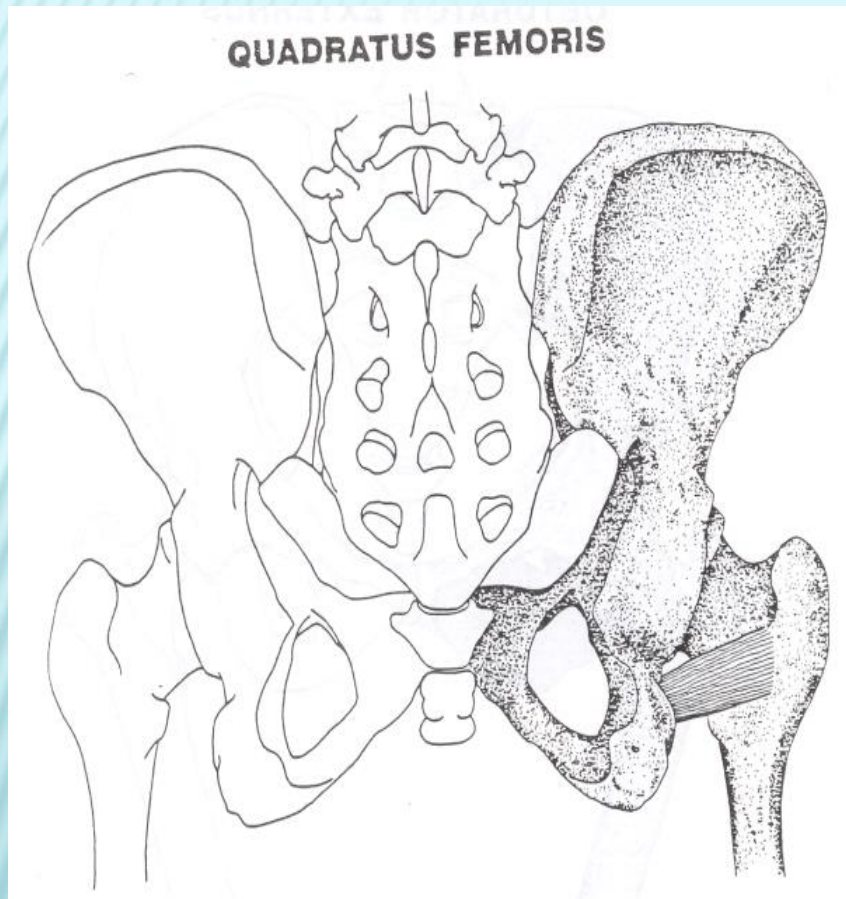
- × Gemellus Inferior
- × Action: External Rotation
- × P
+ Sciatic Nerve
- × G
- × O
- × Gemellus Inferior
- × O
- × Q

OBTURATOR EXTERNUS=EXTERNAL ROTATION



- × Obturator Externus
- × Action: External Rotation
- × P
+ Sciatic Nerve
- × G
- × O
- × G
- × Obturator Externus
- × Q

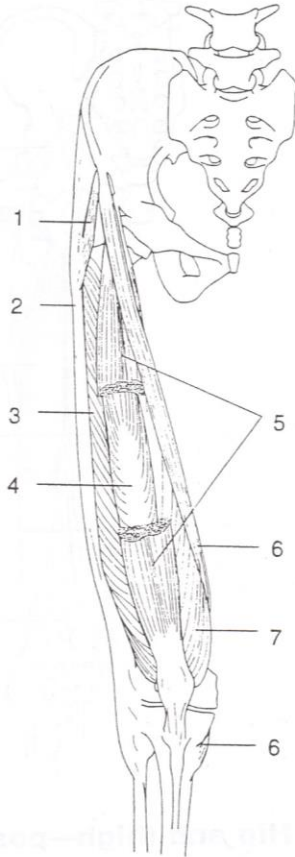
QUADRATUS FEMORIS=EXTERNAL ROTATION



- × Quadratus Femoris
- × Action: External Rotation
- × P
+ Sciatic Nerve
- × G
- × O
- × G
- × O
- × Quadratus Femoris

MUSCLES AND FUNCTIONS

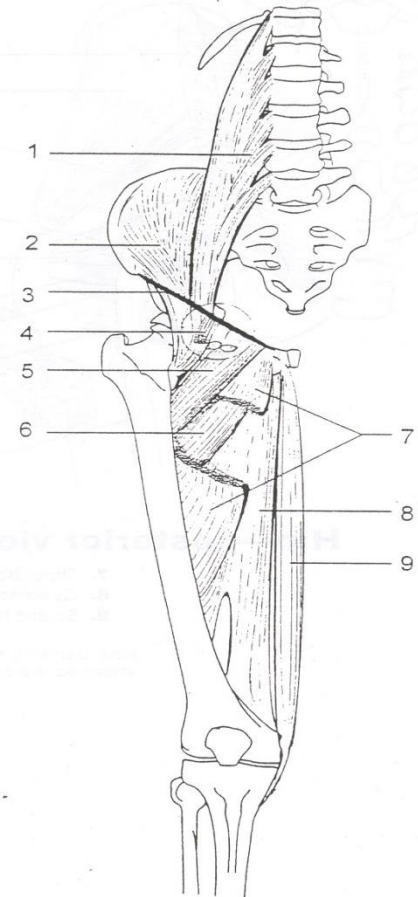
MUSCLES OF THE ANTERIOR THIGH



Hip and thigh—anterior view

- | | |
|--------------------------------------------|----------------------------------------------|
| 1. Tensor fasciae latae | 5. Rectus femoris (cut) (quadriceps femoris) |
| 2. Iliotibial tract | 6. Sartorius |
| 3. Vastus lateralis (quadriceps femoris) | 7. Vastus medialis (quadriceps femoris) |
| 4. Vastus intermedius (quadriceps femoris) | |

HIP FLEXORS AND ADDUCTORS

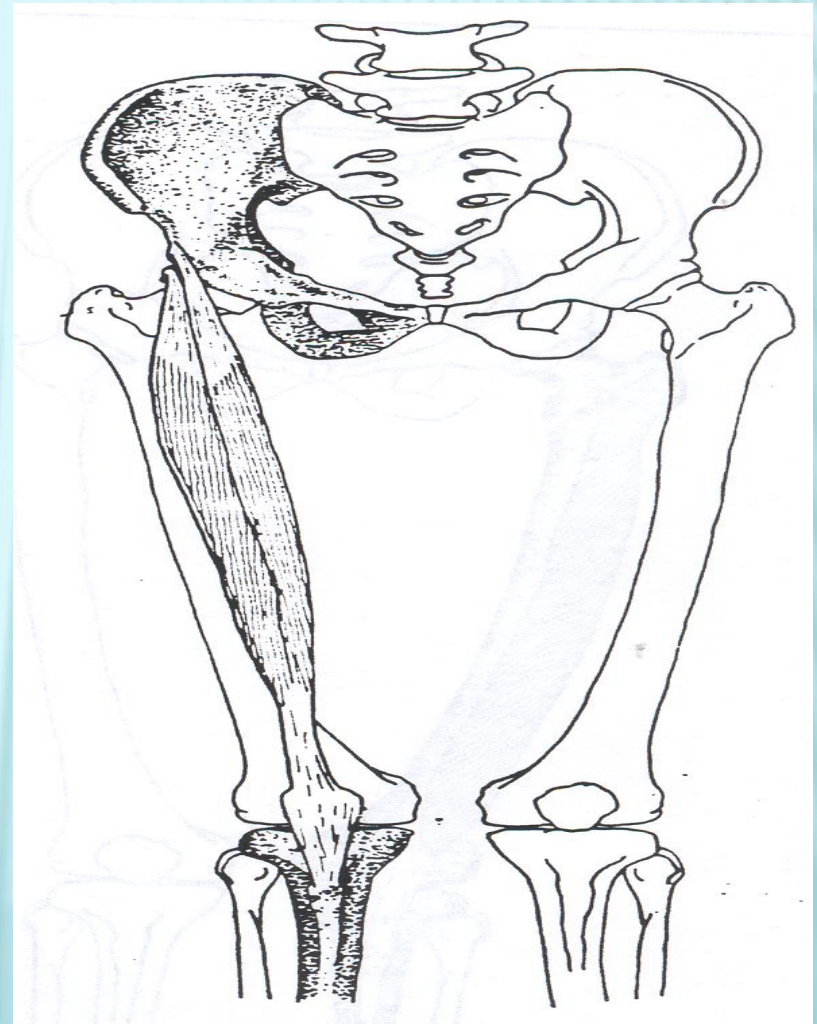


Hip and thigh—anterior view

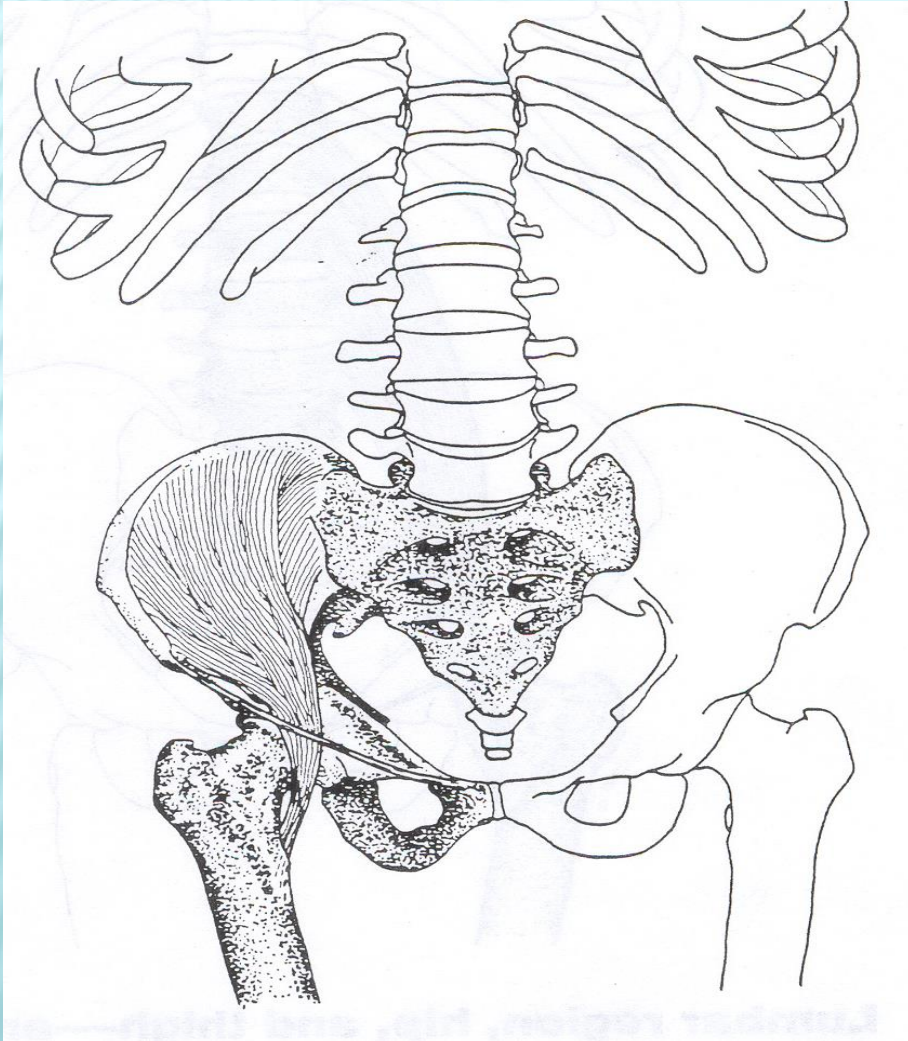
- | | |
|--------------------------------|--------------------------|
| 1. Psoas major | 6. Adductor brevis |
| 2. Iliacus | 7. Adductor longus (cut) |
| 3. Inguinal ligament | 8. Adductor magnus |
| 4. Femoral nerve, vein, artery | 9. Gracilis |
| 5. Pectineus | |

RECTUS FEMORIS= FLEXION

- ✘ Rectus Femoris
 - + Originates at AIIS
 - + Inserts at Tibial Tuberosity
- ✘ Action: Flexion of the Hip
- ✘ Action: Extension of the Knee

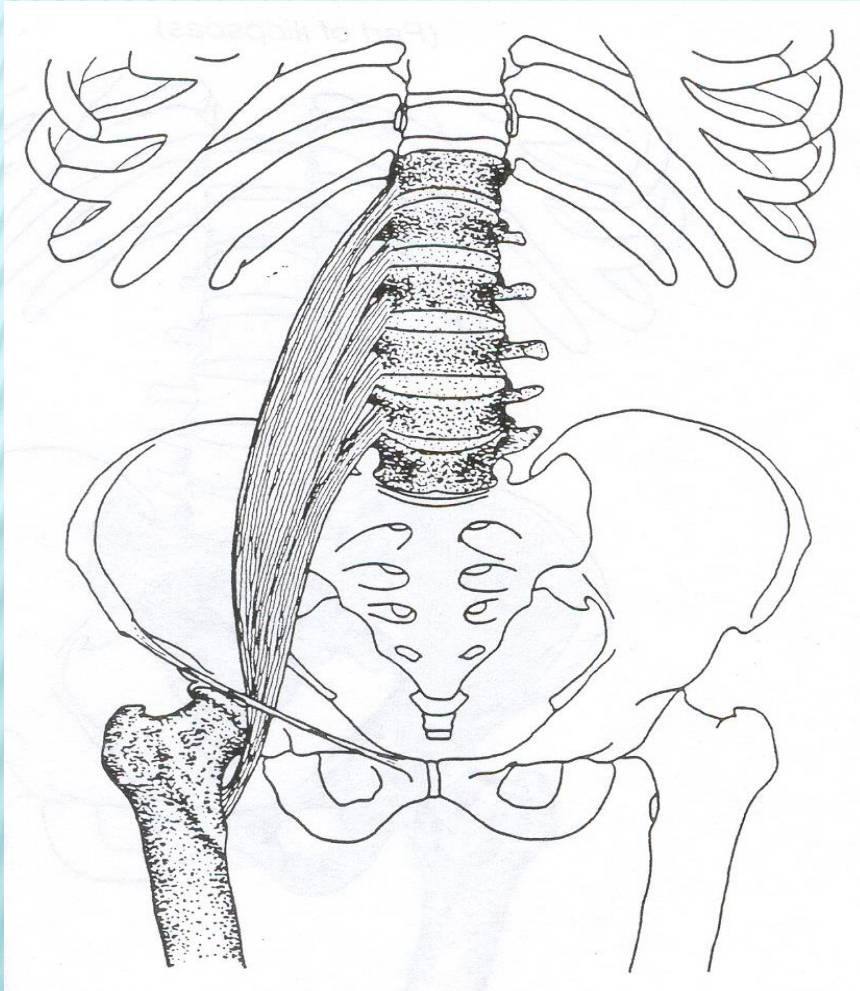


ILIACUS= FLEXION



- × Iliacus
- × Action: Flexion
- × Located on the Iliac Crest

PSOAS MAJOR/MINOR=FLEXION

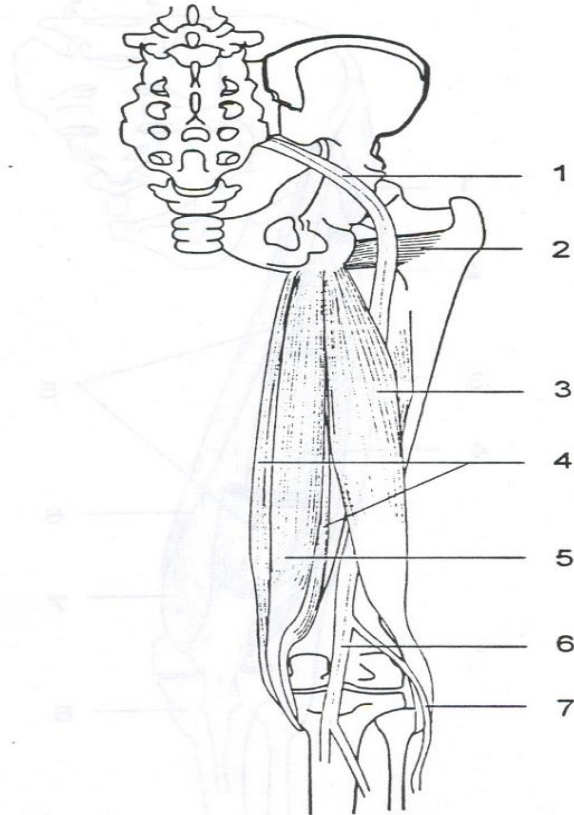


- × Psoas Major/Minor
- × Action: Flexion

- × Run from the Spine to the Hip

MUSCLES AND FUNCTIONS

HAMSTRING MUSCLES



Hip and thigh—posterior view

1. Sciatic nerve
2. Quadratus femoris
3. Biceps femoris
4. Semimembranosus
5. Semitendinosus

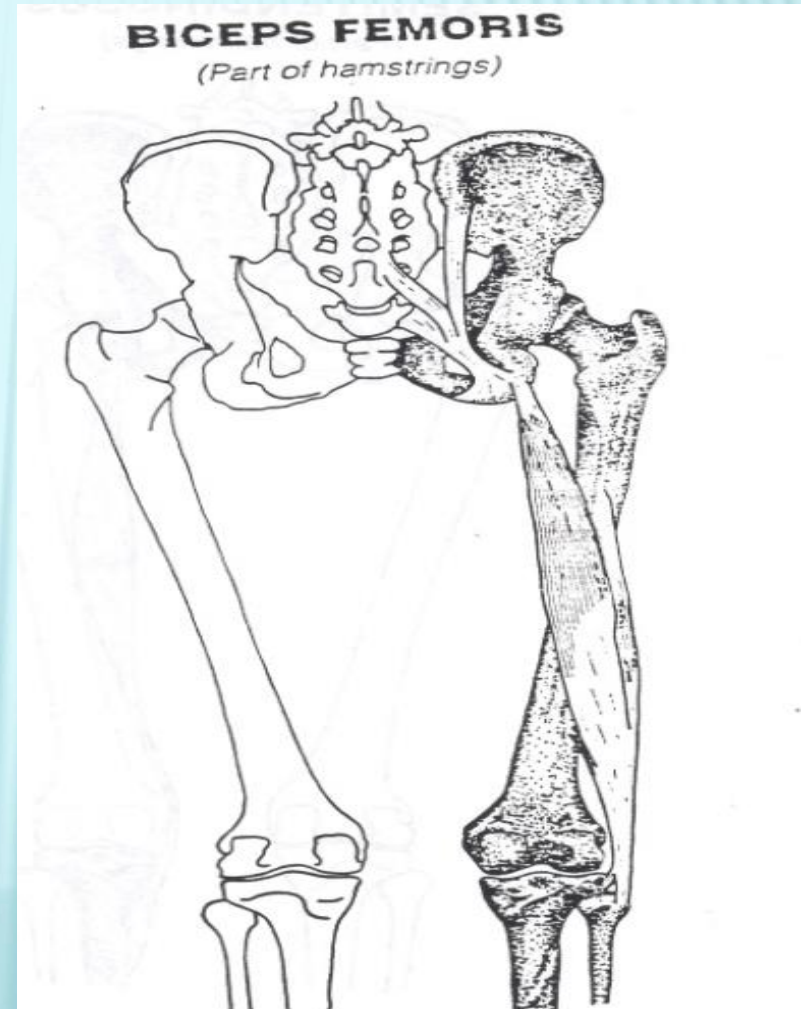
6. Tibial nerve
7. Common peroneal nerve

Note: The common peroneal nerve is exposed to compression and damage as it passes over the head of the fibula.

The quadratus femoris, a lateral rotator, is included for reference.

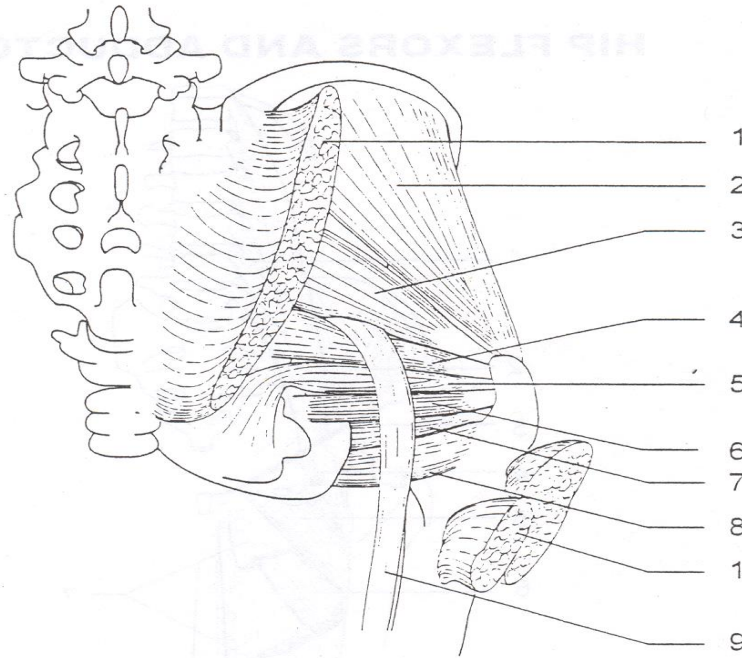
BICEPS FEMORIS=EXTENSION

- × Biceps Femoris
 - + Originates at the Ischial Tuberosity
 - + Inserts on the Fibula
- × Action: Extension of the Hip
- × Action: Flexion of the Knee



MUSCLES AND FUNCTIONS

MUSCLES OF THE HIP



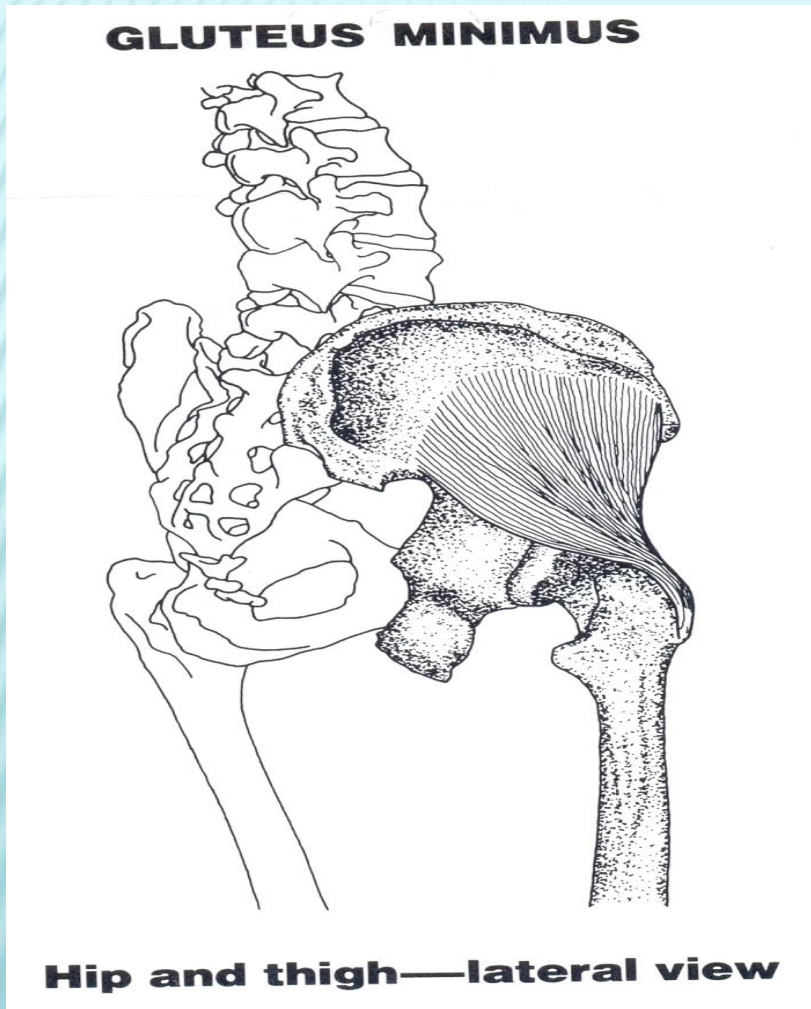
Hip—posterior view

1. Gluteus maximus (cut)
2. Gluteus medius
3. Piriformis
4. Gemellus superior
5. Obturator internus
6. Gemellus inferior

7. Obturator externus
8. Quadratus femoris
9. Sciatic nerve

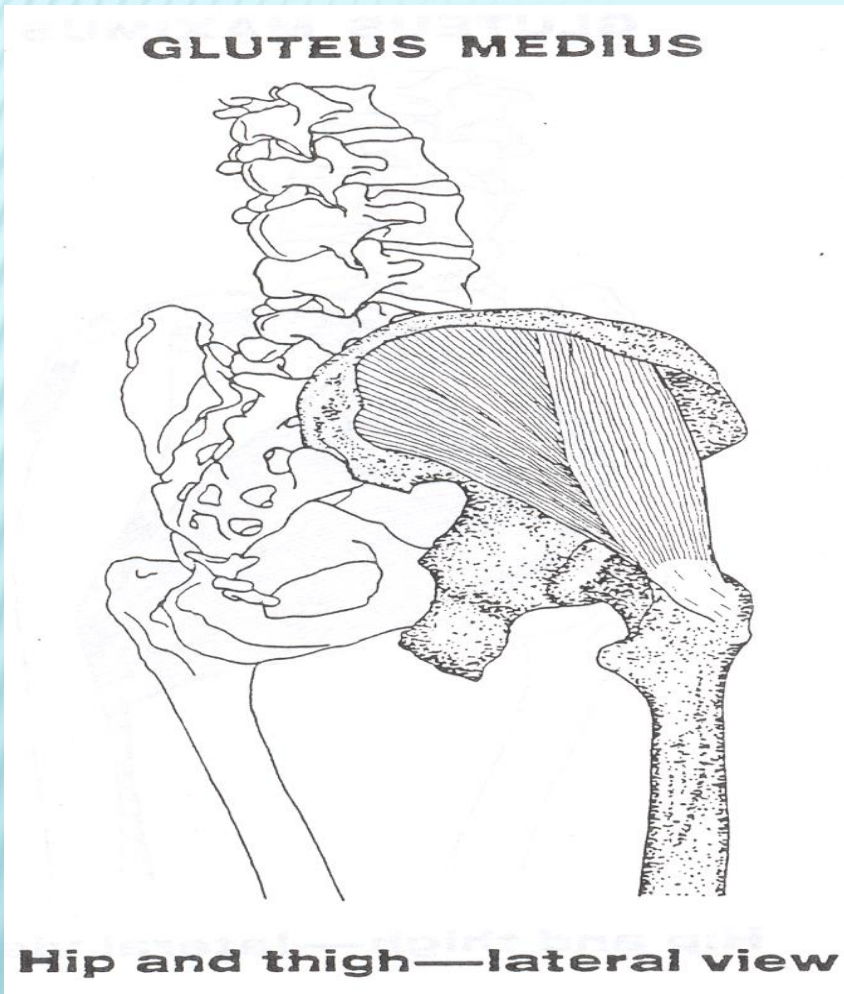
Note: Gemellus inferior and quadratus femoris have been shown separated to expose the deeply placed obturator externus.

GLUTEUS MINIMUS= ABDUCTION AND INTERNAL ROTATION



- × Gluteus Minimus
- × Action: Abduction and Internal Rotation
- × Part of the Buttocks
- × Deepest of the 3 Gluteal Muscles.

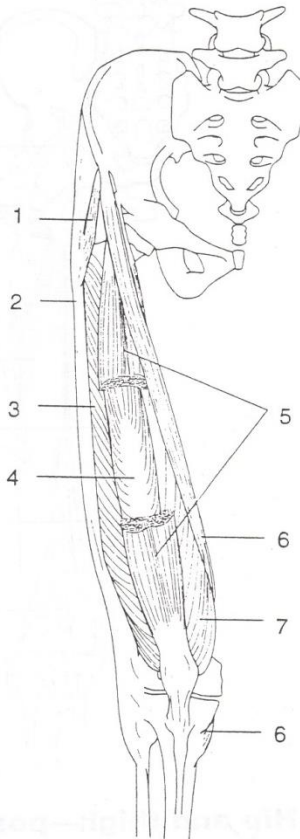
GLUTEUS MEDIUS= ABDUCTION AND INTERNAL ROTATION



- × Gluteus Medius
- × Action: Abduction and Internal Rotation
- × Part of the Buttocks.
- × Sits between the Gluteus Minimus and Gluteus Maximus.

MUSCLES AND FUNCTIONS

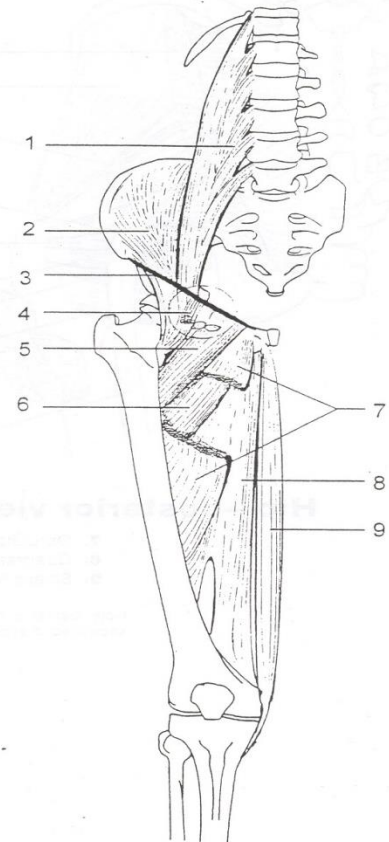
MUSCLES OF THE ANTERIOR THIGH



Hip and thigh—anterior view

- | | |
|--------------------------------------------|----------------------------------------------|
| 1. Tensor fasciae latae | 5. Rectus femoris (cut) (quadriceps femoris) |
| 2. Iliotibial tract | 6. Sartorius |
| 3. Vastus lateralis (quadriceps femoris) | 7. Vastus medialis (quadriceps femoris) |
| 4. Vastus intermedius (quadriceps femoris) | |

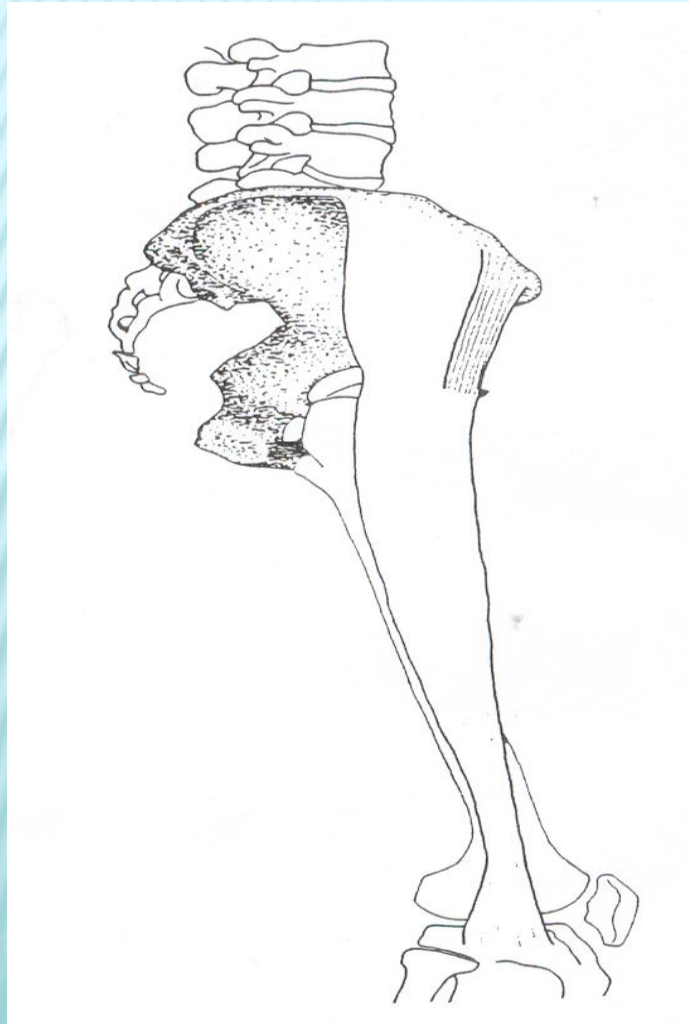
HIP FLEXORS AND ADDUCTORS



Hip and thigh—anterior view

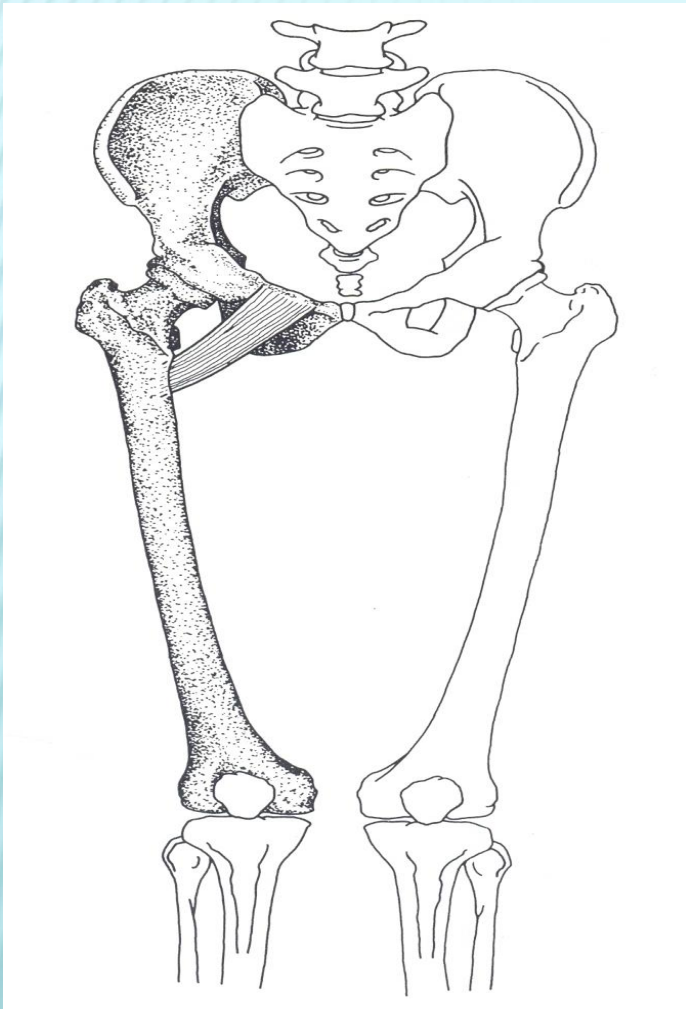
- | | |
|--------------------------------|--------------------------|
| 1. Psoas major | 6. Adductor brevis |
| 2. Iliacus | 7. Adductor longus (cut) |
| 3. Inguinal ligament | 8. Adductor magnus |
| 4. Femoral nerve, vein, artery | 9. Gracilis |
| 5. Pectineus | |

TENSOR FASCIAE LATAE= FLEXION AND INTERNAL ROTATION



- × Tensor Fasciae Latae (TFL)
- × Action: Flexion and Internal Rotation
- × Sits in the Iliotibial Band (ITB) at the iliac crest.

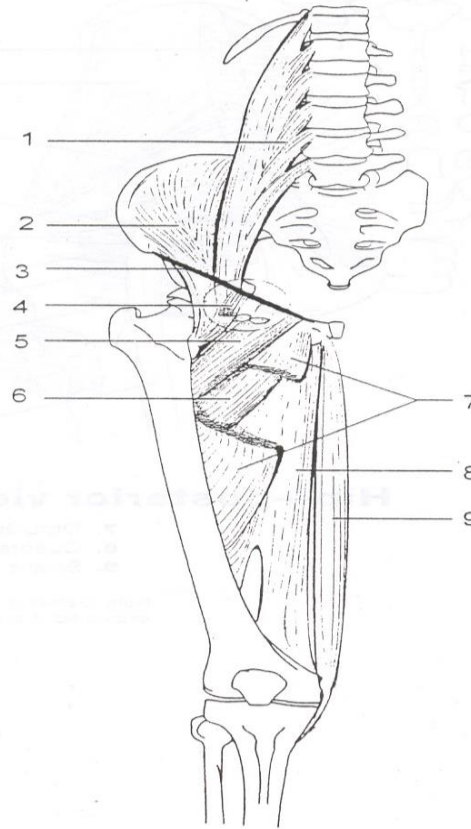
PECTINEUS=FLEXION AND INTERNAL ROTATION



- × Pectineus
- × Action: Flexion and Internal Rotation

MUSCLES AND FUNCTIONS

HIP FLEXORS AND ADDUCTORS

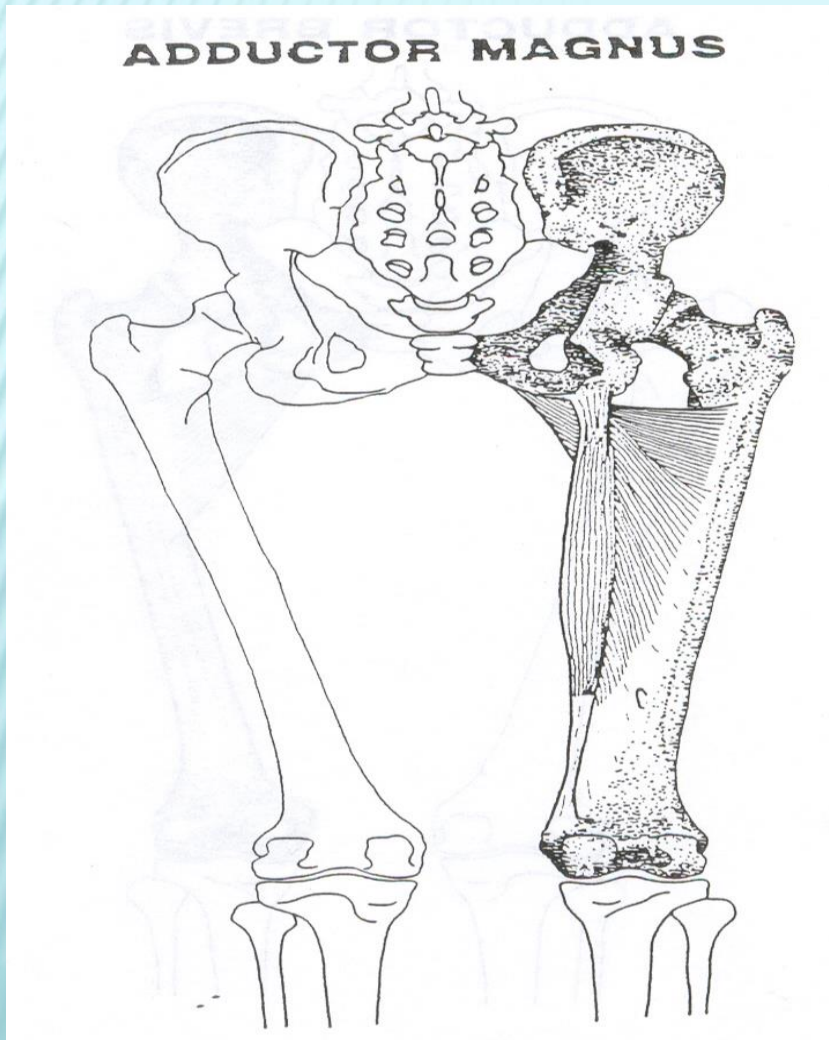


Hip and thigh—anterior view

1. Psoas major
2. Iliacus
3. Inguinal ligament
4. Femoral nerve, vein, artery
5. Pectineus

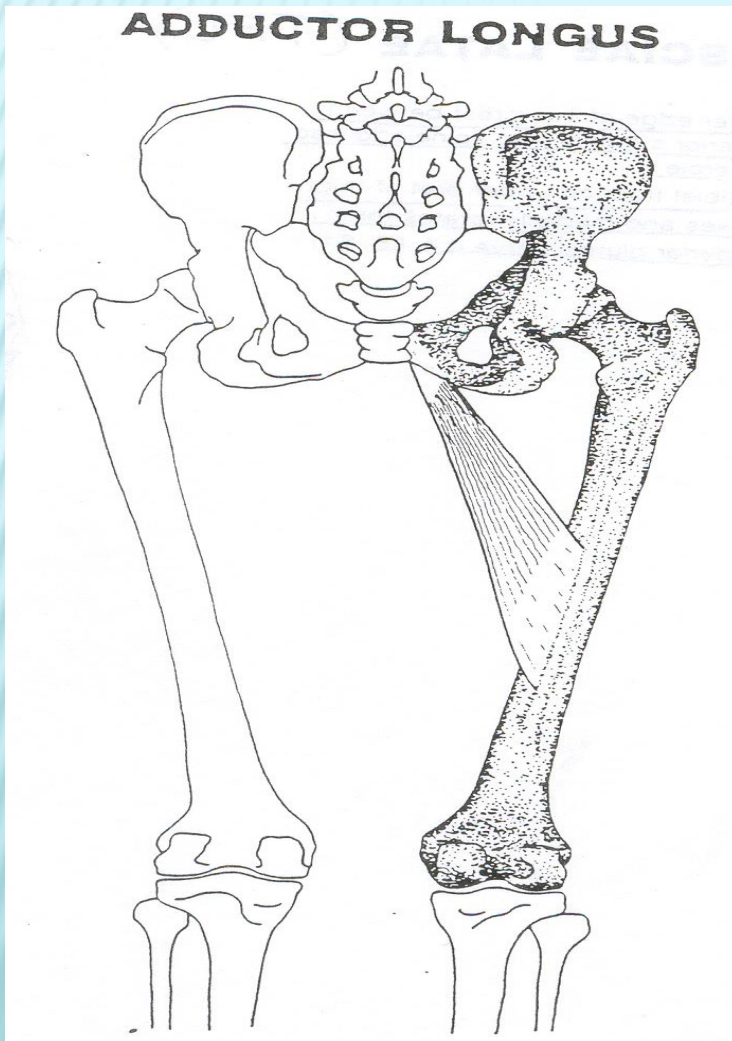
6. Adductor brevis
7. Adductor longus (cut)
8. Adductor magnus
9. Gracilis

ADDUCTOR MAGNUS= ADDUCTION AND INTERNAL ROTATION



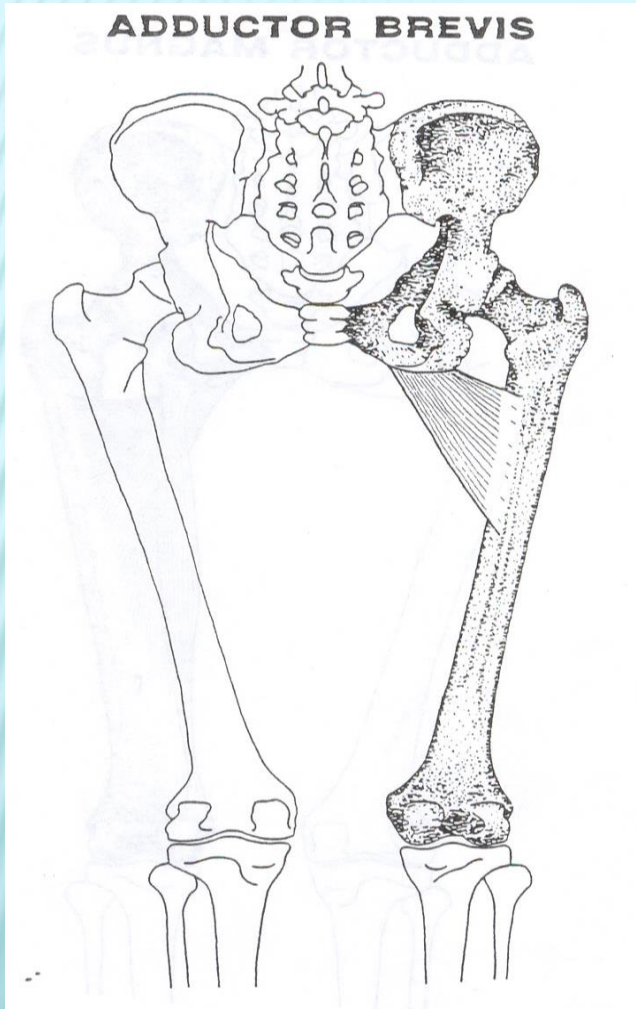
- × Adductor Magnus
- × Action: Adduction and Internal Rotation
- × Largest of the 3 Adductor Muscles.

ADDUCTOR LONGUS= ADDUCTION AND INTERNAL ROTATION



- × Adductor Longus
- × Action: Adduction and Internal Rotation
- × Longest of the 3 Adductor Muscles.

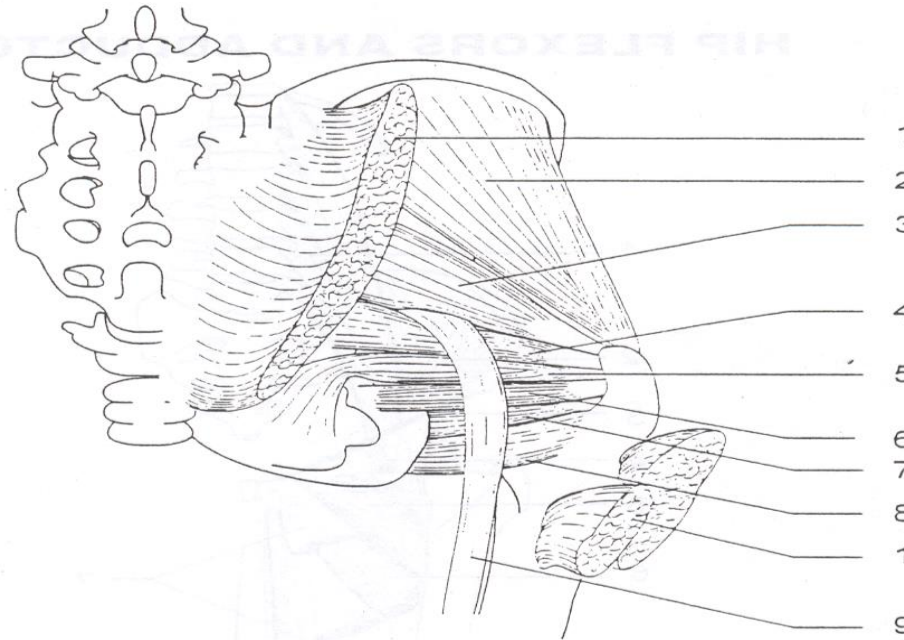
ADDUCTOR BREVIS= ADDUCTION AND INTERNAL ROTATION



- × Adductor Brevis
- × Action: Adduction and Internal Rotation
- × Shortest of the 3 Adductor Muscles.

MUSCLES AND FUNCTIONS

MUSCLES OF THE HIP



Hip—posterior view

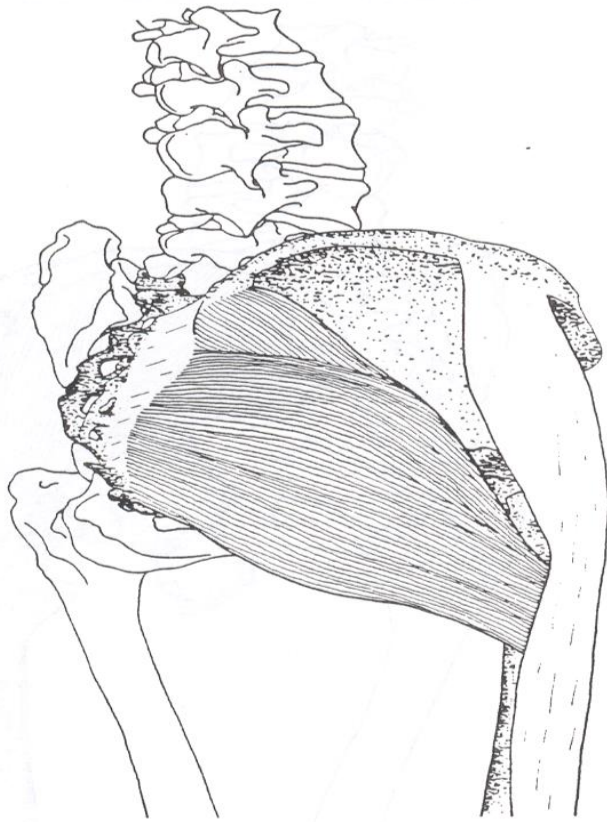
1. Gluteus maximus (cut)
2. Gluteus medius
3. Piriformis
4. Gemellus superior
5. Obturator internus
6. Gemellus inferior

7. Obturator externus
8. Quadratus femoris
9. Sciatic nerve

Note: Gemellus inferior and quadratus femoris have been shown separated to expose the deeply placed obturator externus.

GLUTEUS MAXIMUS= ABDUCTION, EXTENSION, AND EXTERNAL ROTATION

GLUTEUS MAXIMUS

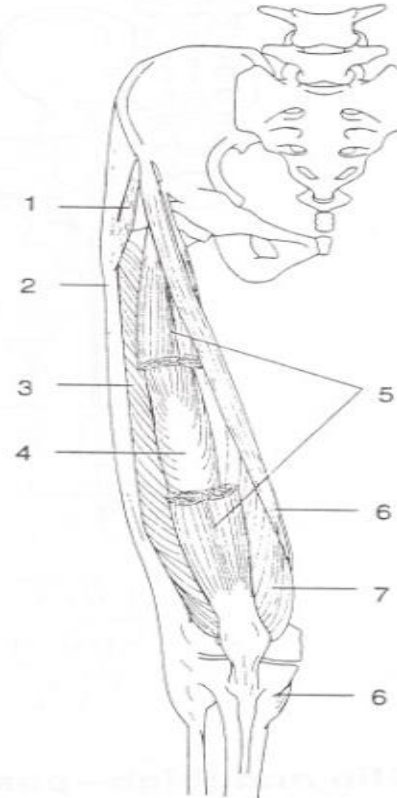


Hip and thigh—lateral view

- × Gluteus Maximus
- × Action: Abduction, Extension, and External Rotation
- × Part of the Buttocks.
- × Largest and most Superficial of the Gluteal Muscles.

MUSCLES AND FUNCTIONS

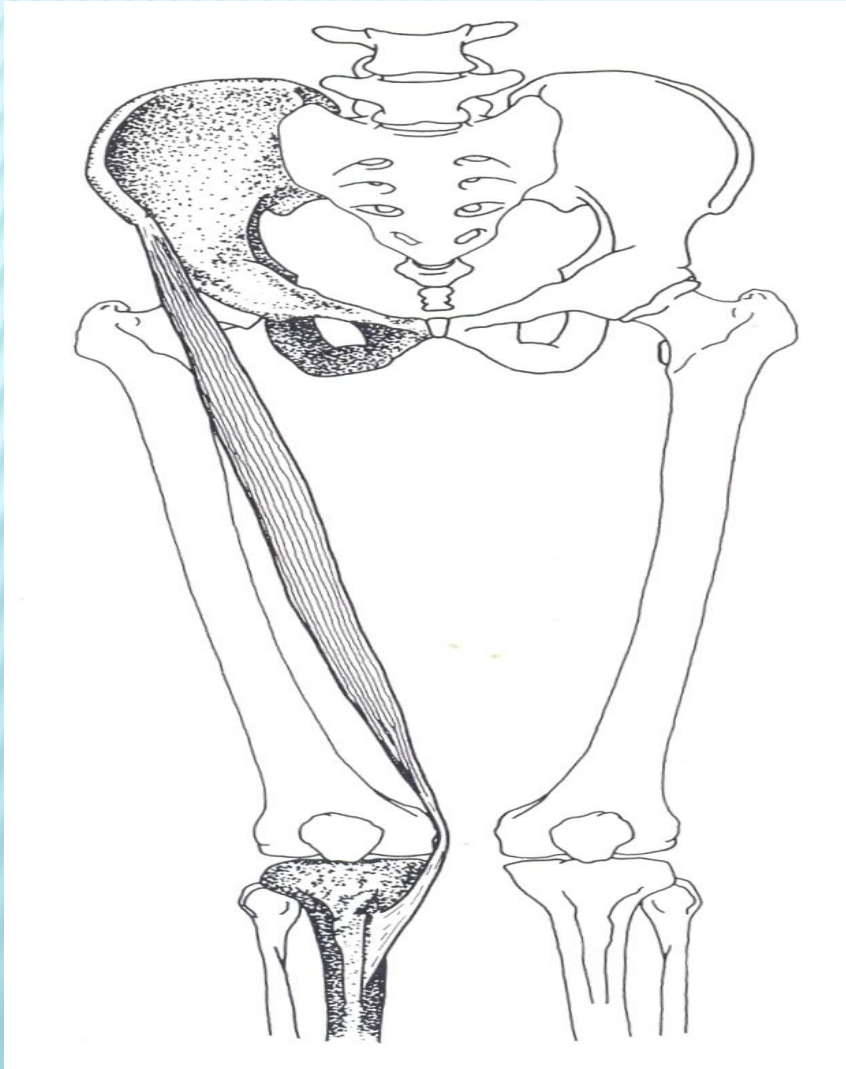
MUSCLES OF THE ANTERIOR THIGH



Hip and thigh—anterior view

1. Tensor fasciae latae
2. Iliotibial tract
3. Vastus lateralis (quadriceps femoris)
4. Vastus intermedius (quadriceps femoris)
5. Rectus femoris (cut) (quadriceps femoris)
6. Sartorius
7. Vastus medialis (quadriceps femoris)

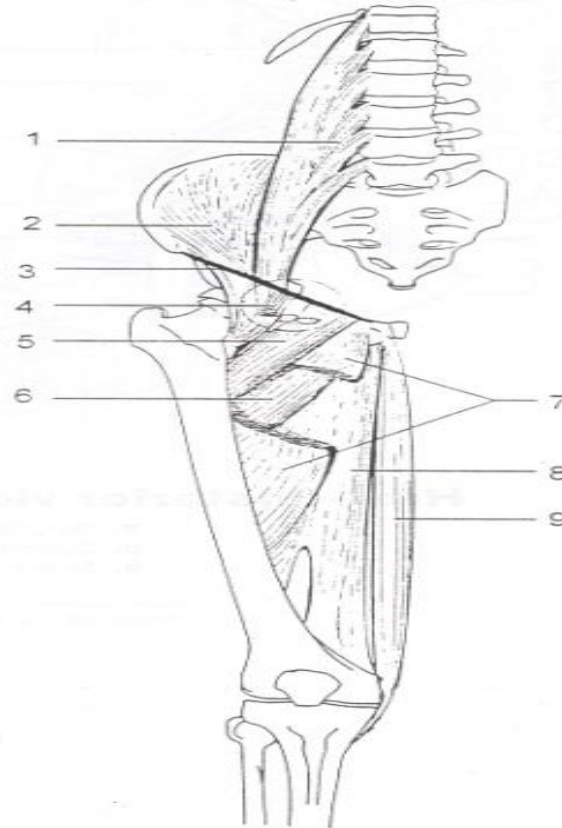
SARTORIUS= FABER



- × Sartorius
 - + Originates at the ASIS
 - + Inserts at the pes anserine on the tibia
- × Action: FABER
- × Flexion
- × ABduction
- × External
- × Rotation

MUSCLES AND FUNCTIONS

HIP FLEXORS AND ADDUCTORS

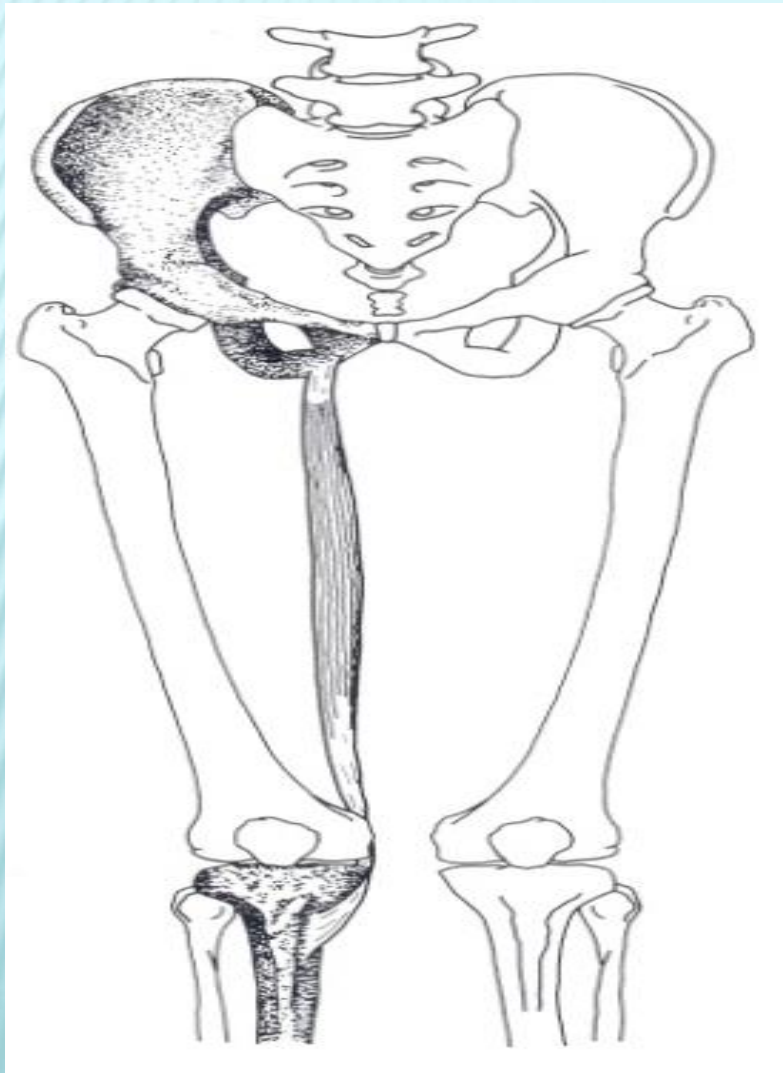


Hip and thigh—anterior view

1. Psoas major
2. Iliacus
3. Inguinal ligament
4. Femoral nerve, vein, artery
5. Pectineus

6. Adductor brevis
7. Adductor longus (cut)
8. Adductor magnus
9. Gracilis

GRACILIS=FADIR



- × Gracilis
 - + Originates on the Pubis
 - + Inserts at the pes anserine on the tibia
- × Action: FADIR
- × Flexion
- × ADduction
- × Internal
- × Rotation