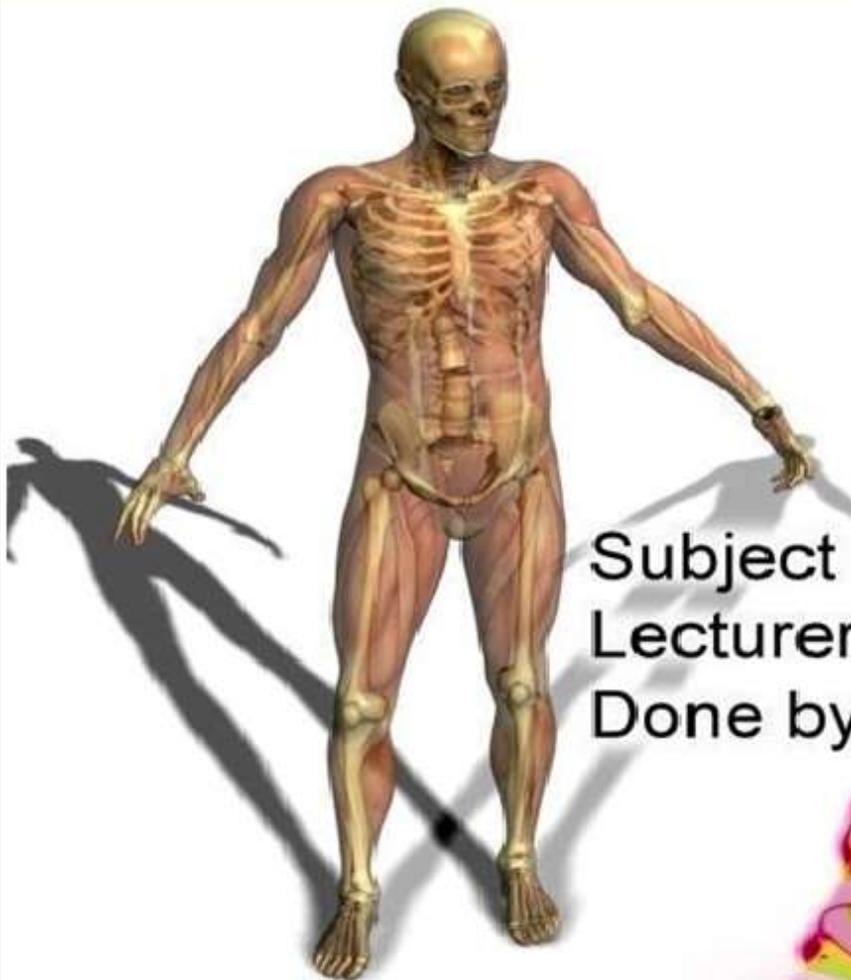




# ANATOMY



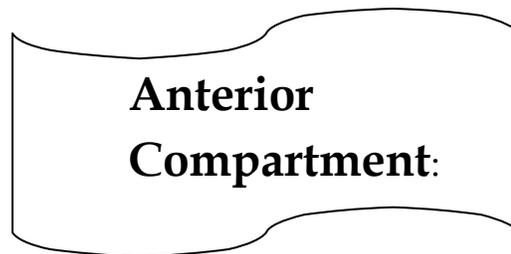
**Subject** : *Introduction to Anatomy*  
**Lecturer** : *Dr.Mahir Al-Hadidi*  
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# lower limb

## lecture 3

The deep fascia ( fascia lata) divides the thigh into 3 compartments:

1. Anterior Extensor compartment
2. Medial Adductor compartment
3. Posterior Flexor compartment



### 1. Sartorius:

*Origin:* Anterior Superior Iliac Spine

*Insertion:* upper Medial surface of tibia (SGS area)

### 2. Quadriceps femoris:

- Vastus medialis
  - Vastus lateralis
  - Vastus intermedius
  - Rectus femoris
- } \* Innervated by Femoral nerve  
\* Main extensors of the knee joint  
\* Inserted into: Tibial tuberosity

**\* Muscles that pass the anterior compartment:**

1) Pectineus :

*Origin:* Superior pubic ramus

*Insertion:* Linea aspra

*Action:* assist the flexion of the hip joint

*Nerve supply:* Femoral nerve ( according to Snell, but other references says that occasionally obturator nerve and usually femoral and sometimes both of them but we'll follow snell here )

2) Psoas :

Located on both sides of lumbar vertebrae

*Origin:* All lumbar vertebrae and their intervertebral discs

*Insertion:* Lesser trochanter of femur

*Nerve supply:* Lumber plexus

*Action ( with iliacus) :* Prime flexor of the hip joint

\*It passes below inguinal ligament.

3) Iliacus:

*Origin:* Iliac fossa

*Insertion:* Lesser trochanter of femur

*Nerve supply:* Femoral nerve

*Action:* Prime flexor of the hip joint

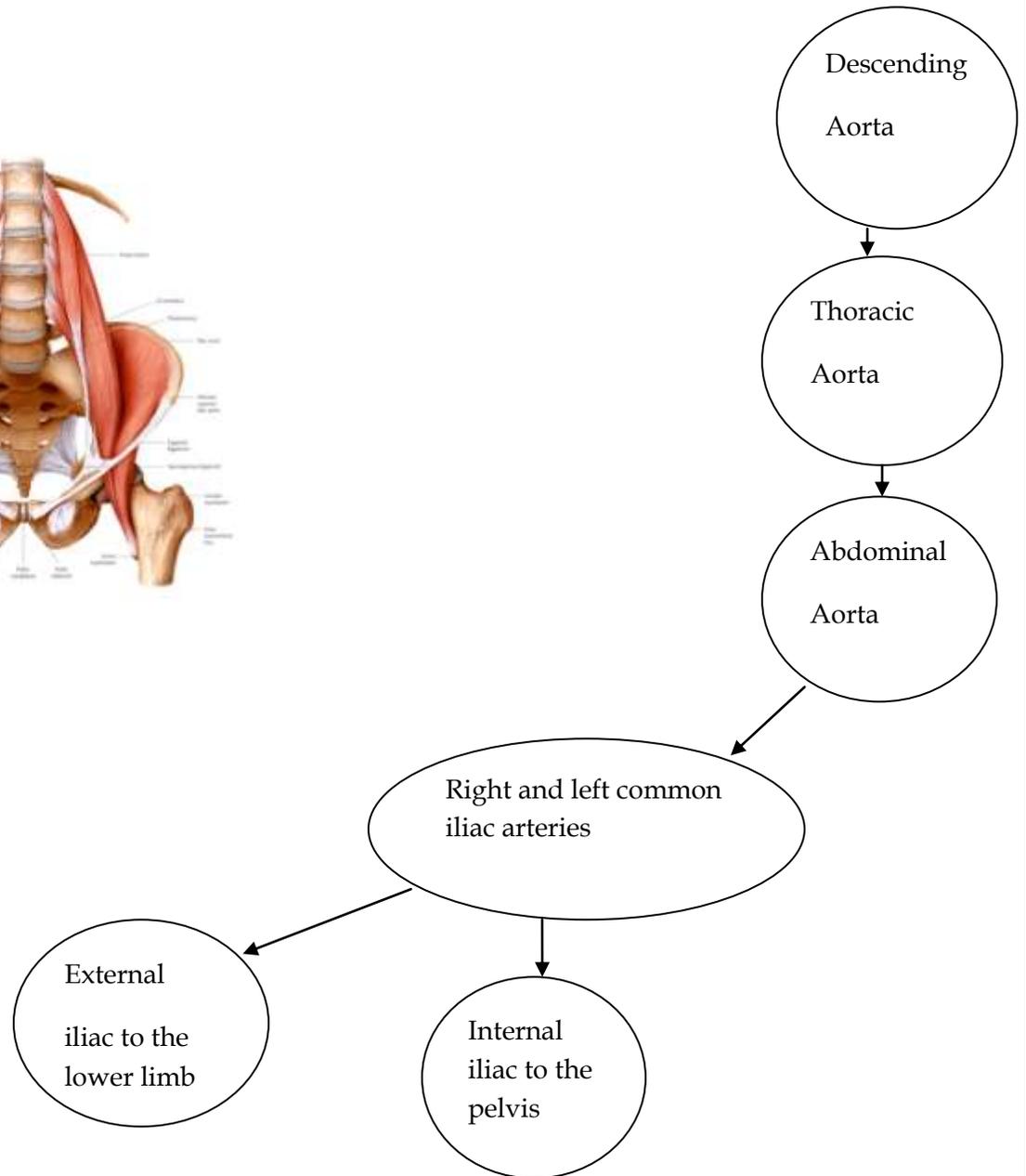
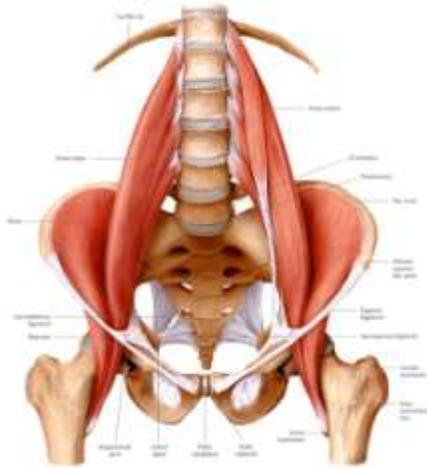
\*Fan-shaped muscle.

\*Its tendon unites with the tendon of Psoas to form **Iliopsoas tendon which will finally insert into the lesser trochanter of the femur .**

\*Passes below inguinal ligament.

\*Both Psoas and Iliacus are:

Passing below Inuinal ligament
Inserted Into lesser trochanter of femur
Main Flexors of the hip joint



\*External iliac artery passes below Inguinal ligament to give Femoral artery.

- Femoral artery:

- \* *Begins*: Below midinguinal point.

- \* Direct continuation of external iliac artery.

- \* Continue as Popliteal artery which passes via **Adductor opening**.

- \*It is superficial at femoral triangle(where we can feel the pulsation of femoral artery)

- \*It is deep below.

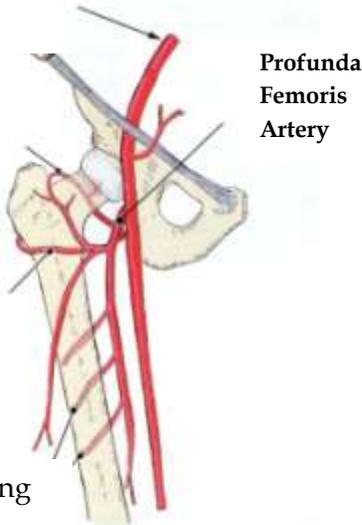
\*Femoral artery passes through **Subsartorial canal** or **Adductor canal** which ends at the **Adductor opening**.

\***Branches of femoral artery:**

**Profunda Femoris artery**

It is the deep branch of Femoral artery , that starts from posterolateral aspect of the femoral artery, descends down to give 4 Perforating arteries , that supply the medial compartment and posterior compartment of the thigh .

External Iliac artery



Perforating Arteries

\* **Lumbar Plexus:**

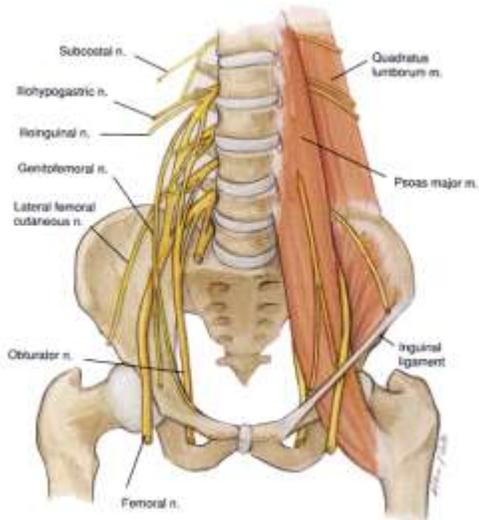
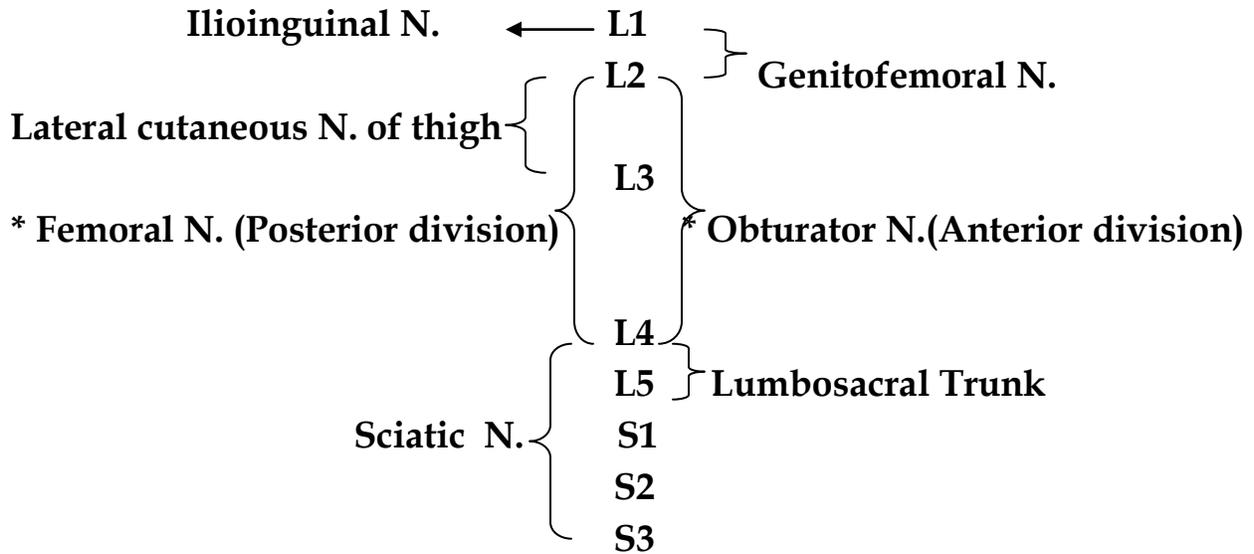
\* Remember: Spinal cord gives 31 pairs of spinal nerves.

\* Lumbar area gives 5 pairs of lumbar spinal nerves.

\* Originates from: ventral rami of L1-L5 spinal nerves.

\* Forms within Psoas muscle and supplies it .

**\*Branches:**



A pregnant woman may lose the sensation of the lateral cutaneous nerve of the thigh due to the pressure on it.

**\*\*Femoral Nerve:**

Originated from the **posterior** divisions of L2-L3-L4, forms within Psoas muscle, passes **lateral** to Psoas, below inguinal ligament, reaches femoral triangle and there gives the following branches:

- Muscular branches ( supplies the whole muscles of the anterior compartment of the thigh )
- Articular branches:

supply hip joint and knee joint ( because it cross them)

- Cutaneous branches:

\* Anteromedial side of the thigh

\* Gives the longest nerve in the body : Saphenous nerve

Accompanies the Great Saphenous Vein , located anteromedial to the medial malleolus.

(When we want to remove the great saphenous vein or to insert a cannula we should avoid saphenous nerve, or the patient will lose sensation in the medial side of his foot)

### **\*\*Obturator Nerve:**

Originated from the anterior division of L2-L3-L4, passes medial to Psoas , leaves the pelvis via obturator foramen to reach the adductor group , and there divides into anterior and posterior divisions.

- Muscular branches: to the adduction compartment except 1\2 Muscle
- Articular branches: to the hip joint and knee joint.
- Cutaneous branches: Upper medial side of the thigh.

Note : If there was a fracture in the Pelvis the obturator nerve will be involved branches .

Also the pregnant lady complains from a numbness in the obturator nerve's ( The baby compresses on these branches )

## Medial Compartment ( Adductor Compartment )

	Origin	Insertion	Nerve supply	Action
1.Gracilis	Inferior Pubic ramus, Iscial ramus	SGS area of Tibia	Obturator n.	Adduction the hip. Flexion the knee.
2.Adductor Longus	Pubic body	Linea aspra	Obturator n.	Adduction the hip.
3.Adductor Brevis	Inferior pubic ramus	Linea aspra	Obturator n.	Adduction the hip.

### 4. Adductor Magnus:

Has 4 openings for perforating branches of Profunda Femoris artery.

#### \*The adductor part:

*Origin:*Inferior pubic ramus, iscial ramus (Like Grasilis)

*Insertion:* All Linea aspra But not the supracondylar line

*Nerve supply:* Obturator nerve

*Action :* Adduct hip joint

*Compartment:* Medial

#### \*The Hamstring part:

*Origin:*iscial tuberosity

*Insertion:*Adductor tubercle of femur

*Nerve supply:* Sciatic nerve

*Action:* Extend the hip joint

*Compartment:* Posterior

The law of the posterior compartment ( Hamstring compartment ) :  
All originated from the ischial tuberosity  
All supplied by the sciatic nerve  
All flex the knee joint ( and if they crossed the hip joint they will extend it )

Obturator externus :

O: the external margin of the obturator foramen

I : greater trochanter of the femur

NS: Obturator nerve

Ac: lateral Rotation of the hip joint

Note : the lateral rotators of the hip joint are stronger than the medial rotators

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