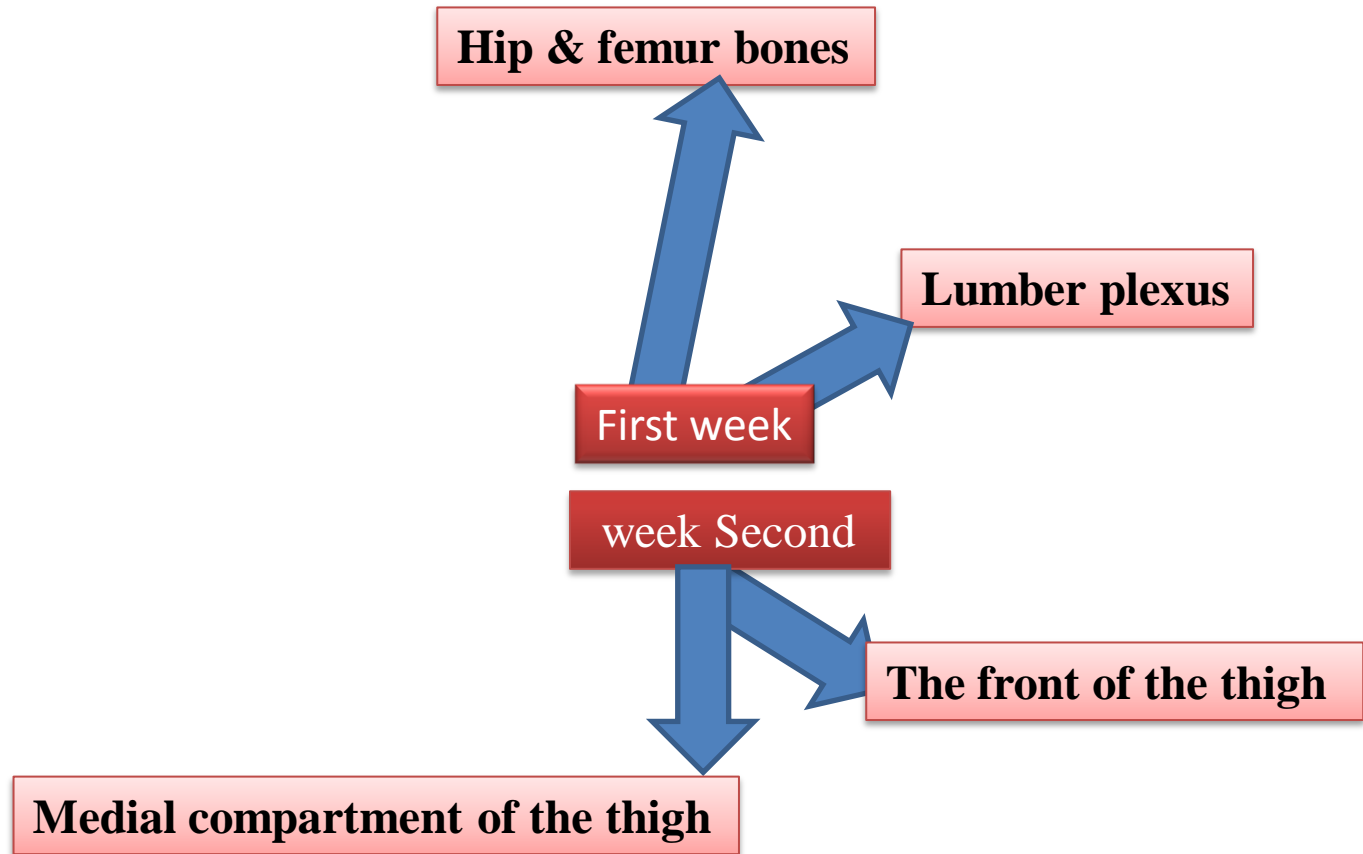


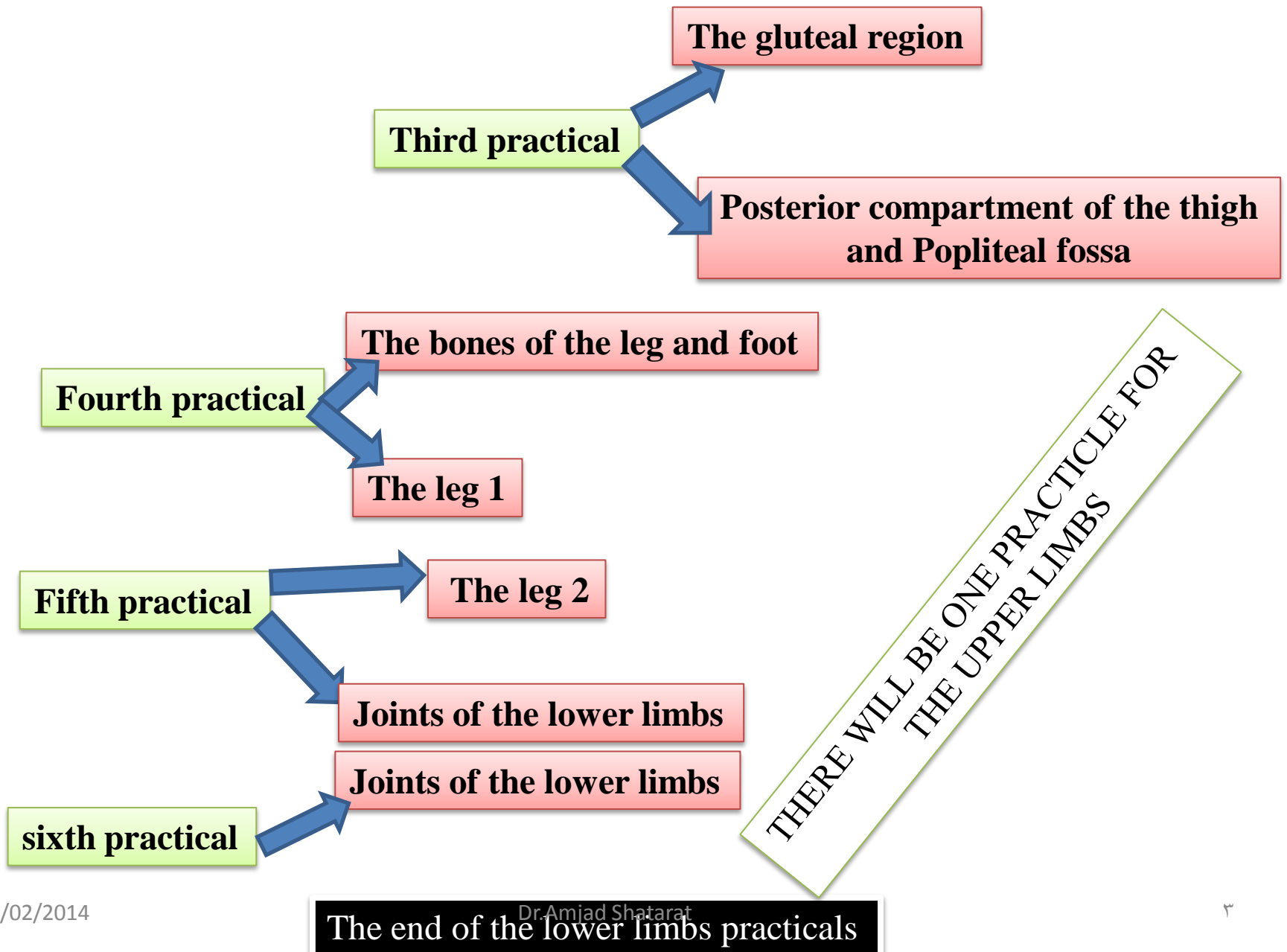
الجهاز الحركي الهيكلي

THE MUSCULOSKELETAL SYSTEM

منسق المساق
د. امجد الشطرات

a.shatarat@ju.edu.jo





seventh practical



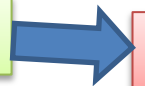
The skull & scalp

Eighth practical



The skull & face

Ninth practical



The Cranial cavity

End of head practicals

Tenth practical



The neck 1

Eleventh practical



The neck 2

End of neck practicals

Twelfth practical



The eye 1

Thirteenth practical



The eye 2

The end of eye practicals

Fourteenth practical



**Vertebral column, muscles of the back,
intercostal muscles and diaphragm**

ANATOMY OF THE LOWER LIMBS

BY

DR. AMJAD SHATARAT

د. امجد الشطرات

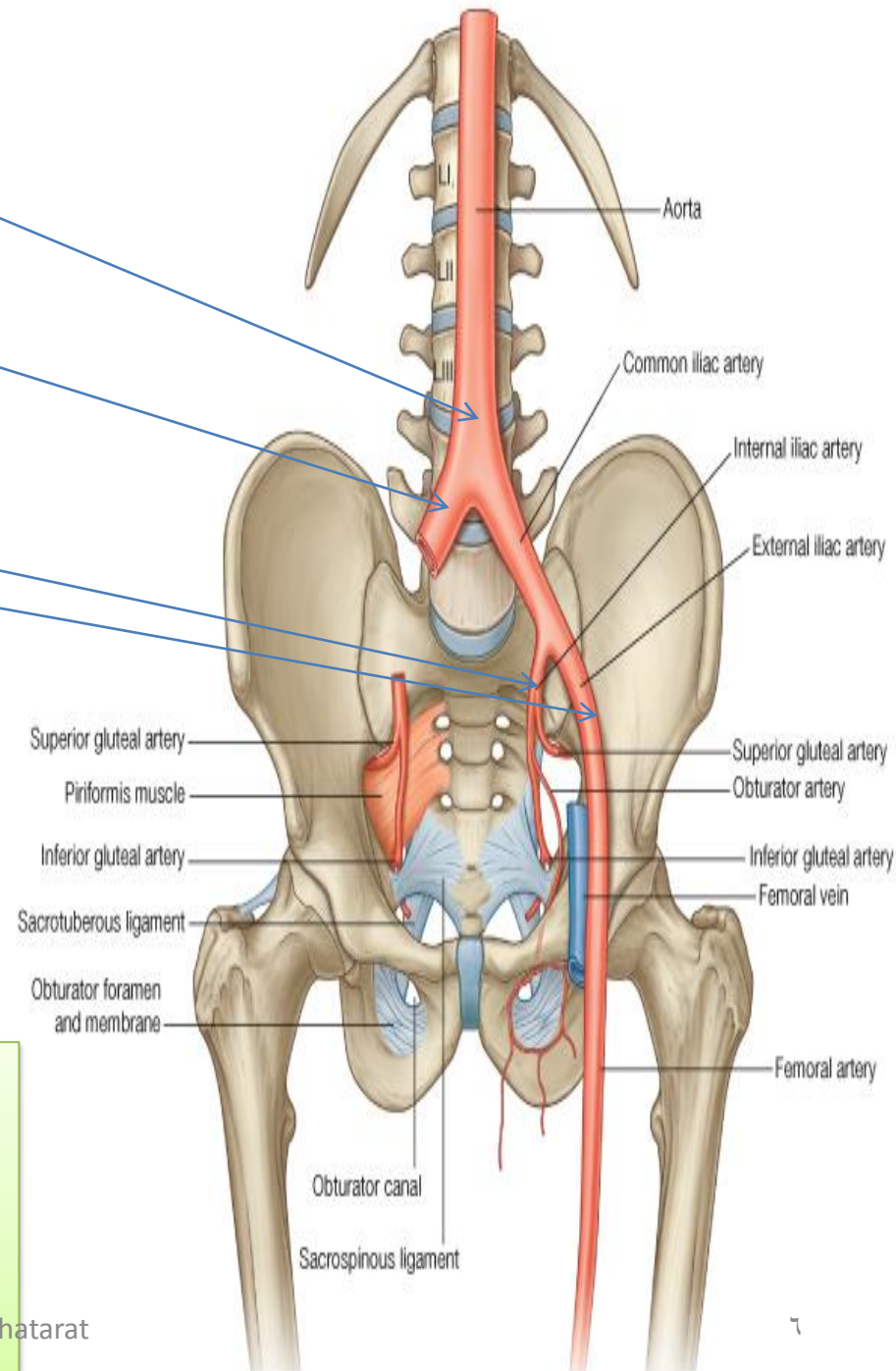
Blood supply of the lower limbs

1- The abdominal aorta divides at the level of **L4** into Right and left **common iliac arteries**

2- Each common iliac artery divides into **external and internal iliac arteries**

3- The external iliac artery becomes **the femoral artery** (**as it passes behind the inguinal ligament**) which will be the **main** blood supply to the whole lower limb

4- **The internal iliac artery** shares in the blood supply of the lower limb through its branches, for example, **the superior and inferior gluteal arteries and obturator artery** (to be discussed later)



5- THE FEMORAL ARTERY (to be discussed later)

begins midinguinal point and ends
at the **opening in the adductor magnus** where it
becomes

THE POPLITEAL ARTERY

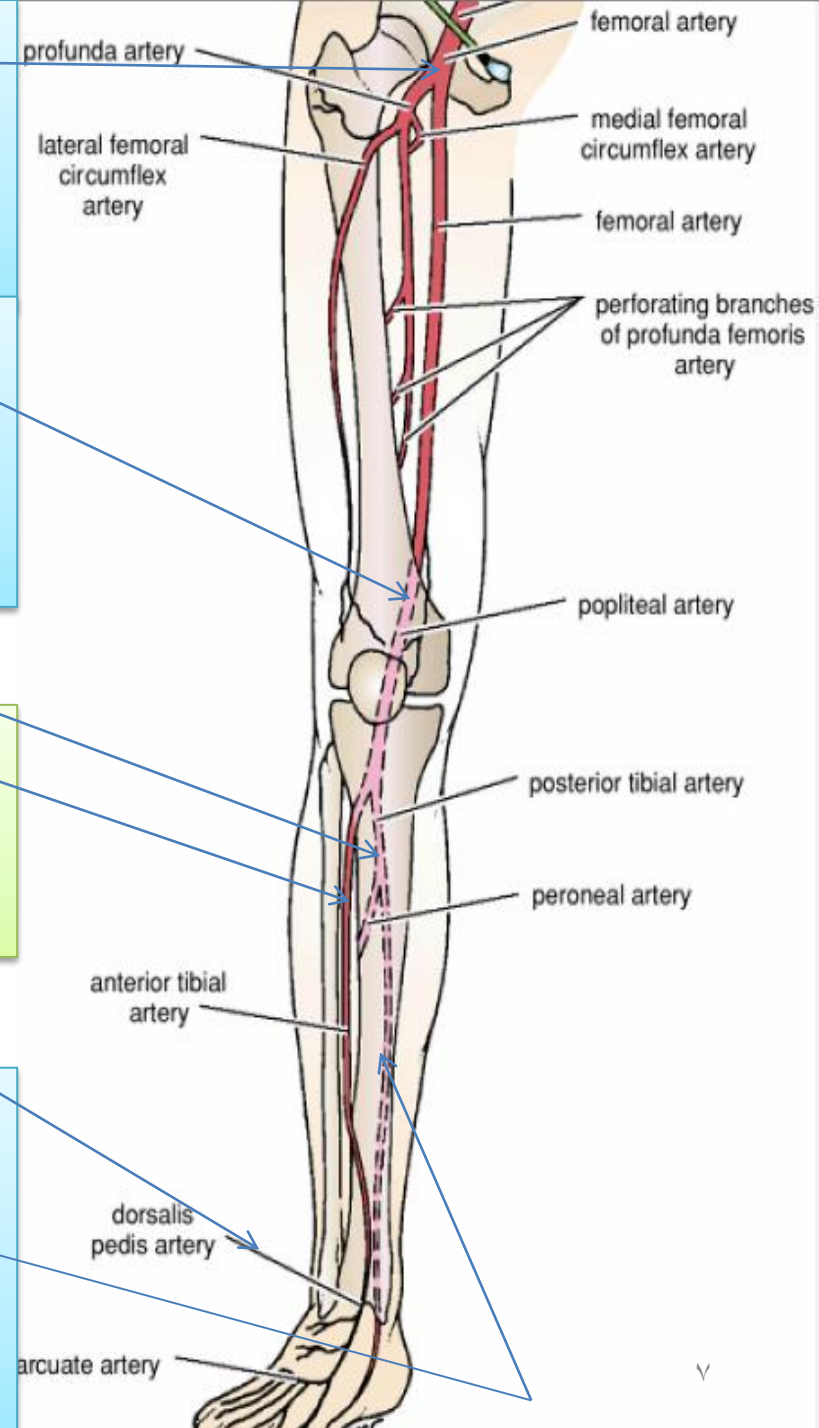
6- The popliteal artery

Ends at the lower border of the popliteus muscle
by dividing into

**ANTERIOR AND POSTERIOR TIBIAL
ARTERIES**

7- The anterior tibial artery supplies
the anterior compartment of the leg and terminates
in front of the ankle joint by becoming
THE DORSALIS PEDIS ARTERY

8- The posterior tibial artery supplies the posterior
and the lateral compartments of the leg
ends deep to the flexor retinaculum by dividing
Into
MEDIAL AND LATERAL PLANTER ARTERIES
which supply the sole

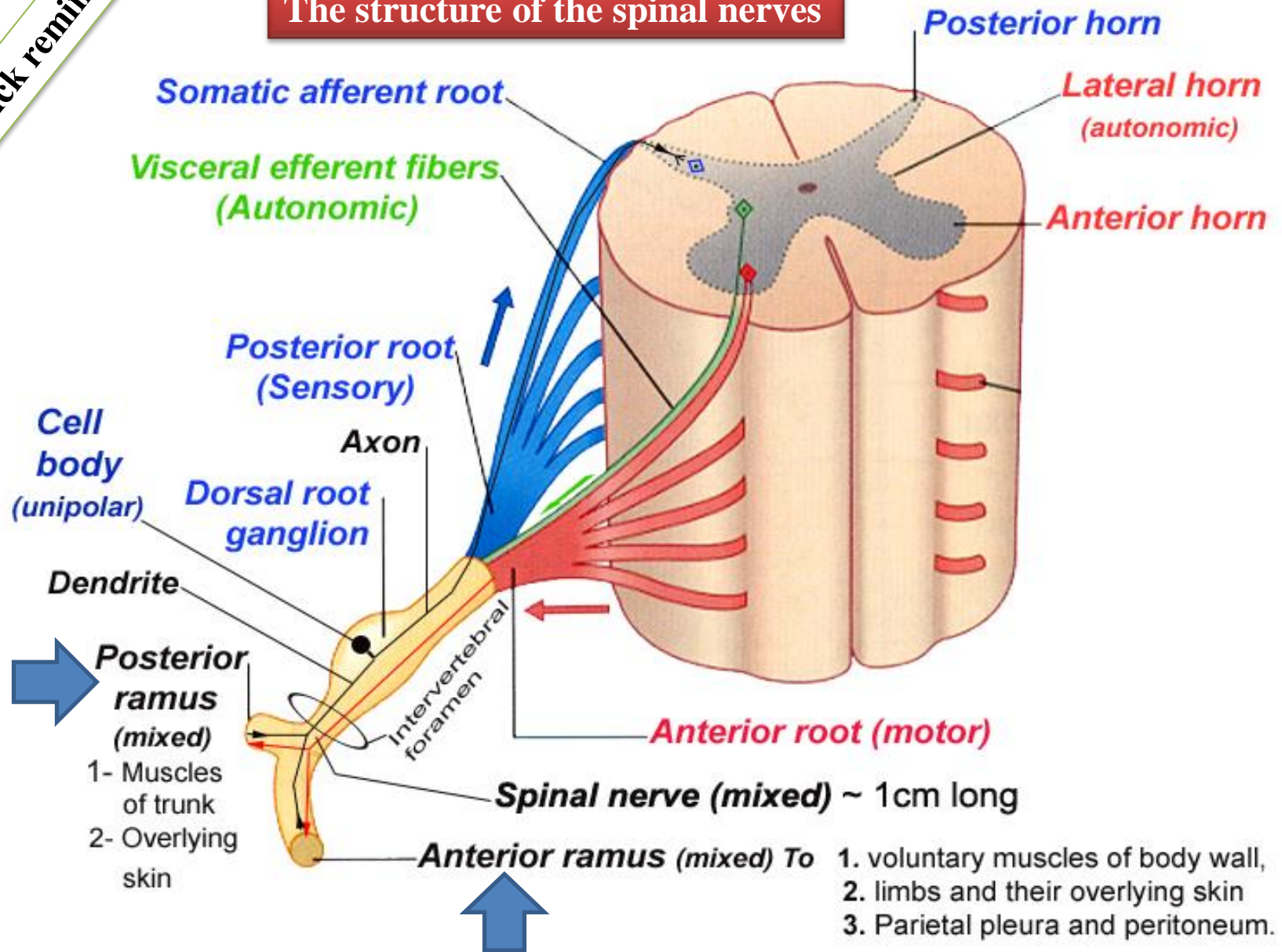


NERVES OF THE LOWER LIMB

LUMBER PLEXUS

Quick reminder

The structure of the spinal nerves



The lumbar plexus

what about the posterior?



Is formed by

the anterior primary rami of the upper four lumbar nerves
in the substance of psoas major muscle

It also receives a contribution from the **T12**
(subcostal) nerve

4 small nerves ? + 2 main nerves ?

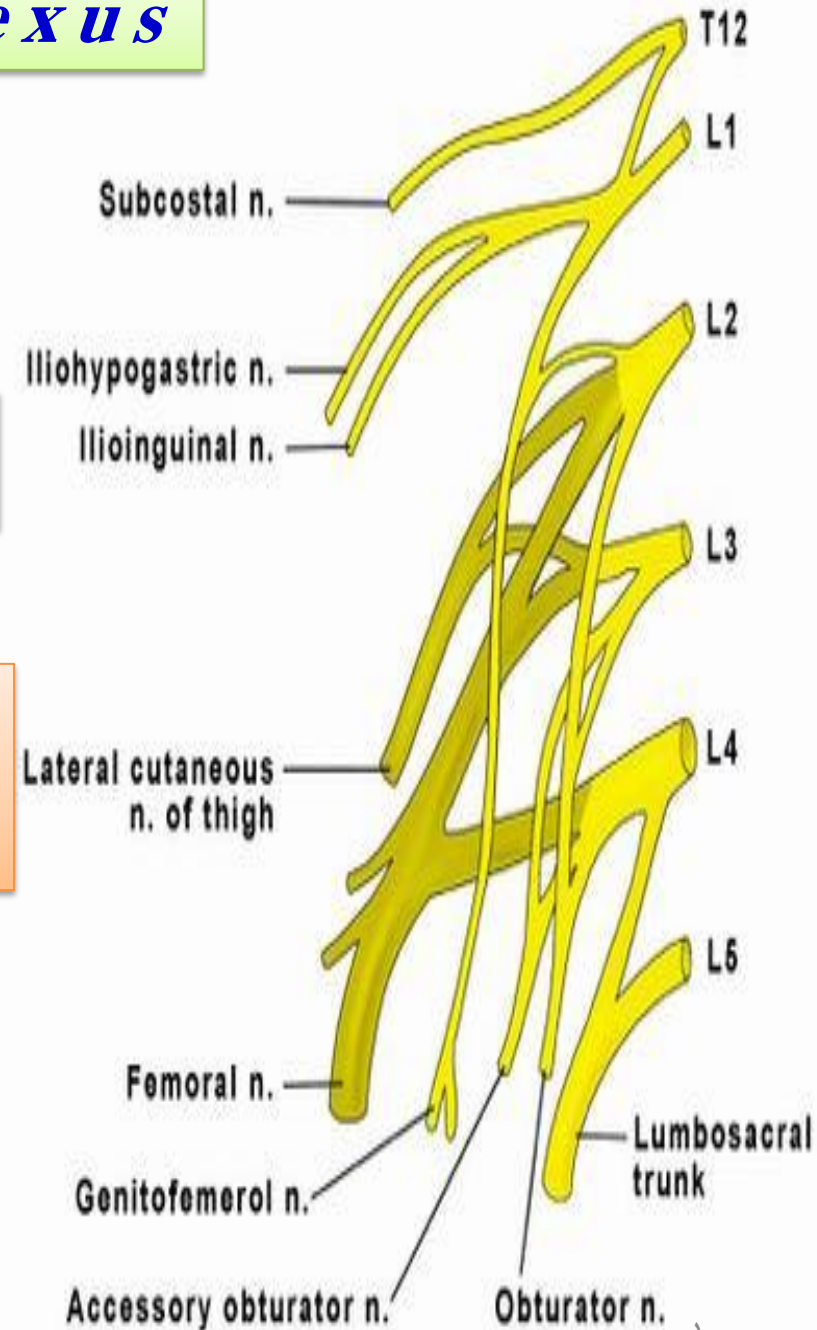
Ilio-hypogastric

Ilio-inguinal

Genitofemoral

*Lateral cutaneous
nerve of the thigh*

**Femoral
Obturator**



L1 gives

- 1- Ilio-hypogastric nerve
- 2- Ilio-inguinal
- 3- The first root of the genito-femoral

What is the key to memorize the lumbar plexus?

L2 gives (four branches)

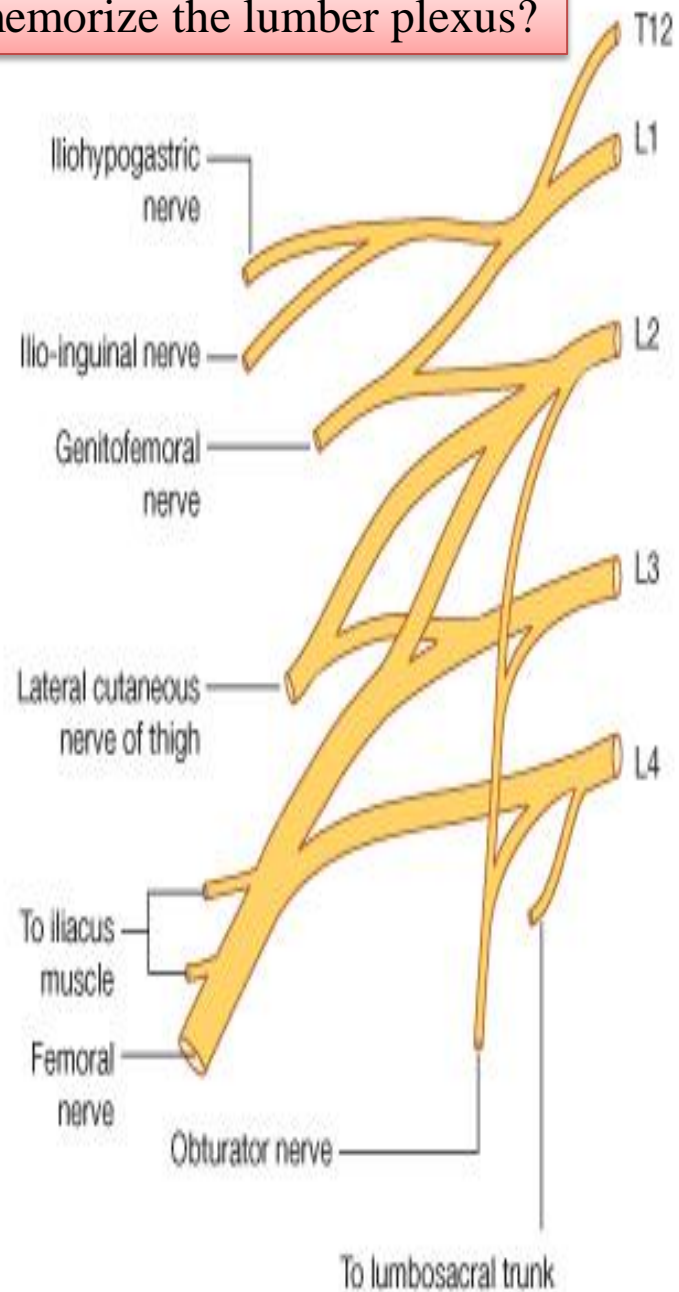
- 1- The second root of the genito-femoral
- 2- The first root of the lateral cutaneous nerve of the thigh
- 3- The first root of the femoral nerve
- 4- The first root of the obturator nerve

L3 gives

- 1- The second root of the lateral cutaneous nerve of the thigh
- 1- The second root of the femoral nerve
- 2- The second root of the obturator nerve

L4 gives

- 1- The third root of the femoral nerve
- 2- The third root of the obturator nerve
- 3- The upper root of the lumbo-sacral trunk



Each nerve of the lumbar **plexus** **emerges** (**exits**) from the substance of the **psoas major muscle** as flows:

➤ **Genitofemoral nerve** from the **anterior surface**.

➤ **Obturator nerve and lumbosacral trunk** from **the medial side**.

➤ **The Iliohypogastric**

➤ **The Ilioinguinal**

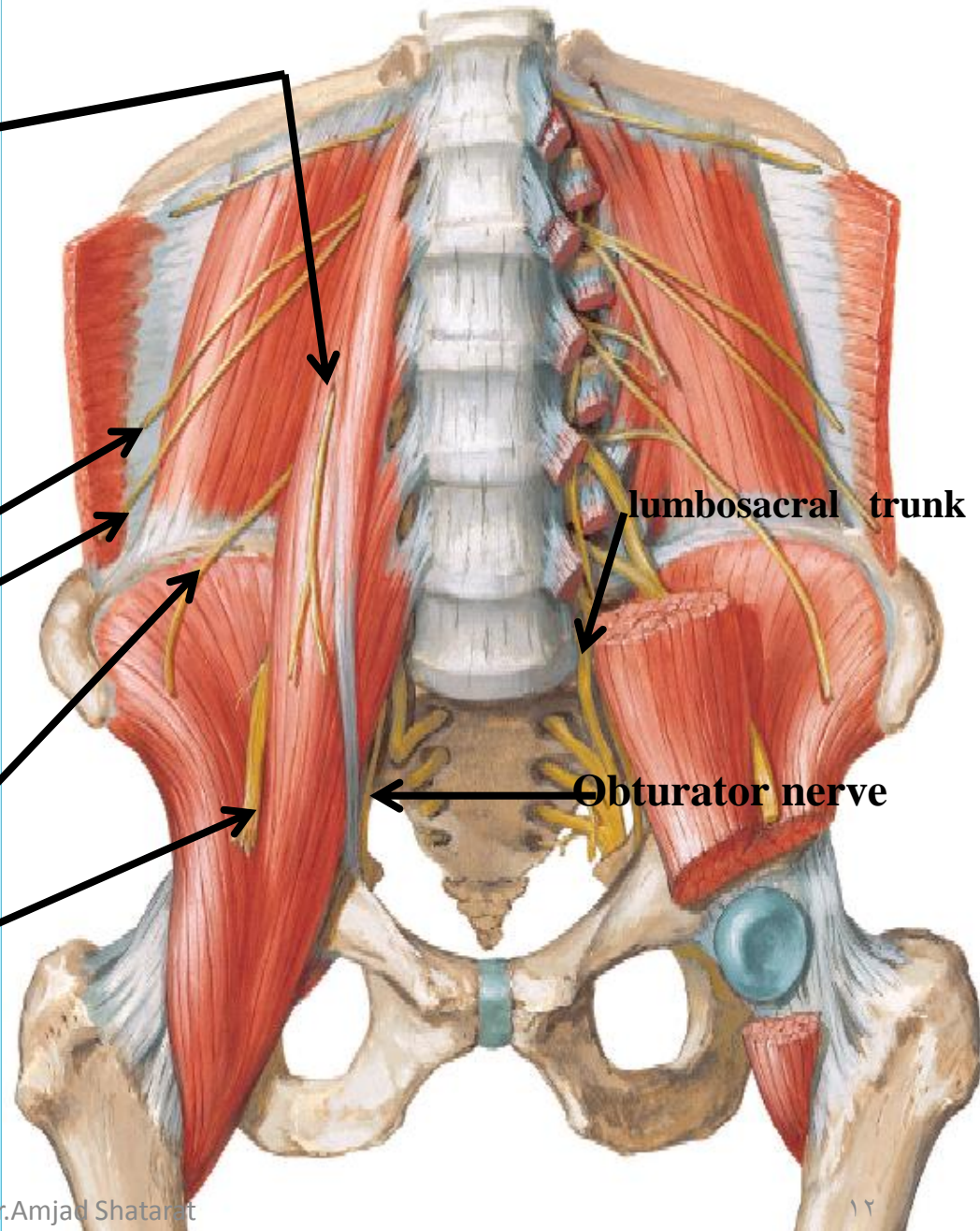
➤ **The Lateral cutaneous nerve of the thigh**

➤ **Femoral nerve**

exit from the **lateral side of the psoas**

15/02/2014
major muscle

Psoas and Iliacus Muscles



Pay attention to this during practicals

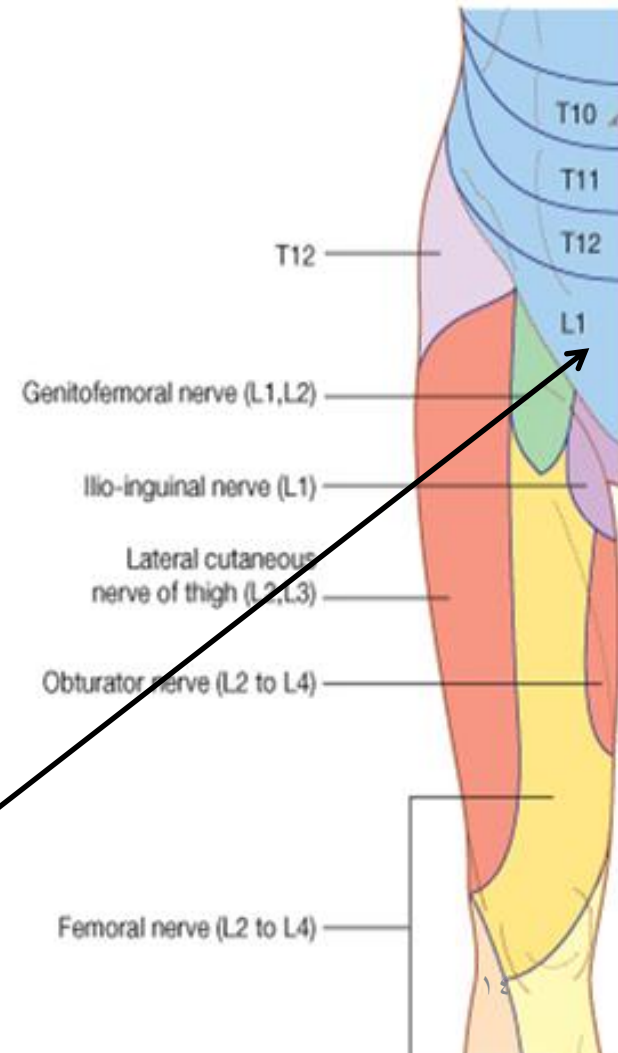
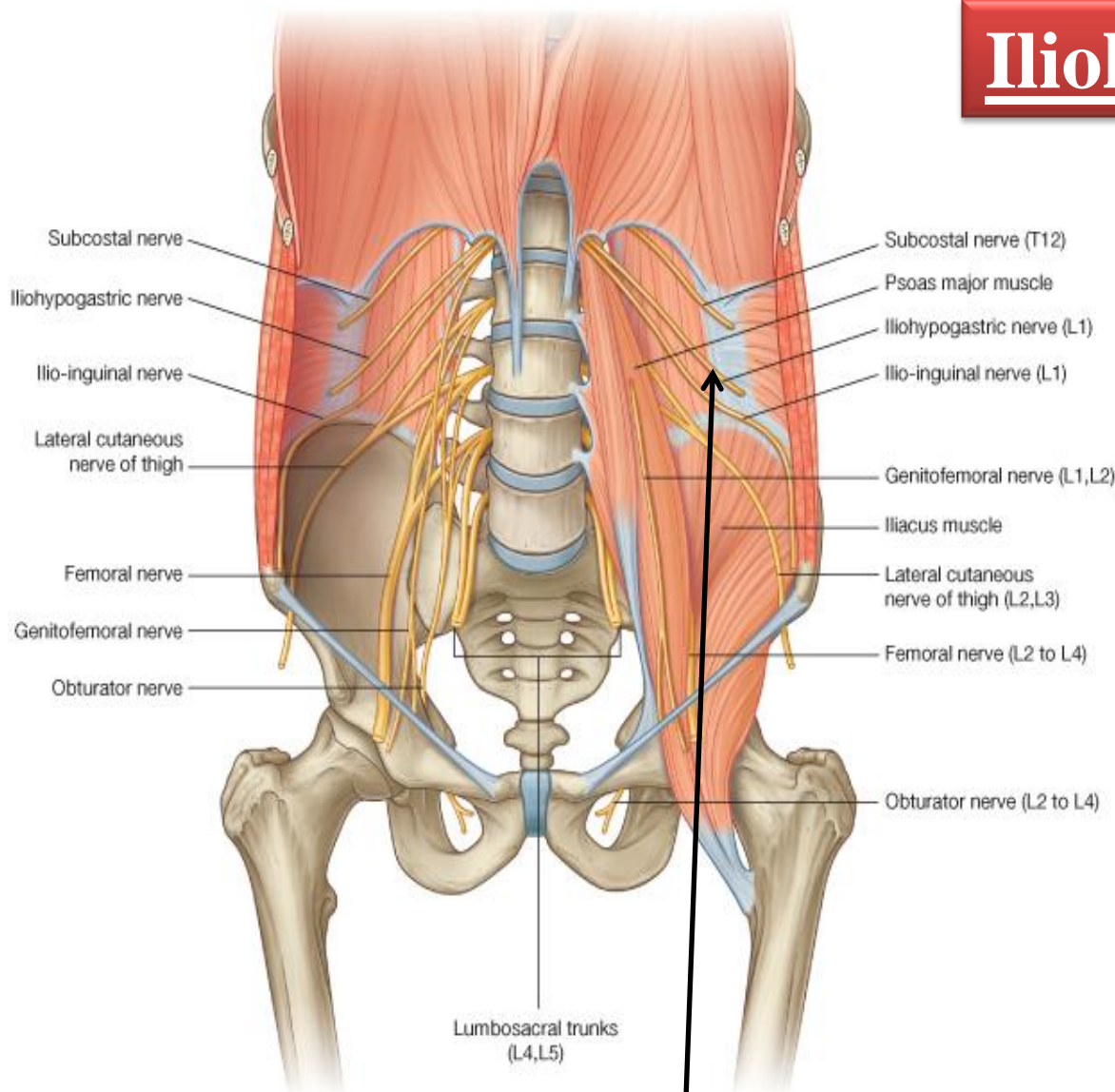
The ilio-hypogastric and ilio-inguinal nerves arise as a **single trunk** from the anterior ramus of L1

Either before or soon after emerging from the lateral border of the psoas major muscle, this single trunk divides into:
the iliohypogastric and the ilio-inguinal nerves

Note

- 1- The iliohypogastric nerve is larger than the ilio-inguinal nerve
- 2- The iliohypogastric nerve runs superior to the ilio-inguinal nerve

Iliohypogastric nerve



Iliohypogastric nerve

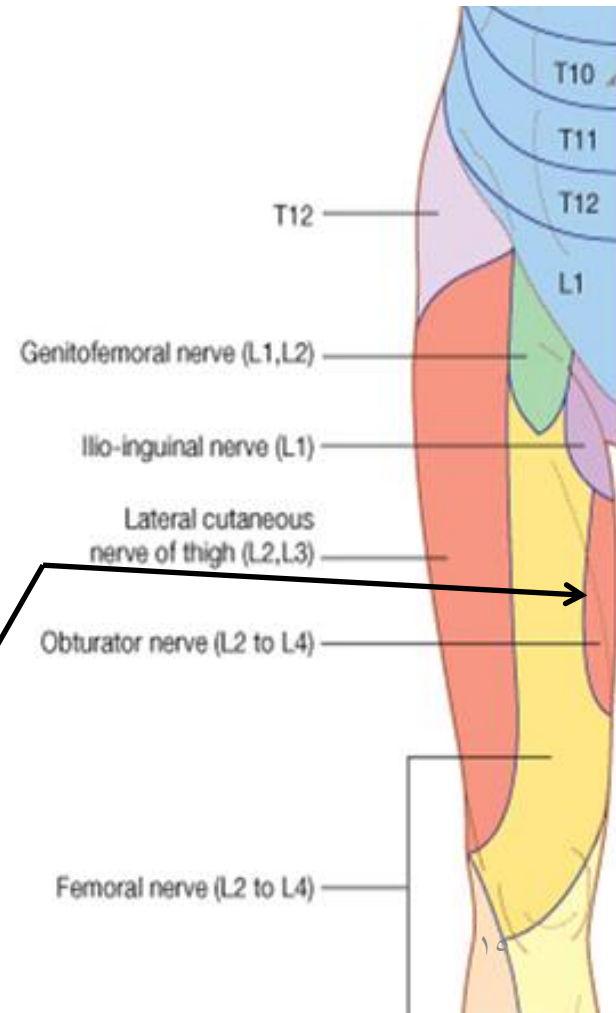
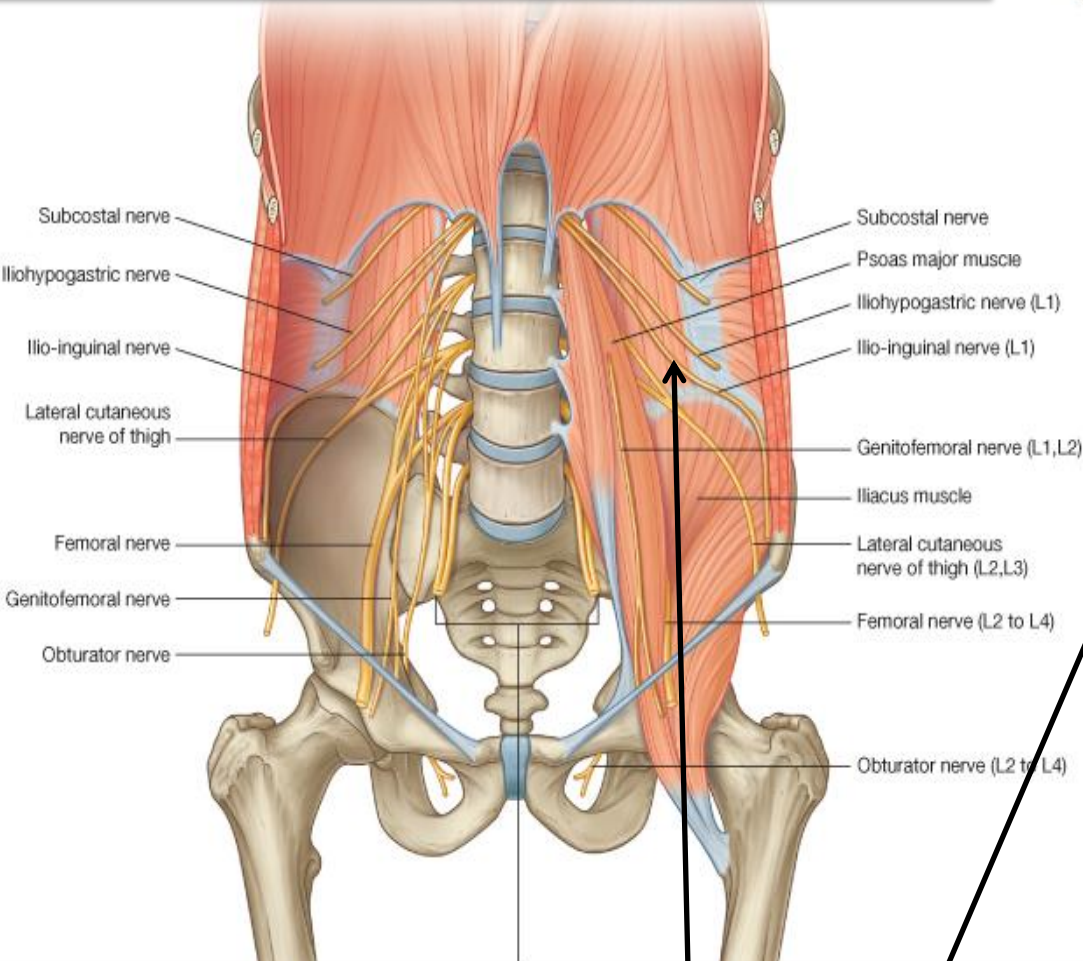
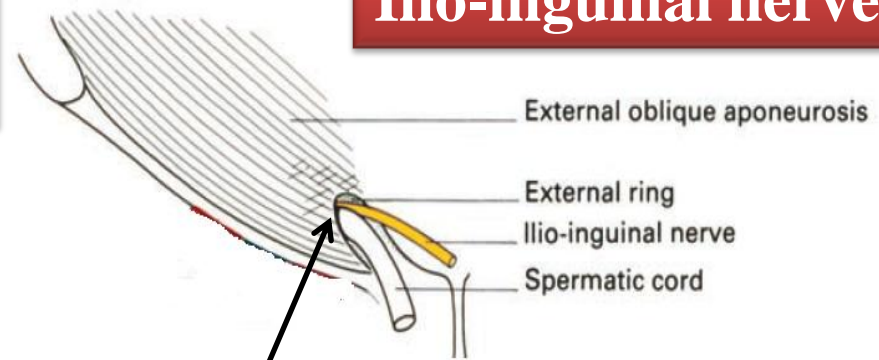
supplies the posterolateral gluteal skin and just above the superficial inguinal ring, after piercing the aponeurosis of the external oblique, it distributes to the skin in the pubic region

15/02/2014

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Ilio-inguinal nerve

The surgeon should be very careful to the Ilio-inguinal nerve while giving incision and hernia repair as it could be injured during these procedures



Ilio-inguinal nerve enters the inguinal canal

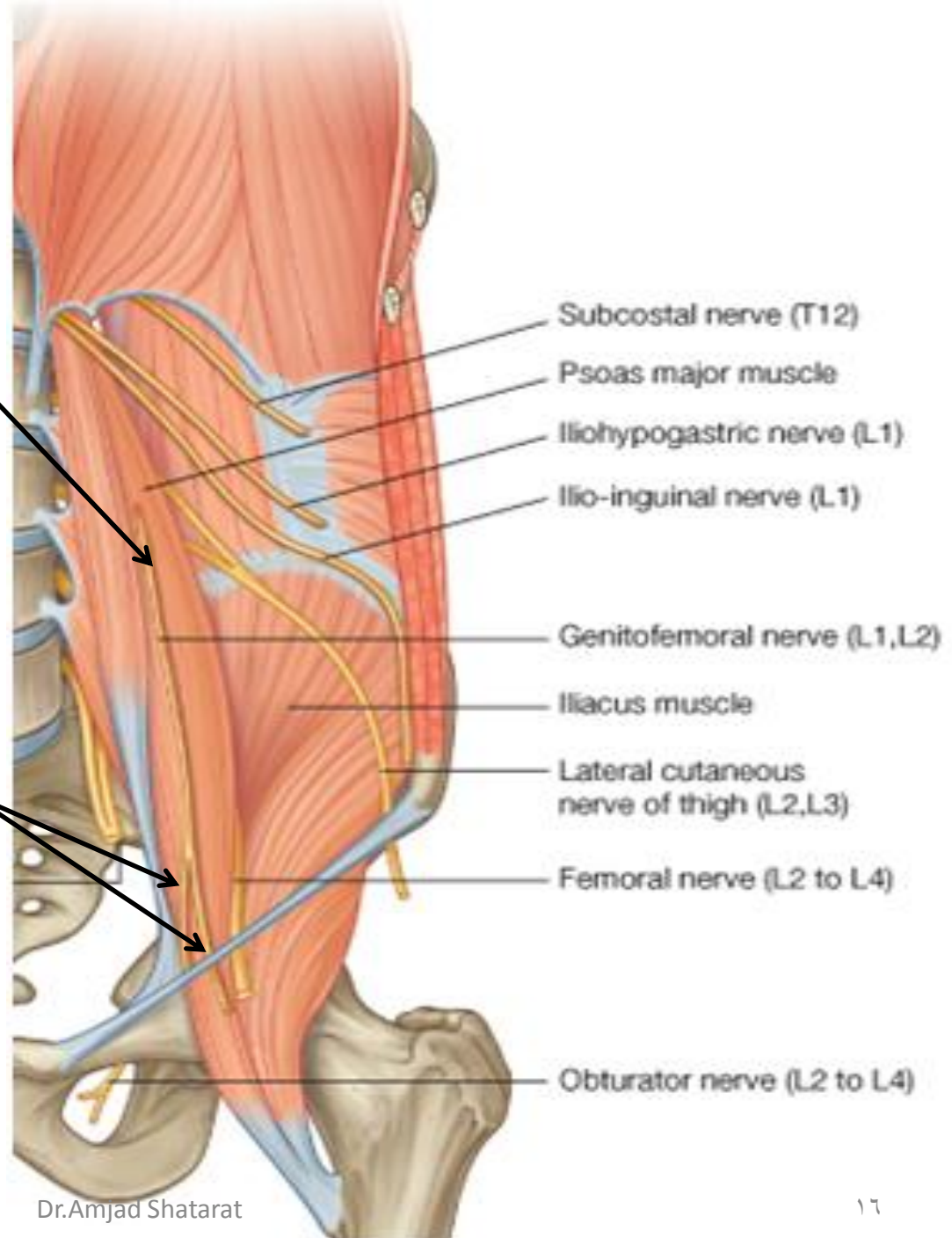
Then emerges through the superficial inguinal ring, along with the spermatic cord, and provides cutaneous innervation to the upper medial thigh, the root of the penis, and the anterior surface of the scrotum in men, or the mons pubis and labium majus in women

Genitofemoral nerve

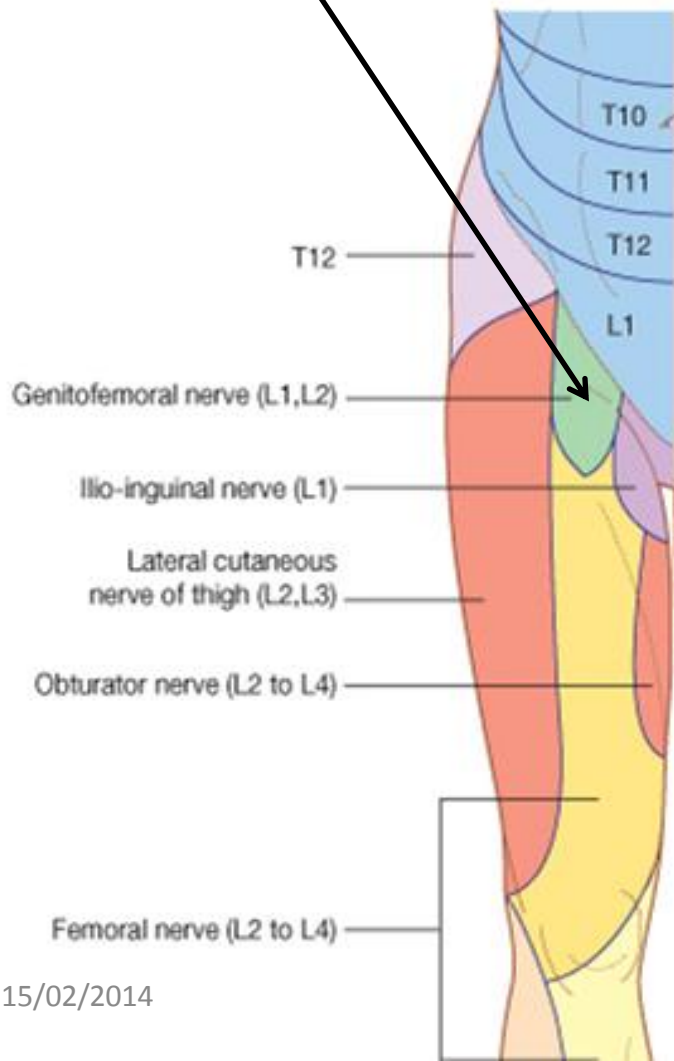
Genitofemoral nerve
(L1 and L2)

The genitofemoral nerve arises from the anterior rami of the nerves L1 and L2 emerges on the anterior surface of psoas major.

It eventually divides into
genital and femoral branches.



The **femoral branch** descends on the lateral side of the external iliac artery and passes posterior to the inguinal ligament, entering the femoral sheath lateral to the femoral artery. It pierces the anterior layer of the **femoral sheath** and the fascia lata to supply the skin of the upper anterior thigh

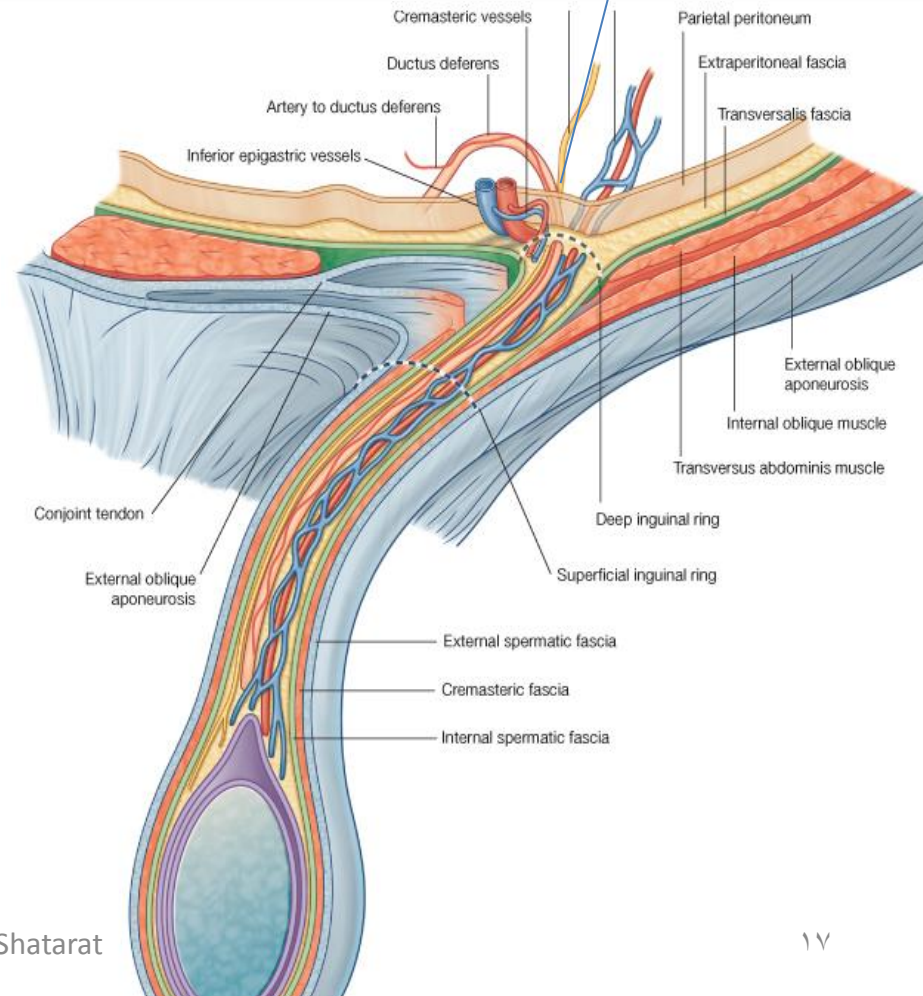


15/02/2014

The **genital branch** continues downward and enters the inguinal canal through the deep inguinal ring.

It continues through the canal and:

- **in men**, innervates the **cremasteric** muscle and terminates on the skin in the upper anterior part of the scrotum;
- **in women**, accompanies the round ligament of the uterus and terminates on the skin of the mons pubis and labium majus.



Dr.Amjad Shatarat

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Lateral cutaneous nerve of thigh (L2 and L3)

The lateral cutaneous nerve of thigh arises from the anterior rami of nerves L2 and L3
It emerges from the lateral border of the psoas major muscle
It passes posterior to the inguinal ligament and enters the thigh.
The lateral cutaneous nerve of thigh supplies the skin on the anterior and lateral thigh to the level of the knee

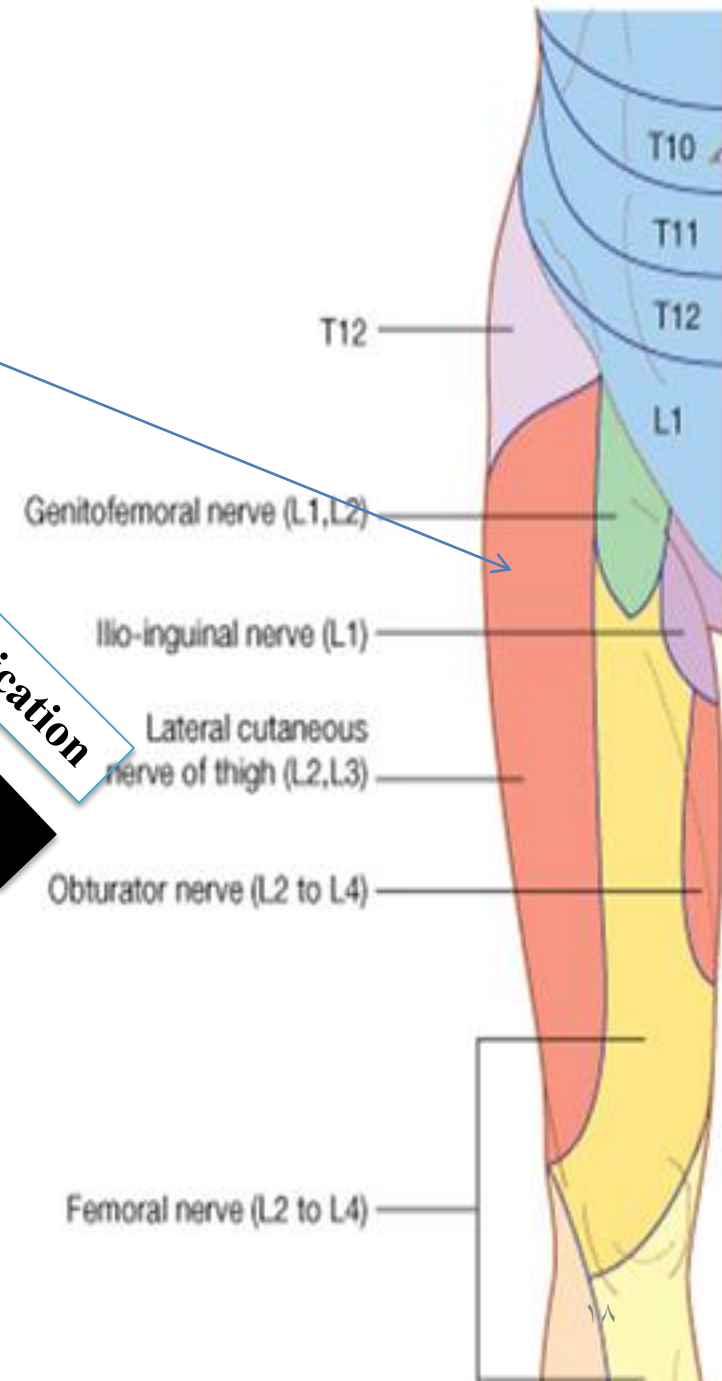
Intrapelvic causes include pregnancy, abdominal tumors

extrapelvic causes include trauma to the region of the ASIS (eg, from a seatbelt in a motor vehicle accident), ***tight garments, belts, girdles***, or ***stretch from obesity***

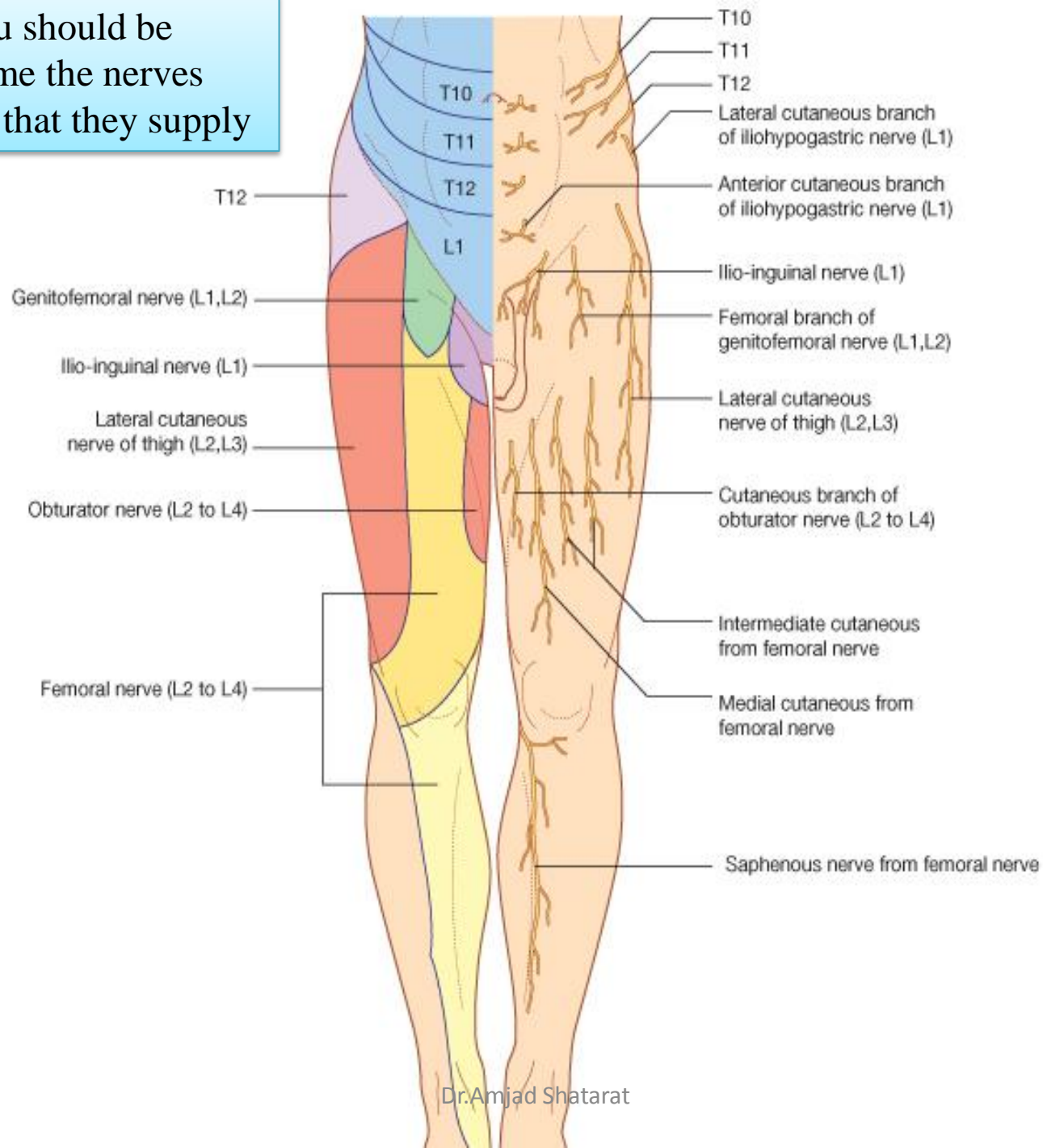
Mechanical factors include ***prolonged sitting or standing***.

Diabetes can also cause this neuropathy in isolation or in the clinical setting of a polyneuropathy

Clinical application
Injury of this nerve



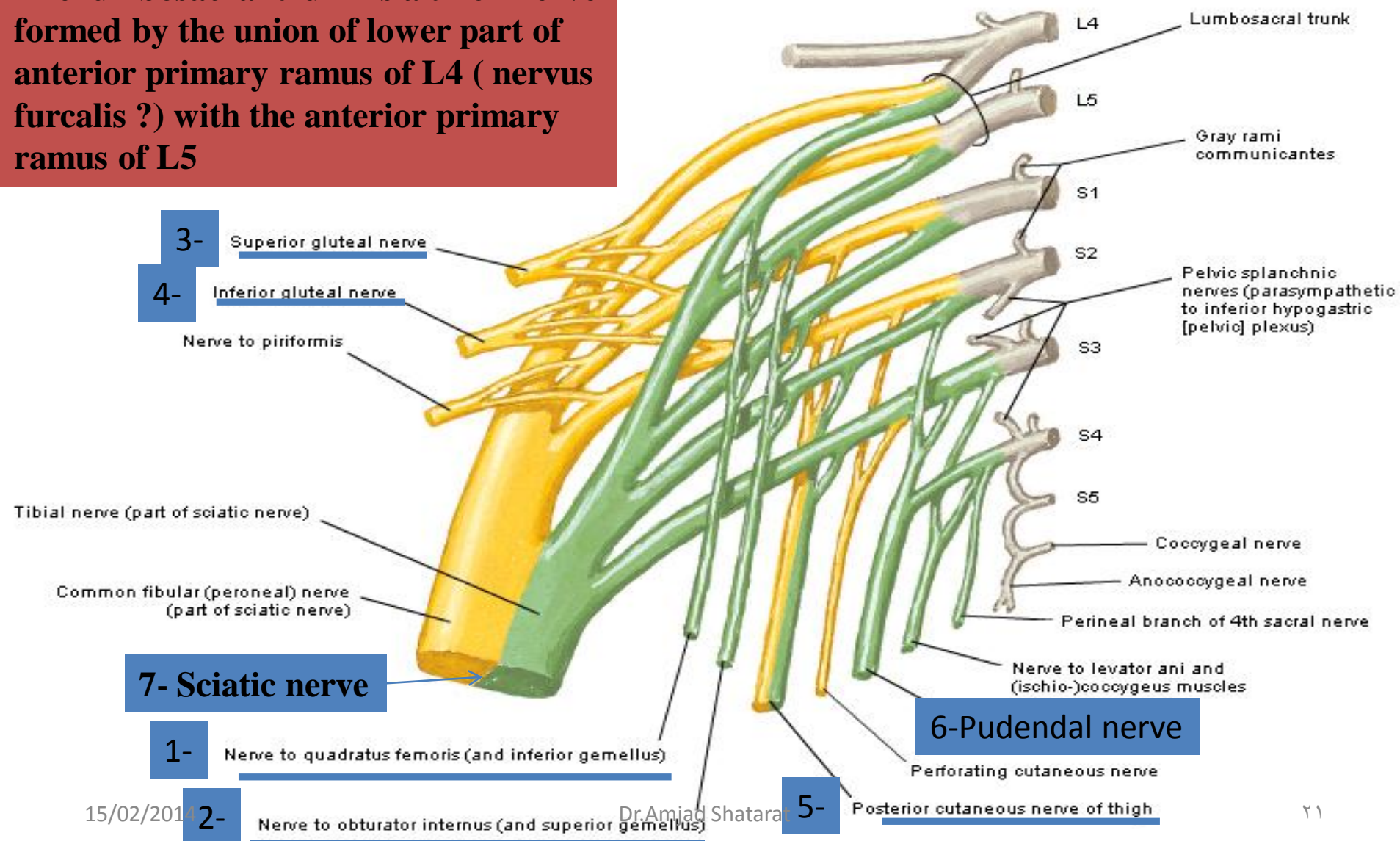
Now you should be able to name the nerves and the areas that they supply



SACRAL PLEXUS

The sacral plexus is formed by the union of lumbosacral trunk and anterior primary rami of the S1, S2, S3 and the upper part of S4 in the pelvis in front of sacrum

The lumbosacral trunk is a thick nerve formed by the union of lower part of anterior primary ramus of L4 (nervus furcalis ?) with the anterior primary ramus of L5



THANK YOU