

وسهلا

أهلا



الأستاذ الدكتور يوسف حسين

أستاذ التشريح وعلم الأجنة - كلية الطب - جامعة الزقازيق - مصر

رئيس قسم التشريح و الأنسجة و الأجنة - كلية الطب - جامعة مؤتة - الأردن

مساعد العميد لشؤون الطلاب والامتحانات - كلية الطب - جامعة مؤتة - الأردن

دكتورة من جامعة كولونيا المانيا

Prof. Dr. Youssef Hussein Anatomy اليوتيوب

جروب الفيس د. يوسف حسين (استاذ التشريح)

dr_youssefhussein@yahoo.com

dr_youssefhussein@yahoo.com



Common peroneal nerve

- **Common Peroneal Nerve**

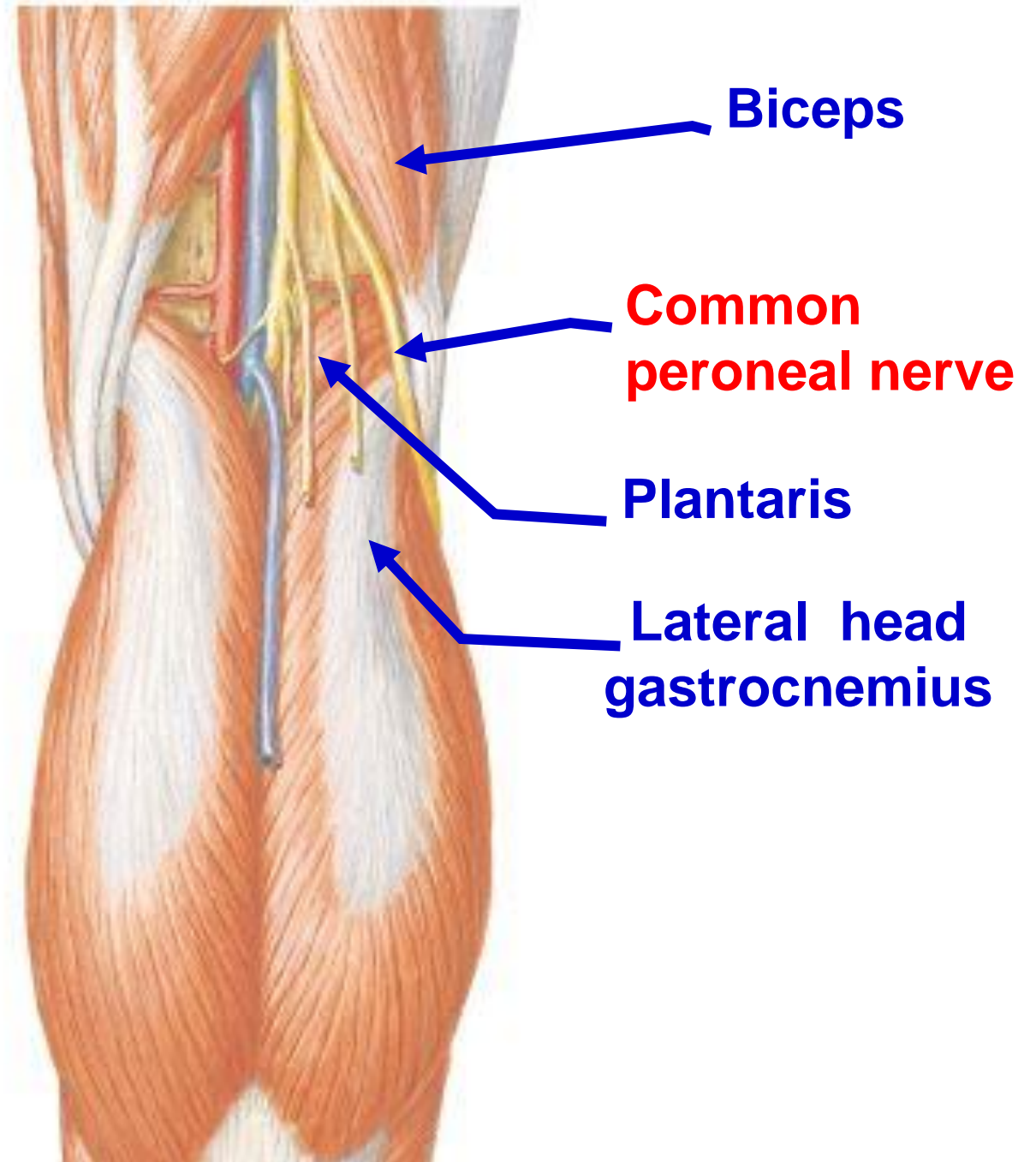
**** Origin:** one of the two terminal branches of the sciatic nerve (Smaller).

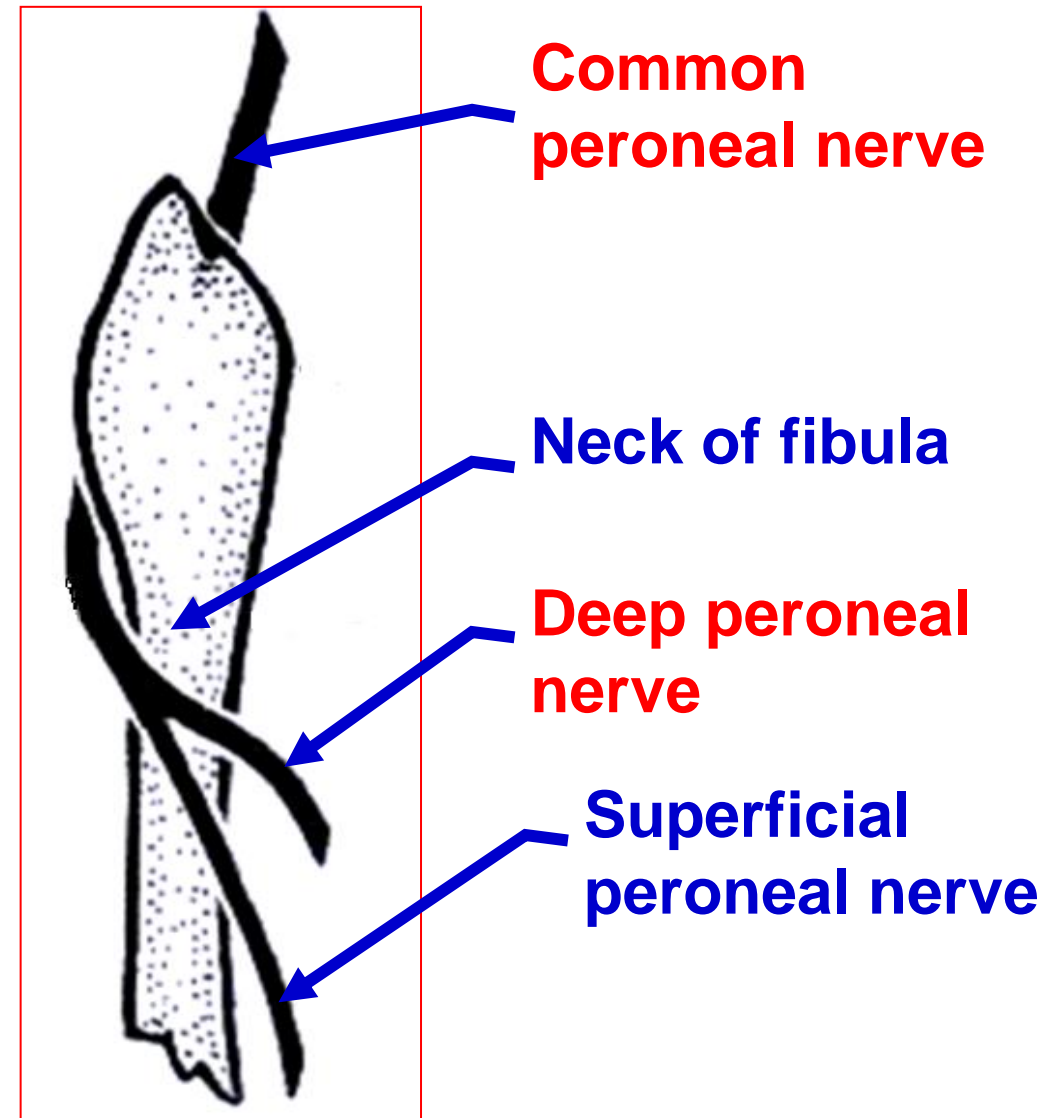
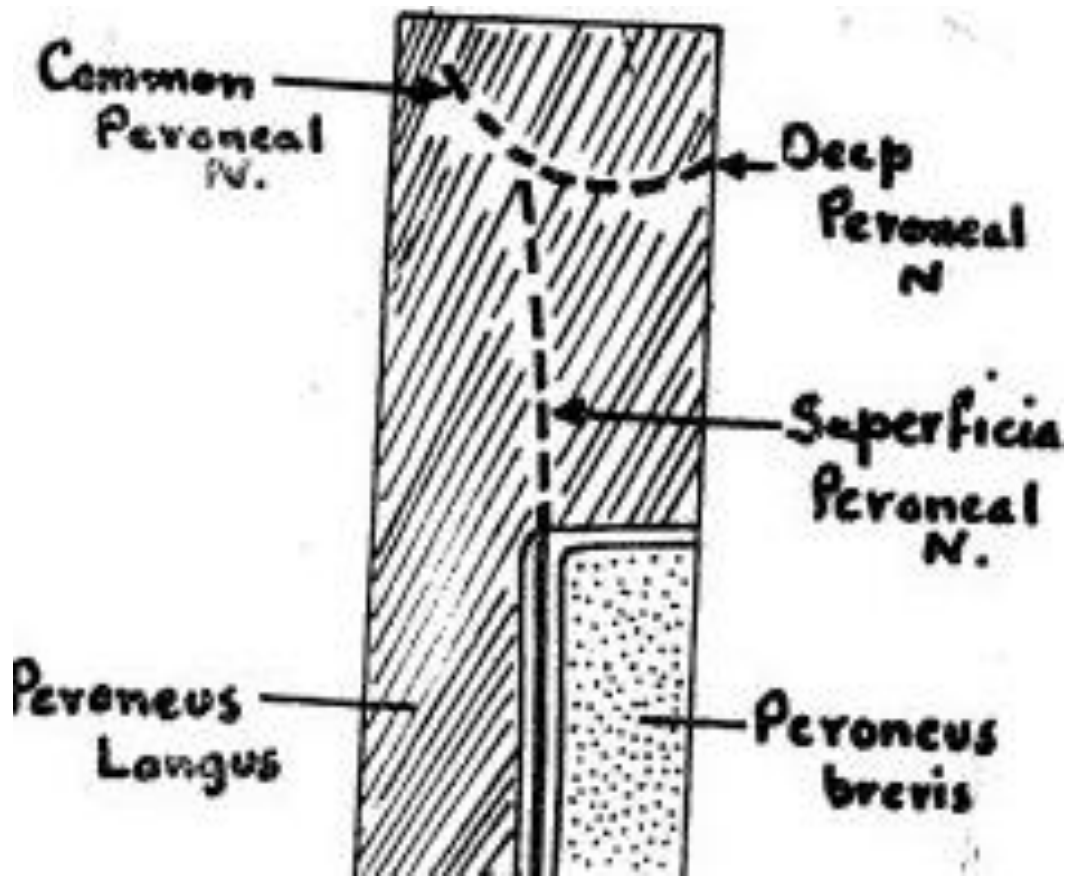
**** Roots:** It arises from **L. 4, 5, S. 1, 2**

**** Course;**

- **It enters the popliteal fossa** at its upper angle and descends downwards and laterally close to the medial side of the biceps femoris.

- **It leaves the fossa** through its lateral angle where it crosses plantaris and lateral head of gastrocnemius.





- **Ends:** it curves on the lateral side of the **neck of the fibula** (the commonest site of injury) then, divides into deep and superficial peroneal nerves, inside the peroneus longus,

**** Branches of Common Peroneal Nerve**

I- No muscular branches in the popliteal fossa.

II- Articular branches to the knee joint.

1- **Superior lateral genicular nerve.**

2- **Inferior lateral genicular nerve.**

3- **Recurrent genicular nerve.**

III- Cutaneous branches:

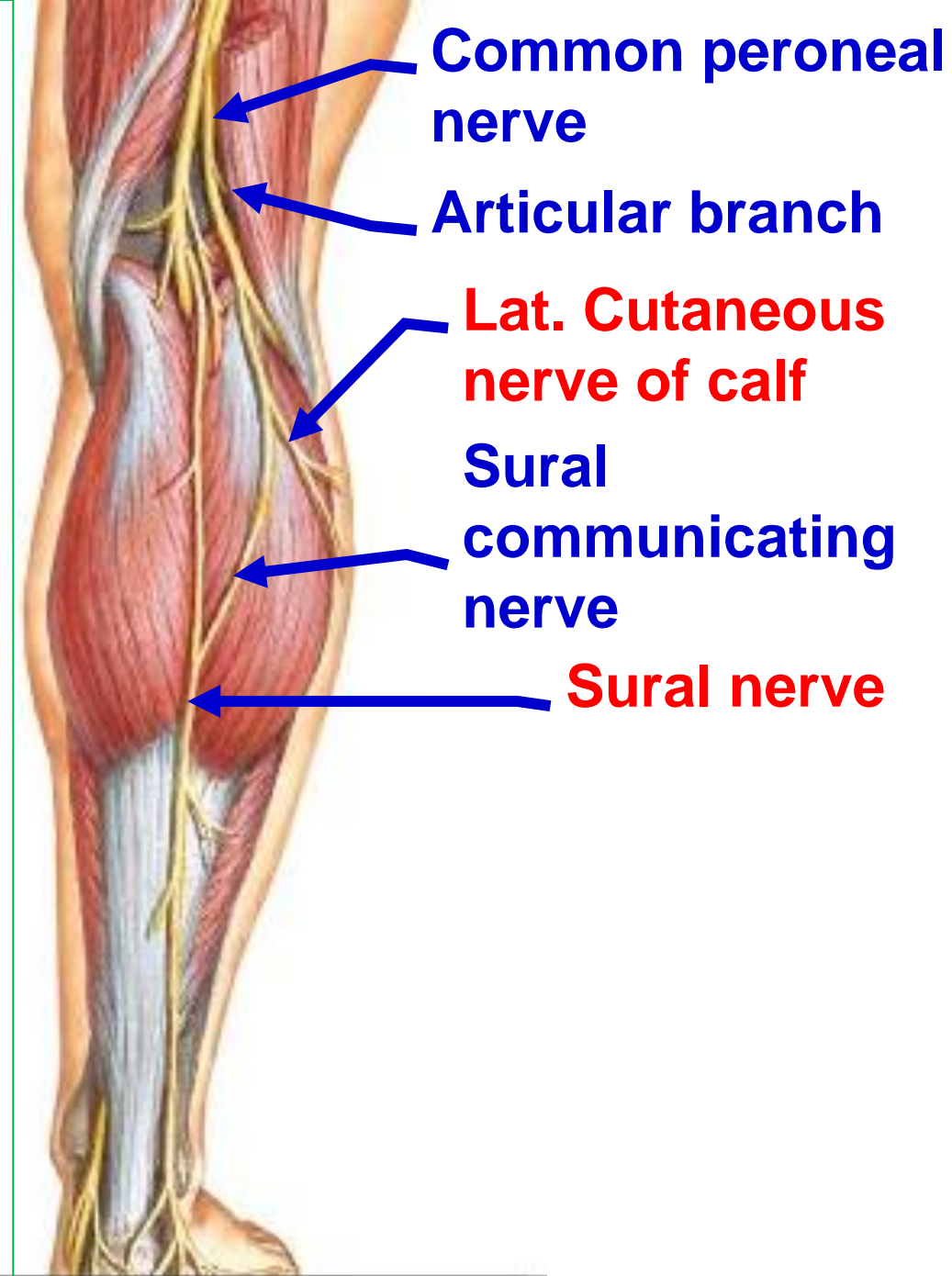
a. Lateral cutaneous nerve of the calf; supplies the skin of the lateral, and anterior surfaces of the **upper part of the leg.**

b- Sural communicating nerve.

IV- Terminal branches:

1- Deep peroneal (anterior tibial) nerve to the **anterior compartment** of the leg.

2- Superficial peroneal (musculocutaneous) nerve to the **lateral compartment** of the leg.



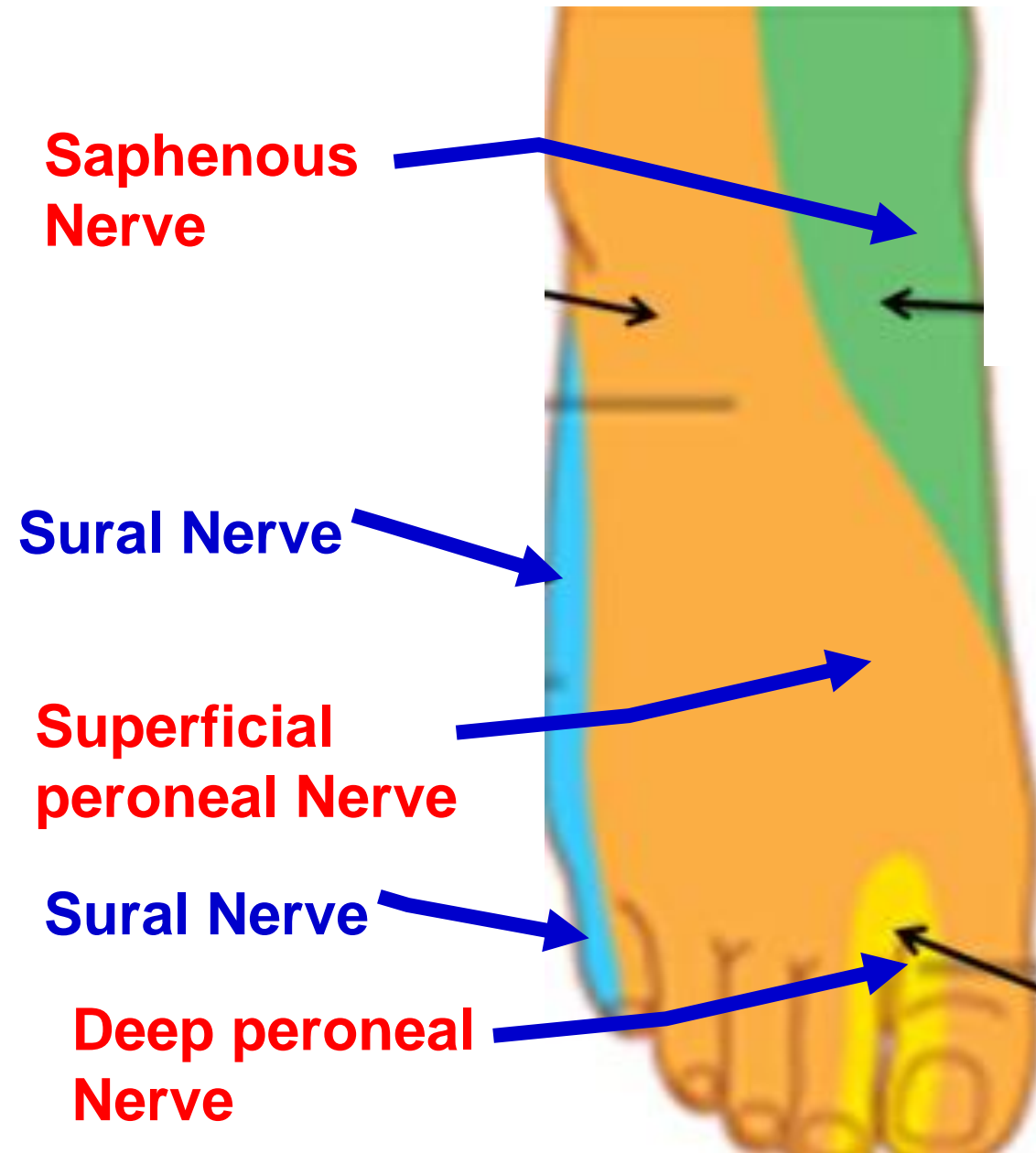
❖ Cutaneous Nerve Supply of Dorsum of Foot

A- Dorsum of the foot.

- 1- **Intermediate** part by superficial peroneal nerve.
- 2- **Medial** by Saphenous nerve from femoral nerve.
- 3- **Lateral** part by sural nerve from tibial nerve.

B- Dorsum of the toes;

- All the dorsum of the toes supplied by the superficial peroneal nerve **except** 2 areas;
- 1- The **adjacent sides** between big toe and 2nd toe by the deep peroneal nerve.
- 2- **Lateral side of the little toe** by the sural nerve.



**** Injury of the common peroneal nerve**

**** Causes:** Fracture of the neck of the fibula (The **commonest site & dangerous position**).

**** Effect of injury:**

1- Motor; Paralysis of muscles of the leg

- Anterior compartment (deep peroneal N)

- Lateral compartment (superficial peroneal)

-Deformity: Foot drops

(manifested by plantar flexion and Inversion).

2- Sensory; Decreased sensation, numbness, or tingling and pain on

1) Anterolateral of lower part of the leg.

2) Dorsum of the foot **except** medial side supplied by saphenous nerve (femoral nerve) and lateral side by sural nerve (tibial nerve)

3) Dorsum of toes **except** lateral side of little toe (sural nerve).

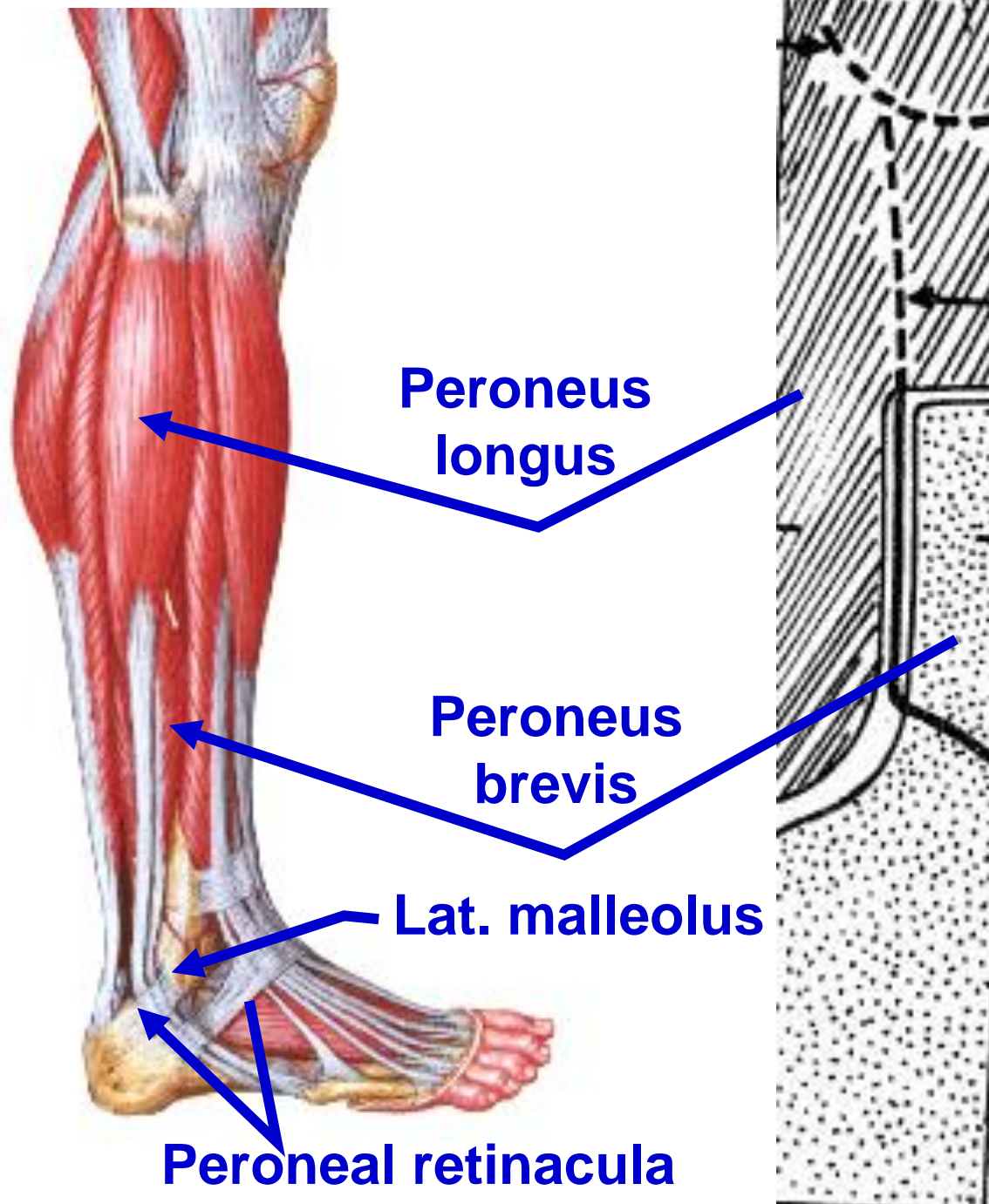


dr_youssefhussein@yahoo.com



Lateral compartment of the leg

dr_youssefhussein@yahoo.com



- **Peroneus Longus**

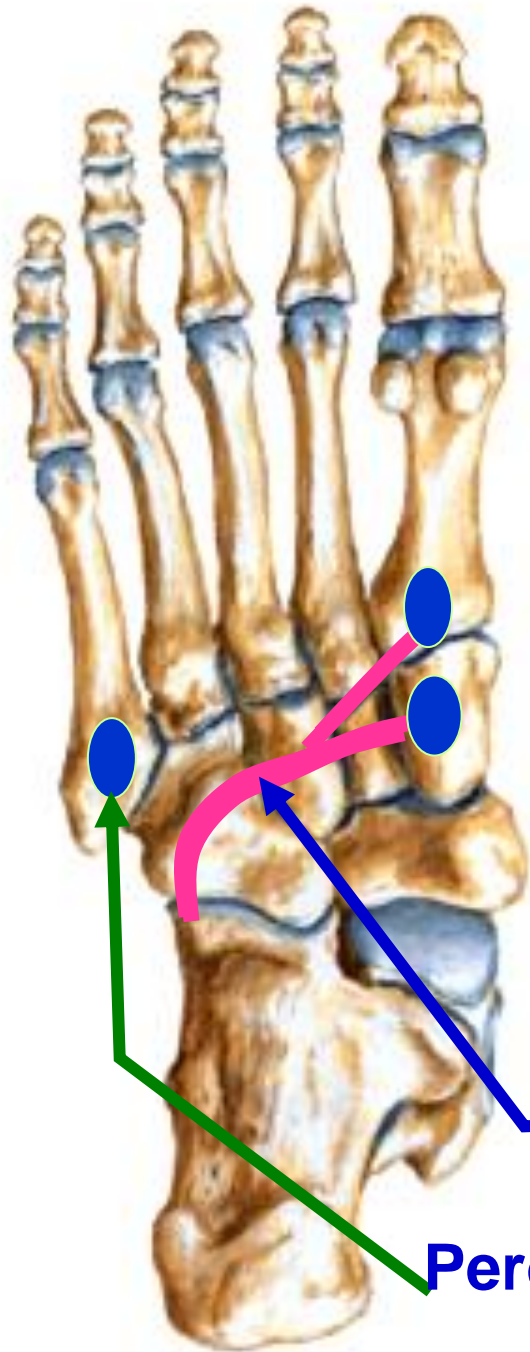
** **Origin:** From upper 2/3 of lateral surface of fibula.

- **Peroneus Brevis**

** **Origin:** From lower 2/3 of lateral surface of fibula.

** Peroneus **longus** passes superficial to peroneus **brevis** **behind** lateral malleolus then **deep** to **peroneal retinacula** inside synovial sheath

dr_youssefhussein@yahoo.com



- **Insertion of Peroneus Longus, crosses sole** of foot from lateral to medial to base of the first metatarsal bone and medial cuneiform bone.
- **Insertion of Peroneus Brevis into** base of 5th metatarsal bone.
- **Nerve supply:** Superficial peroneal nerve.

**** Actions:**

1- Plantar flexion of the foot.

2- Eversion of the foot.

3- **Peroneus longus** Plays an important role in supporting **transverse** arch of foot.

Peroneus longus

Peroneus Brevis

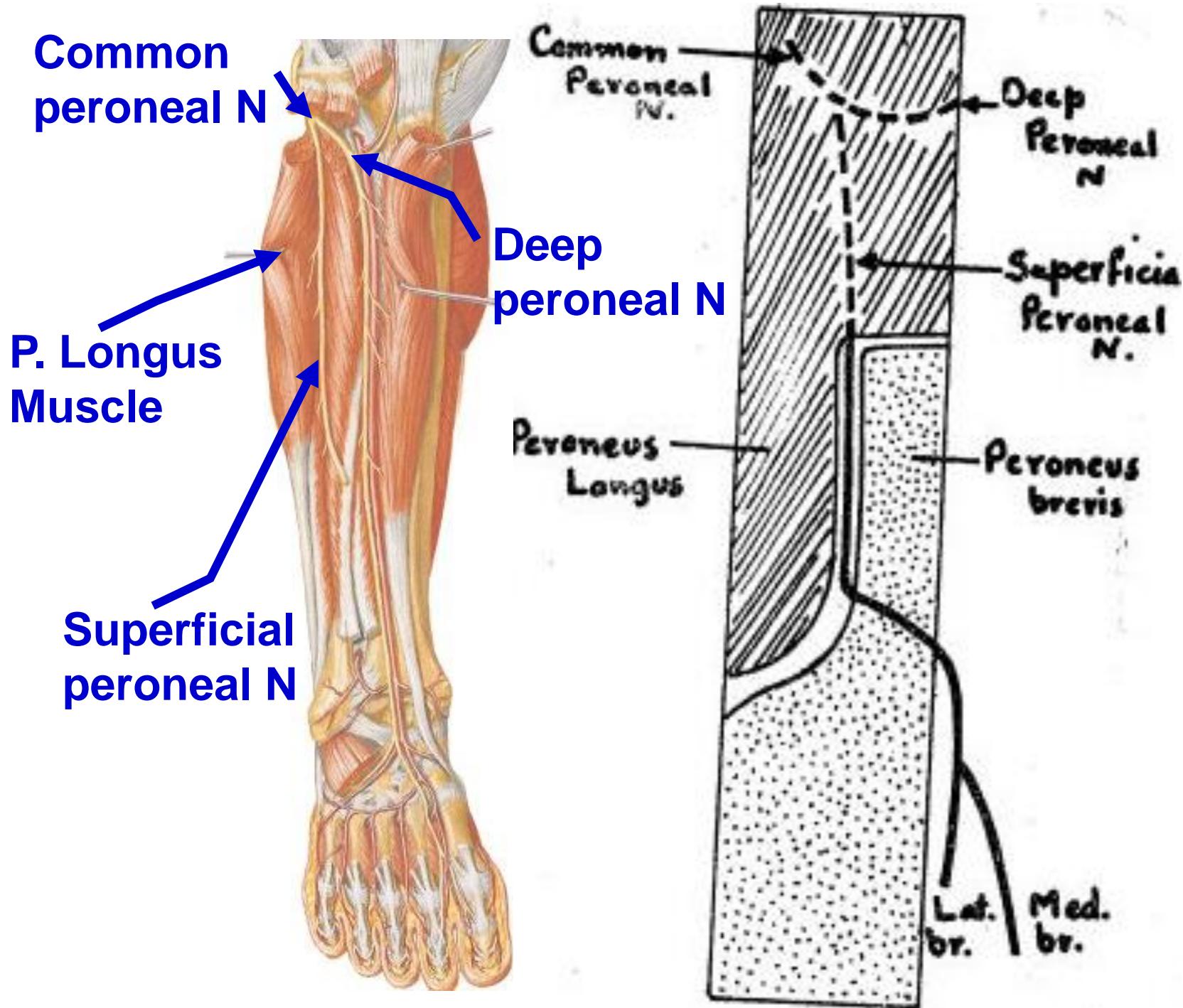
dr_youssefhussein@yahoo.com

dr_youssefhussein@yahoo.com

dr_youssefhussein@yahoo.com



Superficial Peroneal nerve



- **Superficial Peroneal Nerve (musculocutaneous)**

- ** It is the smaller of two terminal branches of common peroneal nerve within substance of peroneus longus.
- It descends through substance of peroneus longus.
- Then between peroneus longus and brevis.
- Then, it pierces deep fascia where it becomes subcutaneous.

- **Superficial Peroneal Nerve (musculocutaneous)**

****** It divides into medial and lateral terminal branches, descend superficial to extensor retinacula to dorsum of foot.

**** Branches**

A- Muscular branches: two 2 peronei longus and brevis.

B- Cutaneous branches

- 1) The lower part of the lateral side and front of the leg.
- 2) Intermediate part of the dorsum of the foot.

C- Medial terminal division: divides into 2 dorsal digital branches

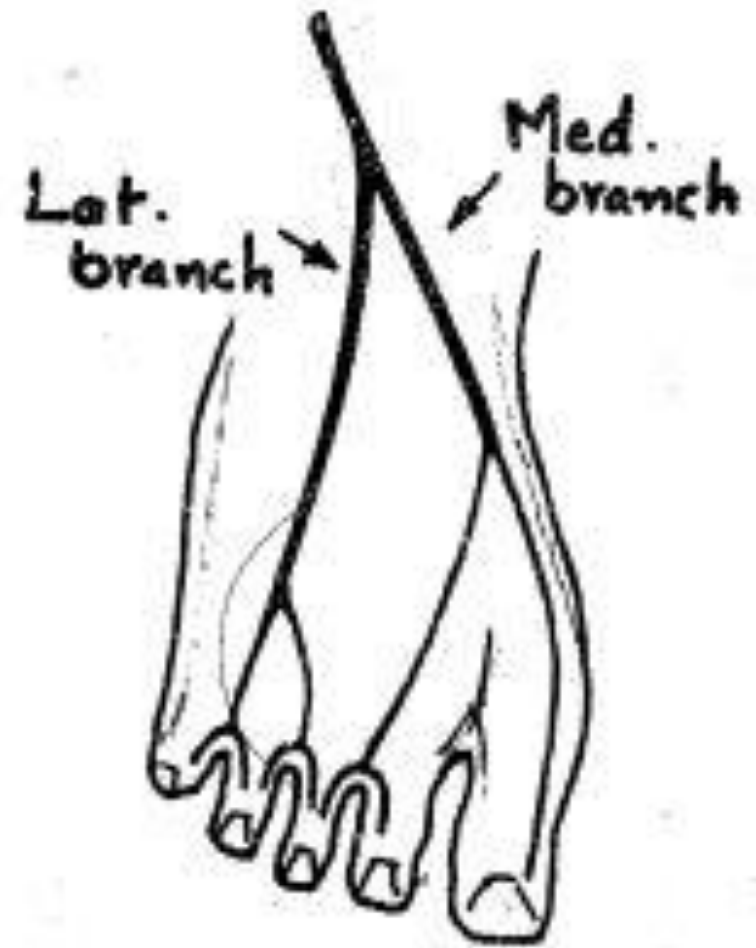
1- Medial branch to the medial side of the big toe.

2- Lateral branch for adjacent sides of 2nd and 3rd toes.

D- Lateral terminal division divides into 2 dorsal digital branches:

1- Medial branch for adjacent sides of 3rd and 4th toes.

2- Lateral branch for adjacent sides of 4th and little toes.



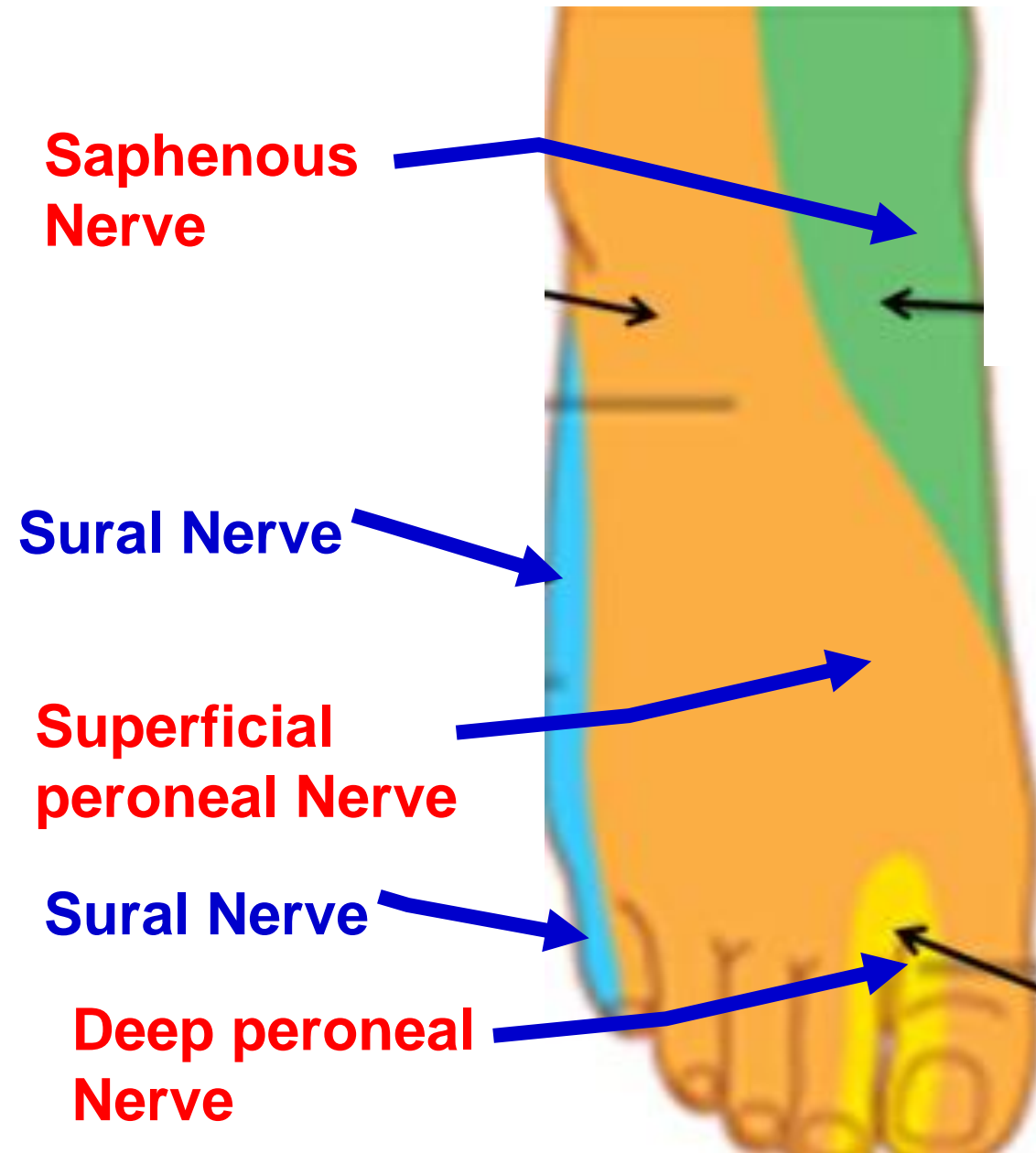
❖ Cutaneous Nerve Supply of Dorsum of Foot

A- Dorsum of the foot.

- 1- **Intermediate** part by superficial peroneal nerve.
- 2- **Medial** by Saphenous nerve from femoral nerve.
- 3- **Lateral** part by sural nerve from tibial nerve.

B- Dorsum of the toes;

- All the dorsum of the toes supplied by the superficial peroneal nerve **except** 2 areas;
- 1- The **adjacent sides** between big toe and 2nd toe by the deep peroneal nerve.
- 2- **Lateral side of the little toe** by the sural nerve.



dr_youssefhussein@yahoo.com

Muscles of Anterior compartment of leg

dr_youssefhussein@yahoo.com



Tibialis anterior

Extensor hallucis longus

Extensor digitorum longus

Peroneus tertius

- **All muscles** of anterior group arise from the anterior surface of **fibula** **except** **tibialis anterior** from lateral surface of **tibia**.

- **Nerve supply: deep peroneal Nerve (anterior tibial Nerve)**

- **Actions: Dorsiflexion of the foot (ankle joint)**

- **Blood supply: Anterior tibial vessels.**

**** Origin of muscles of anterior compartment**

1- Tibialis Anterior

- From the upper 2/3 of the lateral surface of the **tibia**.

2- Extensor Digitorum Longus

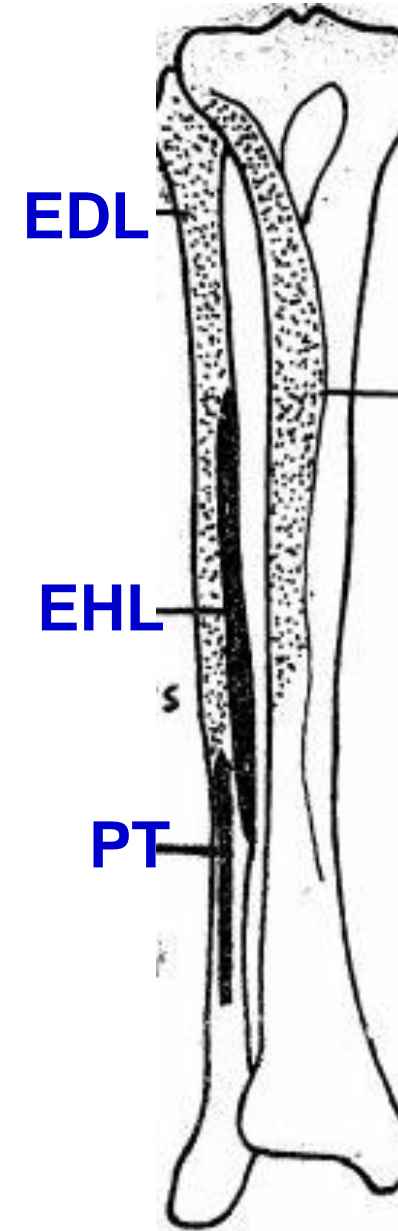
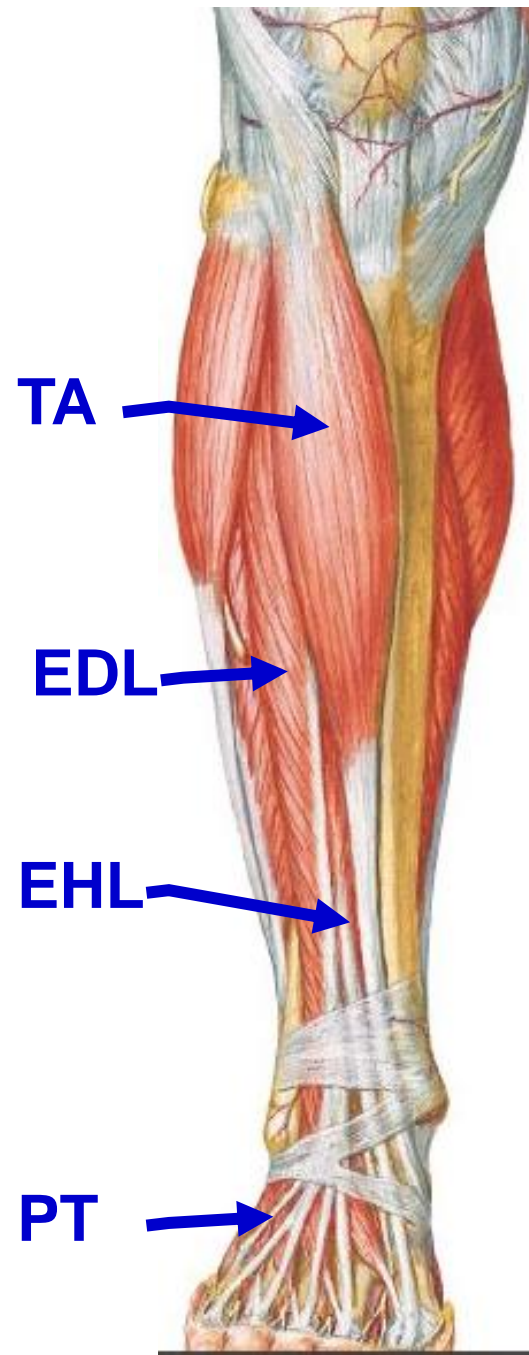
- from the upper 3/4 of the anterior surface of the **fibula**.

3- Extensor Hallucis Longus

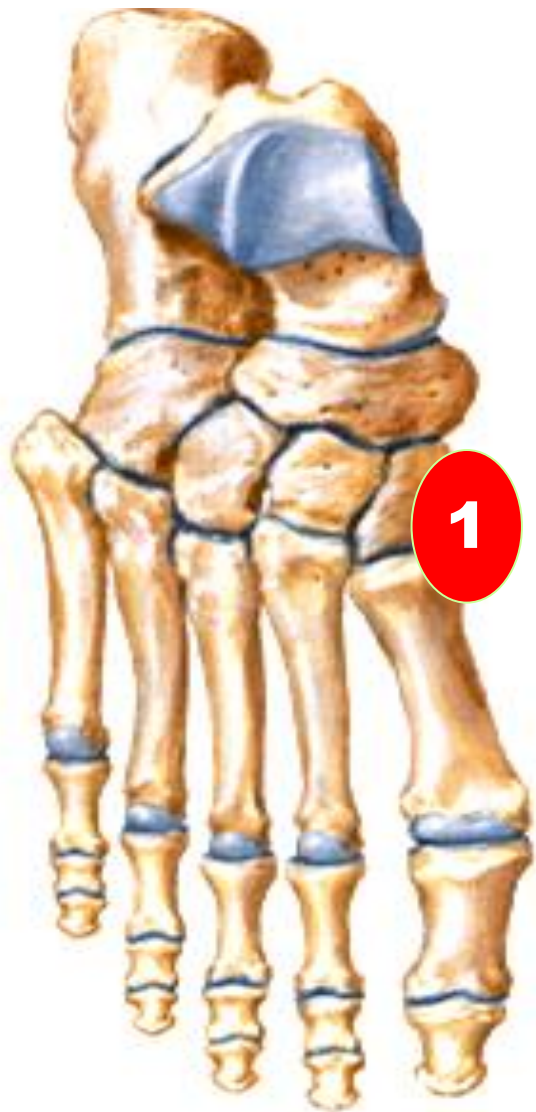
- From the middle 2/4 of the anterior surface of the **fibula**.

4- Peroneus Tertius

- From the lower 1/4 of the anterior surface of the **fibula**.



dr_youssefhussein@yahoo.com



1- Tibialis Anterior

**** Origin:** 1- From the upper 2/3 of the lateral surface of the tibia and interosseous membrane.

**** Insertion:** medial surface of medial cuneiform bone and Adjacent part of base of the first metatarsal bone.

**** Nerve supply:** anterior tibial nerve (deep peroneal nerve).

**** Actions:** 1- Dorsiflexion of the foot (ankle joint).

2- Inversion of the foot.

3- Support and maintain the medial longitudinal arch of the foot.

dr_youssefhussein@yahoo.com



2- Extensor Digitorum Longus

**** Origin:** from the upper 3/4 of the anterior surface of the fibula and interosseous membrane.

**** Insertion :**

- They join the **extensor expansions** on the proximal phalanges of the **lateral 4 toes**, Then divided into

a- Middle slip into the dorsal aspect of the middle phalanges.

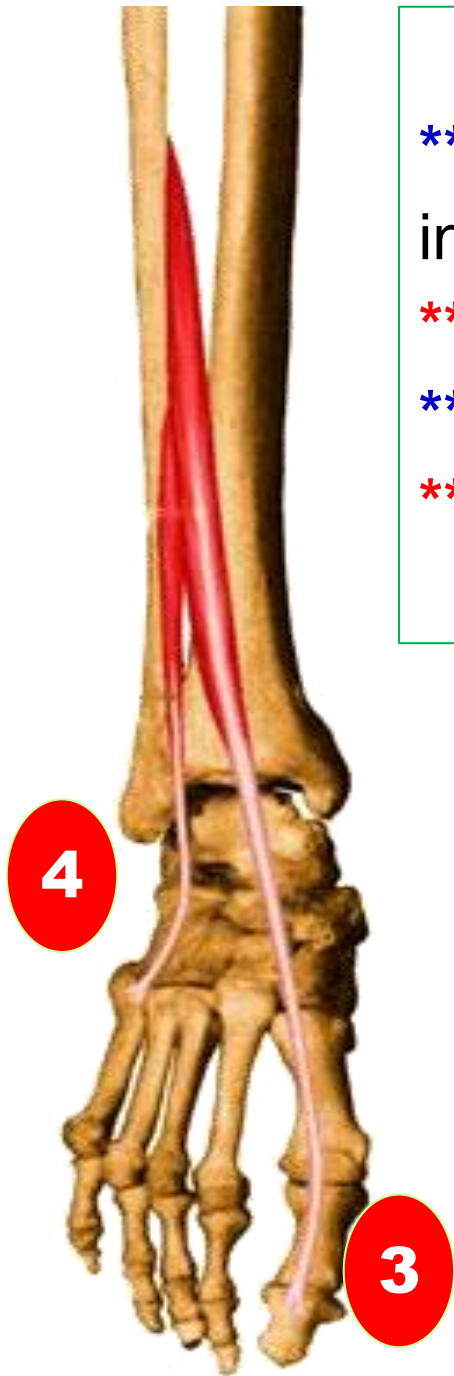
b- 2 collateral slips into the bases of the distal phalanges.

**** Nerve supply:** anterior tibial nerve (deep peroneal nerve).

**** Actions:**

1- Dorsiflexion of the foot.

2- Extension of the all joints of the lateral 4 toes.

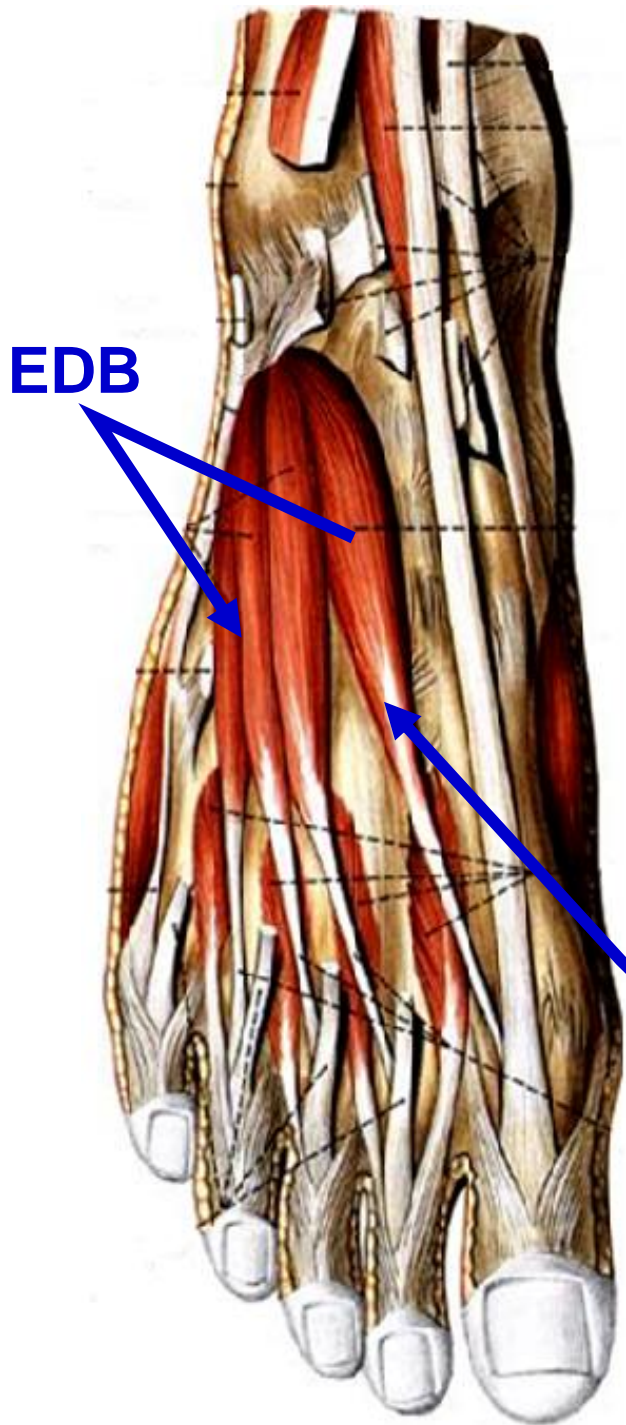


3- Extensor Hallucis Longus

- ** **Origin:** From the middle 2/4 of the anterior surface of the fibula and interosseous membrane.
- ** **Insertion:** dorsum of the base of the distal phalanx of the big toe.
- ** **Nerve supply:** anterior tibial nerve (deep peroneal nerve).
- ** **Actions:** 1- Dorsiflexion of the foot.
2- Extension of all joints of the big toe.

4- Peroneus Tertius

- ** **Origin:** From the lower 1/4 of the anterior surface of the fibula and interosseous membrane.
- ** **Insertion:** dorsum of base of the 5th metatarsal bone.
- ** **Nerve supply:** deep peroneal nerve.
- ** **Actions:** 1- Dorsiflexion of the foot.
2- Eversion of the foot.



- **Extensor Digitorum Brevis**

**** Origin;** anterior surface of the calcaneus and inferior extensor retinaculum.

**** Insertion:** It divides into 4 slips for the **medial 4 toes**.

1- The medial slip is inserted into dorsum of the base of the proximal phalanx of the **big toe (extensor hallucis brevis)**.

2- The lateral 3 slips are inserted into the extensor expansion of the 2nd, 3rd and 4th toes.

**** Nerve supply;** **lateral branch** of the deep peroneal nerve

**** Actions,** Extension of the medial 4 toes.

dr_youssefhusein@yahoo.com

dr_youssefhussein@yahoo.com

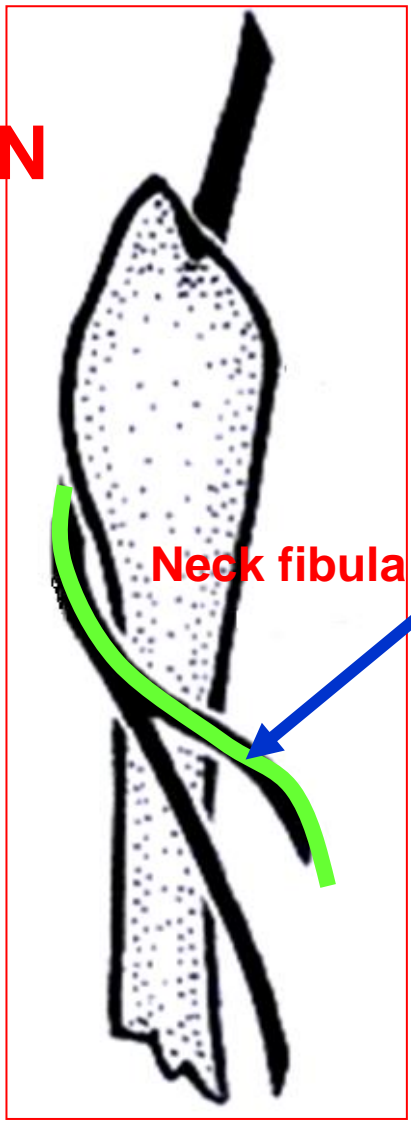


**Deep peroneal
(Anterior Tibial)
Nerve**

dr_youssefhussein@yahoo.com

Deep peroneal nerve

Common peroneal N



Tibialis anterior

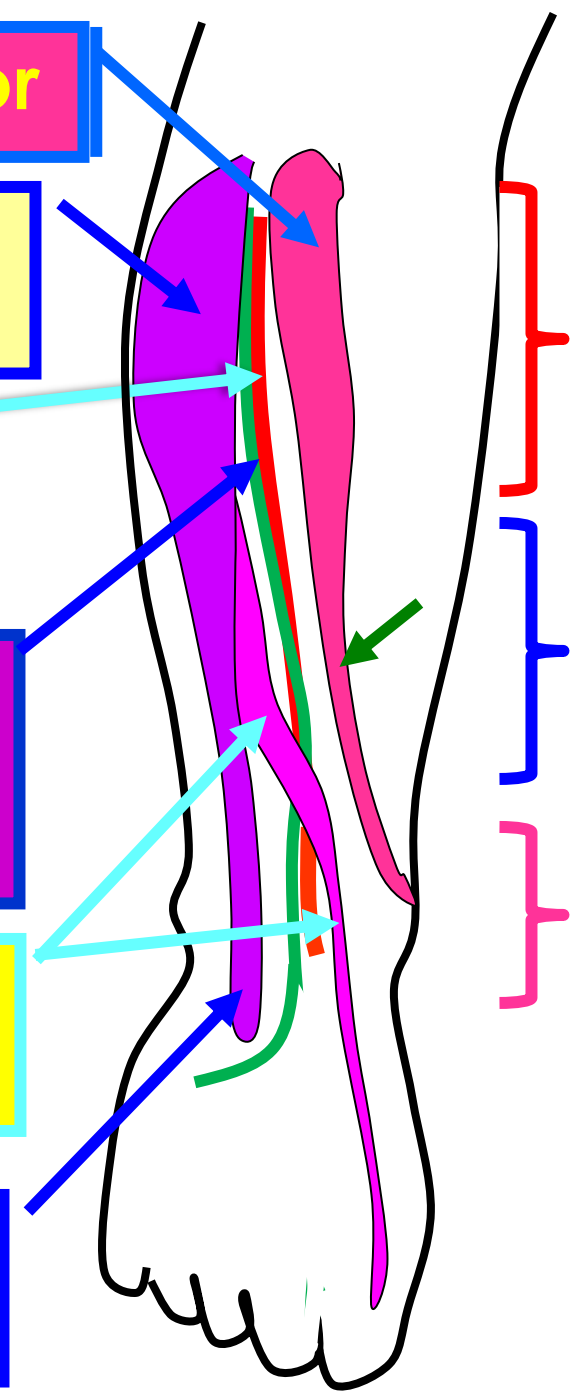
Extensor digitorum longus

Anterior tibial artery

Anterior tibial nerve (Deep peroneal nerve)

Extensor hallucis longus

Extensor digitorum longus



Medial

- **Anterior tibial (Deep Peroneal) Nerve**

**** Origin:** one of the two terminal branches of the common peroneal nerve, at the **lateral side of the neck of the fibula.**

**** Course and relations in the leg:**

1- It passes through the extensor digitorum longus.

2- Upper part, between Tibialis anterior (**Medial**) and extensor digitorum longus.

3- Middle part, between Tibialis anterior (**Medial**) and extensor hallucis longus.

4- It is crossed by extensor hallucis longus from lateral to medial

5- Lower part, between Extensor hallucis longus (**Medial**) & extensor digitorum longus.

6- Relation of the anterior tibial artery to the nerve,

a- Upper part of the leg, the nerve is **lateral** to the artery.

b- Middle part of the leg, the nerve becomes **anterior** to the artery.

c- Lower part of the leg, the nerve returns **lateral** to the artery.

**** Termination;** by dividing into medial and lateral terminal branches.

**** Branches of deep peroneal nerve**

- 1- Muscular branches** to muscles of the anterior compartment
 - Tibialis anterior, Extensor digitorum longus, Extensor hallucis longus and Peroneus tertius muscles
- 2- Articular branches:** to the ankle joint.
- 3- Terminal branches in the foot**
 - I- Medial terminal branch:**
 - **Cutaneous** to the adjacent sides of the big and 2nd toes.
 - **Articular branches** to the joints of the foot.
 - II- Lateral terminal branch:** ends by **ganglia** and gives
 - 1- Muscular** to the **extensor digitorum brevis**.
 - 2- Articular** to the joints of the foot.

- **Injury of the deep peroneal nerve**

**** Causes,** Fracture neck of the fibula. Stab wound.

**** Results of injury**

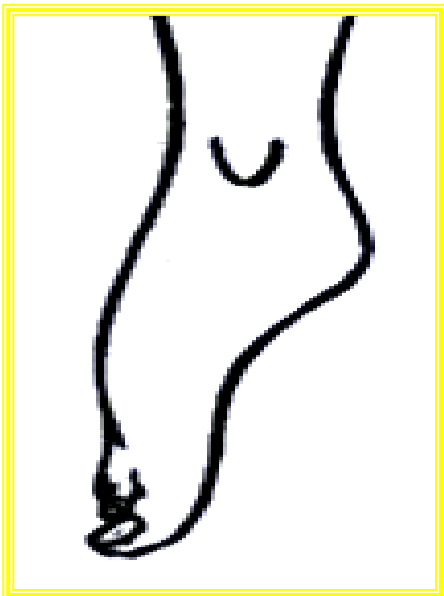
1. Motor affects; paralysis of muscles of anterior compartment leading to

- Loss of dorsiflexion and extension of toes.
- Weakness of inversion of the foot.

**** Deformity, Foot drop**

- **Gait:** high steppage gait.

2- Sensory affects; Loss of sensation of adjacent sides of the big and 2nd toe.

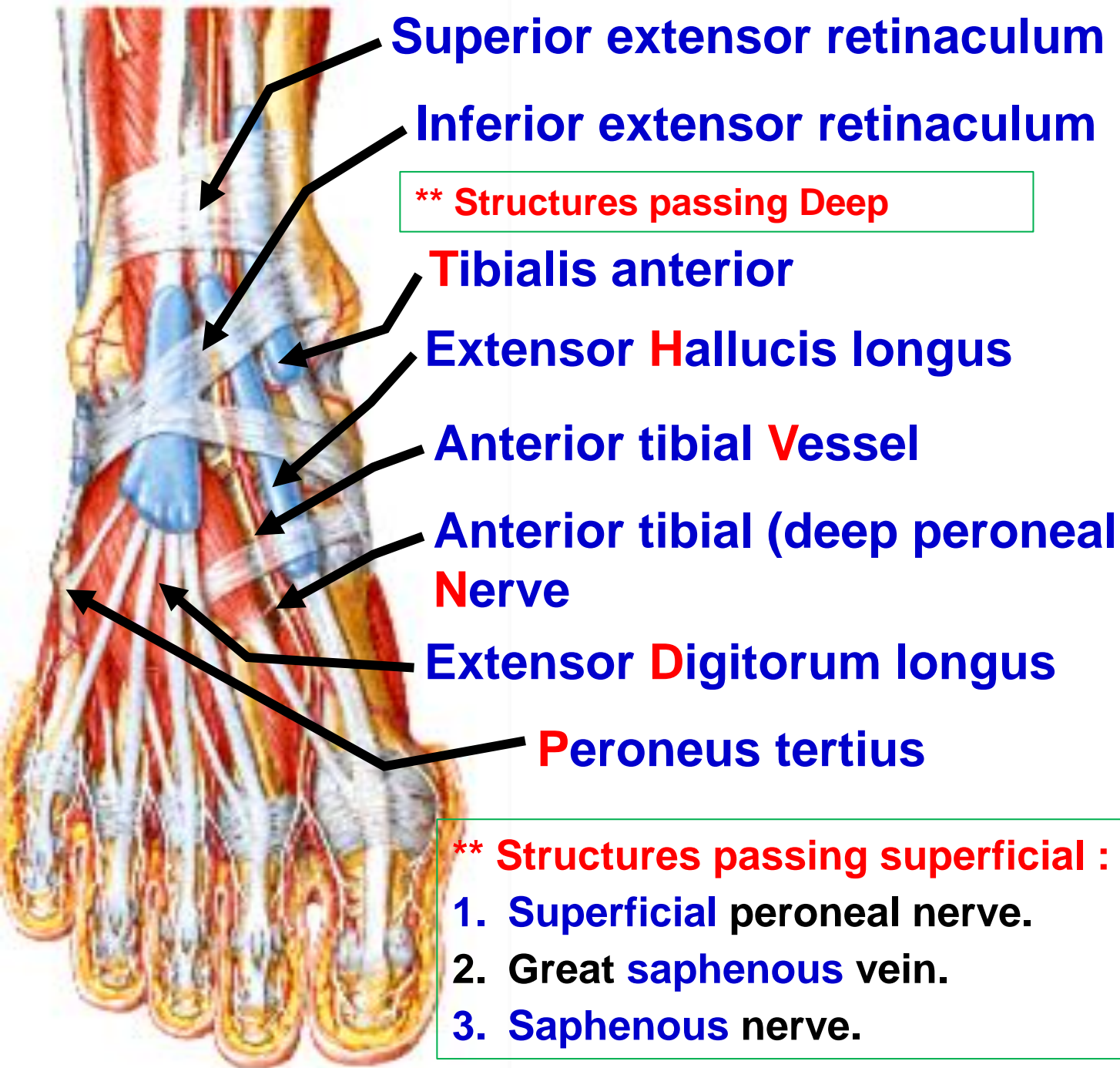


dr_youssefhusseini@yahoo.com

dr_youssefhussein@yahoo.com

Extensor retinaculum of foot

dr_youssefhussein@yahoo.com



- **Extensor Retinaculum**
Thickened band of the deep fascia
- 1- Superior Extensor Retinaculum,**
**** Attachment;** lower part of anterior border of fibula (**Lateral**) to lower part of anterior border of the tibia (**Medial**) .
 - 2- Inferior, Y shaped band**
**** Attachment;**
 - **Laterally, Stem** attached to superior surface of the calcaneus.
 - **Medially,**
 - a- Upper band** medial malleolus.
 - b- Lower band** fuses with deep fascia of foot.

dr_youssefhussein@yahoo.com

