

**FRONT OF LEG  
&  
DORSUM OF FOOT**

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# CUTANEOUS NERVES

Lateral cutaneous n. of the calf (*br. of common peroneal nerve*) supplies the skin on the upper part of the anterolateral surface of the leg.

Superficial peroneal n. (*br. of common peroneal nerve*) supplies the skin of the lower part of the anterolateral surface of the leg and dorsum of the foot

Sural n. (*br. of tibial n*) supplies the skin of the lateral border of the foot upto the tip of the little toe.



Saphenous n. (*br. of post. div. of femoral nerve*) supplies the skin on the anteromedial surface of the leg

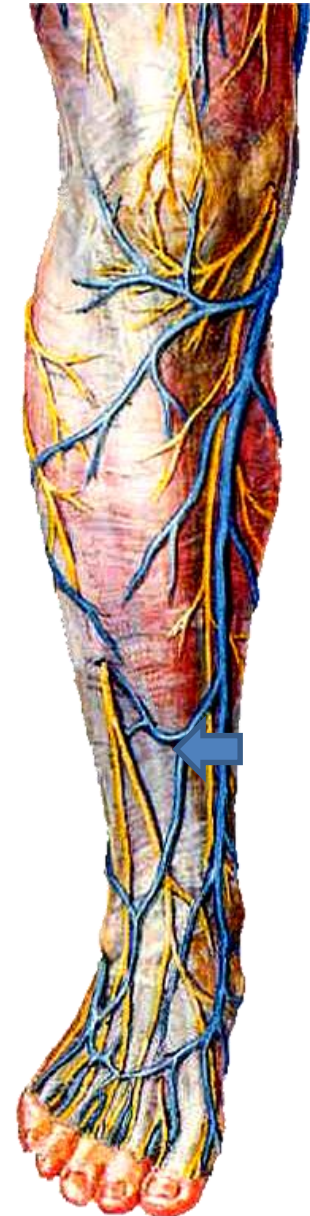
Deep peroneal n. (*br. of common peroneal nerve*) supplies the skin of the adjacent sides of the big and second toes

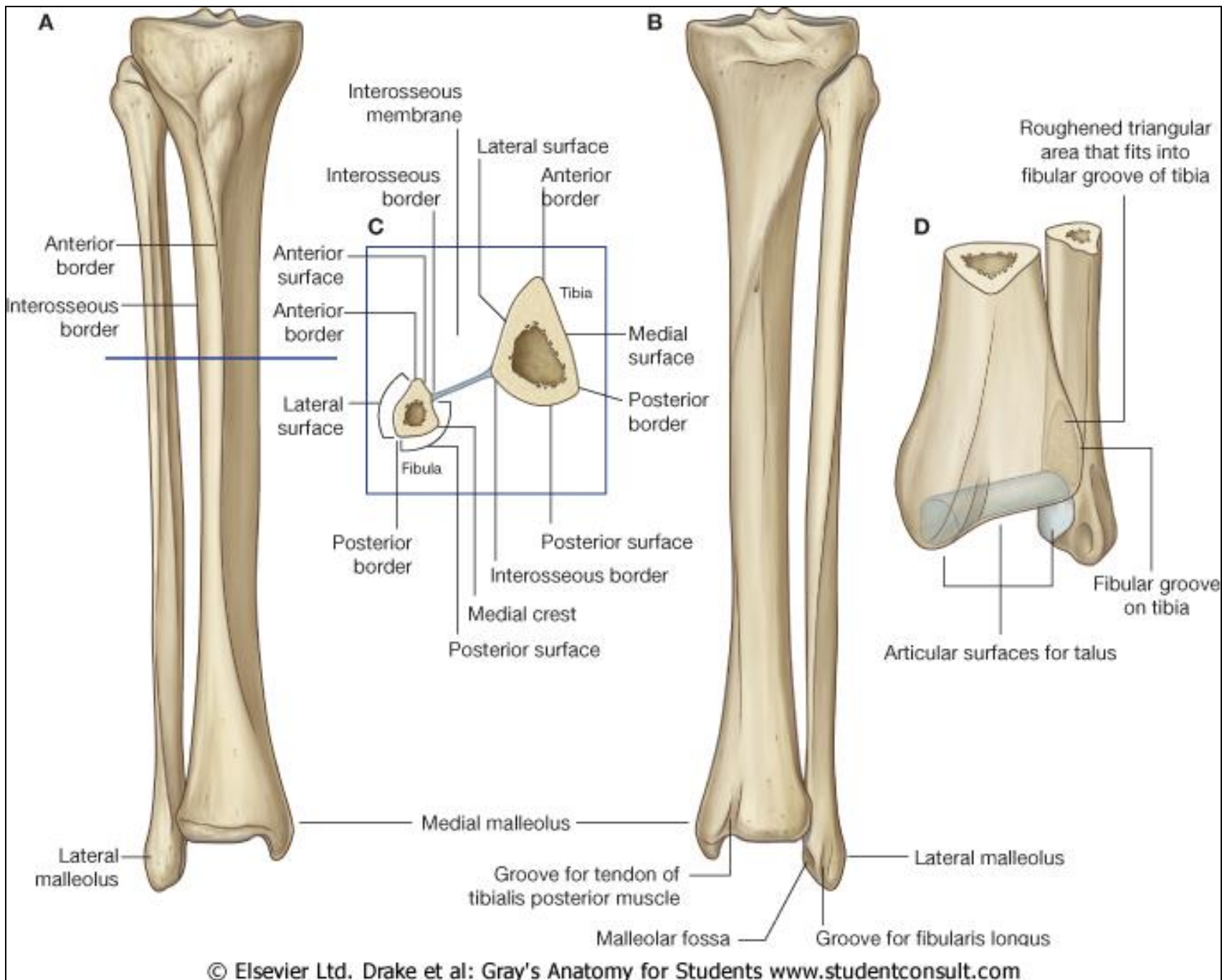
Digital branches. (*br. of tibial n*) Curve up and supply the distal part of dorsum of toes.

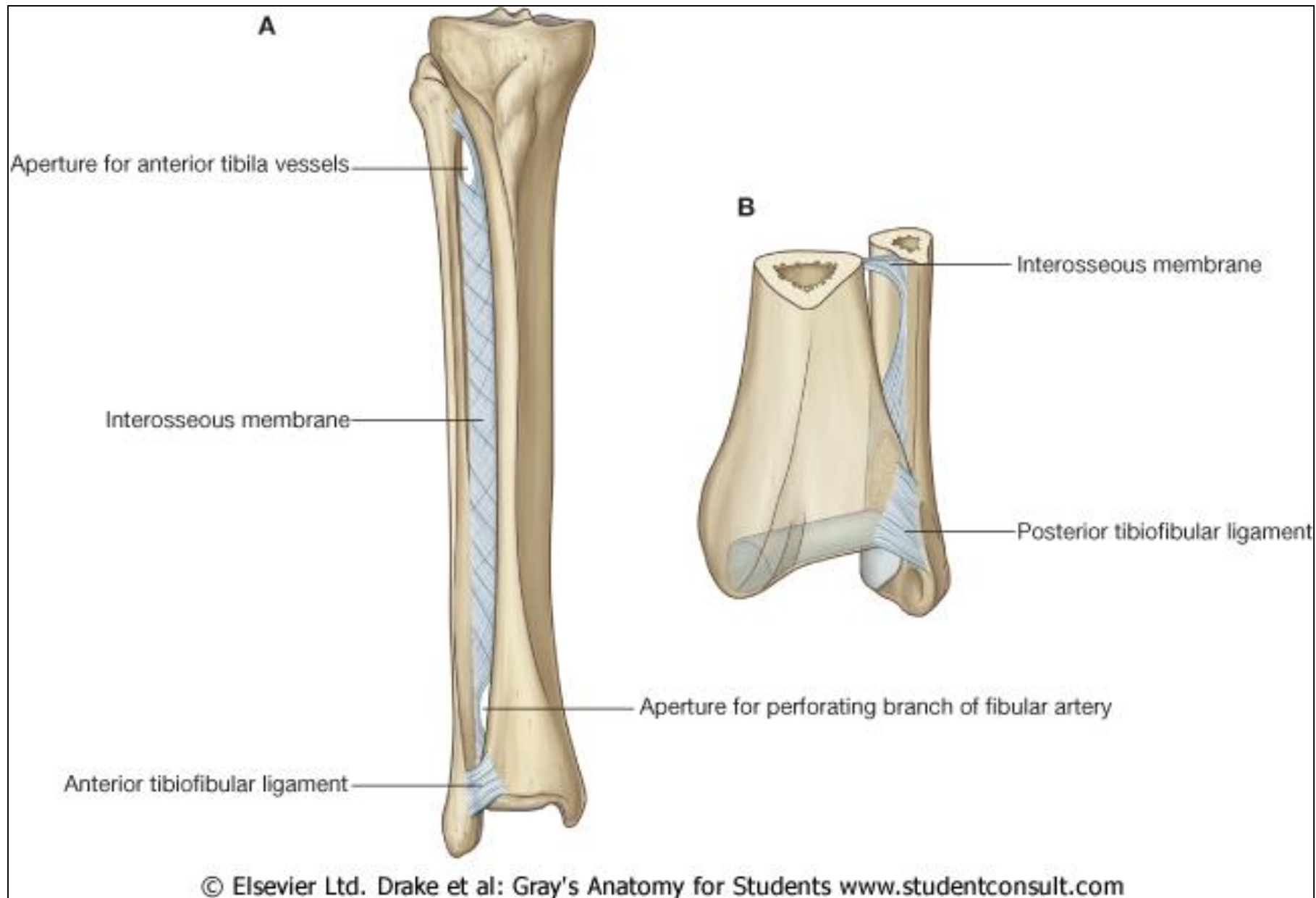
Med. Plantar n.-3 ½ toes  
Lat. Plantar n.-1 ½ toes

# Veins present in superficial fascia of leg

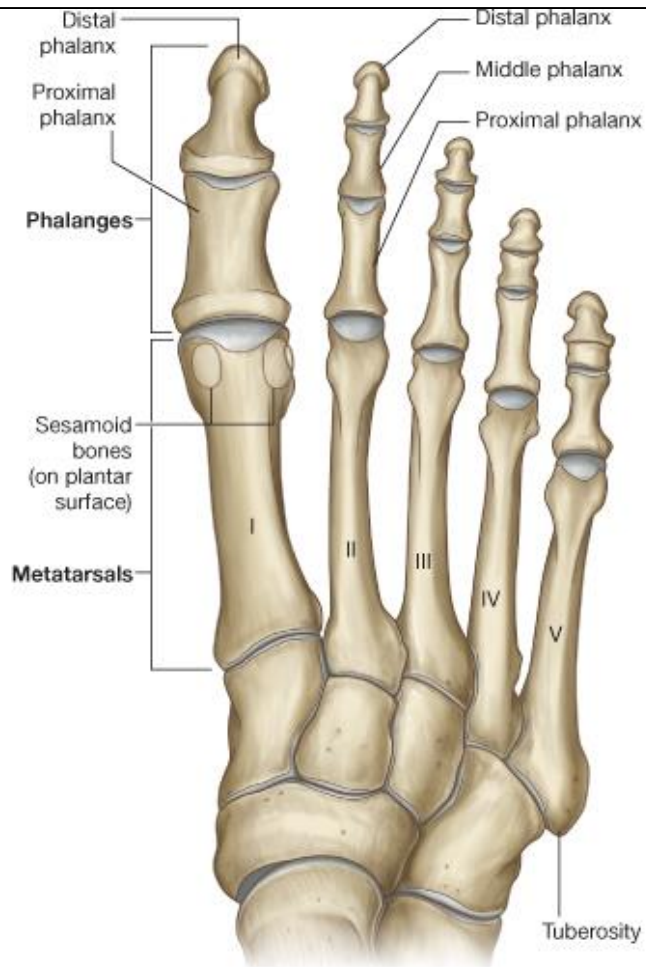
- ❖ **Dorsal venous arch** lies over proximal part of metatarsals, and receives 4 dorsal metatarsal veins formed by union of 2 digital dorsal veins.
- ❖ **Great saphenous vein** formed by union of medial end of dorsal venous arch with medial marginal vein
- ❖ **Small/ Short saphenous vein** formed by union of lateral end of dorsal venous arch with lateral marginal vein



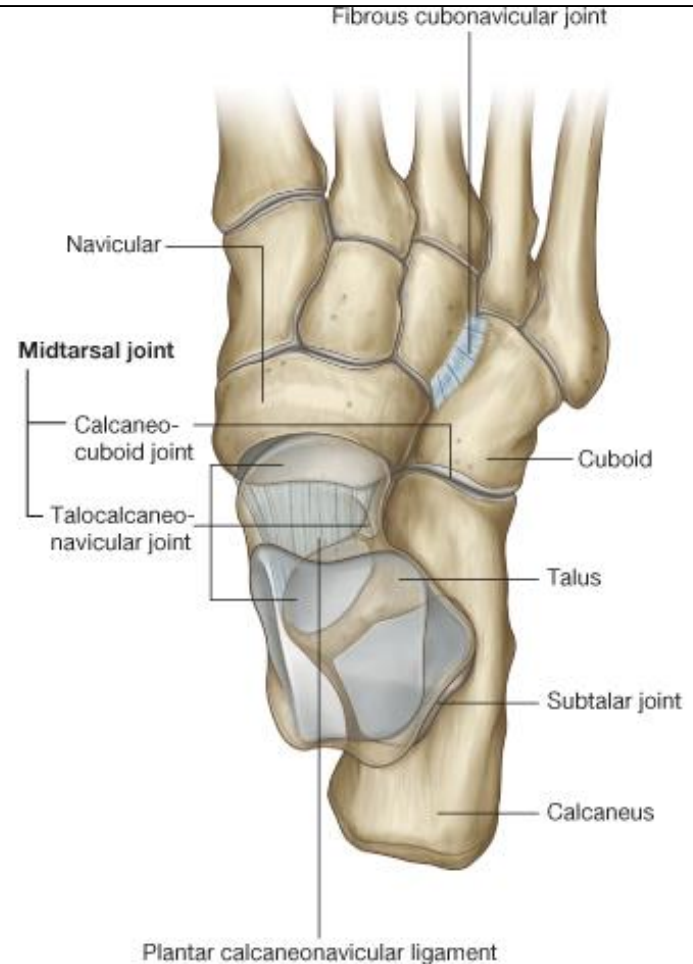




# SKELETON OF FOOT



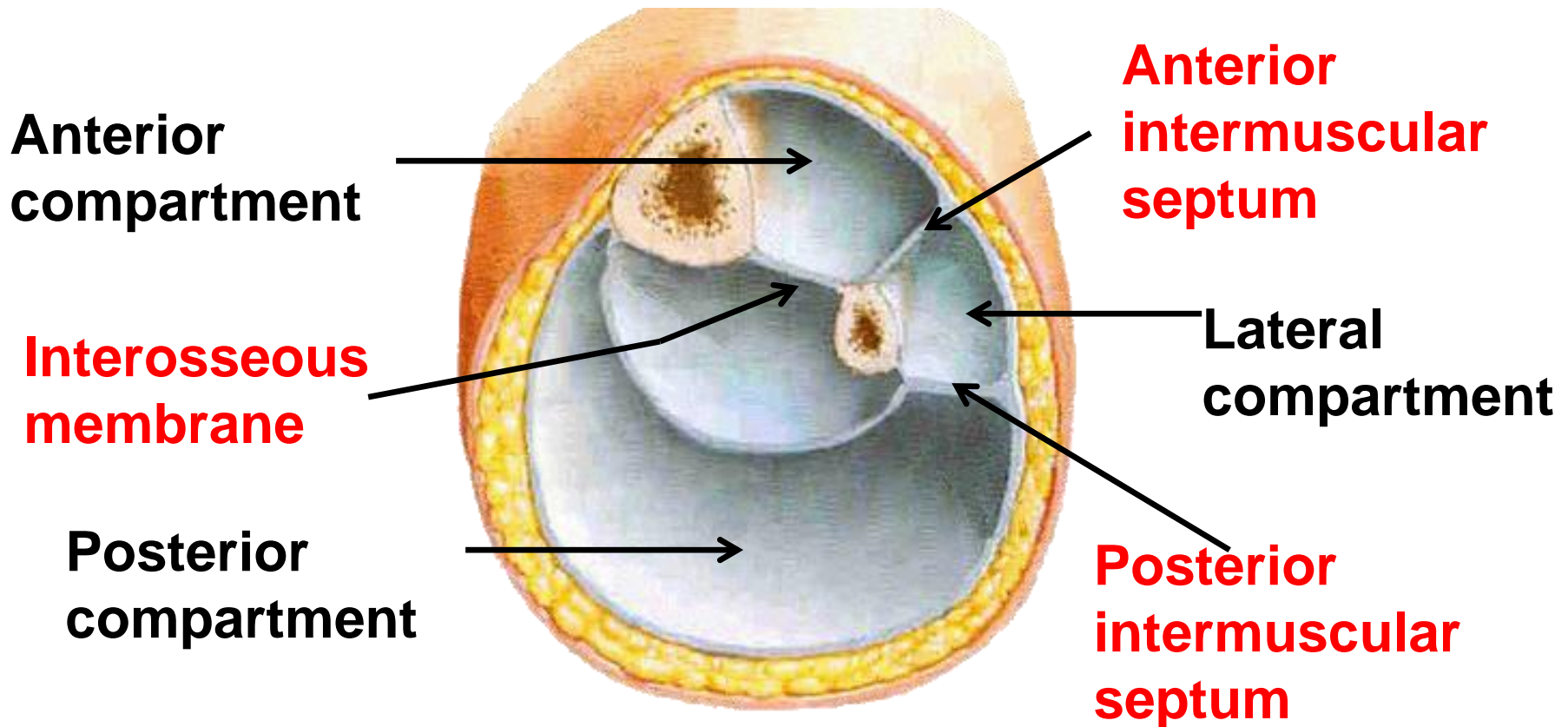
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# Deep fascia of leg



- Replaced by periosteum at subcutaneous areas.
- Forms intermuscular septae to form three compartments

# Retinacula

Deep fascia is thickened to form bands.

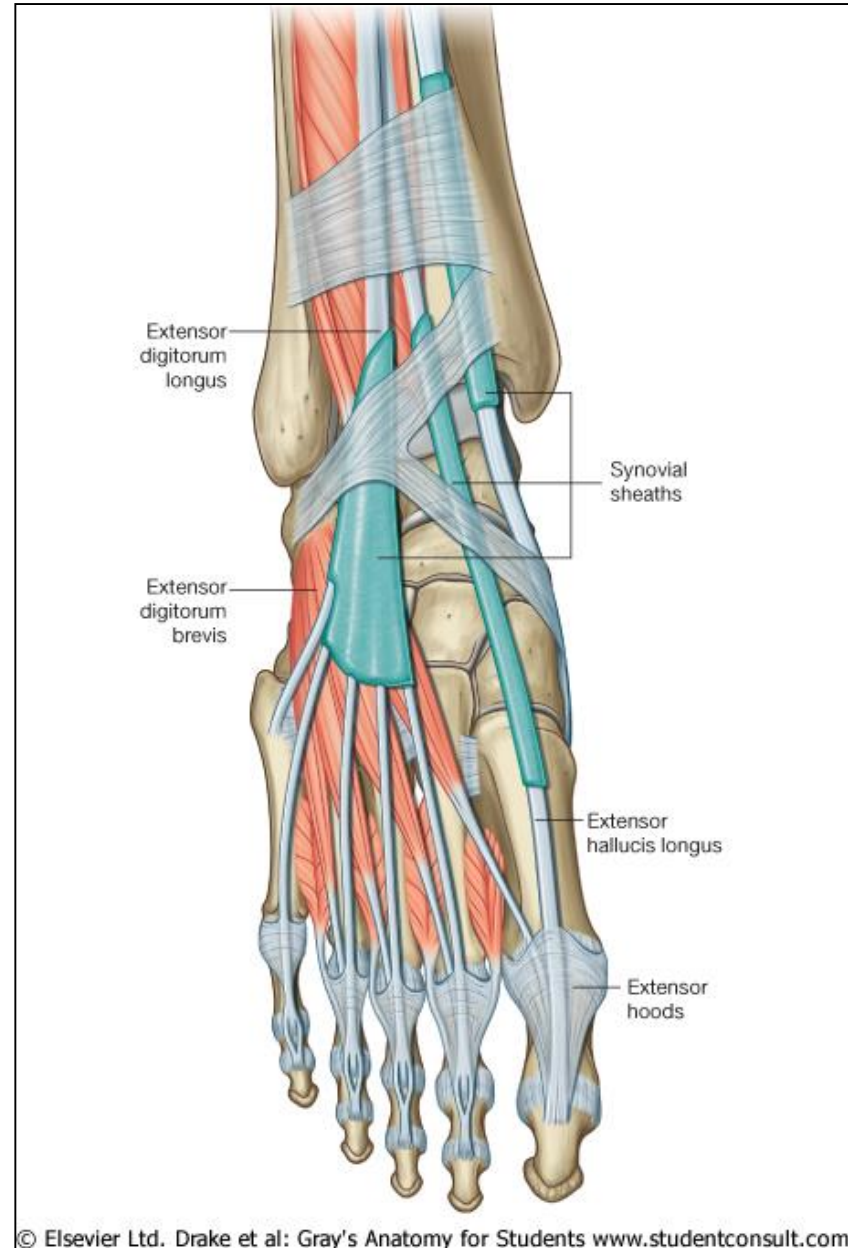
Retain tendons in place.

- Superior Extensor Retinaculum

- Inferior Extensor Retinaculum

- Superior Peroneal Retinaculum

- Inferior Peroneal Retinaculum

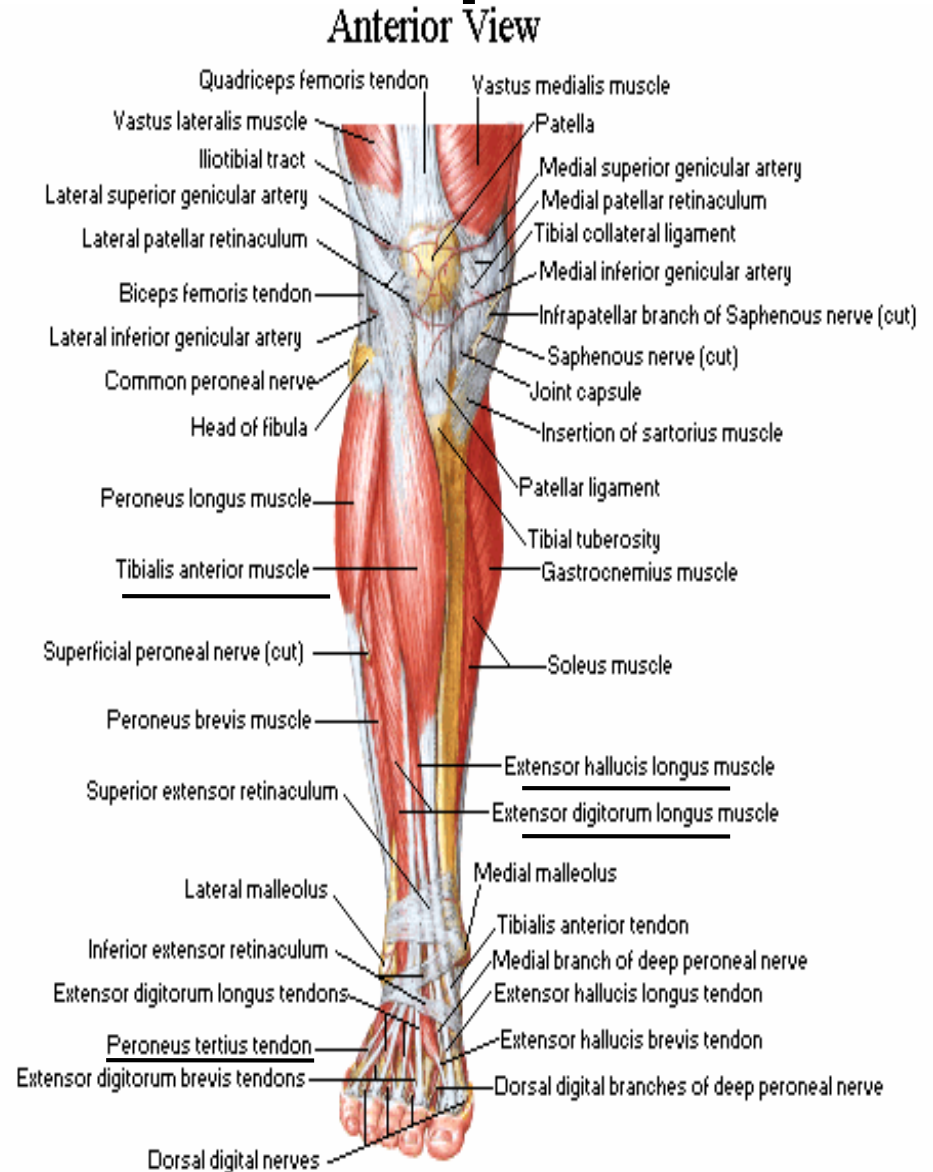




# Contents of the anterior compartment

## ○ Muscles:

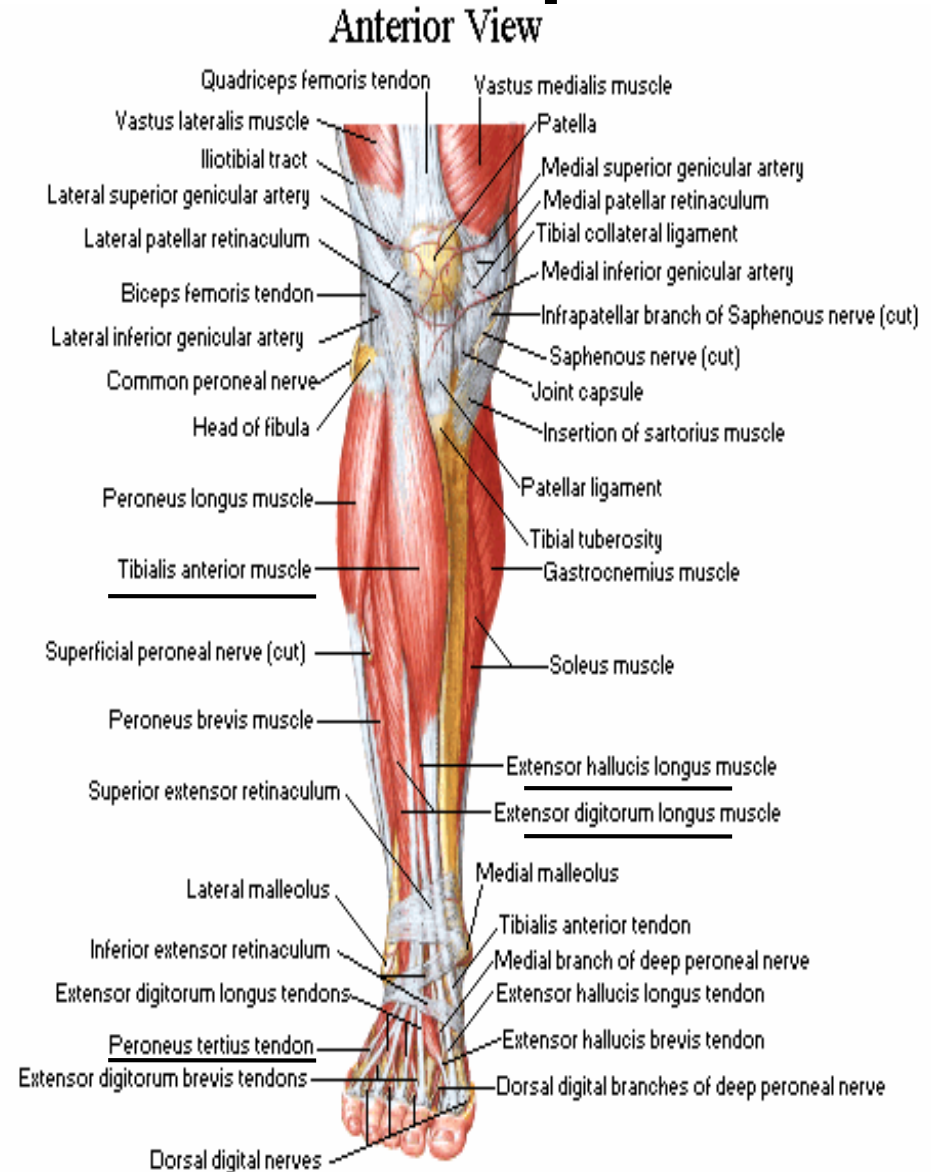
1. Tibialis anterior
2. Extensor digitorum longus
3. Extensor hallucis longus
4. Peroneus tertius



# Contents of the anterior compartment

○ Anterior tibial artery

○ Deep peroneal nerve.



# TIBIALIS ANTERIOR



## Origin:

- Upper two-thirds of the lateral surface of the shaft of tibia.
- Adjacent interosseous membrane.

# TIBIALIS ANTERIOR



## Insertion:

- Infero-medial side of the base of the first metatarsal bone.
- Adjacent medial cuneiform bone.

# TIBIALIS ANTERIOR



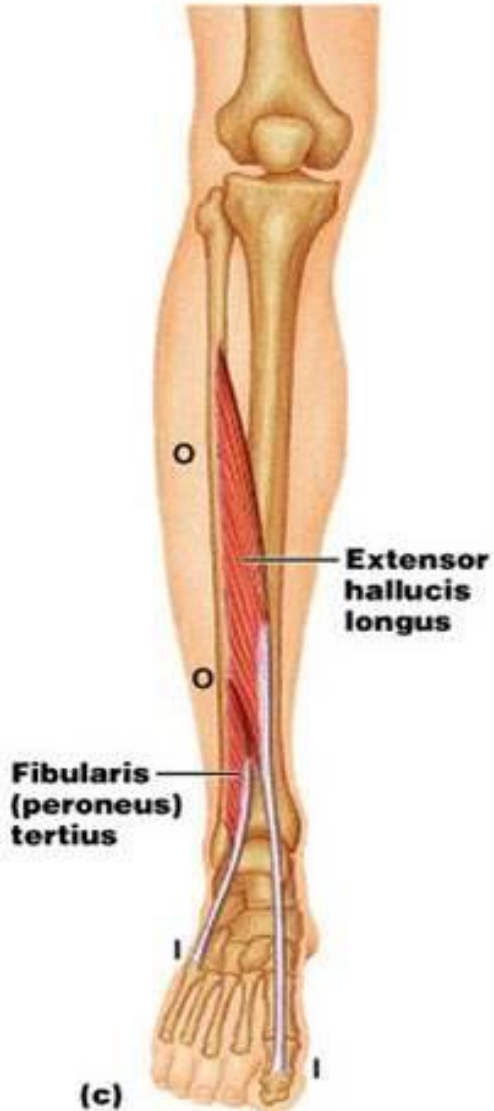
**Nerve Supply:**  
Deep Peroneal nerve.

## **Actions:**

- Dorsiflexion of foot at the ankle joint.
- Maintains medial longitudinal arch.
- Inversion of foot at mid-tarsal and sub-talar joints.



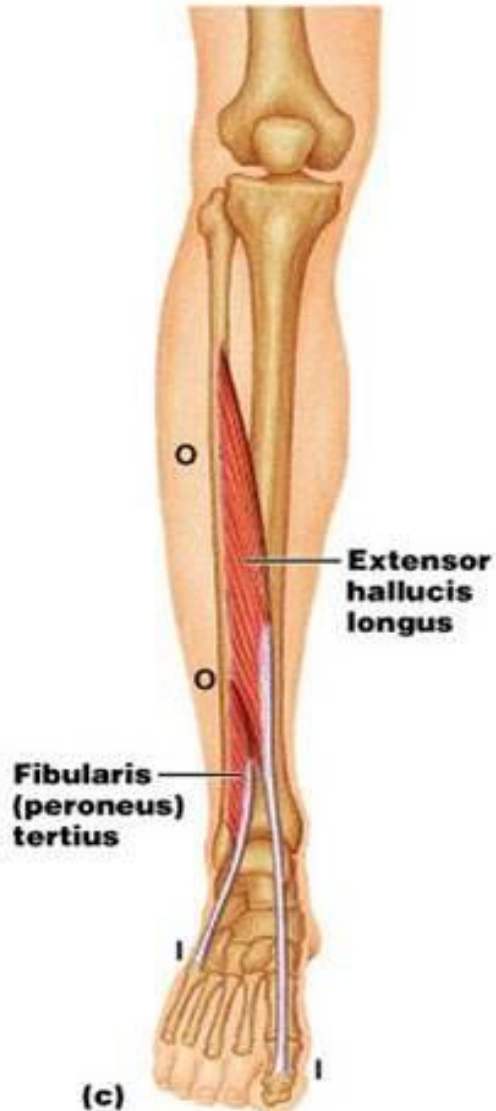
# EXTENSOR HALLUCIS LONGUS



## Origin:

- Middle 2/4 of the medial surface of the shaft of fibula medial to the origin of extensor digitorum longus.
- Adjacent interosseous membrane.

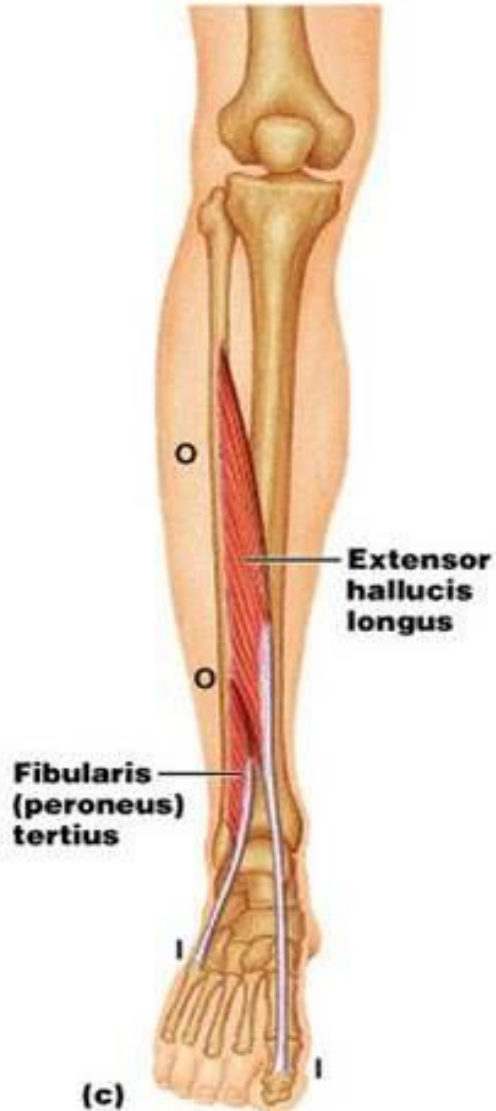
# EXTENSOR HALLUCIS LONGUS



## Insertion:

- The tendon crosses in front of anterior tibial vessels and deep peroneal nerve from lateral to medial side.
- Base of the terminal phalanx of great toe.

# EXTENSOR HALLUCIS LONGUS



## Nerve supply:

Deep Peroneal nerve

## Actions:

- Dorsiflexion of the great toe.
- Stretches the plantar aponeurosis.
- Increases the concavity of the medial longitudinal arch.

# EXTENSOR DIGITORUM LONGUS

## Origin:

- Upper three-fourths of the medial surface of the shaft of fibula.
- A small area of lateral tibial condyle.
- Interosseous membrane.
- Anterior intermuscular septum.



# EXTENSOR DIGITORUM LONGUS

## Insertion:

- Tendon divides into four digital slips for insertion into lateral four toes.

- The slips join laterally with the three digital slips of extensor digitorum brevis to form the dorsal digital expansion.





# EXTENSOR DIGITORUM LONGUS

## Nerve Supply:

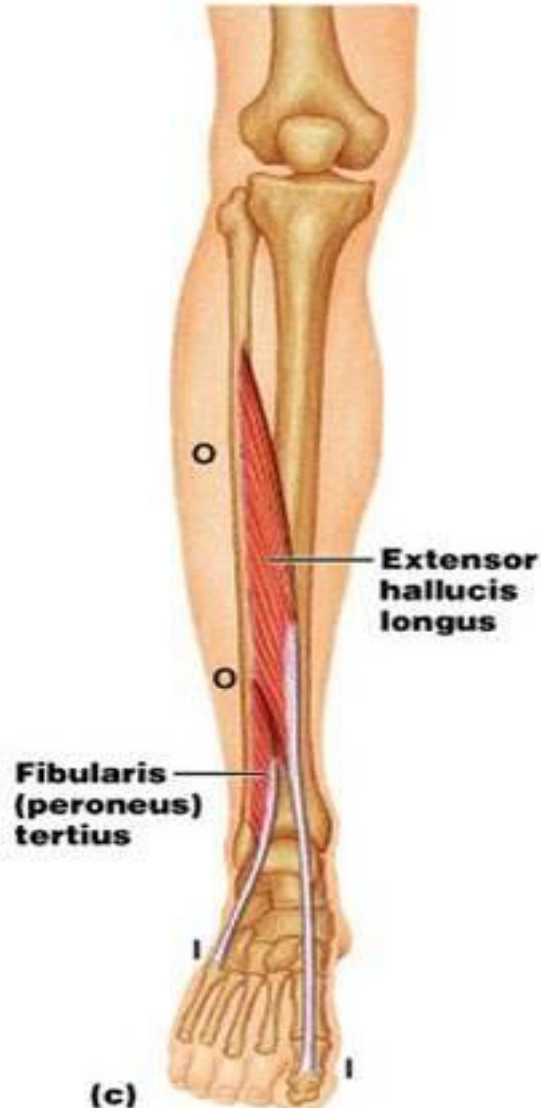
Deep peroneal nerve

## Actions:

- Dorsiflexion of foot at the ankle joint.
- Dorsiflexion of lateral four toes.



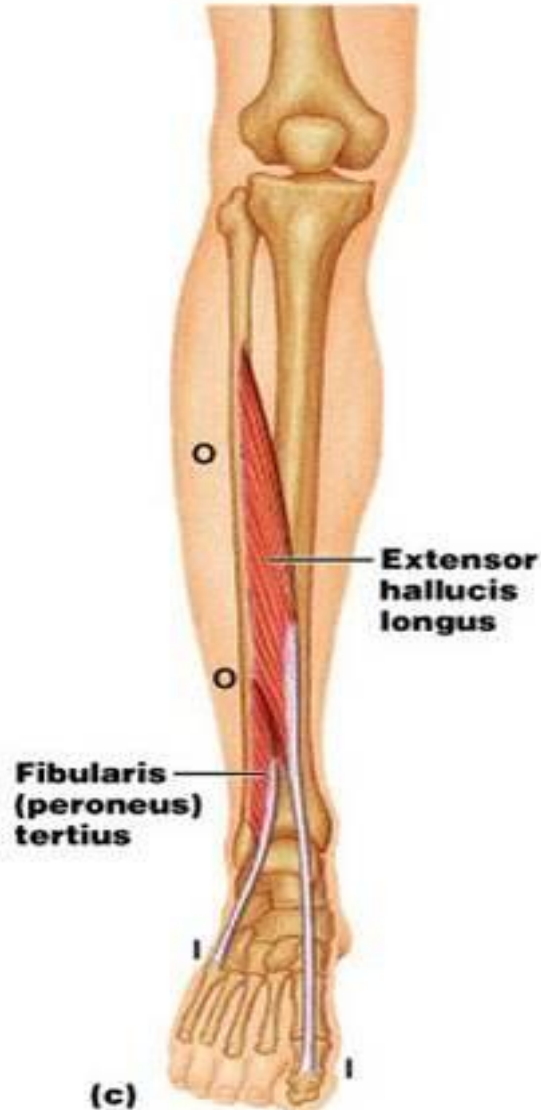
# PERONEUS TERTIUS



## Origin:

- Lower one-fourth of the medial surface of the shaft of fibula in continuity with the origin of extensor digitorum longus.
- Adjacent inerosseous membrane.

# PERONEUS TERTIUS



## Insertion:

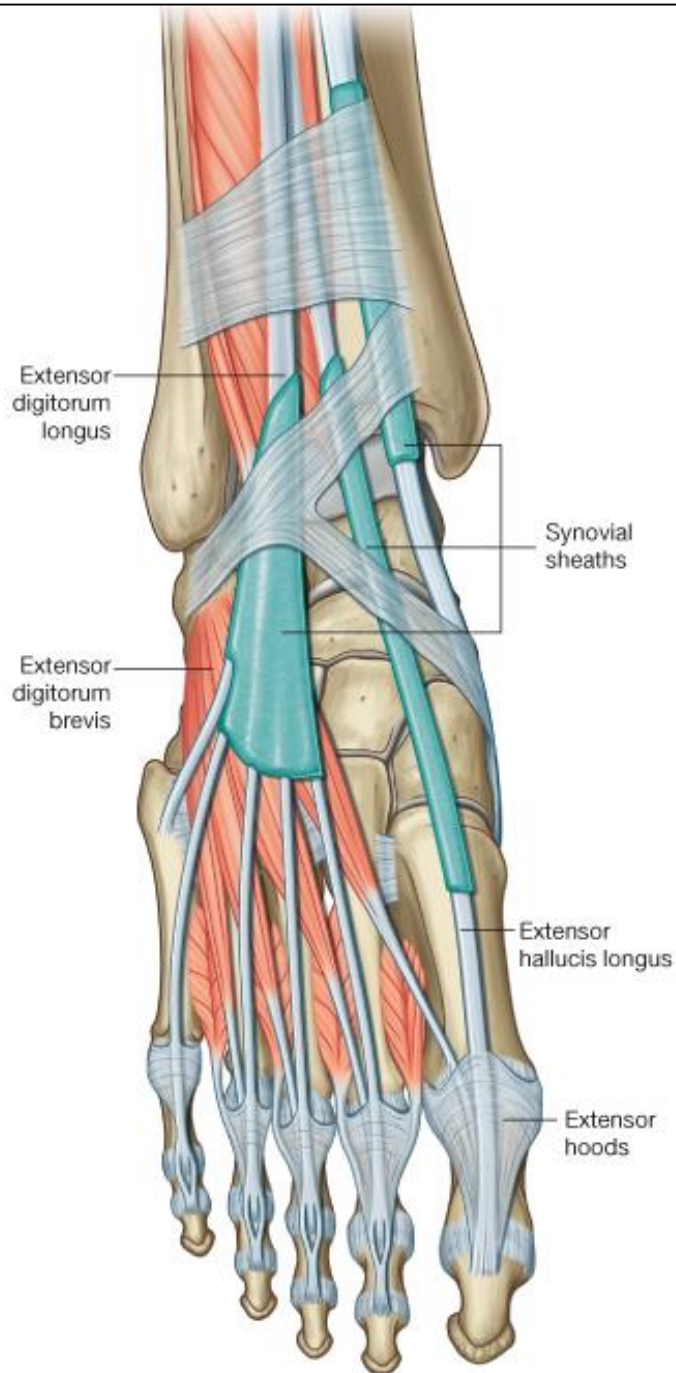
- Dorsal surface of the base of the fifth metatarsal bone.

## Nerve Supply:

Deep Peroneal nerve

## Actions:

- Dorsiflexion of foot at the ankle joint.
- Weak evertor of the foot.

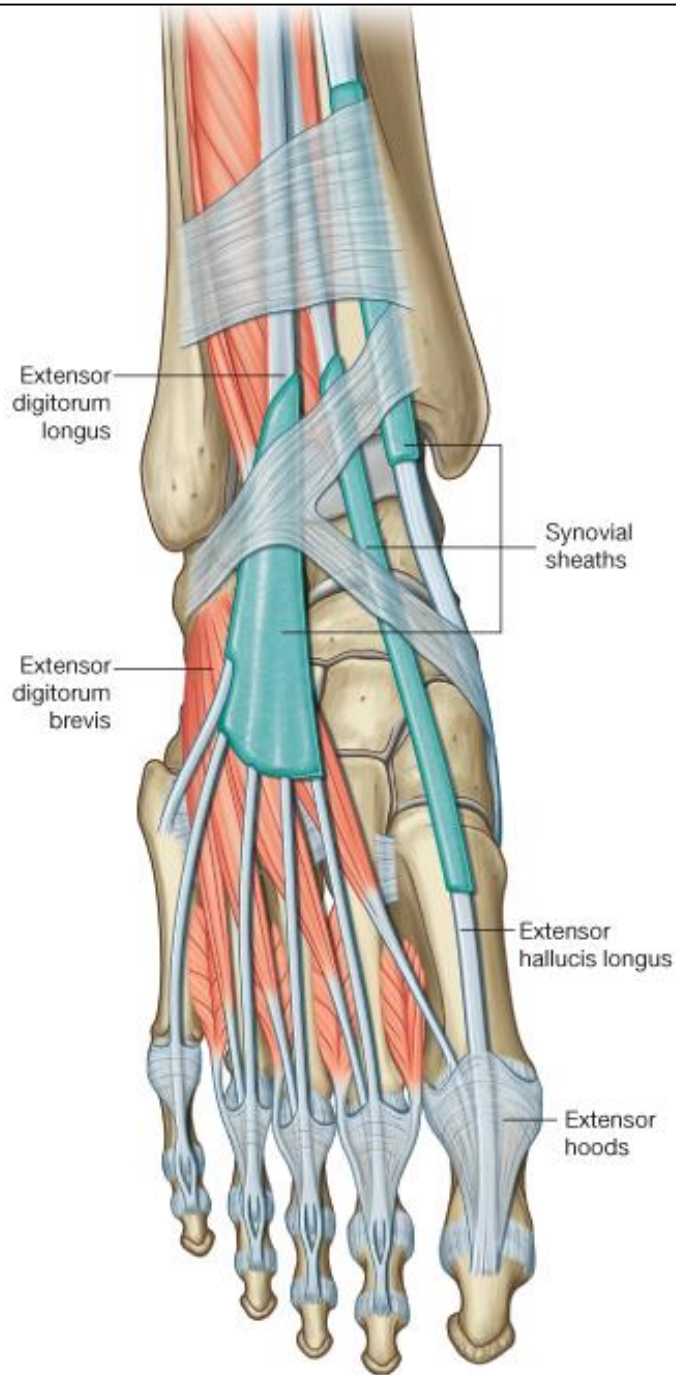


# Superior Extensor Retinaculum

**Lateral:** lower part of subcutaneous anterior border of fibula.

**Medial:** anterior border of tibia above the medial malleolus.

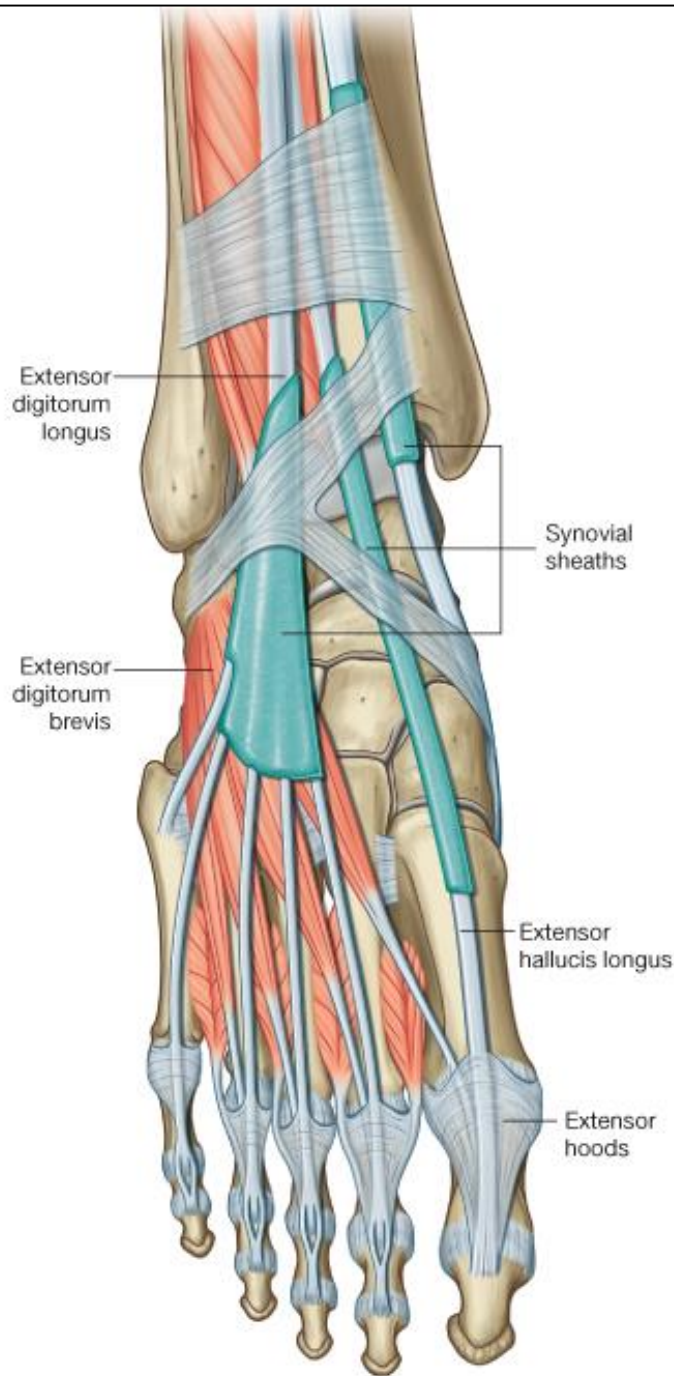
Encloses tendon of Tibialis anterior.



## Inferior Extensor Retinaculum

**Stem:** upper surface of calcaneus anterior to sulcus calcanei.  
encloses tendons of Peroneus tertius & Extensor digitorum longus.





**Upper limb:** Tibial malleolus.

encloses tendons of Extensor hallucis longus & Tibialis anterior.

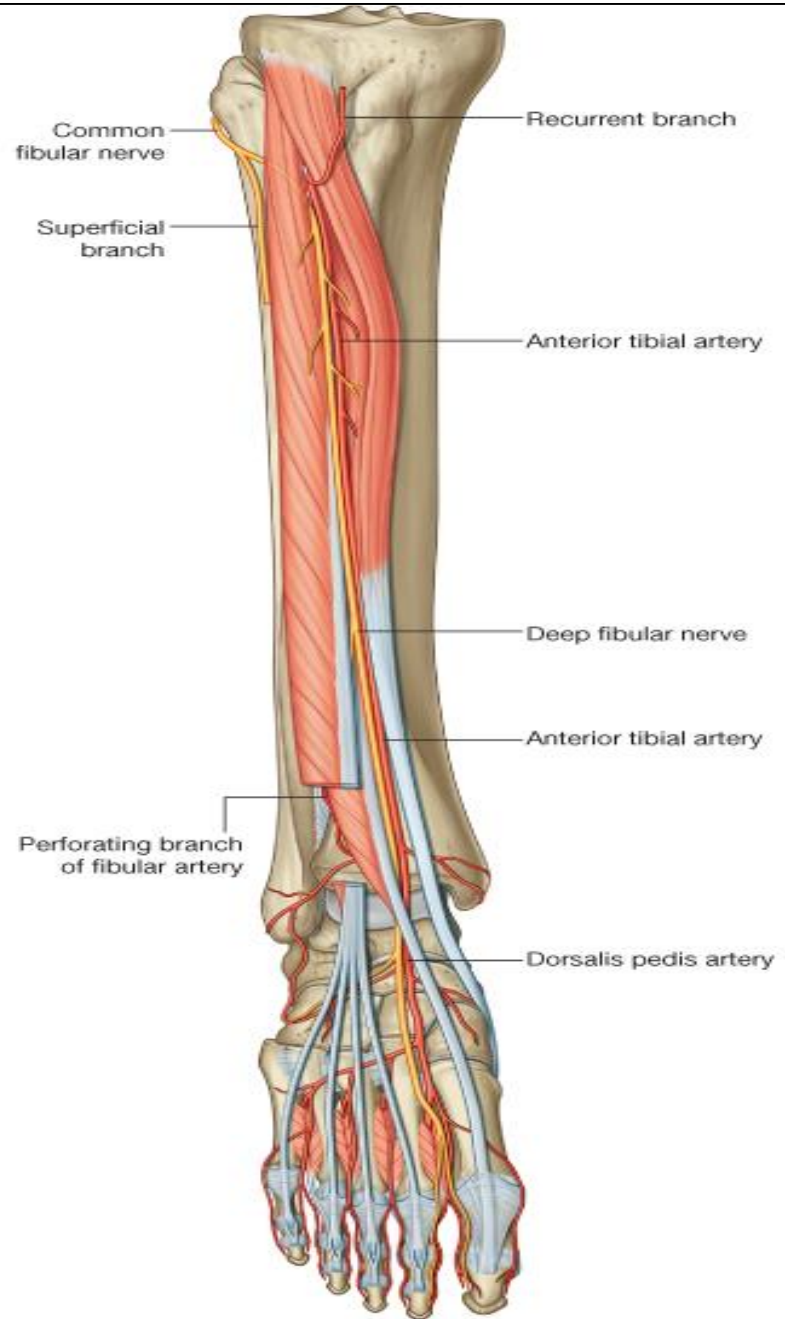
**Lower limb:** blends with Plantar aponeurosis.

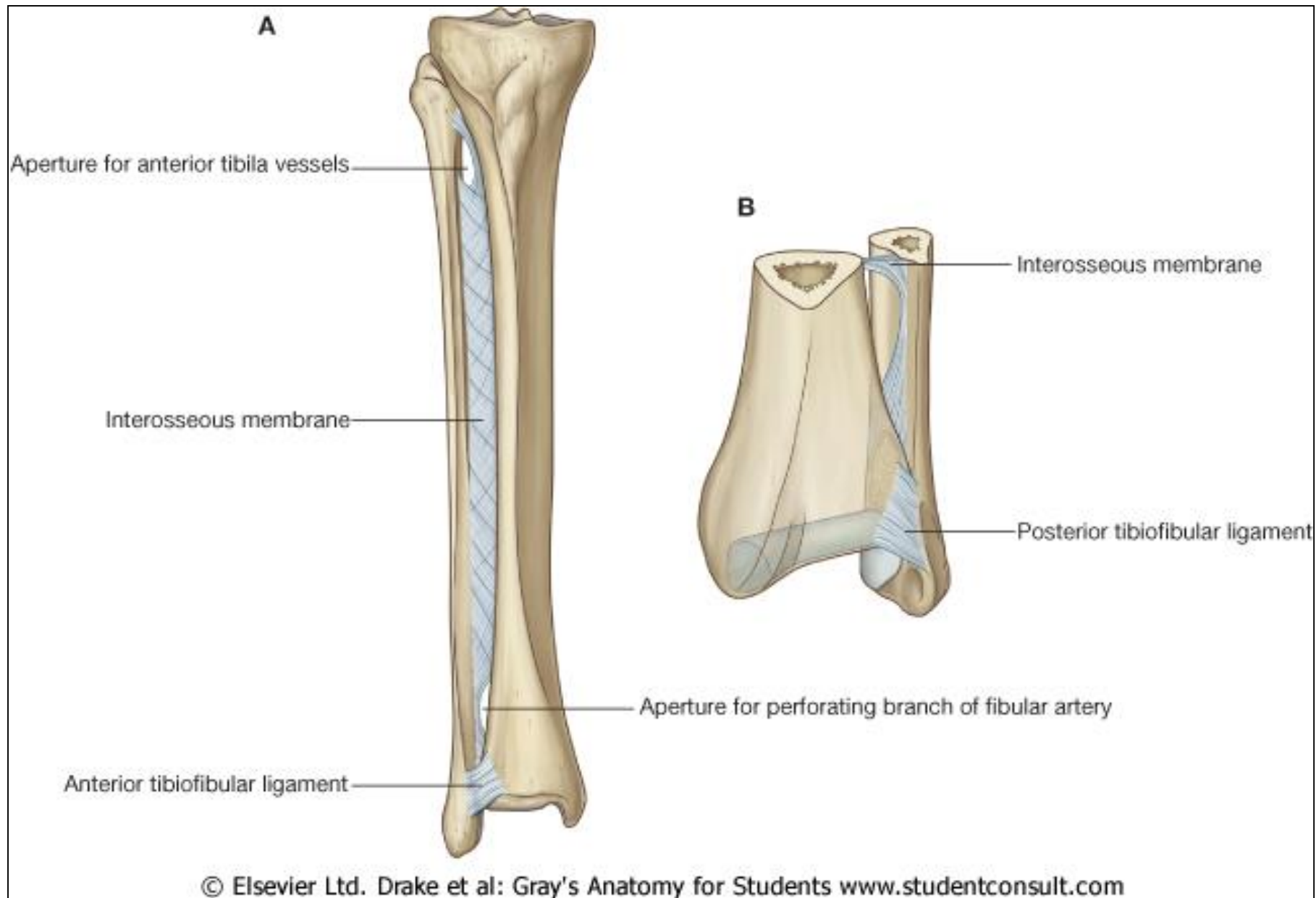
arches over tendons of Extensor hallucis longus & Tibialis anterior.

# ANTERIOR TIBIAL ARTERY

It arises at the lower border of popliteus.

The artery passes forwards between two heads of tibialis posterior and appears on the interosseus membrane through an oval gap in it.

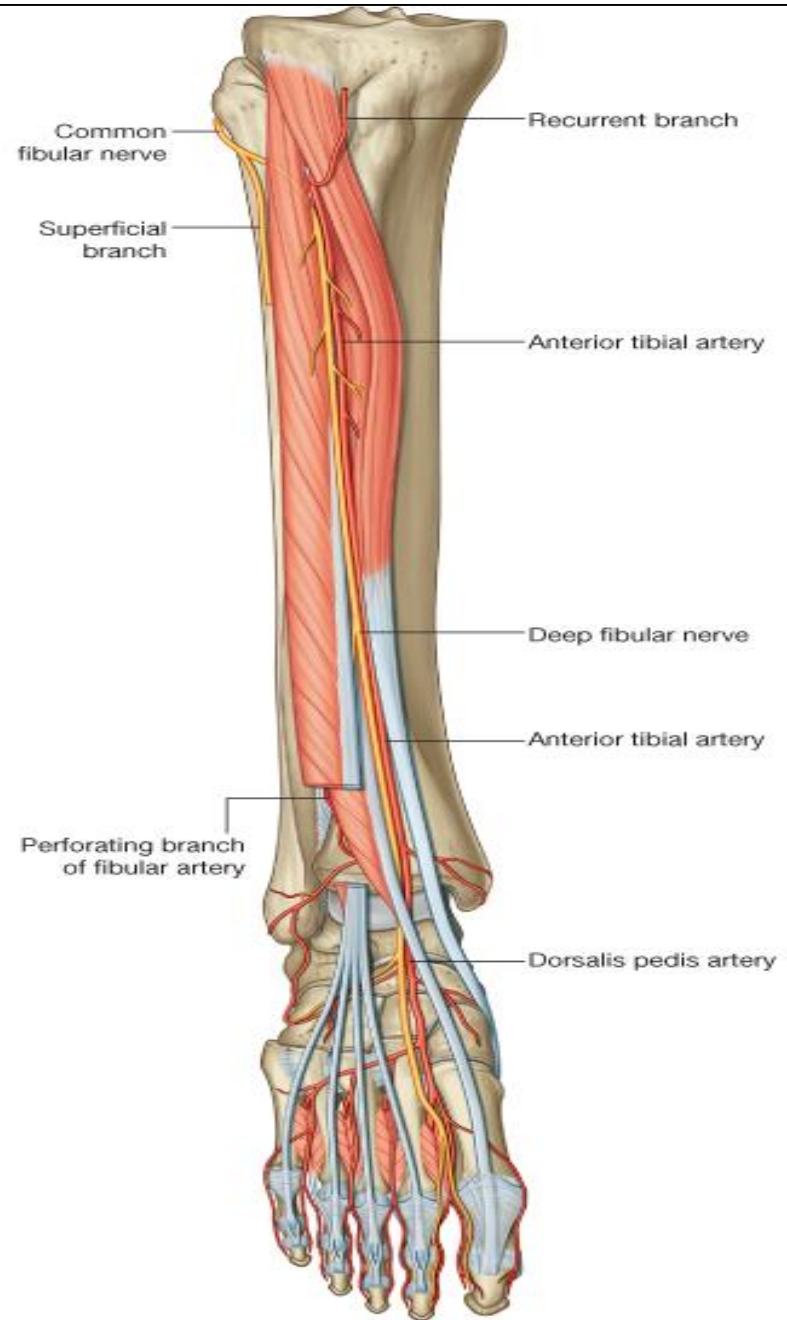




# ANTERIOR TIBIAL ARTERY

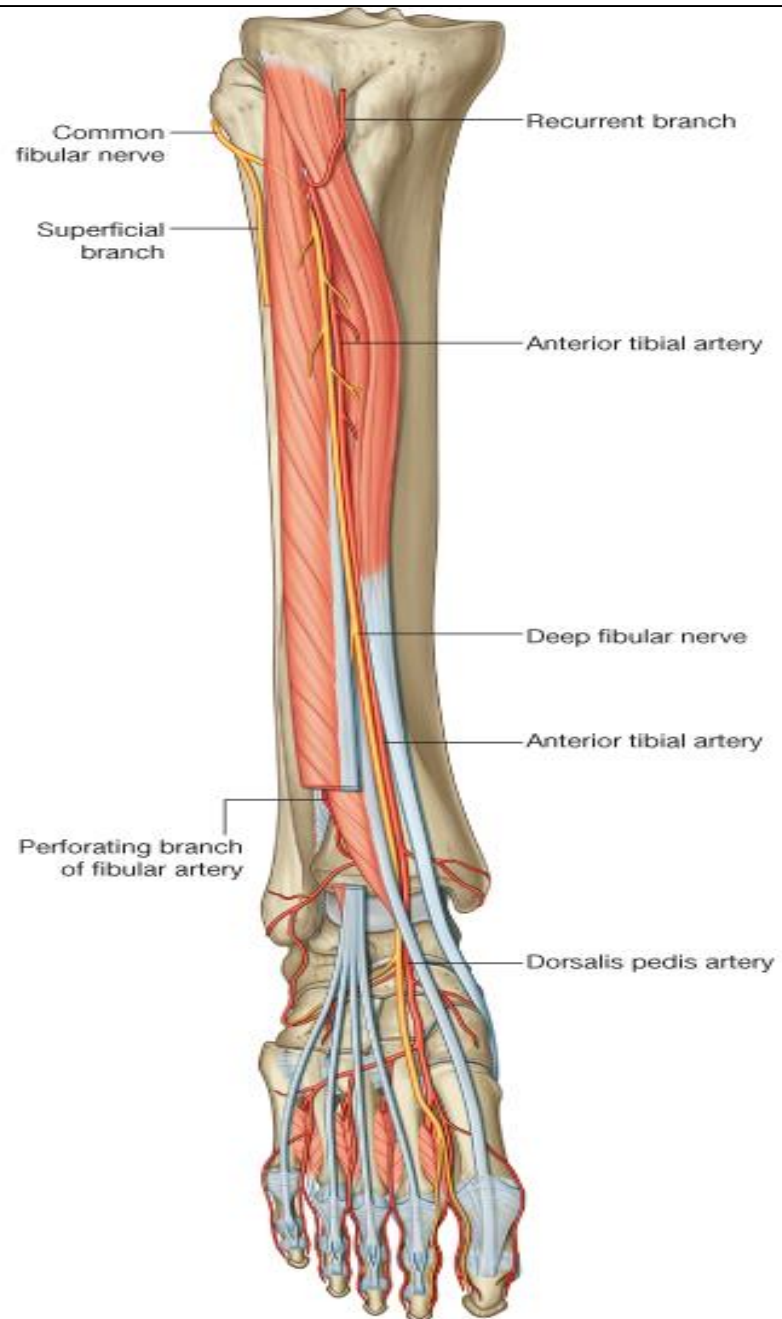
In the lower part it lies over tibia midway between the two malleoli.

It terminates as dorsalis pedis artery distal to the ankle.



# Branches :

1. Posterior tibial recurrent artery.
2. Anterior tibial recurrent artery.
3. Muscular branches.
4. Medial malleolar artery.
5. Lateral malleolar artery.

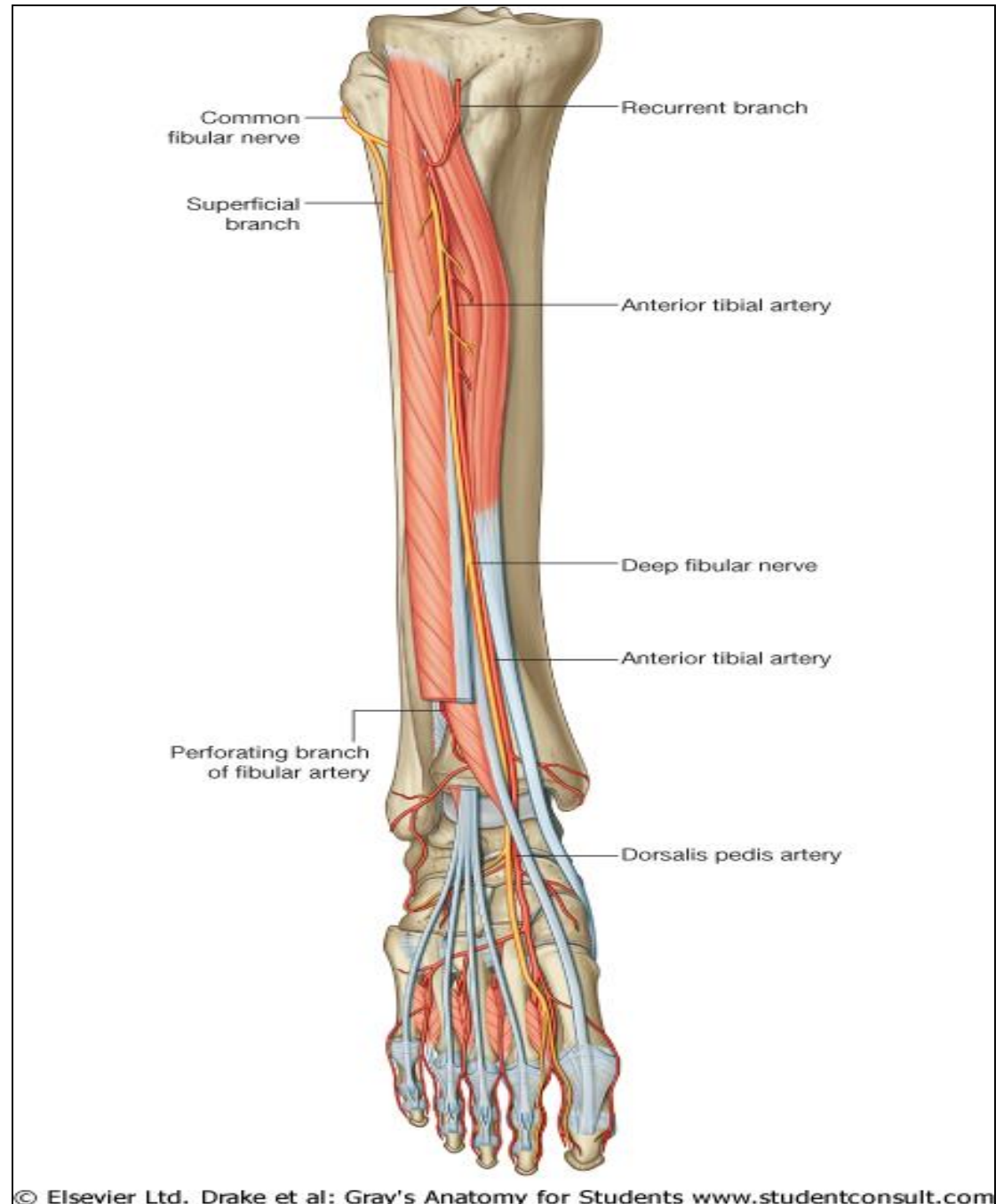




# Deep peroneal nerve

It arises from the bifurcation of common peroneal nerve lateral to neck of fibula.

Spirals around the fibular neck, pierces anterior intermuscular septum.



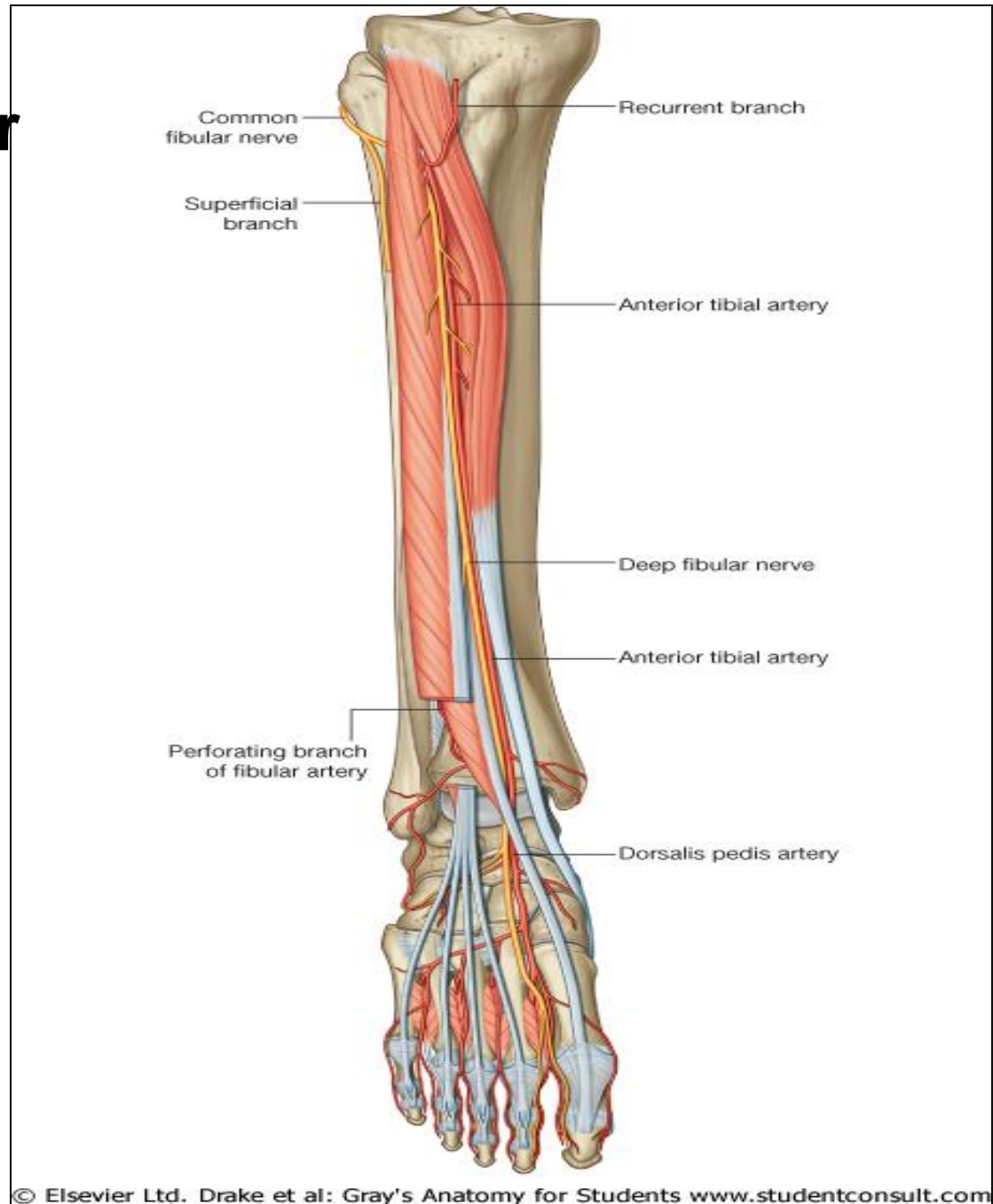


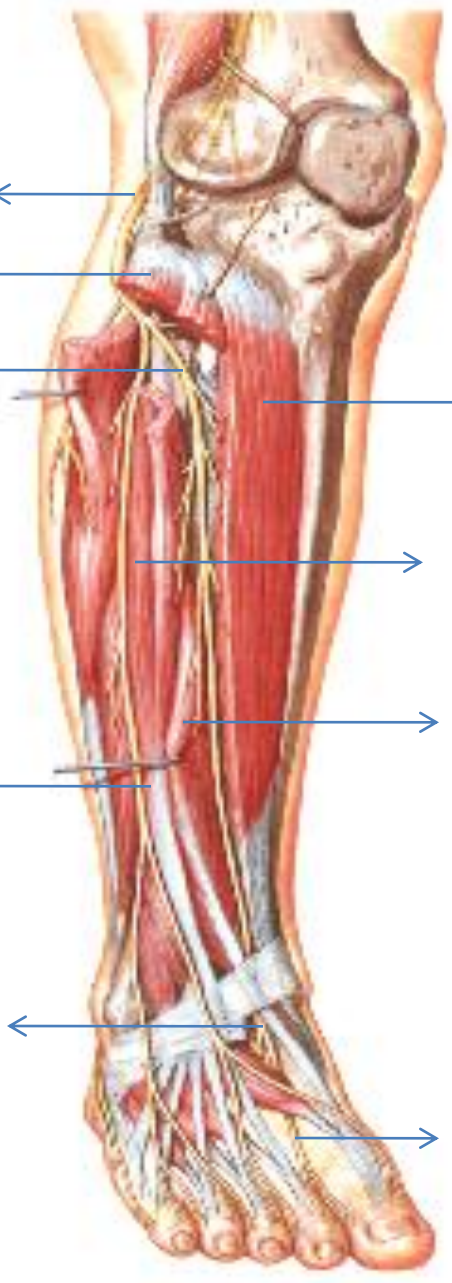
Lies deep to Extensor digitorum longus over interosseus membrane lateral to tibial vessels.

## Branches :

1. Muscular branches.

2. Articular branches to ankle joint.





**Common peroneal nerve** ←

**Peroneus longus** ←

**Deep peroneal nerve** ←

→ **Tibialis Anterior**

→ **Extensor Digitorum Longus**

→ **Extensor Hallucis Longus**

← **Superficial Peroneal nerve**

← **Lateral branch of Deep peroneal nerve to Extensor Digitorum Brevis**

→ **Medial branch to skin of 1<sup>st</sup> interdigital cleft**

# EXTENSOR DIGITORUM BREVIS



## Origin:

- Anterior part of the upper surface of calcaneus.
- Stem of inferior extensor retnaculum.



# EXTENSOR DIGITORUM BREVIS

## Insertion:

- Muscle divides into four tendons for insertion into medial four toes.
- Most medial tendon is known as Extensor hallucis brevis. It is inserted separately into base of proximal phalanx of great toe.
- The other three tendons join with the dorsal digital expansion of the second to fourth toes and get inserted into the bases of middle and distal phalanges.



# EXTENSOR DIGITORUM BREVIS

## **Nerve supply:**

By a pseudoganglion from lateral terminal branch of deep peroneal nerve.

## **Actions:**

Dorsiflexion of medial four toes in dorsiflexed foot.



# DORSALIS PEDIS ARTERY

**Begins in front of ankle between two malleoli.**

**Passes forward to the medial side of the dorsum into the gap between two heads of first dorsal interosseous muscle.**

**Enters the sole and forms plantar arch by joining with the deep branch lateral plantar artery.**





# DORSALIS PEDIS ARTERY

## Branches:

- Lateral tarsal artery.
- Medial tarsal artery.
- Arcuate artery
- First dorsal metatarsal artery.



# DEEP PERONEAL NERVE

**Present lateral to dorsalis pedis in the foot between the tendon of extensor hallucis longus and first tendon of extensor digitorum longus.**



# DEEP PERONEAL NERVE

## LATERAL BRANCH

- **Extensor digitorum brevis**
- **Tarsal joints**
- **2<sup>nd</sup> Dorsal Interosseus muscle**

## MEDIAL BRACH-

- **1<sup>st</sup> Dorsal Interosseus muscle**
- **Proximal joint of great toe**
- **Skin of 1<sup>st</sup> interdigital cleft**



# APPLIED ANATOMY

1. **Foot Drop- Paralysis of anterior compartment muscles**
2. **Dorsalis pedis artery-** Pulse felt between tendons of Extensor hallucis longus and first tendon of extensor digitorum longus.
3. **Anterior Tibial compartment syndrome**
4. **Nerve entrapments in deep fascia**
  - Saphenous nerve**
  - Superficial Peroneal nerve**