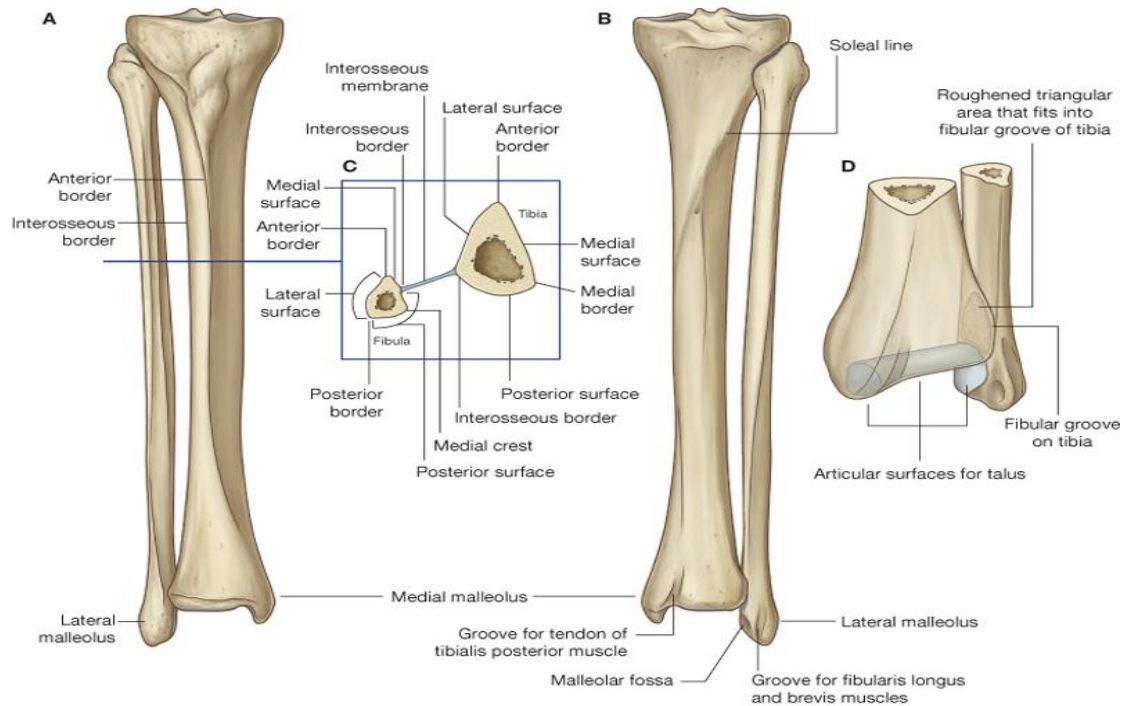


## Front and lateral compartment and dorsum of the foot



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According to objectives we will go through these slides

- Bone of the leg and foot
- Deep fascia of the leg
- Extensor and peroneal reticula
- Intramuscular septa
- Anterior compartment muscles
- Lateral compartment muscles
- Structures on the dorsum of the foot

## Tibia

- The leg is between the knee joint and the ankle joint
- Tibia is the largest weight bearing bone of the leg
- it has an expanded upper end and smaller lower end
- It has lateral and medial condyles at the upper end
- The shaft is triangular in cross section , thus three borders and three surfaces
- The anterior and medial borders have the medial surface between them
- Its anterior border is very prominent
- **The tuberosity of tibia is where the upper end and anterior border meet which receives ligamentum patellae**
- Its lower border forms the medial malleolus

## Fibula

- Takes no part at knee articulation
- Forms the lateral malleolus of the ankle
- Its sole function is providing attachment to muscles
- Its upper end articulates with lateral condyle of tibia
- The lower end forms the medial malleolus

## Foot bones

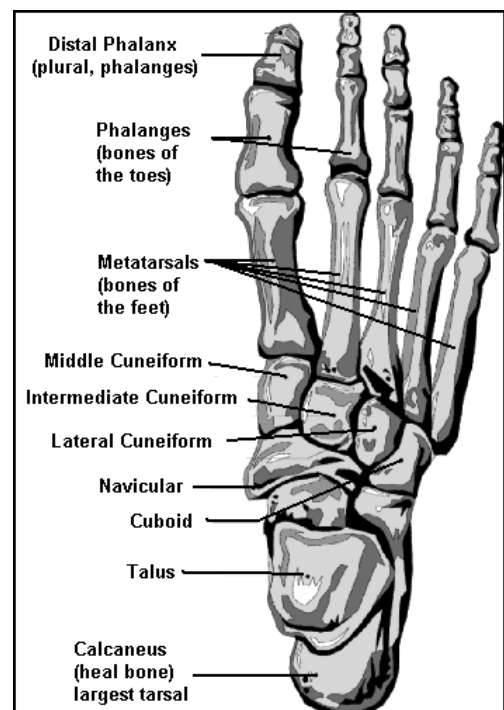
- Tarsals :

### Calcaneum

- Largest
  - Has 6 surfaces
  - Forms the heel prominence
- Talus
  - Navicular
  - Cuboid

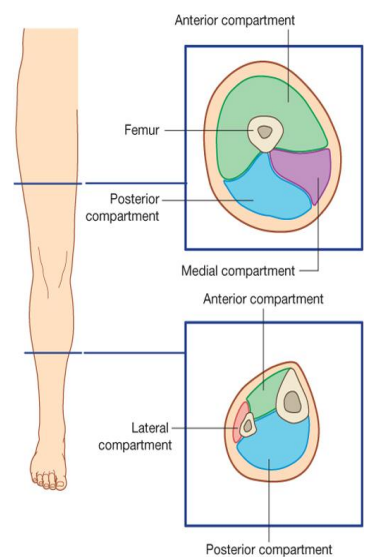
### Three cuneiforms

- metatarsals
  - 5
- Phalanges : Same as hand bones



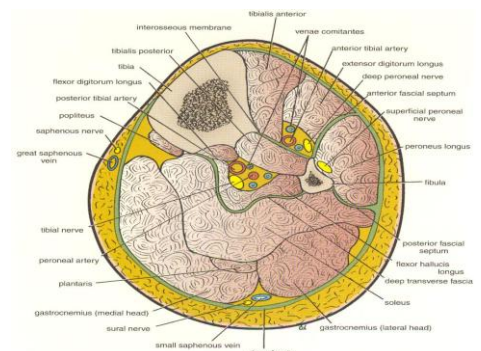
## Fascia

- The deep fascia surrounds the leg and attached to **anterior & medial** borders of tibia
- Interosseous membrane :
  - Binds tibia to fibula and provides attachment to ms.
- Arising from the deep fascial septa and attaching to the anterior border of fibula is the anterior fascial septa
- Inter muscular
- And to the posterior border of fibula attaches the posterior fascial septa
- There are three deep fascial septa
  - Anterior
  - Posterior
  - Deep



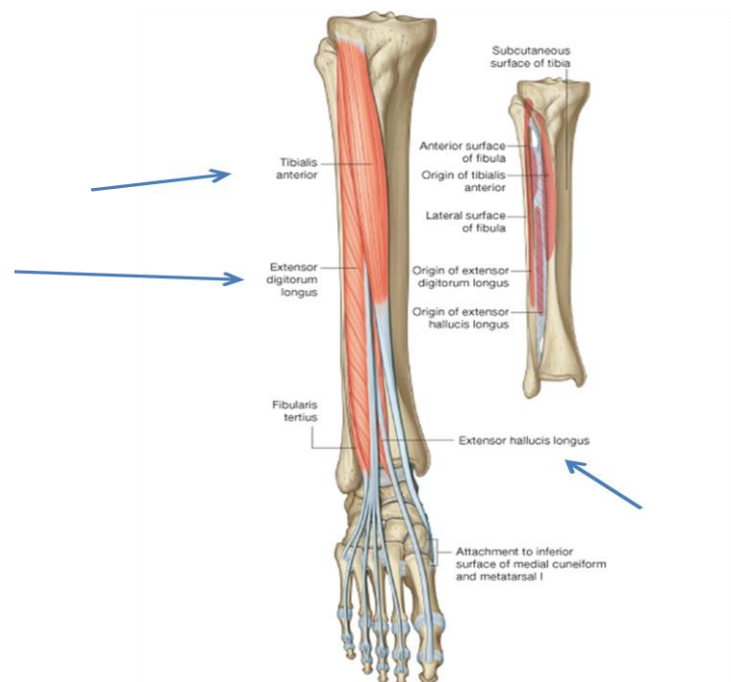
Thus the fascia separates the leg into three compartments :

- Anterior with **deep peroneal nerve**
- Lateral with **superficial peroneal nerve**
- Posterior with **tibial nerve**



## Anterior compartment

- Tibialis anterior
- Extensor digitorum longus
- Extensor hallucis longus
- Peroneus tertius
- B.S: **anterior tibial artery**
- N.S: **Deep peroneal nerve one of the terminal branches of common peroneal nerve**



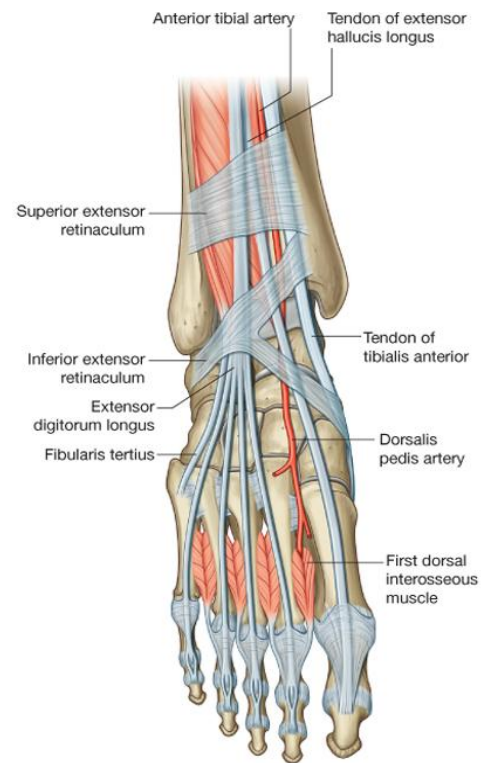
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## Flexor Retinacula

- Thick deep fascia keeping the tendons in position
- Superior :
  - Attached to anterior borders of tibia and fibula above ankle
- Posterior :
  - Y shaped
  - Below ankle

## Structures that pass below the retinacula ?

- Tendons of muscles of anterior compartment
- **Anterior tibial artery**
- **Deep peroneal nerve**



Muscle name	Origin	Insertion	N.S	Action
Tibialis anterior	Lateral surface of tibia and IOM	<ul style="list-style-type: none"> <li>• Medial cuneiform</li> <li>• Base of first metatarsal</li> </ul>	Deep peroneal N	Extend foot at ankle
Extensor digitorum longus	Anterior surface of fibula	Extensor expansion of lateral 4 fingers	Deep peroneal N	Extend toes
Peroneus tertius	Anterior surface of fibula	Base of 5 <sup>th</sup> metatarsal	Deep peroneal N	Extend foot at ankle
Extensor hallucis longus	Anterior surface of fibula	Base of distal phalynx of great toe	Deep peroneal N	Extends big toe
Extensor digitorum brevis	calcanuem	Proximal phalynx of big toe , 2 <sup>nd</sup> , 3 <sup>rd</sup> , 4 <sup>th</sup>	Deep peroneal N	Extend toes

## Lateral compartment

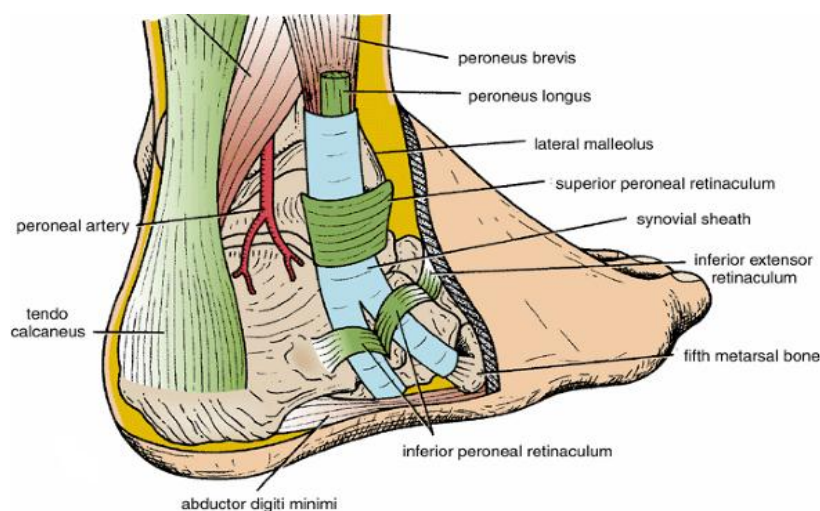
- Peroneus longus
- Peroneus brevis
- **B.S : branches of peroneal artery**
- **N.S : superficial peroneal nerve**
- Origin : lateral surface of shaft of fibula
- Insert :
  - Longus : base of first metatarsal
  - Brevis : base of fifth metatarsal

Action :

- Flex the foot at ankle joint
- Evert the foot
- Hold up the lateral longitudinal arch in the foot (brevis )
- Hold up the lateral transverse arch in the foot (longus )

## Peroneal Retinacula

- Superior peroneal retinaculum
  - Connects the **lateral malleolus** to **calcaneum** & holds the tendon of peroneus longus & brevis to the back of the lateral malleolus
- Inferior peroneal retinaculum
  - Binds the tendons of **peroneus longus and brevis to lateral side of calcaneum**

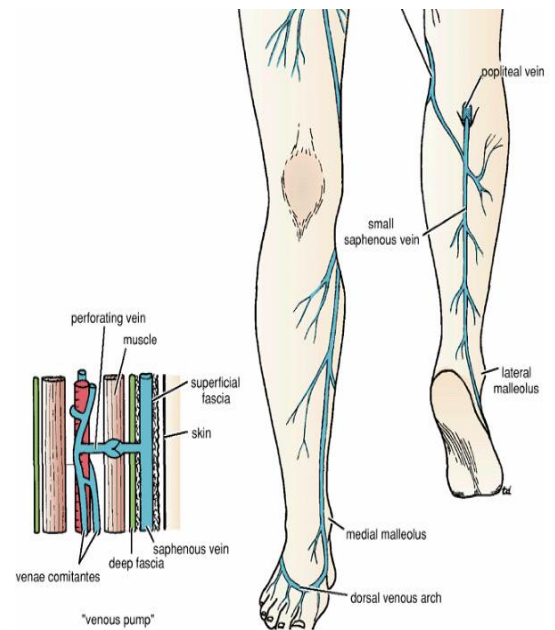


## Synovial Sheaths of Peroneal Longus & Brevis

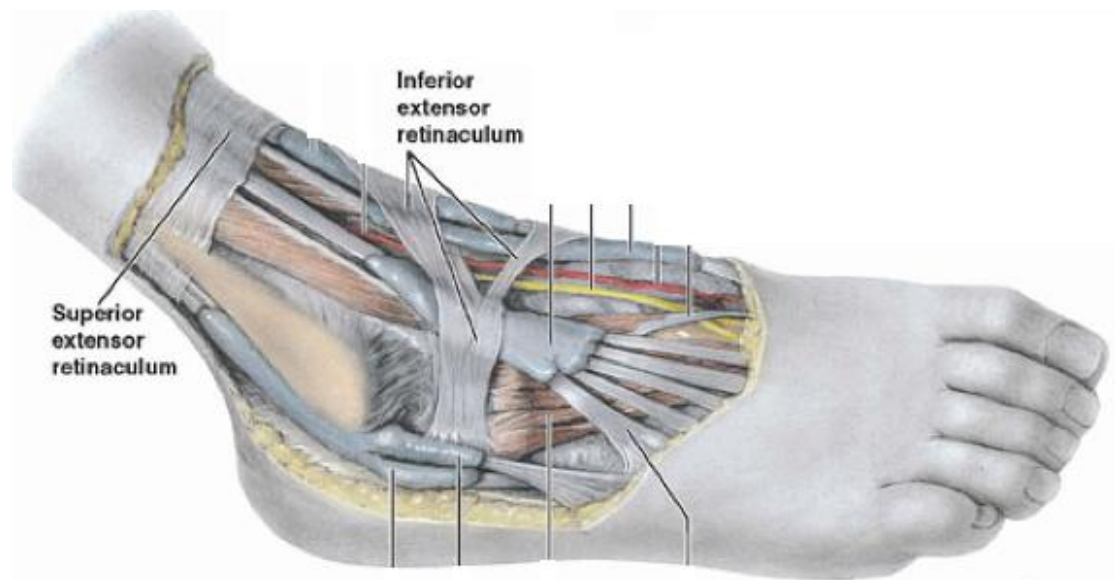
Tendons of peronei are surrounded by a single common tubular synovial sheath, but deep to inferior peroneal retinaculum they have separate sheaths

## Dorsal venous arch and superficial veins

- Dorsal venous arch
  - Lies in superficial fascia
- Small saphenous vein :
  - Arises from lateral part of dorsal venous arch
  - Ascends behind the lateral malleolus with the sural nerve
  - Pierces the deep fascia at lower border of popliteal fossa
- Great saphenous vein



## Deep fascia of dorsum of Foot



It is very thin, but just distal to ankle joint, it is thickened to form

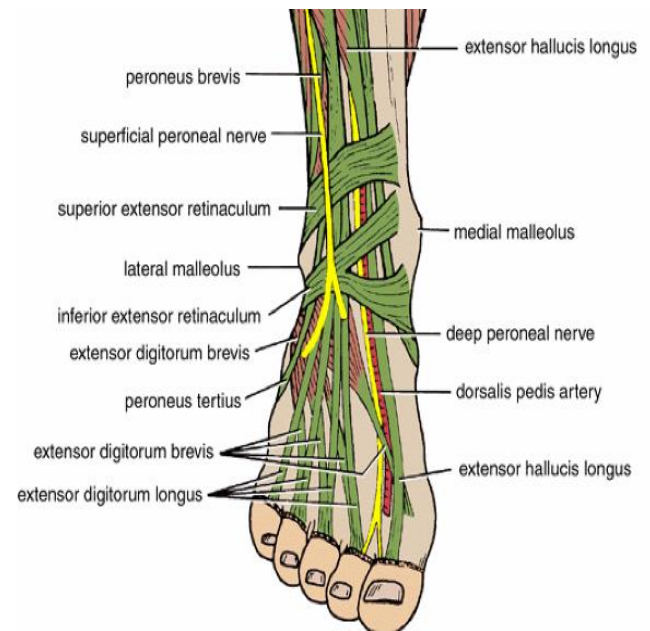
**inferior extensor retinaculum**



## Dorsum of the foot

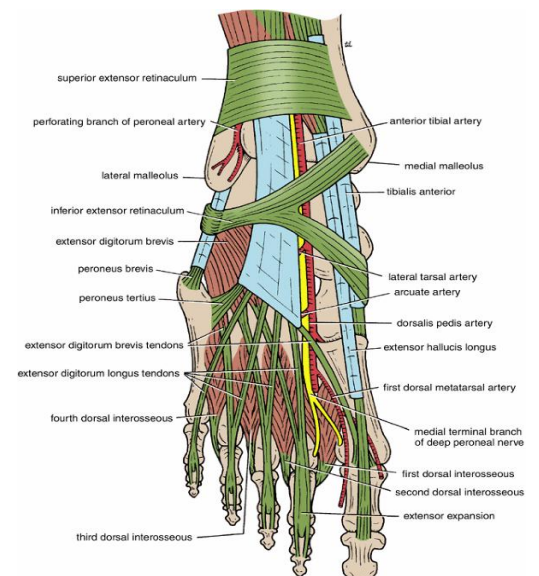
Contents :

- Extensor digitorum brevis muscle
- Origin :
  - Inferior extensor retianculum
  - Calcaneum
- Insertion : Proximal phalynx of big toe , 2<sup>nd</sup> , 3<sup>rd</sup> , 4<sup>th</sup>
- Extends the toes
- Dorsalis pedis artery
- Deep peroneal nerve



## Synovial sheath of tendons

- Extensor digitorum longus and peroneus tertius tendons are surrounded by common synovial sheath as they pass beneath the extensor retinacula
- Tibialis anterior has its own synovial sheath
- So as Extensor hallucis longus



## MCQ

### 1. Which muscle everts the foot?

- a. Tibialis anterior
- b. Tibialis posterior
- c. Extensor digitorum longus
- d. **Peroneus tertius**

### 2. Inversion of foot is performed by:

- a. Extensor digitorum longus
- b. Extensor digitorum brevis
- c. Peroneus tertius
- d. **Tibialis anterior**

### 3. Deep peroneal nerve supplies:

- a. Peroneus longus
- b. Peroneus brevis
- c. **Peroneus tertius**
- d. Tibialis posterior

### 4. Which does not contribute to the structures passing through extensor retinacula ?

- a. Tibialis anterior
- b. Extensor digitorum longus tendons
- c. **Extensor digitorum brevis**
- d. Peroneus tertius

### 5. which muscle supports the transverse arches of foot ?

- a. Peroneus tertius
- b. **Peroneus longus**
- c. Peroneus brevis
- d. Tibialis anterior



6. Which structure is lying in the subcutaneous tissue of dorsum of foot ?

- a. Superficial peroneal nerve
- b. Deep peroneal nerve
- c. **Dorsal venous arch**
- d. Anterior tibial artery