

ANTERIOR, LATERAL COMPARTMENTS OF THE LEG & DORSUM OF THE FOOT

Objectives

- ⇒ Identify the deep fascia of leg
- ⇒ Identify the fascial compartments of the leg
- ⇒ Describe the anatomy of the anterior & lateral compartments
- ⇒ List the contents of each compartment (muscles, vessels & nerves)
- ⇒ Describe the anatomy and contents of the dorsum of the foot

Color Index

- Red :Important.
- Violet: Explanation.
- Gray: Additional Notes.

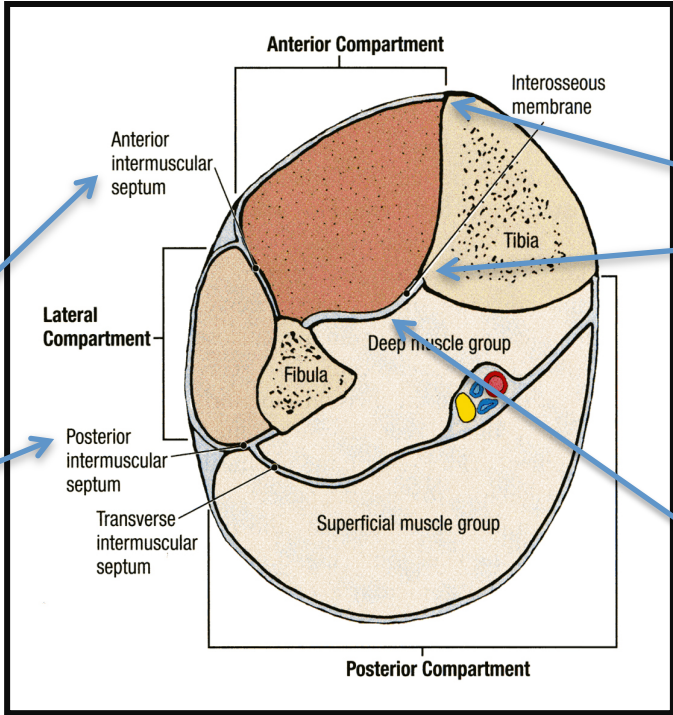
Other colors are for
Coordination

Fascia of the leg

Two Intermuscular Septa

Pass from the deep aspect of this fascia to be attached to :

- Anterior border of fibula (Anterior fascial septum)**
- Posterior border of fibula (Posterior fascial septum)**



The deep fascia surrounds the leg and is attached to the Anterior & Medial borders of the Tibia.

Interosseous membrane: A thin & strong membrane that binds the interosseous borders of the tibia & fibula. It binds the two bones and provides attachment for muscles.

interosseous membrane and deep fascia divided leg to

Anterior

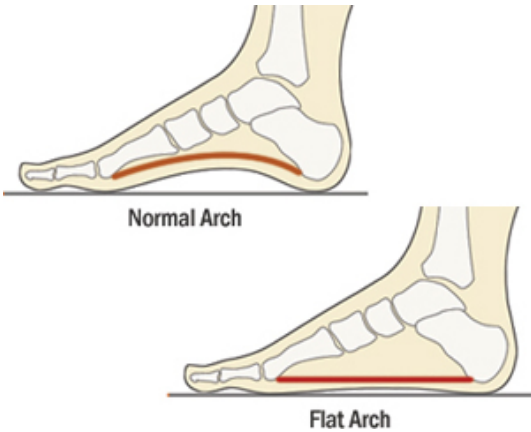
Superior

Lateral (peroneal)

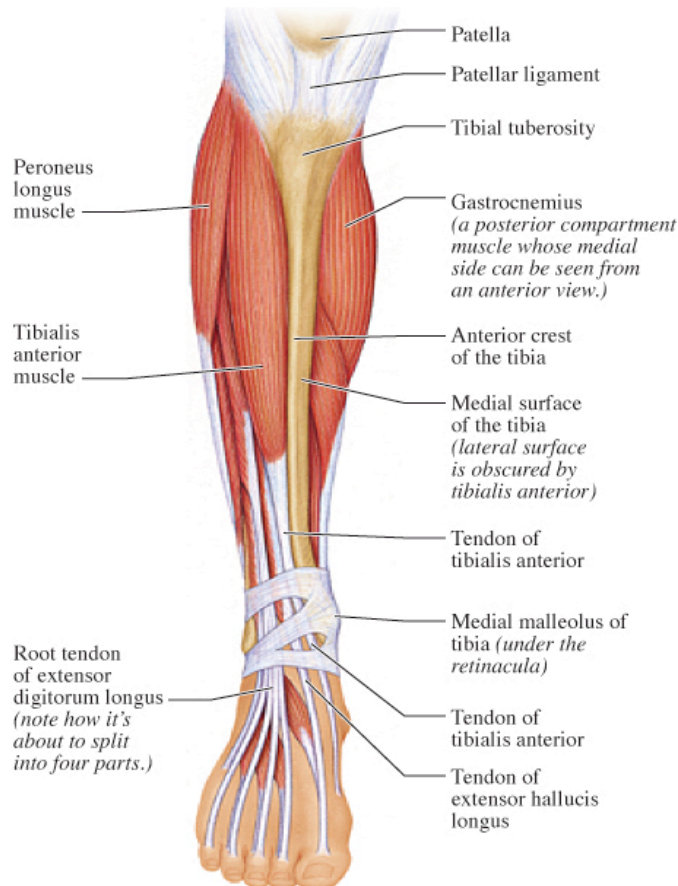
Anterior compartment					
Muscle	Origin	Insertion	Action	Blood s.	Nerve s.
Tibialis anterior	Lateral surface of shaft of <u>tibia</u> and interosseous membrane	Medial cuneiform and base of first metatarsal bone	<u>Extends</u> foot at ankle joint; <u>Inverts</u> foot at subtalar & transverse tarsal joints & <u>Holds up medial longitudinal¹ arch</u> of foot	ANTERIOR TIBIAL	DEEP PERONEAL
Extensor digitorum longus	Anterior surface of shaft of <u>fibula</u>	Extensor expansion of lateral four toes	<u>Extends</u> toes; <u>Dorsi flex (extends)</u> foot at ankle joint		
Peroneus tertius	Anterior surface of shaft of <u>fibula</u>	Base of 5 th <u>metatarsal</u> bone	<u>Dorsi flex (Extends)</u> foot at ankle joint; <u>Everts</u> foot at subtalar and transverse tarsal joints		
Extensor hallucis longus	Anterior surface of shaft of <u>fibula</u>	Base of distal phalanx of great toe	<u>Extends</u> big toe, <u>Dorsi flex (Extends)</u> foot at ankle joint; <u>Inverts</u> foot at subtalar and transverse tarsal joints		

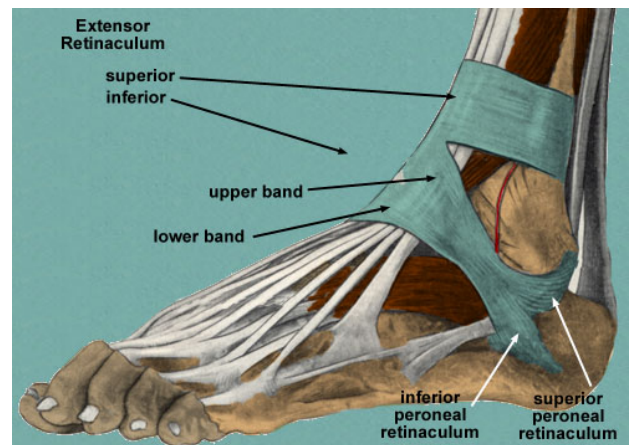
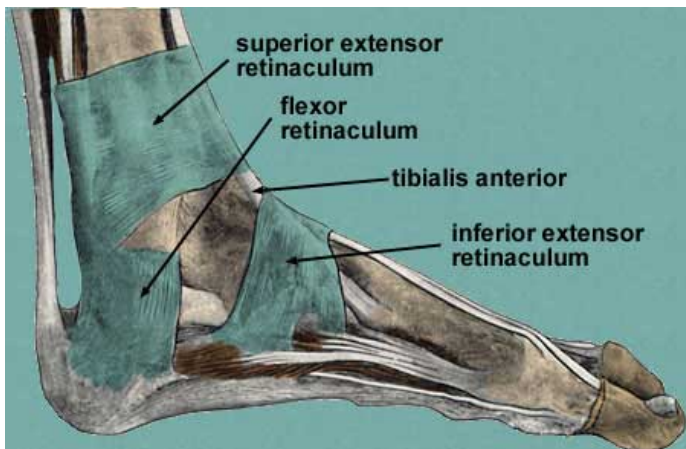
1: the longitudinal arch of the foot is the curve in the sole of the foot which is held by tibialis anterior .

2: notice that all anterior group invert except peroneus tertius



Lateral compartment					
Muscle	Origin	Insertion	Action	Blood s.	Nerve s.
PERONEUS LONGUS	Lateral surface of shaft of fibula	Base of first metatarsal and the medial cuneiform	1) <u>Plantar flexes</u> foot at ankle joint; 2) <u>Everts</u> foot at subtalar and transverse tarsal joints	Peroneal artery	Superficial Peroneal
PERONEUS BREVIS	Lateral surface of shaft of fibula	Base of fifth metatarsal bone	3) <u>Supports</u> Lateral longitudinal & Transverse arches of the foot		





Extensor Retinacula

A thickening of deep fascia that keeps the long tendons around ankle joint in position

Superior Extensor retinaculum :Attached to anterior borders of tibia & fibula above ankle

Inferior Extensor retinaculum: Y-shaped band located inferior to ankle

Structures Passing Deep to Extensor Retinacula (From medial to lateral)

1. **Tibialis Anterior**
2. Extensor **h**allucislongus tendon
3. Anterior tibial artery → (**dorsalis pedis**) (vessel)
4. Deep peroneal **n**erve
5. Extensor **d**igitorum longus tendons
6. **P**eroneus tertius

Mnemonic: **T**om **H**as very nice **d**og and **p**igion.

Peroneal Retinacula

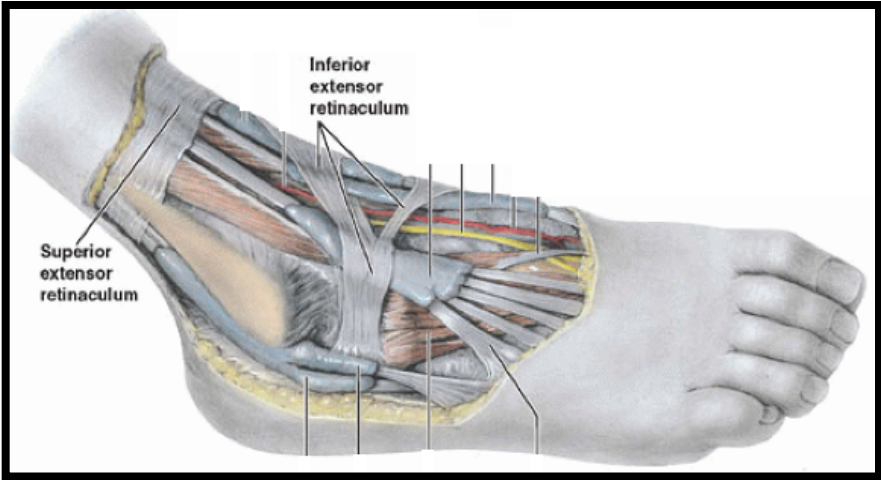
Superior peroneal retinaculum: Connects the lateral malleolus to calcaneum & holds the tendons of peroneus longus & brevis

Inferior peroneal retinaculum

Synovial Sheaths of Peroneal Longus & Brevis:

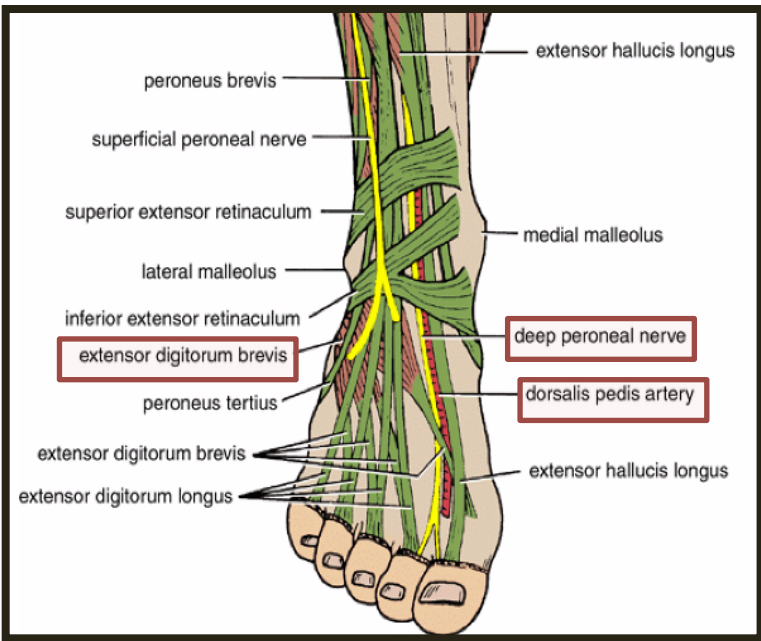
Tendons of peronei are surrounded by a single common tubular synovial sheath, deep to inferior peroneal retinaculum, they have separate sheaths

Deep Fascia of Dorsum of Foot: It is very thin, but just distal to ankle joint, it is thickened to form **Inferior extensor retinaculum**



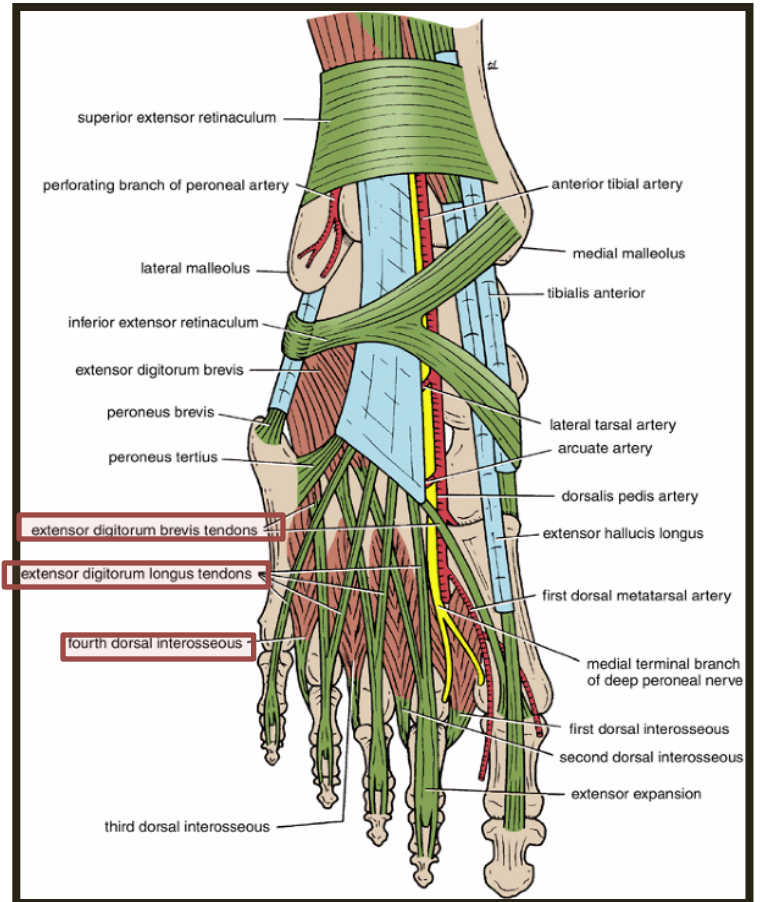
Muscle of the dosum of the foot

Muscle	Origin	Insertion	Action	Blood s.	Nerves s.
Extensor Digitorum Brevis	Anterior part of upper surface of the Calcaneum and from the Inferior extensor retinaculum	By four tendons into the proximal phalanx of big toe and long extensor tendons to second, third, and fourth toes	Extend toes	DorsalisPedis	DEEP & Superficial Peroneal



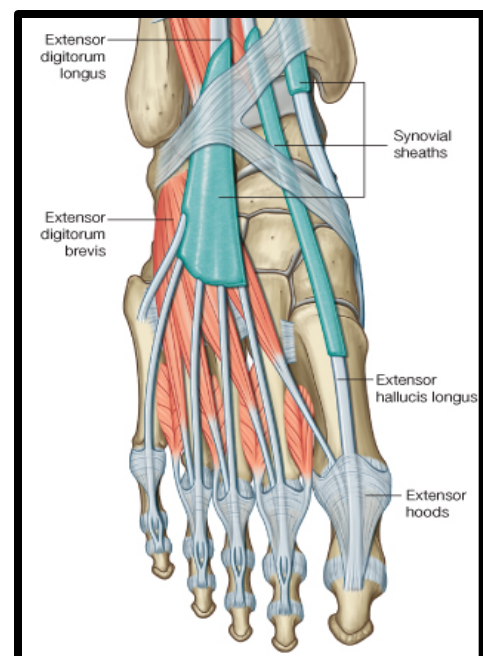
Insertion of Long Extensor Tendons

- The tendons of **Extensor digitorum longus** pass to the lateral four toes.
- Each tendon to the 2nd, 3rd & 4th toes is joined on its lateral side by a tendon of **Extensor digitorum brevis**.
- The extensor tendons form
- **Fascial Expansion (Extensor Expansion)** on the dorsum of each toe.
- The expansion divides into (3) parts:
 - 1- **Central part:** inserted into the **Base of Middle ph.**
 - 2&3 - **Two Lateral parts:** inserted into the **Base of Distal ph.**
- The **(Extensor Expansion)** receives insertion of :
Interossei & Lumbrical muscles.



Synovial Sheaths of Extensor Tendons on the Dorsum of foot

- ⇒ **Tibialis anterior**
 - ⇒ **Extensor hallucis longus**
- (Both have their own synovial sheath)
- ⇒ **Extensor digitorum longus &**
 - ⇒ **peroneus tertius :**
- have a common sheath, it extends to the level of Base of 5th Metatarsal bone.



Multiple Choice Questions

1) Which muscle is responsible for Lateral longitudinal arch?

- a) tibialis anterior b) Peroneus tertius c) peronuslongus d) Extensor hallucis brevis

2) “evert” movement can be produced by

- a) Tibialis anterior b) Extensor hallucislongus c) Biceps d) Peroneus tertius

3) Which nerve does supply anterior compartment?

- a) Superficial peroneal b) Deep Peroneal c) sciatic nerve d) A&B

Q Ans. :

1-C 2-D 3-B

Good luck

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For any comments
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