ANATOMY TEAM

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

OBJECTIVE

At the end of the lecture, student should be able to

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

تنويه / هذا العمل لا يعتبر مصدر أساسي للمذاكره وإنما هو للمراجعه فقط ،
"يوجد بعض الفروقات بين سلايد الأولاد و البنات وقد تم ذكرها

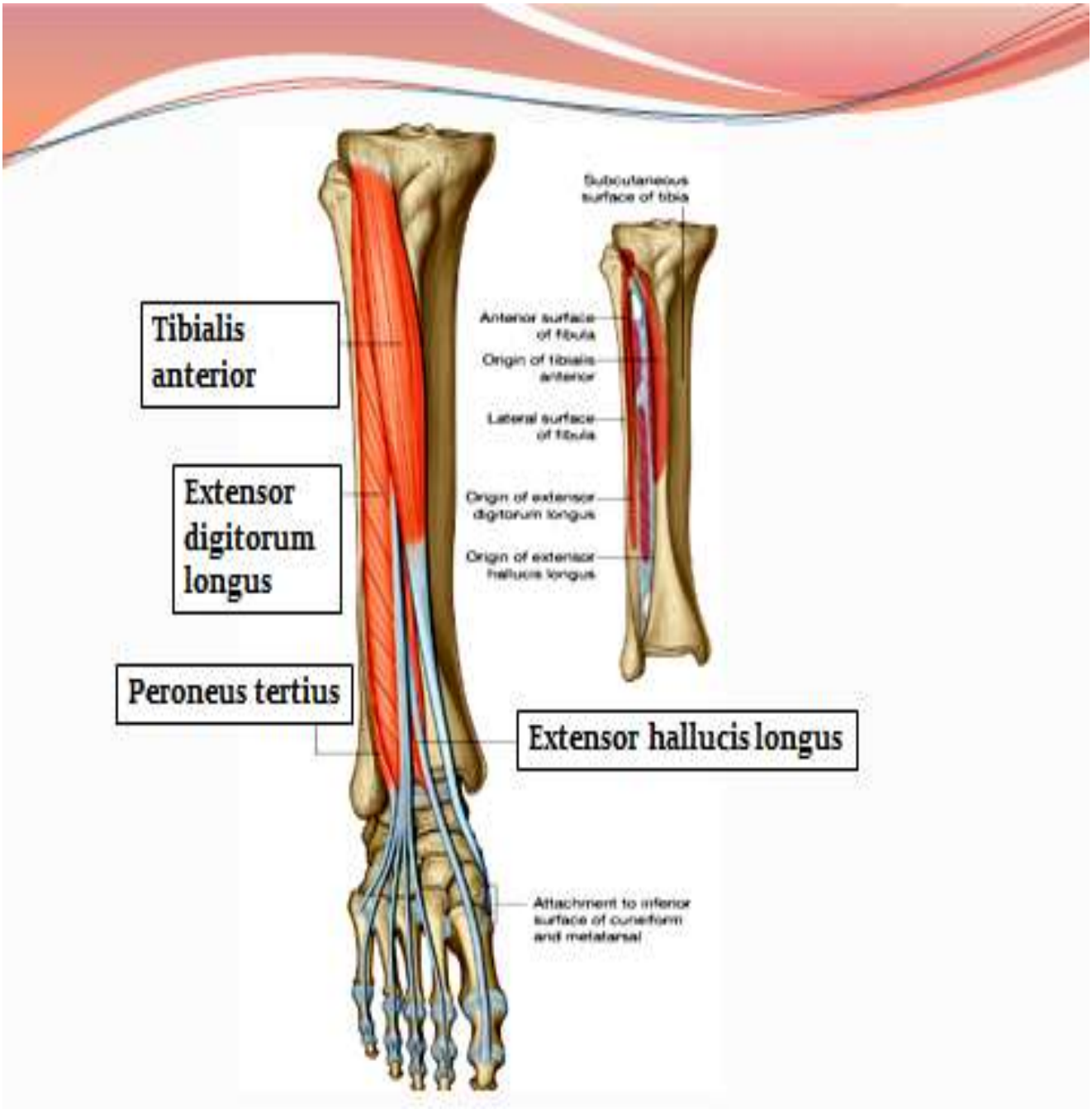
Origin	Insertion	Action
Inferior extensor retinaculum & Calcaneum	Extensor Hallucius Brevis to base of proximal phalanx of big toe. Other (3) to extensor expansion	Extension of Interphalange al & Metatarsophal -angeal joint of 1st, 2nd, 3rd& 4th toes (during Dorsi flex).

Origin	Insertion	Action
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

BOYS **GIRLS**

عند الأولاد فقط ← الفرق بس انه هذا مرتب اكثر من حق البنات

Muscle	Origin	Insertion	Action
Tibialis anterior	Lateral surface of shaft of tibia & interosseous membrane.	Medial cuneiform & base of 1st metatarsal bone	Dorsi flexion & Inversion of foot and maintains Medial Long arch
Extensor dig longus	Anterior surface of shaft of fibula	Extensor expansion of lat (4) toes	Extension of toes & Dorsi flexion of foot
Extensor hallucis longus	Anterior surface of shaft of fibula	Base of distal phalanx of great toe	Dorsi flexion& Inversion of the foot and extension of big toe
Peroneus tertius	Anterior surface of shaft of fibula	Base of 5th metatarsal bone	Dorsiflexion and Eversion of the foot.



السلايد هذا عند الأولاد فقط

Anatomy of the leg

introduction

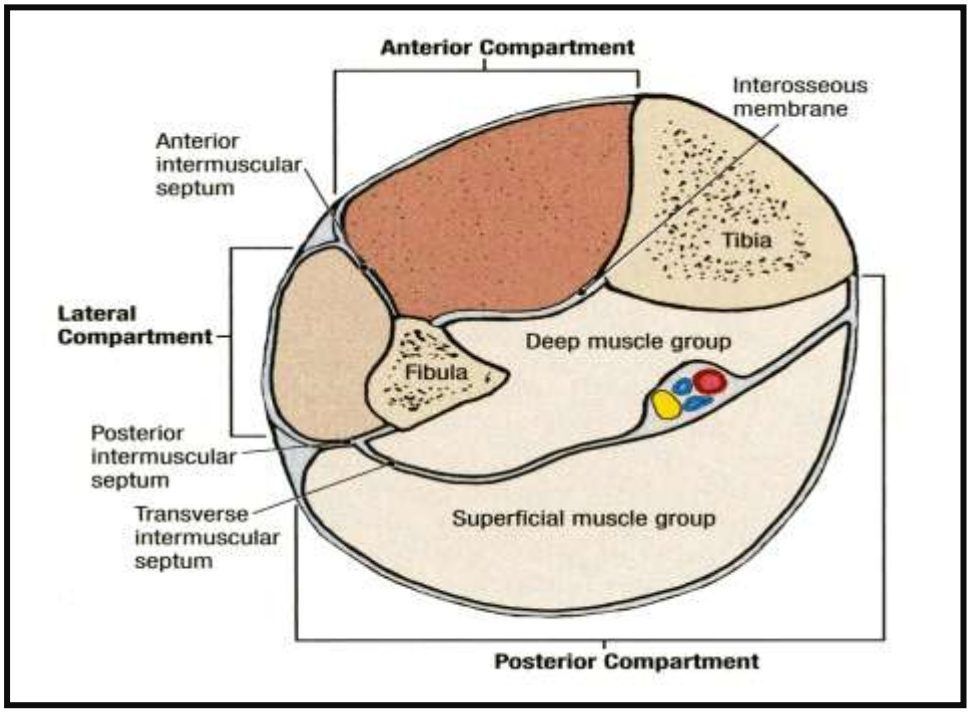
First of all : we have to know that the leg is divided into three compartment due to the deep fascia.

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)

As we see in the picture:



And also we have the Interosseous membrane

So the out come will be three compartment :

1-anterior part

2-lateral part

3-posterior part (the biggest part)

(we donot have medial compartment cause the tibial border is subcoutanous)

(as we know that each compartment has its own muscle,nerve and vessels)

(but now we are going to discus the anterior and lateral compartment only)

Important notes:-

The anterior and lateral compartment need a fascia to keep them in their position which called"extensor retinculeum"

So what is extensor retineculem?

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

How many do we have from it?

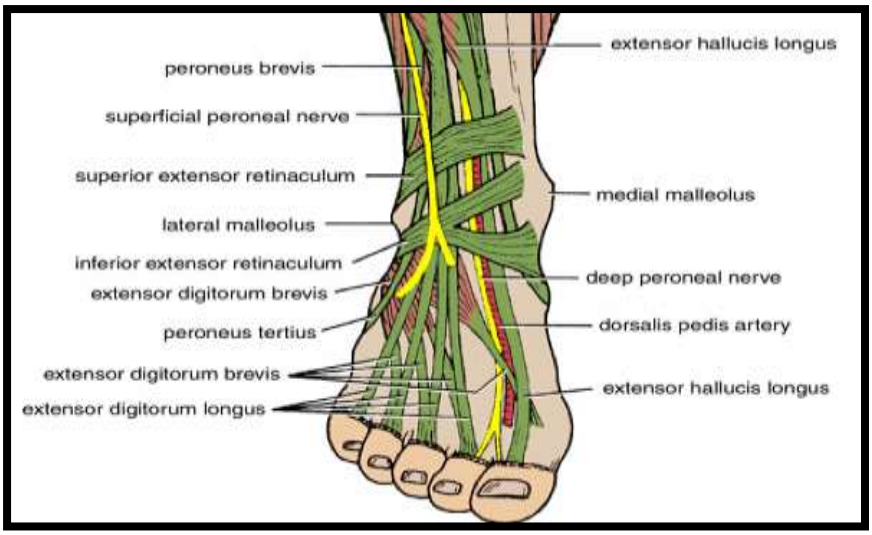
we have two extensor reteniculm

-superior: superior to the ankle joint

-inferior:inferior to the ankle joint(has Y shape)

(notice that they are both in anterior to the anckle joint)

To see the picture:



Each of these anterior muscle is goes under this extensor retinculum as this rule(from medially to laterally) :

1.Tom → (tibails anterior)

2.Has → (halocios longus)

3.Very → (vessels)

4.Nice → (nerve)

5.Dog → (digitorum longus)

6.Pigion → (perinoes terios)

The anterior compartment:

-tibials anterior muscle:-(tibials =so it take origin from lateral surface of tibia,anterior=because we have tibials posterior in the posterior compartment)

Its important action is invertion, dorsiflextion, keep medial arch, why it keep the medial arch? because it inserted in the base of the first metacarpal and medial cuniform.

(important note:- note that the aother anterior muscle anterior surface of will take origin from the fibula)

-Extensor digitorum longus:-

Digitoreum=it goes to digit(toes)

So which toes? the lateral four toes

So what does do to the toes?it extend them.

-Extensor hallucis longus:

Hallucis= goes to big toe.

To extend him.

-Peroneus tertius:

Inserted in:Base of 5th metatarsal bone,))))((it is the only muscle that do the eversion where as the rest anterior muscle will do the invertion))

All of the anterior muscle will make:

-dorsiflexton

-Inversion(except: Peroneus tertius will make evertion)

The lateral compartment: (their origion will be from the lateral surface of the fibula)

- **Peroneus Longus:**

They have to cross the sole to insert in the base of the first metacarpl and medial cuniform(see the insertion of the tibials anterior)so it will support the lateral and transverse arch)

Peroneus Brevis -

Will support the latral arch,cause it will insert in the base of the fifth metacarpal

(note that all the lateral muscle will make: planterflexion andevertion)

* The deep fascia of the dorsum is very thin but when it becomes distal to ankle joint it will get more thick

Extensor digitorum brevis in he dorsum of foot → blood vessel : dorslis pedis → nerve : DEEP and superficial; proneal .

The tendons of Extensor digitorum longus pass to the lateral 4 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

a Fascial Expansion (Extensor Expansion) on the dorsum of each toe.

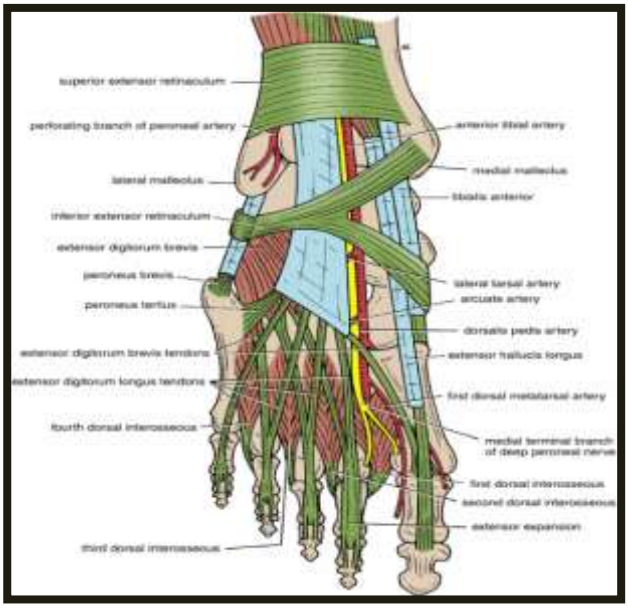
The expansion divides into (3) parts.

Central part: inserted into the Base of Middle ph.

Two Lateral parts: inserted into the Base of Distal ph.

The (Extensor Expansion) receives insertion of :

Interossei & Lumbrical muscles



Quiz :

1) **The interosseous membrane is a :**
   - a- **Thin & strong**
   - b- **Thick & strong**
   - c- **Thin & wweak**
   - d- **Thick & weak**

2) **The septa divid the leg into**
   - a- **4 compartment**
   - b- **2 compartment**
   - c- **3 comparment**
   - d- **None**

3) **The nerve supply to extensor digitorumal longus is :**
   - a- **Superficial peroneal**
   - b- **Deep peroneal**
   - c- **None of the above**
   - d- **A & b**

4) **Blood supply for extensor digitorum brevis in dorsum of the foot :**
   - a- **Dorsalis pedis**
   - b- **Anterior tibial**
   - c- **Posterior tibial**
   - d- **Superficial proneal**

5) **Origin of Peroneus Longus :**
   - a- **Lateral surface of shaft of fibula**
   - b- **Medial surface of tibia**
   - c- **Lateral surface of tibia**
   - d- **Medial surface of fibula**

6) **Insertion of Peroneus Brevis:**
   - a- **Base of 5^{th} metatarsal bone**
   - b- **Base of 4^{th} metatarscal bone**
   - c- **Base of 5^{th} tarsal bone**
   - d- **Base of 4^{th} tarsal bone**

7) The Superior peroneal retinaculum connect

a- **medial malleolus to talus**
b- **medial malleolus to calcaneum**
c- **lateral malleulos to talus**
d- **lateral malleolus to calcaneum**

8) deep fascia of the dorsum get more thick

a- **proximal to ankle joint**
b- **away from ankle joint**
c- **distal to ankle joint**
d- **distal to knee**

9) The tendons of Extensor digitorum longus pass to

a- **Medial 4 toe**
b- **Lateral 4 toe**
c- **Medial 3 toe**
d- **Lateral 3 toe**

10) Extensor digitorum longus & peroneus tertius : have a common sheath, it extends to the level of :

a- **base of 4^{th} metatarsal bone**
b- **base of 1^{th} metatarsal bone**
c- **base of 5^{th} metatarsal bone**
d- **base of 3^{th} metatarsal bone**

1	A
2	C
3	B
4	A
5	A
6	A
7	D
8	C
9	B
10	C

GOOD LUCK ;)