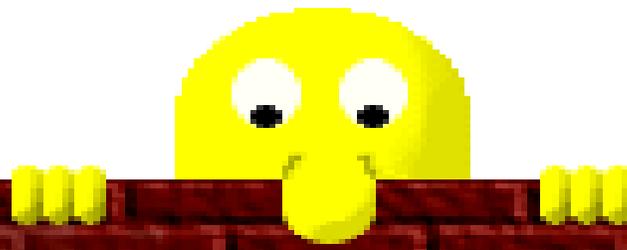




Muscles of the foot





Dorsum of The Foot

M N U

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✉ medic@mansnu.edu.eg



الصفحة الرسمية للجامعة

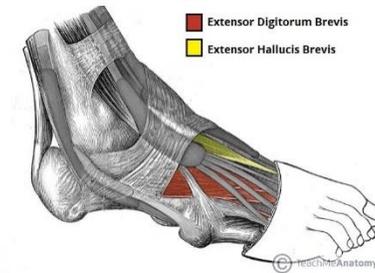
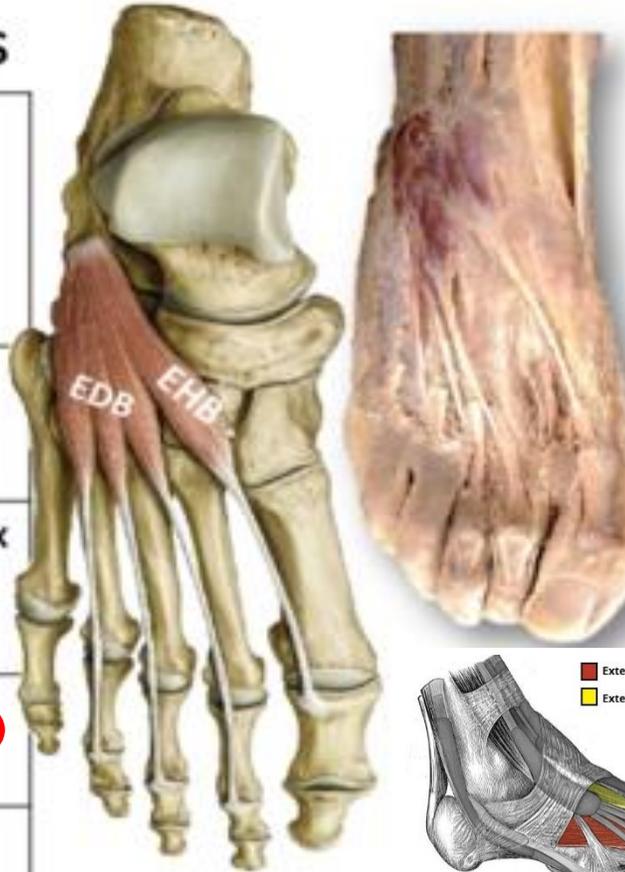


الموقع الرسمي للجامعة

Intrinsic Muscles on Dorsum of Foot

- Function: Extension of toes

Muscle	Extensor Digitorum Brevis (EDB)	Extensor Hallucis Brevis (EHB)
Proximal Attachment (Origin)	Calcaneus	Calcaneus
Distal Attachment (Insertion)	Proximal phalanges of 2 nd - 4 th digits	Proximal phalanx of 1 st digit (Hallux)
Motor Innervation	Deep fibular nerve	Deep fibular nerve
Action	Extend 2 nd - 4 th digits	Extend hallux (big toe)



Extensor Digitorum Brevis Muscle

Origin:

Upper surface of calcaneus

Insertion:

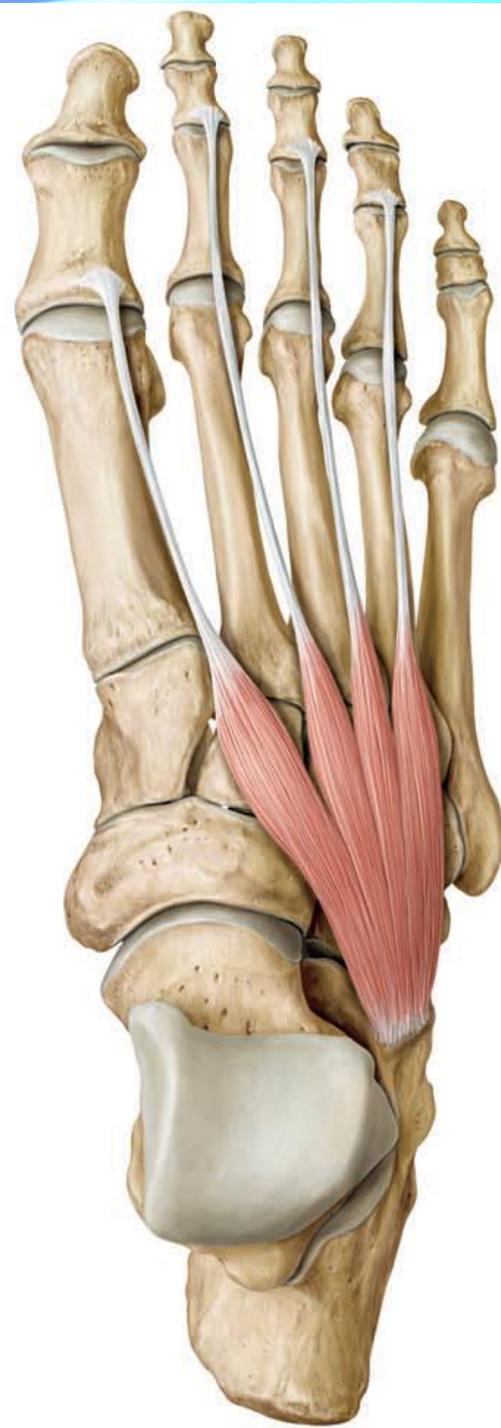
phalanges of medial 4 toes

Nerve supply:

Anterior tibial nerve

Action:

Extension of Interphalangeal joints of
Medial 4 Toes





Sole of The Foot

M N U

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الصفحة الرسمية للجامعة



الموقع الرسمي للجامعة

1- fascia of the Sole

Planter aponeurosis

- Deep fascia of the sole.
- Triangular in shape:
 - Apex: attached to calcaneus.**
 - Base: divides at the head of metatarsal bones forming 5 slips for the toes.**



MUSCLES OF SOLE OF THE FOOT

[4 layers]

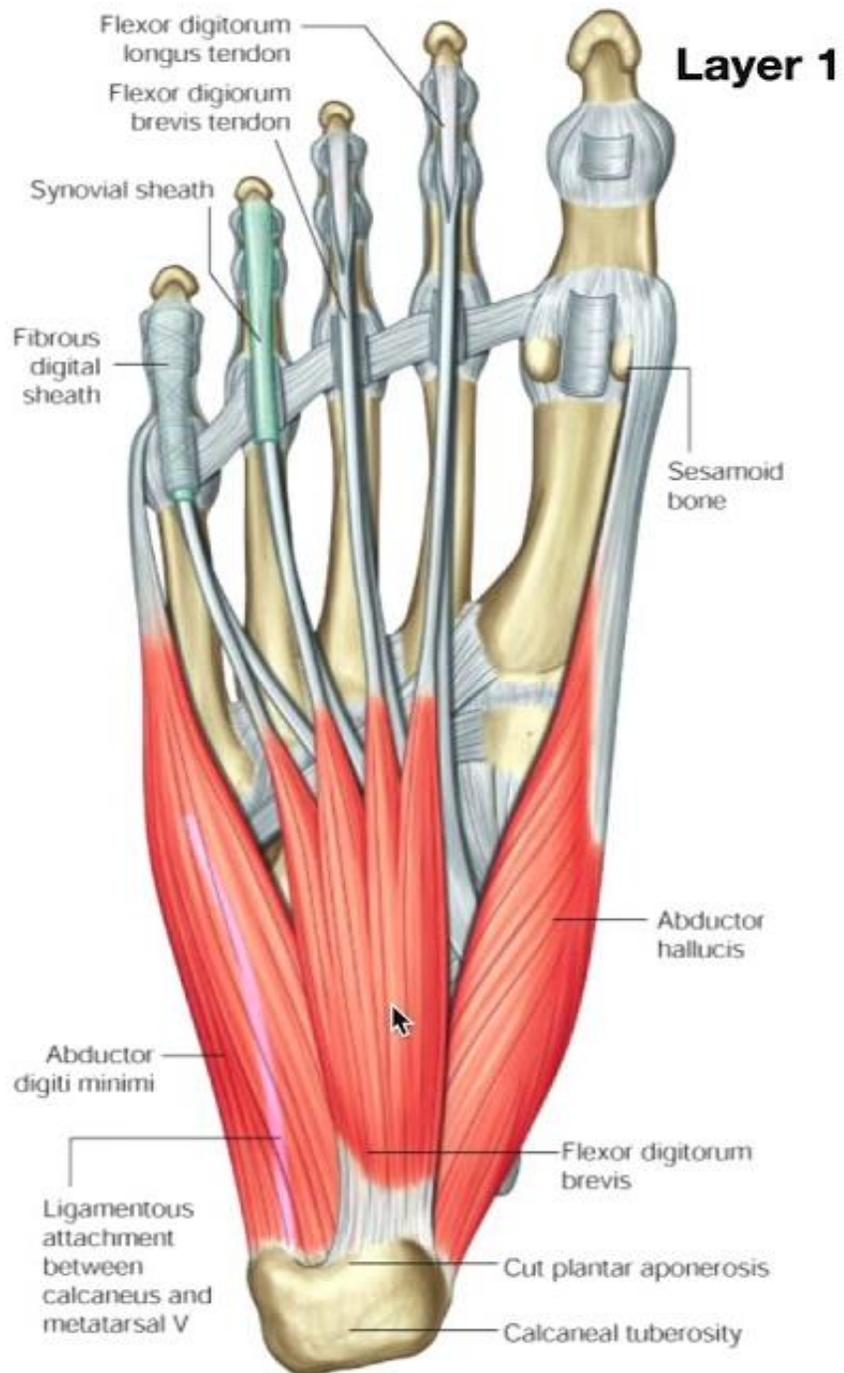


The First layer	The Second layer	The Third layer	The Fourth layer
<p><u>Three muscles:</u></p> <ol style="list-style-type: none"> 1. Abductor hallucis muscle. 2. Flexor digitorum brevis muscle. 3. Abductor digiti minimi muscle. 	<p><u>Two muscles:</u></p> <ol style="list-style-type: none"> 1. Flexor digitorum accessorius. 2. Four Lumbrical muscles <p><u>Two tendons:</u></p> <ol style="list-style-type: none"> 1. Tendon of flexor digitorum longus. 2. Tendon of flexor hallucis longus. 	<p><u>Three muscles:</u></p> <ol style="list-style-type: none"> 1. Flexor hallucis brevis muscle 2. Adductor hallucis muscle. 3. Flexor digiti minimi muscle. 	<p><u>Two muscles:</u></p> <ol style="list-style-type: none"> 1. Three Planter interossei. 2. Four Dorsal interossei <p><u>Two tendons:</u></p> <ol style="list-style-type: none"> 1. Tendon of peroneus longus. 2. Tendon of tibialis posterior.

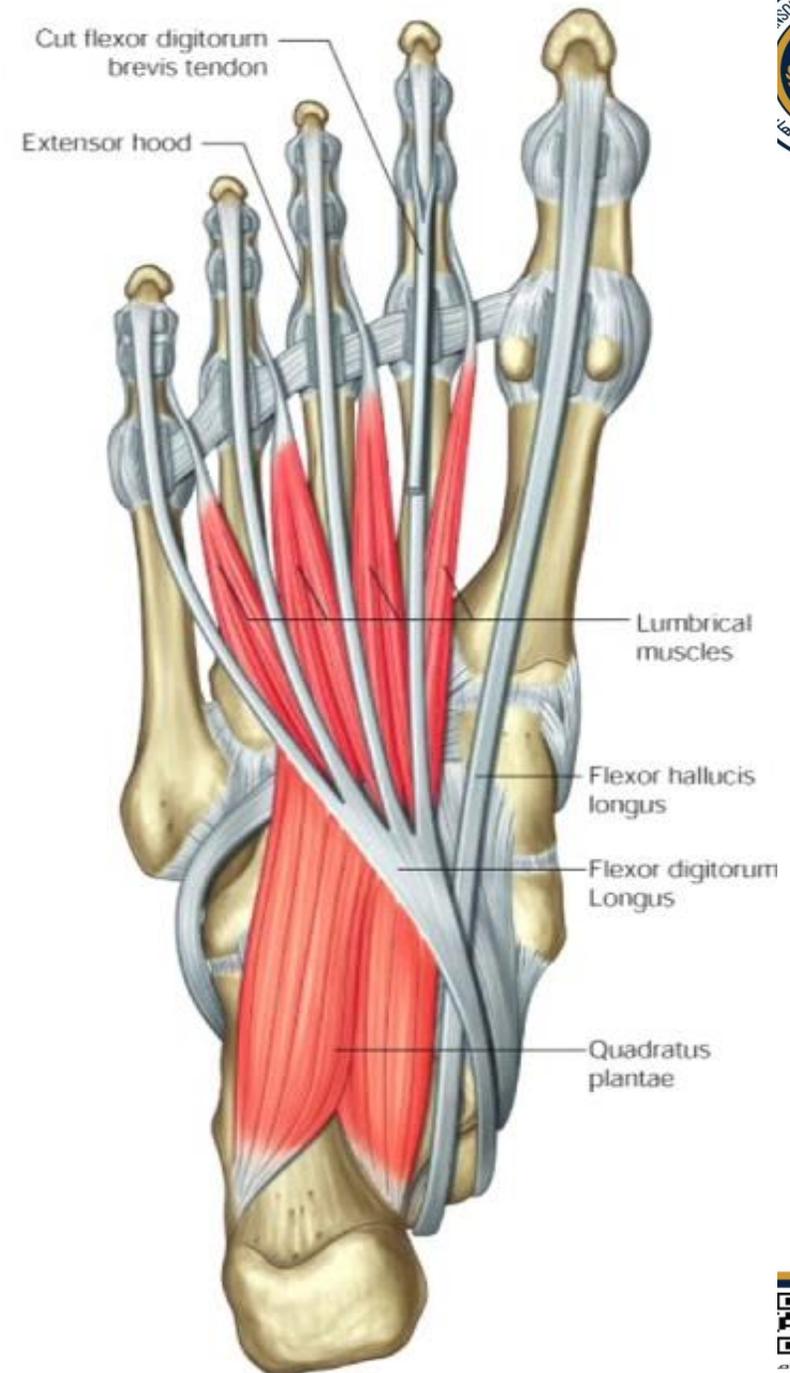
NERVE SUPPLY

All the muscles of the sole are supplied by the lateral planter nerve except:

1. Abductor hallucis
2. Flexor digitorum brevis
3. First lumbrical **Supplied by medial planter nerve**
4. Flexor hallucis brevis

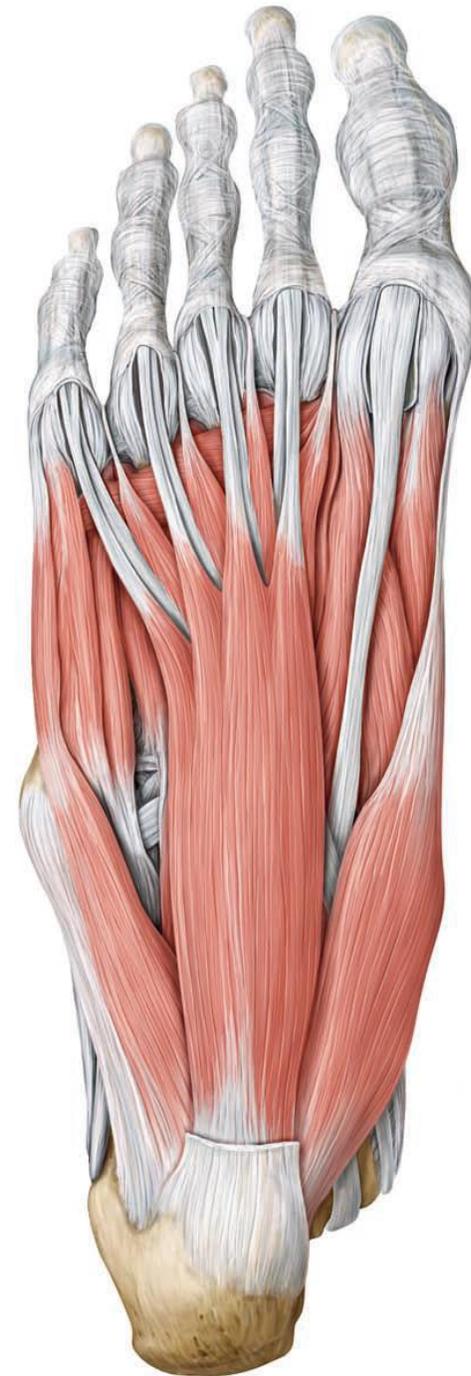
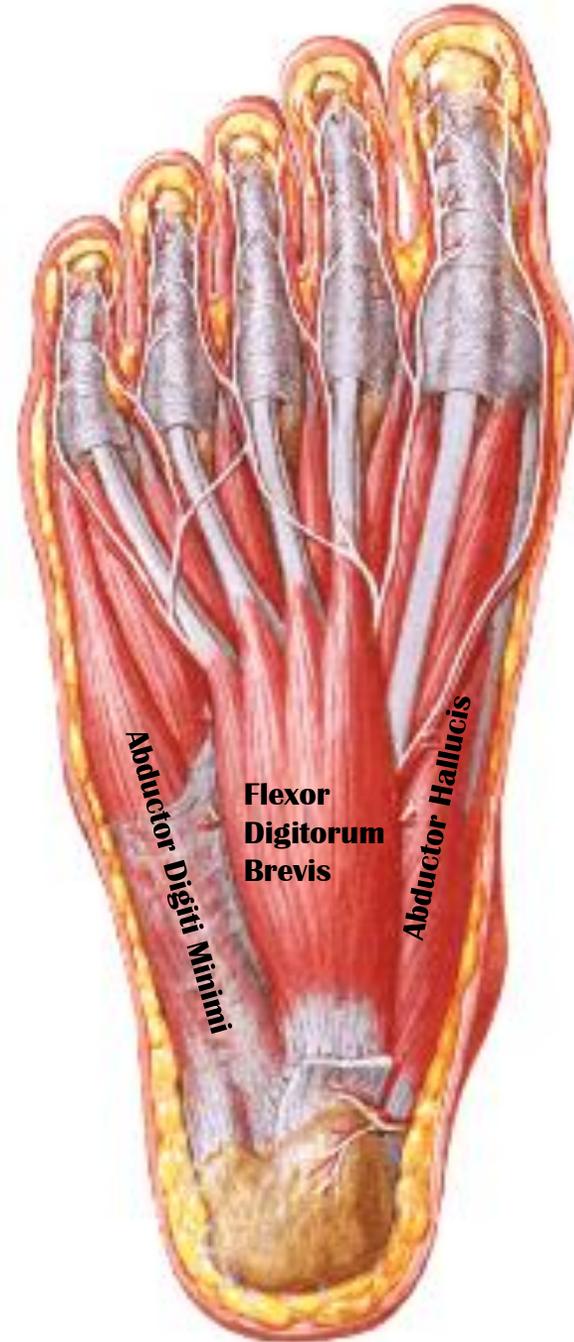


Layer 2



1st layer:

**formed of
3 muscles**

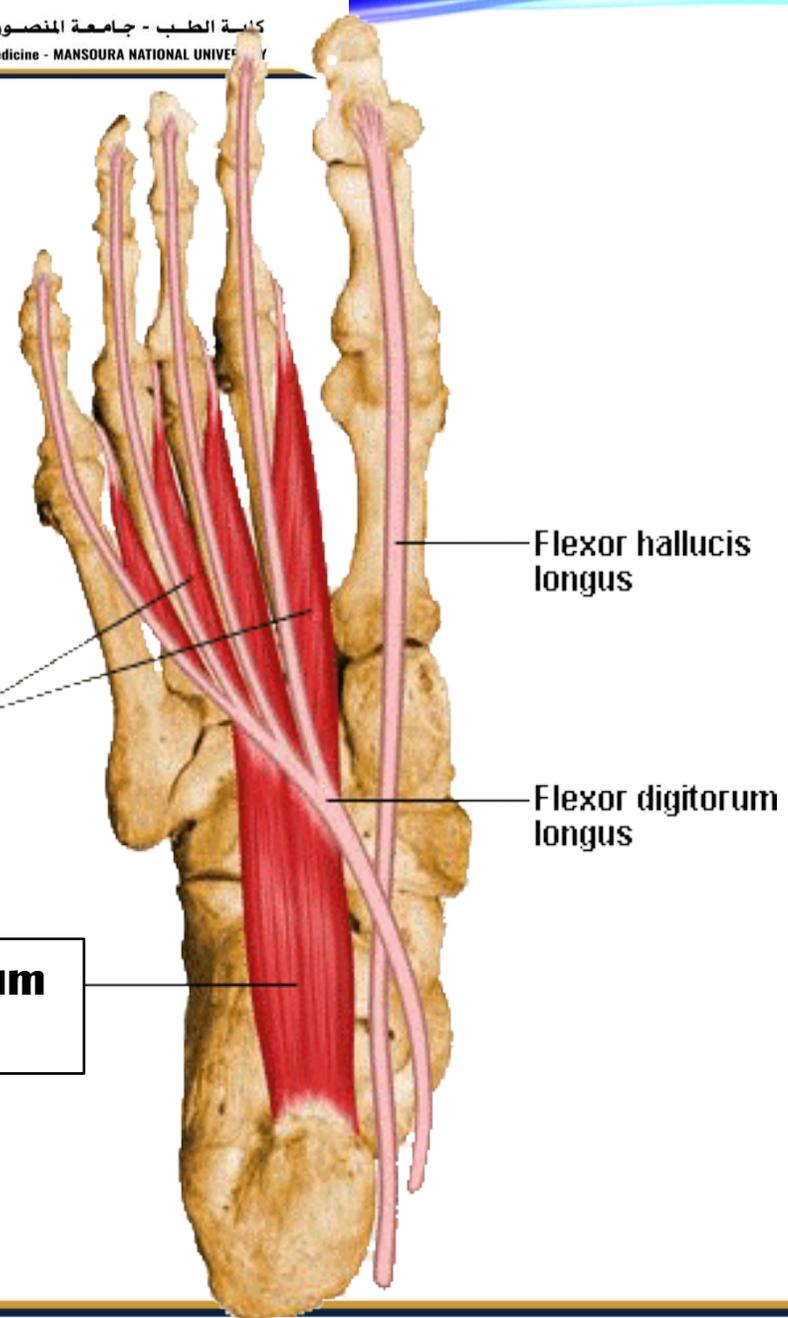


2nd layer:

**formed of
2 muscles
2 tendons**

4 Lumbricals

**Flexor Digitorum
Accessorius**

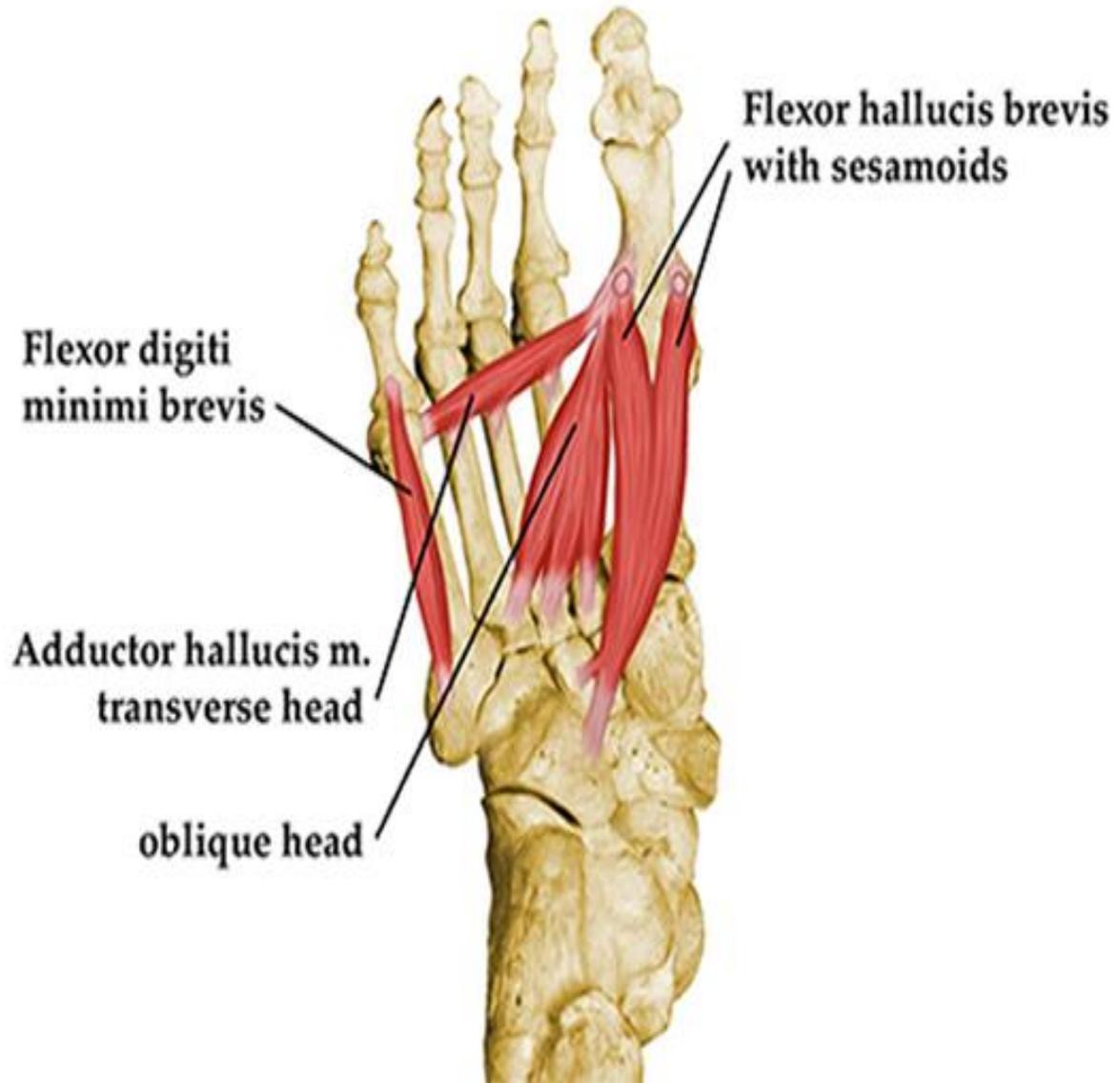


Flexor hallucis longus

Flexor digitorum longus

3rd layer:

**formed of
3 muscles**



4th layer:

**formed of
2 muscles
2 tendons**

3- Four Dorsal Interossei

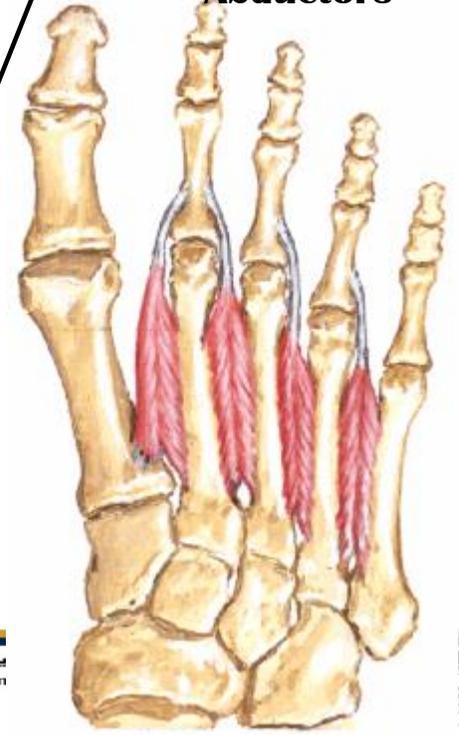
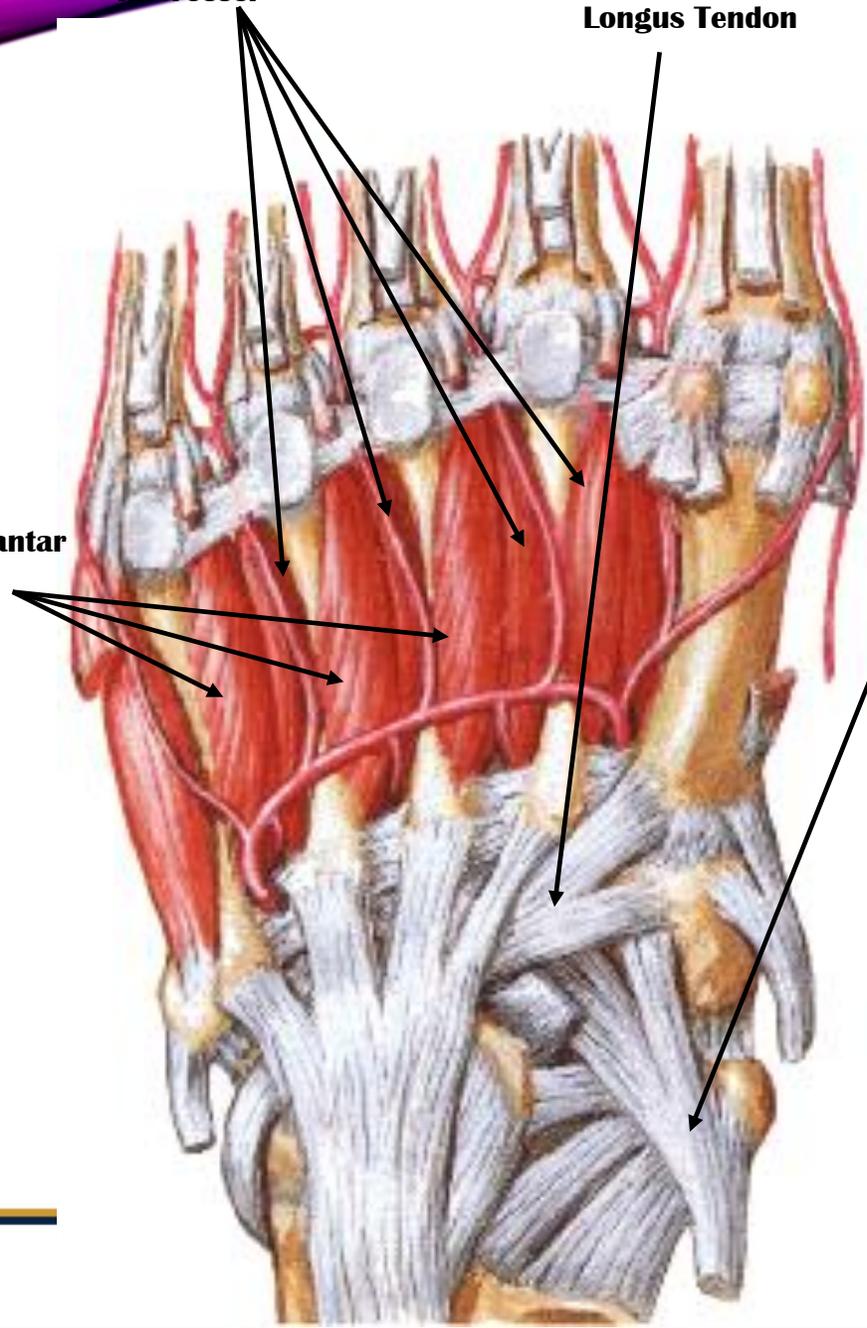
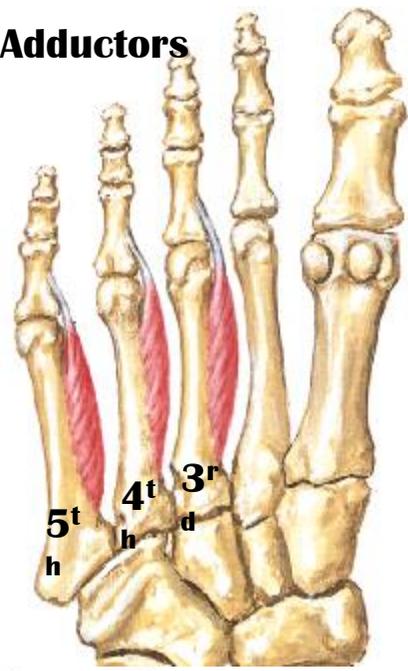
2- Peroneus Longus Tendon

1- Tibialis Posterior Tendon

4- Three Plantar Interossei

Adductors

Dorsal Interossei Abductors

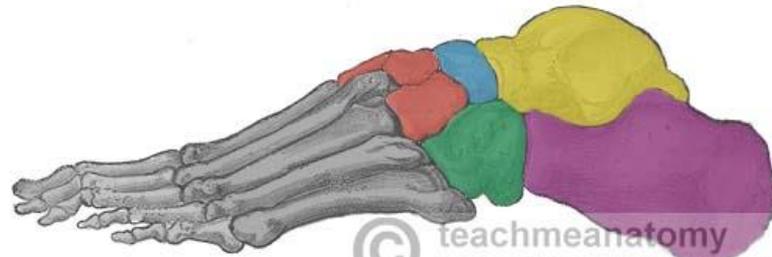




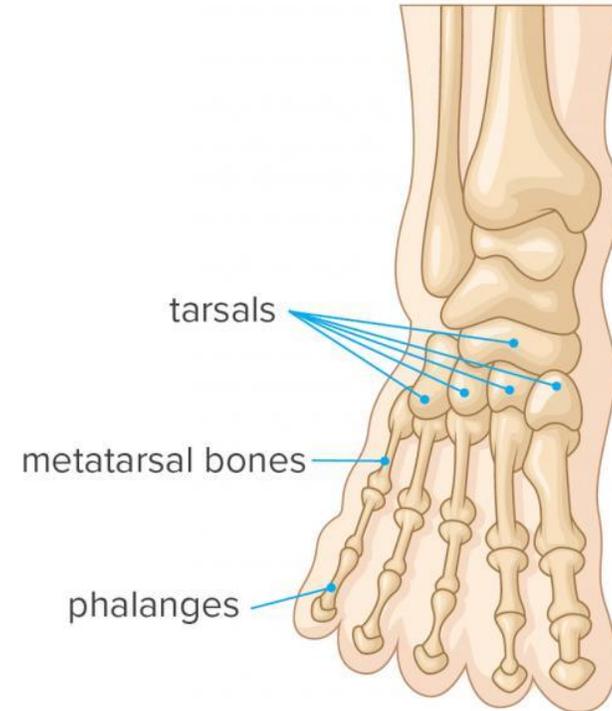
Arches of the foot



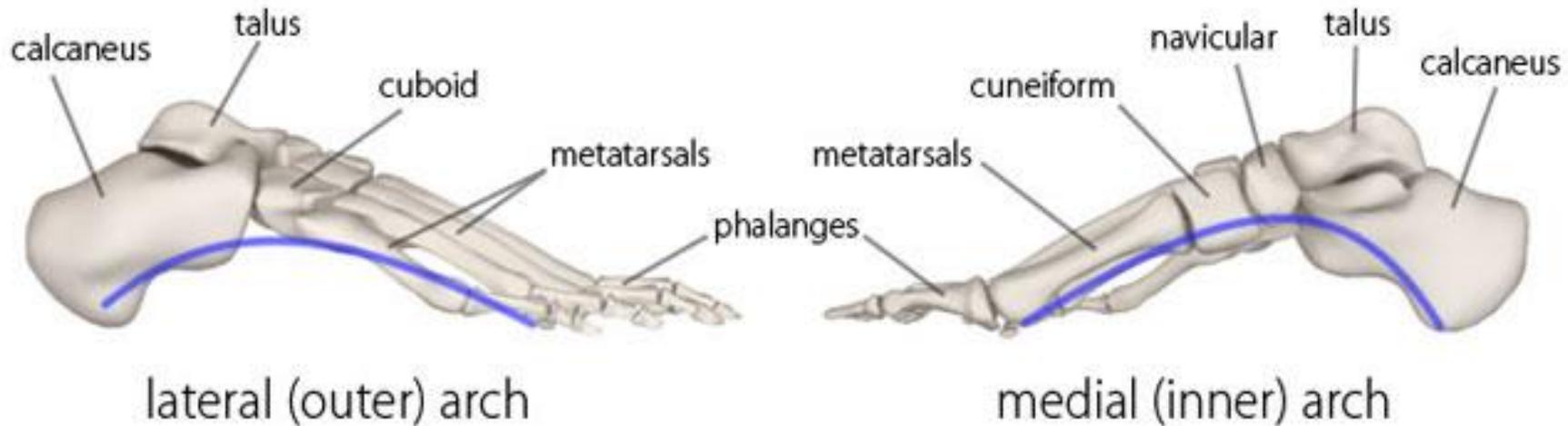
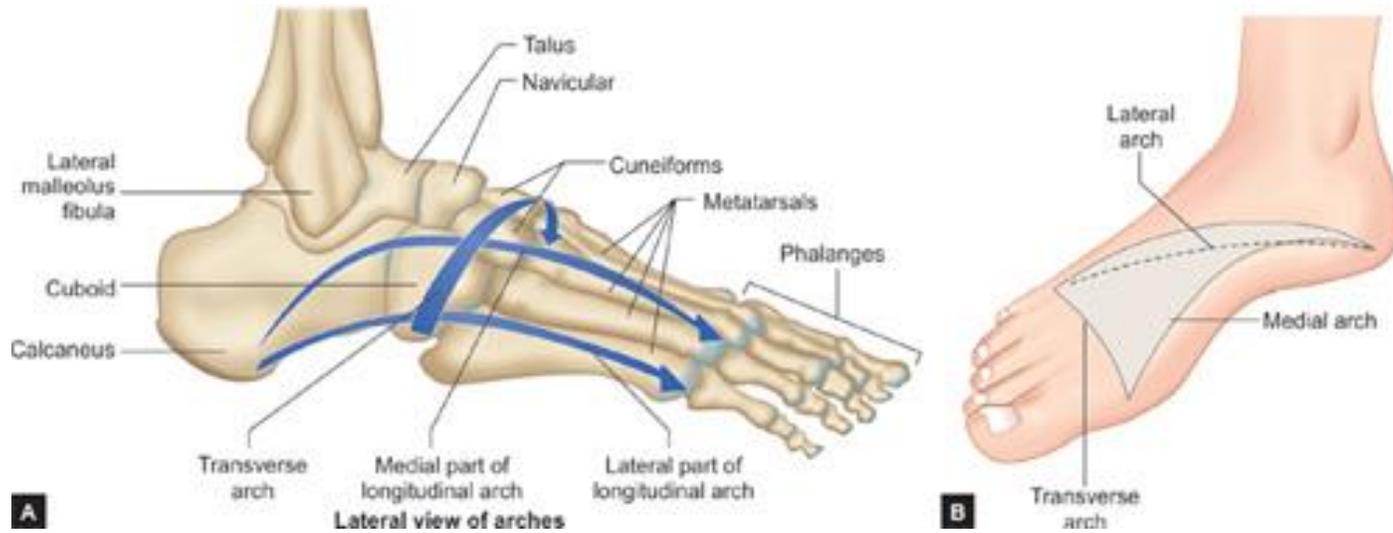
BONES OF THE FOOT



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ARCHES OF THE FOOT



ARCHES OF THE FOOT

Definition :

Human foot built in such way that its bones form parts which do not come in contact with the ground

3 arches:

- 1- medial longitudinal arch.
- 2- lateral longitudinal arch.
- 3- transverse arch

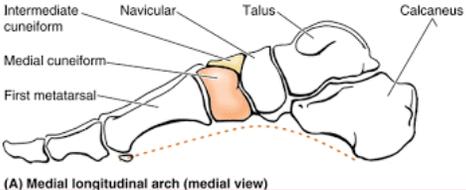
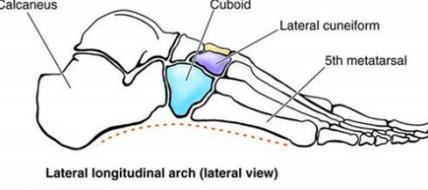
Function:

- 1- distribution of the body weight on the bones of the foot.
- 2- elasticity of movement.
- 3- absorption of shock when falling on the foot.
- 4- adaptation to irregular surfaces.
- 5- protection of the planter structures

Factors maintaining the arches:

- 1- shape of bones
- 2- ligaments.
- 3- tendons.

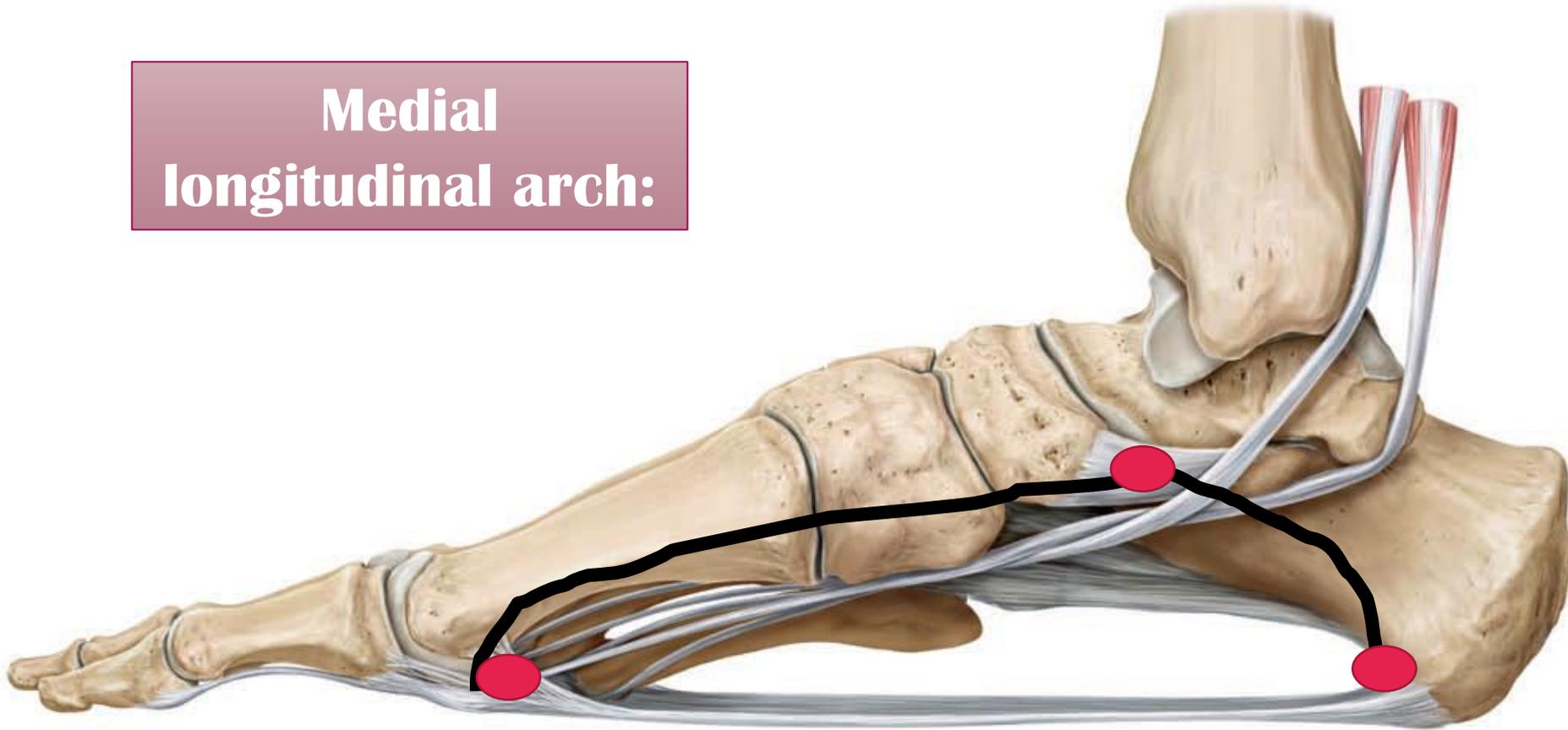
ARCHES OF THE FOOT

	Medial longitudinal arch	Lateral longitudinal arch	Transverse arch
Bones forming	i. The key-stone: talus. ii. The posterior pillar: calcaneus. iii. The anterior pillar: navicular, three cuneiform and the medial three metatarsal bones.  <p>(A) Medial longitudinal arch (medial view)</p>	i. The calcaneus. ii. The cuboid. iii. The 4 th and 5 th metatarsal bones.  <p>Lateral longitudinal arch (lateral view)</p>	i. cuboid and the three cuneiform. ii. The bases of the 5 metatarsal bones.  <p>(B) Transverse arch</p>
Character	has a greater height	nearly flat.	Its medial end is high while its lateral end reaches the ground.
Function	Important in the process of walking and running	important in support the body weight	Protection of soft tissue of the sole of foot from the effect of pressure during standing or walking

FACTORS MAINTAINING THE ARCHES OF THE FOOT:

- 1. Shape of the bones:**
- 2. Long tendons of the foot:**
- 3. Ligaments of the joints of the foot:**
- 4. Planter aponeurosis:** is the thickened central part of the deep fascia.
- 5. Superficial fascia:** distribution of fat in the sole of the foot helps to preserve shape of the arches.

Medial longitudinal arch:



Latera longitudinal arch:

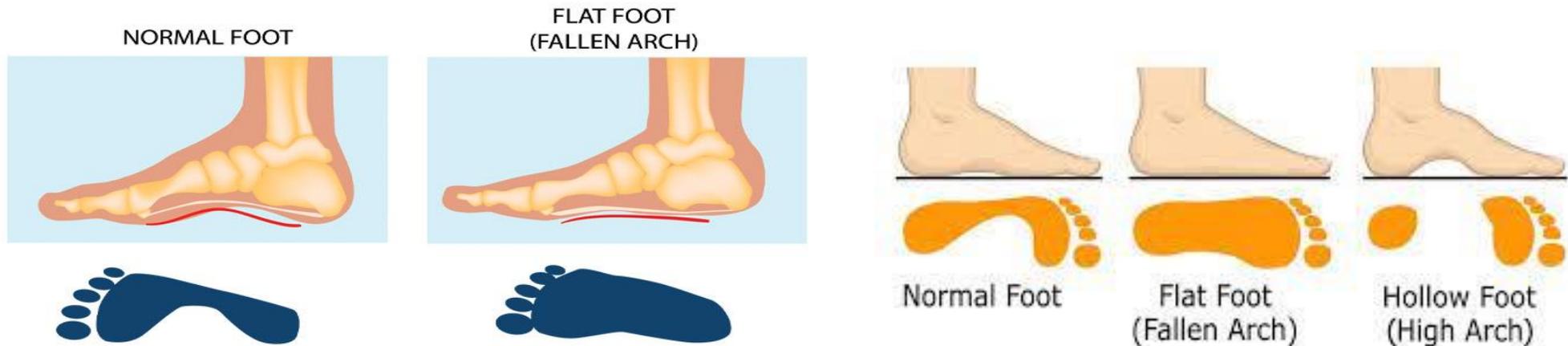


Transverse arch:



FLAT FOOT

Definition	loss of the arches of the foot.
Causes	A. Congenital: B. Acquired:



Quiz 1

Is responsible for unlocking of knee joint?

- A) tibialis anterior
- B) tibialis posterior
- C) gastrocnemius
- D) soleus
- E) popliteus



Quiz 2

Is responsible for plantarflexion of ankle joint?

- A) tibialis anterior
- B) tibialis posterior
- C) extensor hallucis longus
- D) peroneus tertius
- E) popliteus

