

Arches of foot - 2 longitudinal arches ✓ 1 series of transverse arches

① medial longitudinal arch

Shape → wedge shaped, Keystone → talus

Formation → calcaneus, navicular, talus, 3 cuneiforms,
medial 3 metatarsals.

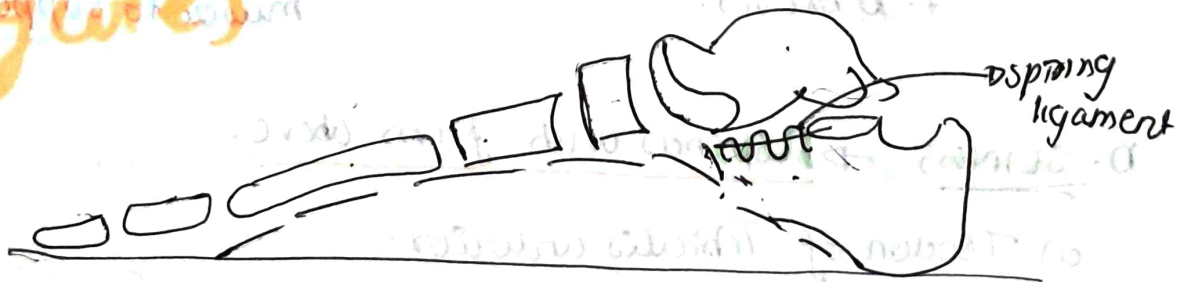
• 2 Pillar → anterior pillar
head of 3 medial metatarsals. ✓

posterior pillar
medial half of calcaneum. ✓

• Summit → Talus → Keystone of arch:

• Joints → Talocalcaneonavicular joint
Subtalar joints.

2 figures



Factors maintaining arch.

A. BONES.

sustentaculum tali partly support head of talus.

B. INTERSEGMENTAL TIES → bind together lower edge of tarsal bones like metal staples

(a) spring ligament → calcaneonavicular ligament.

sustentaculum tali of calcaneum → navicular bone.
→ supported by tibiocalcaneal ligament.
~~(b) flexor hallucis brevis~~

C. TIE BEAMS → prevent separation of pillars.

a. plantar aponeurosis,

(b) flexor hallucis longus → extent → sustentaculum tali → great toe

+ Abductor hallucis.

(c) flexor digitorum longus

f. D. brevis.

↓
strongest & bulkiest muscle to support.

D. SLINGS → suspends arch from above.

a) Tendon of Tibialis anterior.

b) Tendon of peroneus longus.

c) Deltoid ligament of ankle joint.

Applied ANATOMY

- absence of arch \rightarrow flat foot \rightarrow pes planus.
- Exaggeration of longitudinal arch \rightarrow pes cavus.

Foot Deformities

Talipes equines \rightarrow person walk on toes.

Talipes calcareus \rightarrow person walks on heel.

FUNCTIONS \rightarrow shock absorption
propulsion

Spongy ligament - plantar Calcaneo Navicular ligament.

\rightarrow It is intersegmental tie & one of the important ligament in formation of medial longitudinal arch.

EXTENT

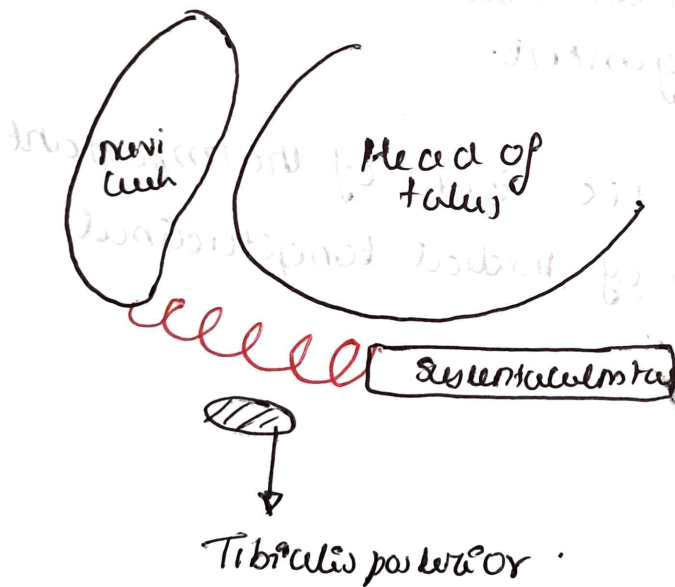
from sustentaculum tali of calcaneum to tuberosity of navicular base.

Function

- ① supports Head of talus
- ② provide attachment to deltoid ligament.

APPLIED ANATOMY

- If this ligament is stretched → **arch is flattened**



LATERAL LONGITUDINAL ARCH.

KEY Stone → Cuboid.

INTRO: LOW ARCH: almost touches ground

Weight transmission ✓

Thrust ✓

FORMATION

• Calcaneum, Cuboid, Lateral 2 metatarsals.

A. PILLARS

Anterior pillar → head of lateral 2 metatarsals

posterior pillar → lateral half of calcaneum.

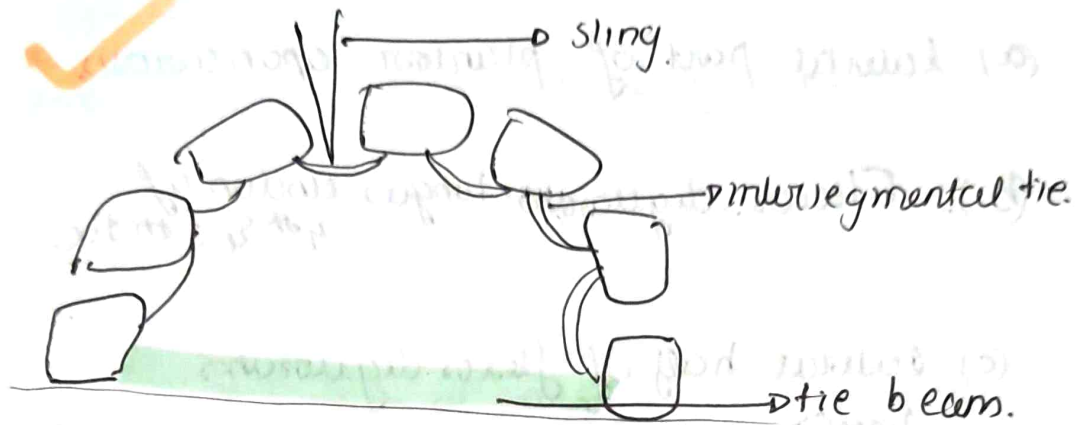
B. SUMMITS

articular facet of superior surface of calcaneum.

C. JOINTS.

calcaneocuboid. → saddle type of
joint. synovial joint.

FACTORS MAINTAINING ARCH.



A. BONES

proper shaping of proximal end of cuboid & distal end of calcaneum.

Key stone - Cuboid.

B. INTERSEGMENTAL TIES → def.

(a) Short plantar ligament: Thick, short
bridges concavity of
Calcaneo cuboid joint.

(b) long plantar ligament: thin, long.

Supports joints between
Calcaneum, cuboid &
metatarsals.

C. TIE BEAM (dy)

(a) lateral part of plantar aponeurosis

(b) Flexor digitorum longus tendon of 4th & 5th toe.

(c) lateral half of flexor digitorum brevis.

(d) Abductor digiti minimi

D. SLINGS (dy)

- peroneus longus.
- peroneus brevis tendon.

APPLIED ANATOMY

same as before.

