joints & ARCHES OF THE FOOT

1- subtalar joint	*2- TALOCALCANEONAVICULAR joint*
Type: synovial	*Type: synovial*
variety: plane	*variety: Ball & socket*
Articular parts: *lower surface of body of talus upper surface of calcaneus*	*Articular parts:* *a- Ball:- is formed by the head of the talus.* *b- Socket:- is formed by* *- navicular bone,* *-upper surface of the spring ligament,* *(which extends from sustantaculum tali to navicular bone it support head of talus)* *-sustentaculum tali,* *-superior surface of the calcaneus*

Movements

*1- **I**nversion*	*2- **E**verson:*
-medial rotation of the foot so the sole looks inwards *- It is done by* *a) T**i**bialis anterior* *b) T**i**bialis posterior.*	*-Lateral rotation of the foot so the sole looks outwards* *-It is done by* *a) P**e**roneus longus.* *b) P**e**roneus brevis.* *c) P**e**roneus tertius.*

		Medial longitudinal arch:-	*Lateral longitudinal arch*	*transverse arches*
Construction		*-Formed by 9 bones. Calcaneus, talus, navicular, 3 cuneiforms and med, 3 metatarsals*	*- Formed by 4 bones calcaneus, cuboid , 4 th and 5 th metatarsal bones*	*Formed by metatarsal bones , cuboid , the 3 cuneiform bones*
pillars		*Ant. pillar: Heads of med. 3 metatarsal bones. Post. pillar: calcaneus*	Ant. pillar : heads of 4th and 5th metatarsal bones. Post. pillar; calcaneus	
Key stone		*body of talus*	*cuboid*	
Factors maintaining the arch	*-Bony factor*	most of the bones are wedge shaped.		
	inter-segmental ties:	*Ligaments : e.g. :Spring ligament interosseous ligaments*	*:short plantar ligament long plantar ligament interosseous ligaments*	*Ligaments: e.g. deep transverse metatarsal ligament muscles : e.g. : interossei muscles .*
	-tie beams	*Ligaments : e.g. Plantar aponeurosis Muscles: e.g. abd. Hallucis flexor hallucis brevis flexor digitorum brevis flexor digitorum longus*	*Ligaments : e.g. Plantar aponeurosis Muscles: e.g. abd. Digiti minimi flexor digiti minimi brevis*	*Ligaments : e.g. Plantar aponeurosis Muscles: e.g. Adductor hallucis*
	4- slings	*Ligaments : e.g. deltoid ligament Muscles: e.g. Tibialis ant. Tibialis posterior flexor hallucis longus*	*Muscles: e.g. peroneus longus peroneus brevis. peroneus tertius*	*Muscles: e.g. Peroneus longus tibialis Post*

Medial longitudinal arch higher than the lateral one

Important ligaments of the SOLE

1- spring ligament

2- short plantar ligament

(plantar calcaneo cuboid)

Extends from the anterior part of calcaneus to the cuboid

3-long plantar ligament

-strongest in the sole

-Extended from posterior part of the calcaneus

to bases of 2nd,3rd, 4th metatarsal bones

-Crosses the plantar surface of cuboid converting its groove into a tunnel for peroneus longus