



# ***MSS Module***

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# ***Joints***

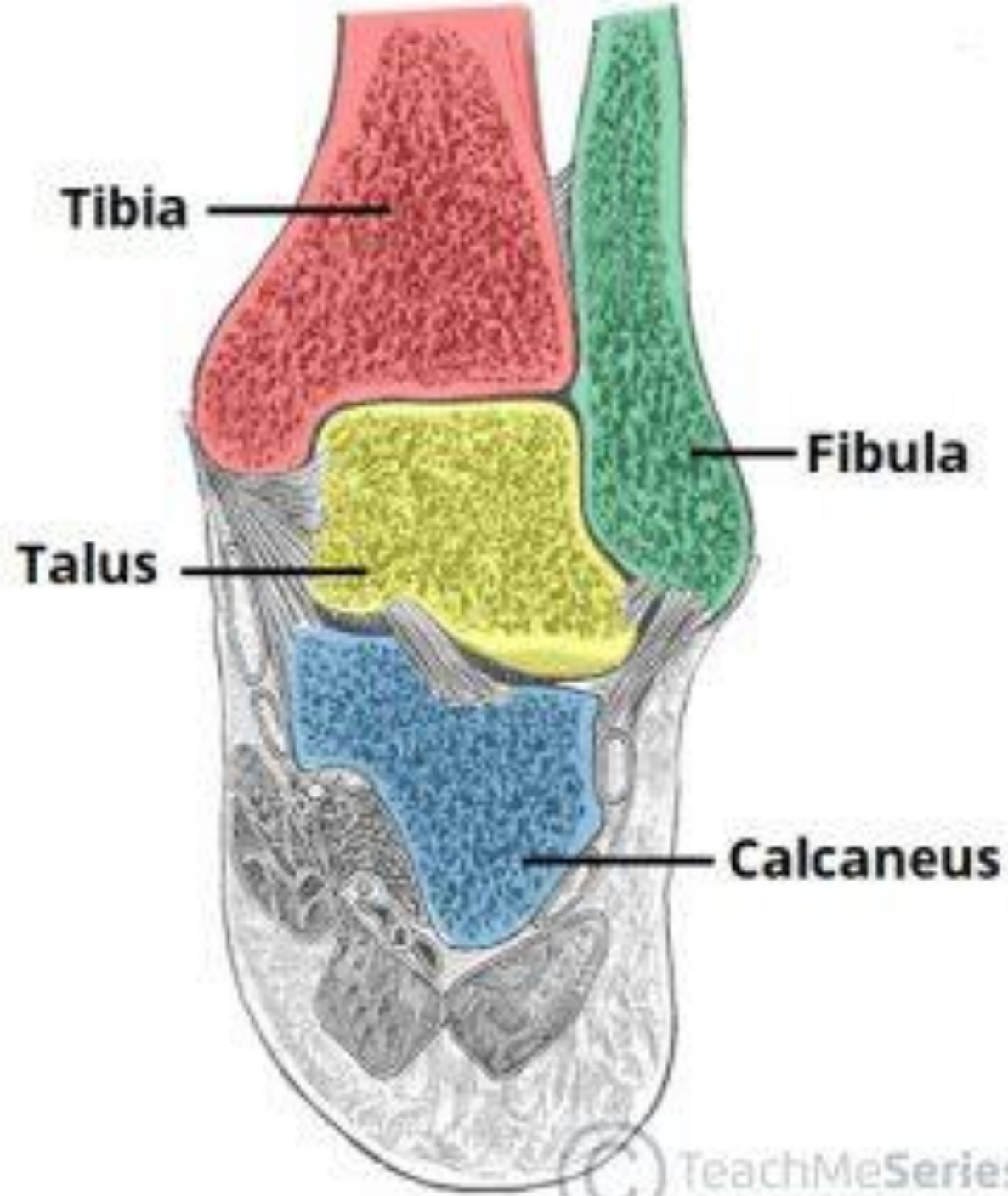
## ***Hip & Knee***



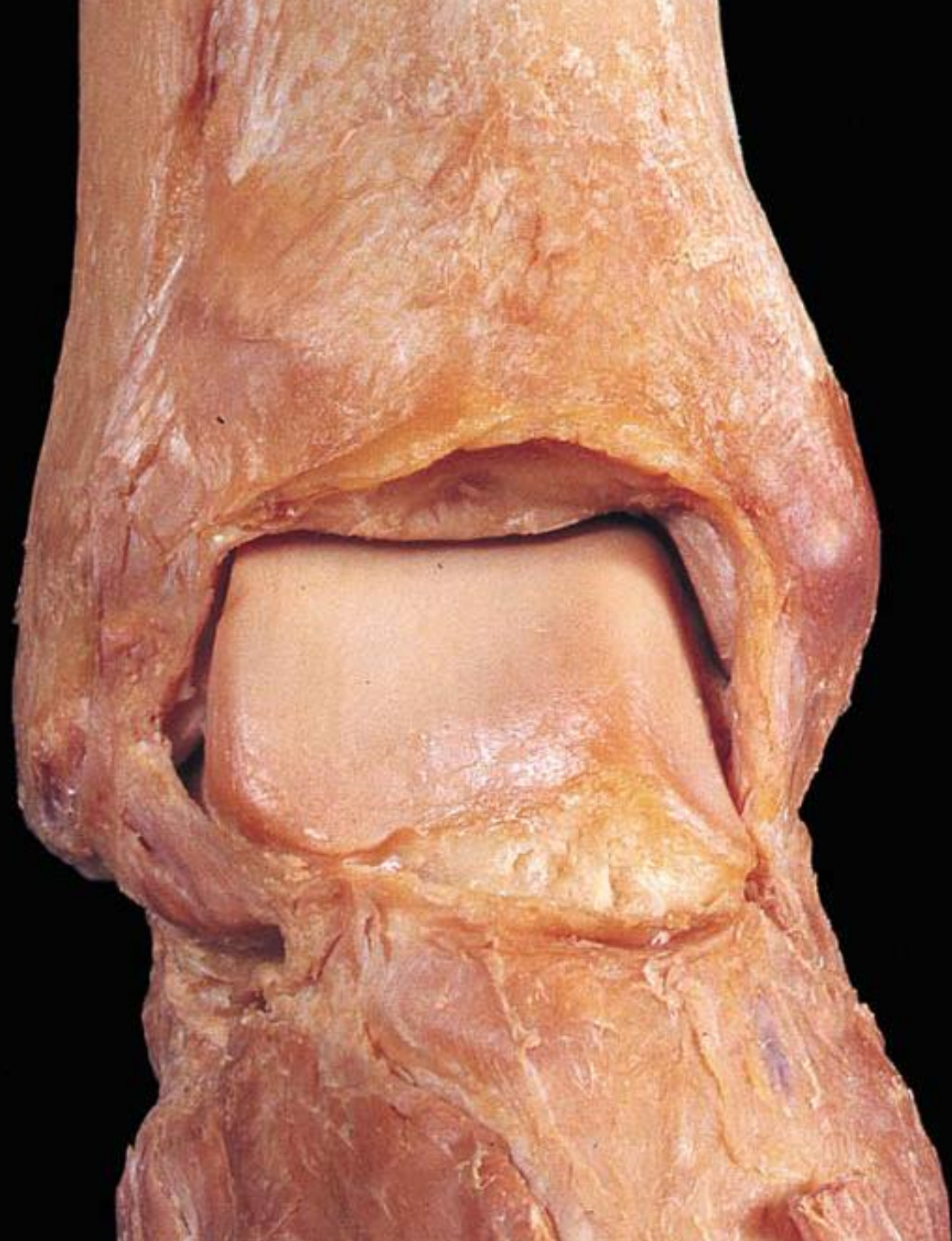
# *Ankle Joint*

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- Functionally, it is a ***hinge type*** joint, permitting dorsiflexion and plantarflexion of the foot.
- The ankle joint is formed by three bones; the **tibia** and **fibula** of the leg, and the **talus** of the foot:
- The tibia and fibula are bound together by strong **tibiofibular ligaments**. Together, they form a bracket shaped socket, covered in hyaline cartilage. This socket is known as a **mortise**.





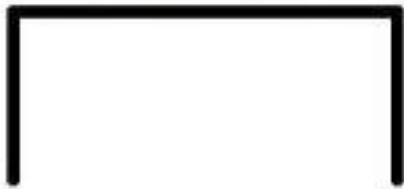






**Distal tibiofibular joint**

**Bracket shaped socket:**



**Talus**

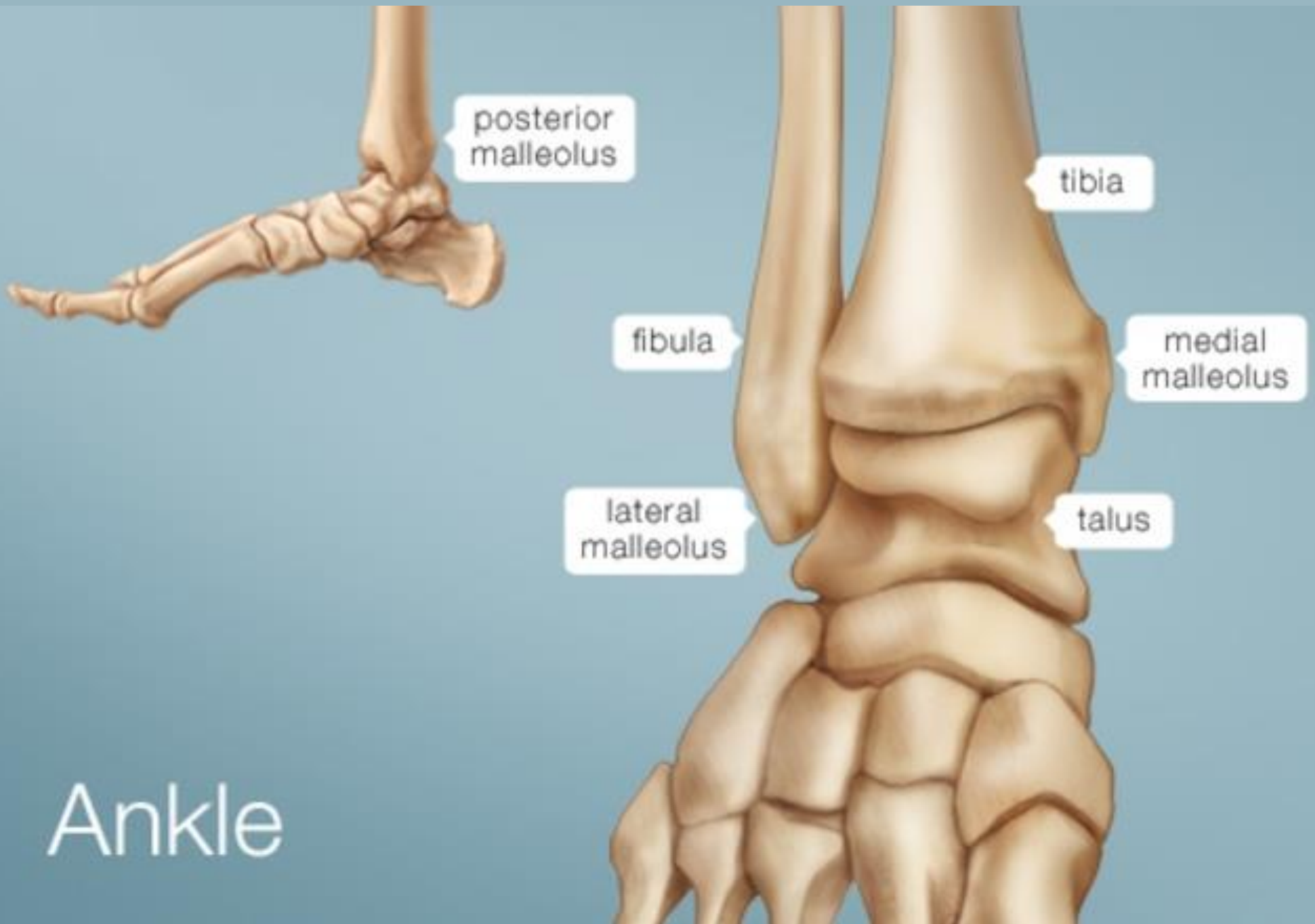


# *Ankle Joint*

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- The articulating part of the talus is wedge shaped – it is broad anteriorly, and narrow posteriorly
- ***Dorsiflexion:*** the anterior part of the talus is held in the its socket, and the joint is more stable.
- ***Plantarflexion:*** the posterior part of the talus is held in the socket, and the joint is less stable.







# *Ligaments*

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## *Medial Ligament*

- The **medial ligament** (or deltoid ligament) is attached to the medial malleolus (a bony prominence projecting from the medial aspect of the distal tibia).
- It consists of four ligaments, which fan out from the malleolus, attaching to the talus, calcaneus and navicular bones. The primary action of the medial ligament is to resist **over-eversion** of the foot.

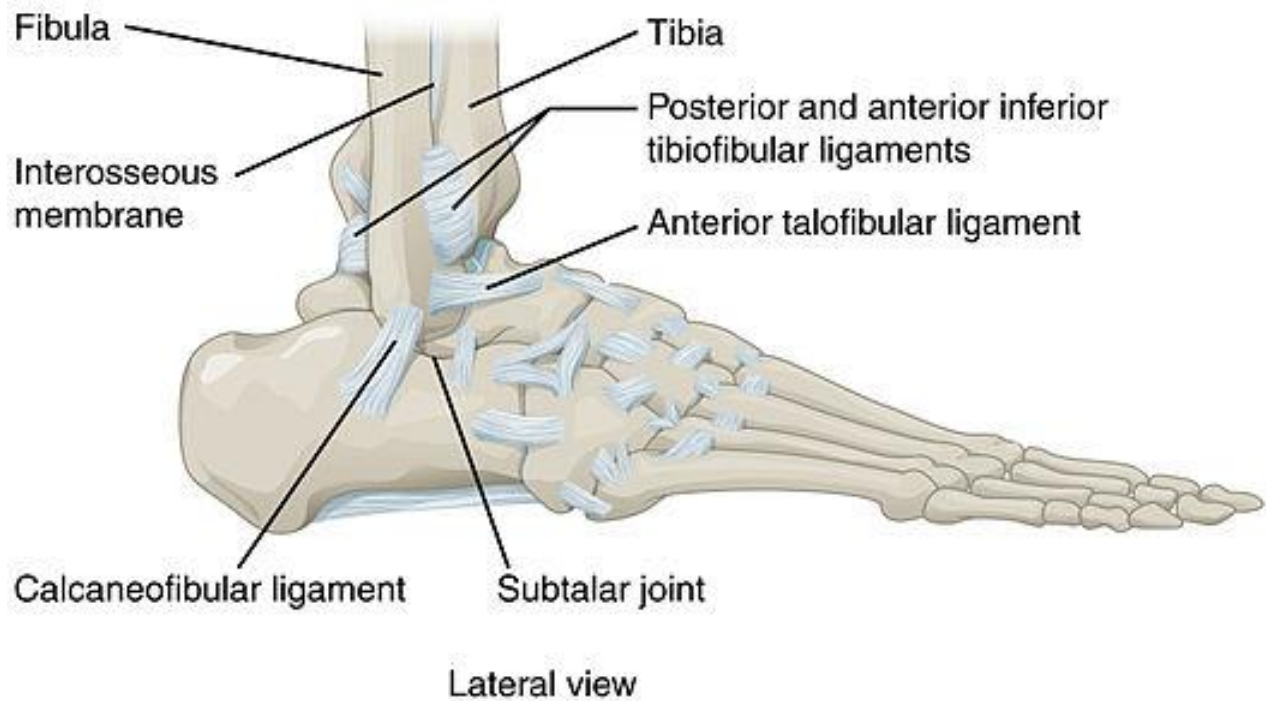
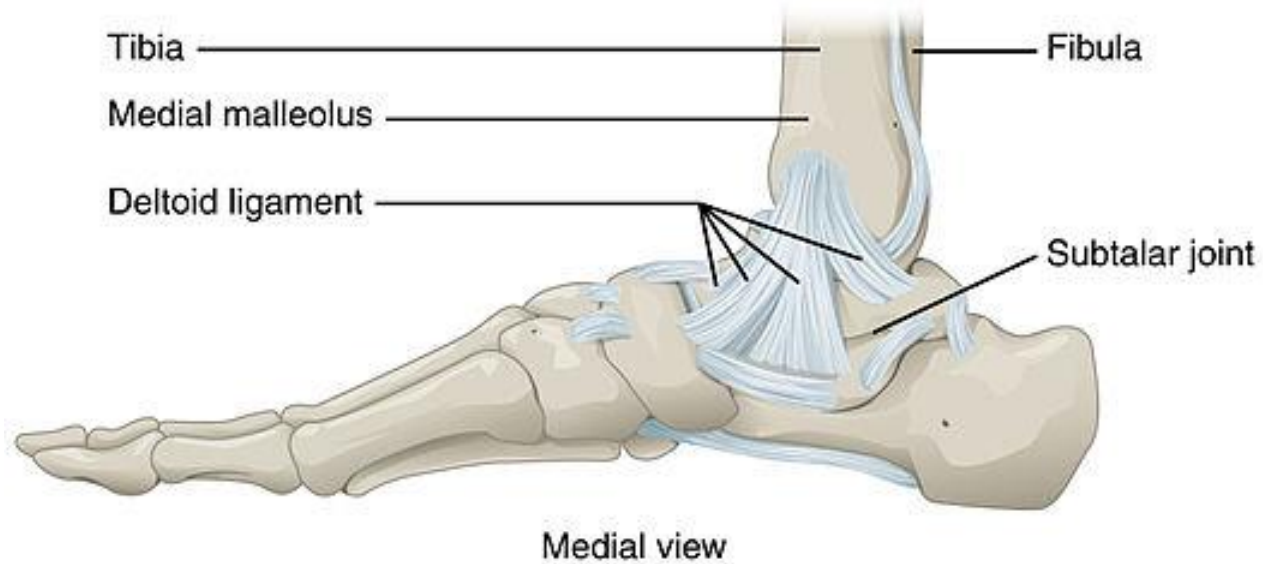


# *Ligaments*

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## *Lateral Ligament*

- The **lateral ligament** originates from the lateral malleolus (a bony prominence projecting from the lateral aspect of the distal fibula).
- It resists over-inversion of the foot, and is comprised of three distinct and separate ligaments:
  1. **Anterior talofibular** – spans between the lateral malleolus and lateral aspect of the talus.
  2. **Posterior talofibular** – spans between the lateral malleolus and the posterior aspect of the talus.
  3. **Calcaneofibular** – spans between the lateral malleolus and the calcaneus.

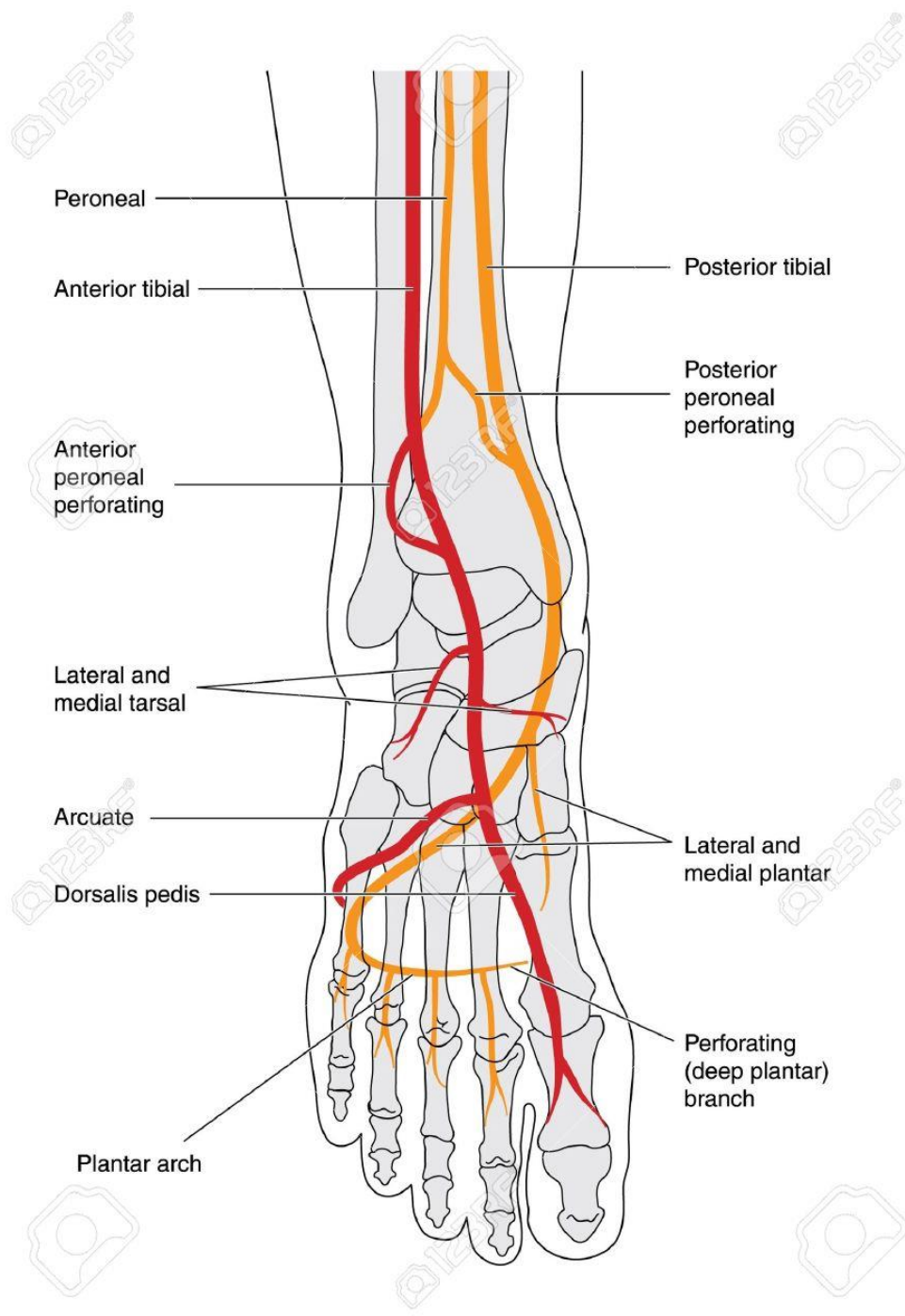




# ***Blood and Nerve Supply***

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- The **arterial supply** to the ankle joint is derived from the ***malleolar branches*** of the ***anterior tibial, posterior tibial*** and ***fibular*** arteries.
- **Innervation** is provided by ***tibial, superficial fibular*** and ***deep fibular*** nerves

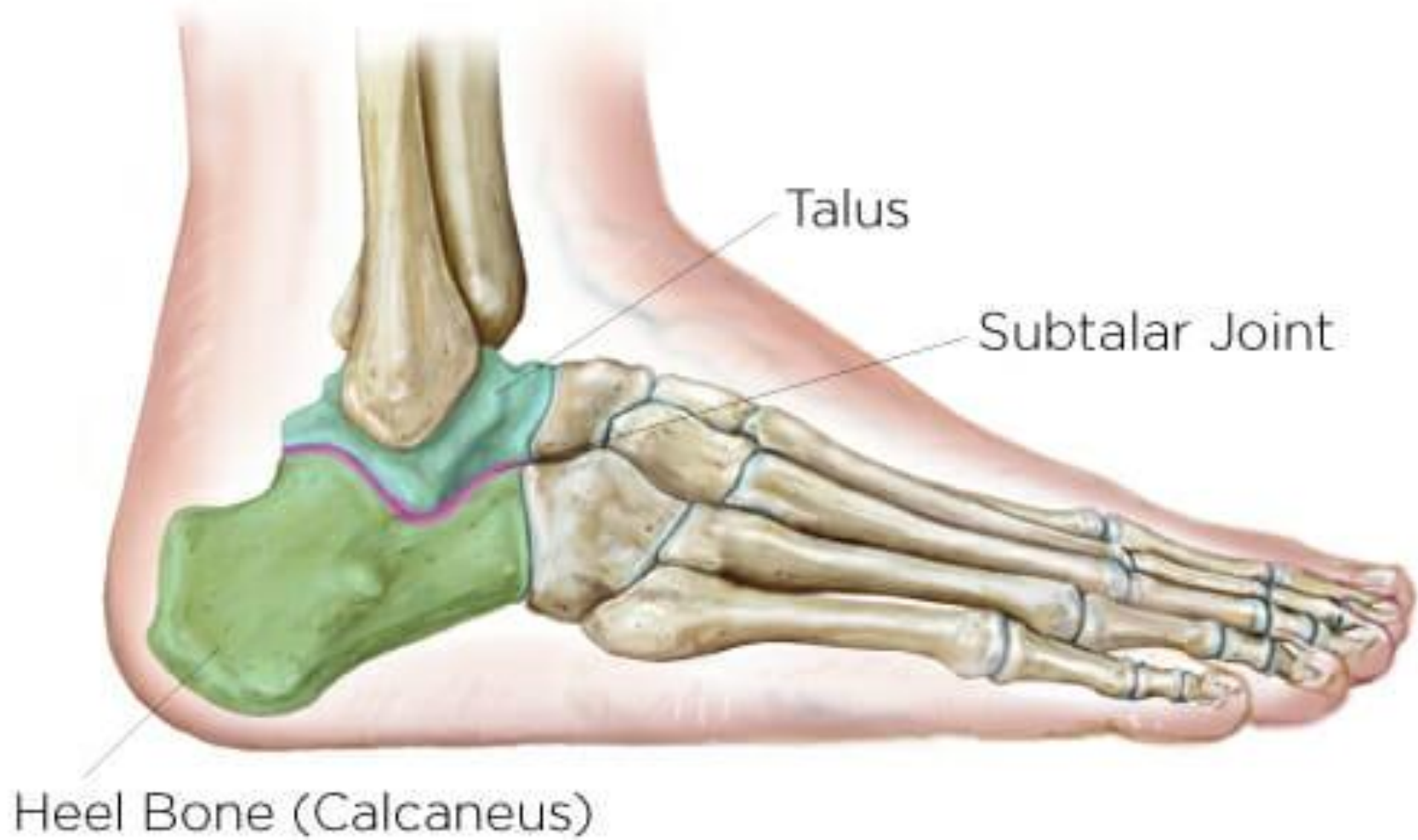




# *Subtalar Joint*

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- The joint is classed structurally as a **synovial** joint, and functionally as a *plane synovial* joint.
- **The subtalar joint is formed between two of the tarsal bones:**
  1. Inferior surface of the body of the talus
  2. Superior surface of the calcaneus
- As is typical for a synovial joint, these surfaces are covered by **articular cartilage**.







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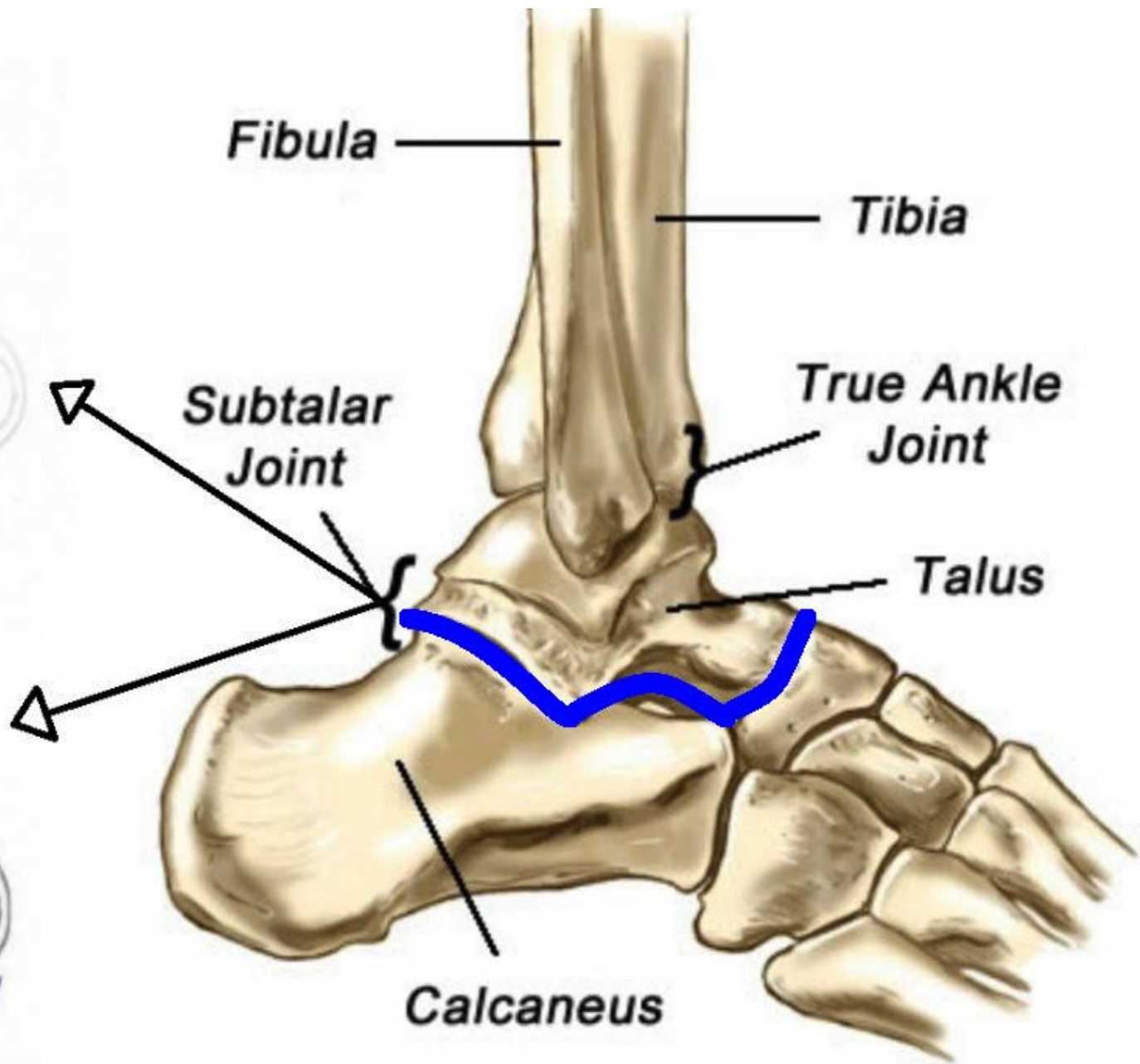




Pronation



Supination



Fibula

Tibia

Subtalar Joint

True Ankle Joint

Talus

Calcaneus

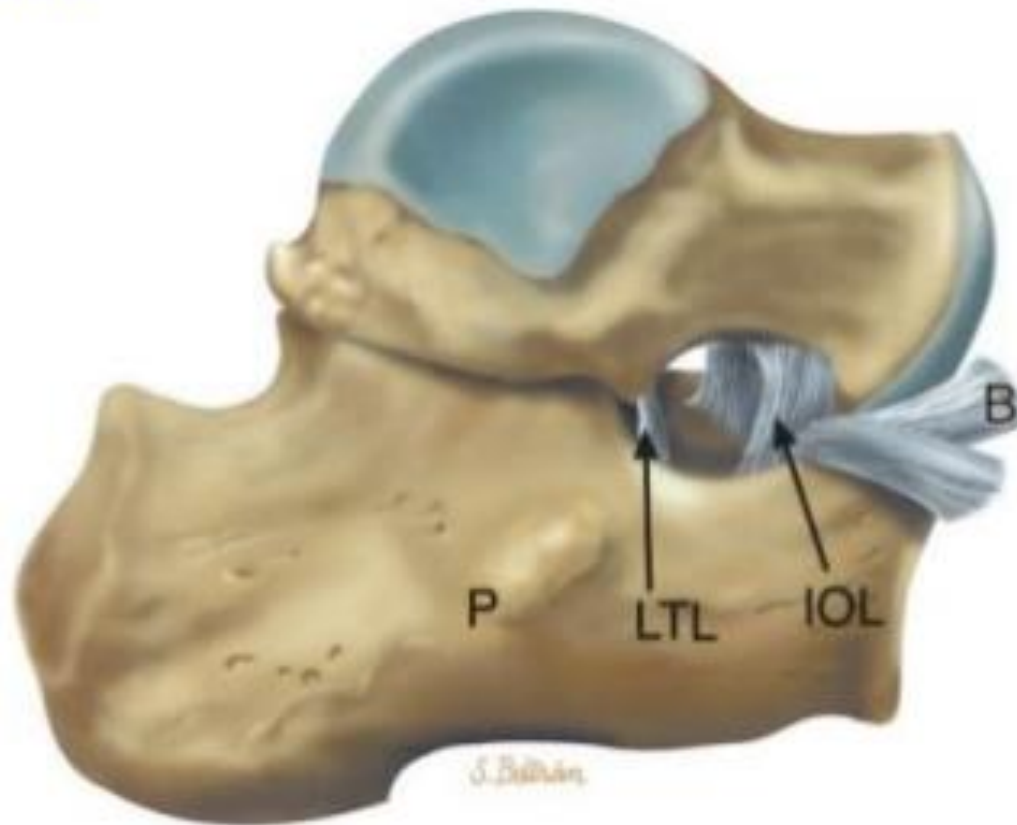


# *Ligaments*

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- The subtalar joint is enclosed by a **joint capsule**, which is lined internally by synovial membrane and strengthened externally by a fibrous layer. The capsule is also supported by three ligaments:
  1. *Posterior talocalcaneal ligament*
  2. *Medial talocalcaneal ligament*
  3. *Lateral talocalcaneal ligament*
- An additional ligament – the **interosseous talocalcaneal ligament** – acts to bind the talus and calcaneus together.

Lateral, medial, posterior, and interosseous **talocalcaneal ligaments** stabilize the joint.



Drawing of the lateral surface of the calcaneus shows the peroneal tubercle (**P**), as well as the lateral talocalcaneal (**LTL**), interosseous (**IOL**), and bifurcate (**B**) ligaments.

Tibia

Fibula

Inferior  
extensor  
retinaculum

Anterior  
talofibular  
ligament

Calcaneofibular  
ligament

Cervical  
ligament

Interosseous  
ligament

Posterior  
calcaneal  
facet

Talar  
head

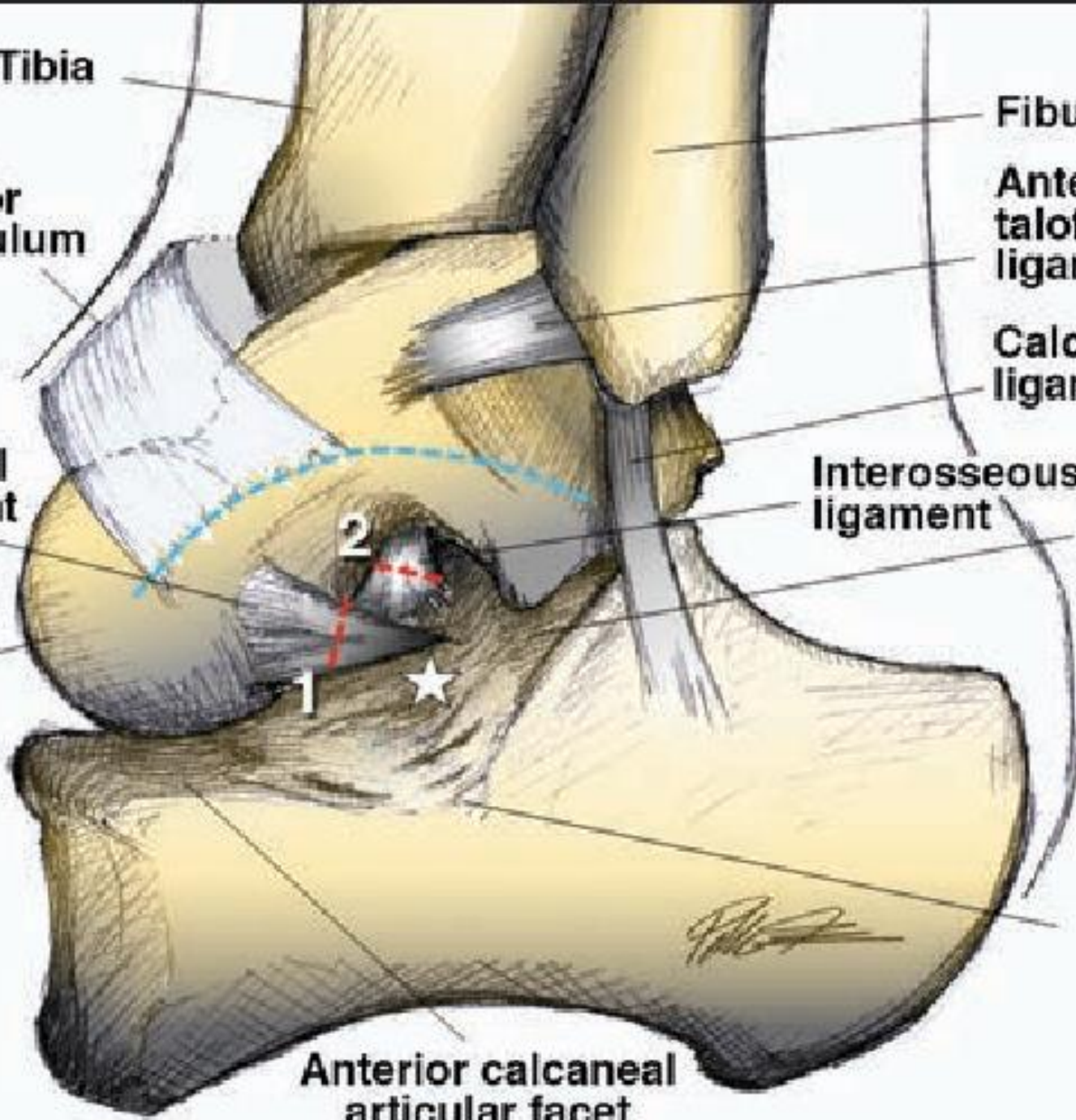
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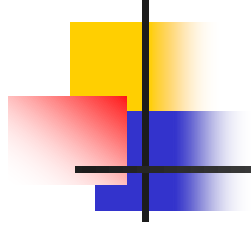
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Gissane  
angle

Anterior calcaneal  
articular facet

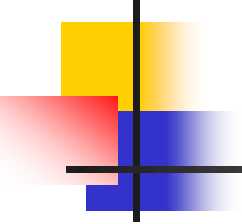




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*Thank You*



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- For further inquiries **PLZ** feel free to contact at any time through email

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