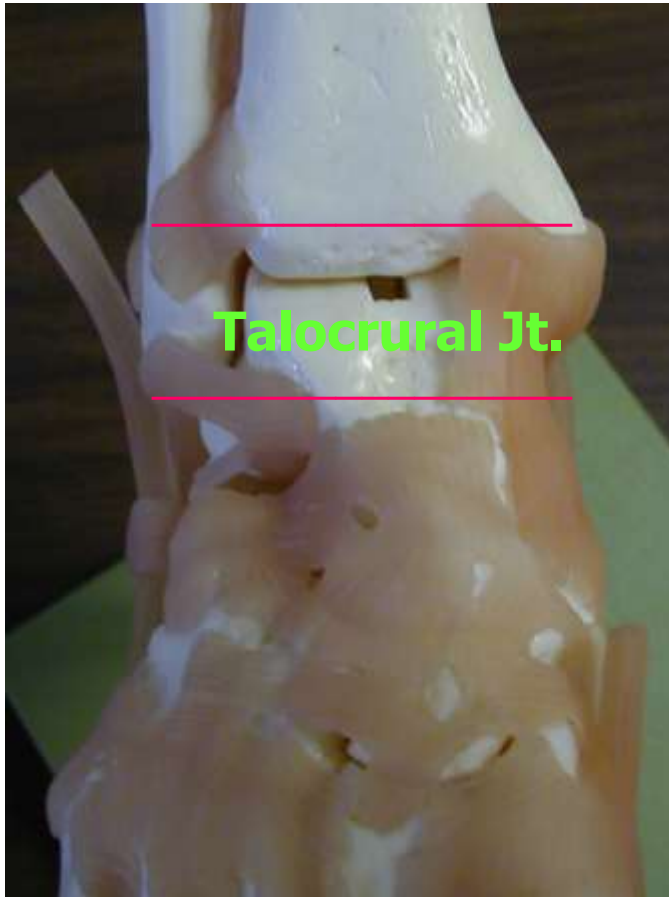


Anatomy of the ankle

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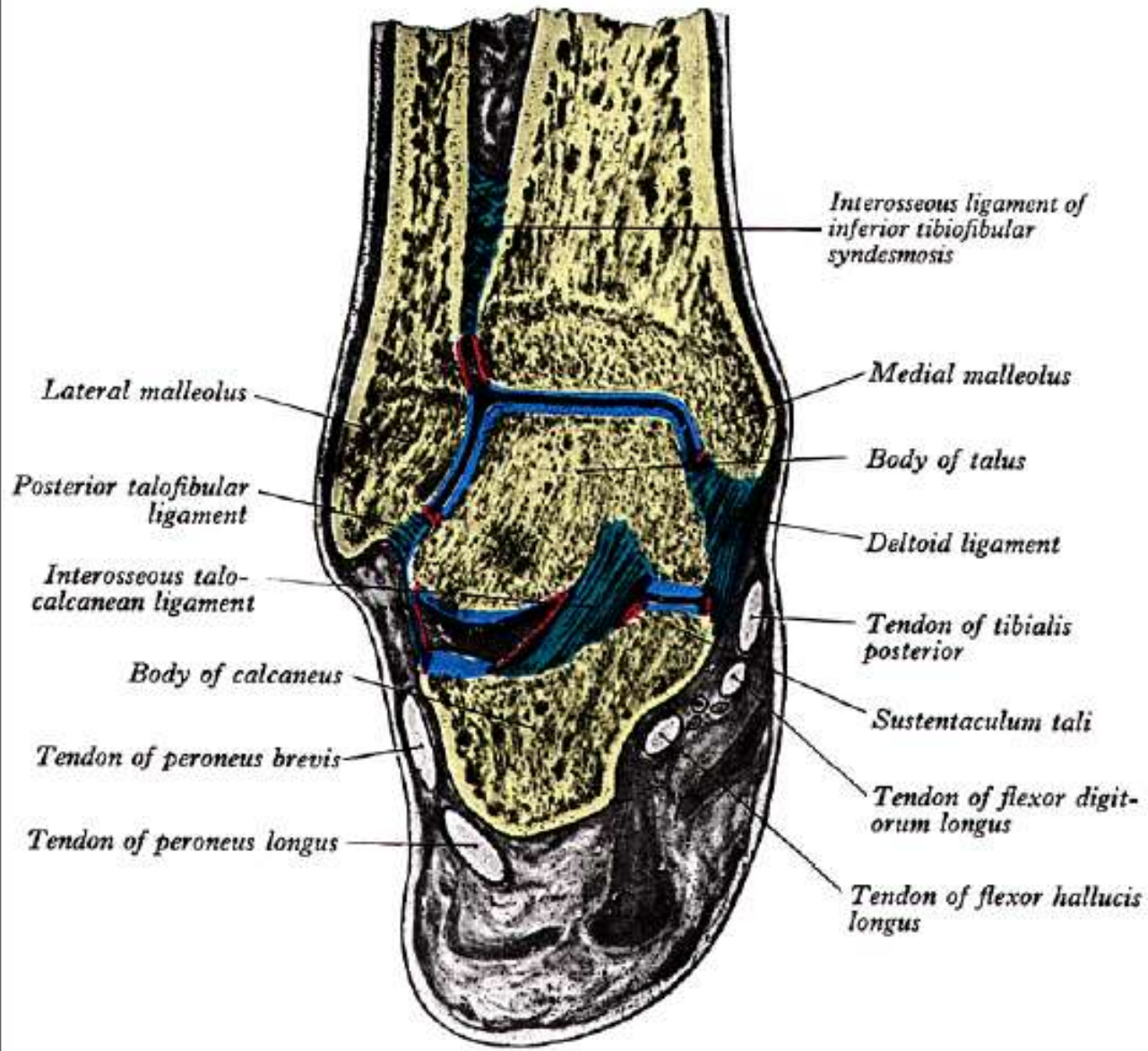
- The ankle is also called the talocrural joint
- It is a mortise joint

The ankle: Introduction

The Mortise:

- The mortise (a hole) is formed by the medial malleoli (Tibia) and lateral malleoli (fibula)
- The talus lying in between them is the **tenon**
- Together, the two components makes up the talocrural or ankle joint.
- It is a hinge joint and allows mostly plantarflexion and dorsiflexion.

The Ankle Mortise



Ankle

- Anatomical Structures
 - Tibia
 - Fibular
 - Talus



Tibia

- It bears the weight of the body
- forms the medial malleoli



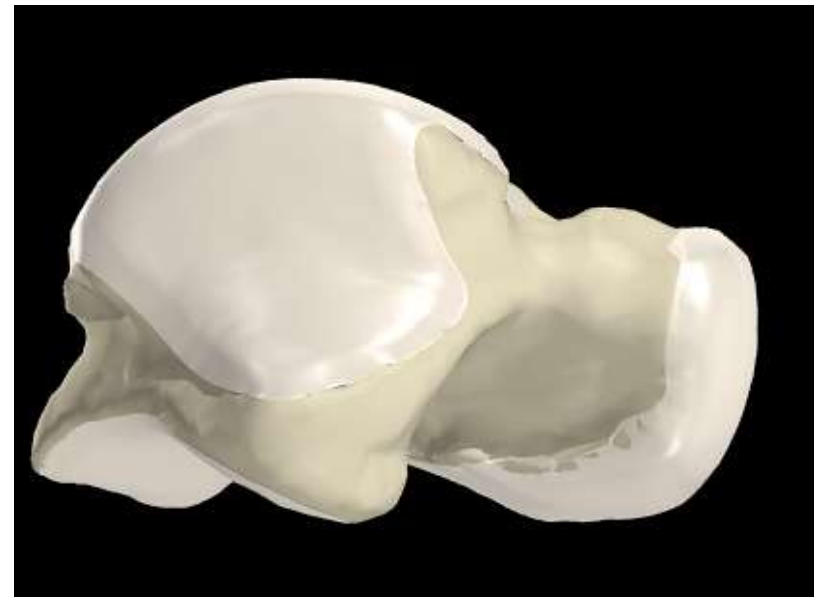
Fibula

- This is the smaller lateral bone of the lower leg. It is not vital for weight bearing
- Forms the lateral malleolus
- Longer than the tibia. Lateral malleolus lies inferior to the medial malleolus



Talus

- Transmits forces from the calcaneus up to the tibia
- The part which articulates which forms the ankle is the trochlear
- The trochlear is wider anteriorly than posteriorly, thus, the ankle is more stable in dorsiflexion than plantarflexion

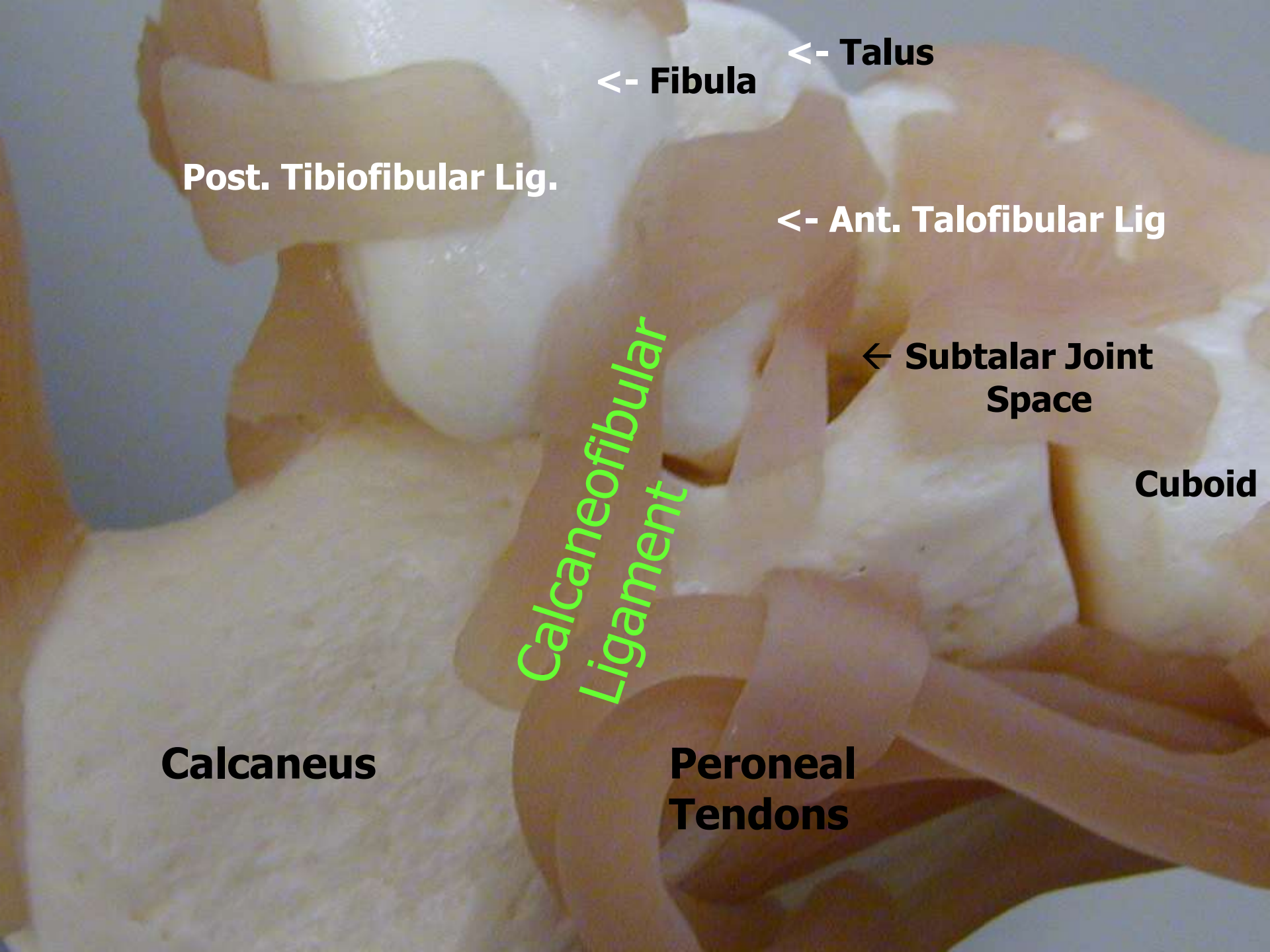


The Capsule

- Consists of an outer fibrous and an inner synovial layer
- Attaches to the articular margins of the bones
- Thin anteriorly and posteriorly, but reinforced by ligaments laterally.
- The synovium lines the fibrous layer loosely

Ankle Ligaments

- The capsule is reinforced laterally by the lateral ligament of the ankle.
- This consists of three parts:
 - i. Anterior talofibular ligament: flat & weak. It is anteromedial & between the lateral malleolus and the neck of the talus
 - ii. Posterior talofibular ligament: thick & strong. Runs horizontally between malleolar fossa and the lateral tubercle of the talus.
 - iii. Calcaneofibular ligament: cord-like. Runs posteroinferiorly from the tip of the lateral malleolus to the lateral surface of the calcaneus.
- They are responsible for the support and maintenance of joint integrity



← - Fibula ← - Talus

Post. Tibiofibular Lig.

← - **Ant. Talofibular Lig**

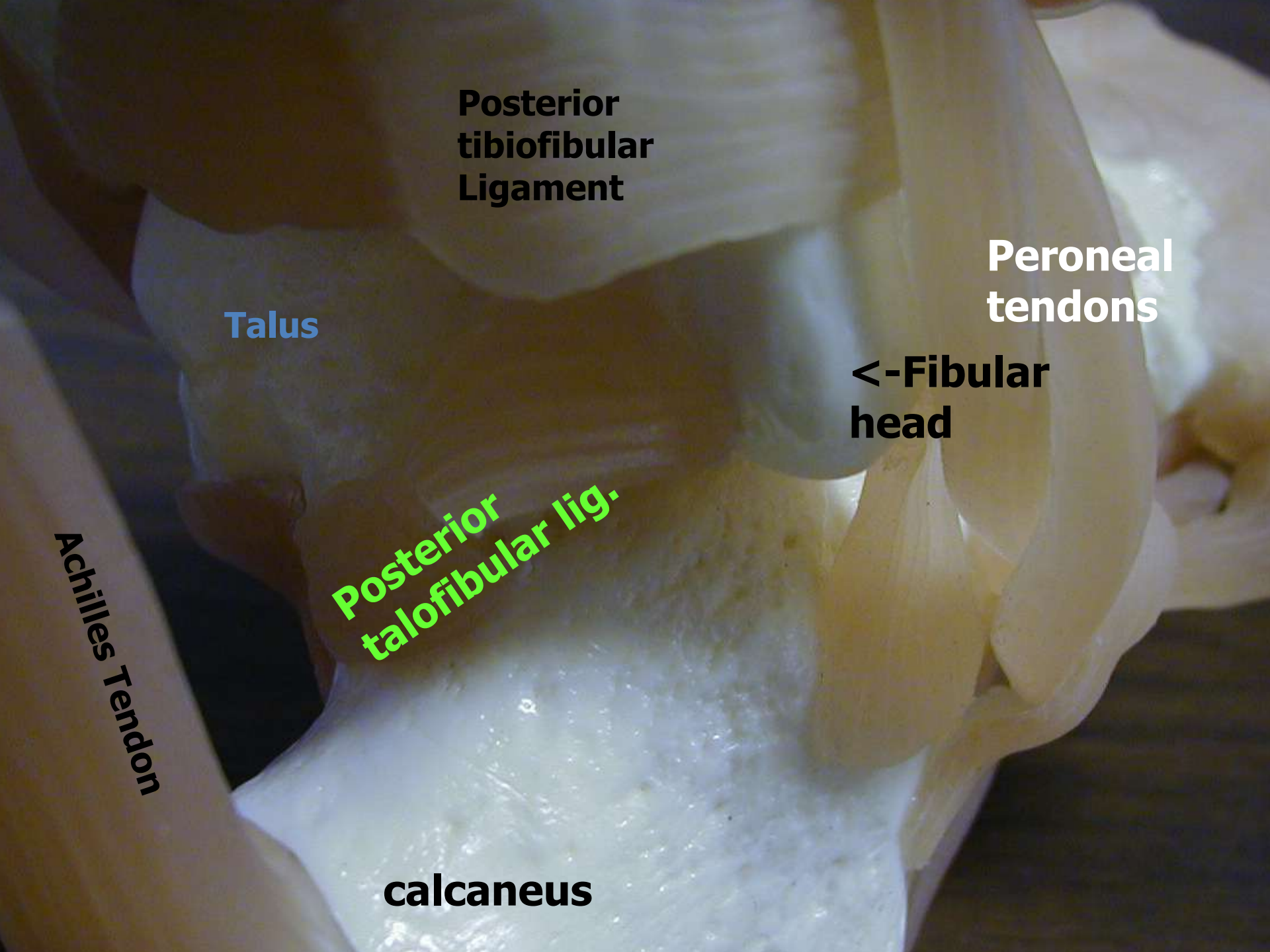
← **Subtalar Joint Space**

Cuboid

Calcaneofibular Ligament

Calcaneus

Peroneal Tendons



Posterior
tibiofibular
Ligament

Talus

Peroneal
tendons

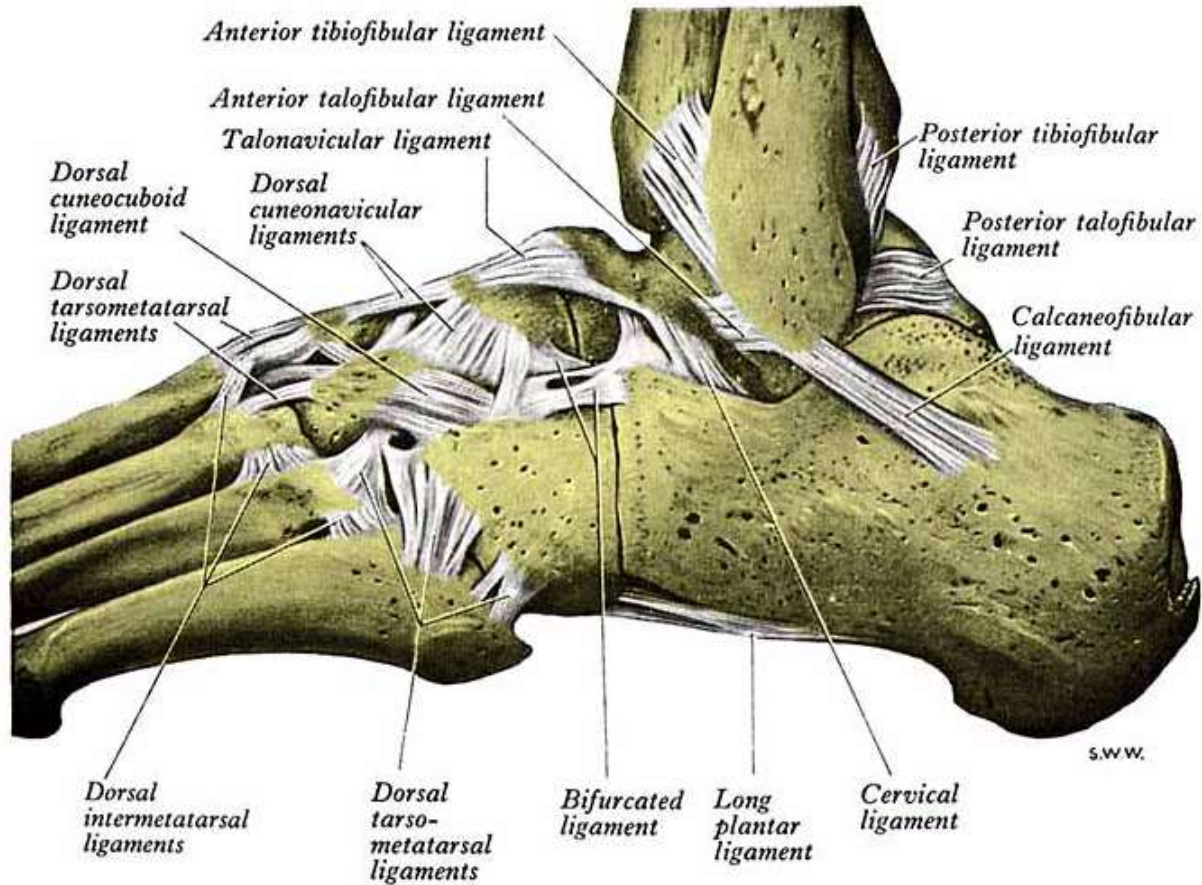
<-Fibular
head

Posterior
talofibular lig.

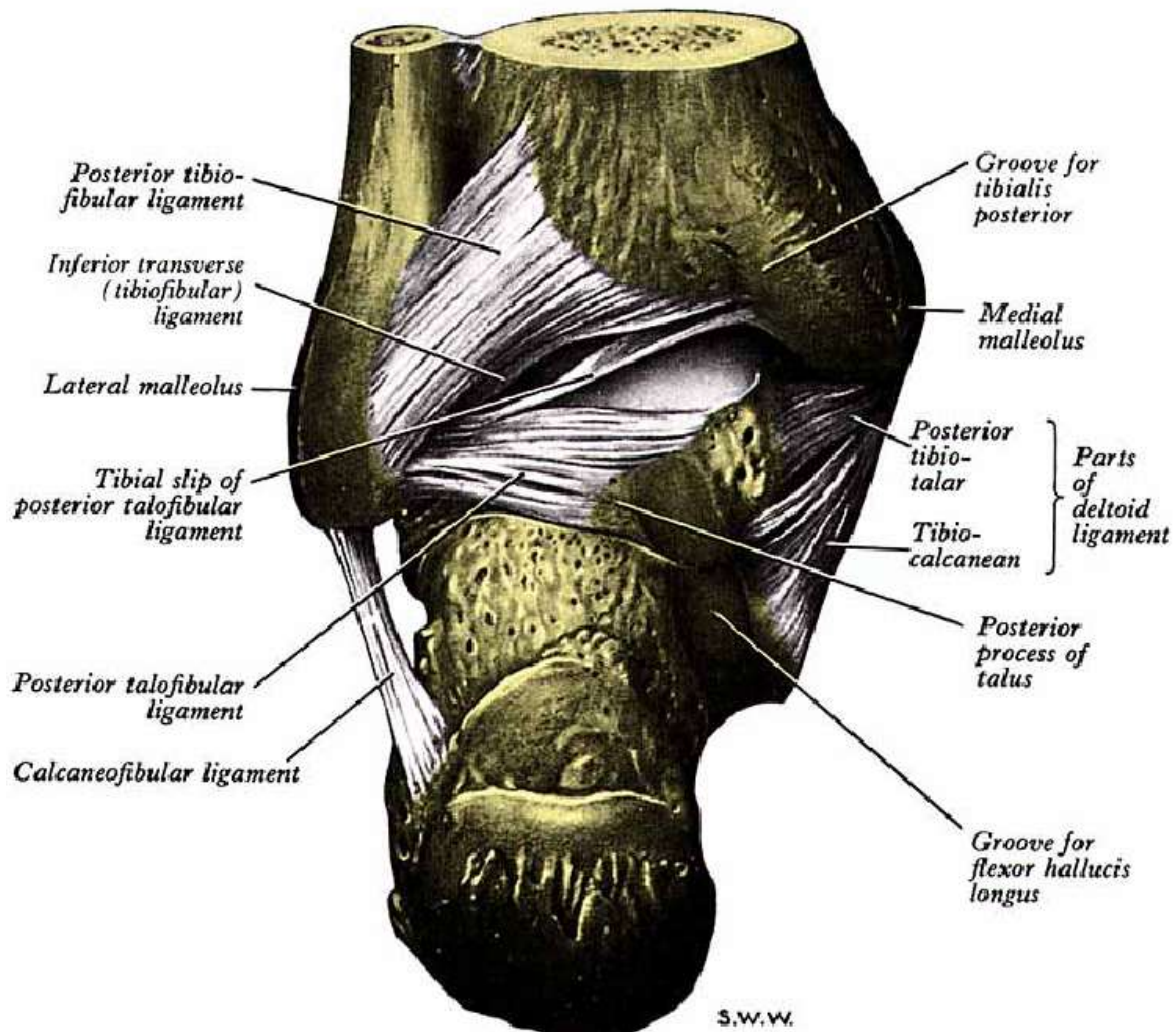
Achilles Tendon

calcaneus

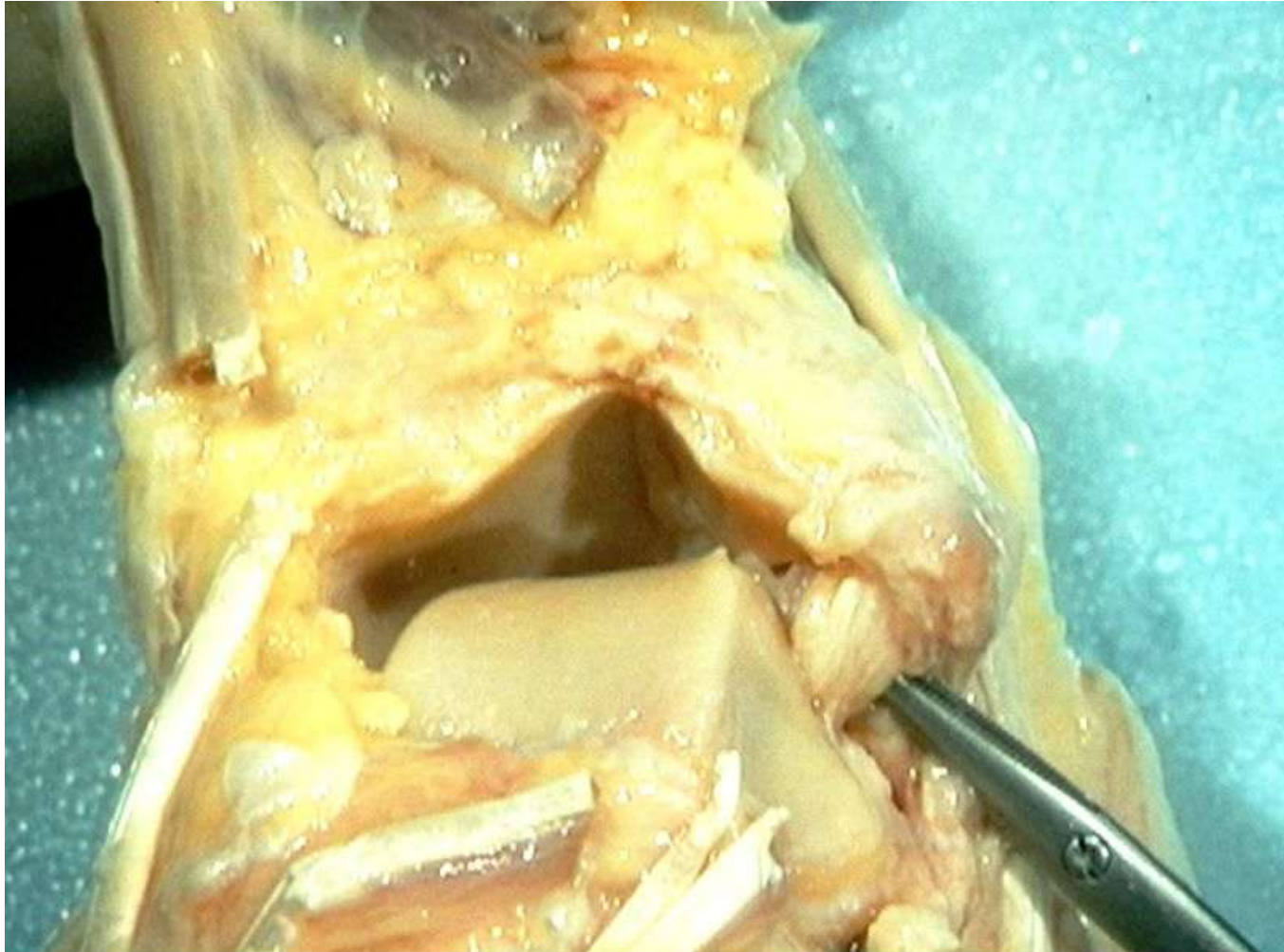
Lateral View of the ankle



Posterior view of the ankle

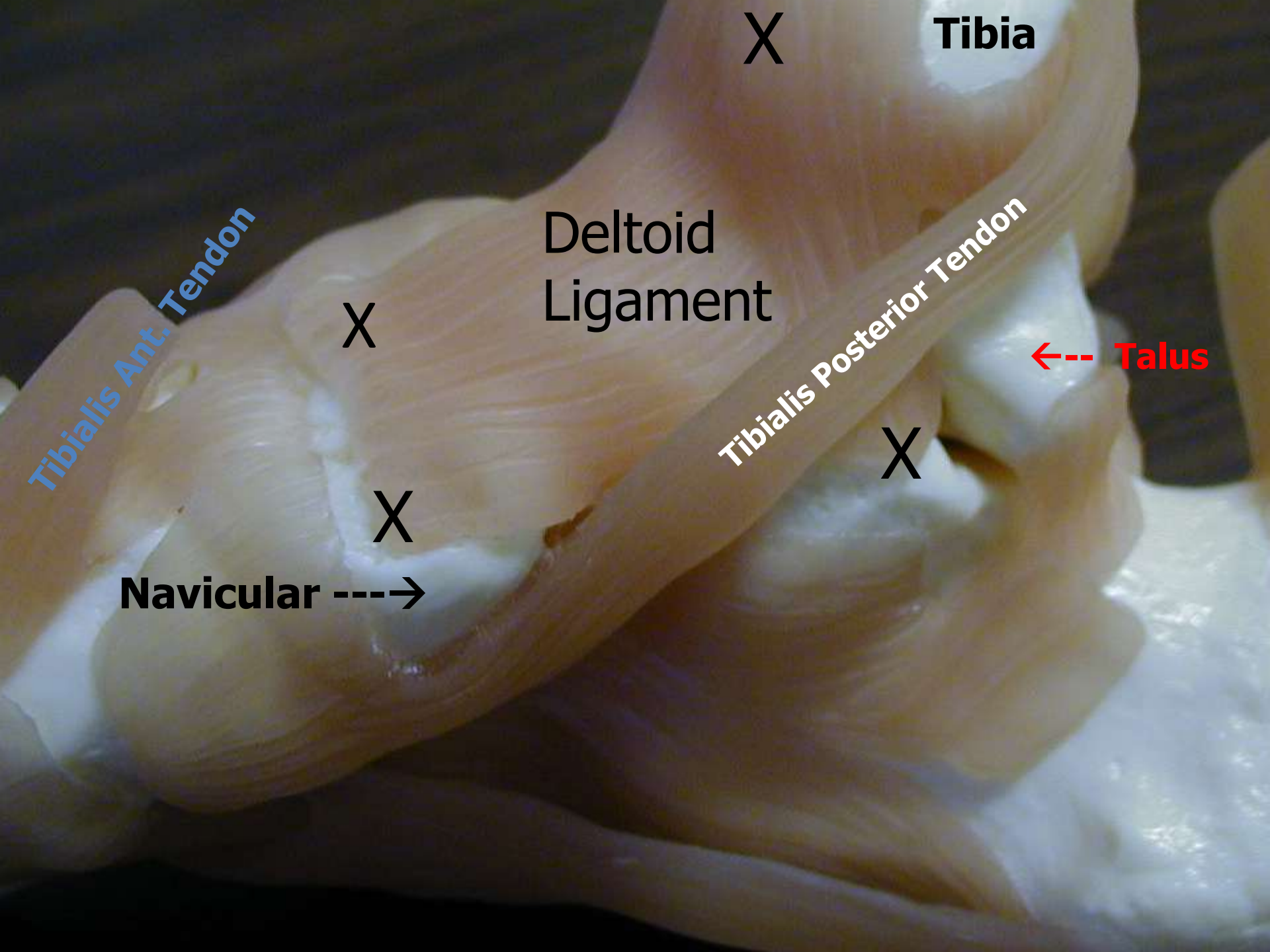


The posterior talofibular ligament



The deltoid ligament

- This is located on the medial aspect of the foot.
- It is the largest ligament and strongest ligament of the ankle.
- It consists of four sections (tibionavicular, tibiocalcaneal, anterior tibiotalar and posterior tibiotalar) parts all fused together.
- Attaches proximally to the medial malleolus and distally to the talus, navicular and the calcaneus.
- prevents (eversion) of the ankle.



Tibia

X

Tibialis Ant. Tendon

Deltoid Ligament

X

Tibialis Posterior Tendon

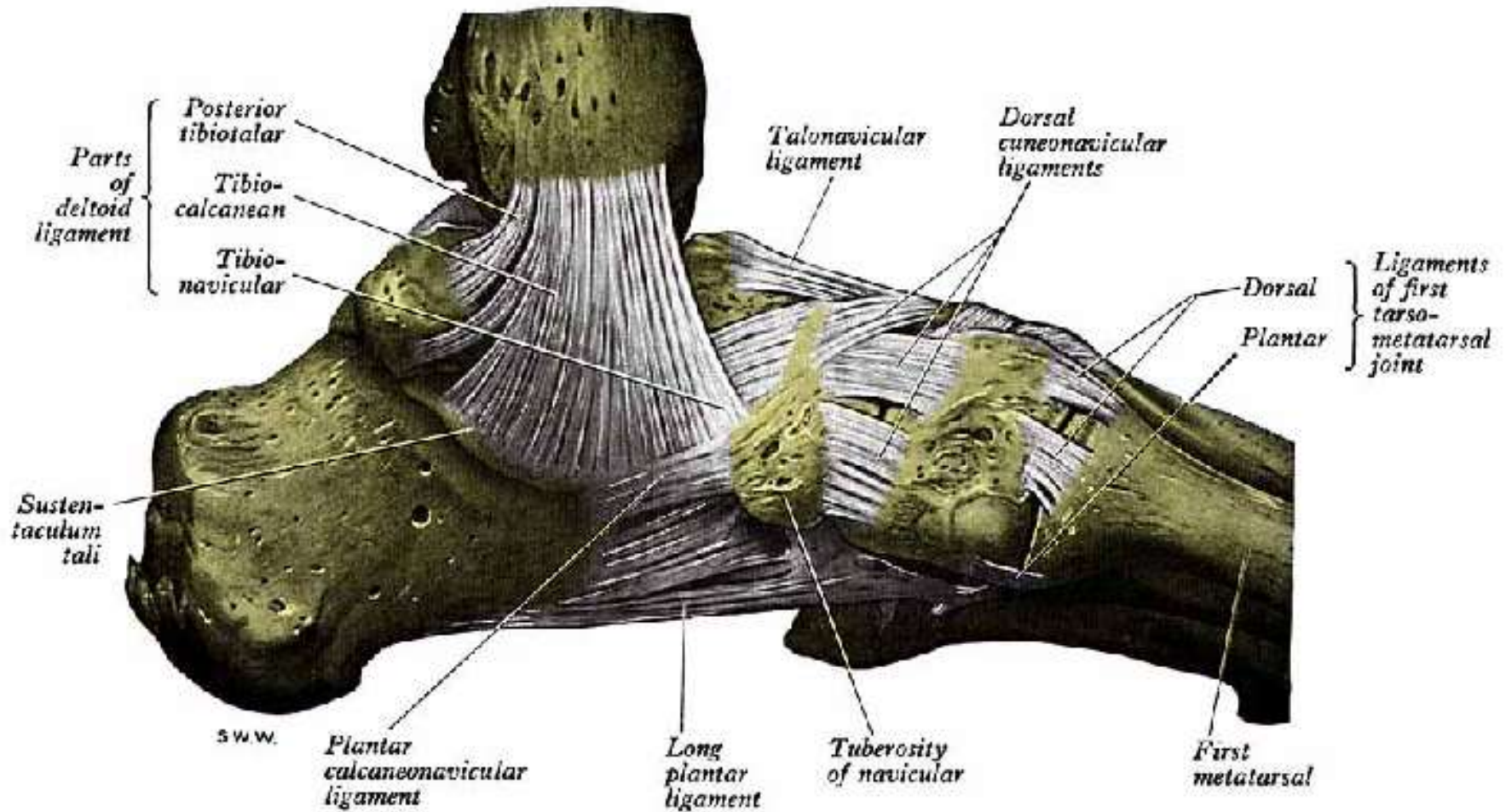
←-- Talus

X

X

Navicular ---->

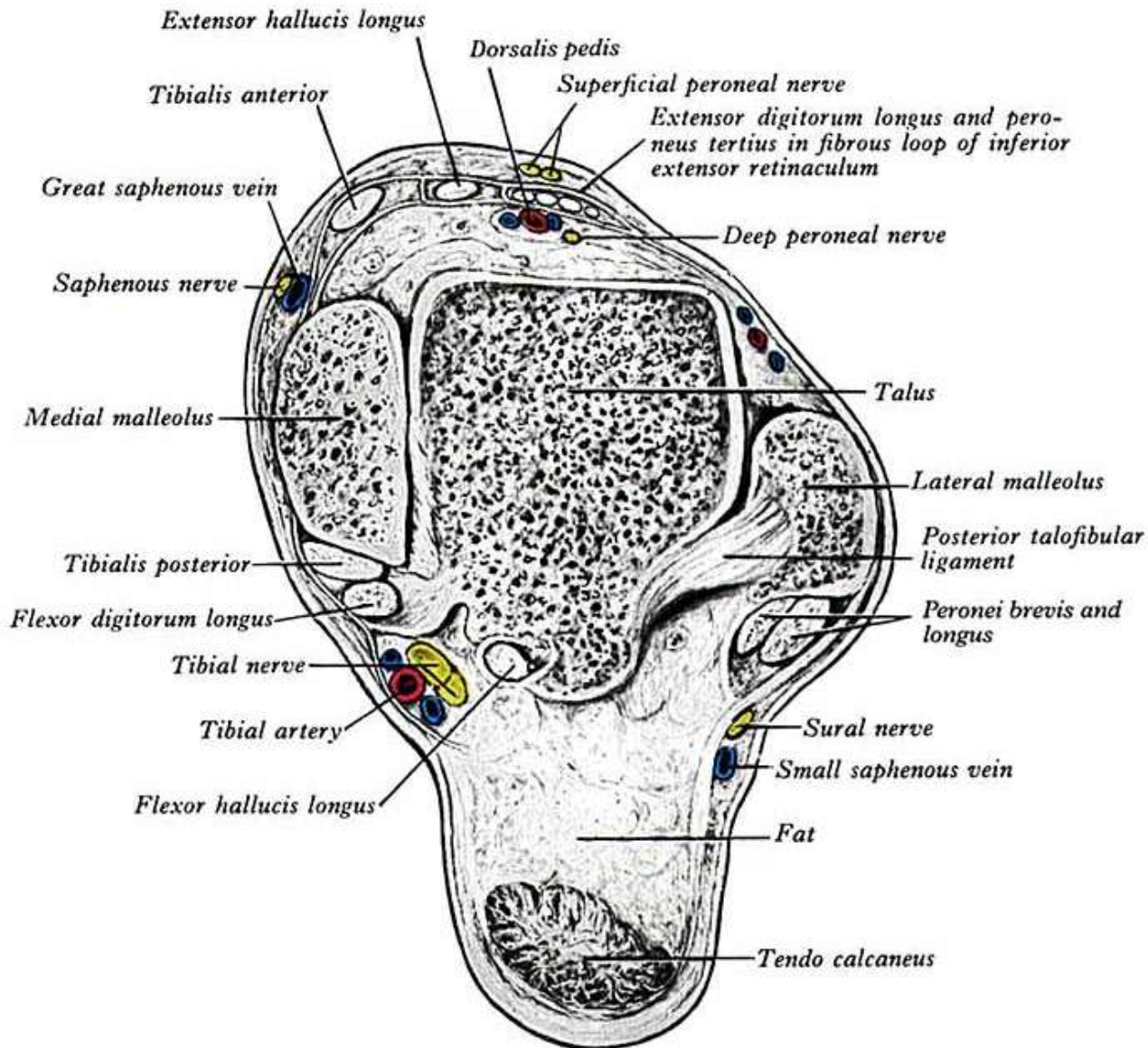
Deltoid ligament



Muscles responsible for movements

- **Dorsiflexion:** tibialis anterior, assisted by extensors digitorum longus and hallucis longus, and peroneus tertius.
- **Plantarflexion:** gastrocnemius and soleus, assisted by plantaris, tibialis posterior, flexors hallucis longus and digitorum longus.

Related structures to the ankle



Subtalar Joint

- The articulation between the talus and the calcaneus is referred to as the subtalar joint.
- The articular facets are the posterior calcaneal articular surface of the talus and the posterior articular facet of the calcaneus
- Supported by the medial, lateral, posterior, and interosseous talocalcaneal ligaments
- Motions allowed by this joint are:
 - i. inversion
 - ii. eversion
 - iii. rear foot pronation (inward tilt of the calcaneus)
 - iv. Supination (outward tilt of the calcaneus) .

Medial aspect of foot

Talus

←---Subtalar Joint

calcaneus

