

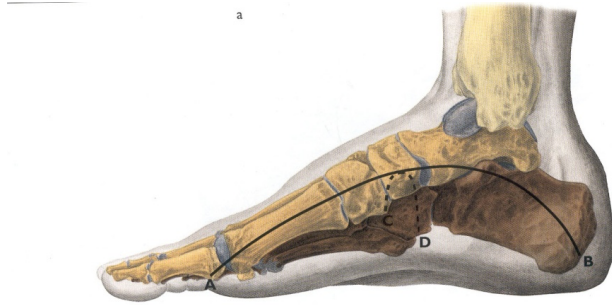


Ayak bileđi patomekaniđi

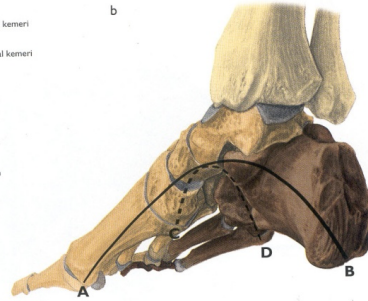
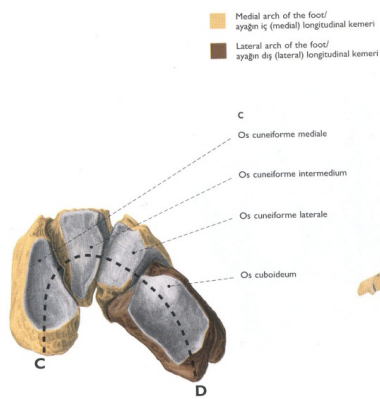
4. Hafta

Prof.Dr. Serap ALSANCAK

AYAK KUBBESİ



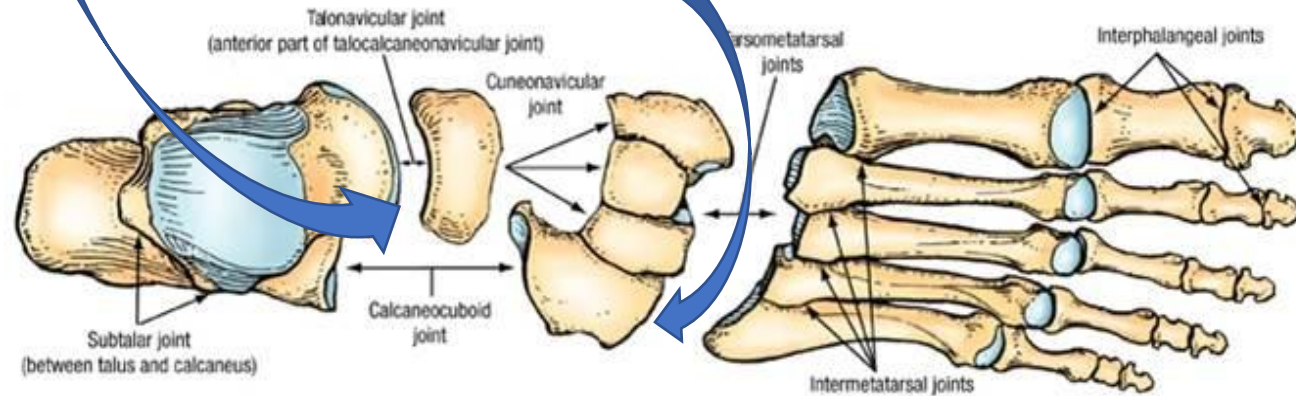
- m. tibialis anterior
- m. tibialis posterior
- m. peroneus longus
- m. flexor hallucis longus



- Lig. plantare longum
- Lig. plantare brevis (Lig. calcaneocuboidum)
- Lig. calcaneonavicularis plantare
- Lig. calcaneocuboidum

Midtarsal eklem: Calcaneo-cuboid eklem ve Talo-navicular eklem: Chopart's eklem

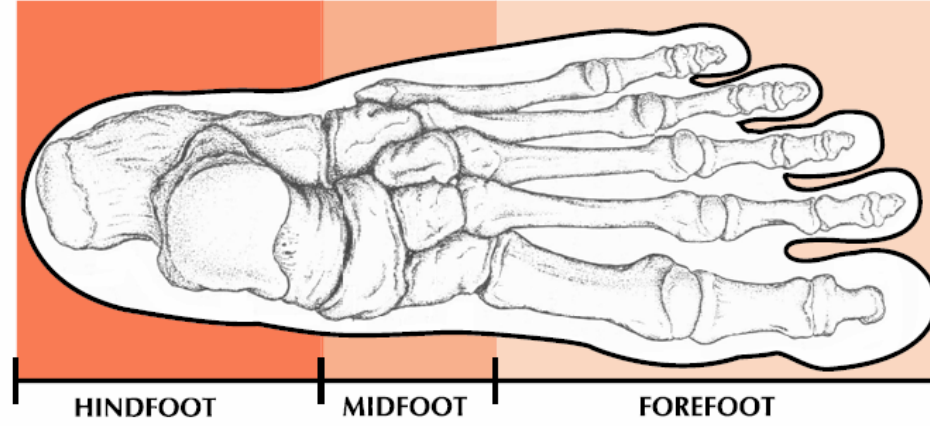
Tarsometatarsal eklem: Lisfrank eklemi



Superior View Talonavicular joint + Calcaneocuboid joint = Transverse tarsal joint

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Ayağın Bölümleri

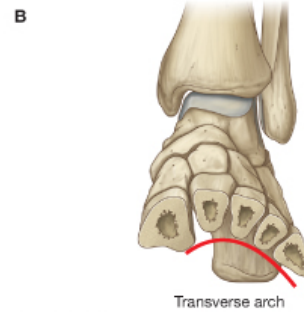
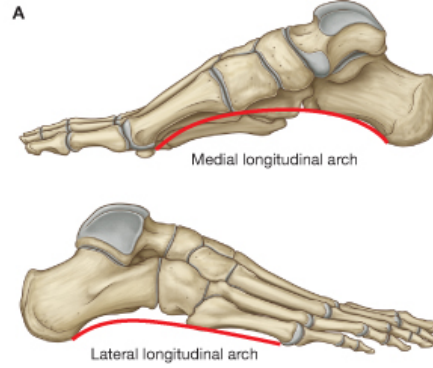
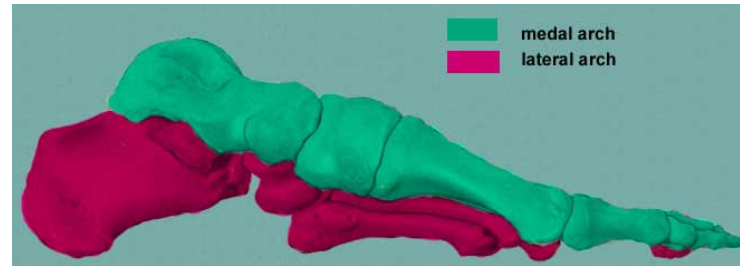
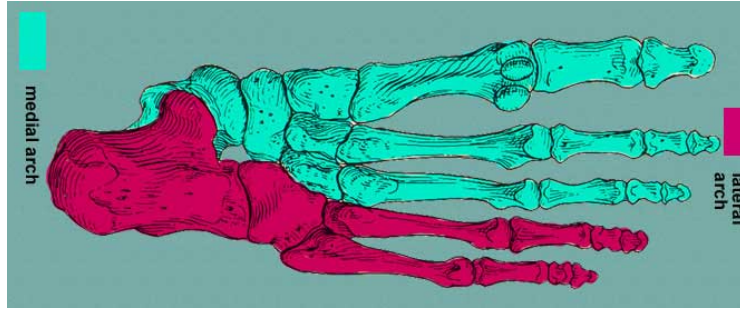


Hindfoot /Rarefoot (posterior bölüm)

Midfoot (orta bölüm)

Forefoot (anterior bölüm)

Kemikler ve arklar



Medial longitudinal ark

Calcaneus

Talus

Cuneiforme mediale /laterale /
intermedium

Metatarsal kemikler (ilk 3
kemik)

Lateral longitudinal ark

Calcaneus

Cuboideum

Metatarsal kemikler (son 2
kemik)

Diz altı seviye ortezleri için önemli kemik çıkıntıları



OS CRURIS (Calf)

TİBİA

Tuberositas tibia

Condylus medialis (Medial condyle)

Condylus lateralis (Lateral condyle)

Malleolus medialis (Medial malleol)

FİBULA

Caput fibula

Malleolus lateralis

AYAK

Sesamoid

Tüm metatars başları

Navicula

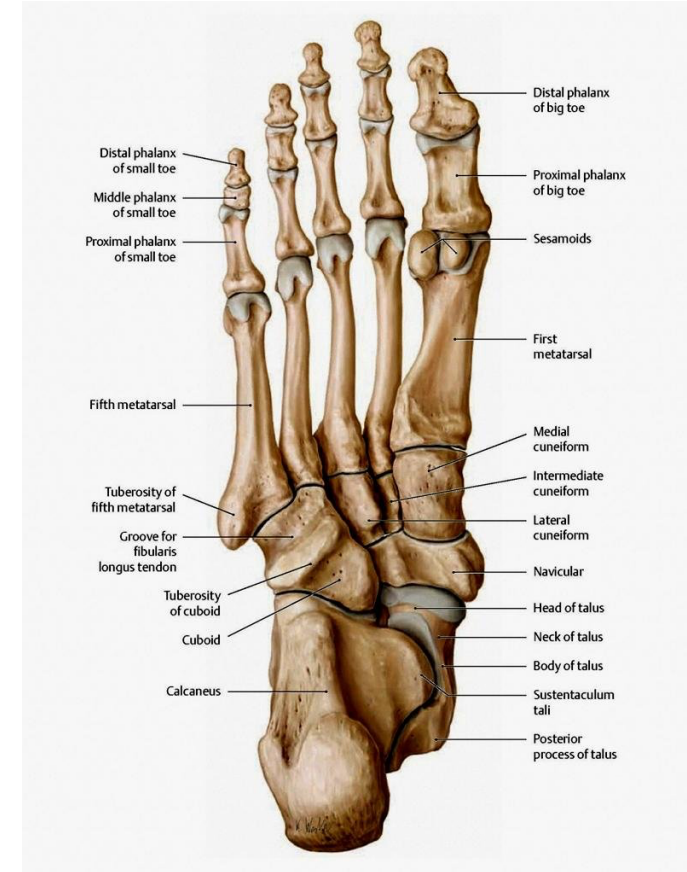
Talus başı

Sustantaculum tali (Calcaneus)

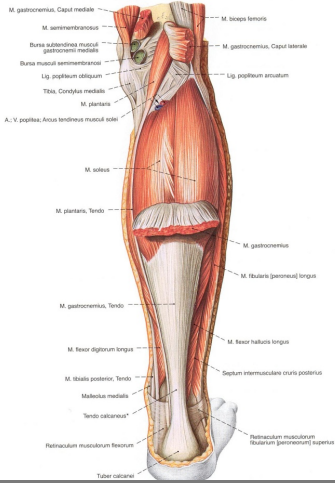
Talus posterior process

5. MT tuberositası (basi)

Cuboid tuberositası



POSTERİOR CALF KASLARI



M. gastrocnemius

O: femoral condyles

I: calcaneus

(tendo calcanei-achilles)

In: n. tibialis

F: Diz ve ayak bileği fleksiyonu

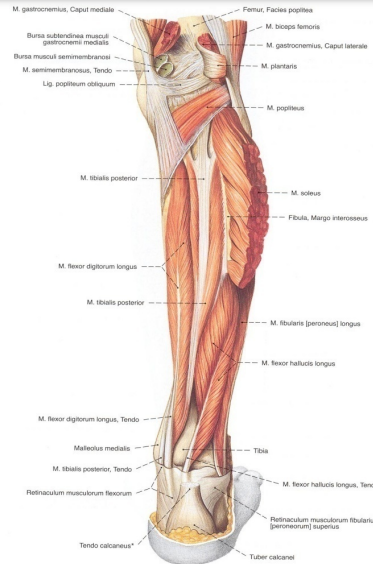
M. soleus

O: fibula, tibia

I: calcaneus

In: n. tibialis

F: ayak bileği fleksiyonu



- M. tibialis posterior (I. Navicular, tüm tarsal kemikler)

Medial longitudinal arkı destekler

- M. fleksör digitorum longus

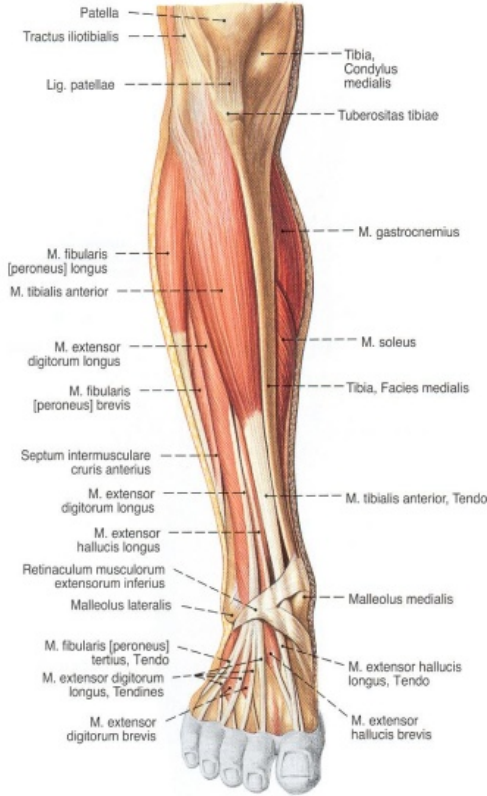
- M. fleksör hallucis longus

Ayak plantar fleksiyon (PF) ve inversiyon (supinasyon)

In: n. tibialis



ANTERİOR CALF KASLARI



Ayak dorsifleksörleri (ekstansör) kaslar

M. tibialis anterior (I: cuneiform ve 1. metatars), Güçlü ekstansör kas

Medial longitudinal arki tutar

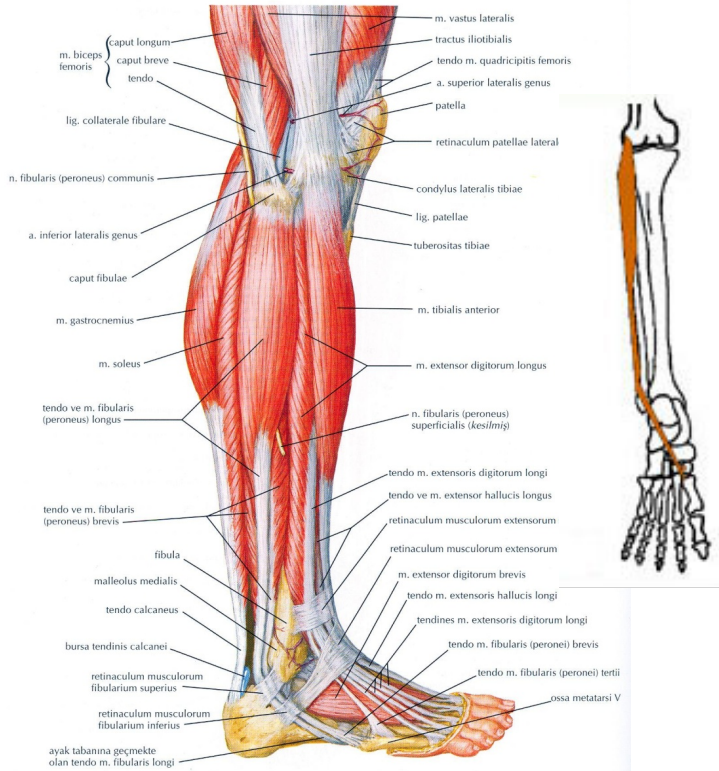
M. ekstansör hallucis longus (I: birinci parmak distal phalanxı, toe off'ta önemli rol oynar

M. ekstansör digitorum longus (I: diğer parmakların distal phalanxları)

M. Peroneus (Fibularis) tertius (I: 5. metatars)

Inv. Derin peroneal sinir

LATERAL CALF KASLARI



Ayak fleksörleri and evertörleri (pronatorler)

M. Peroneus longus; Medial longitudinal arkı ve transvers arkı destekler

(I: 1. cuneiform ve 1. metatarsal kemik bazisi)

M. Peroneus brevis; Lateral longitudinal arkı destekler

(I: 5. metatarsal kemik bazisi)

Inv: superficial peroneal sinir

Ayak Pozisyonları

Ayak Pronasyonu

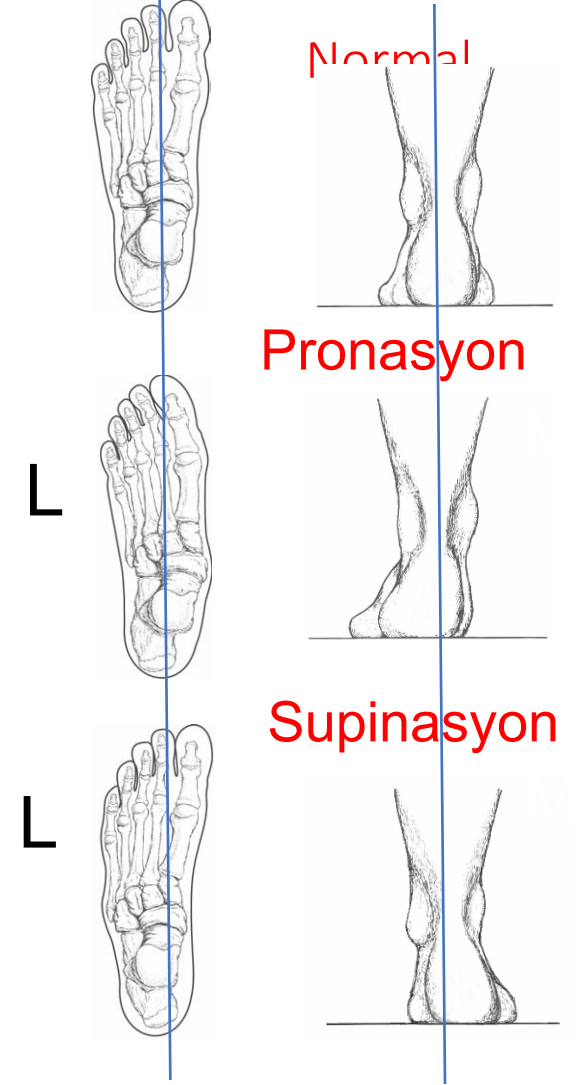
Topuk valgus (eversiyon); Forefoot abduksiyon

Ayak bileği dorsifleksiyonda (DF)

Ayak Supinasyonu

Topuk varus (inversiyon); Forefoot adduksiyon;

Ayak bileği plantarfleksiyonda (PF)

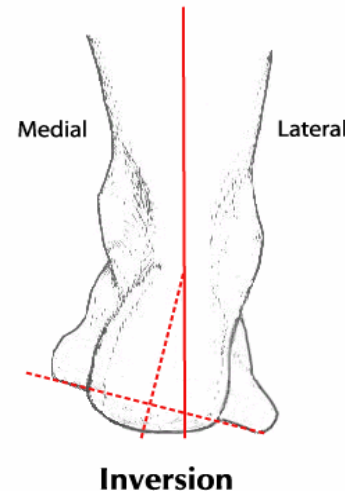
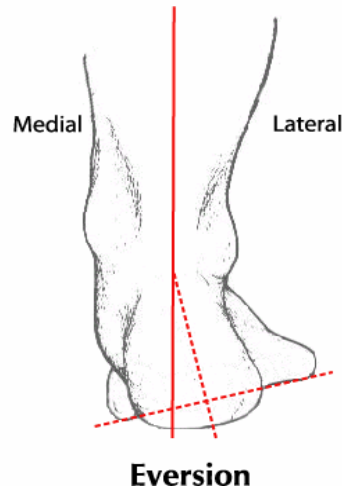


Non-weight bearing pozisyonu

Forefoot pronasyonu

Forefoot supinasyonu

R



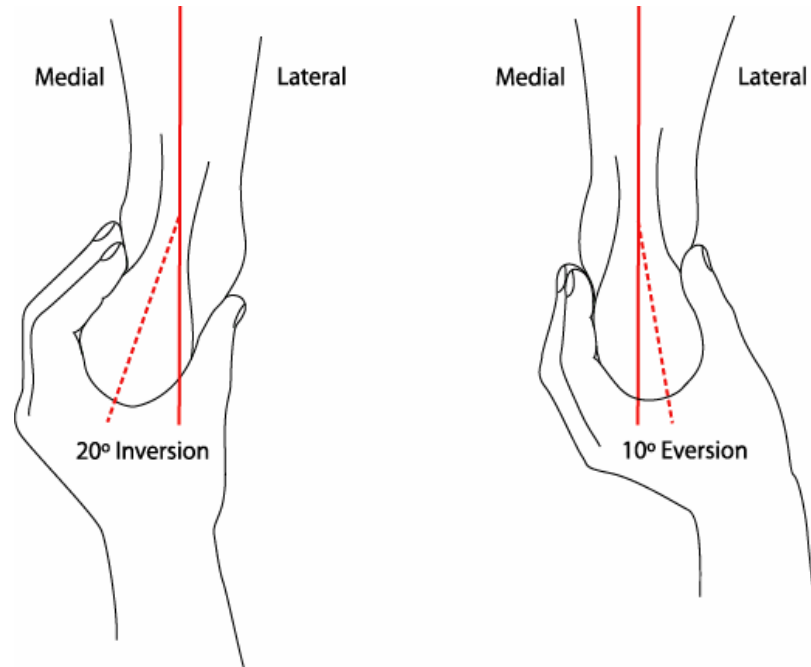
Valgus

Varus

Hindfoot eversiyonu

Hindfoot inversiyonu

Normal Hindfoot ROM



Hindfoot Deęerlendirmesi

Topuk eversiyonu (hindfoot valgus) ve Topuk inversiyonu (hindfoot varus)

Valgus (Eversiyon)/ Abduksiyon/ Planus

Topuk hattı merkezden uzaklaşır/

MT Abduksiyonu/ Planus

Korreksiyon: ? kama

HINDFOOT VALGUS

Varus (Inversiyon) /Adduksiyon/ Cavus

Parmaklar merkeze yaklaşır/

MT Adduksiyonu/ Cavus

Korreksiyon: ? kama

HINDFOOT VARUS

Forefoot Deęerlendirmesi

Ayak Pronasyonu

Forefoot: Abduksiyon

Hindfoot: Eversiyon

Medial Ark: Pes planus

Ayak bileęi: DF



Ayak Supinasyonu

Forefoot: Adduksiyon

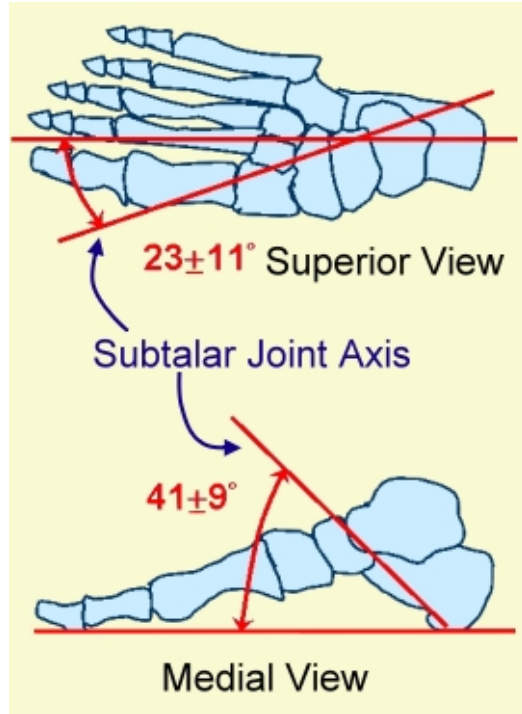
Hindfoot: Inversiyon

Medial Ark: Pes cavus

Ayak bileęi: PF



Triplanar hareket



Horizontal düzlem hareketleri

Inversion: 0-20°

Eversion : 0-10°

Sagittal düzlem hareketleri

Plantarfleksiyon (PF): 40-45°

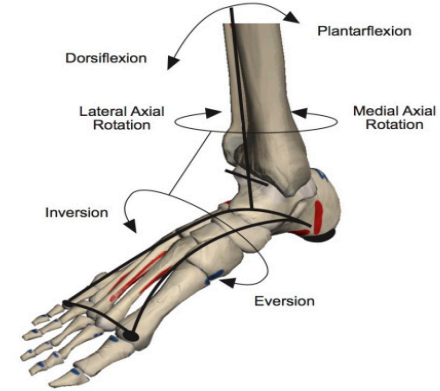
Dorsifleksiyon (DF): 15-20°

Frontal düzlem hareketleri

Abduksiyon ve Adduksiyon



Ayak bileđi kompleksi



3 EKLEM Inferior 1. Tibio-fibular eklem

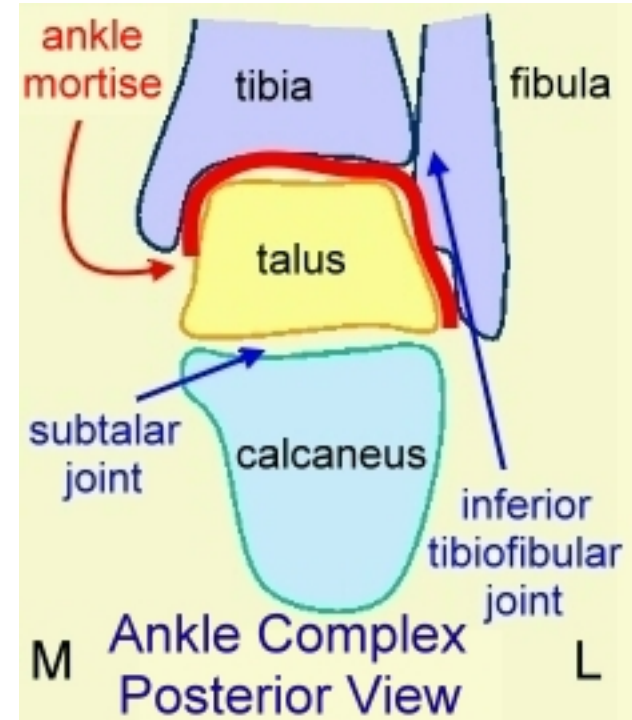
2. Talo-crural eklem (Tibio-talar joint)

(Hinge tip) Fonksiyon: Plantarfleksiyon (PF)/Dorsifleksiyon (DF)

3. Subtalar joint (Talo-calcaneal eklem)

(Pivot tip)

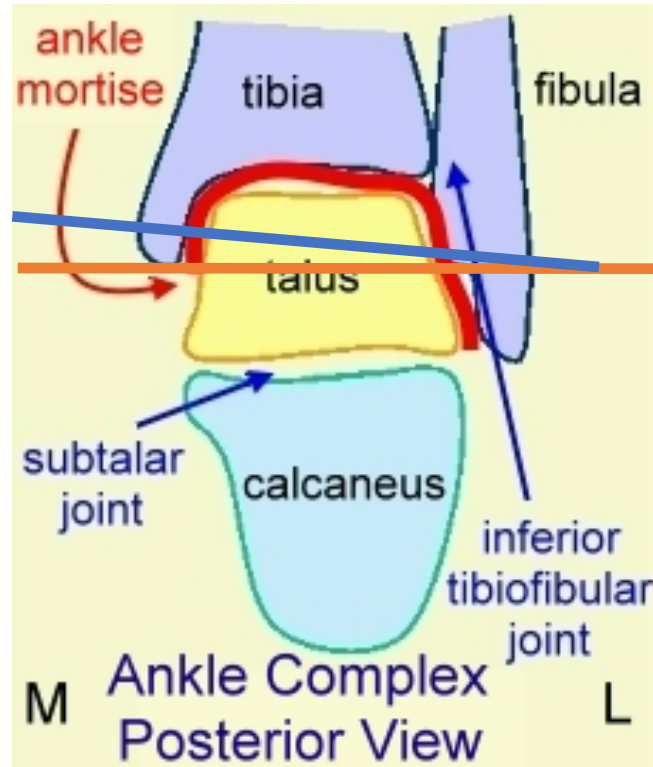
Triplanar hareket: DF, inversiyon, adduksiyon ve PF, eversiyon, abduksiyon



Talokrural Eklem:

Talus transvers ekseni – malleoler eksen (13-18°)

İki malleol merkezinin vertikal displasmanı : 1.5 cm

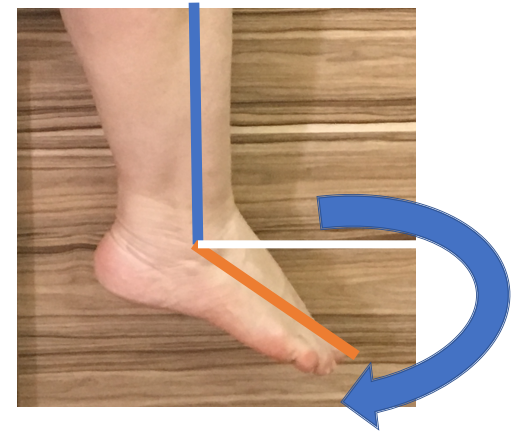


Talocrural eklem (Tibiotalar eklem)

ROM

0-20⁰ dorsifleksiyon (DF)

0-40⁰ plantarfleksiyon (PF)



Talocrural eklem (Tibiotalar eklem)

ROM

0-20⁰ dorsifleksiyon (DF)

0-40⁰ plantarfleksiyon (PF)

Triplanar hareket

Frontal düzlem hareketleri

Inversion: 0-20⁰

Eversion : 0-10⁰

Horizontal düzlem hareketleri

Abduksiyon ve Adduksiyon

Sagittal düzlem hareketleri

Plantarfleksiyon (PF): 40-45⁰

Dorsifleksiyon (DF): 15-20⁰

Ayak bileğinin ligametleri

