

Lower limb 1

Prof. MUDr. Jiří Ferda, Ph.D.

General overview

- 🔥 Bearing weight of trunk
- 🔥 locomotion
- 🔥 Gluteal region
- 🔥 Hip joint
- 🔥 thigh
- 🔥 Knee
- 🔥 Crural region
- 🔥 ankle
- 🔥 tarsus
- 🔥 Foot



Ossa

- ♦ Pelvis

- ♦ Os ilium
- ♦ Os ischium
- ♦ Os pubis

- ♦ Femur

- ♦ Patella

- ♦ Tibia

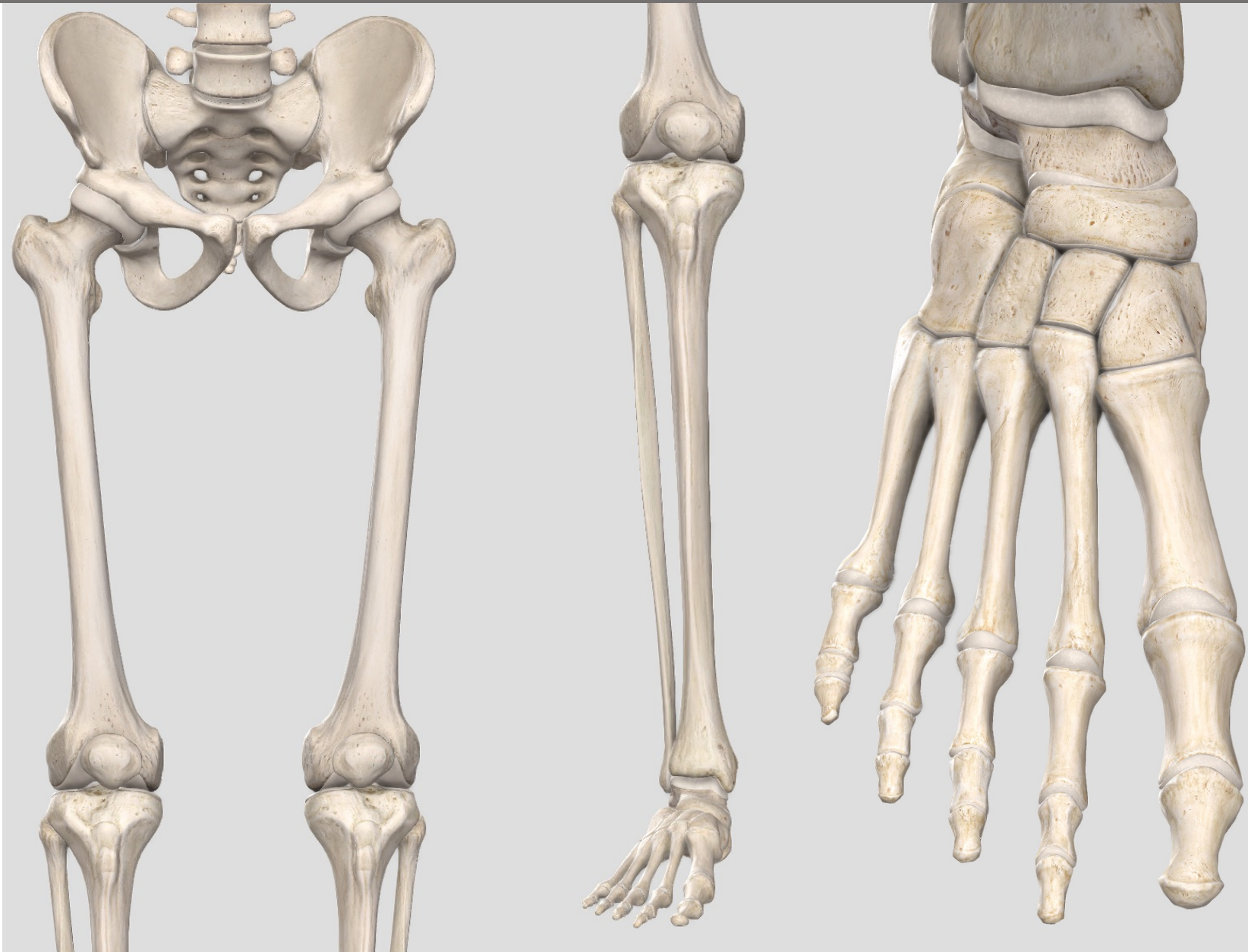
- ♦ Fibula

- ♦ Ossa tarsi

- ♦ talus, calcaneus
- ♦ os naviculare, os cuboideum,
- ♦ ossa cuneiformia

- ♦ Ossa metatarsi

- ♦ Phalanges

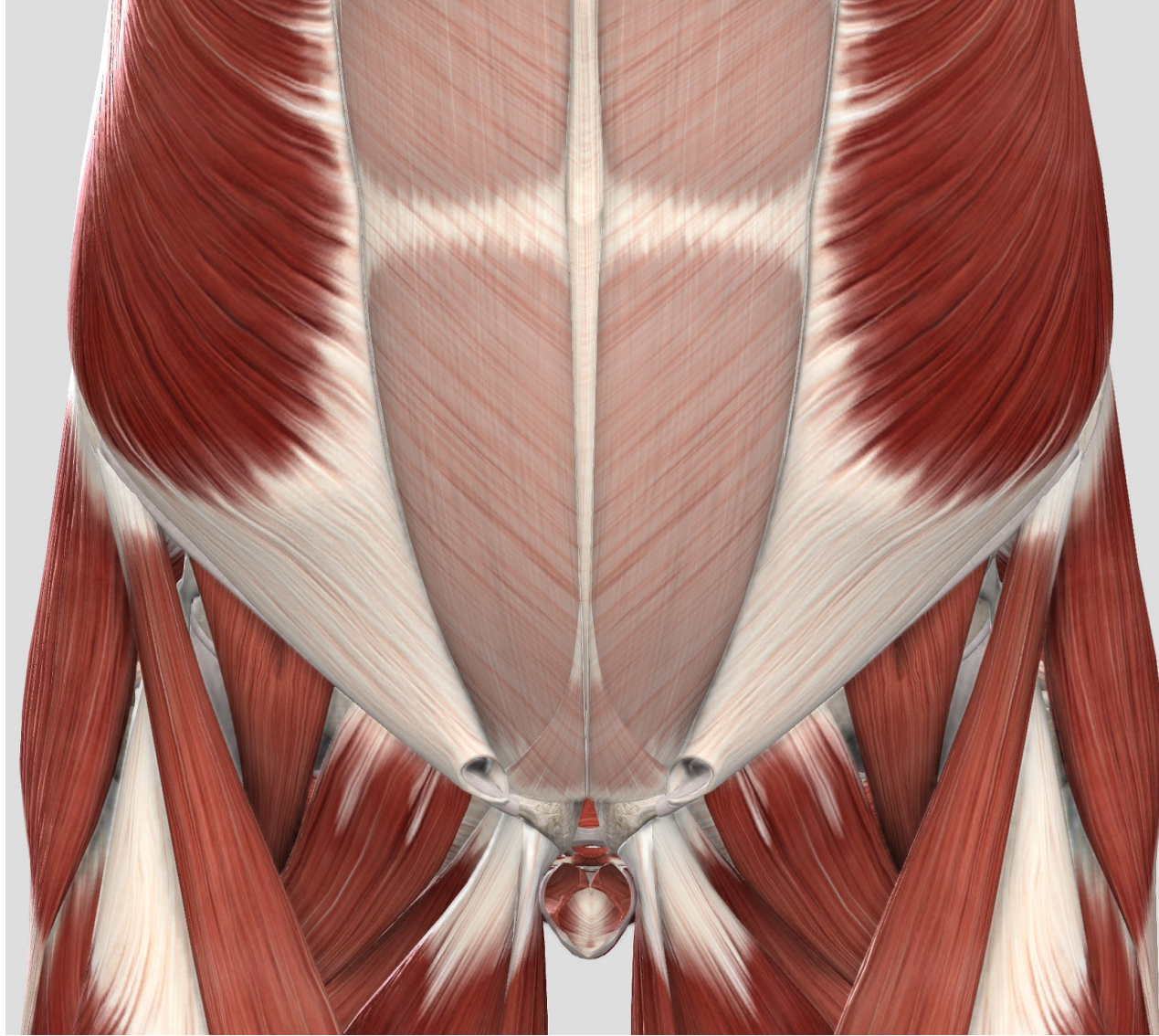
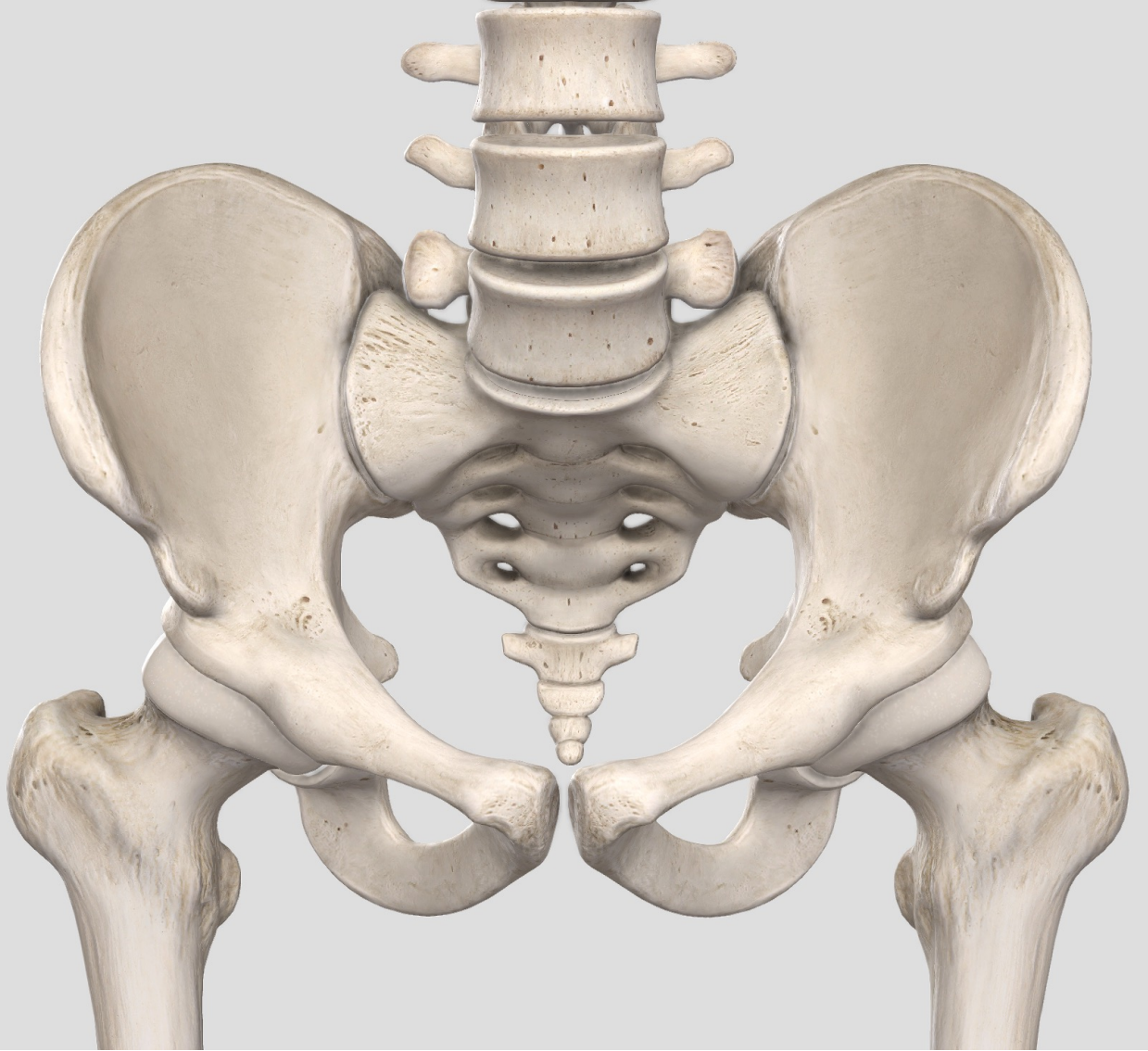


Musculi

- ♦ gluteal
- ♦ Hip flexores
- ♦ Tight muscles
 - ♦ anterior
 - ♦ medial
 - ♦ dorsa
- ♦ Crural muscles
 - ♦ anterior
 - ♦ fibular
 - ♦ dorsal
- ♦ Foot muscles



Articulatio coxae



Articulatio coxae



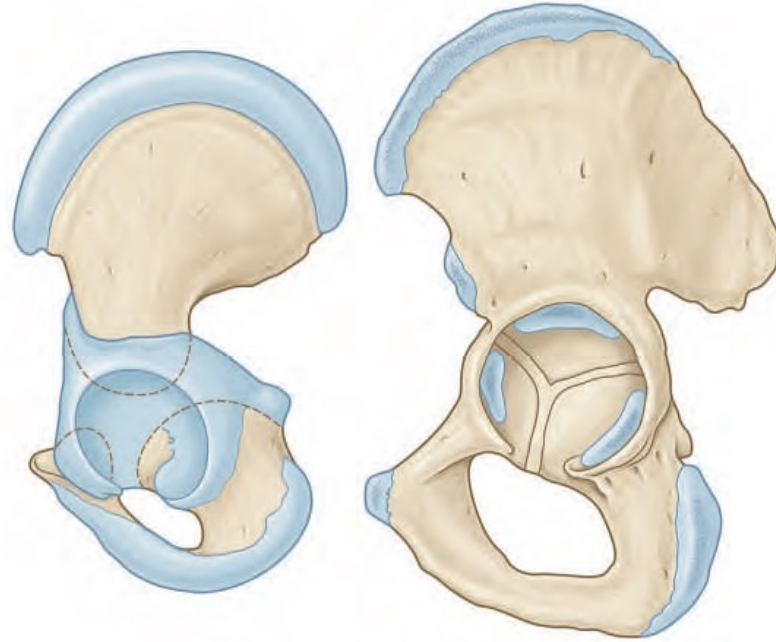
R



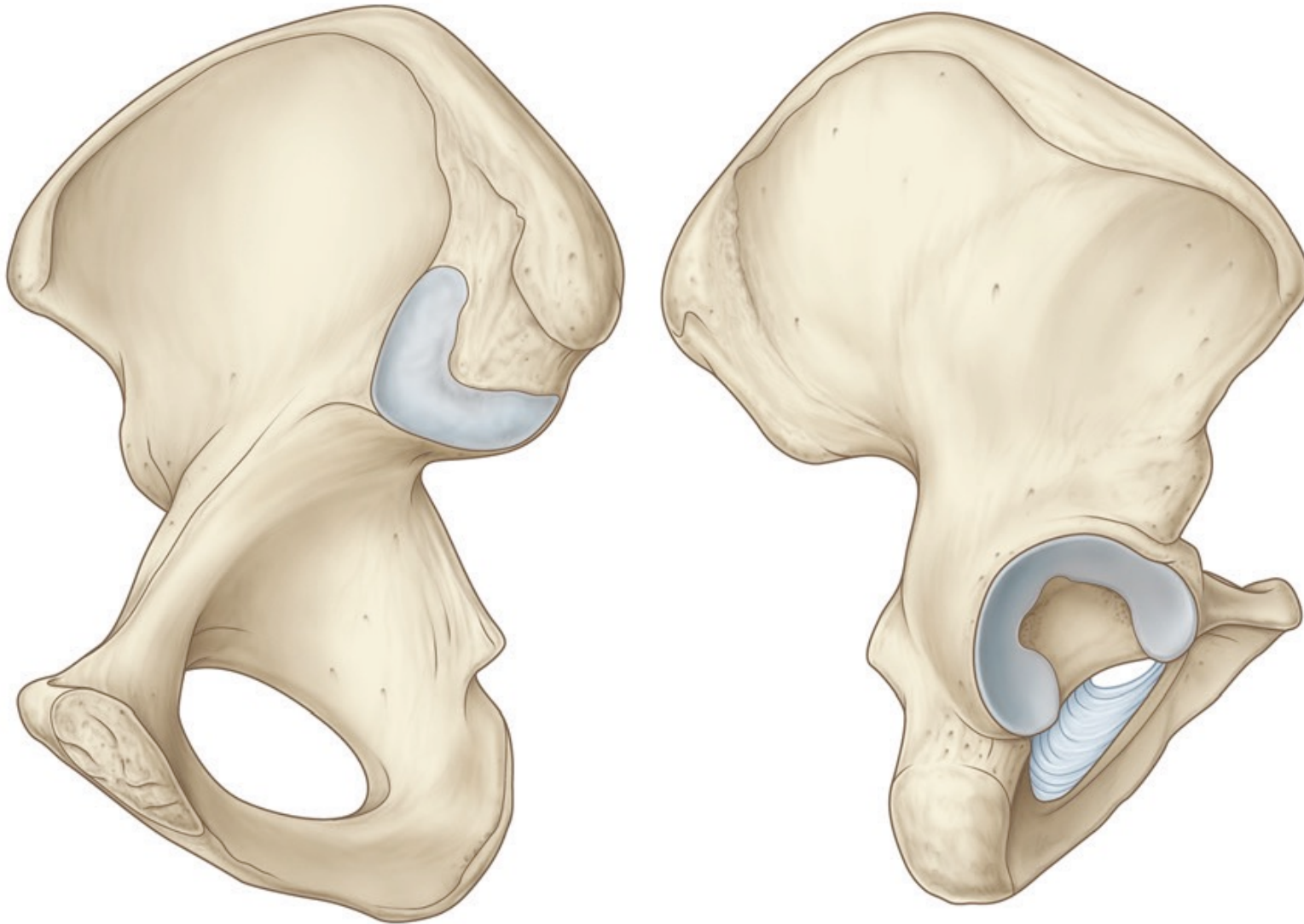
Articulatio coxae

Gray's Anatomy 41th ed. Elsevier

- Y- cartilage
- Crista ilium
- Femoral head
- trochanters



Articulatio coxae



♦ Os ilium

- ♦ *Facies articularis sacroiliaca*
- ♦ *Crista ossis ilii*

♦ Os ischium

- ♦ *Tuberositas ischiadica*
- ♦ *Spina ischiadica*

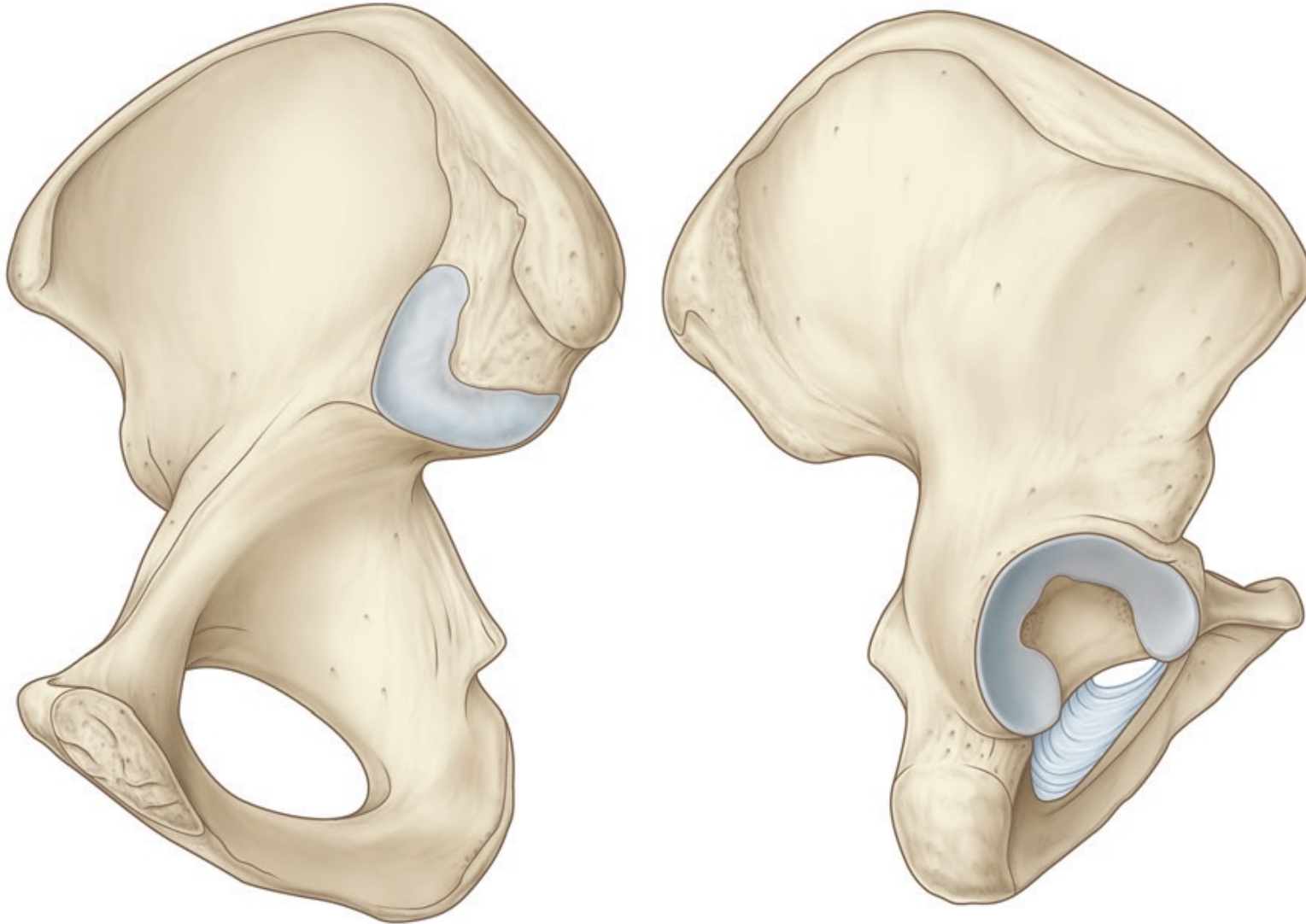
♦ Os pubis

- ♦ *Ramus superior*
- ♦ *Ramus inferior*
- ♦ *Tuberculum pubis*

♦ Acetabulum

♦ Foramen obturatum

Articulatio coxae



- ♦ Spina iliaca anterior superior
- ♦ Spina iliaca anterior inferior
- ♦ Spina iliaca posterior superior
- ♦ Spina iliaca posterior inferior
- ♦ Fossa iliaca
- ♦ Lineae glutaeae

Articulatio coxae

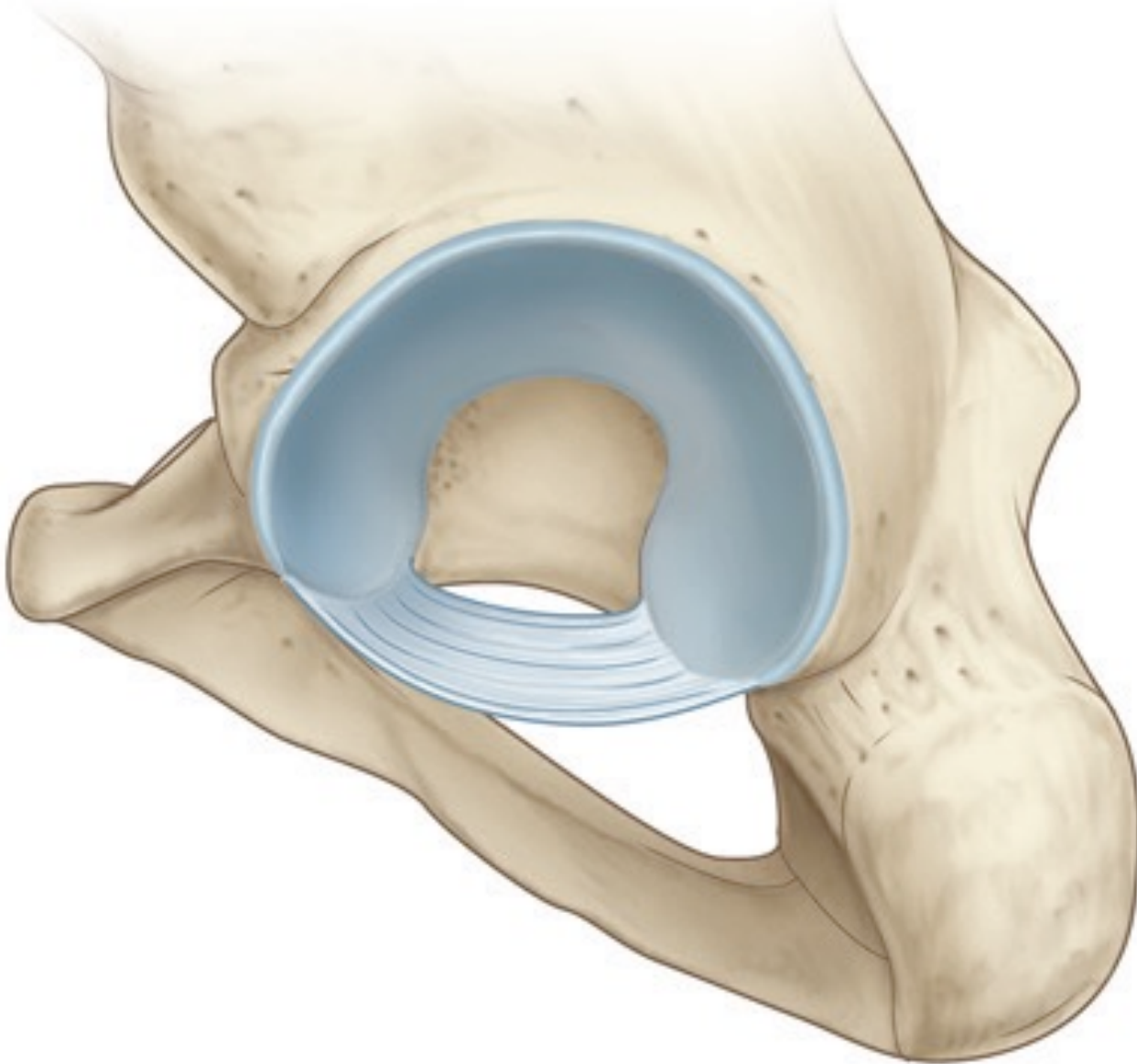


- ♦ **Caput**
- ♦ **Fovea capitis**
- ♦ **Collum**
- ♦ **Trochanter major**
- ♦ **Trochanter minor**

- ♦ **Crista intertrochanterica**
- ♦ **Linea pectinea (spiralis)**
- ♦ **Diaphysis**

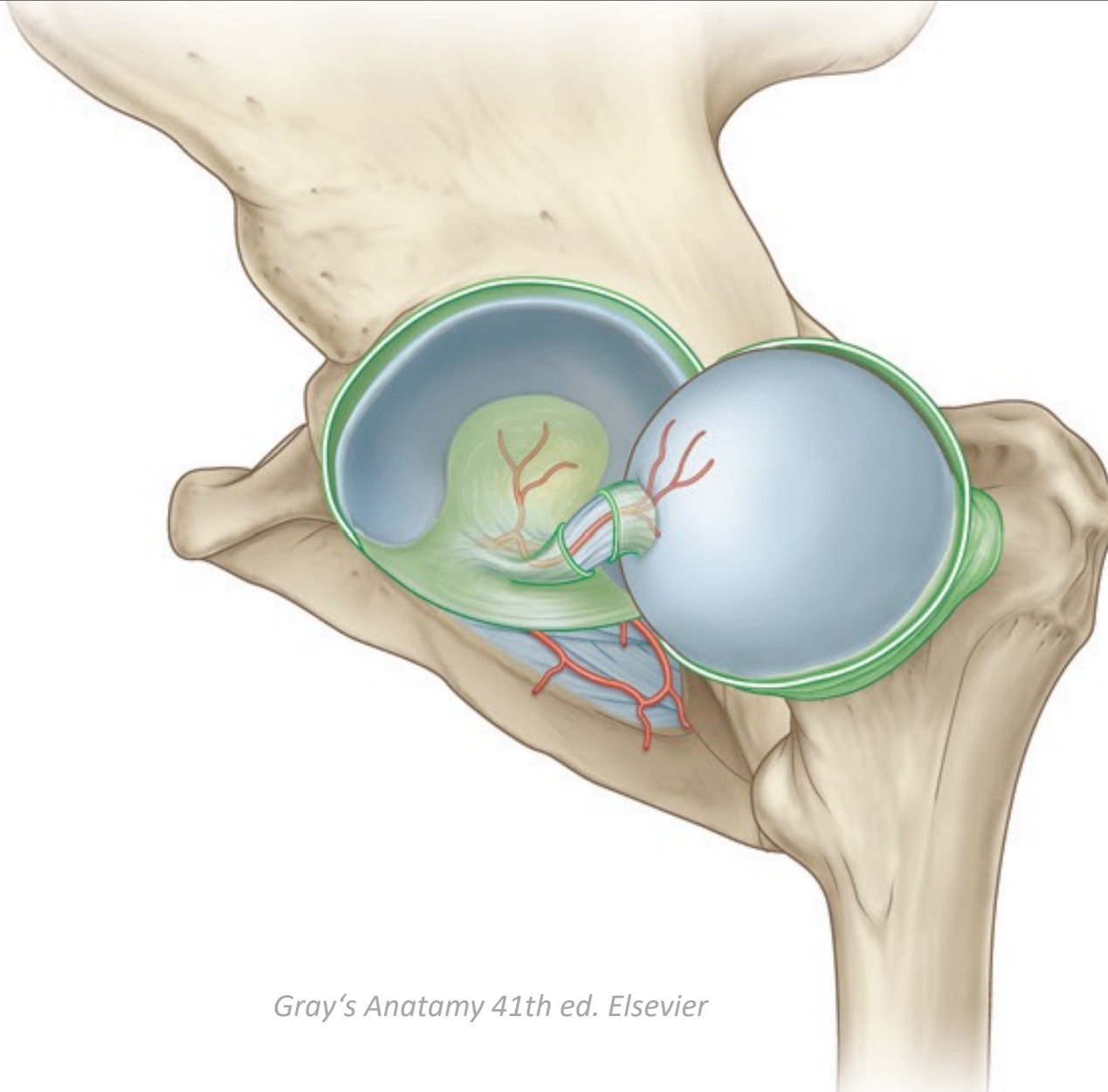


Articulatio coxae



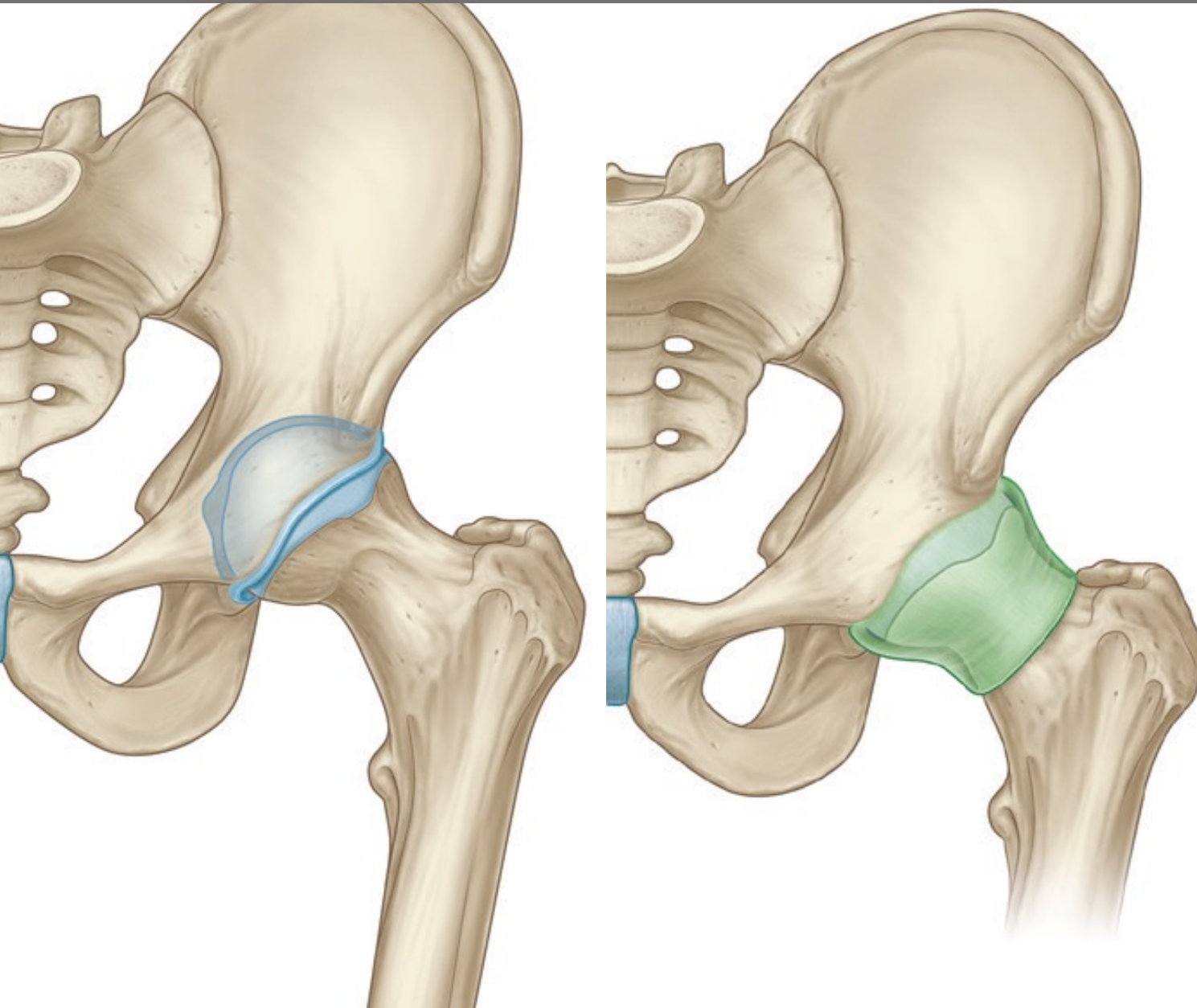
- ♦ **Acetabulum**
- ♦ **Labrum acetabulare**
- ♦ **Ligamentum transversum acetabuli**
- ♦ **Foramen acetabuli**
- ♦ **Caput femoris**
- ♦ **Ligamentum capitis femoris**
- ♦ **Capsula articularis**
- ♦ **Membrana synovialis**

Articulatio coxae



- ♦ Acetabulum
- ♦ Labrum acetabulare
- ♦ Ligamentum transversum acetabuli
- ♦ Foramen acetabuli
- ♦ Caput femoris
- ♦ Ligamentum capitis femoris
 - ♦ A. capitis femoris
- ♦ Capsula articularis
- ♦ Membrana synovialis

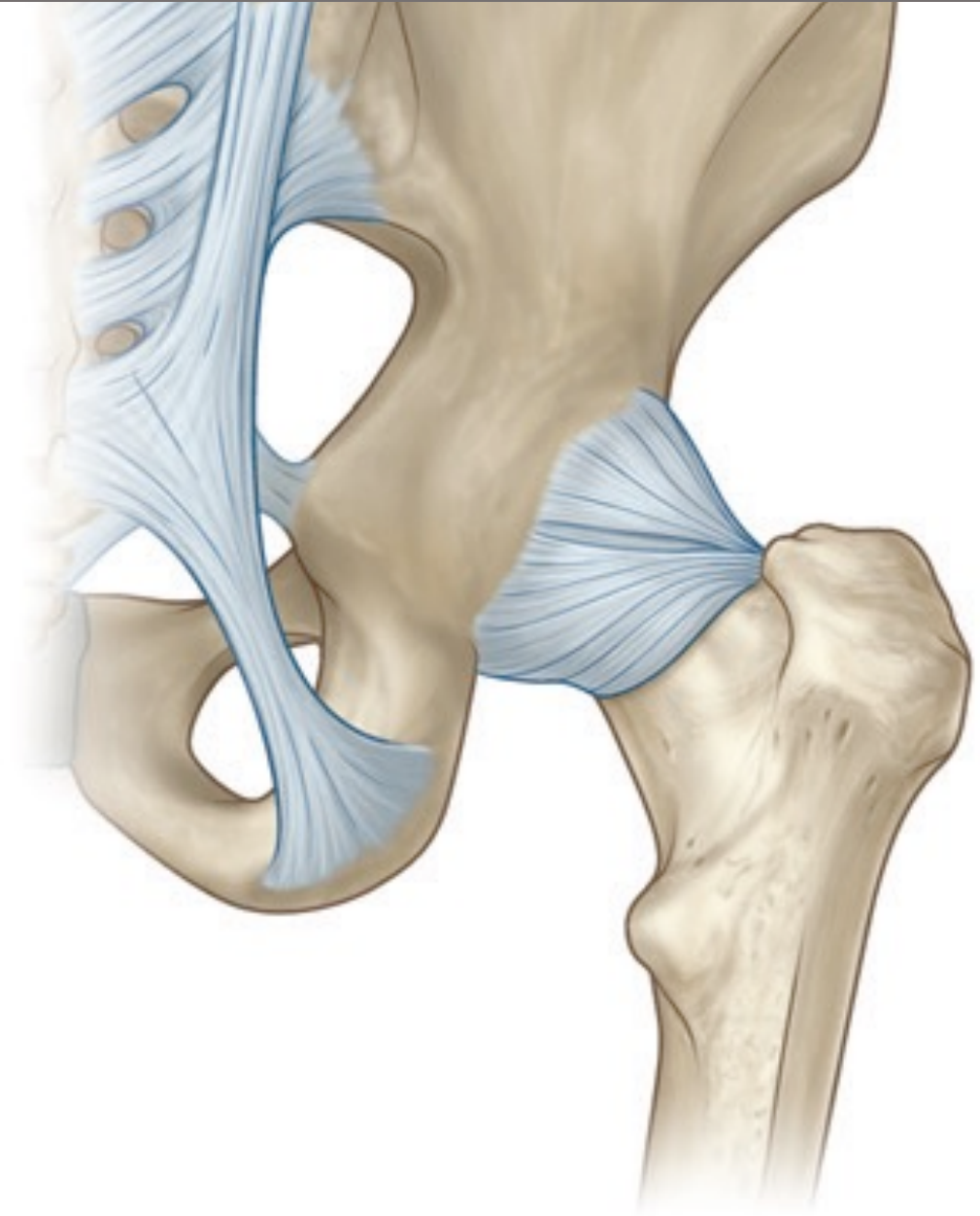
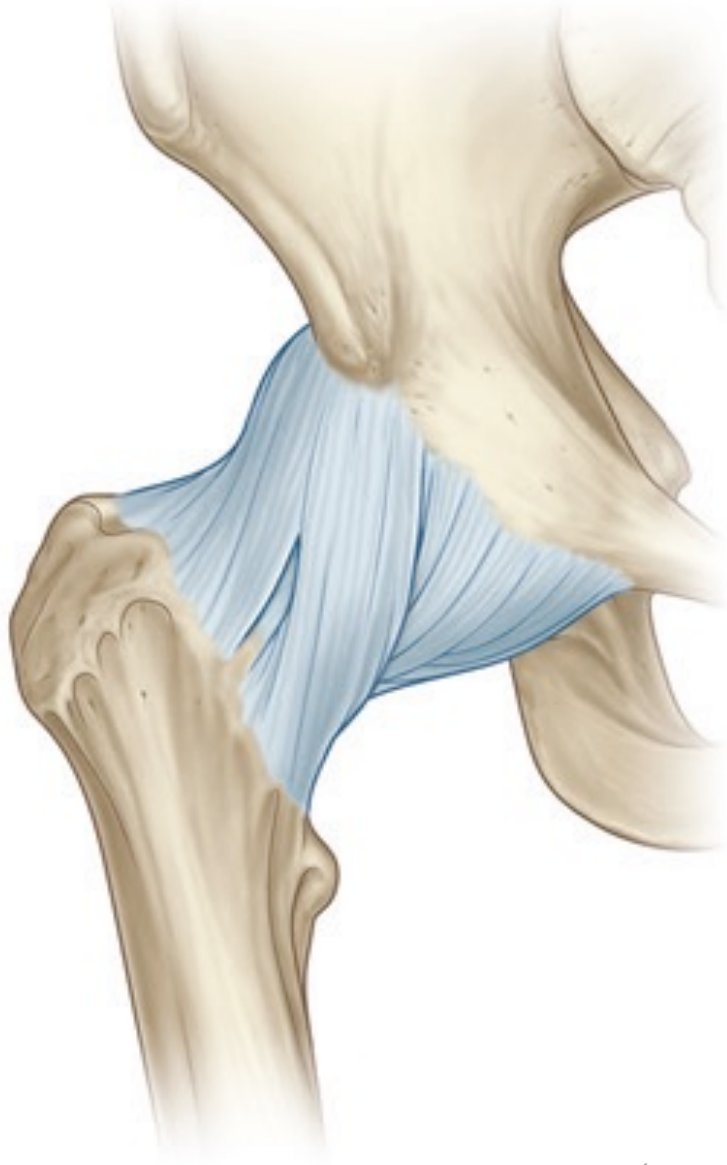
Articulatio coxae



- ♦ **Acetabulum**
- ♦ **Labrum acetabulare**
- ♦ **Ligamentum transversum acetabuli**
- ♦ **Foramen acetabuli**
- ♦ **Caput femoris**
- ♦ **Ligamentum capitis femoris**
- ♦ **Capsula articularis**
- ♦ **Membrana synovialis**

Articulatio coxae

- Lig. pubofemorale
- Lig. iliofemorale
- Lig. ischiofemorale



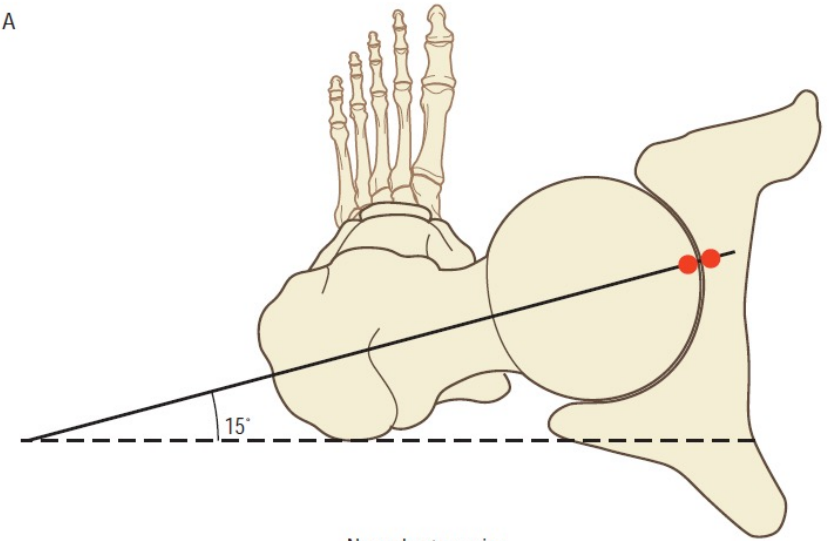
Articulatio coxae

🔥 Kolodiafyzární úhle

🔥 Antevertze

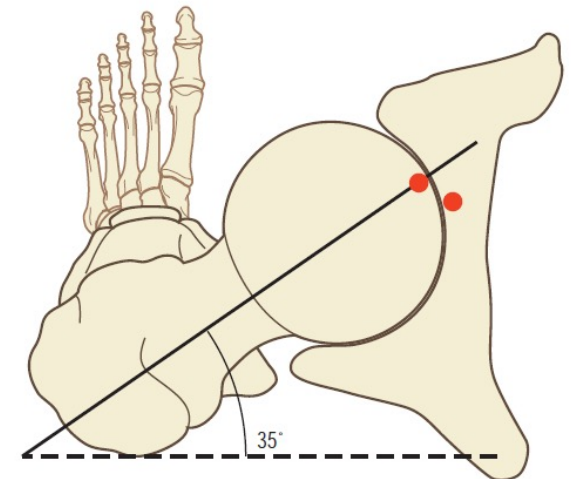


A



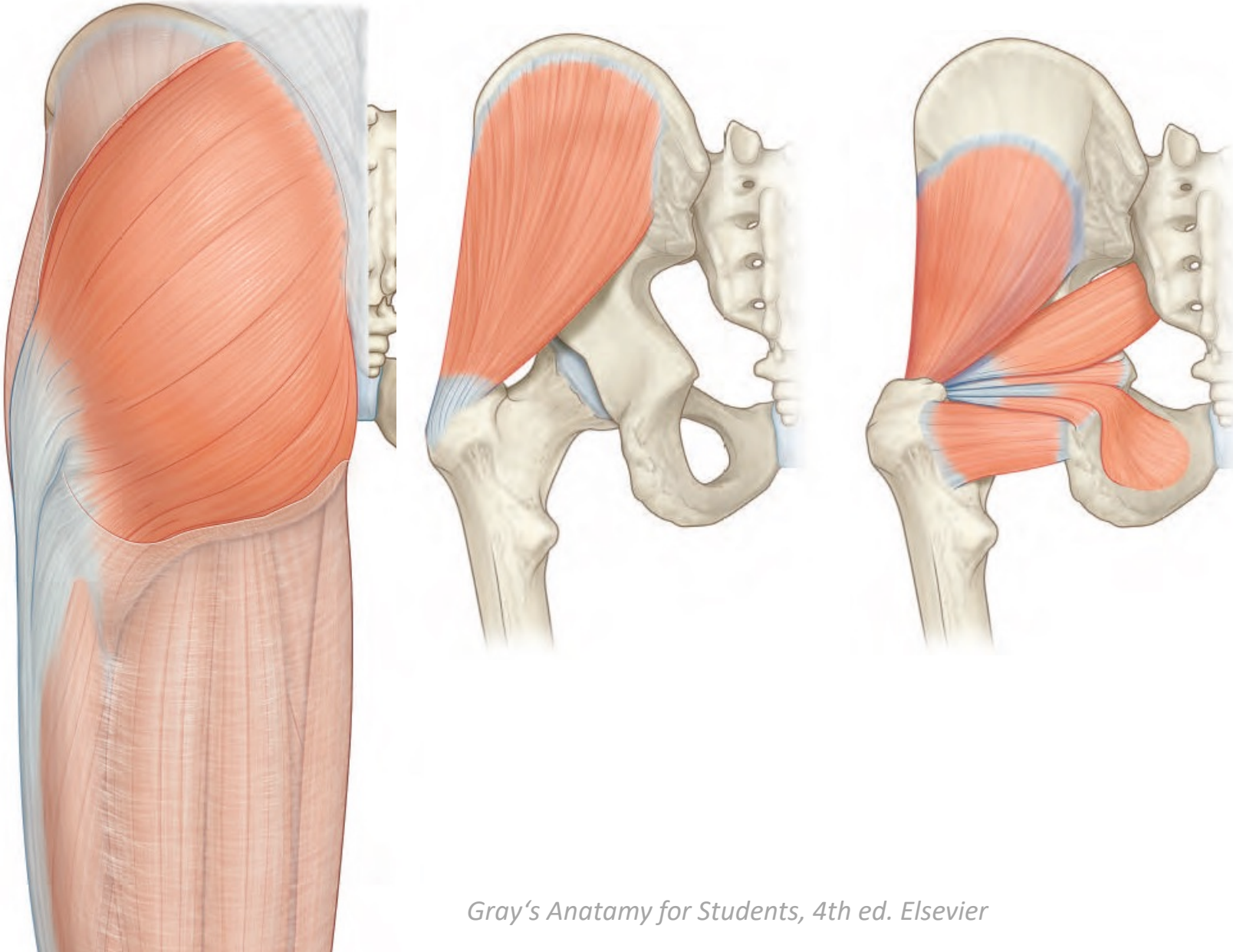
Normal anteversion

B



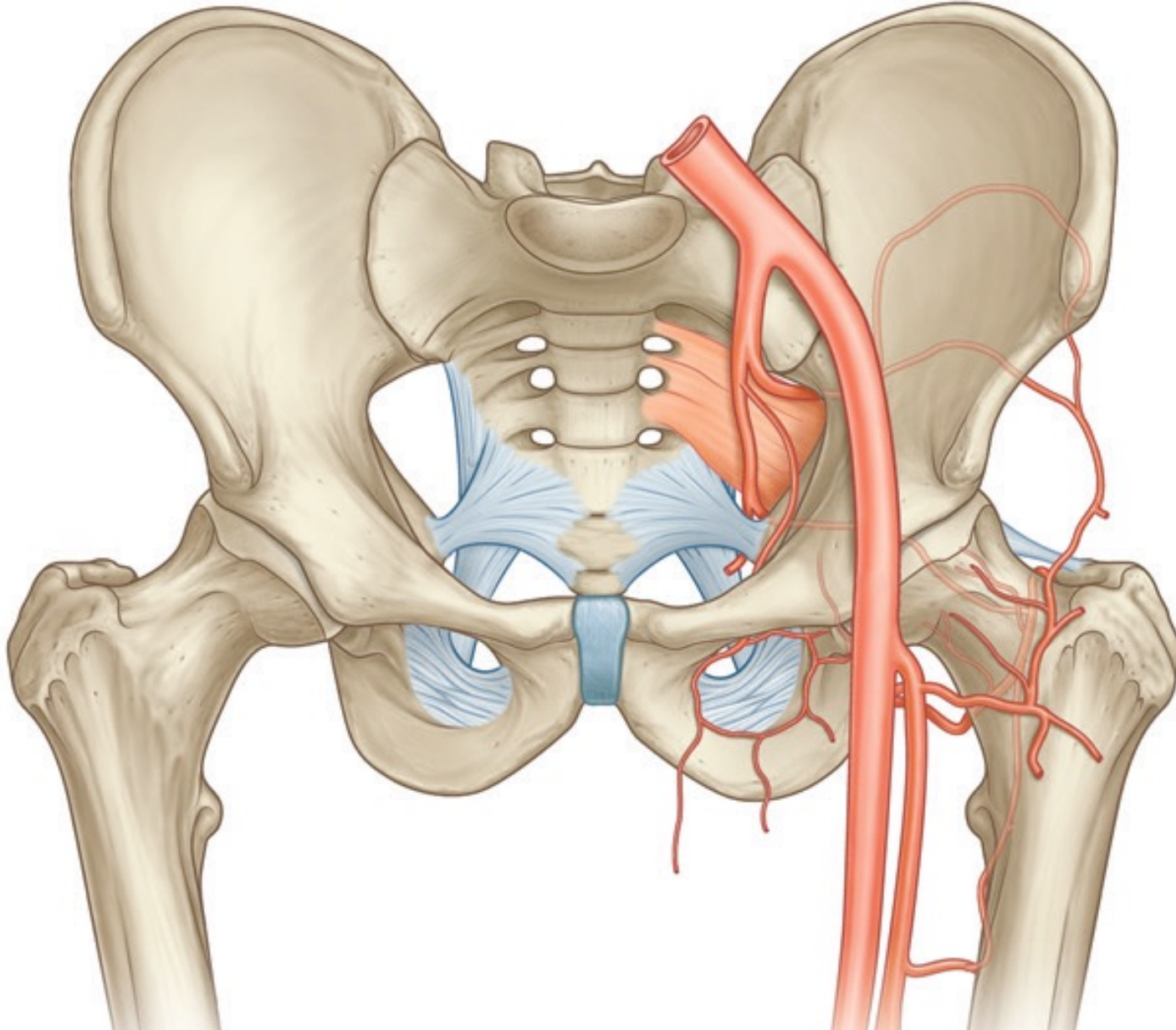
Excessive anteversion

Musculi gluteales



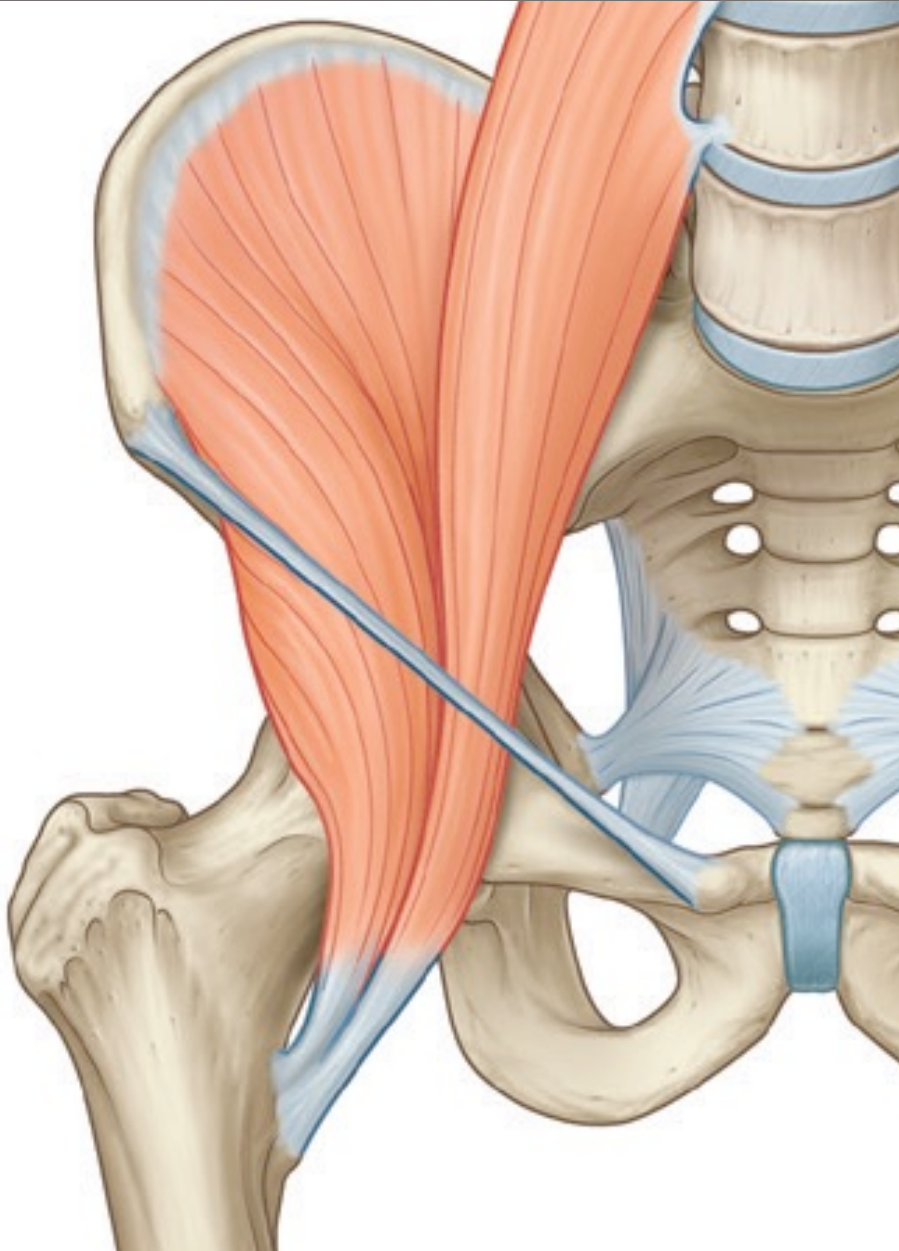
- ♦ M. tensor fasciae latae
- ♦ M. gluteus maximus
- ♦ M. gluteus medius
- ♦ M. gluteus minimus
- ♦ M. piriformis
- ♦ M. gemellus superior
- ♦ M. obturatorius internus
- ♦ M. gemellus inferior

Articulatio coxae - arteries

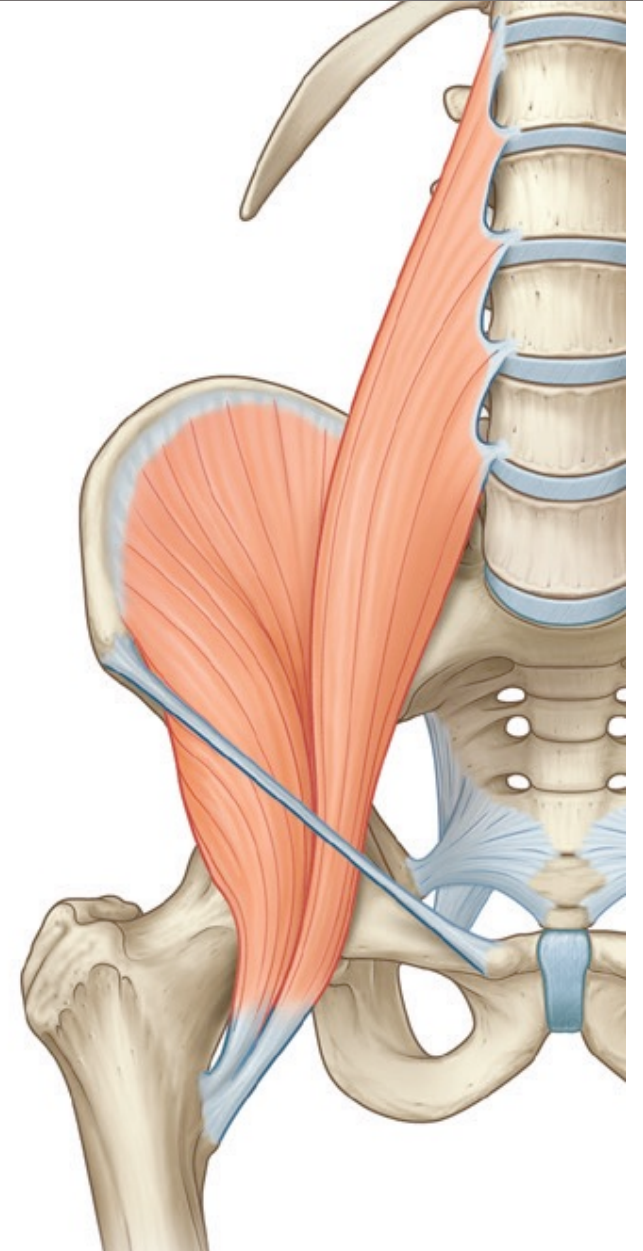


- ♦ **A. iliaca communis**
- ♦ **A. ilaca externa**
- ♦ **A. femoralis (communis)**
 - ♦ A. circumflexa femoris lateralis
 - ♦ A. circumflexa femoris medialis
- ♦ **A. iliaca interna**
- ♦ **A. obturatoria**
 - ♦ A. capitis femoris
- ♦ **A. glutea superior**

Flexores coxae



- ♦ **Hip flexion**
- ♦ **M. psoas major**
 - ♦ Rami ventrales L1-3
- ♦ **M. iliacus**
 - ♦ N. femoralis L2-3
- ♦ **M. quadriceps femoris**



Articulatio genus

💧 Femur

- 💧 Condylus medialis
- 💧 Condylus lateralis

💧 Tibia

- 💧 Condylus medialis
- 💧 Condylus lateralis
- 💧 Eminentia intercondylaris
- 💧 Tuberositas tibiae

💧 Meniscus medialis

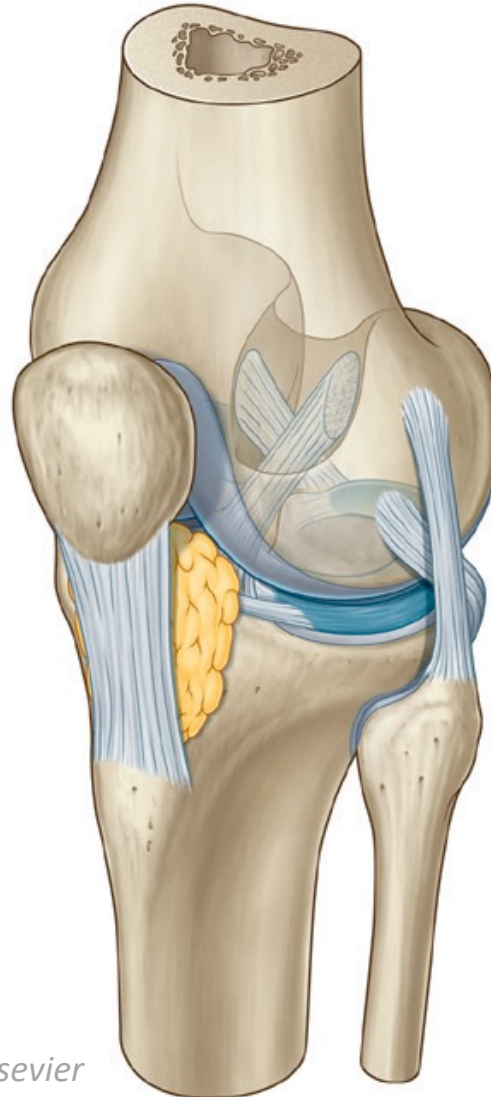
💧 Meniscus lateralis

💧 Patella



Articulatio genus

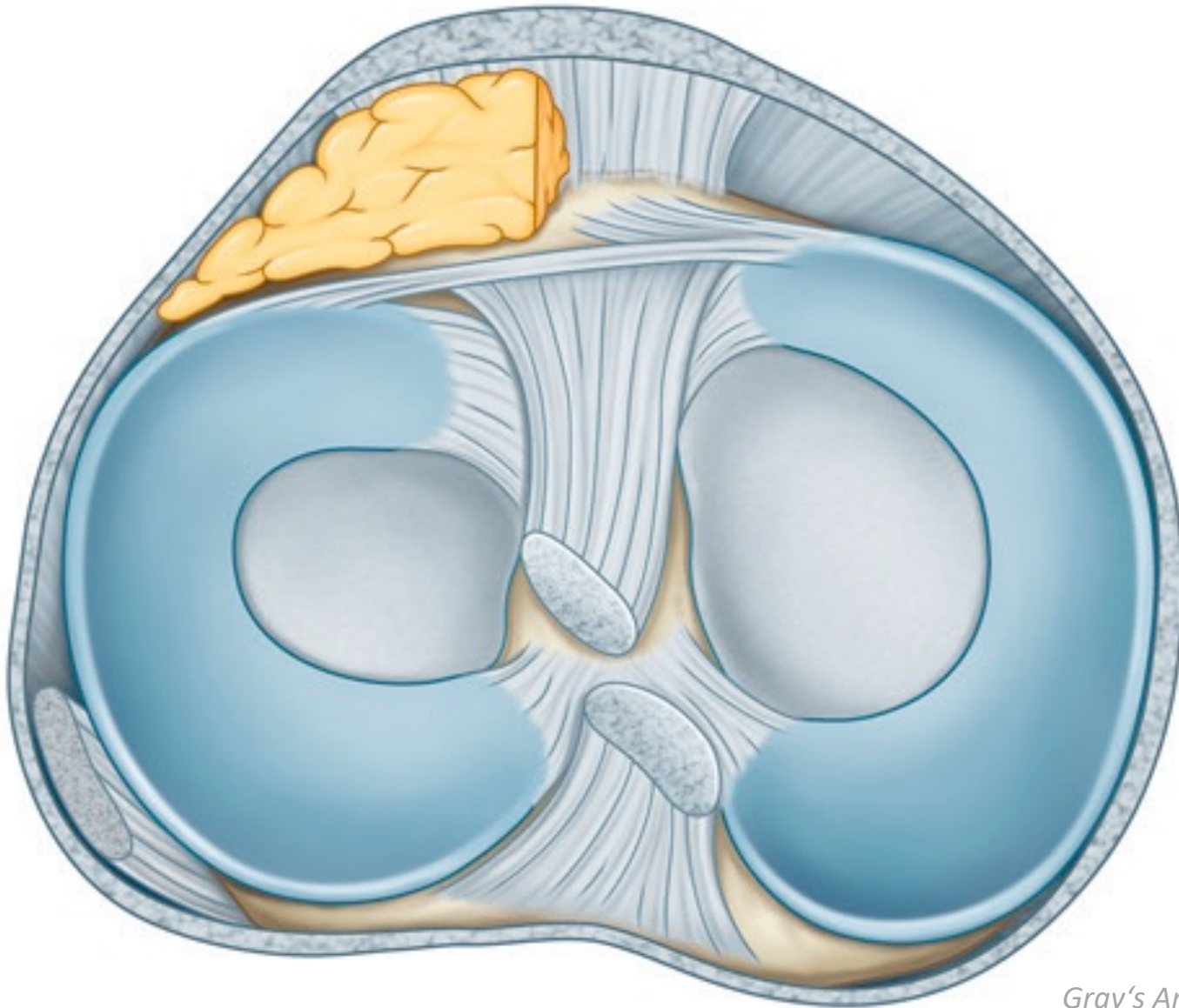
- ♦ Lig. colaterale mediale
- ♦ Lig. colaterale laterale
- ♦ Lig. cruciatum anterius
- ♦ Lig. cruciatum posterius
- ♦ Lig. transversum genus
- ♦ Lig. meniscofemorale posterius
- ♦ Lig. patellae
 - ♦ Tendo m. poplitei
 - ♦ Corpus adiposum infrapatellare
 - ♦ Tela synovialis
 - ♦ Plica synovialis intrapatellaris
 - ♦ Bursa suprapatellaris
 - ♦ M. articularis genus



Gray's Anatomy 41th ed. Elsevier



Articulatio genus



- **Lig. colaterale mediale**
- **Lig. colaterale laterale**
- **Lig. cruciatum anterius**
- **Lig. cruciatum posterius**
- **Lig. transversum genus**
- **Lig. meniscofemorale posterius**
- **Lig. patellae**

Articulatio genus

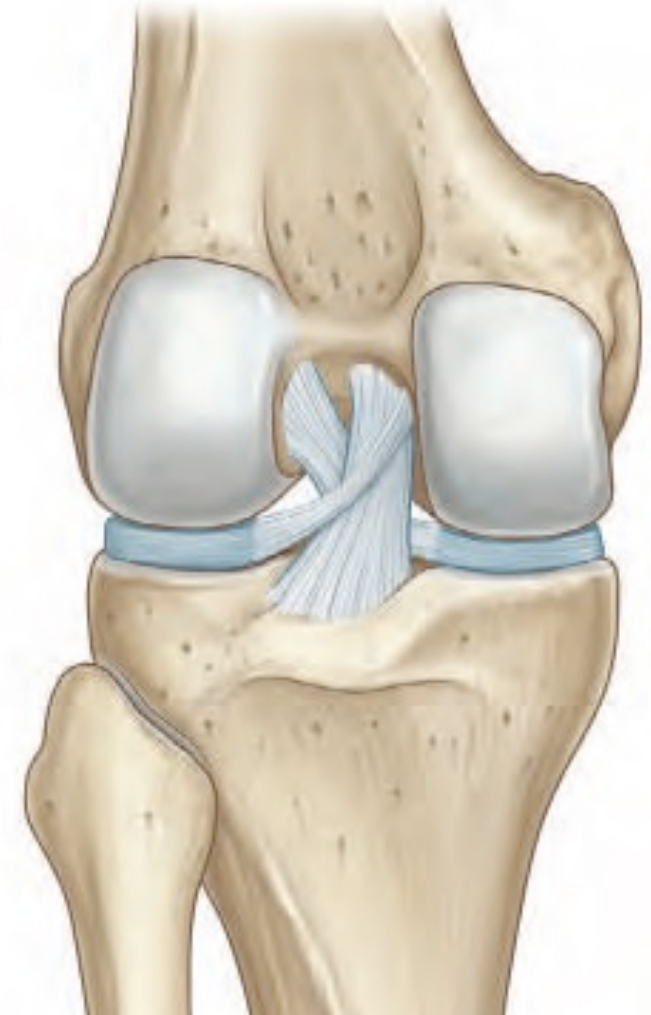
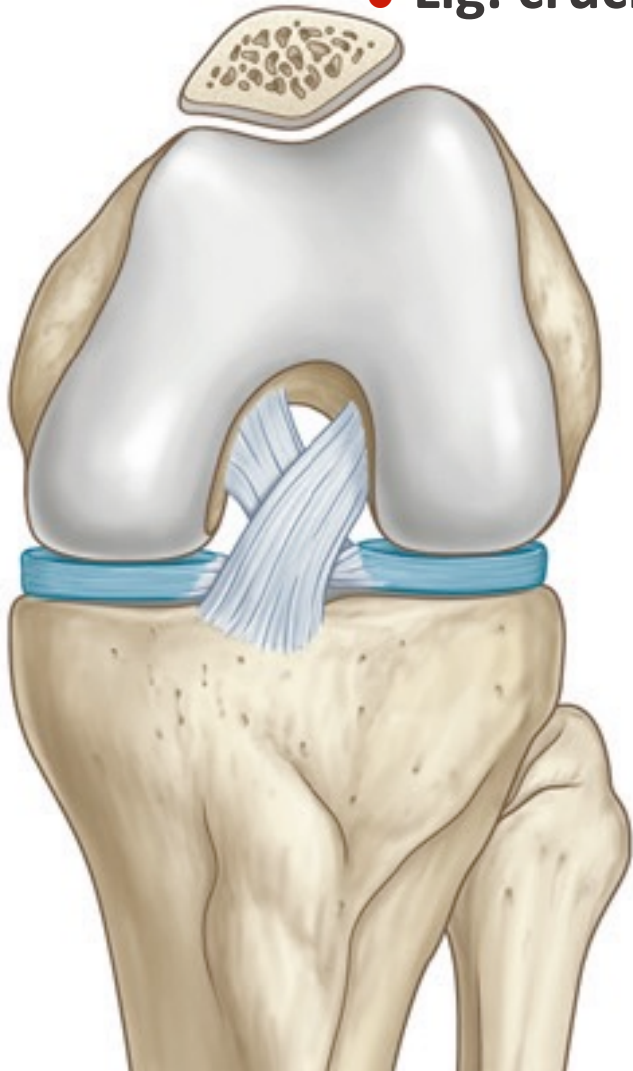
Gray's Anatomy 41th ed. Elsevier

♦ **Lig. cruciatum anterius**

♦ **Lig. transversum genus**

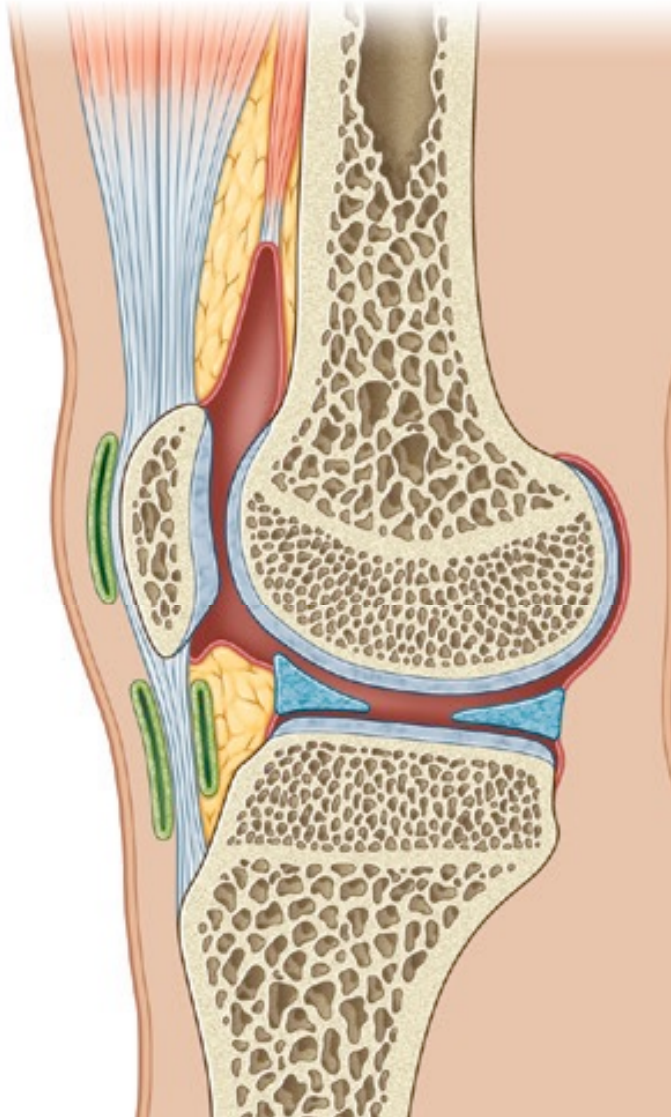
♦ **Lig. cruciatum posterius**

♦ **Lig. meniscofemorale posterius**



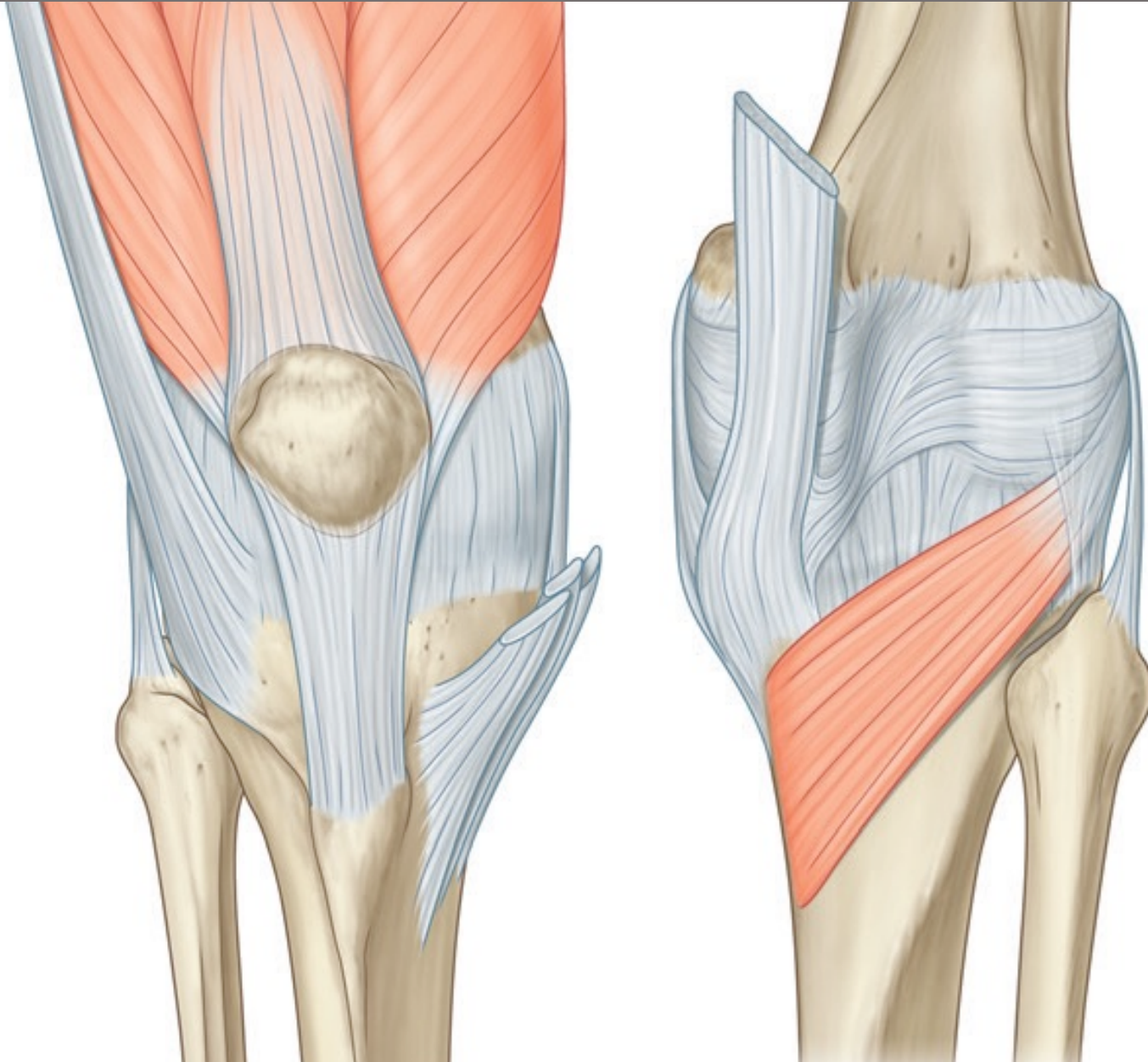
Articulatio genus

Gray's Anatomy 41th ed. Elsevier



- ♦ **Lig. patellae**
- ♦ Tendo m. poplitei
- ♦ Corpus adiposum infrapatellare
- ♦ Tela synovialis
- ♦ Plica synovialis intrapatellaris
- ♦ Bursa suprapatellaris
- ♦ M. articularis genus
- ♦ *Bursa praepatellaris subcutanea*
- ♦ *Bursa infrapatellaris subcutanea*
- ♦ *Bursa infrapatellaris subtendinea*

Articulatio genus



♦ M. semimembranosus

- ♦ Pes anserinus
- ♦ Lig. popliteum obliquum
- ♦ *Bursa semimembranosa*

♦ M. popliteus

- ♦ Lig. acruatum popliteum
- ♦ *Resessus subpopliteus*
- ♦ *Cysta Bakerova*

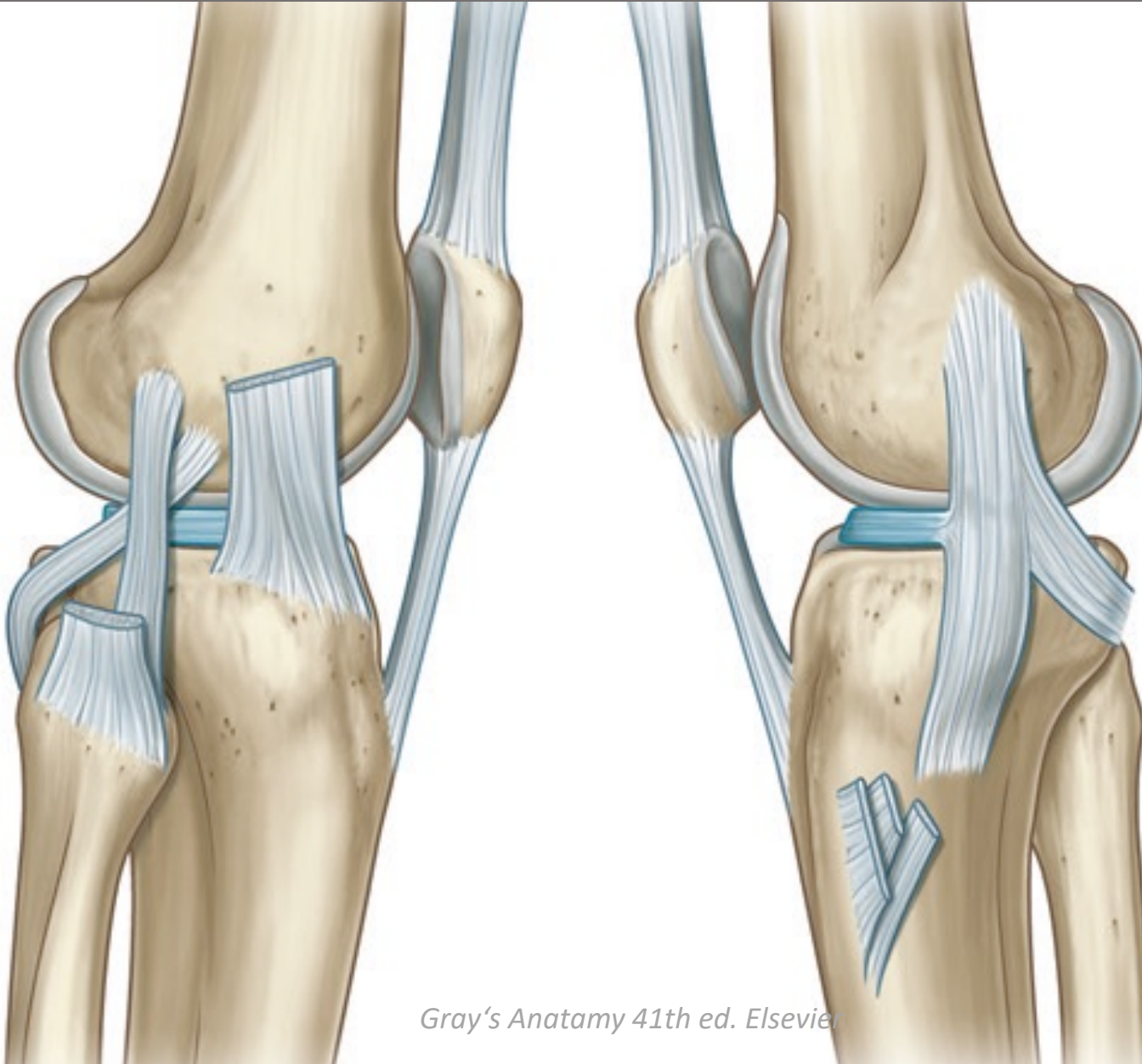
♦ M. biceps femoris

- ♦ *Bursa m. bicipitis femoris*

♦ Lig. patellae

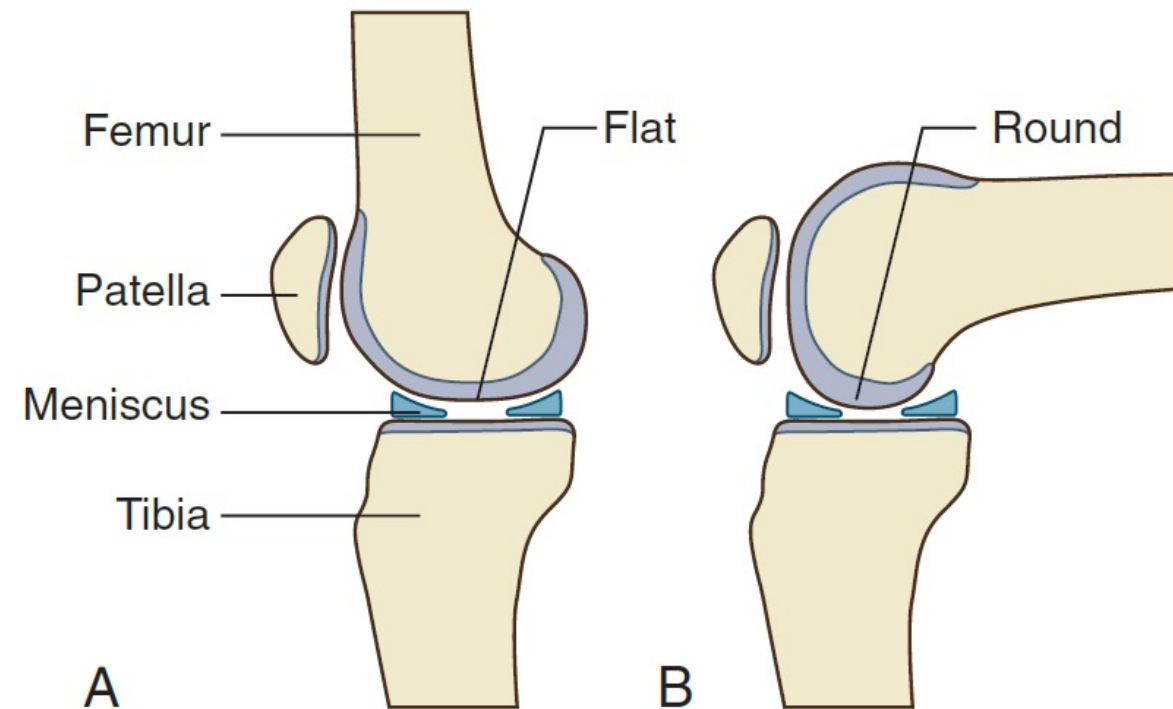
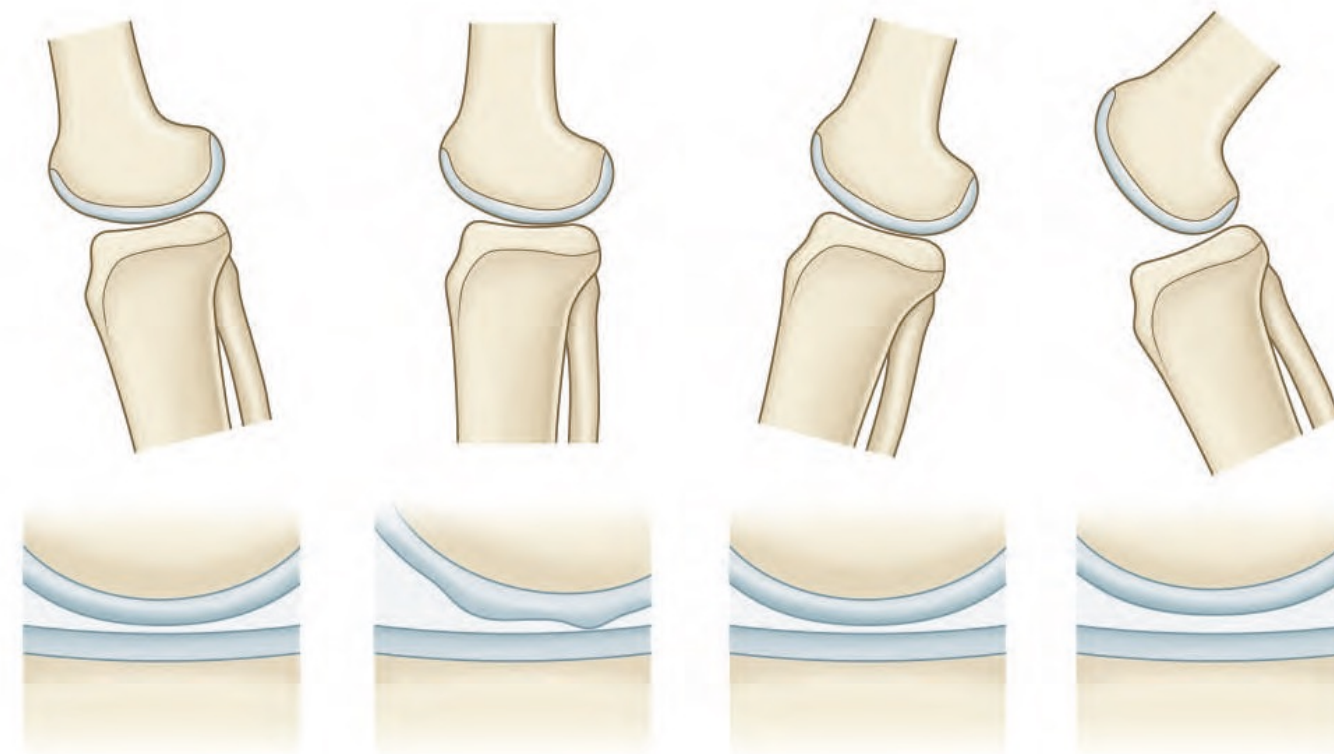
- ♦ *Bursa praepatellaris subcutanea*
- ♦ *Bursa infrapatellaris subcutanea*
- ♦ *Bursa infrapatellaris subtendinea*

Articulatio genus



- ♦ **Lig. colaterale mediale**
- ♦ **Lig. colaterale laterale**
- ♦ **Lig. Patellae**
- ♦ **Pes anserinus (tendines)**
 - ♦ *M. sartorius*
 - ♦ *M. semitendineus*
 - ♦ *M. gracilis*
- ♦ **Tractus iliotibialis**
- ♦ **M. biceps femoris (tendo)**
- ♦ **M. popliteus (tendo)**

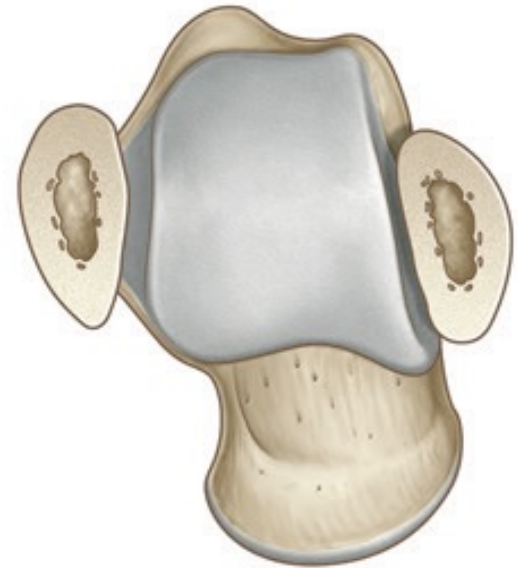
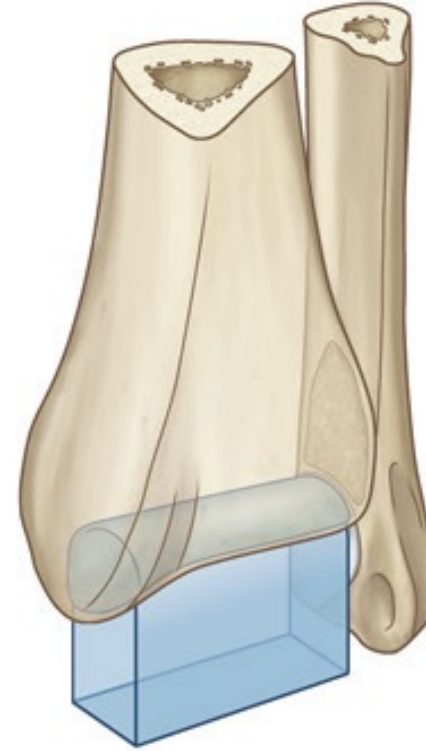
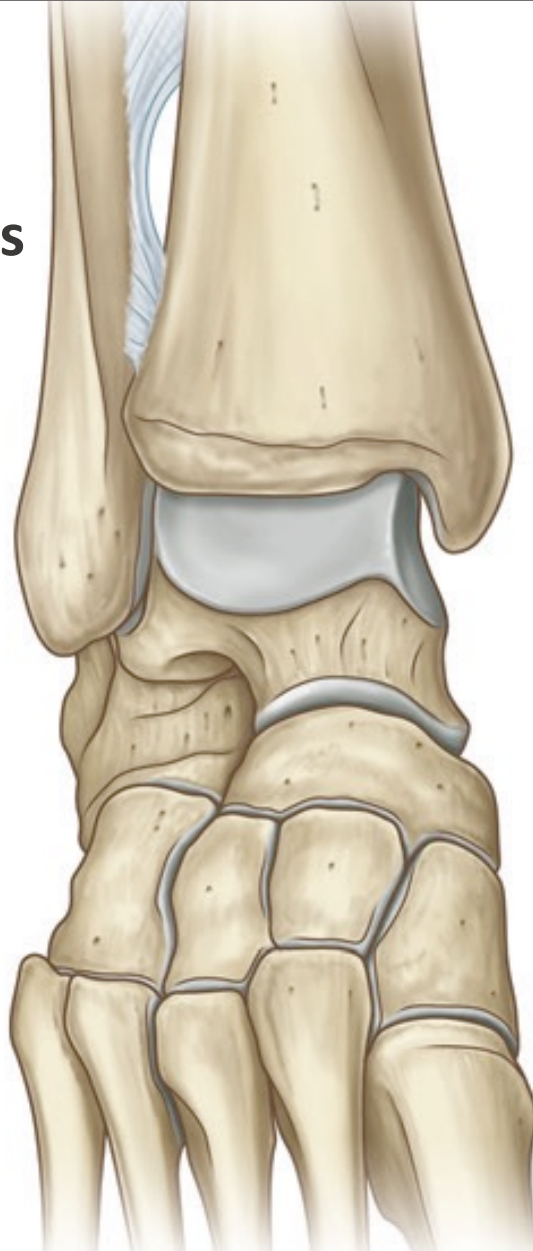
Articulatio genus





Articulatio talocruralis et talocalcanealis

- ♦ **Art. tibiofibularis distalis**
- ♦ **Art. talocruralis**
- ♦ **Art. talocalcanealis**





Talus

- ♦ Caput, collum, corpus, trochlea, processus posterior
- ♦ Sulcus tali, sulcus m. flexoris longi
- ♦ Facies articulares calcanei ant., media et post.
- ♦ Facies articularis ossis navicularis



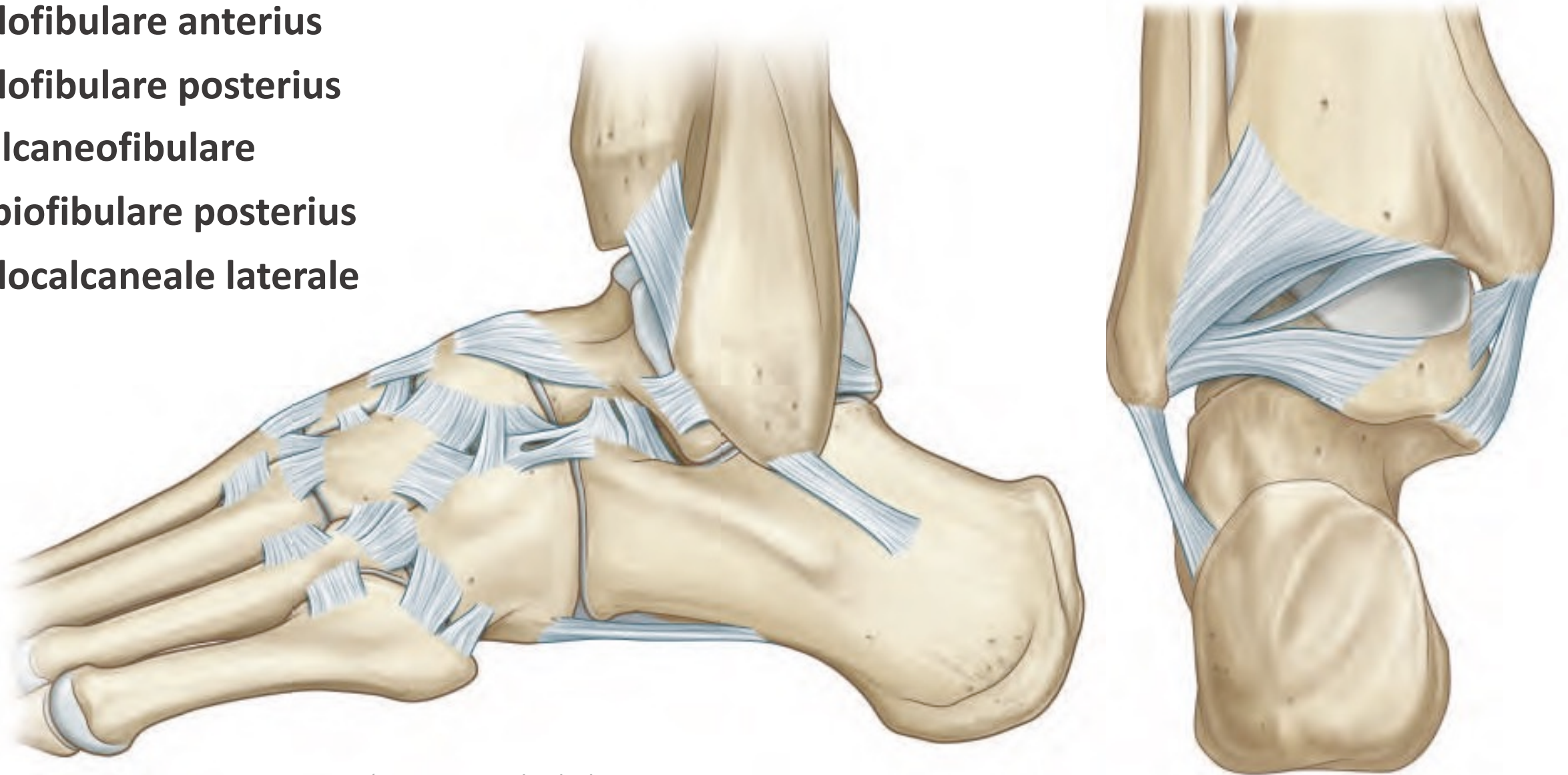
Calcaneus

- ♦ Tuber calcanei, incisura calcanei, tuberculum calcanei
- ♦ Sulcus calcanei, sulcus m. flexoris hallucis longi
- ♦ Facies articularis tali ant., media et post.
- ♦ Trochlea fibularis, insertio lig. colateralis lateralis
- ♦ Sustentaculum tali



Ligamenta tarsi

- Talofibulare anterius
- Talofibulare posterius
- Calcaneofibulare
- Tibiofibulare posterius
- Talocalcaneale laterale

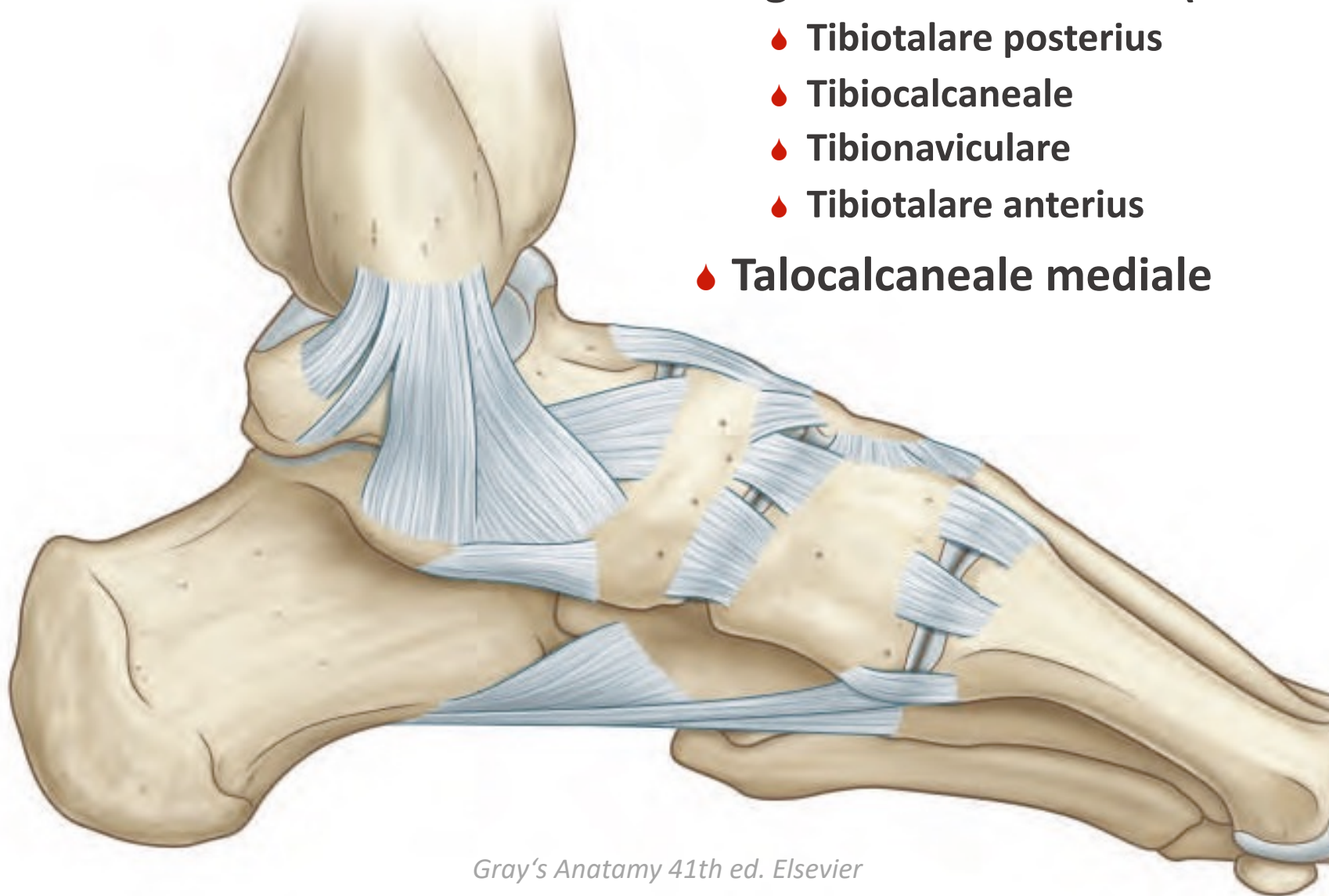


Ligamenta tarsi

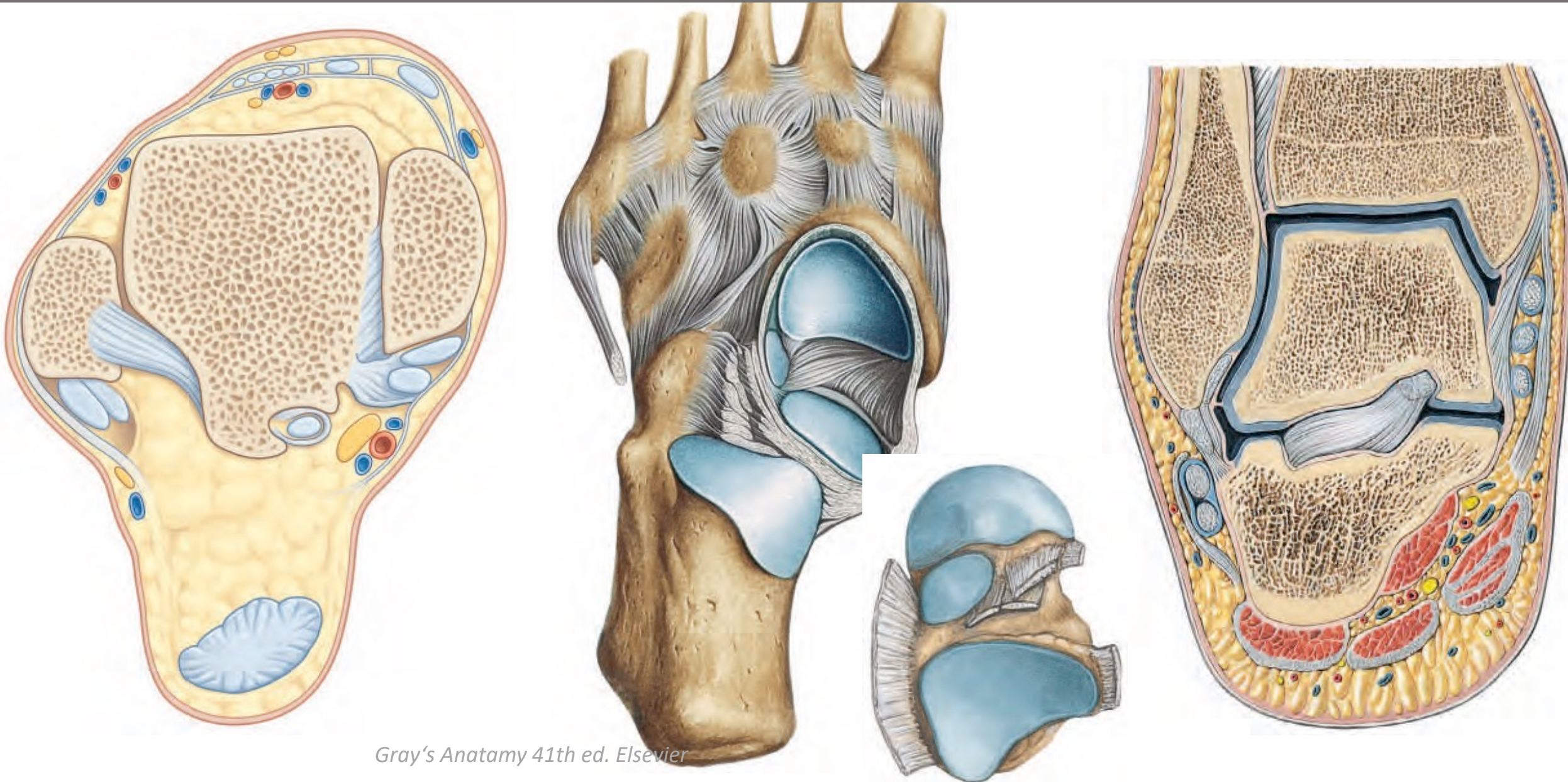
♦ Ligamentum mediale (deltoideum)

- ♦ Tibiotalare posterius
- ♦ Tibiocalcaneale
- ♦ Tibionaviculare
- ♦ Tibiotalare anterius

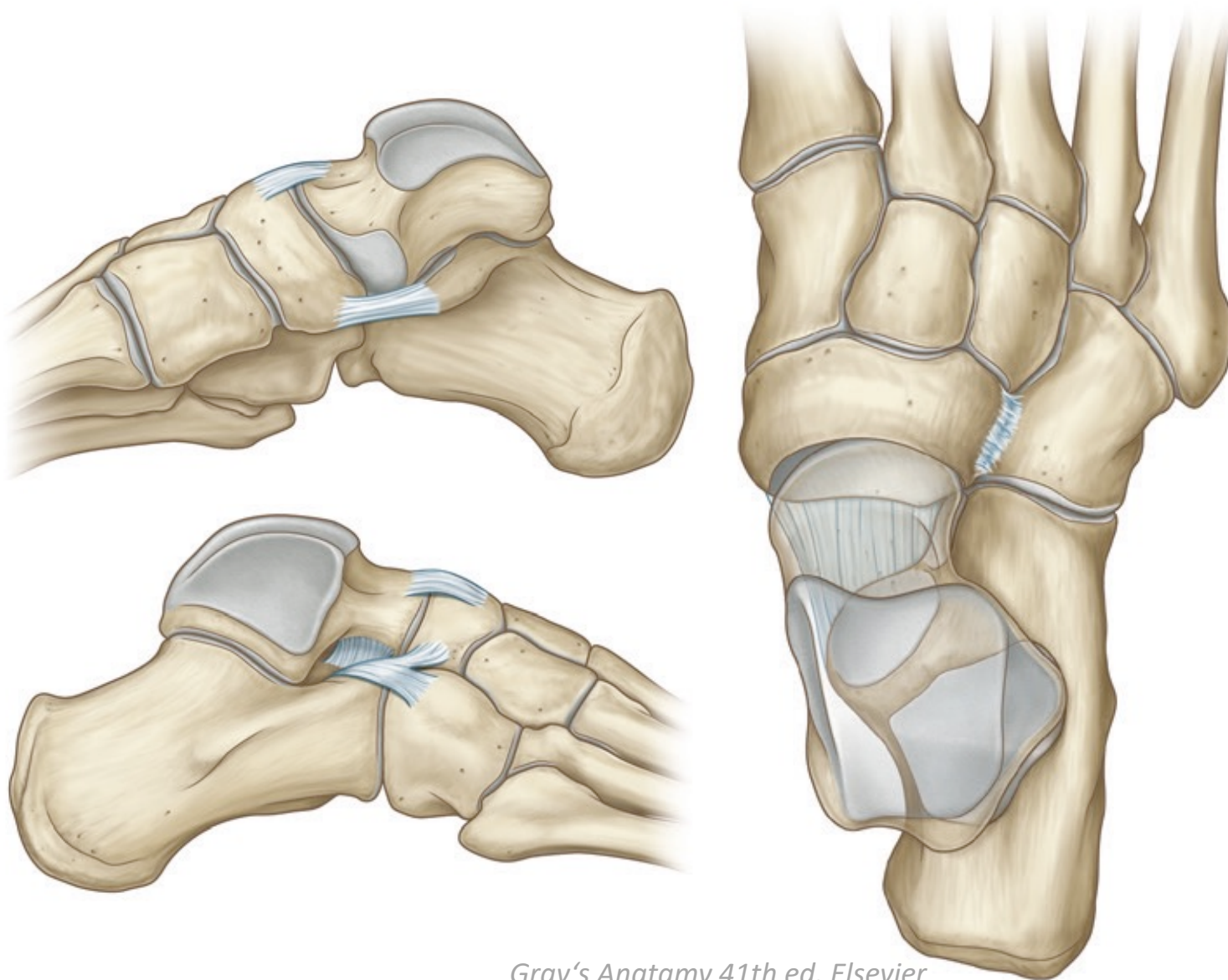
♦ Talocalcaneale mediale



Articulatio talocruralis et talocalcanealis



Tarsus



- ♦ **Talus**

- ♦ *Lig. talonaviculare*

- ♦ **Calcaneus**

- ♦ *Lig. calcaneonaviculare plantare*

- ♦ *Lig. bifurcatum*

- ♦ *Lig. plantare longum*

- ♦ **Os naviculare**

- ♦ **Os cuboideum**

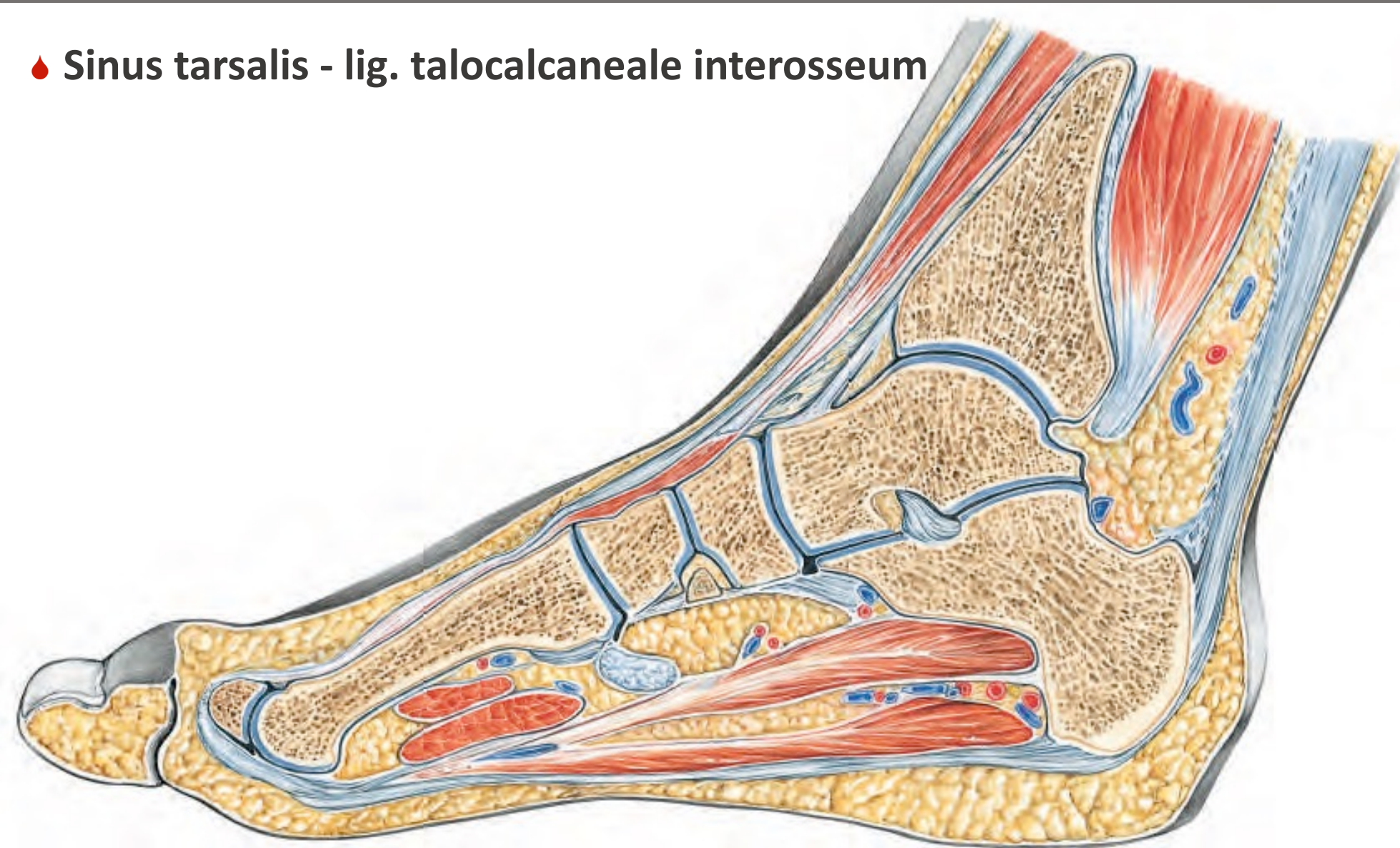
- ♦ *Lig. cuboideonaviculare*

- ♦ **Ossa cuneiformia**

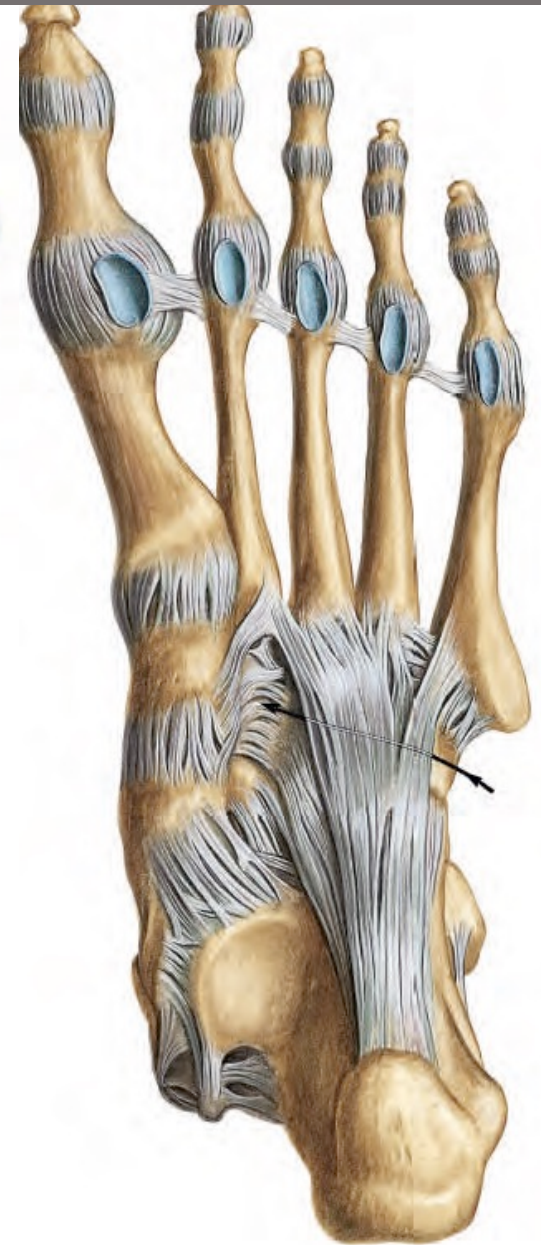
- ♦ laterale, intermedium, mediale

Tarsus

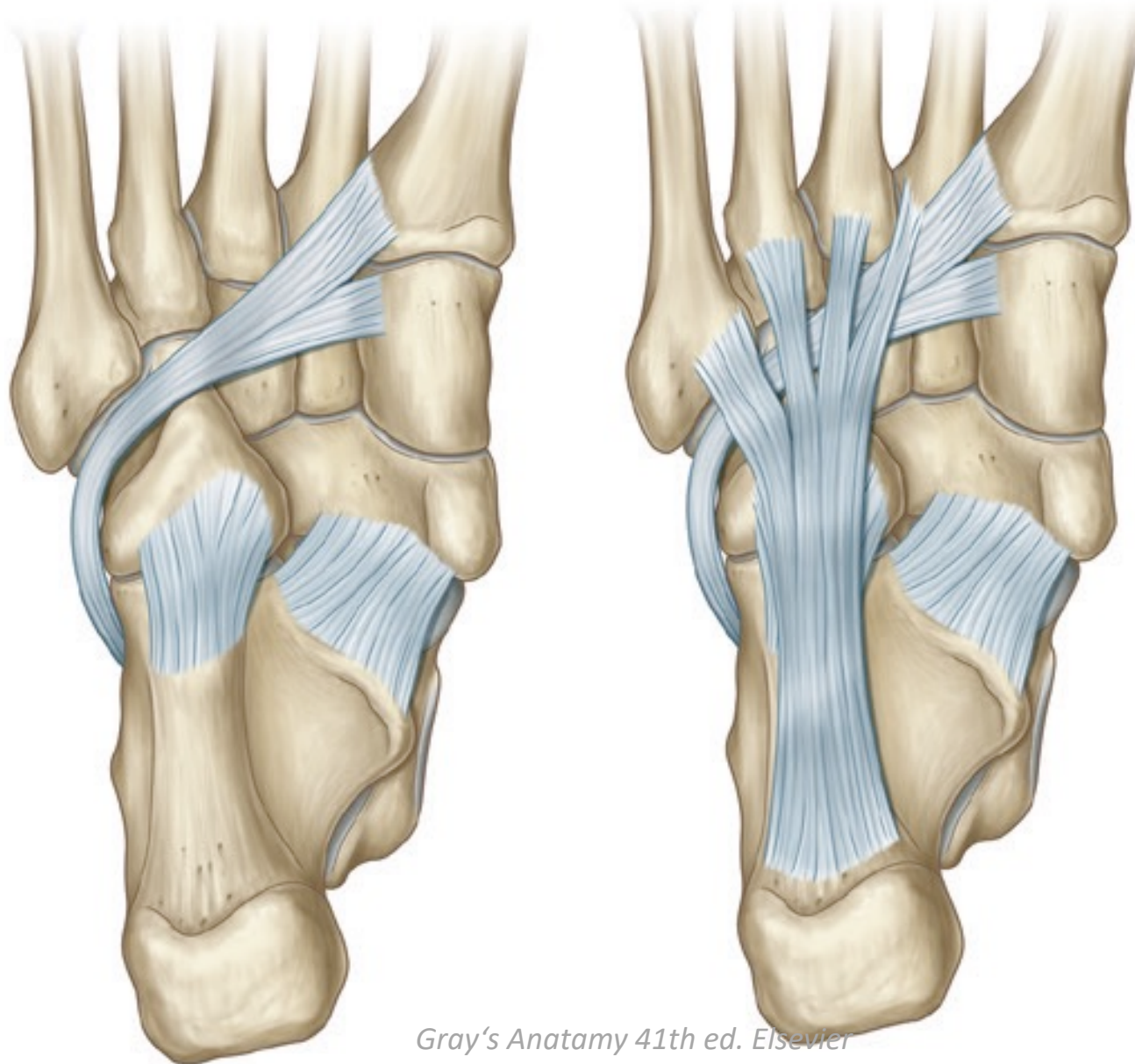
♦ Sinus tarsalis - lig. talocalcaneale interosseum



Gray's Anatomy 41th ed. Elsevier



Ligamenti tarsi (planta)



♦ Talus

♦ *Lig. talonaviculare*

♦ Calcaneus

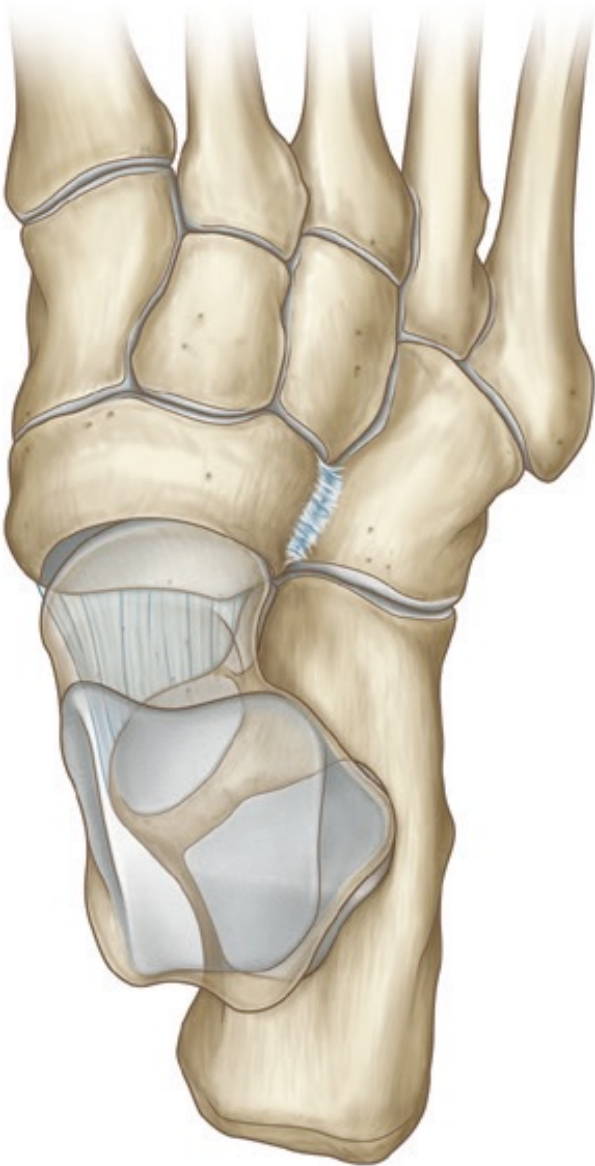
♦ *Lig. calcaneonaviculare plantare*

♦ *Lig. bifurcatum*

♦ *Lig. plantare longum*

♦ M. fibularis longus (tendo)

Articulatio tarsi media (Choparti)



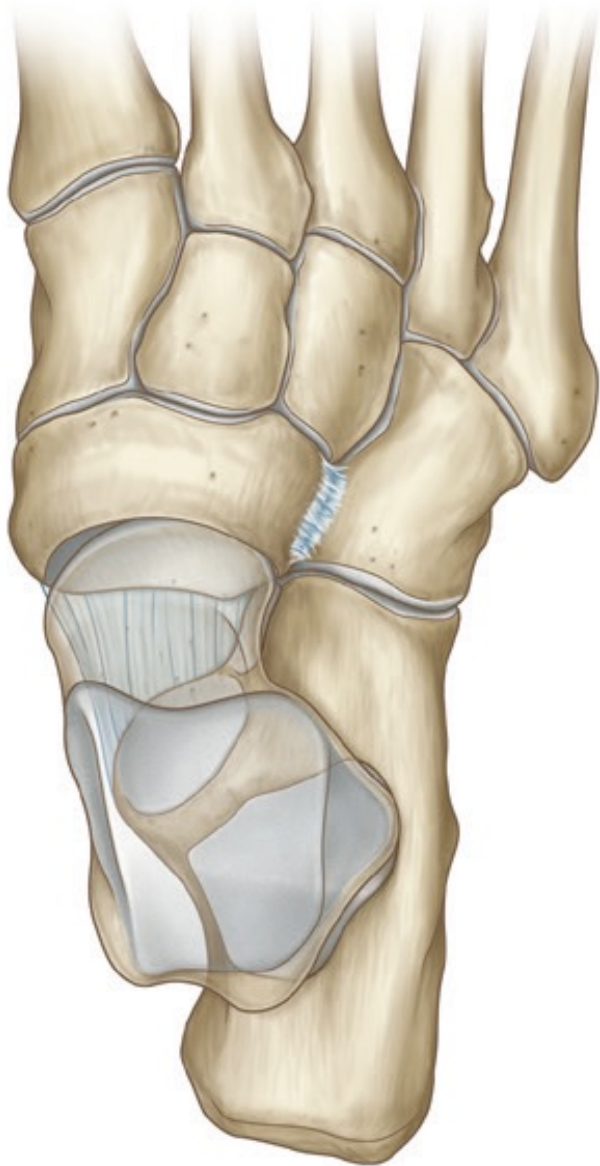
• Talus

• Calcaneus

• Os naviculare

• Os cuboideum

Articulatio tarsometatarsalis (Lisfranci)



- ♦ Ossa tarsi
- ♦ Os cuboideum
- ♦ Os cuneiforme laterale
- ♦ Os cuneiforme intermedium
- ♦ Os cuneiforme mediale
- ♦ Metatarsi

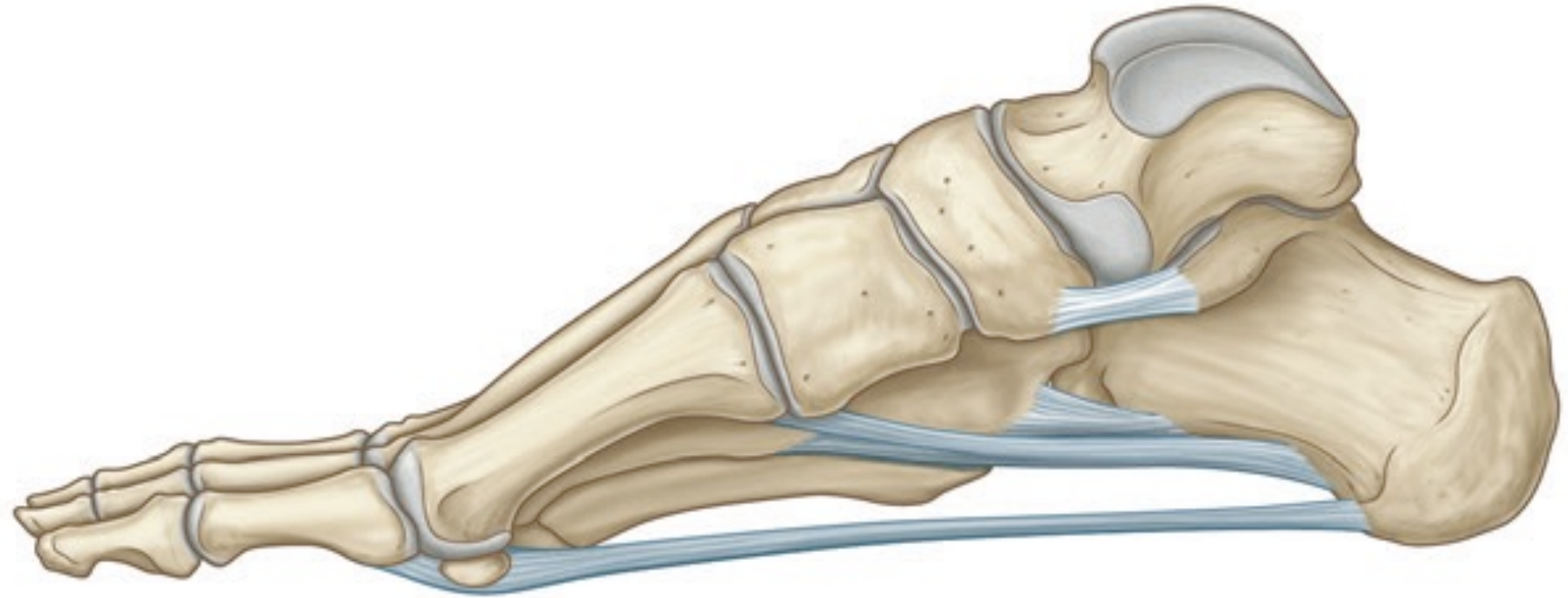
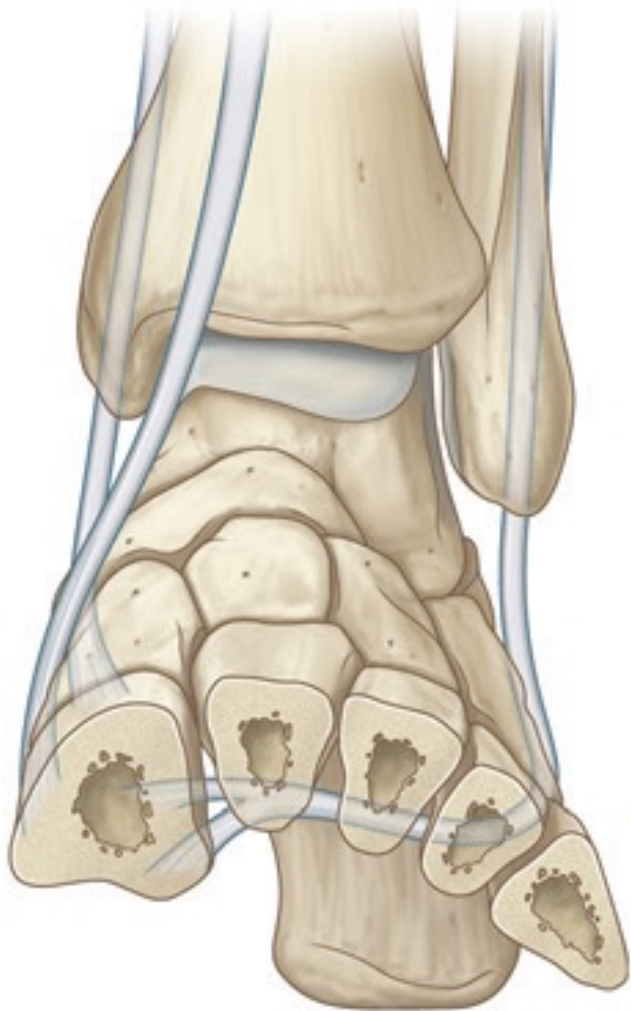
Excavation

- ♦ **longitudinal**

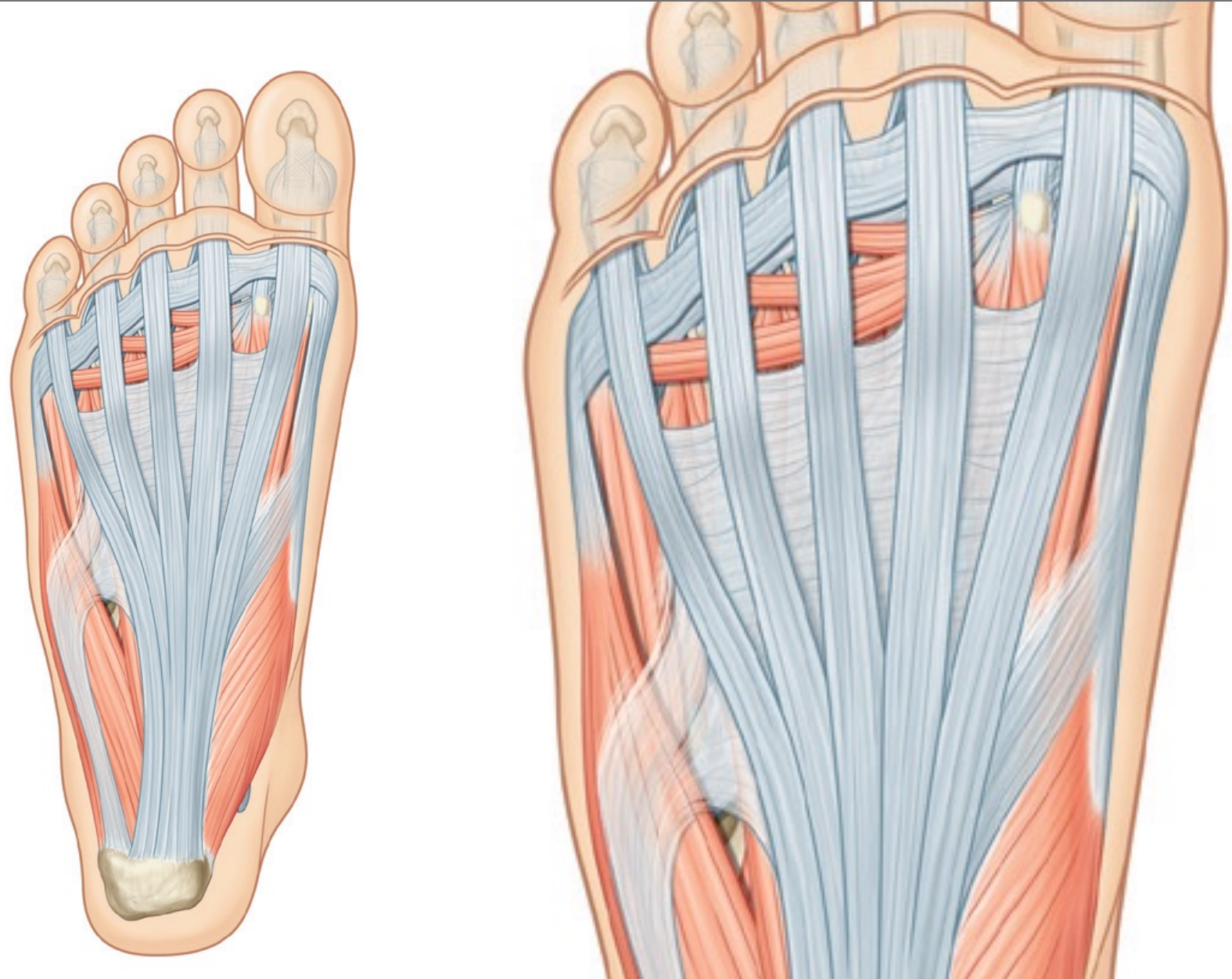
- ♦ Ligamenta plantaria breve et longum, aponeurosis plantaris

- ♦ **Transverse**

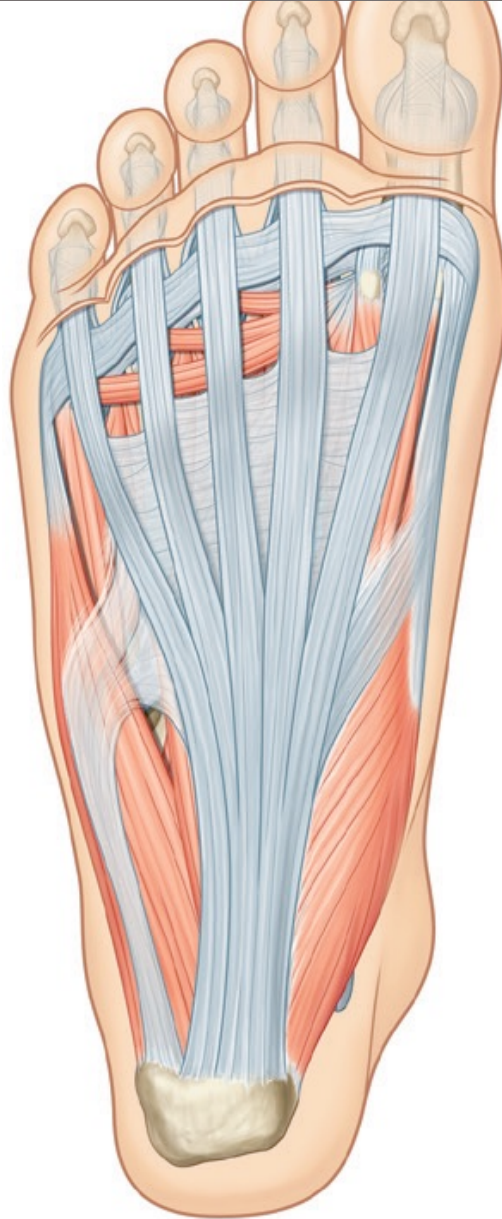
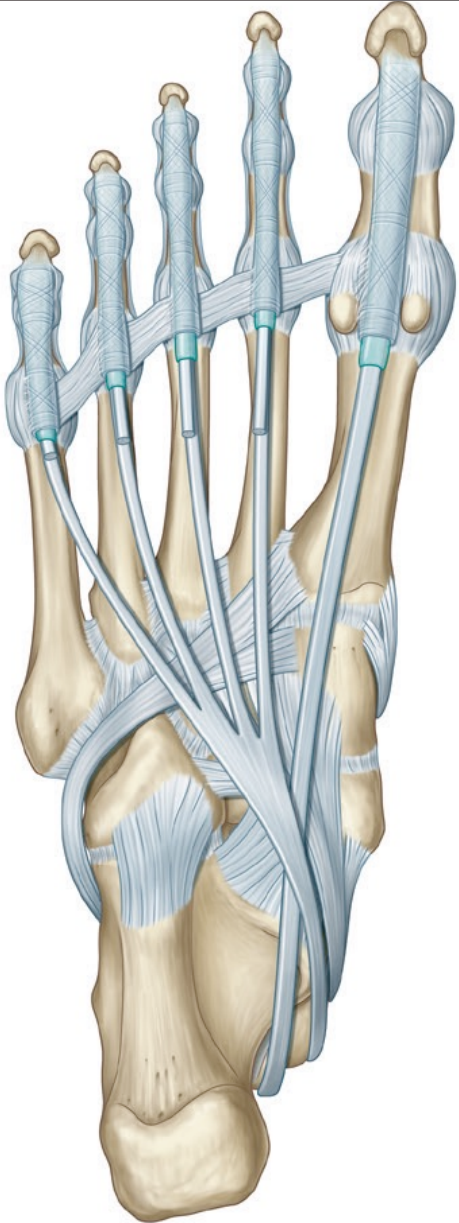
- ♦ M. tibialis anterior, posterior, m. fibularis longus (tendines)



Aponeurosis plantaris



Planta pedis



- ♦ **Aponeurosis plantaris**
- ♦ **Ligg. metatarsalia transversa superficialia**
- ♦ **M. tibialis posterior**
- ♦ **M. flexor digitorum longus**
- ♦ **M. flexor hallucis longus**
- ♦ **M. tibialis anterior**
- ♦ **Ligamenta plantaria**
- ♦ **Ligg. metatarsalia transversa profunda**