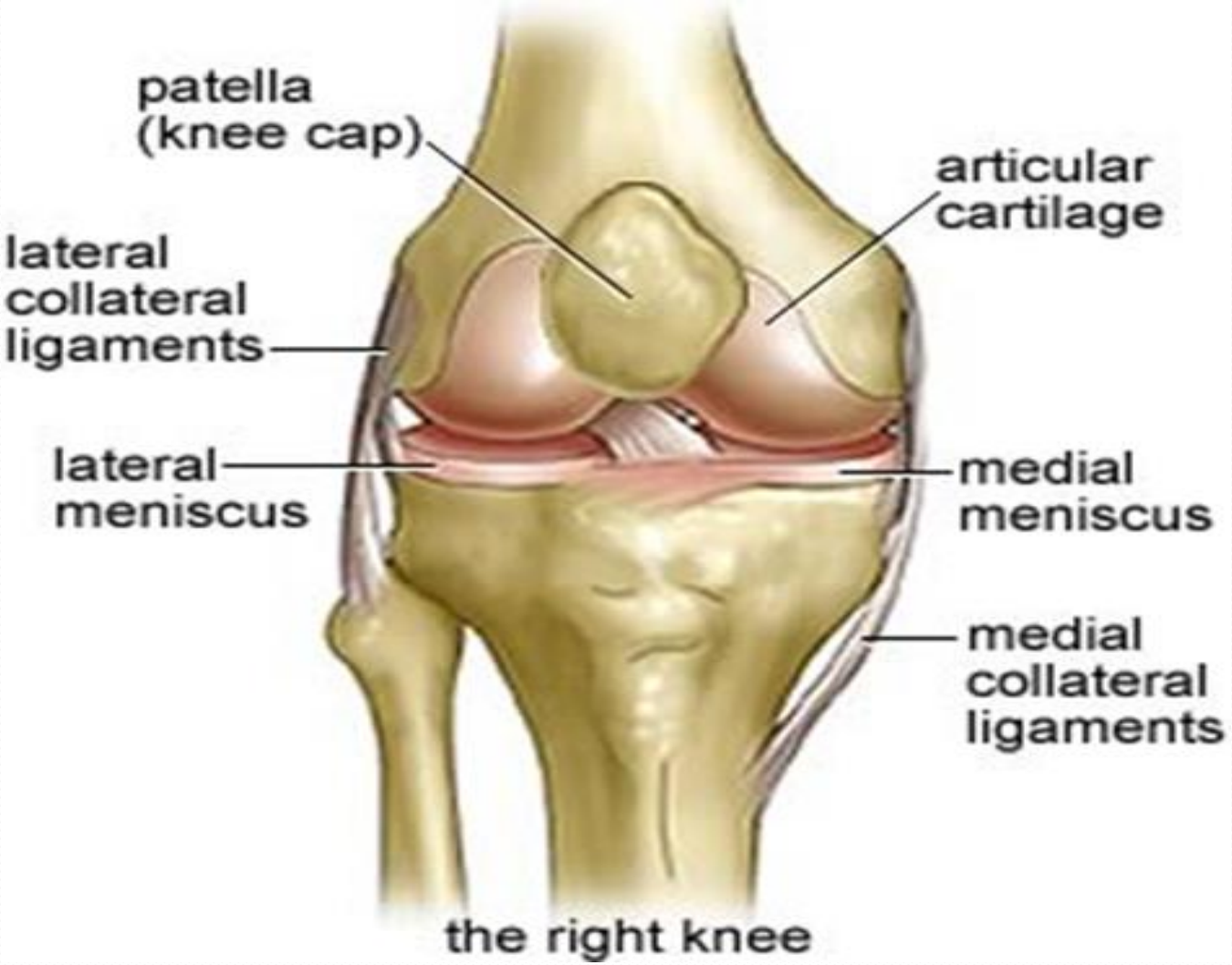
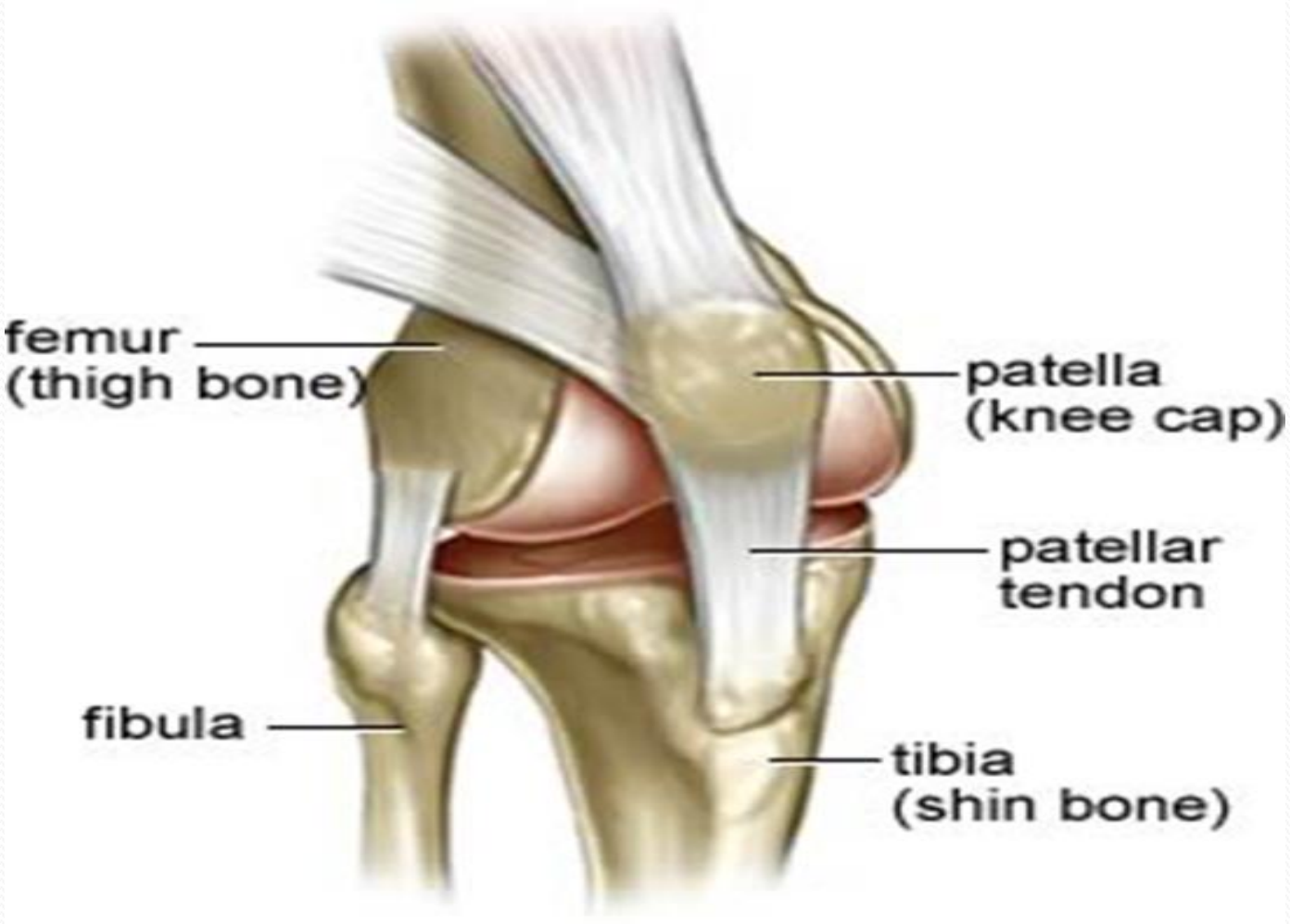
Joints of the Lower Limb and foot

Lec. 5

Knee Joint


patella
(knee cap)
articular
cartilage
lateral
collateral
ligaments
lateral
meniscus
medial
meniscus
medial
collateral
ligaments
the right knee


femur
(thigh bone)
patella
(knee cap)
patellar
tendon
fibula
tibia
(shin bone)

Knee joint

The knee joint is the largest and most complicated joint in the body.

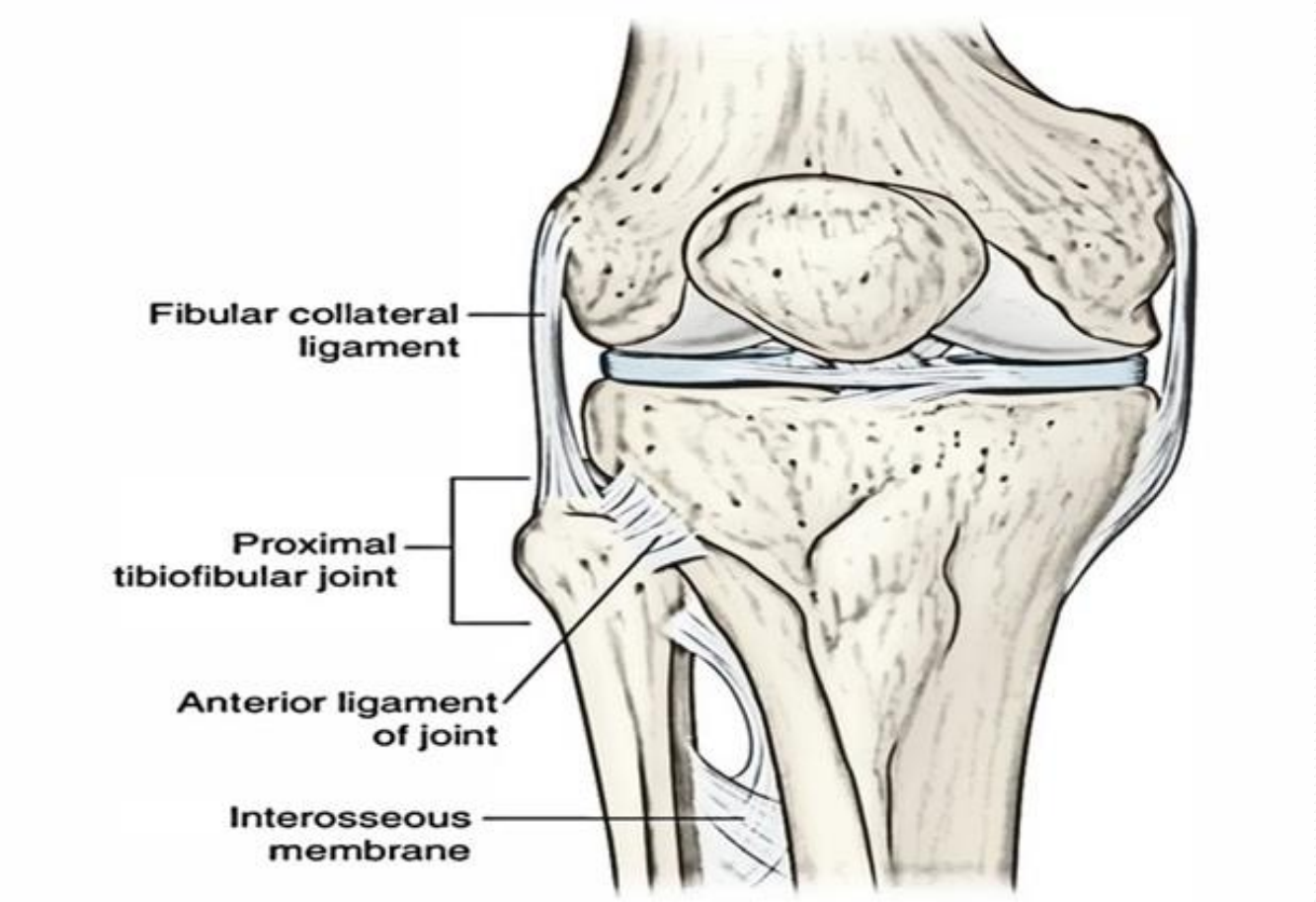
:Articulation

1_Above are the rounded condyles of the femur; below are the condyles of the tibia and their cartilaginous menisci

2-in front is the articulation between the lower

end of the femur and the patella.

Proximal Tibiofibular Joint:



Articulation:

Articulation is between the lateral condyle of the tibia and the head of the fibula .

Type:

This is a synovial, plane, gliding joint.

Distal Tibiofibular Joint

Articulation:

Articulation is between the lower end of the tibia and the lower end of the fibula .

Type:

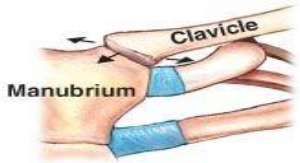
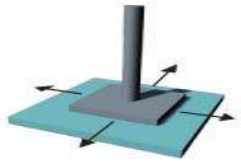
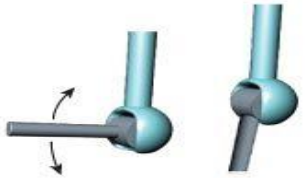
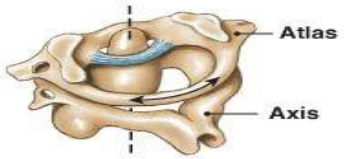
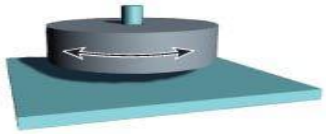
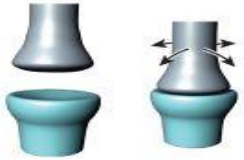
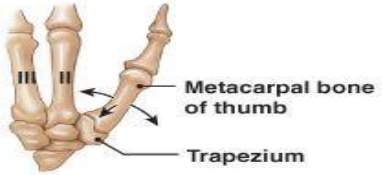
The distal tibiofibular joint is a fibrous joint.

Capsule:

There is no capsule.

Synovial joints are subdivided based on the shapes of the **articulating surfaces** of the **bones** that form each joint.

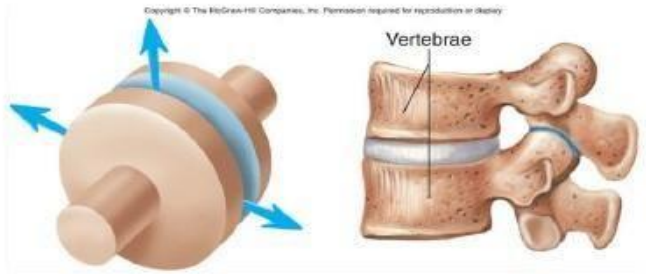
The anatomical types of synovial joints, with joint models and examples

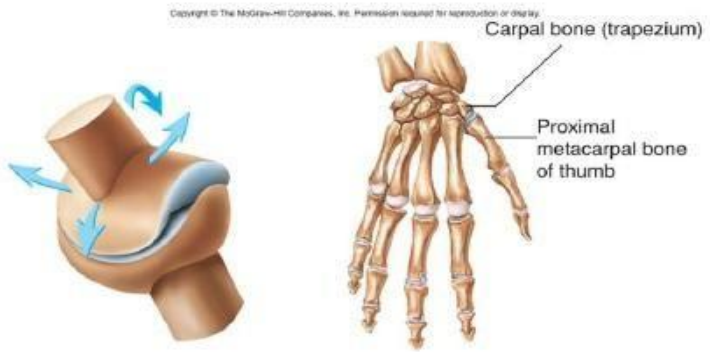
Types of Synovial Joints	Models of Joint Motion	Examples
Gliding joint 		• Acromioclavicular and sternoclavicular joints • Intercarpal and intertarsal joints • Vertebrocostal joints • Sacro-iliac joints
Hinge joint 		• Elbow joints • Knee joints • Ankle joints • Interphalangeal joints
Pivot joint 		• Atlas/axis • Proximal radio-ulnar joints
Ellipsoid joint 		• Radiocarpal joints • Metacarpophalangeal joints 2–5 • Metatarsophalangeal joints
Saddle joint 		• First carpometacarpal joints
Ball-and-socket joint 		• Shoulder joints • Hip joints

6 Types of Synovial Joints

Plane / Gliding

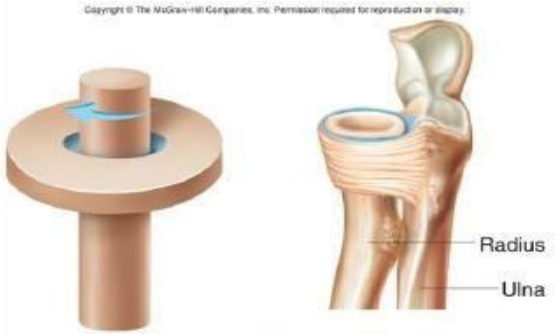
Saddle





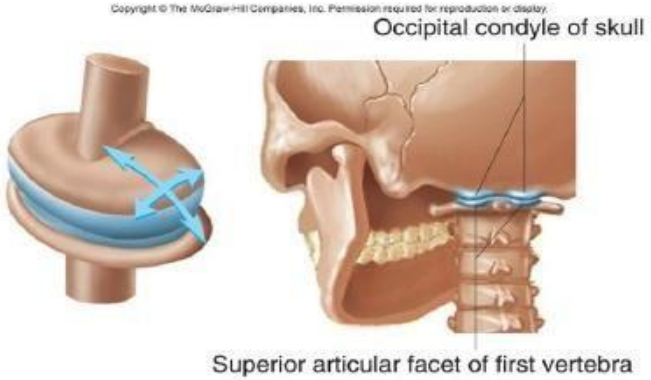
Hinge

Pivot



Ball-and-Socket

Ellipsoid



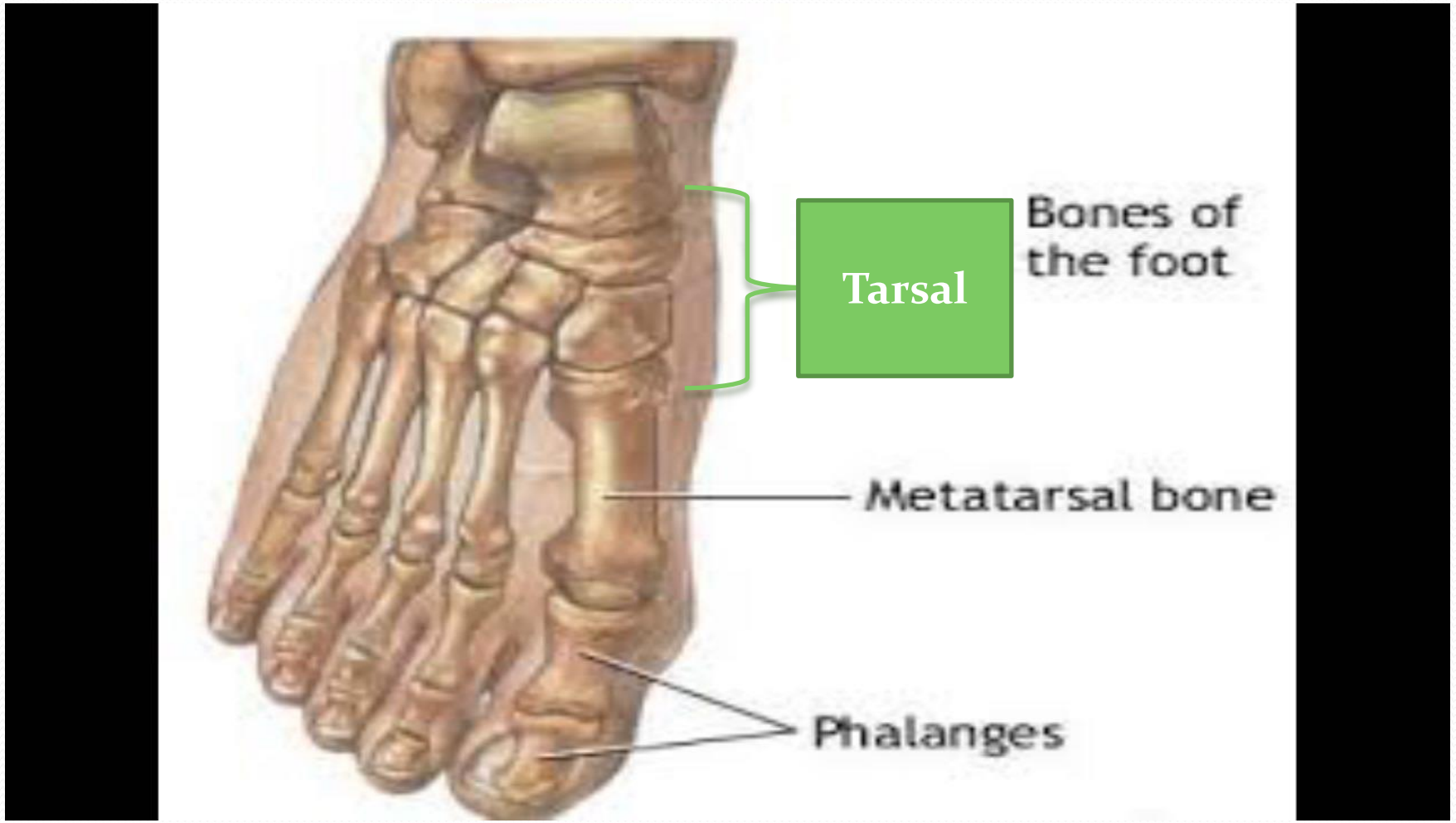
Plane joint (arthrodial **joint**, gliding joint, **plane** articulation) is a **synovial joint** which, under physiological conditions, allows only gliding movement.

The bones of the foot:

1-Tarsal bones

2-The metatarsals

3-The phalanges.



Tarsal Bones:

The tarsal bones are:

1- The calcaneum.

2- The talus.

3- The navicular.

4- The cuboid.

5- The three cuneiform bones.

.

Calcaneum:

The calcaneum is the largest bone of the foot and forms the prominence of the heel.

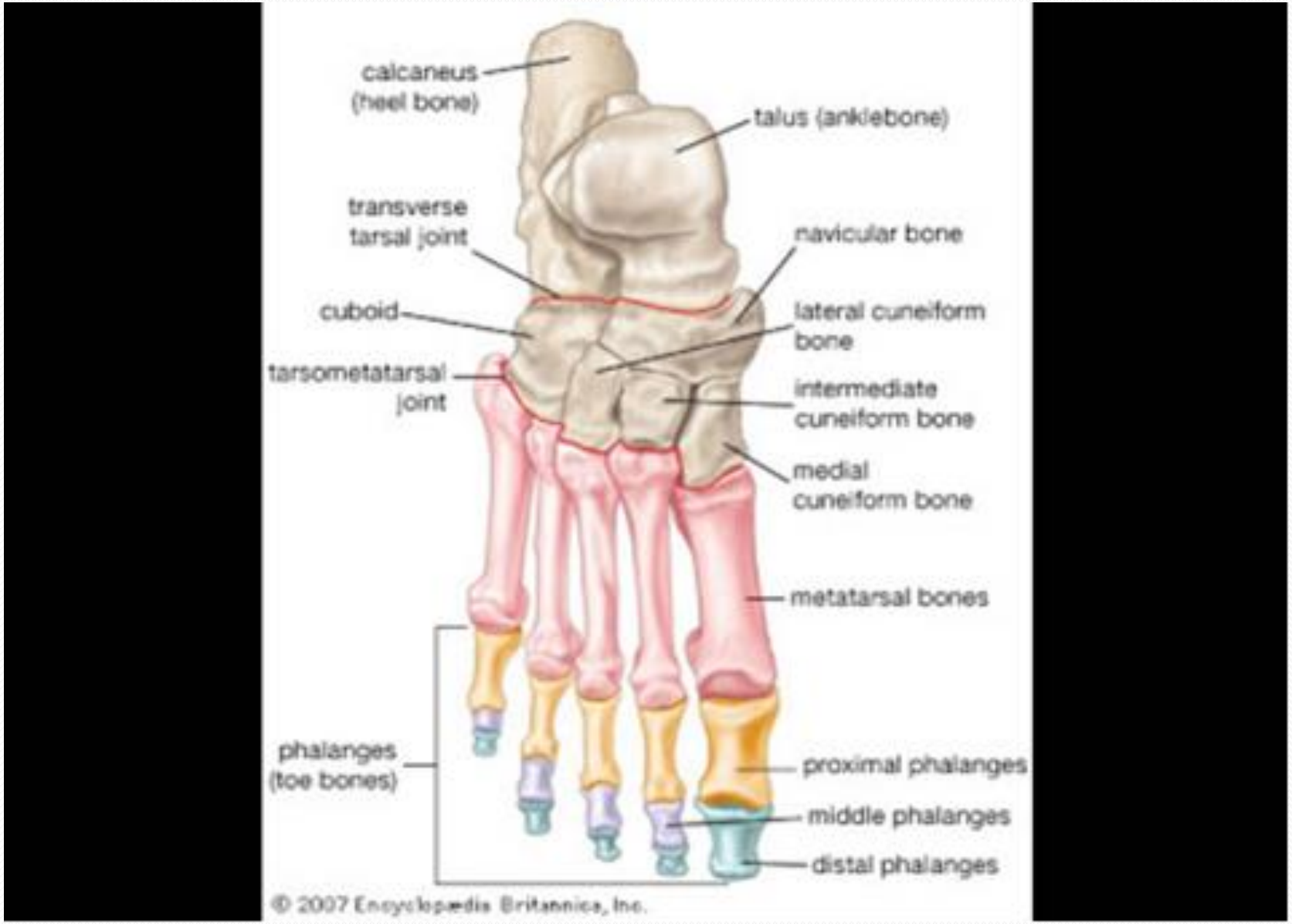
Talus:

The talus articulates above at the ankle joint with the tibia and fibula.

It possesses a head, a neck , and a body.

Cuneiform Bones:

The three small, wedge-shaped cuneiform bones.


calcaneus (heel bone)
talus (anklebone)
transverse tarsal joint
navicular bone
cuboid
lateral cuneiform bone
tarsometatarsal joint
intermediate cuneiform bone
medial cuneiform bone
metatarsal bones
phalanges (toe bones)
proximal phalanges
middle phalanges
distal phalanges
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Metatarsal Bones and Phalanges:

The metatarsal bones and phalanges each had a head, shaft, and base.

Each toe has **three** phalanges except the big toe, which possesses only **two**.

:Ankle Joint

Articulation:

Articulation is between the lower end of the tibia, the two malleoli, and the body of the talus.

Type:

The ankle is a synovial joint.

Tarsometatarsal joint:

Articulation:

Between tarsal and metatarsal bone

Type:

synovial joints .

The arches of the foot:

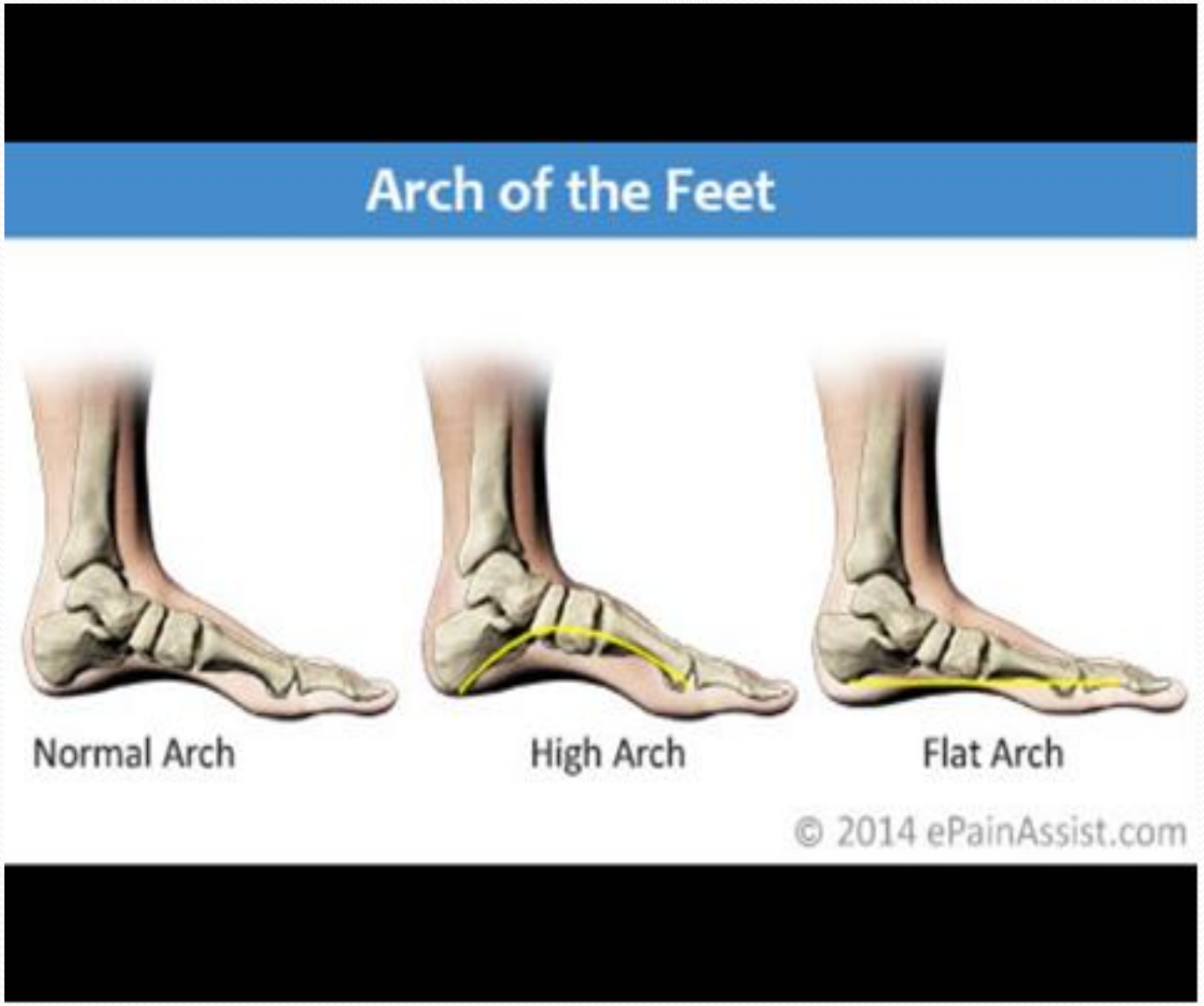
The arches are maintained by the shape of the bones of the foot, the ligaments and muscles, particularly of the plantar surface.

Arch of foot:

1- Normal arch

2- High arch

3- Flat arch



- **THE END**