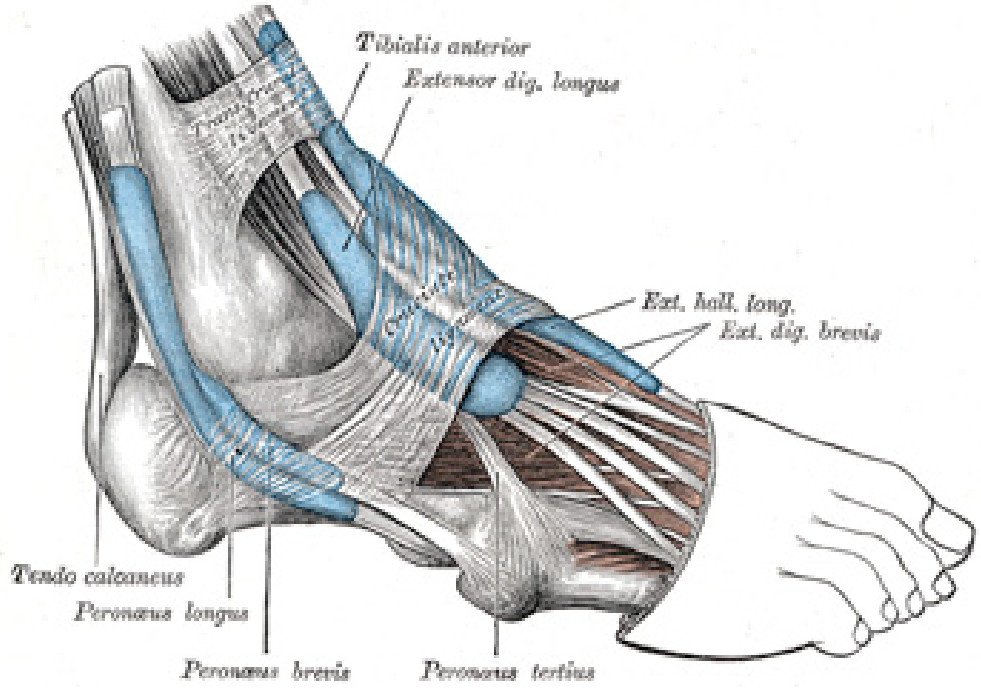
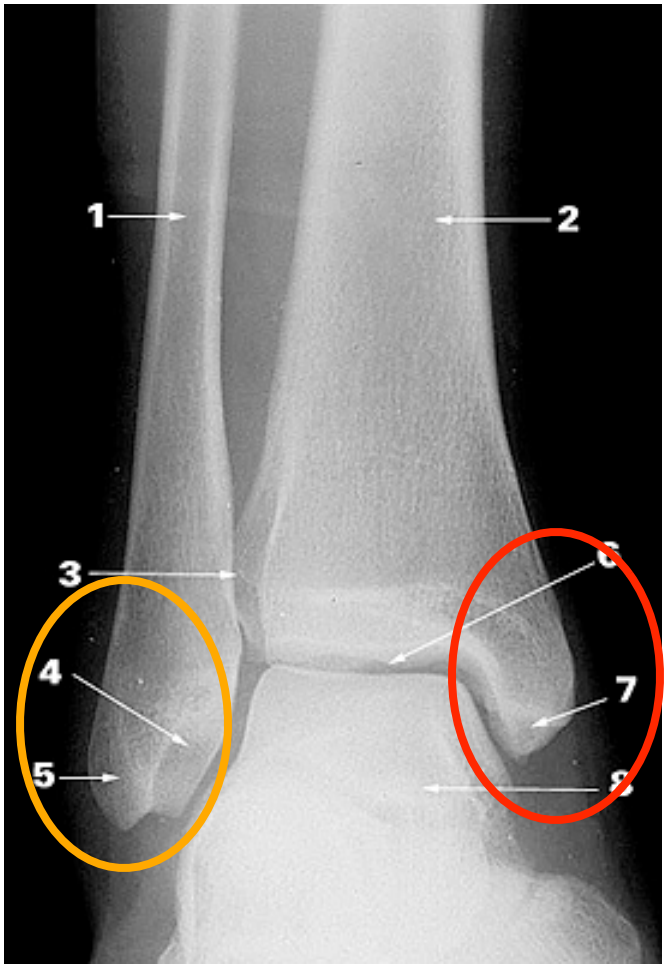
THE ANKLE AND FOOT



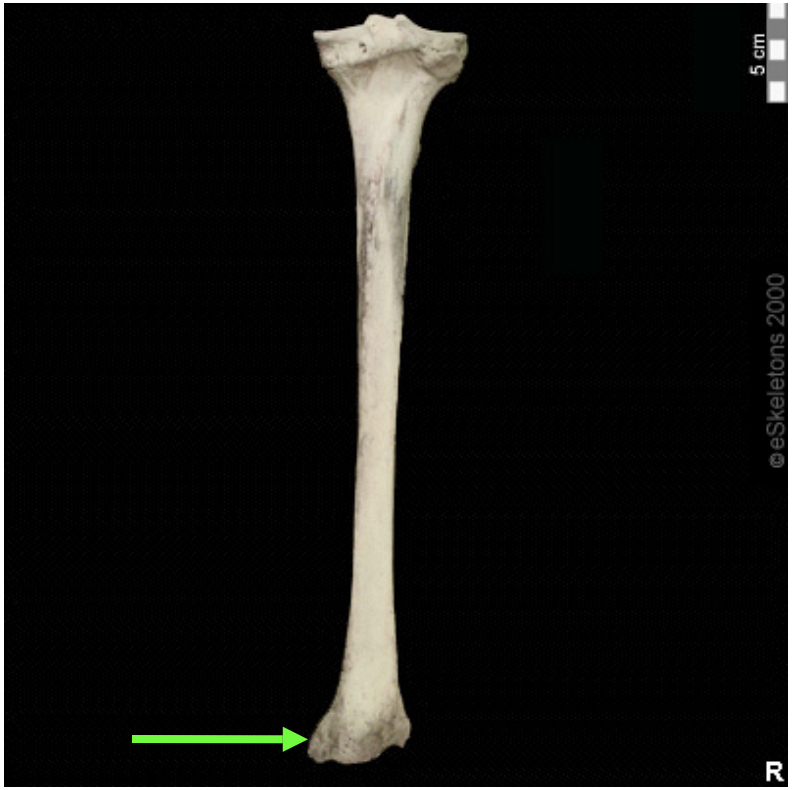
BONES

- A. Tibia
  - medial malleolus
- B. Fibula
  - lateral malleolus



Tibia

- Medial Malleolus

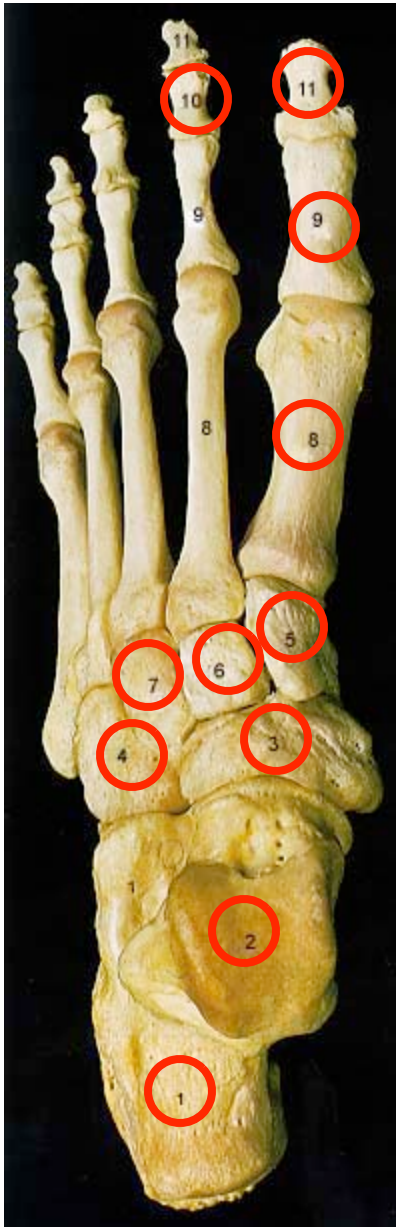


Fibula

- Lateral malleolus

BONES OF THE FOOT

- Tarsal bones
  - 1. Calcaneous
  - 2. Talus
  - 3. Navicular
  - 4. Cuboid (lateral, articulates with 4 and 5 metatarsals)
  - 5-7. Cuneiforms (medial, intermedial and lateral; articulate w/ 1-3 metatarsals)
- 8. Metatarsals (1-5 from the medial to lateral side)
- 9-11. Phalanges (distal, middle, proximal)



- Tarsal bones
  - 1. Calcaneous
  - 2. Talus
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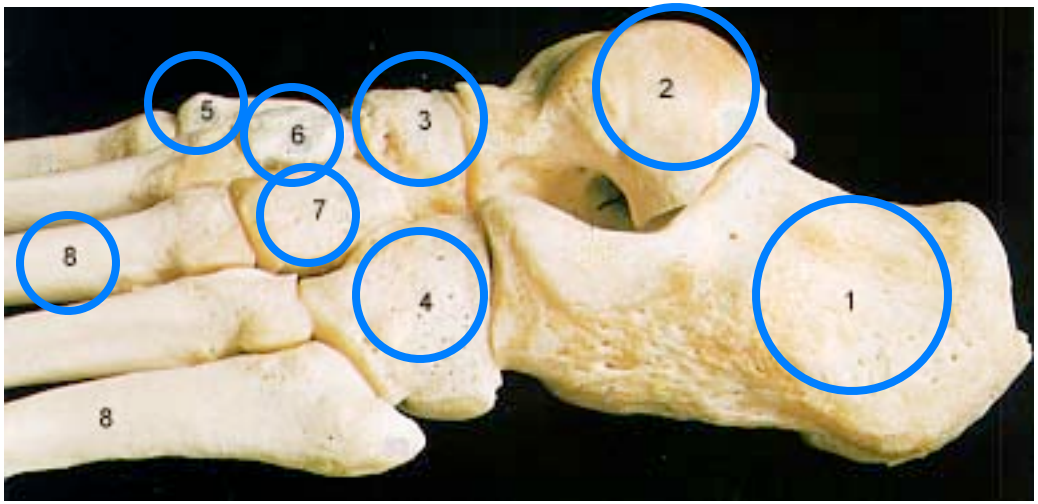
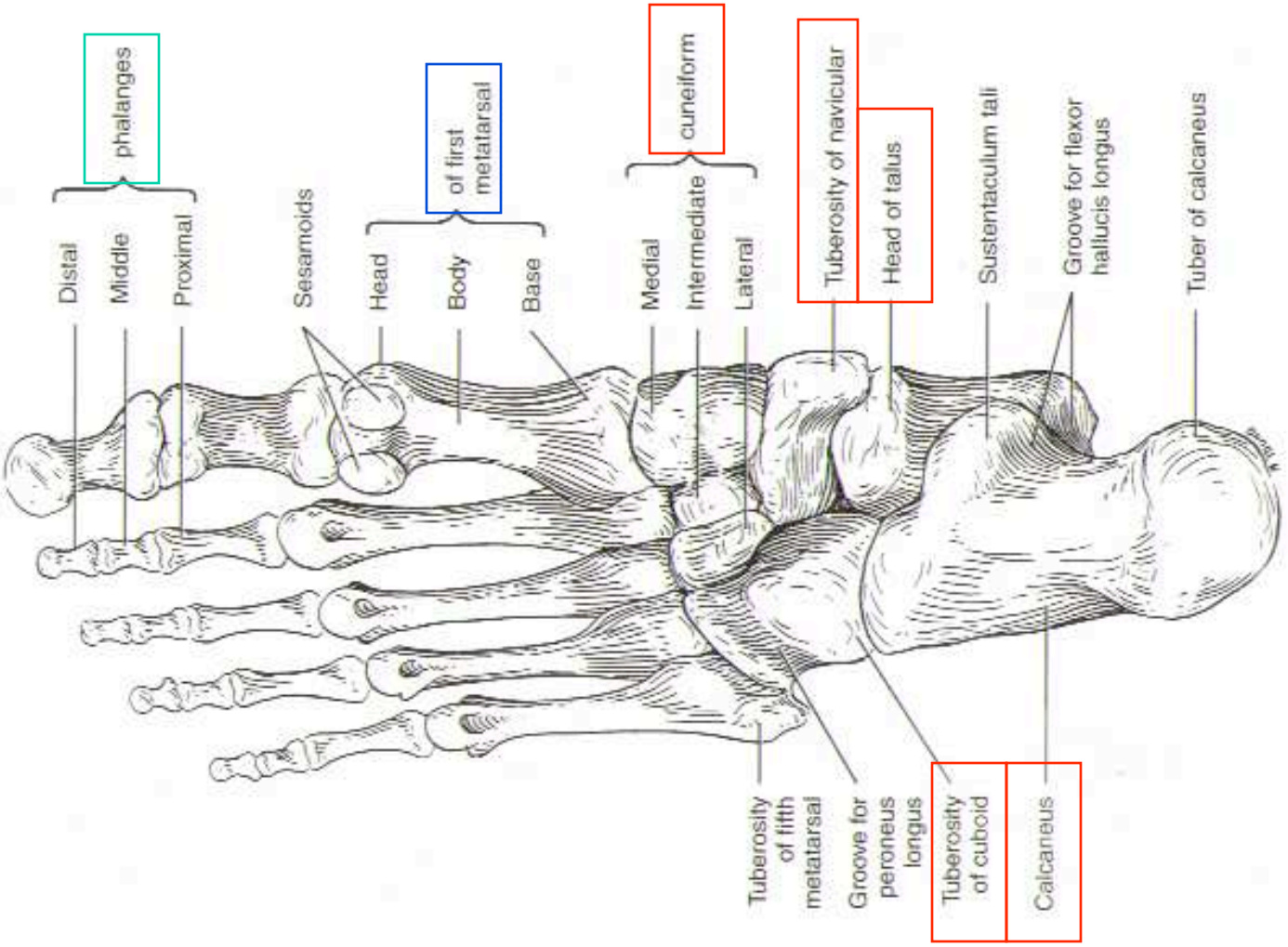


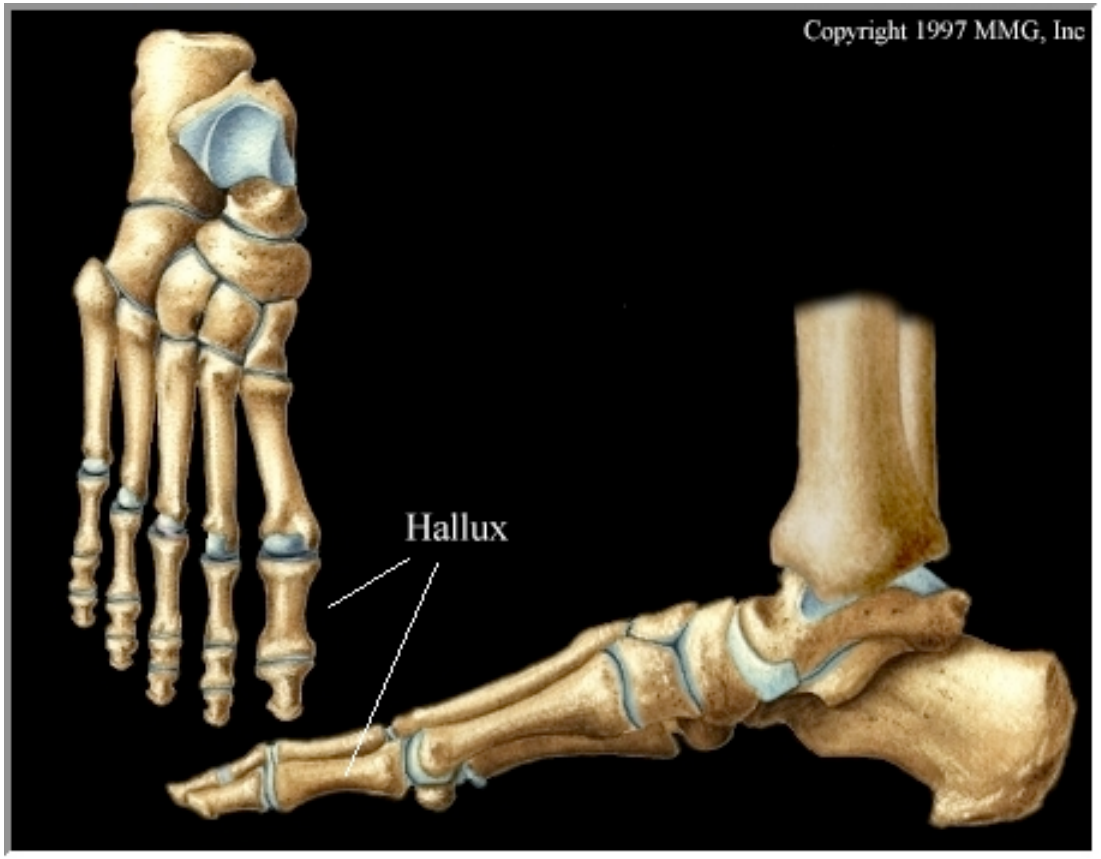
Phalanges

Tarsal bones

Metatarsals



Hallux or Great Toe



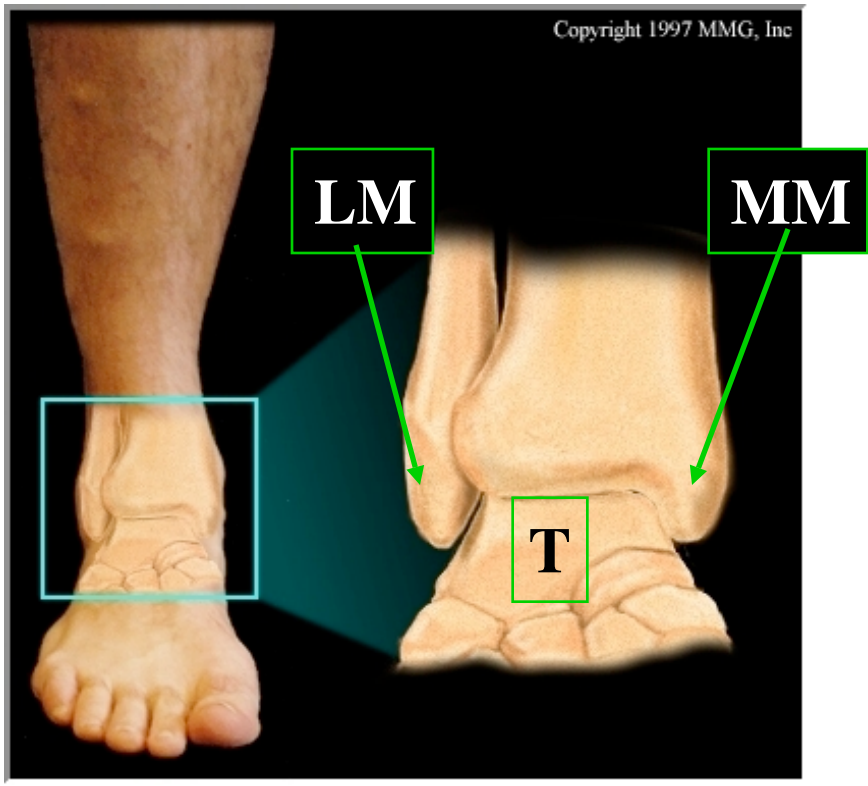
What's wrong with this picture?

JOINTS

- 33 joints and 26 bones.
- Two major joints

1. The Ankle Joint

- A hinge joint which is formed by the articulation of the TALUS with the MALLEOLI of the tibia and fibula.
- Planter flexion and dorsal flexion primarily occur here.



JOINTS

2. Subtalar Joint

- Articulation between the TALUS and CALCANEUS.
- Inversion and eversion primarily occur here.

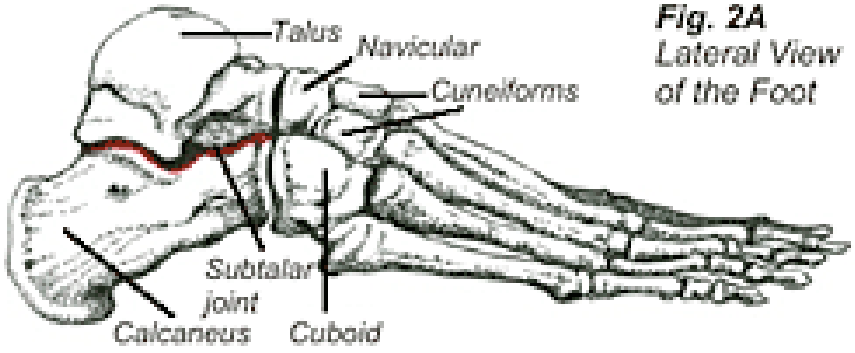


Fig. 2A
Lateral View of the Foot

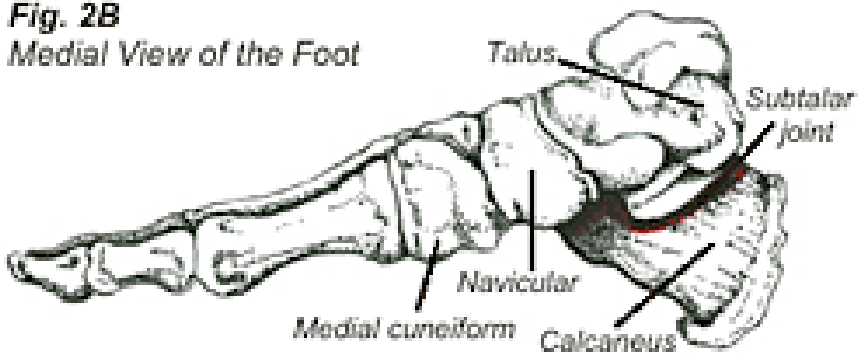
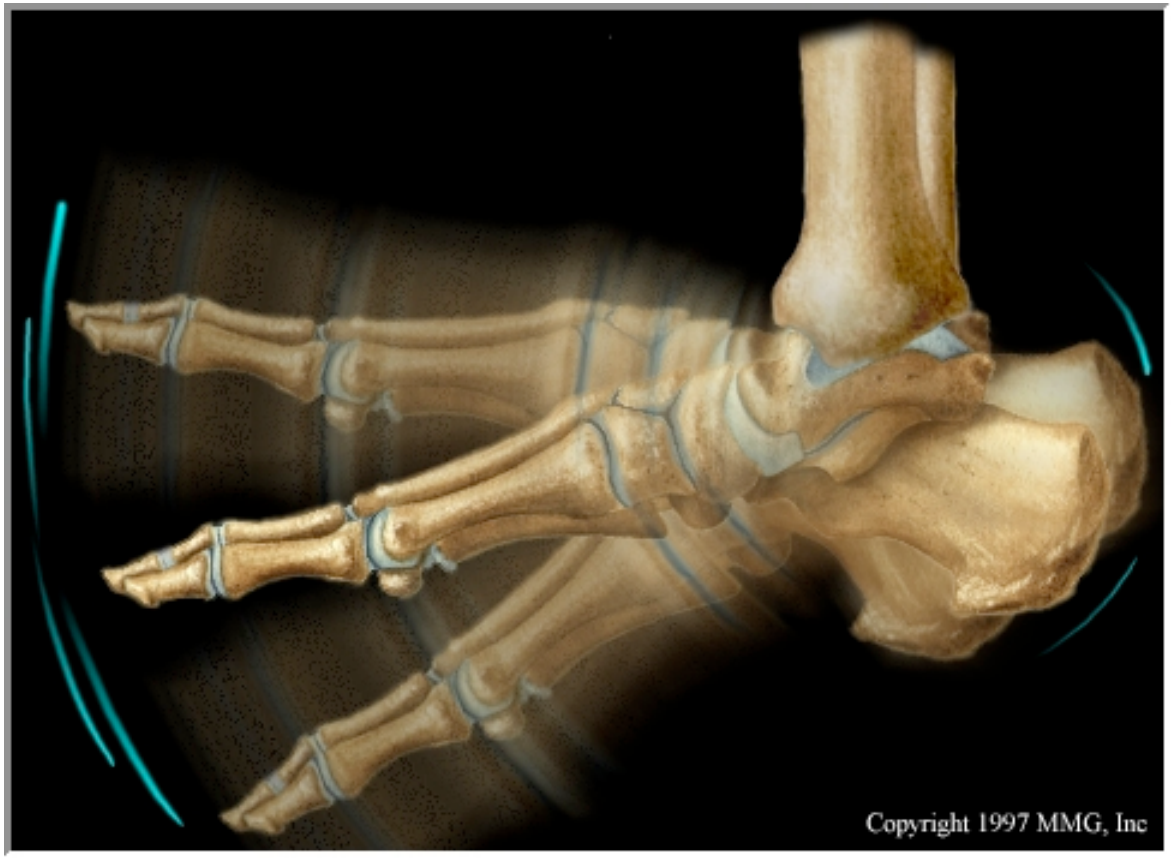


Fig. 2B
Medial View of the Foot

MOVEMENTS

Dorsal flexion
[15-20°]

Plantar flexion
[50°]



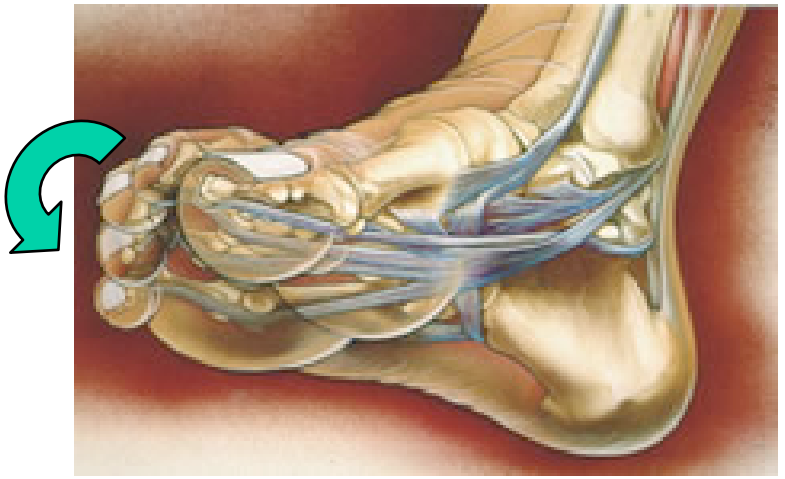
MOVEMENTS

- **Inversion** - raising medial border (20-30°)
  - Supination is similar to Inversion + plantar flexion + adduction (toe in)
- **Eversion** - raising lateral border (5-15°)
  - Pronation is similar to Eversion + dorsal flexion + abduction (toe out)

Inversion **Eversion**

MOVEMENTS

- Toe flexion

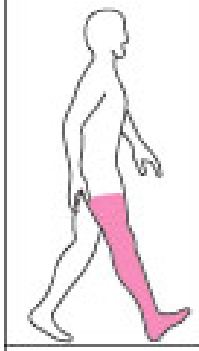
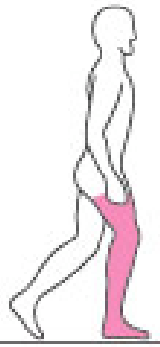
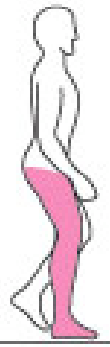
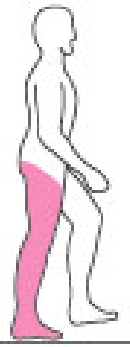
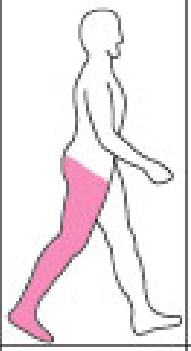
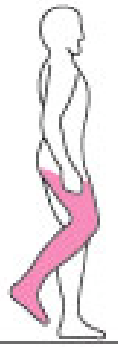
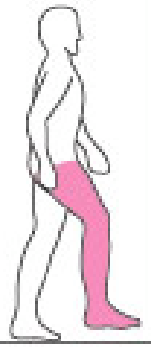
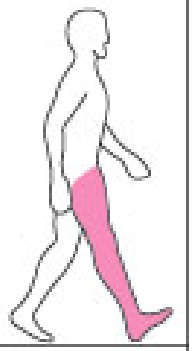


- Toe extension

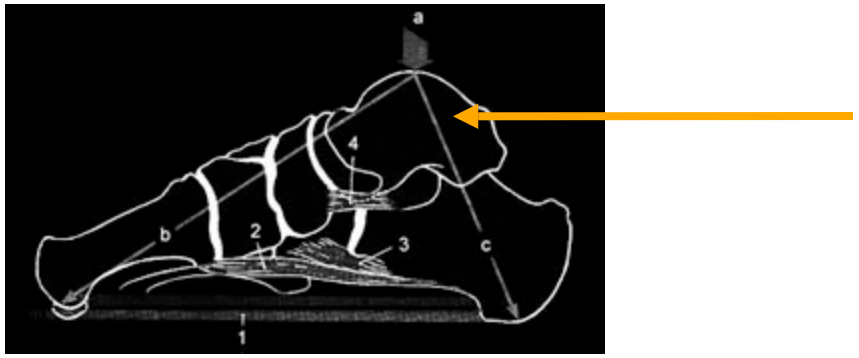
Movements

- Supination
  - Plantar flexion
  - Inversion
  - Forefoot adduction (toe-in)
- Pronation
  - Dorsiflexion
  - Eversion
  - Forefoot abduction (toe-out)

Walking Gait Cycle

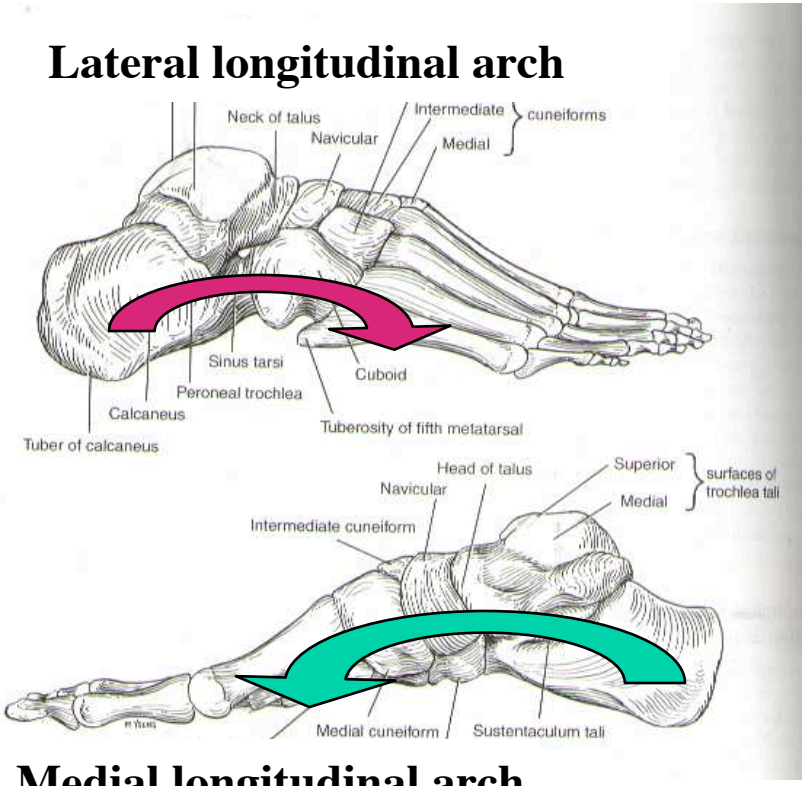
Stance Phase (60% of total)					Swing Phase		
							
Initial Contact (heel contact)	Loading Response	Midstance	Terminal Stance	Pre Swing (toe-off)	Initial Swing	Midswing	Terminal Swing
External Rotation of Tibia	Internal Rotation of Tibia			External Rotation of Tibia			
Supination	Pronation			Supination			

STRUCTURE OF THE FOOT



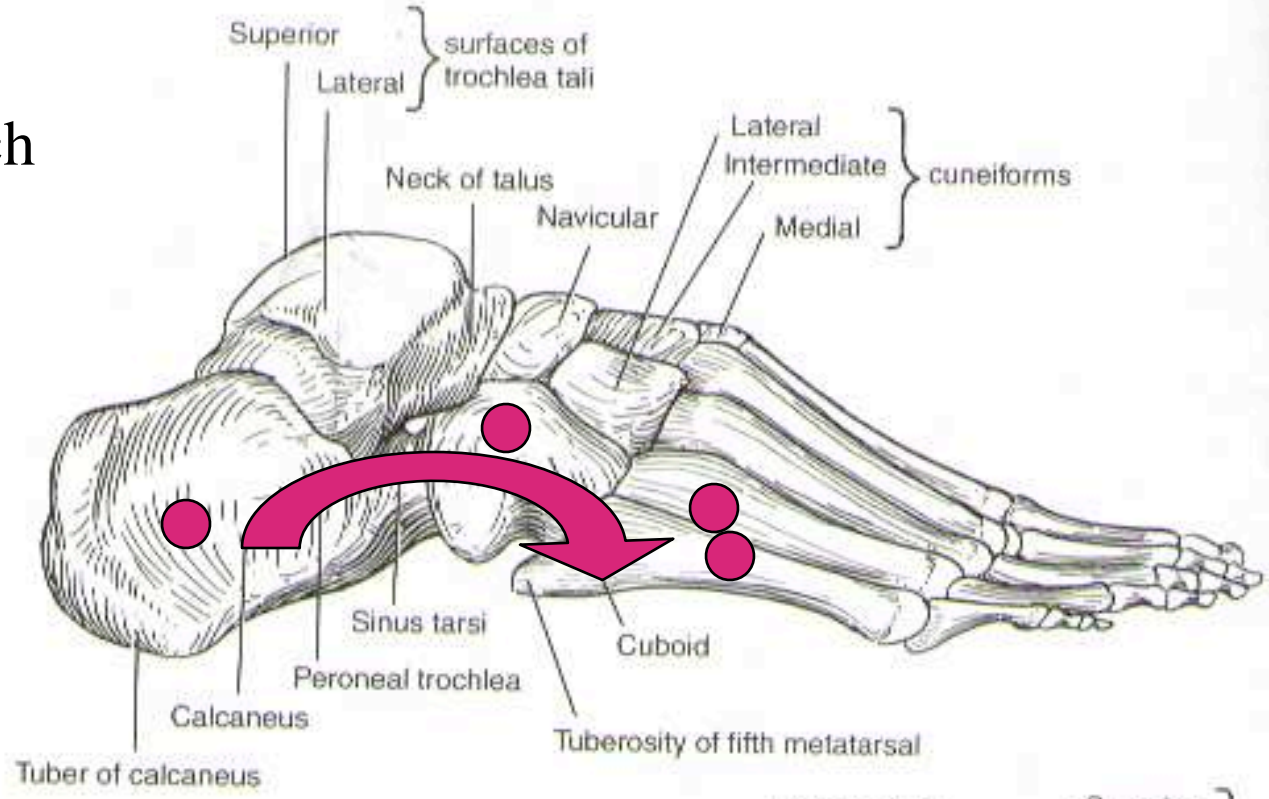
- The foot as a whole is usually described as an elastic arched structure, the keystone of the arch being the talus.
- The talus receives and transmit the entire weight of the body.

ARCHES



- Longitudinal arches
  - **Lateral longitudinal arch** - calcaneous, cuboid, and 4 and 5 metatarsals.
  - **Medial longitudinal arch** - calcaneous, talus, navicular, 3 cuneifroms, 3 med. metatarsals

Lateral Arch



Medial Arch

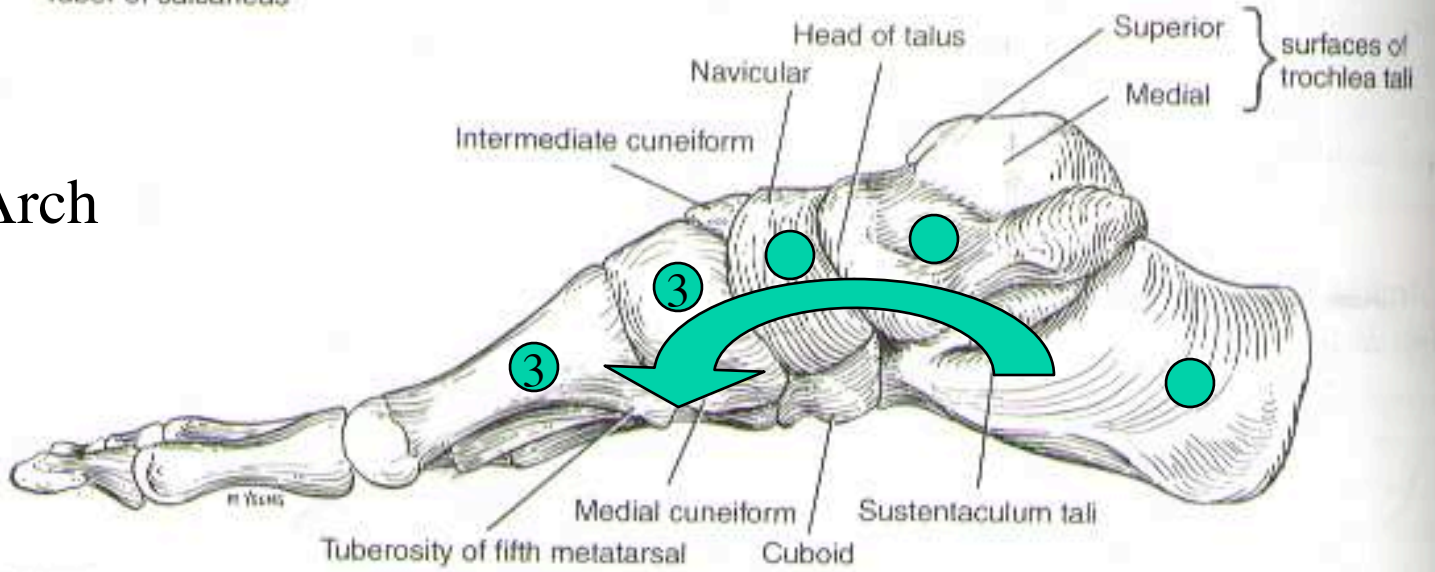
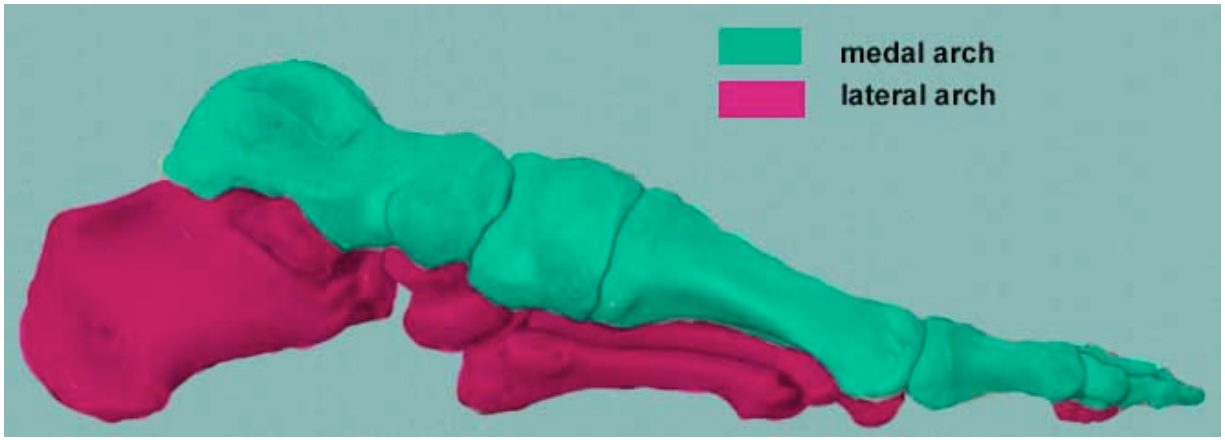
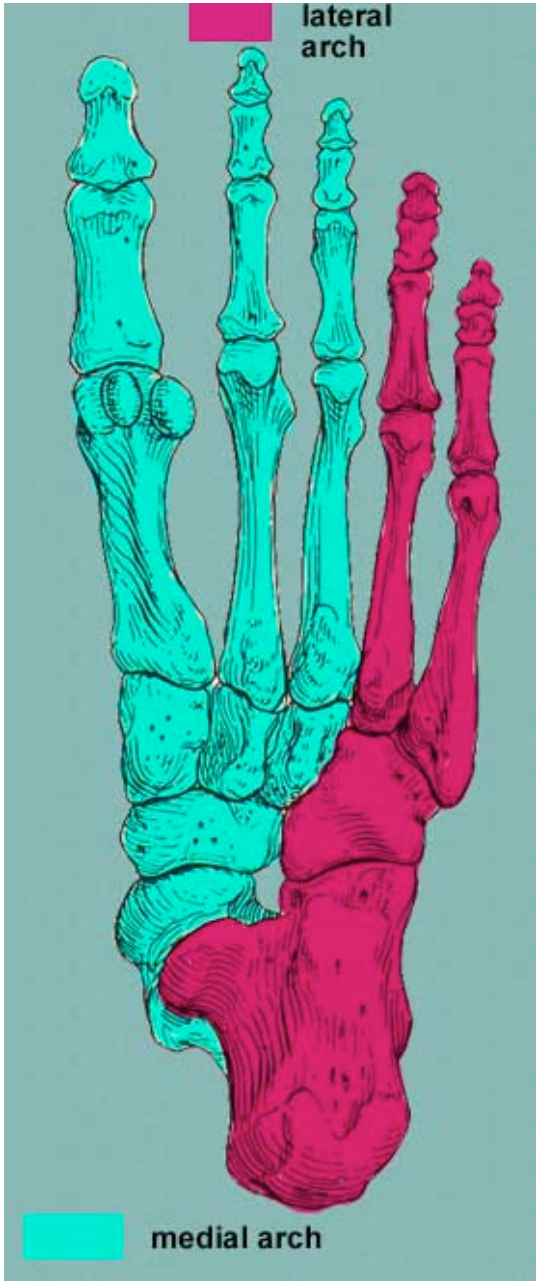


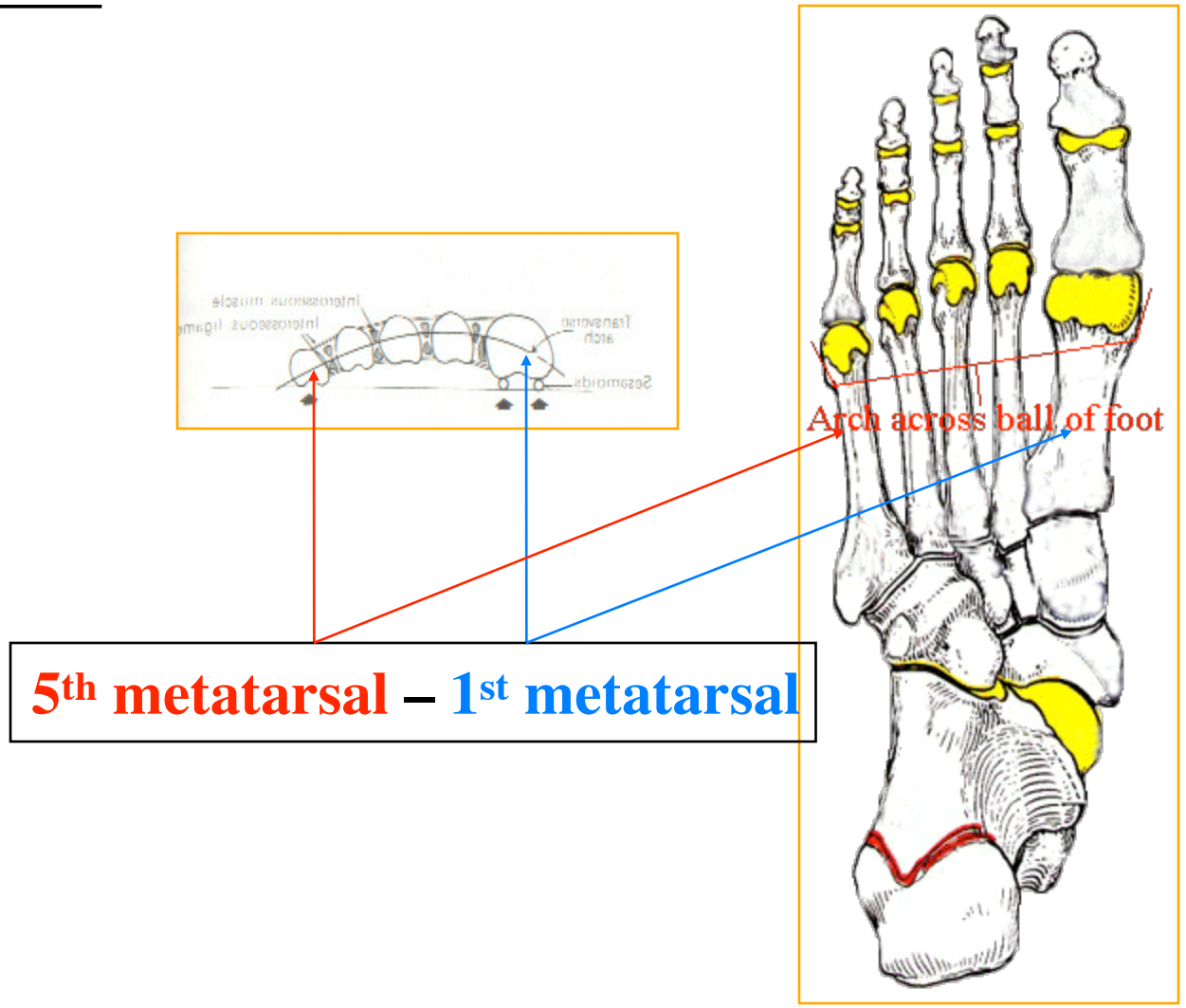
FIGURE 20–2

- Longitudinal arches
- Lateral - calcaneous, cuboid, and 4th and 5th metatarsals.
- Medial - calcaneous, talus, navicular, 3 cuneifroms, 3 medial metatarsals

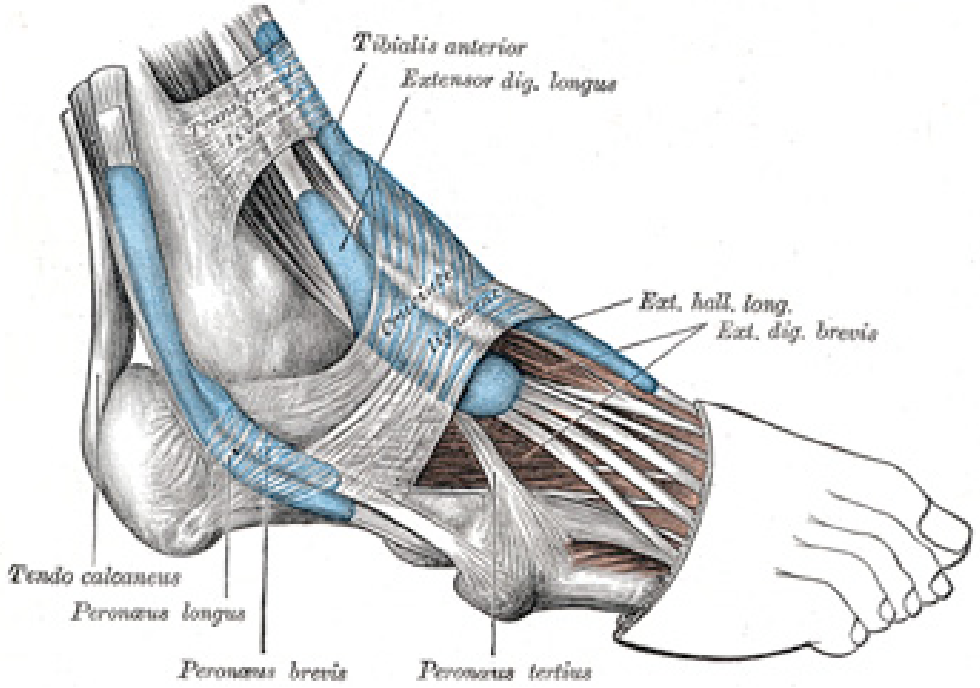




Transverse arch - anterior tarsal bones and the metatarsals.

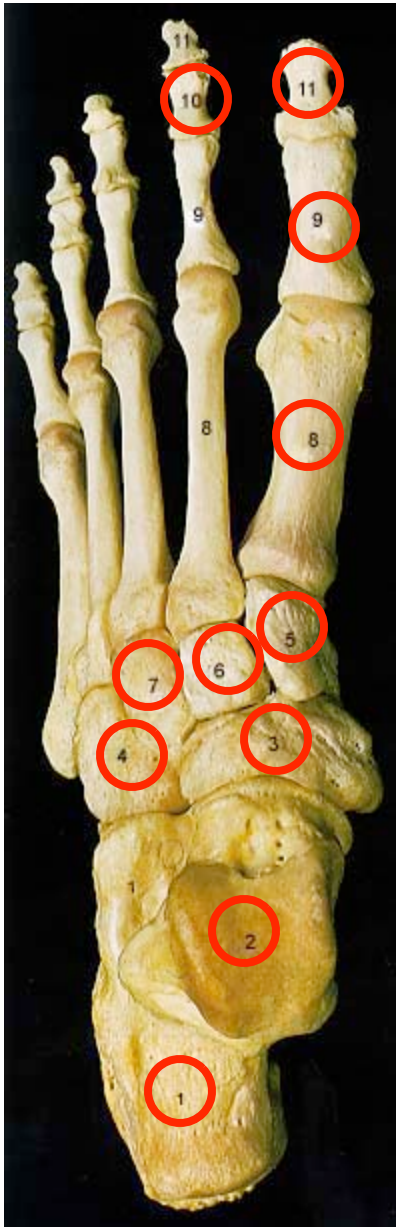


REVIEW of the ANKLE and FOOT



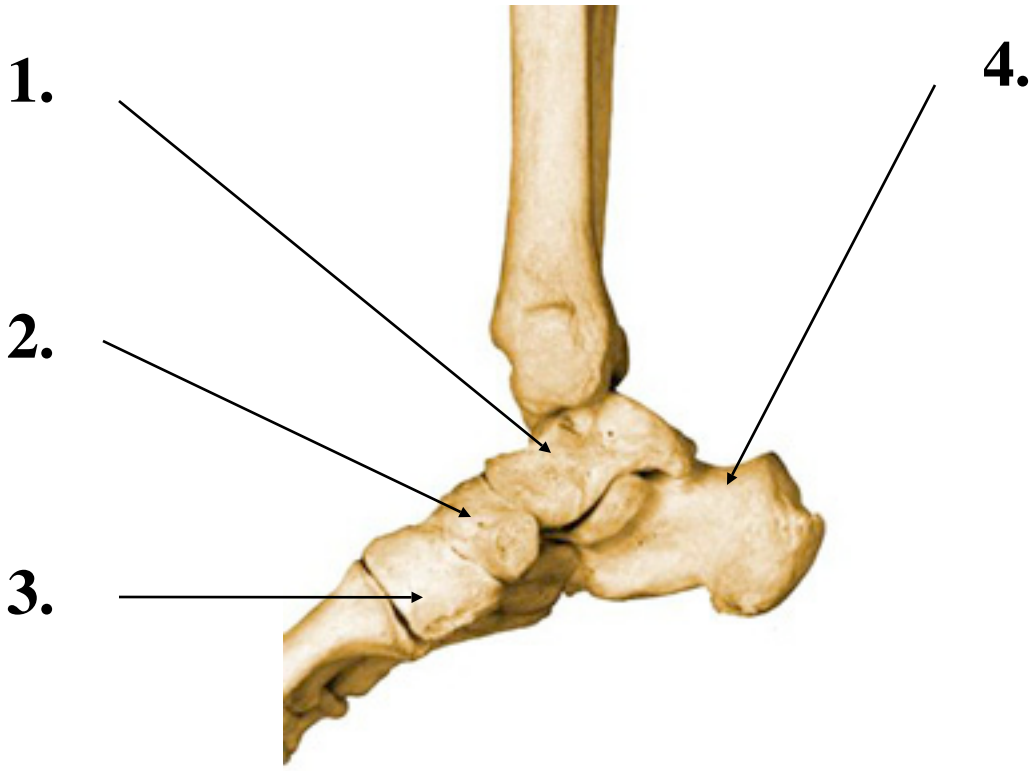
- 1 is the…?
- Calcaneous
- 2 is the…?
- Talus
- 3 is the…?
- Navicular
- 4 is the…?
- Cuboid
- 5 is the…?
- First Cuneiform

- 6 is the…?
- Second Cuneiform
- 7 is the…?
- Third Cuneiform
- 8 is the…?
- First metatarsal
- 9 is the…?
- Proximal phalange
- 10 is the…?
- Middle phalange
- 11 is the…?
- Distal phalange



- Name the landmark

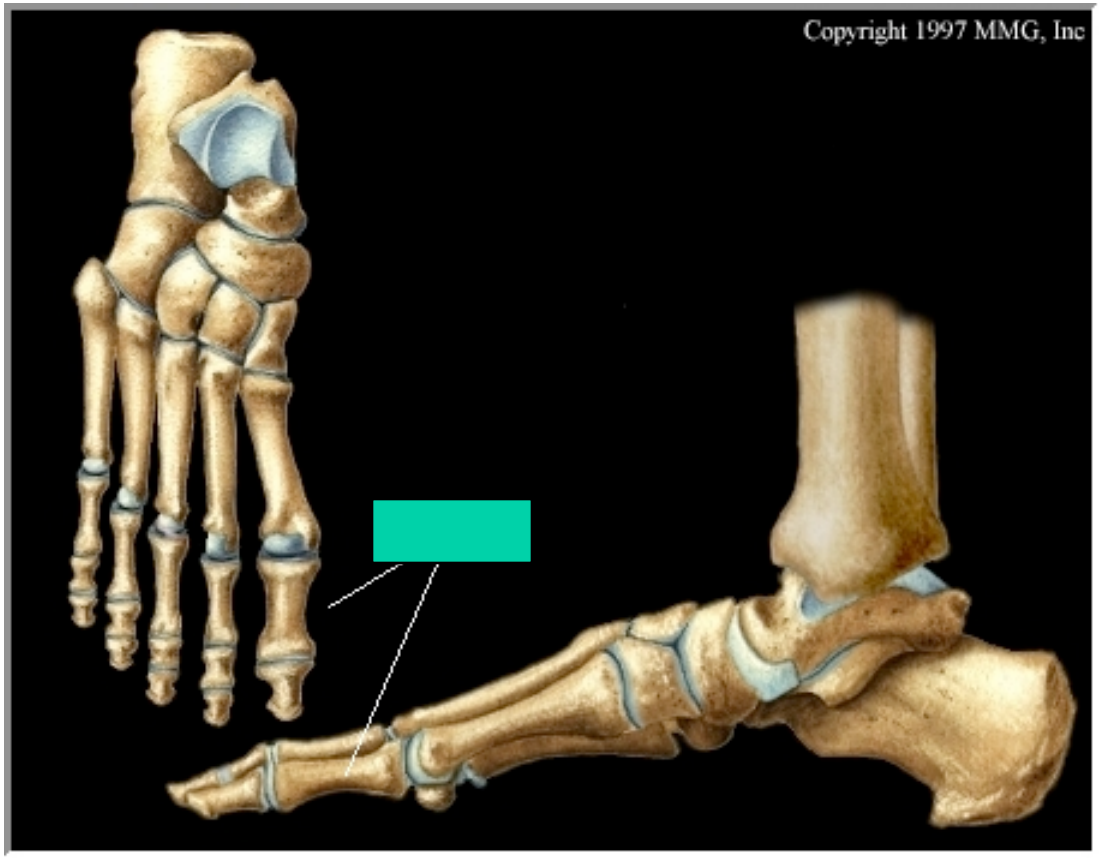
Lateral Malleolus



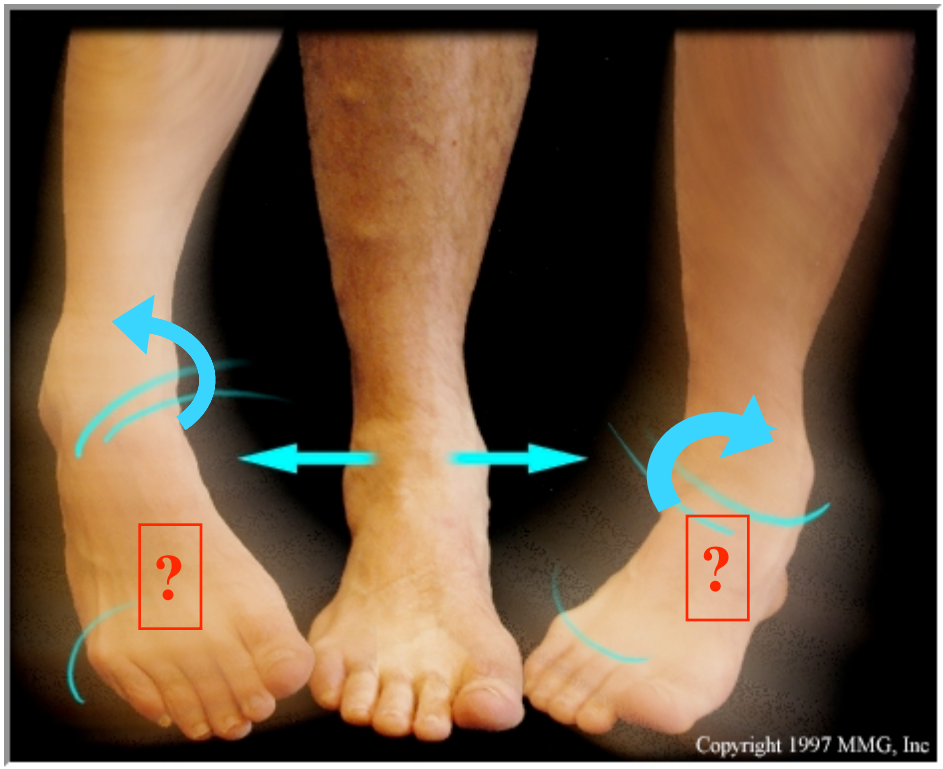
Medial view

1?
Talus
2?
Navicular
3?
1st Cuneform
4?
Calcaneous

What term refers to the great toe? Hallux or Hallicus



Name the actions



Inversion

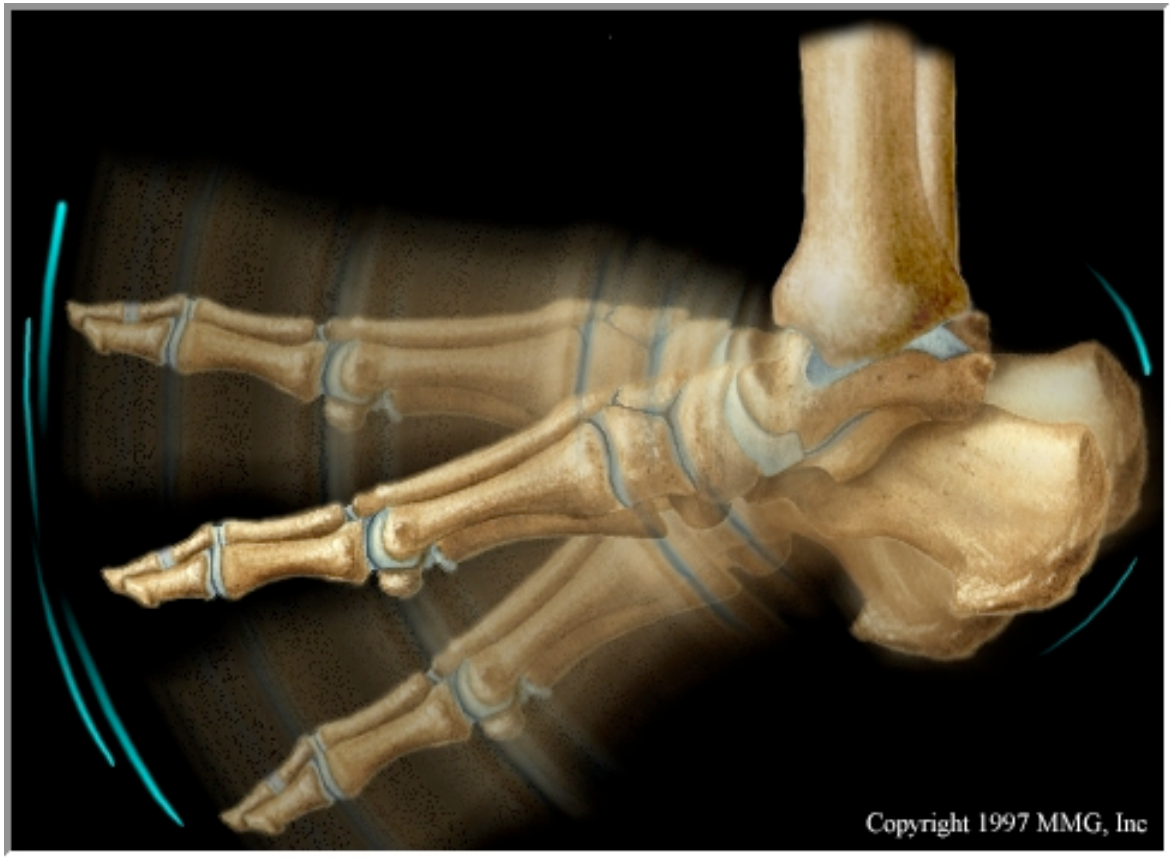
Eversion

Name the two movements at the toes

- Toe flexion
- Toe extension

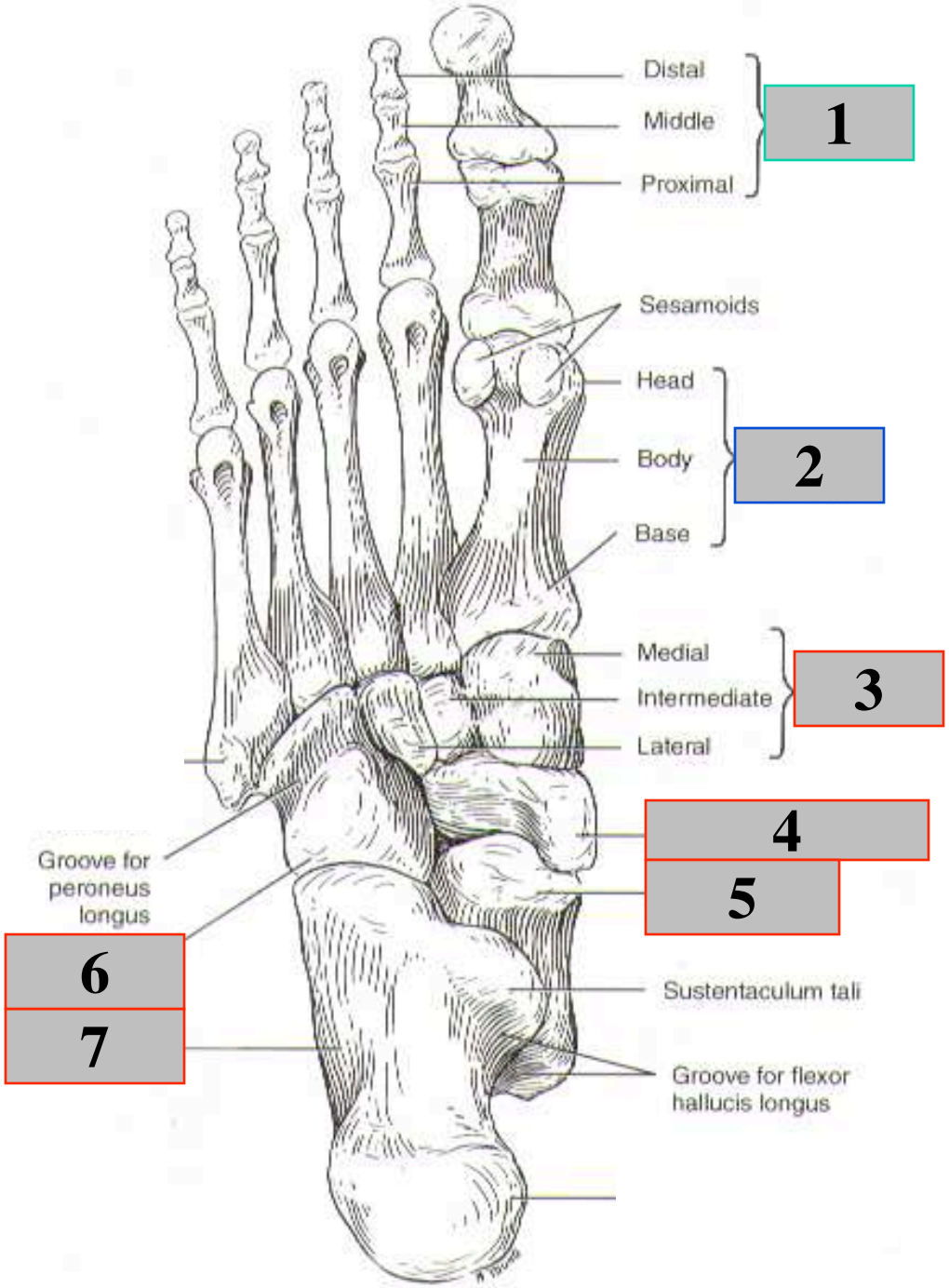
Dorsi Flexion

1. Name the action



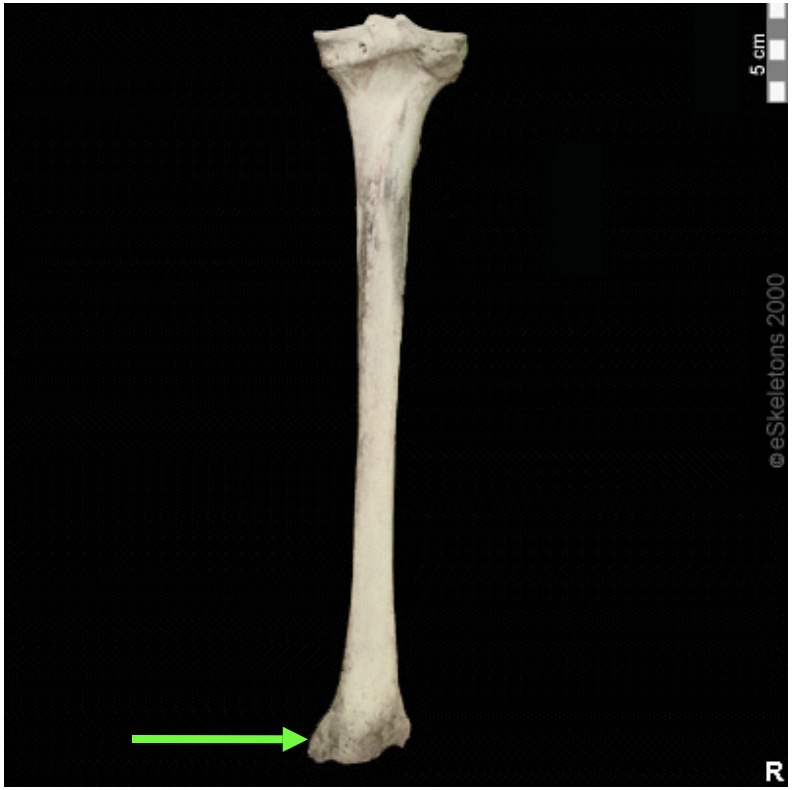
2. Name the action

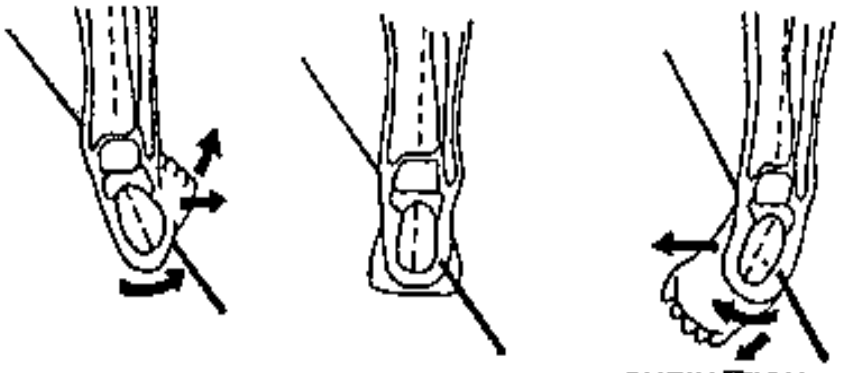
Plantar Flexion



1. Phalanges
2. Metatarsals
3. Cuneiforms
4. Navicular
5. Talus
6. Cuboid
7. Calcaneus

- Name the landmark





Name the actions of the ankle to the left and the ankle to the right.

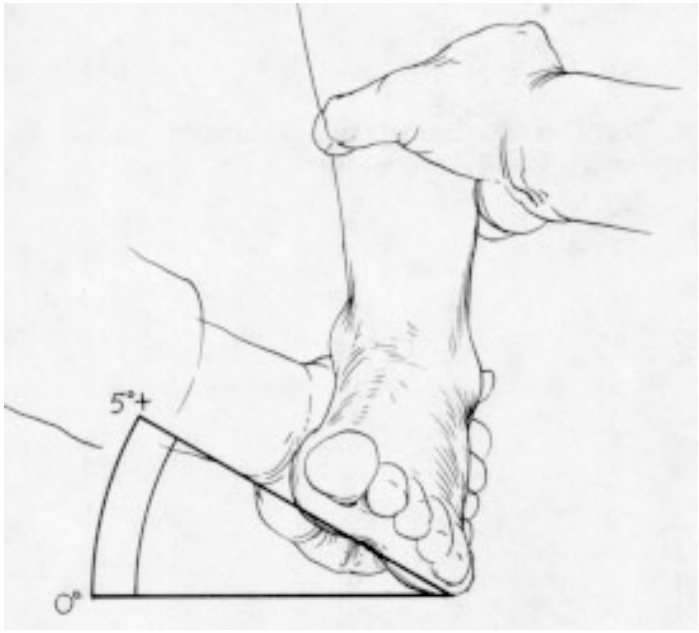
Eversion **Inversion**

Name the action

- Plantar flexion

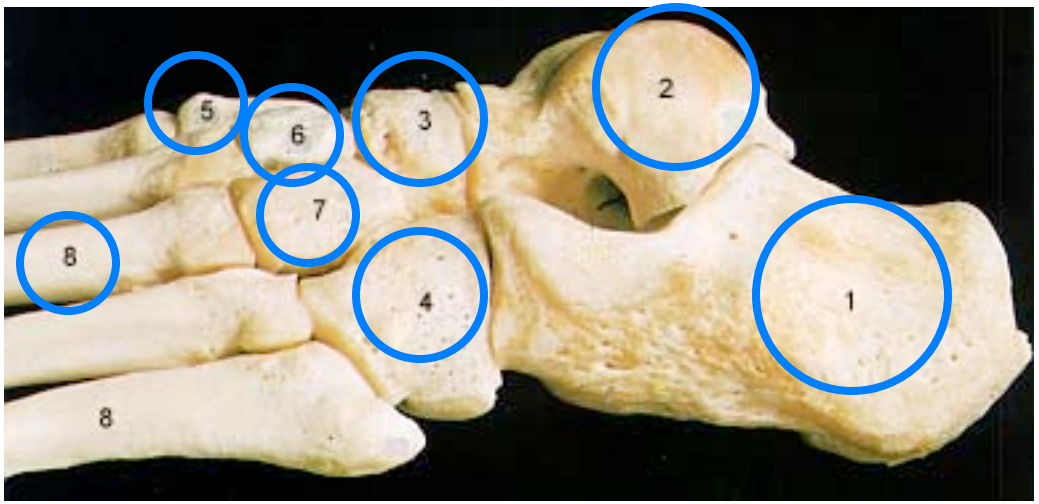
Name the action

- Inversion



- Name them all

1. Calcaneous
2. Talus
3. Navicular
4. Cuboid
5. First Cuneiform
6.Second Cuneiform
7.Third Cuneiform
8. Third Metatarsal (and Fifth Metatarsal)



Name the action at the ankle joint.

- Plantar flexion
- Name the action at the metatarsal phalange joint
- Extension or Hyperextension