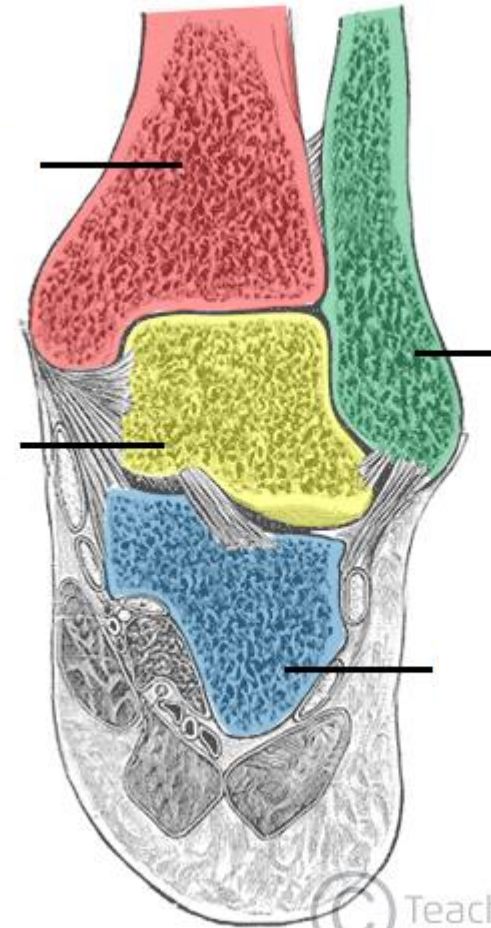


# Foot and ankle work injuries

Dr. Bryant Ho  
Orthopaedic Surgery  
Foot and Ankle  
6/10/19

# Anatomy

- Ankle joint
  - Ball and socket
  - Tibia
  - Fibula
  - Talus



# Ankle

- Ankle injuries
- Causes

Fall





# Twisting injury



Uneven work  
surfaces



## Ankle sprains

- Inversion injury
- 85% of ankle injuries
- 30,000 per day



Partial ligament  
tear



# Initial Evaluation

- Swelling
- Bruising
- Pain with walking



# Evaluation

- Xrays



# MRI?

---

- No need
- There may be injury:
  - Cartilage lesion
  - Peroneal tendon tear
- Does not change treatment!



# Treatment

- RICE
- Rest
- Ice
- Compression
- Elevation

# Treatment

- Rest
- Immobilization
  - Holds alignment
  - Allows healing



# Treatment

- Ice
- Swelling control



# Treatment

- Compression
- Swelling control



# Treatment

- Ice + compression





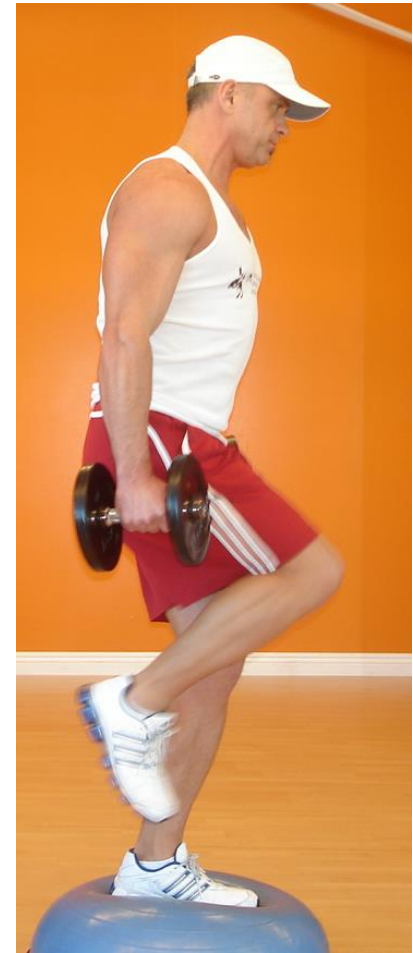


Treatment

—  
Elevation

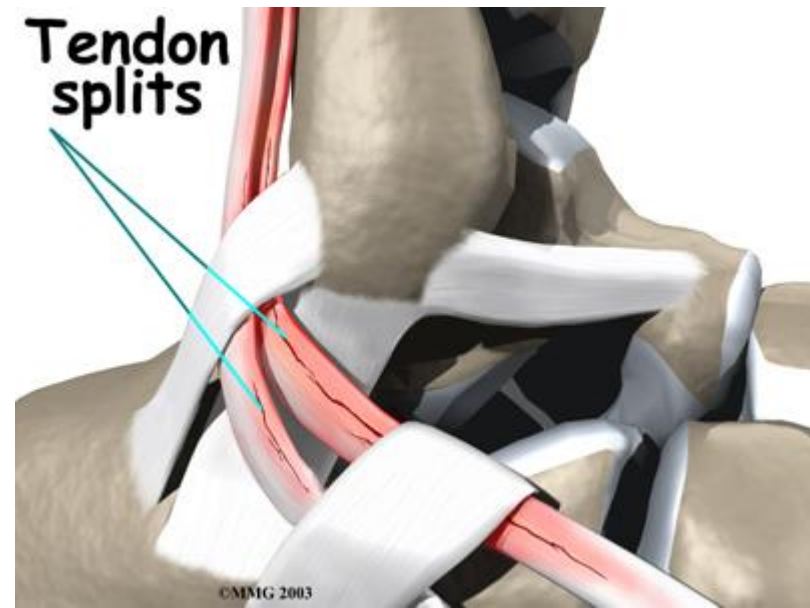
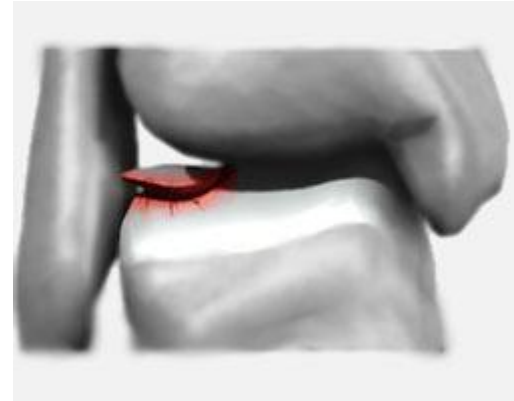
# Treatment

- Physical therapy
  - Strengthening
  - Stretching
  - Balance



# Still pain?

- Associated injuries:
  - Cartilage damage
  - Tendon tear

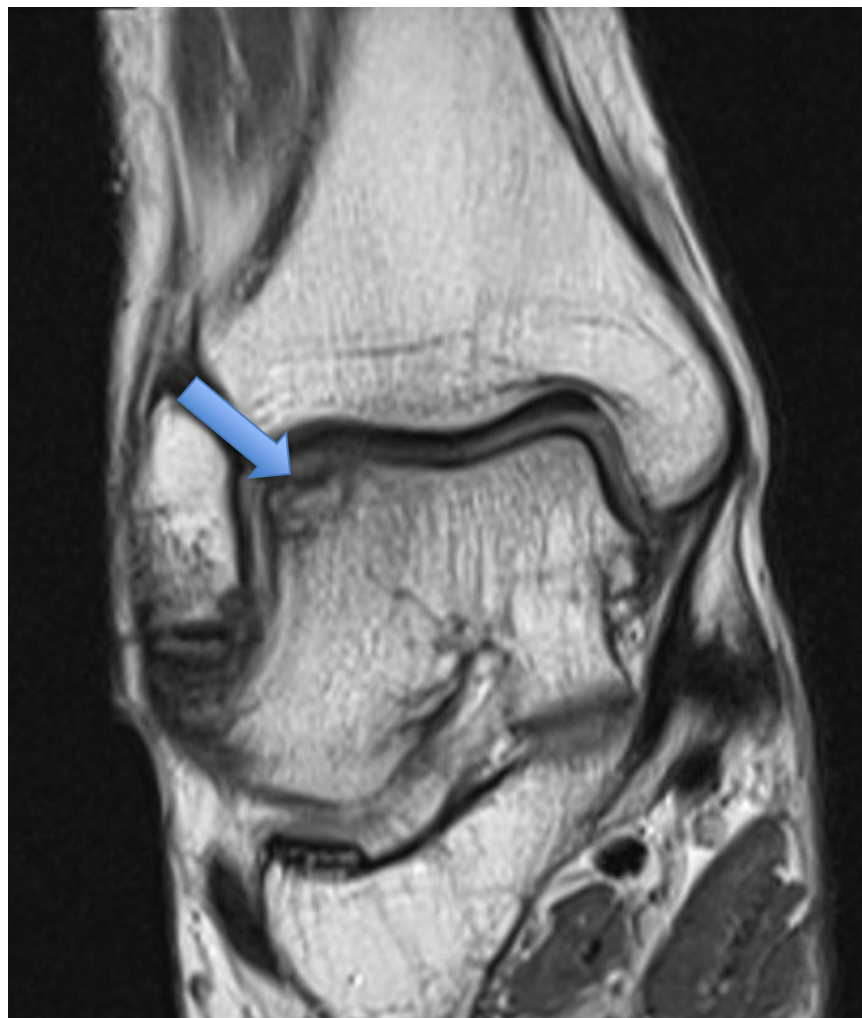




# Evaluation

- MRI

# Cartilage lesions

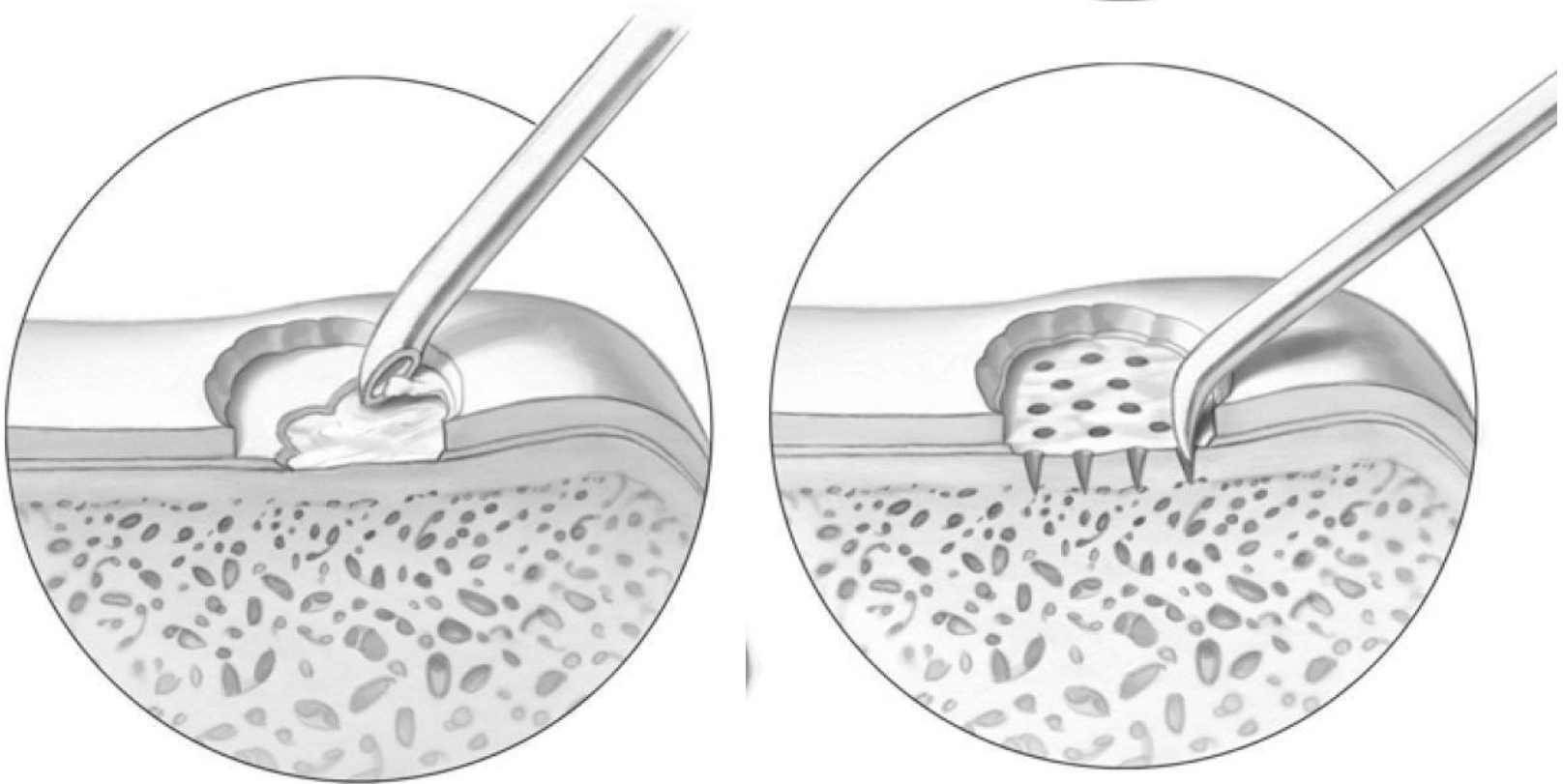


# Cartilage lesions

- Try steroid injection
- Can relieve pain
- If continued pain:
- Surgery



# Microfracture

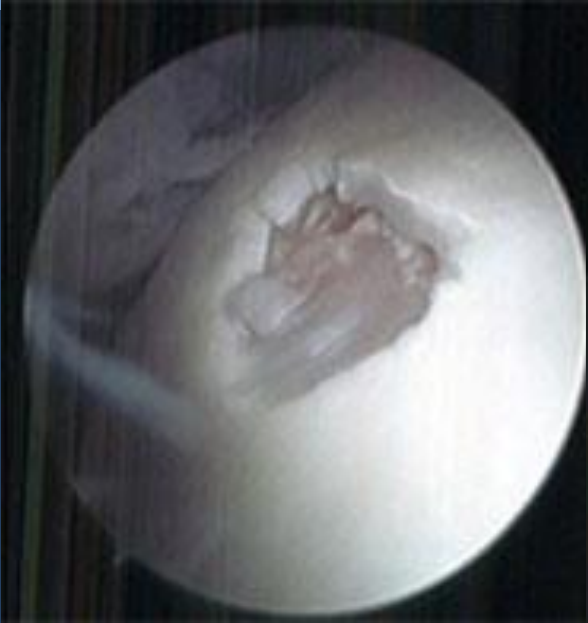


# Microfracture



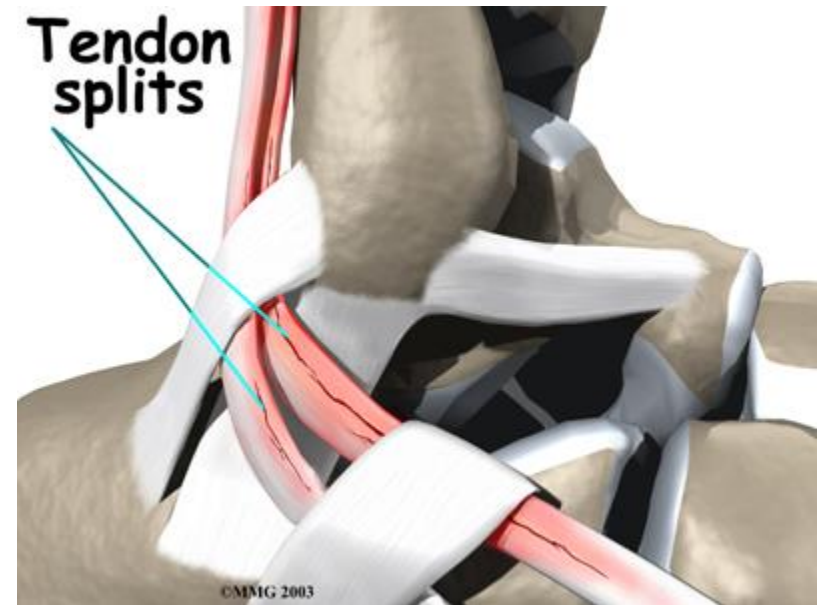
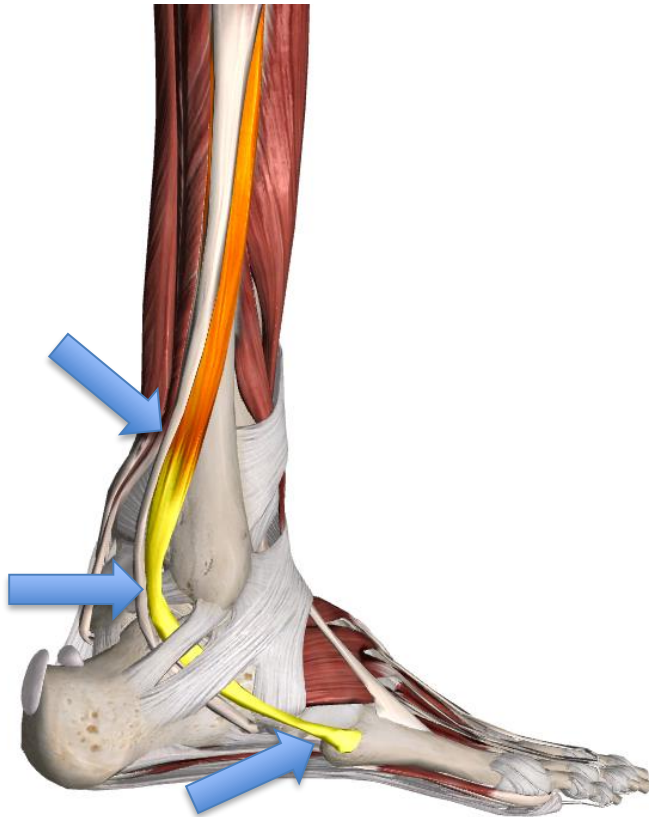


# Microfracture



# Tendon tears

- Peroneal tendon tear

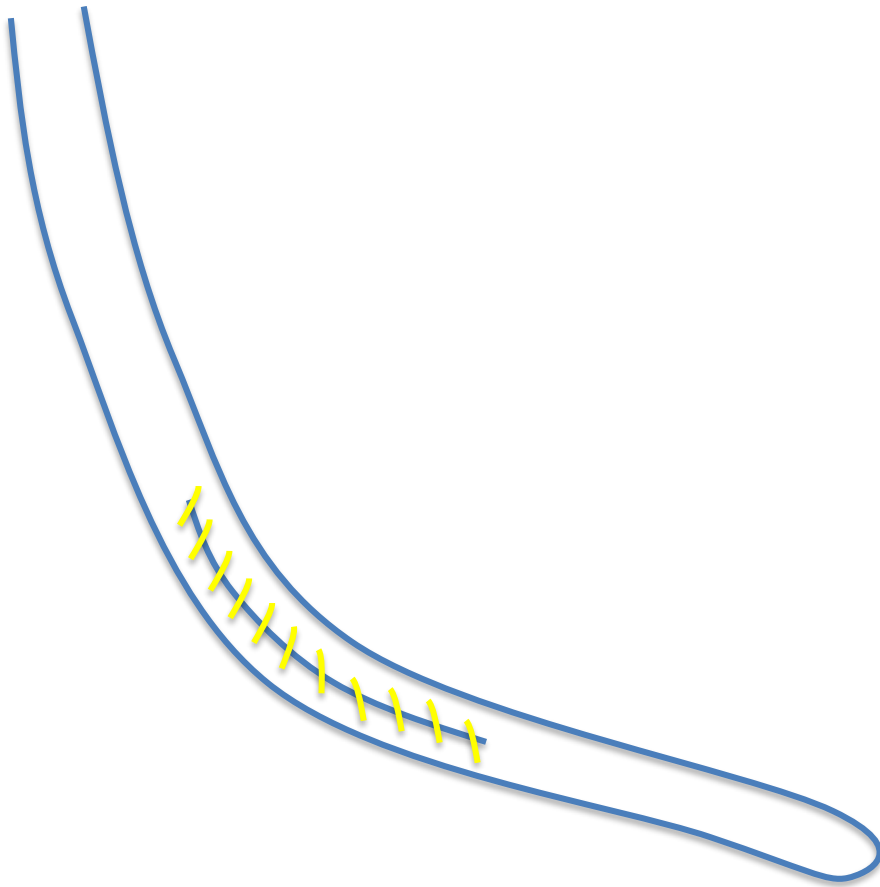


# Treatment

- Physical Therapy
- Steroid injections
- Surgery – repair tendon

# Surgery

- Tendon repair



# Other Work Injuries

- Broken bones (fractures)



# Other work injuries

- Broken bones (fractures)
  - Fall from height



# Fall

- Land feet first



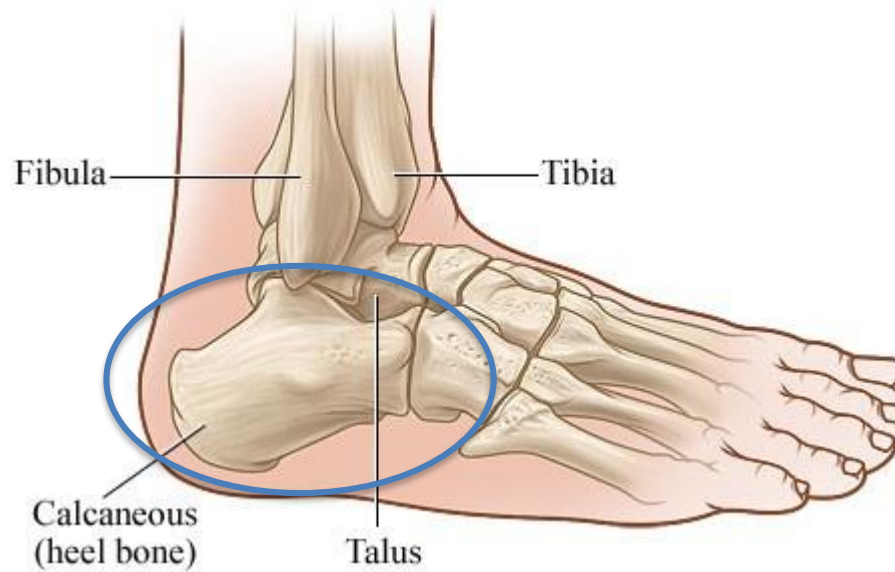
# Fall

- Axial compression
- Common fractures:
  - Heel
  - Ankle
  - Knee
  - Lower back





# Heel fractures



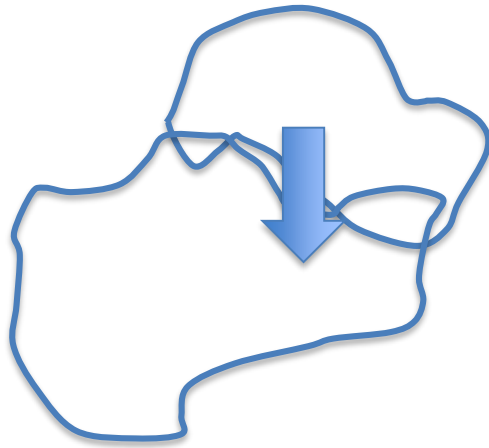
# Heel fractures

- Calcaneus

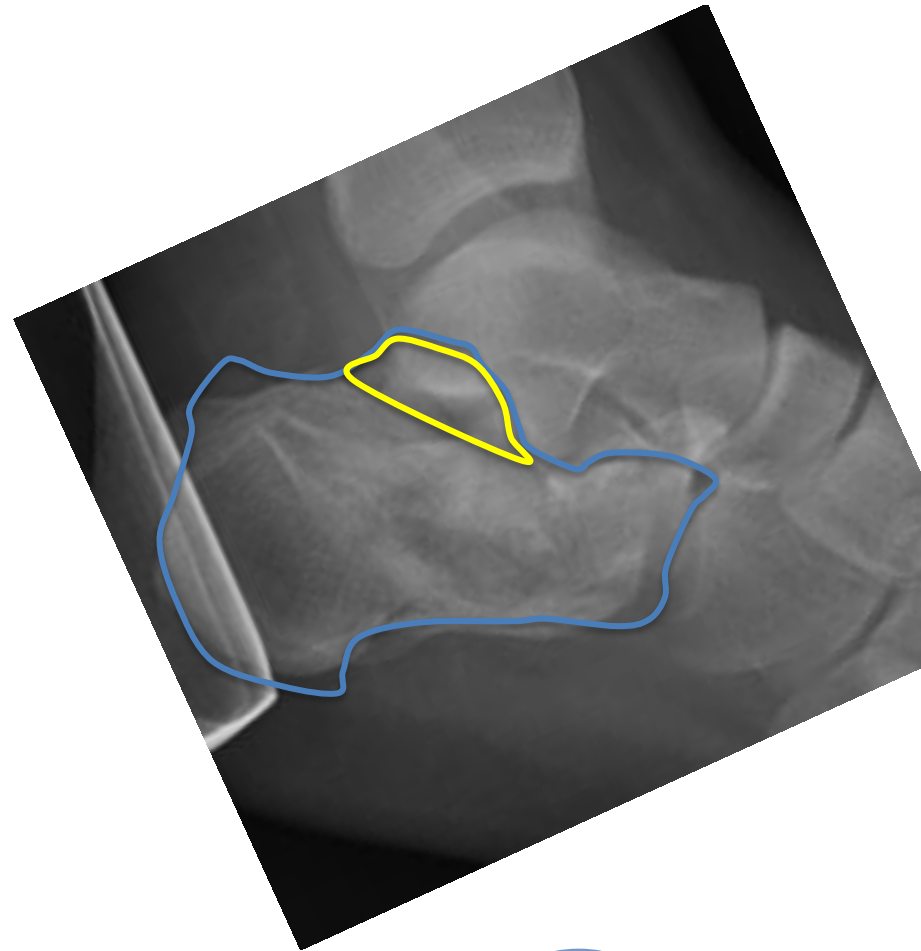


# Heel fractures

- Talus (nutcracker)
- Calcaneus

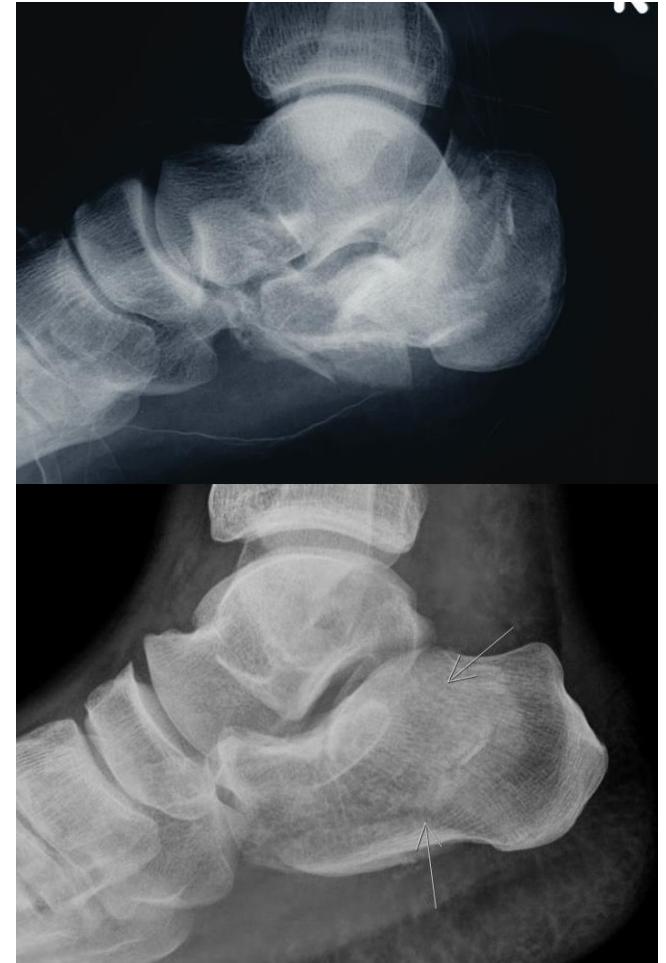


# Heel fractures



# Heel fractures

- Surgery:
  - Joint collapse
  - Bad alignment



# Heel fractures

- Delayed surgery
  - 1-2 weeks
- Allows soft tissue to heal
- Decreases wound healing problems after surgery



# Heel fractures

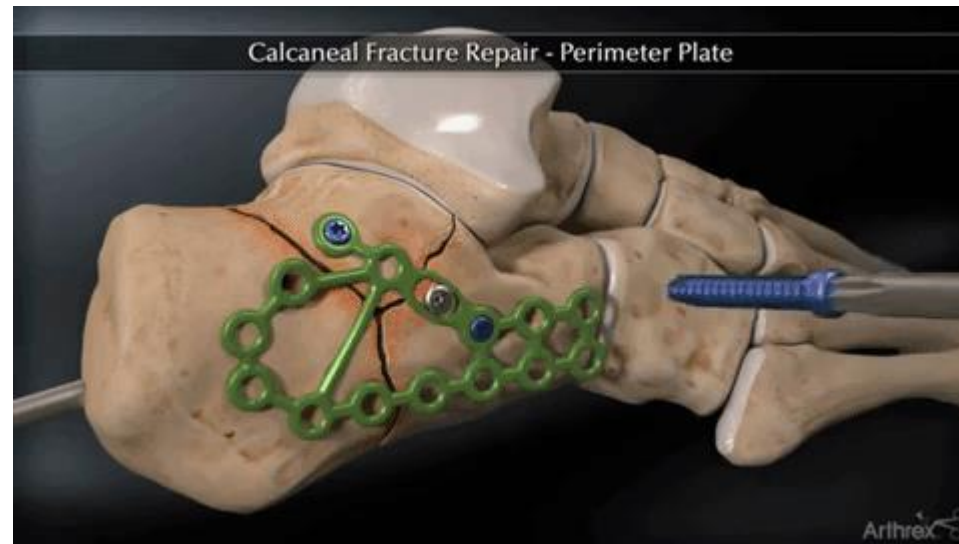


# Heel fractures



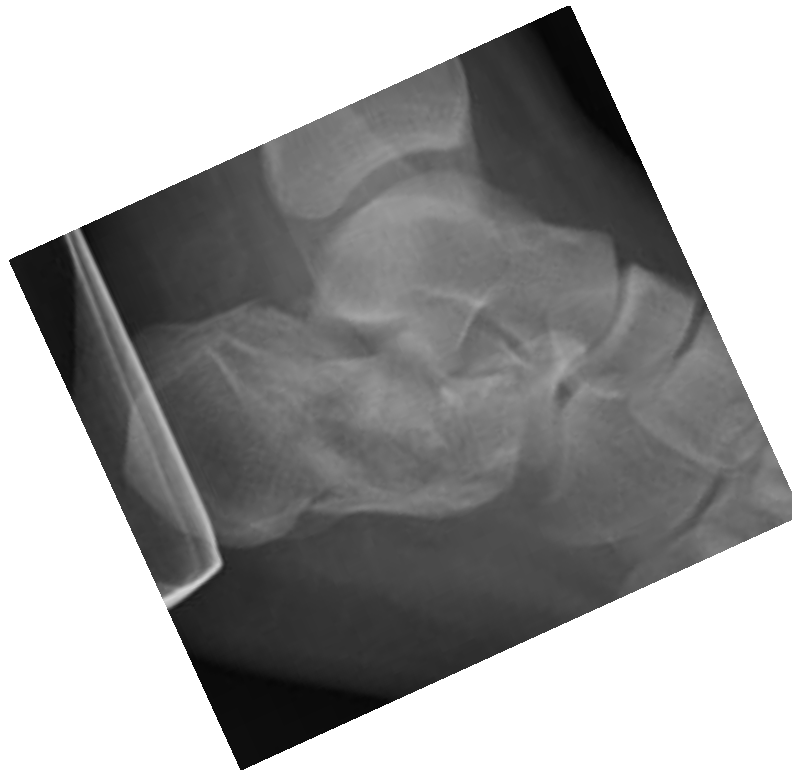


# Heel fractures

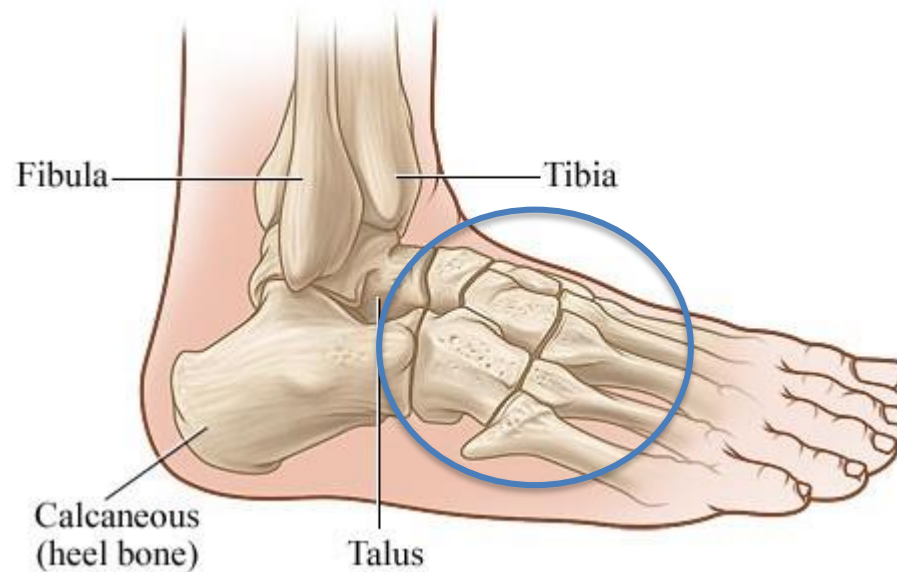


# Heel fractures

- Surgery



# Midfoot injuries



# Midfoot injuries



# Midfoot injuries

- Lisfranc
- Load on pointed foot

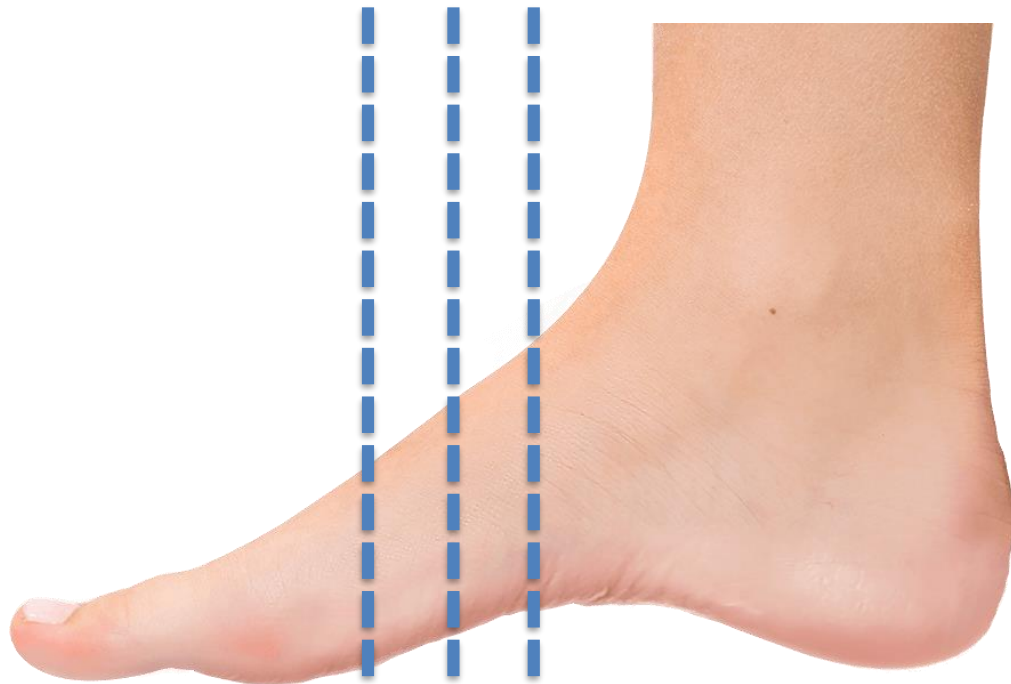


# Lisfranc injury

- Disruption of alignment of middle foot

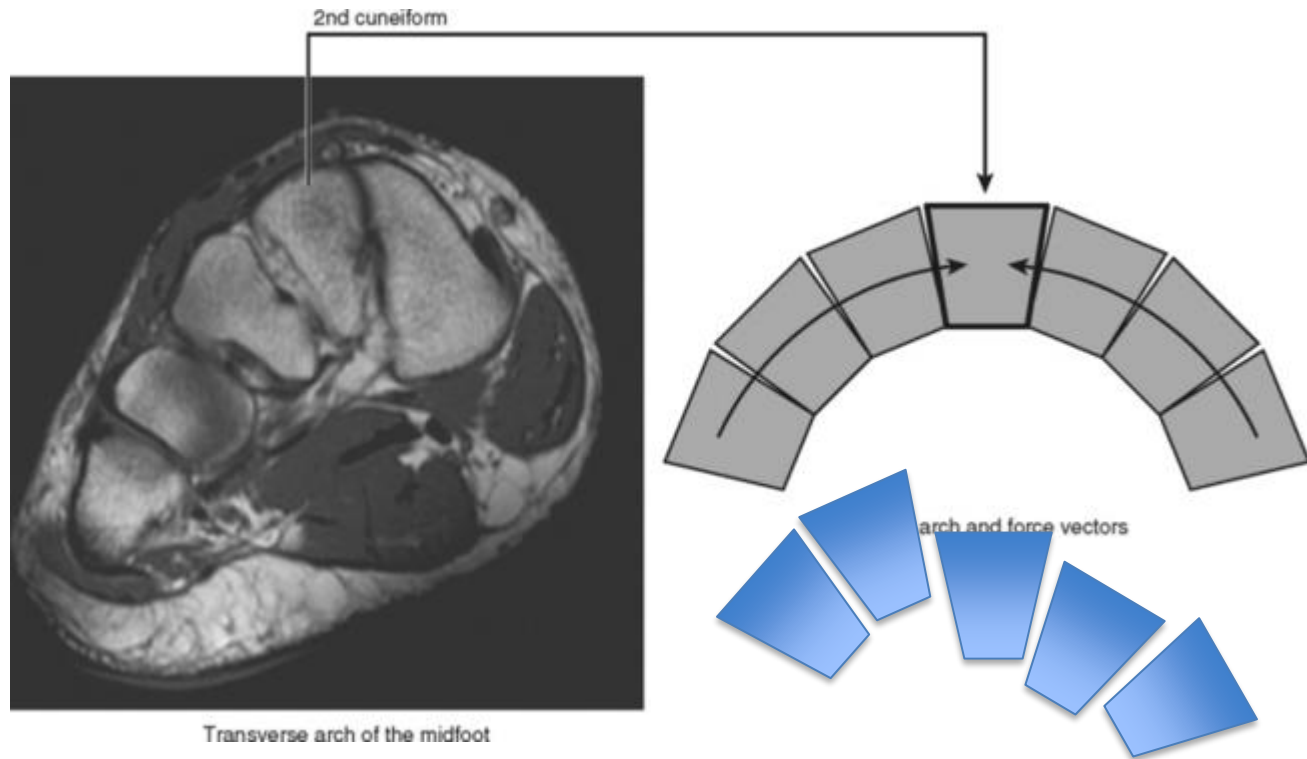


# Lisfranc injury



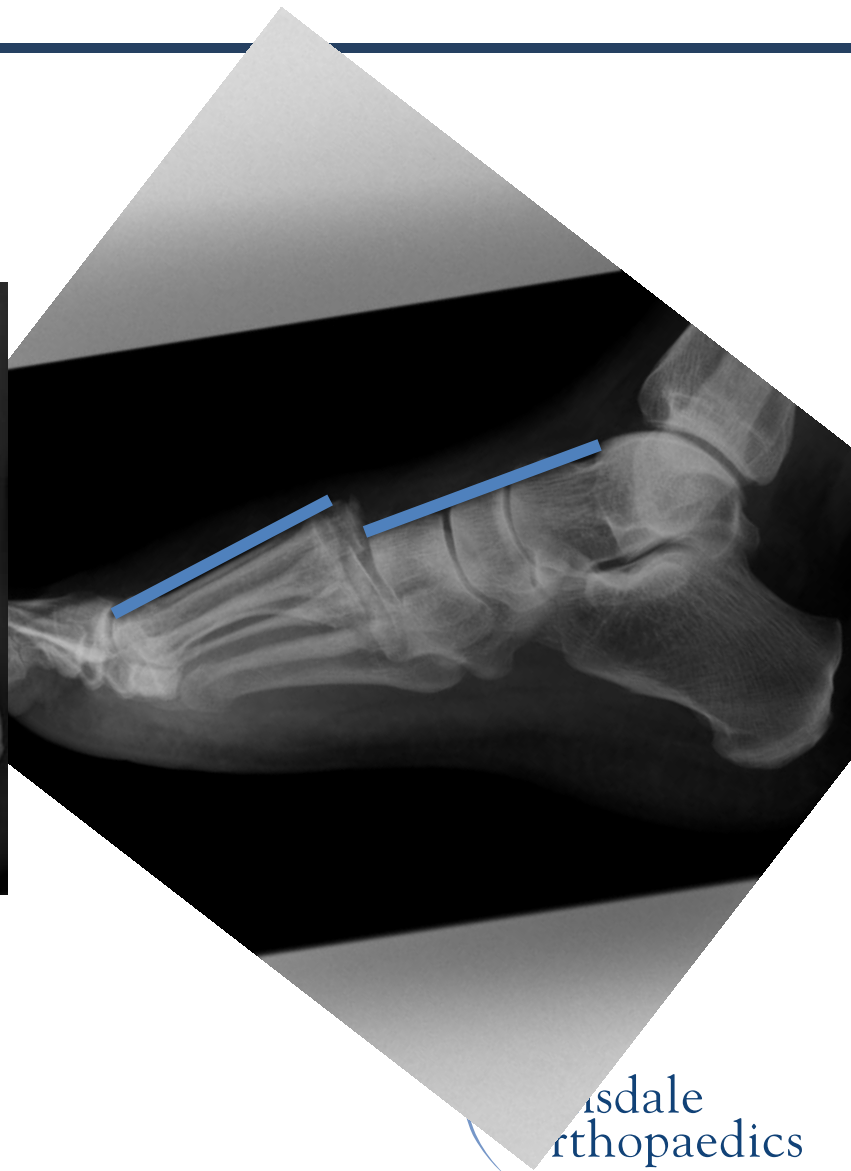
# Lisfranc

- Disrupt “Roman arch”





# Lisfranc injury



# Lisfranc injury



# Physical Exam

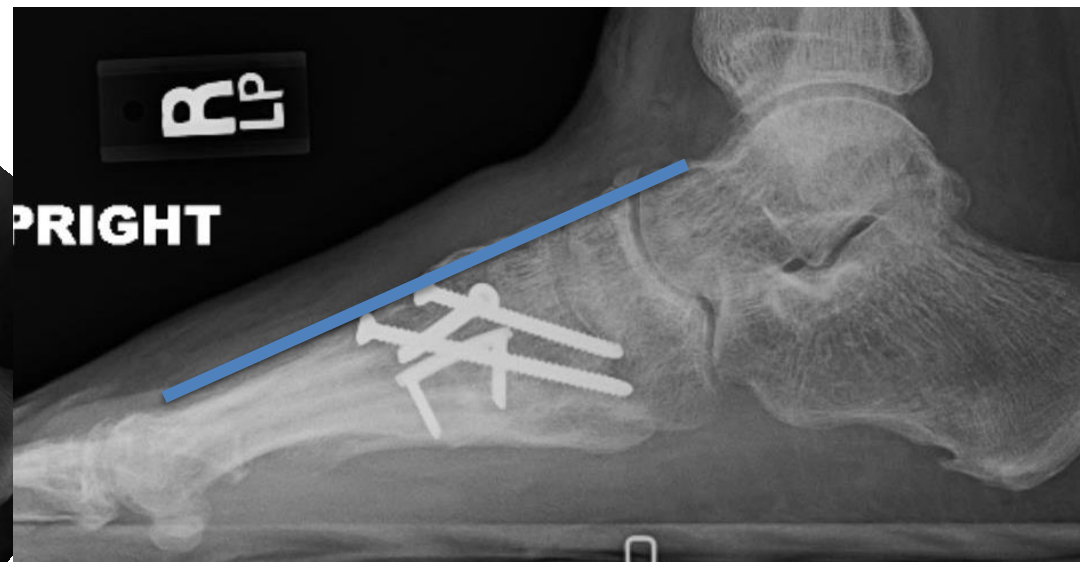
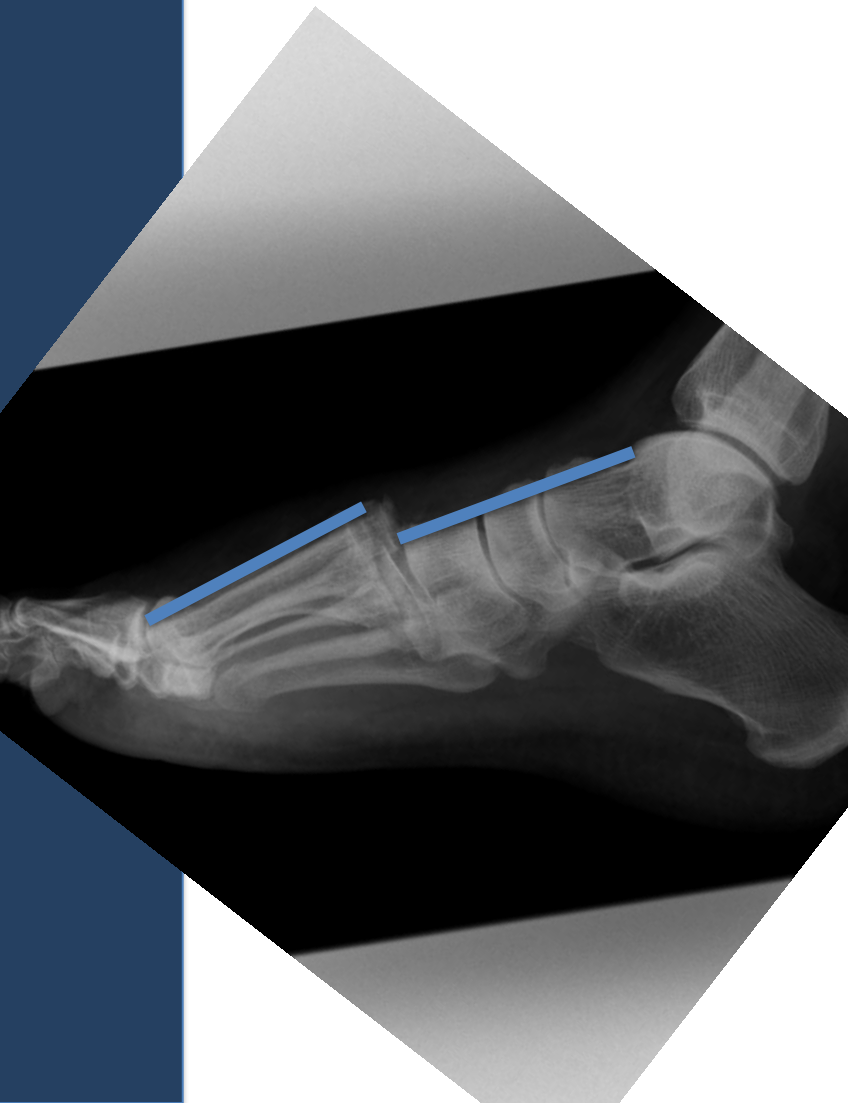
- Severe swelling
- Severe pain
- Bruising bottom foot



# Lisfranc injury

- Often missed!
- Mistaken as foot sprain
- Needs surgery

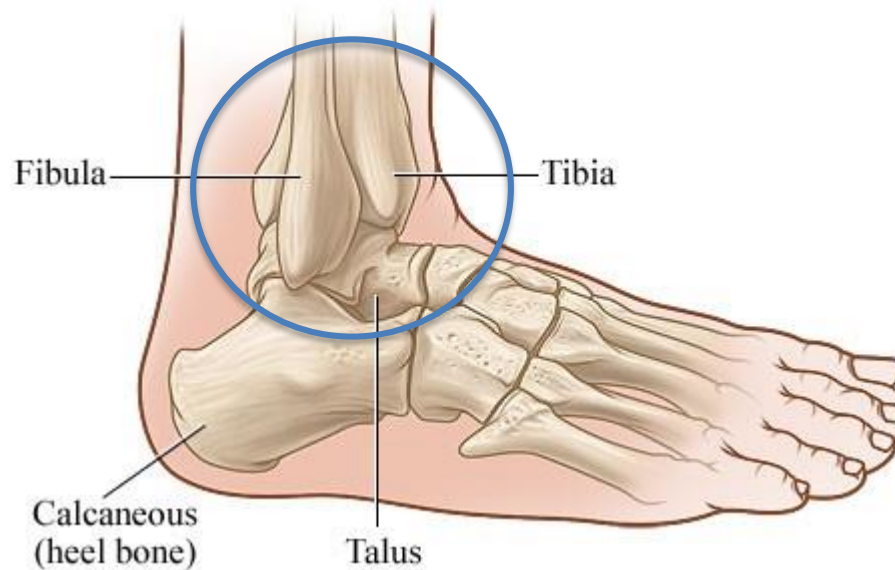




# Lisfranc injury



# Ankle fractures



# Ankle fractures





# Ankle fractures



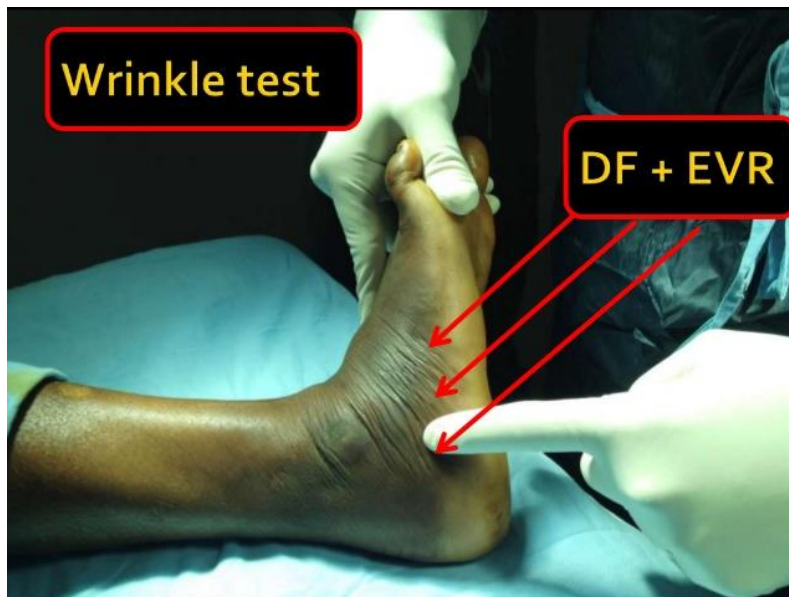
# Ankle fractures

- Surgery
- High energy injuries:
- Two stage surgery



# Ankle fracture

- Stage I
  - Temporary alignment
  - No incisions
  - Allow soft tissue to heal



# Ankle fractures

- External fixation



# Ankle fractures



# Ankle fracture

- Stage I
  - Provisional alignment
  - No incisions
  - Allow soft tissue to heal
- Stage II
  - Definitive fixation







# Physical Therapy

- Critical
- Restore:
  - Motion
  - Strength
  - Balance



# Beyond Therapy

- Job:
  - Police officers
  - Firefighters
- Work requirements
  - Heavy work requirements
  - Long shifts



# Work hardening



# Functional Capacity Evaluation

- Many patients don't regain full function
- FCE
  - Defined test
    - Lifting
    - Push/pull
    - Stand/walk
    - Flexibility/reach
    - Grasping/holding
    - Bending
    - Balance



# Functional Capacity Evaluation

- Can help
  - Permanent disabilities
  - Protects patient
- Can hurt
  - Permanent disabilities limit jobs
  - FCE may not evaluate their true job
    - Ex: firefighter

# End Goal

- Back to work
- Back to normal life



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