

EMERGENCY CARE in SPORTS,
February 18, 2023

Orthopedic Trauma

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Goals in the Care of Orthopedic Trauma

**Focus of presentation: MSK injury
on the Field of Play
Mechanisms of Injury
Process & Treatment
Examples**

How to fulfill goals in the care of Orthopedic trauma on a sporting field of play

How to fulfill goals in the care of Orthopedic trauma on a sporting field of play

EMERGENCY ACTION PLAN

Before, During & After the injury

GENERAL

ANATOMIC REGION SPECIFIC

Mechanisms of Injury

Extremity – Arm & Leg

Bone

Tendon & Muscle

Ligament

Cartilage, Meniscus, Labrum

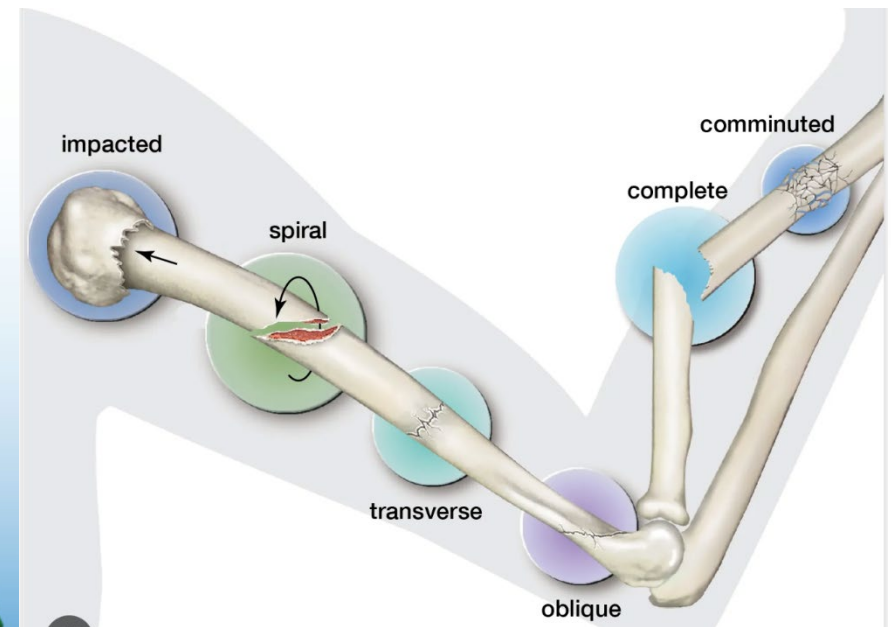
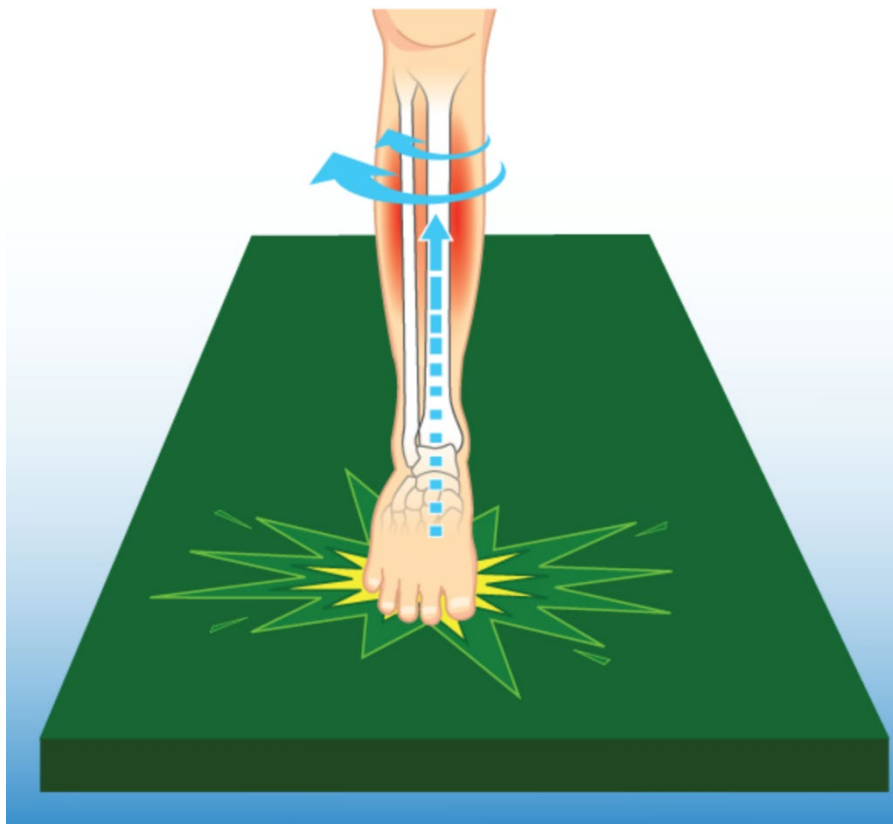
Nerve

Vasculature

Skin

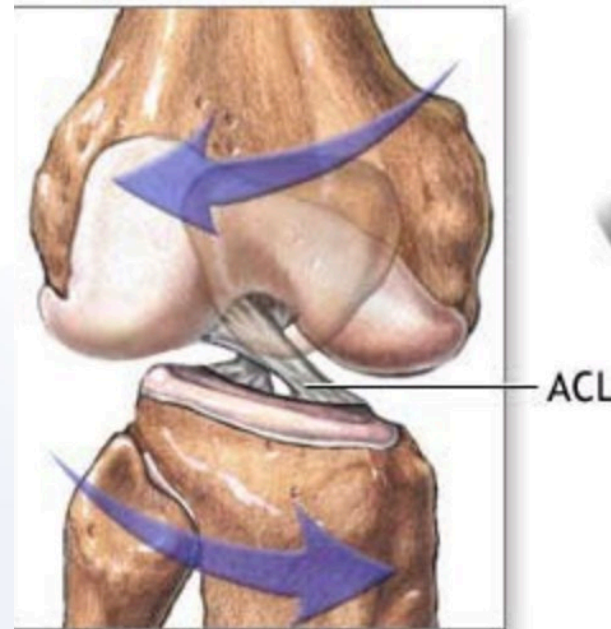
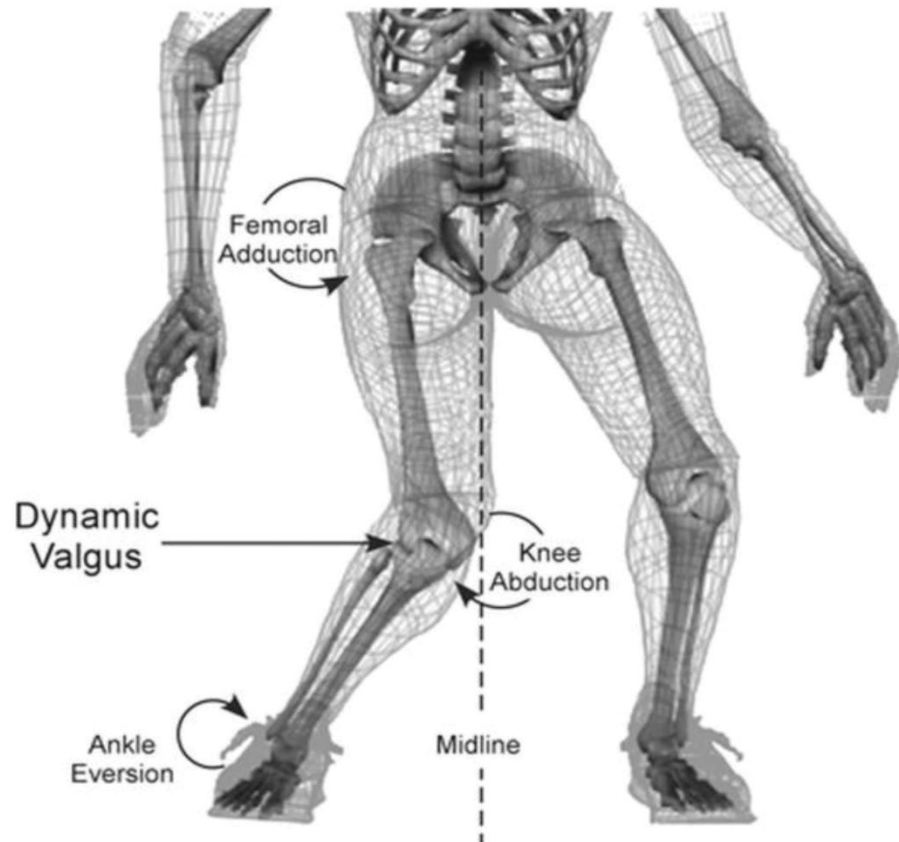
Mechanisms of Injury

- ▶ **Bones** fracture due to supraphysiologic loading



Mechanisms of Injury

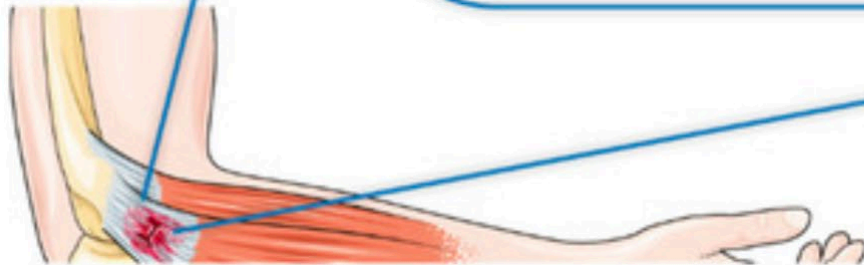
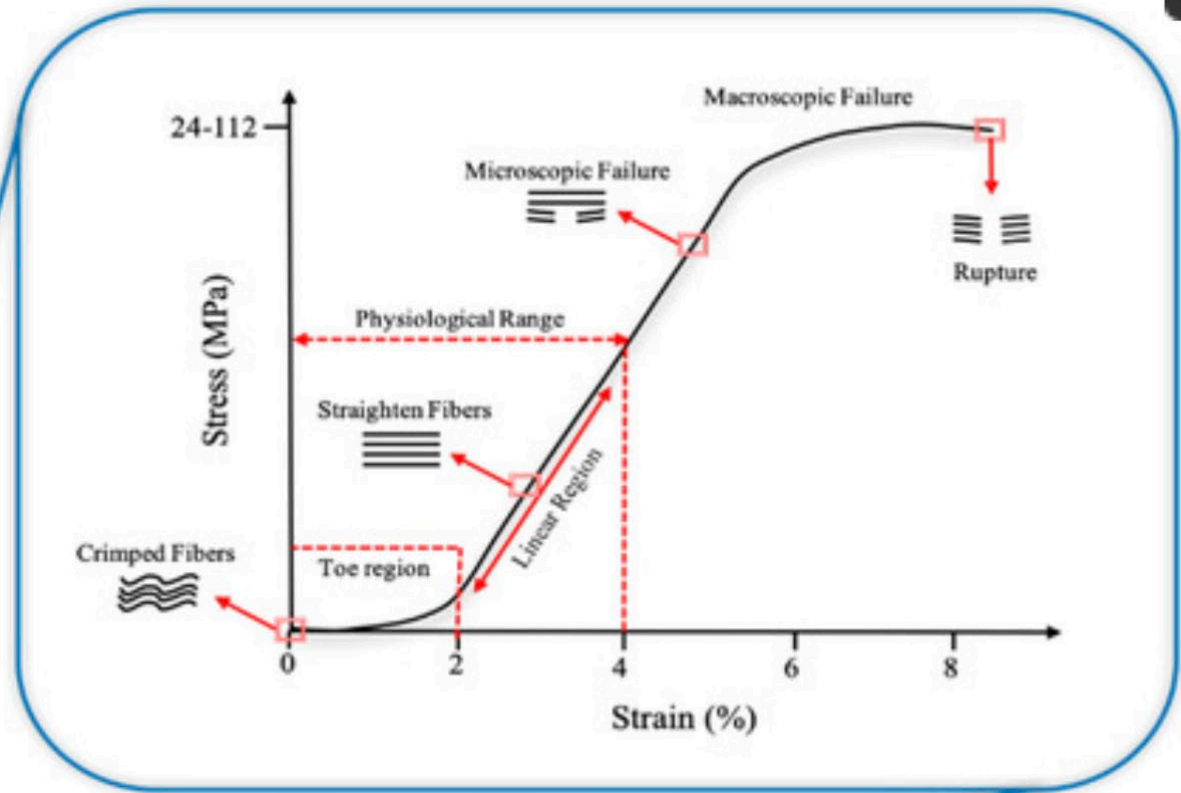
- ▶ **Ligaments, Tendons and Muscle** tear and fail due to excessive tensile load and/or eccentric overload



ACL injuries occur when bones of the leg twist in opposite directions under full body weight

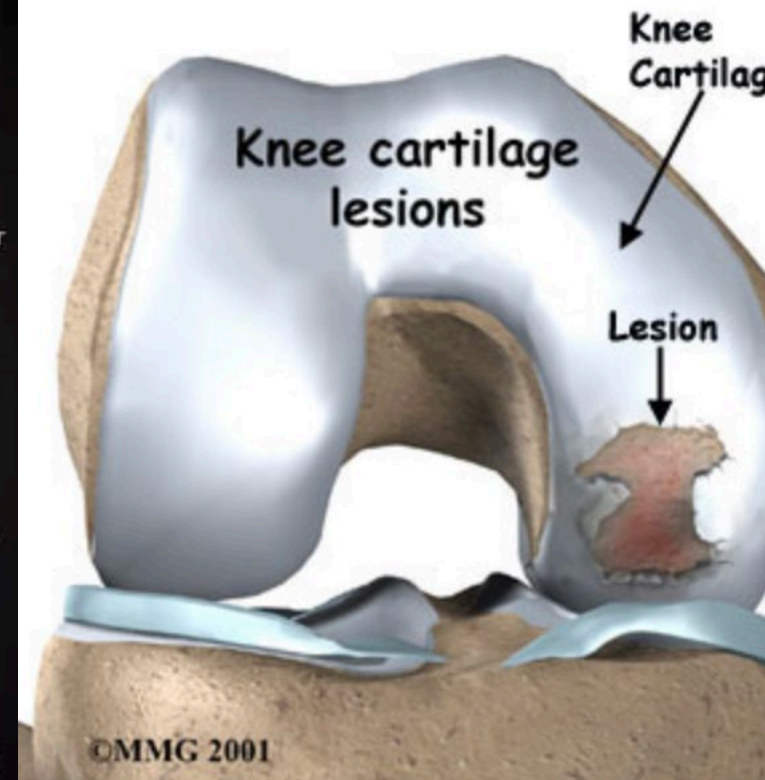
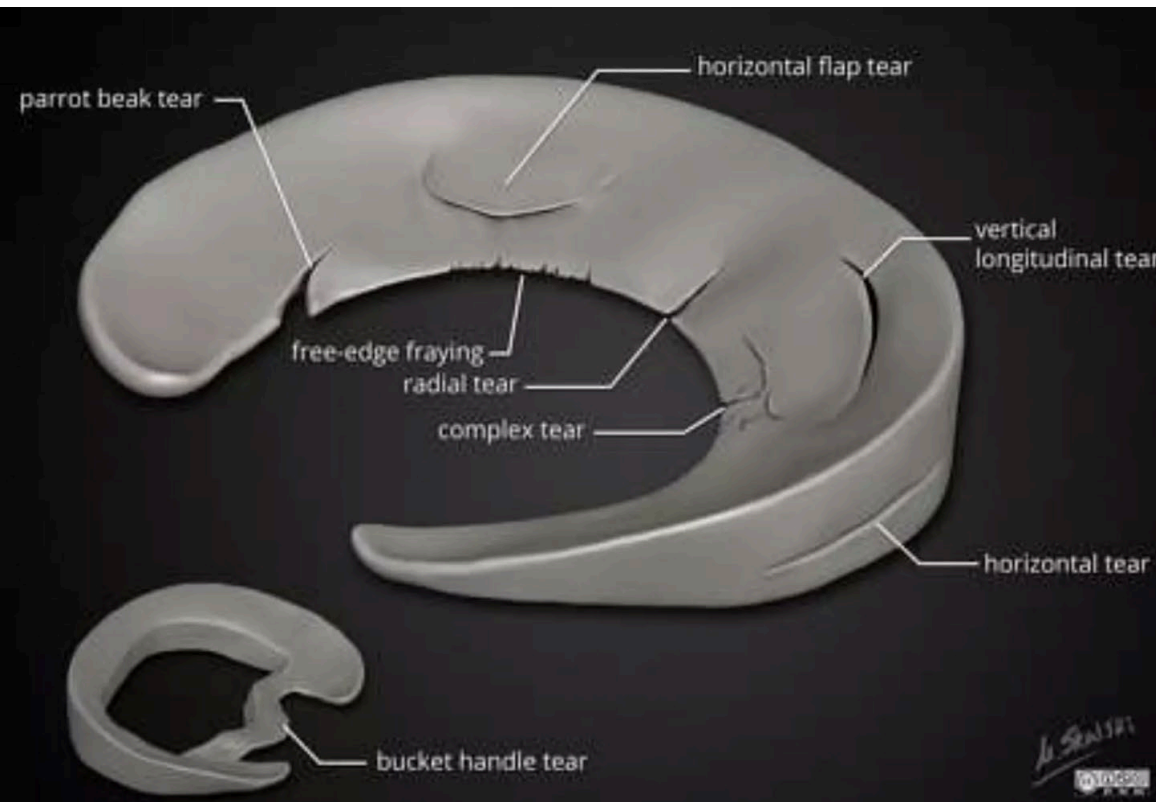


Ligaments, Tendons and Muscle tear and fail due to excessive tensile load and/or eccentric overload of collagen

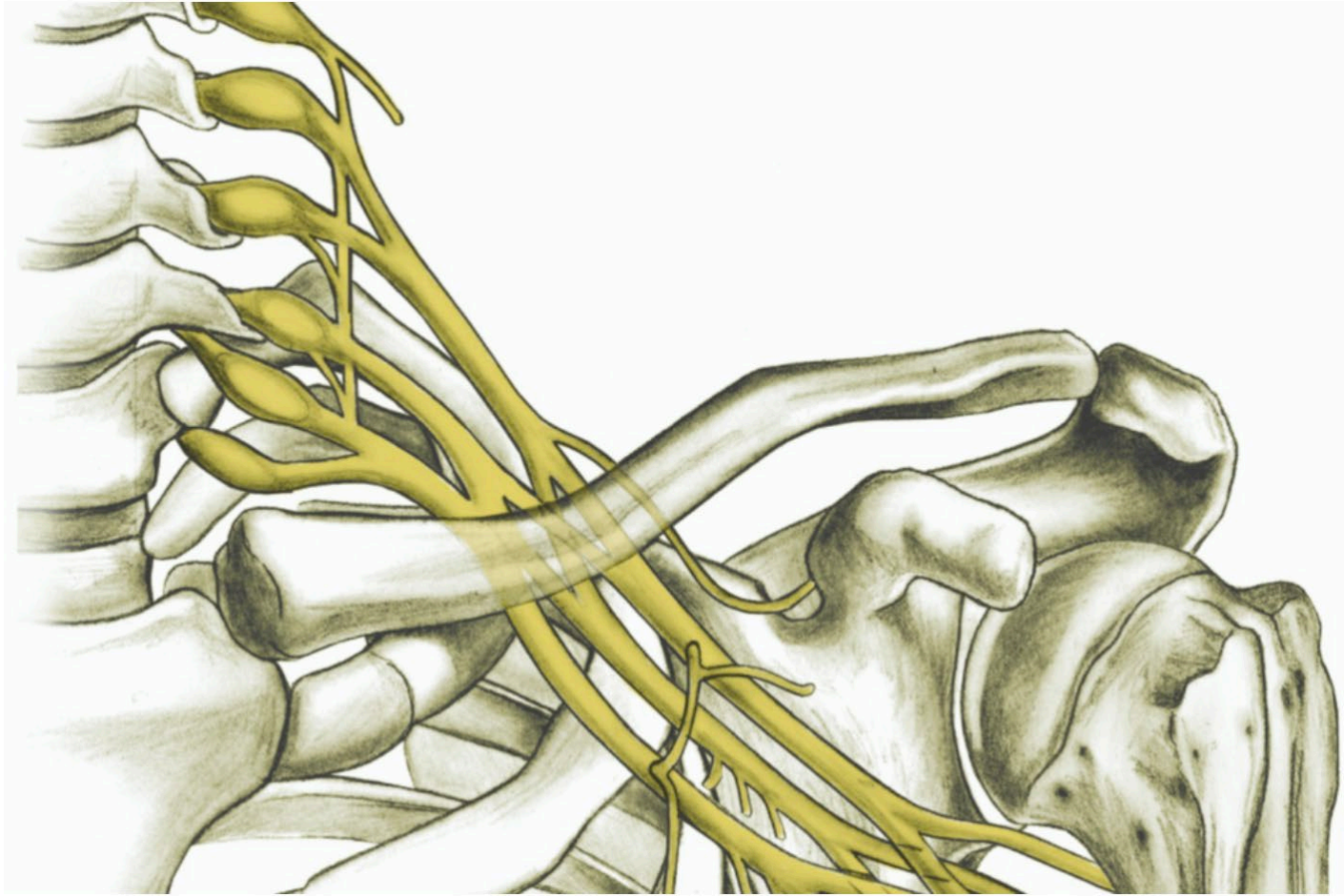


Cartilage & Meniscus Injury

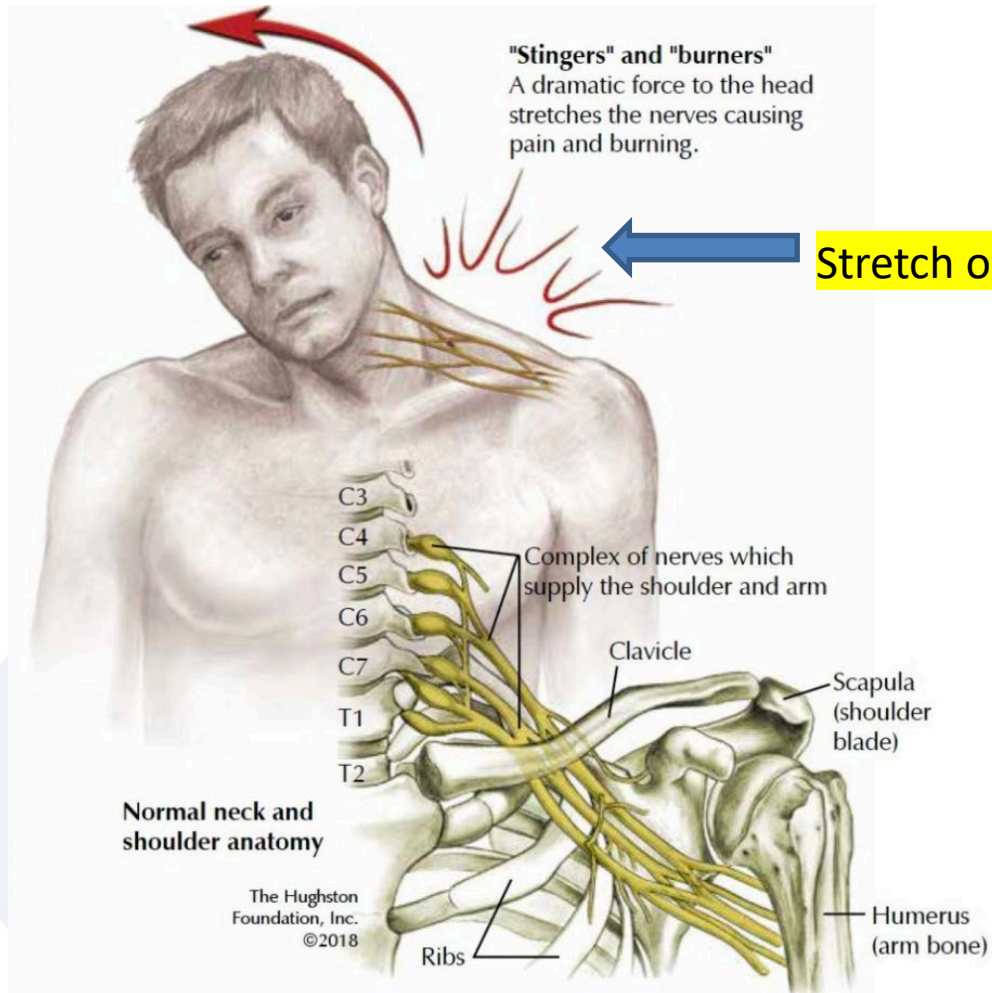
- ▶ Rotating movement while bearing weight causes **shear** forces along the surface of the tissue.



Nerve Injury – Brachial Plexus



Nerve Injury – Brachial Plexus



Process of Trauma Evaluation

- ▶ Have Eyes on the Action
- ▶ History
- ▶ Physical Exam
- ▶ Differential Diagnosis
- ▶ Limb appropriate splint & support

Eyes on The Action

- ▶ You are a Healthcare Provider First--- then a fan
- ▶ Have Situational Awareness



Eyes on The Action

- ▶ You are a Healthcare Provider First--- then a fan
- ▶ You can see a lot just by watching
 - ▶ Scanning the field of play
 - ▶ Remember the mechanisms of injury
 - ▶ Body language
 - ▶ Sounds

HISTORY



- ▶ **What you see**
- ▶ **What the athlete says**
- ▶ **What a teammate says**
- ▶ **Knowledge of the sport**

PHYSICAL EXAM

- ▶ **Visual and Hands on**
- ▶ **Deformity**
- ▶ **Extremity Position and Posture**
- ▶ **Skin Clues**
- ▶ **Point Tenderness**
- ▶ **Range of Motion-**
 - ▶ **Active first, then Passive**
- ▶ **Strength**
 - ▶ **Inhibition versus neurologic**

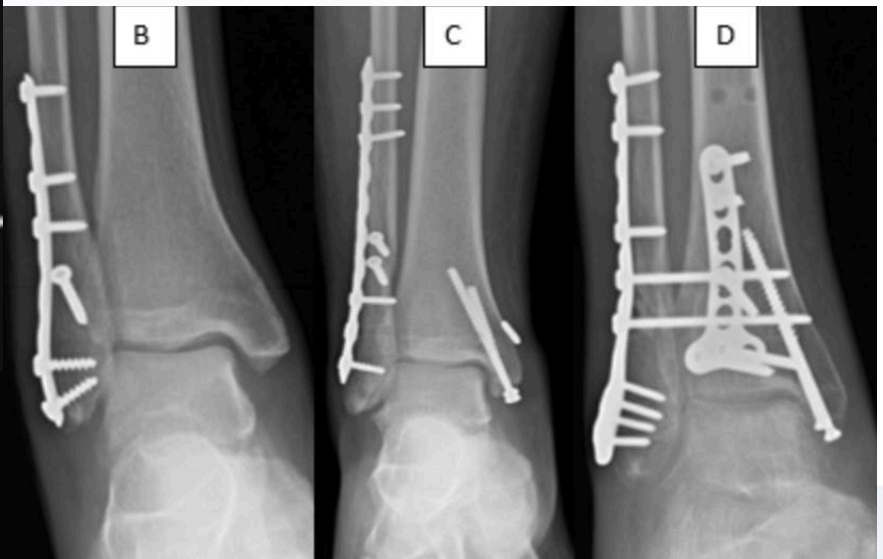
FRACTURES

- ▶ **Hand**
- ▶ **Ankle/Foot**
- ▶ **Forearm**
- ▶ **Long Bones of Leg**

Hand & Forearm Fractures

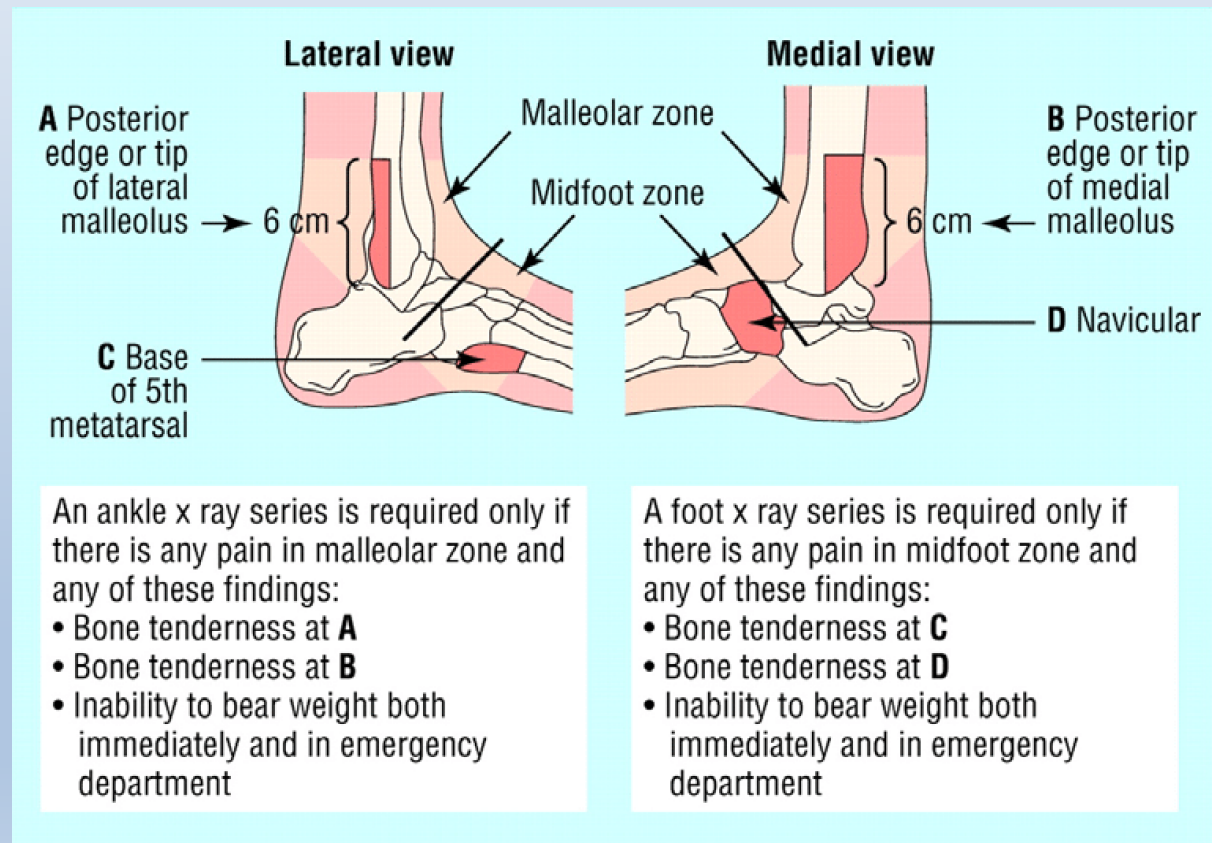






ANKLE FRACTURE

▶ OTTAWA RULES



FOOT FRACTURE

- ▶ Jones 5th Metatarsal



TIBIA FRACTURE



TIBIA FRACTURE



TIBIA FRACTURE

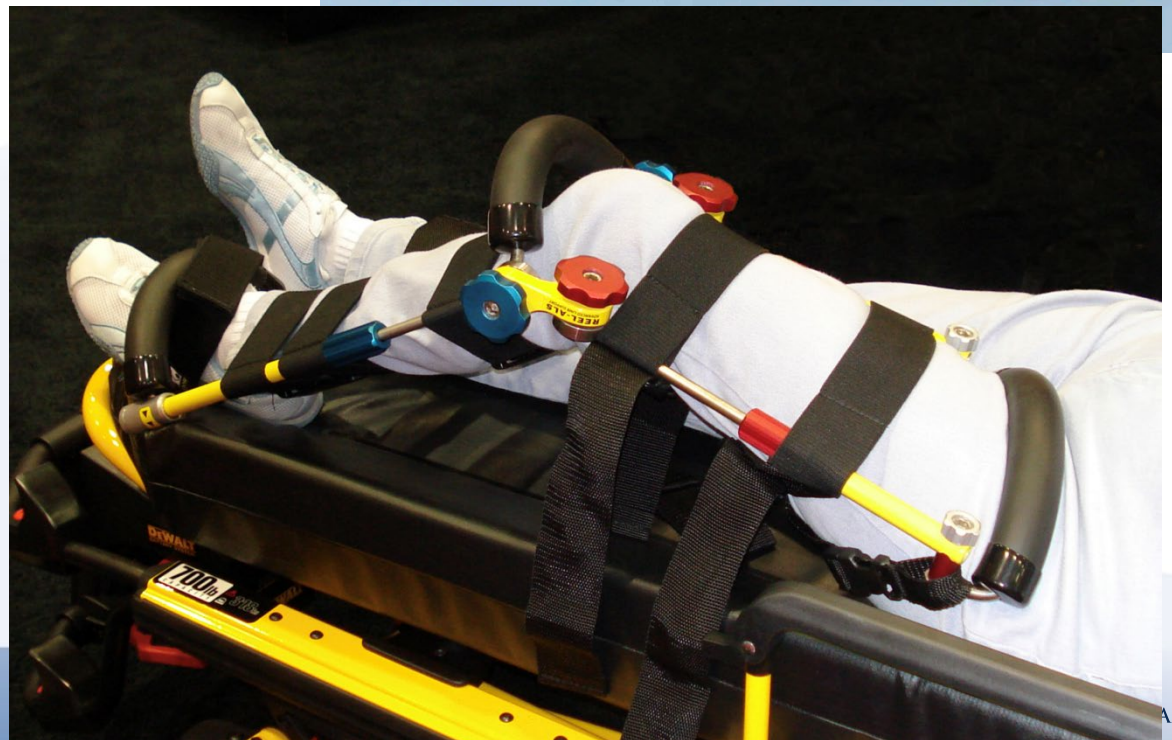
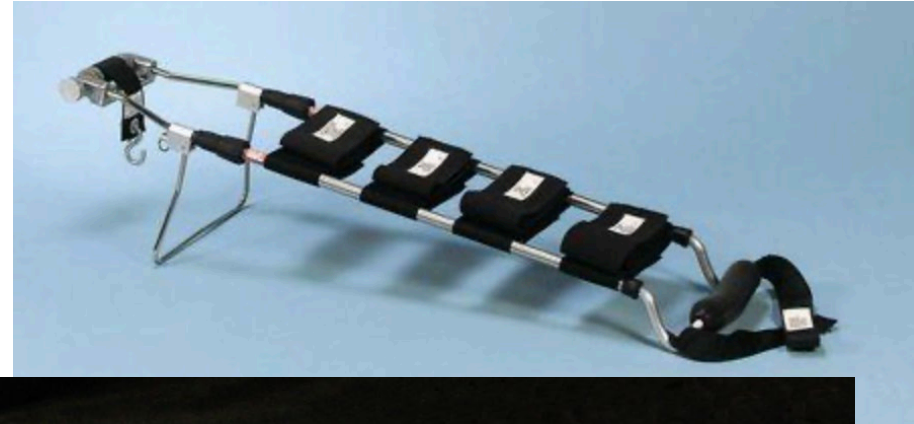


TIBIA FRACTURE



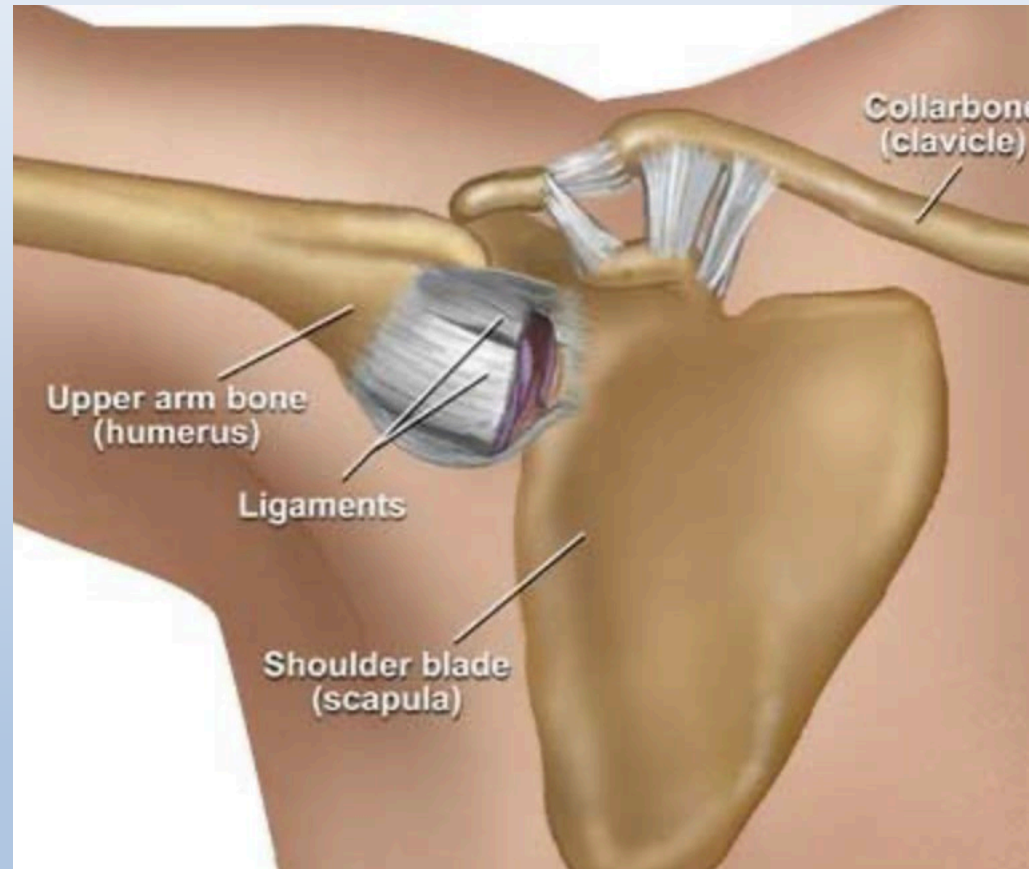
FEMUR FRACTURE

- ▶ Uncommon
- ▶ 3 point bending moment
- ▶ Hare Splint

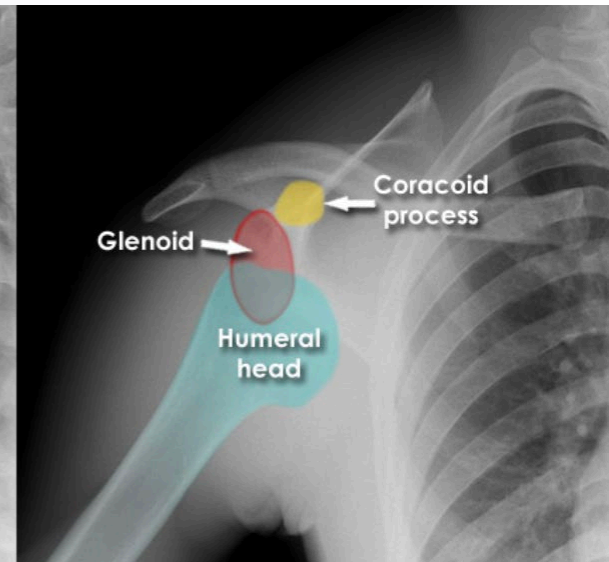


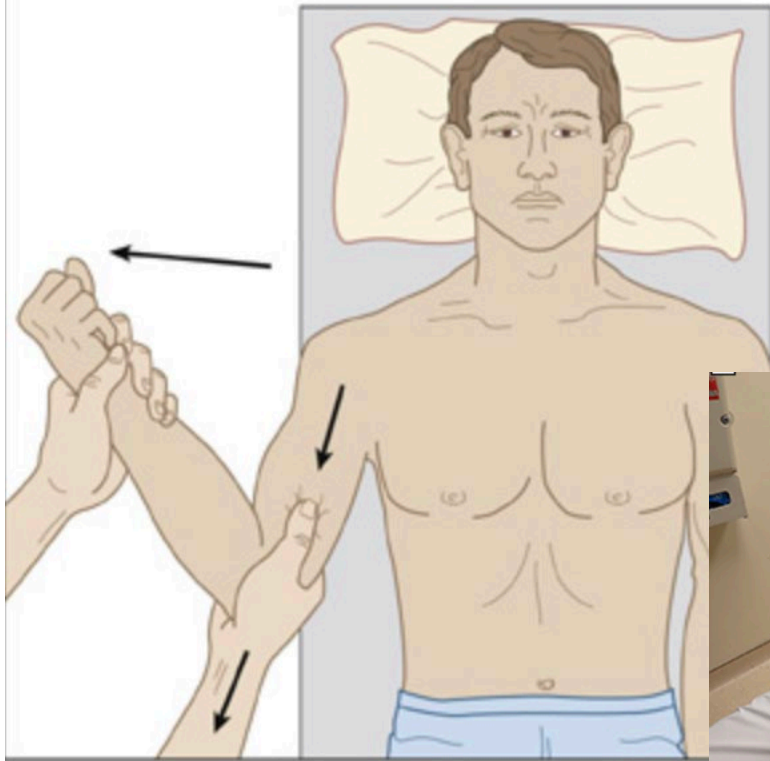
DISLOCATIONS

- ▶ **Shoulder**
- ▶ **Hand**
- ▶ **Elbow**
- ▶ **Hip**
- ▶ **Ankle**
- ▶ **Knee**



SHOULDER DISLOCATION





Hand Dislocations



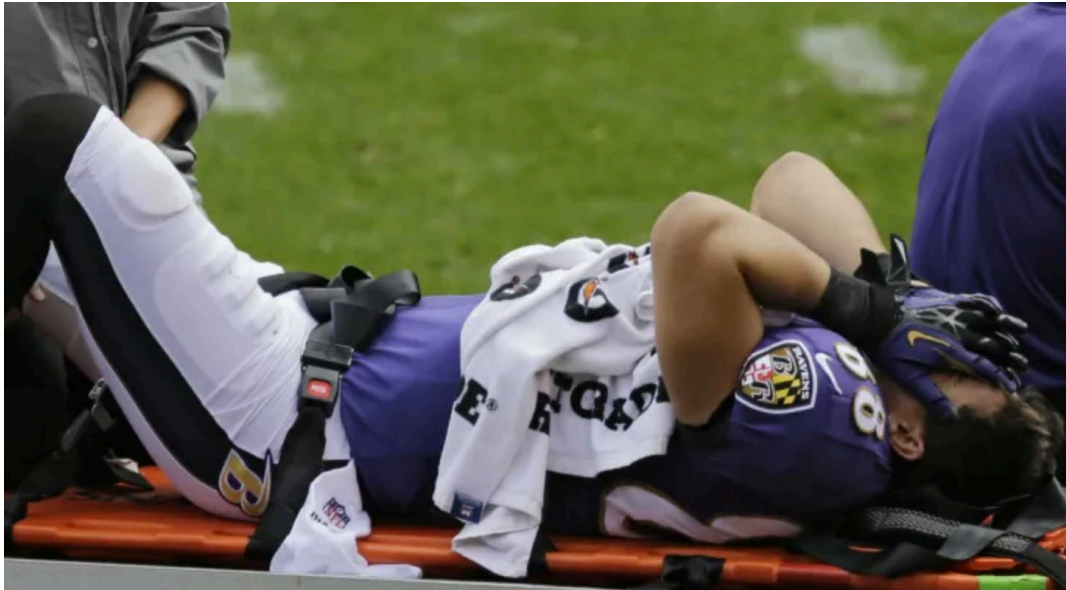
Hand Dislocations



ELBOW DISLOCATION

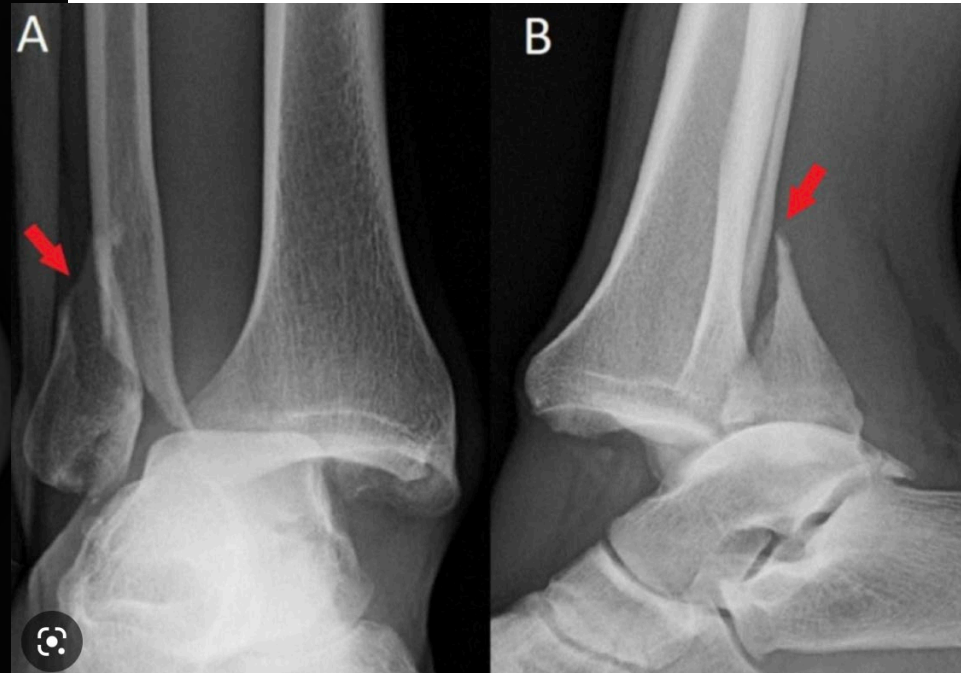


Hip Dislocation

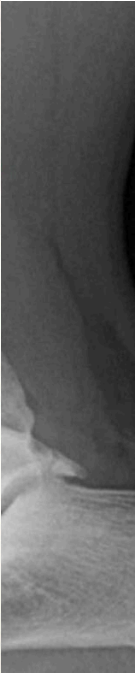


Ankle Dislocation

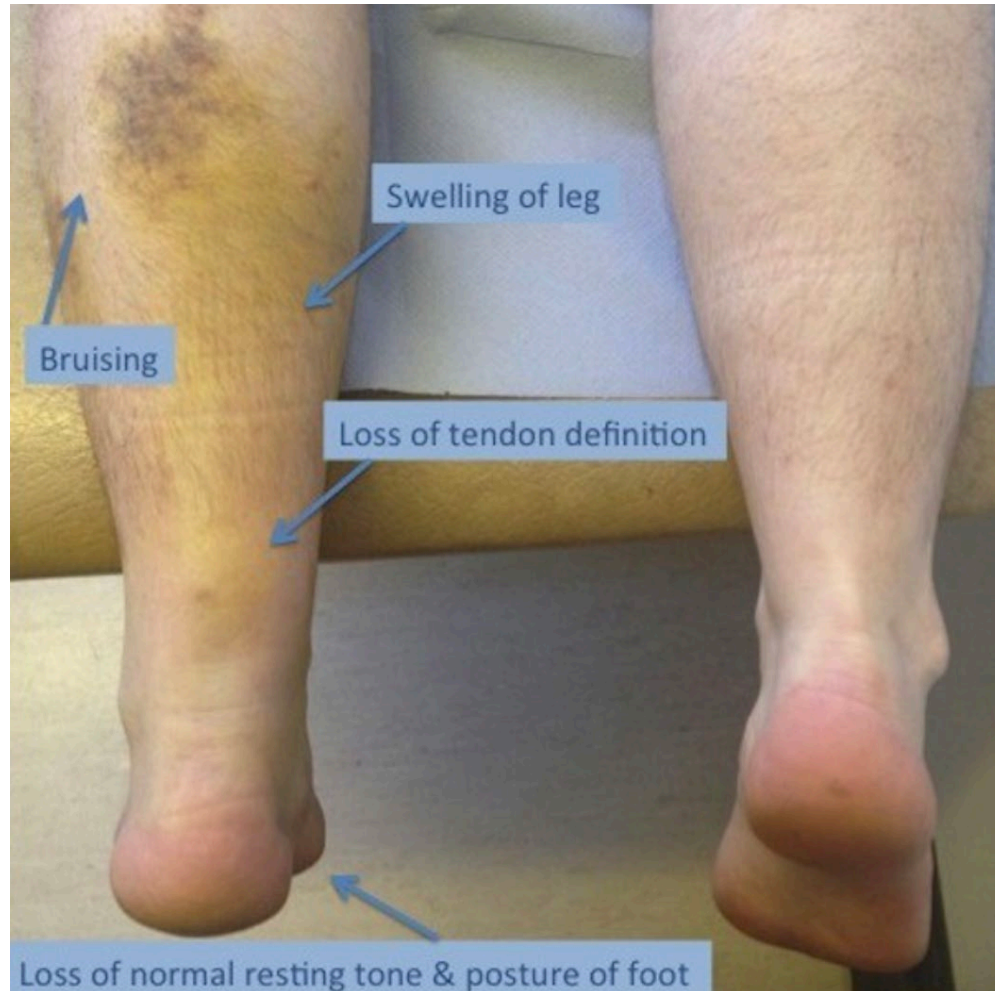
Usually associated with fracture



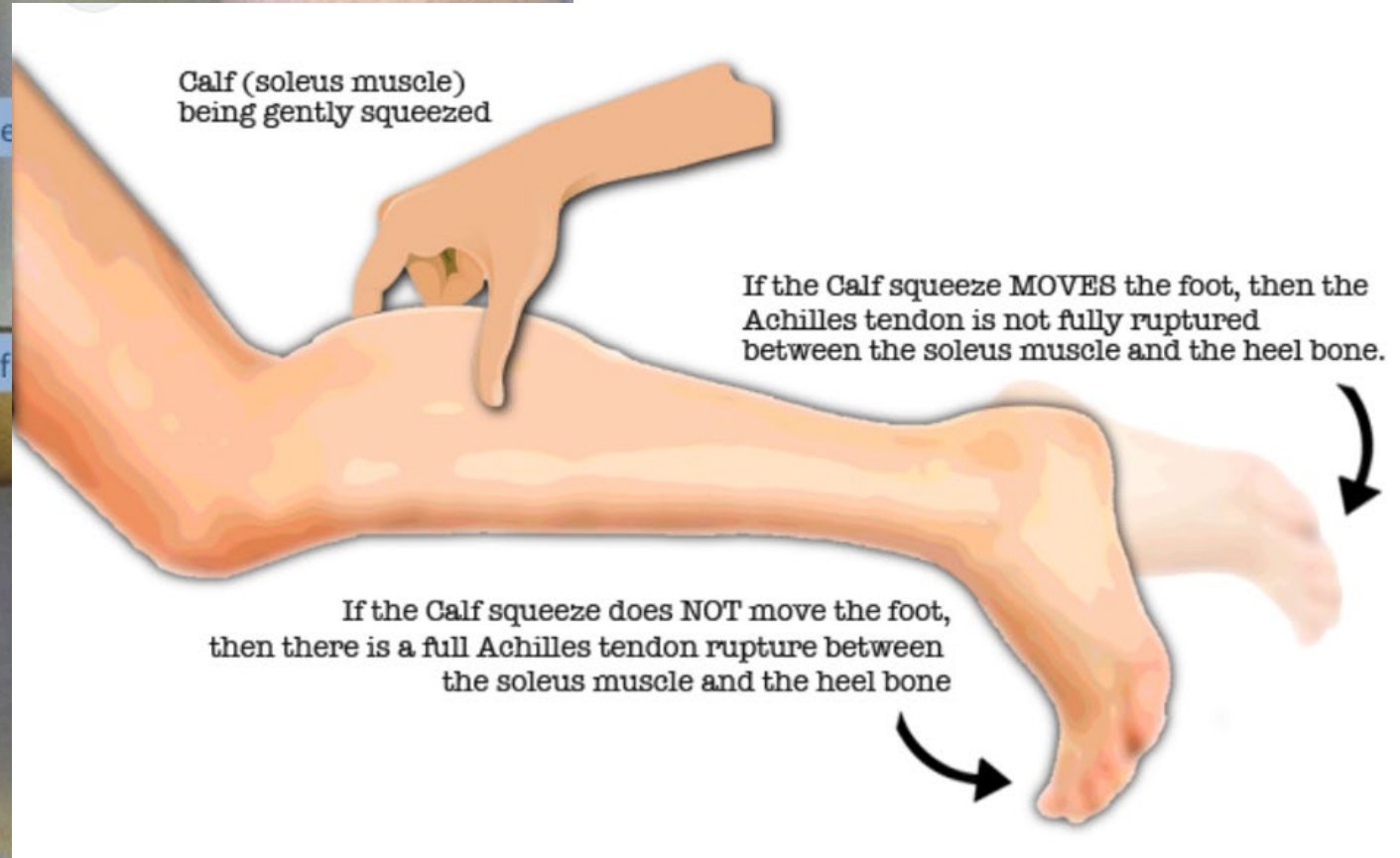
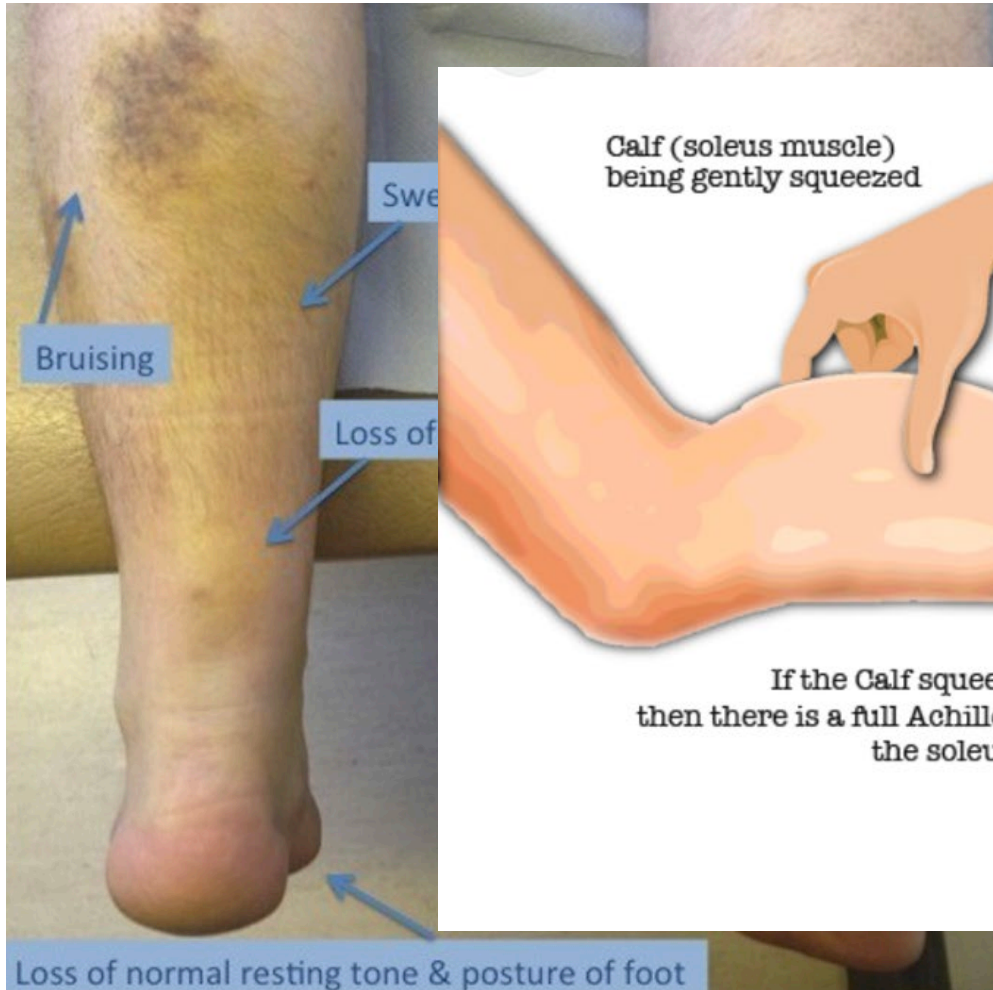
Ankle Dislocation



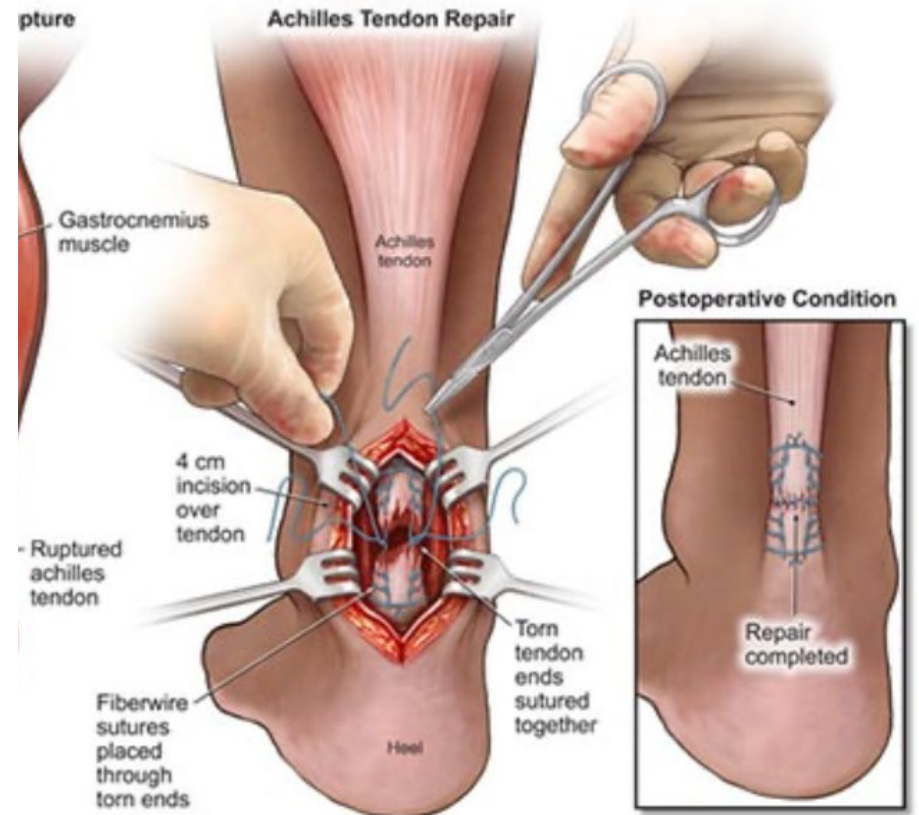
ACHILLES TENDON TRAUMA



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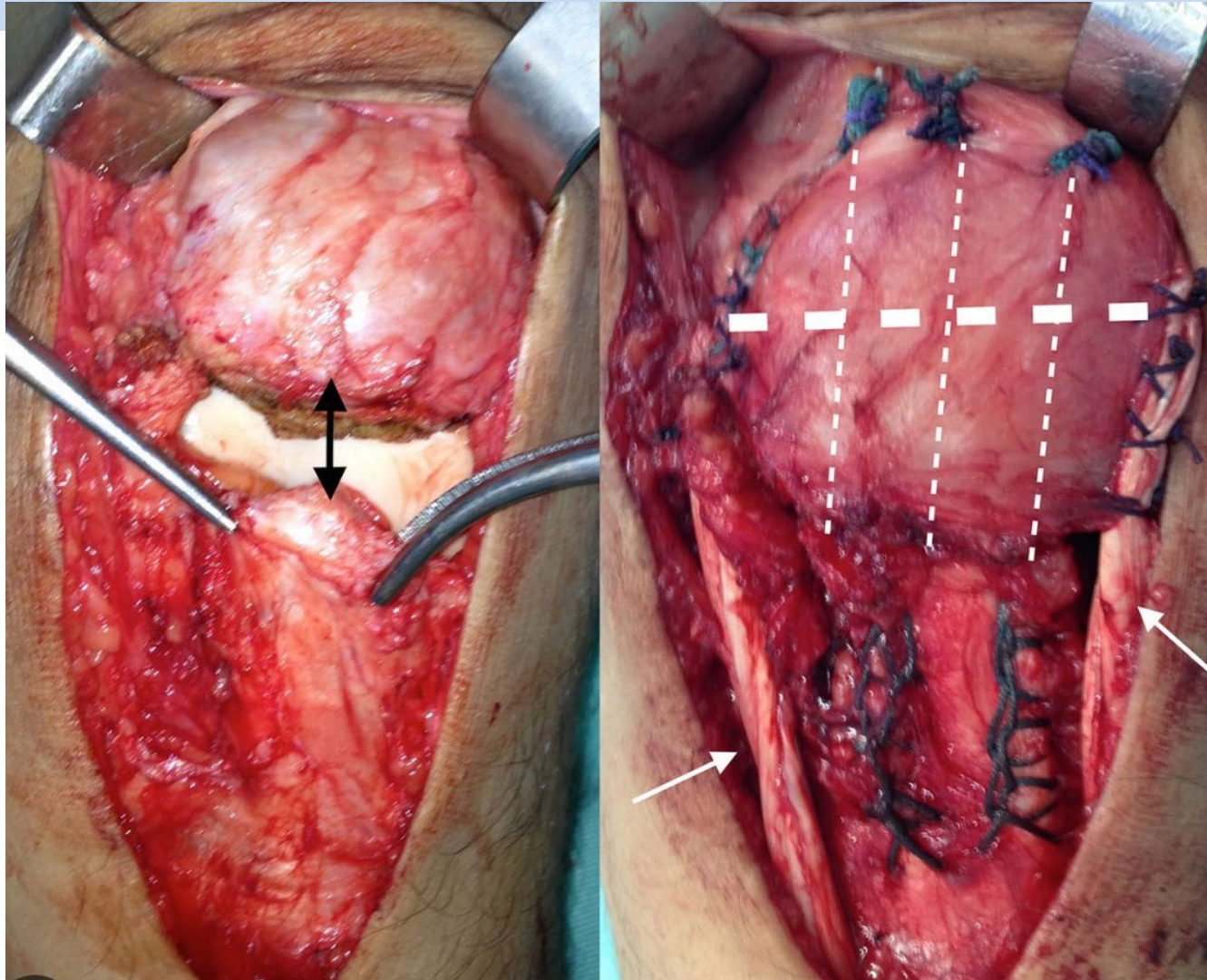
ACHILLES TENDON TRAUMA



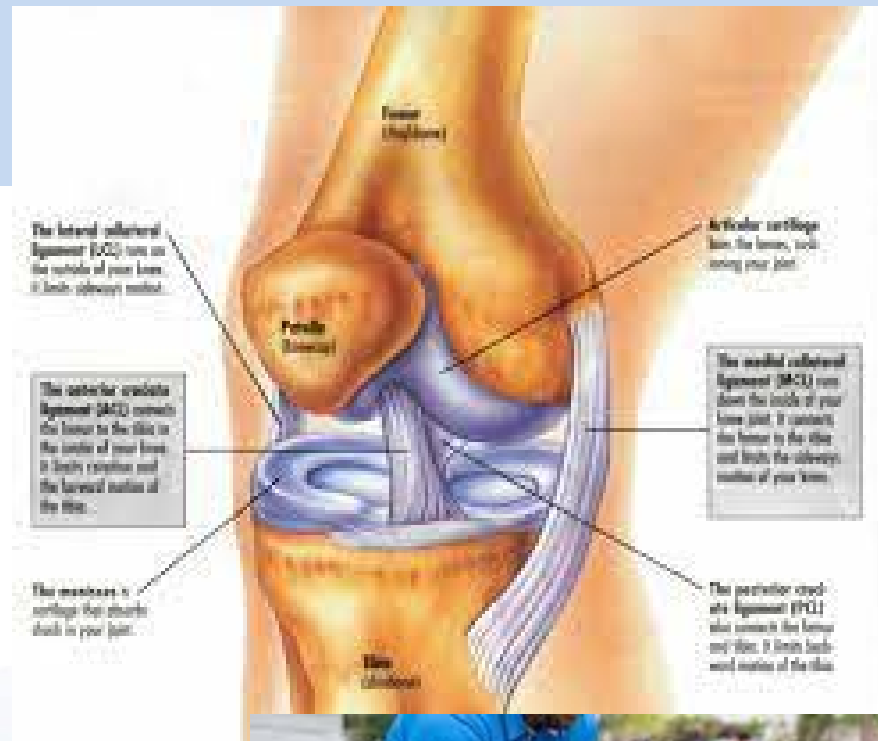
PATELLAR TENDON RUPTURE



PATELLAR TENDON RUPTURE



Knee Ligaments



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