

Common Injuries Sustained in Basketball

Rhode Island Athletic Trainers' Association



Disclaimer

All informations presented today is in good faith to educate and to provide basic guidelines and basic knowledge of the potential injuries that can occur during activities.

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Objectives

- General Overview of Anatomical Systems with some basic terminology
- Injuries Overview - Acute and Chronic

Fractures

Sprains

Tendinitis

Concussion- [CDC](#), NFHS

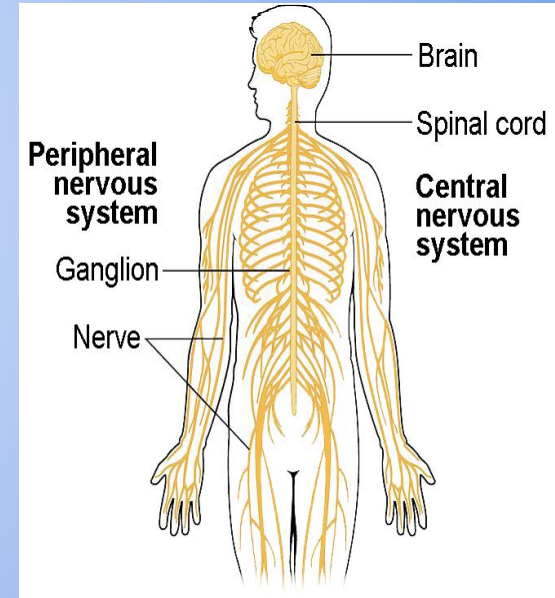
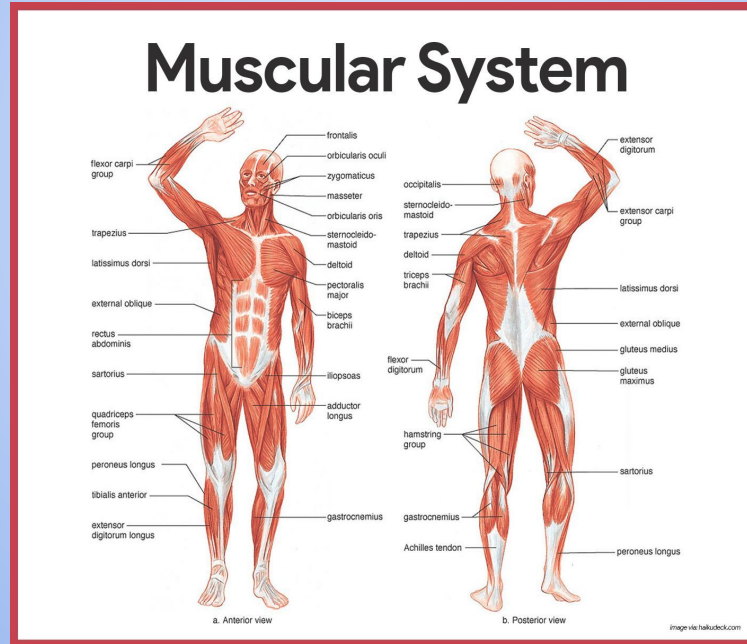
- Review

Anatomical Systems

Skeletal

Muscular

Nervous



Bone Injury- Fracture

Mechanism (cause of injury) – stress of the bone beyond its limit, either from a direct hit, extreme flexing or extending of a joint, and/or fatigue (stress fractures can occur to the metatarsals)

Common Types fractures: Simple, compound, transverse, oblique, avulsion, greenstick or buckle, spiral

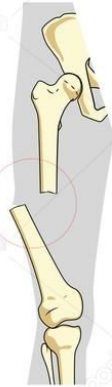
Types of Bone fractures



Normal



Transverse



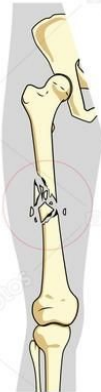
Open / compound



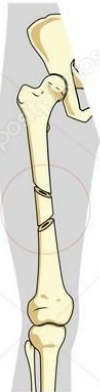
Oblique



Obliquely displaced



Comminuted



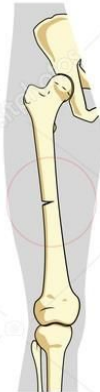
Segmental



Avulsed



Spiral



Greenstick

Fracture- Management of Injury

All suspected fractures must be sent to Md for X-rays

- Displaced/severe deformity esp of Long bones need transport to hospital
- Stress fractures may not show up on X-rays and may need further diagnostics such as MRI or bone scan

Rest

Immobilization

Possible Surgical procedures which may require internal and external fixation

Sprains- Stretching or Tear of a Ligament

Ligaments - connect bone to bone

Sprain- Injury of the Ligament

Grade 1 - Stretch of Fibers

Grade 2- Partial tear of Fibers

Grade 3- Full Rupture of Fibers

Common ligament injuries include - Ankle- ATFL, CF, PTFL, High Ankle, Deltoid; Knee - MCL, ACL

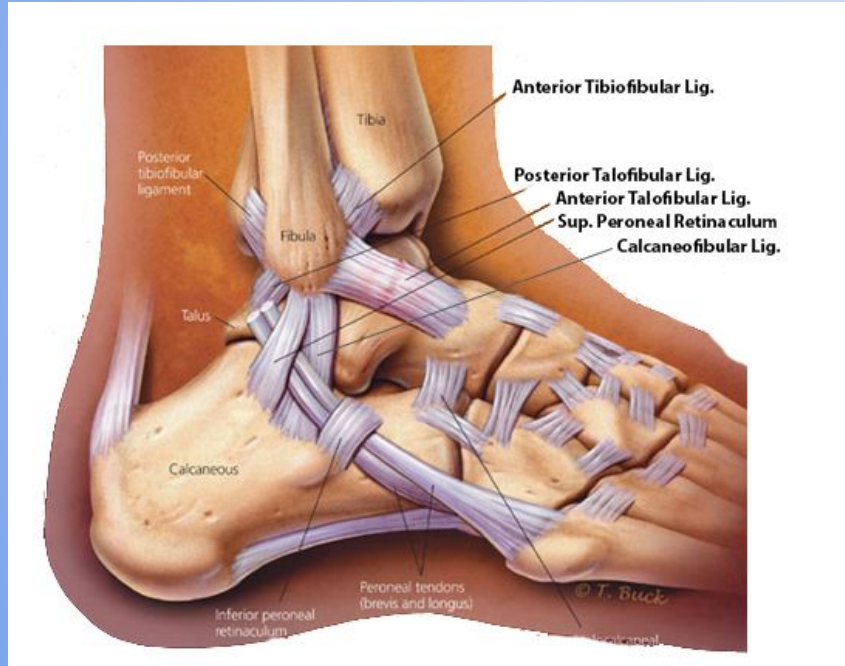
Ankle Sprain- Mechanism of Injury (MOI)

Mechanisms – Anterior Talo-fibular (ATF), Calcaneo-fibular (CF), Posterior Talo-fibular (PTF), Deltoid, High Ankle Sprain

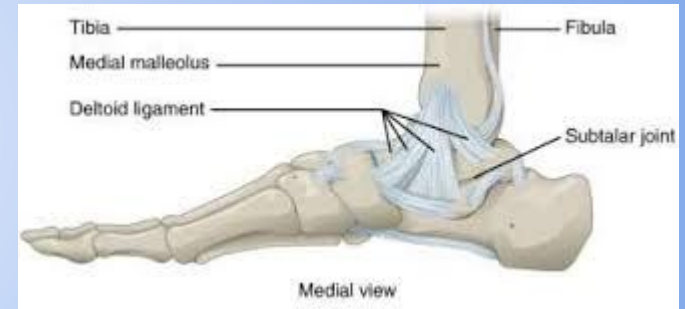
1. ATF – Inversion and Plantarflexion
2. CF – Inversion during Dorsiflexion
3. PTF – Dorsiflexion
4. Deltoid - Eversion (Pronation)
5. High Ankle sprain - External rotation or Dorsiflexion of Talus

Ankle Anatomy

Lateral Side



Medial Side

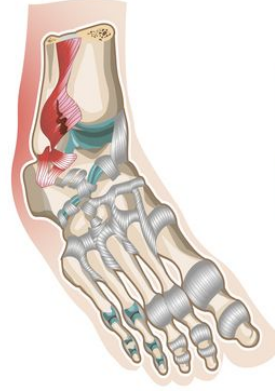


Different Grades Ankle Sprain

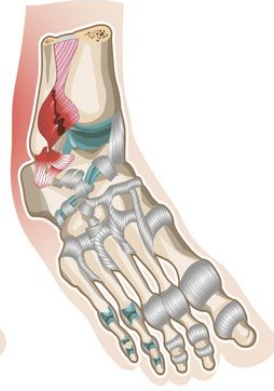
Normal



Grade I



Grade II



Grade III



Ankle Sprain - Signs and Symptoms

Common Signs and Symptoms - pain, swelling, ecchymosis (discoloration), deformity, inability to walk or bear weight, point tenderness over the ligament, decreased range of motion (ROM), instability



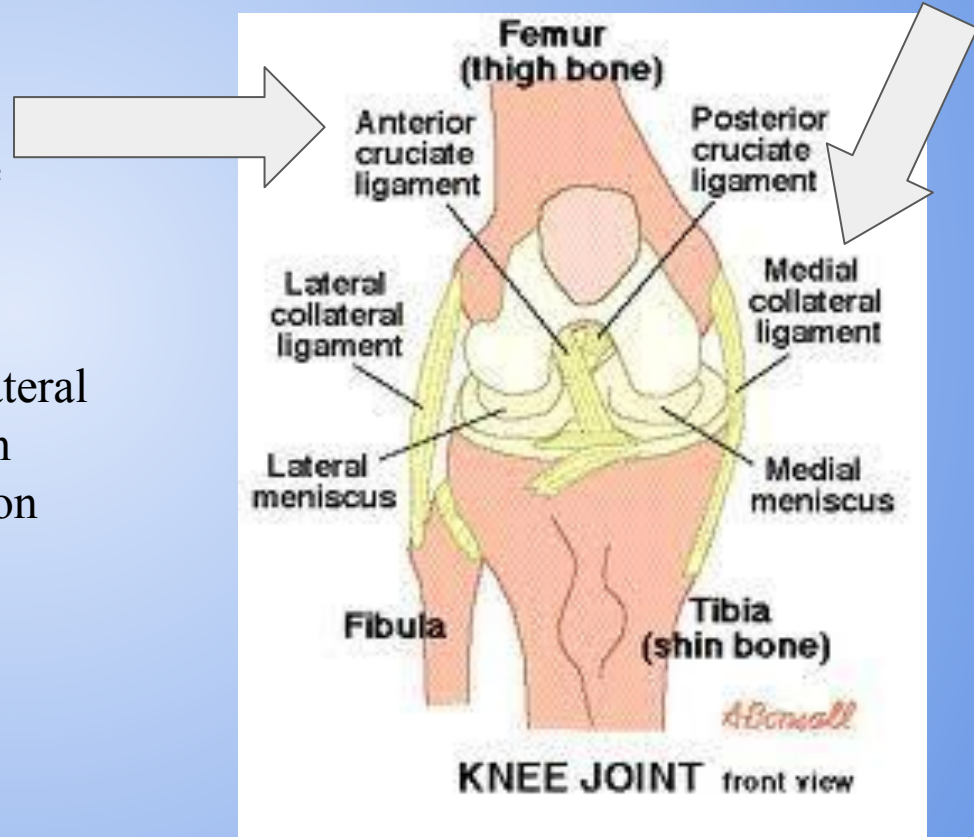
Knee- Sprain Mechanism of Injury (MOI)

Medial Collateral Ligament

- Valgus Stress or stress to the lateral side

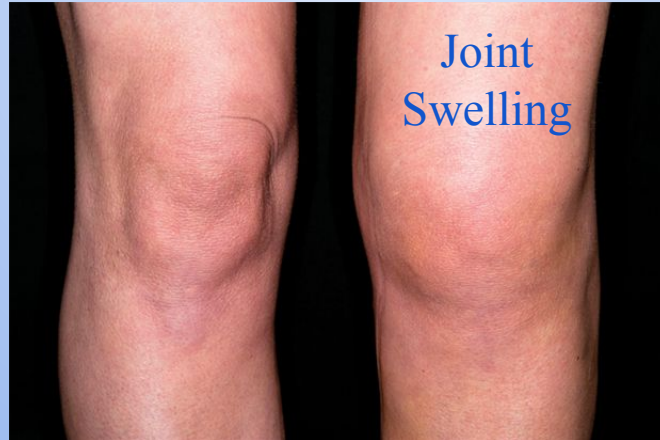
Anterior Cruciate Ligament

- Anterior translation of the medial and lateral tibial plateau commonly occurring when cutting, pivoting, and sudden deceleration



Knee Sprain - Signs and Symptoms

Common Signs and Symptoms - feeling or hearing a pop, pain, swelling, ecchymosis (discoloration), deformity, inability to walk or bear weight, point tenderness over the ligament, decreased range of motion (ROM), instability- feeling like the knee wants to “give away/out”



Sprain Management

Rest

Ice

Compression

Elevate above heart as tolerable

Refer to physician for diagnosis, diagnostic imaging such as x-rays and MRI

Hospital referral is warranted if grossly deformed, vascular/neural compromised, athlete suspected to be in shock

Note- Hospitals will not perform MRI unless the injury is life threatening

ACL- Other Considerations

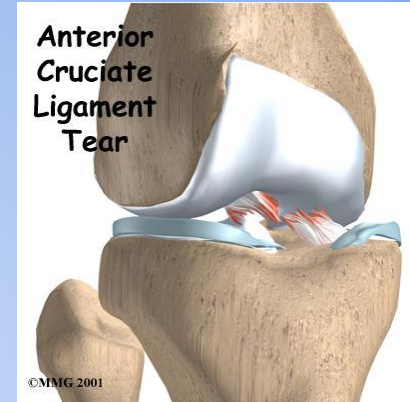
Higher incidents in females due to-

Intrinsic Factors

- ligament size, ligament laxity, intercondylar notch dimensions, limb alignment – higher Q-angle, and estrogen/estrogen receptors on ACL has been researched as well

Extrinsic Factors

- level of skill, level of experience, shoe-floor friction, ankle prophylactic braces, stylistic differences in sport play – plant and cut, straight-leg landing, one-step stop landing with knee hyperextended, pivoting with sudden deceleration, muscle imbalance – e.g. quad dominance over hamstring and glutes



What is Patellar Tendonitis- Jumper's Knee? MOI?

Patellar tendinitis (inflammation to the muscle tendon) is an injury to the tendon connecting your kneecap (patella) to your shinbone.

The patellar tendon works with the muscles at the front of your thigh to extend your knee so that you can kick, run and jump.

Mechanism- repetitive or eccentric knee extension activities



Jumper's Knee - Signs and Symptoms

Increase pain is reported at the beginning of the activity, pain subsides during warm ups then reoccurs after activity, increase pain with ascending and descending of stairs, tenderness over the distal patella tendon, point tenderness over the tibial tubercle

Jumper's Knee - Management

Activity might need to be reduced if prominent swelling is present

Increase range of motion/stretch the following muscle groups - Quadriceps, IT
Ban, adductors

Patella tendon ban for compression

reconditioning/Strengthening of the gluteus and hamstring muscles

Ice post exercises/activity

Refer to physician if pain and swelling does not subside with rest

Concussion - What is it?

A concussion is a type of traumatic brain injury—or TBI—caused by a bump, blow, or jolt to the head or by a hit to the body that causes the head and brain to move rapidly back and forth inside the skull.

This sudden movement can cause the brain to bounce around or twist in the skull, creating chemical changes in the brain and sometimes stretching and damaging brain cells.

Concussion - Common Signs and Symptoms

Observed Signs

- Can't recall events *prior to* or *after* a hit or fall.
- Appears dazed or stunned.
- Forgets an instruction, is confused about an assignment or position, or is unsure of the game, score, or opponent.
- Moves clumsily.
- Answers questions slowly.
- Loses consciousness (*even briefly*).
- Shows mood, behavior, or personality changes.

Symptoms Reported

- Headache or “pressure” in head.
- Nausea or vomiting.
- Balance problems or dizziness, or double or blurry vision.
- Bothered by light or noise.
- Feeling sluggish, hazy, foggy, or groggy.
- Confusion, or concentration or memory problems.
- Just not “feeling right,” or “feeling down”.

Concussion Management

If you suspect a concussion-

Remove from play - *When in doubt, Sit them out*

Observe athlete until parent is contacted and communicate observed symptoms to parents

Refer to a physician for evaluation, suspected concussions must have written medical clearance by a MD or DO in RI before returning to sports

When cleared from a MD, Implement return to play protocol

Concussion

All high school and college coaches are required to complete yearly concussion training through the NFHS.

The RIATA encourage all youth/club coaches to complete training as well.

Training like this can be done through the CDC or NFHS websites.

Concussion - Additional Resources

CDC Concussion [Resource Links](#)

[Return to Play Protocol](#)

[Concussion Sport Policies](#)

QUESTIONS?