

# Common Sport Injuries

# Tissue Properties

- Every tissue in the body has a specific design and purpose and so they all have a specific tolerance and breakpoint.
- If this point is exceeded injury results

# Tissue Properties

- Bones: are the most rigid tissue, they will break before they bend.
- Ligaments (connect bone to bone) are less rigid than bones but do not have the stretching properties of tendons. Ligaments are static stabilizers of joints.
- Tendons and muscles are considered dynamic stabilizers . The stronger these tissues become, the more stable a joint will be. Tendons possess greater stretching properties than ligaments but will also tear if pushed too far.

# Tissue Properties cont..

- Stretching:

<https://www.youtube.com/watch?v=Bpc2H1pUojg>

# Types of Athletic Injuries

- Classification of Injuries:
  - Acute Injuries: Have a known mechanism and are of sudden onset; signs and symptoms usually surface immediately or shortly after injury
  - Chronic Injuries: Have a gradual onset and long duration. Often the person does not recall a specific mechanism of injury, and injury results from an accumulation or repetitive stress over time.

# Sprains, tears and pulls

- Sprains are injuries to ligaments while Strains (pulls) are injuries to muscles or tendons.
- 1<sup>st</sup> 2<sup>nd</sup> and 3<sup>rd</sup> degree injuries.

# 1<sup>st</sup> degree Ankle sprain



- Mild and take a day or a few days to heal if proper care is taken at the time of injury.

## 2<sup>nd</sup> Degree Sprain



- Moderate and require treatment from a physiotherapist once diagnosed by a doctor.



# 3rd degree Sprain

- Most severe and may require surgery.
- Often 6-12 months to fully recover



- <https://www.youtube.com/watch?v=OD-p1mwqsH4>

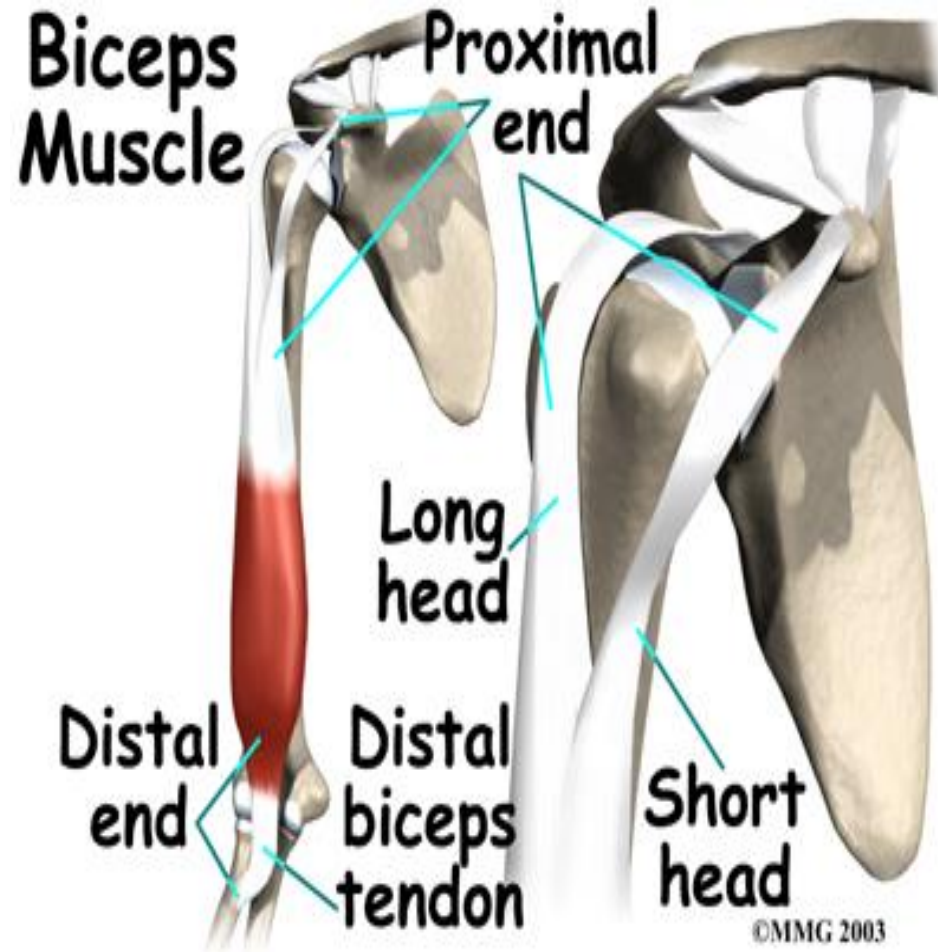
# The Shoulder

- Biceps Tendinitis
- Rotator cuff tears
- Shoulder separation
- Shoulder dislocations

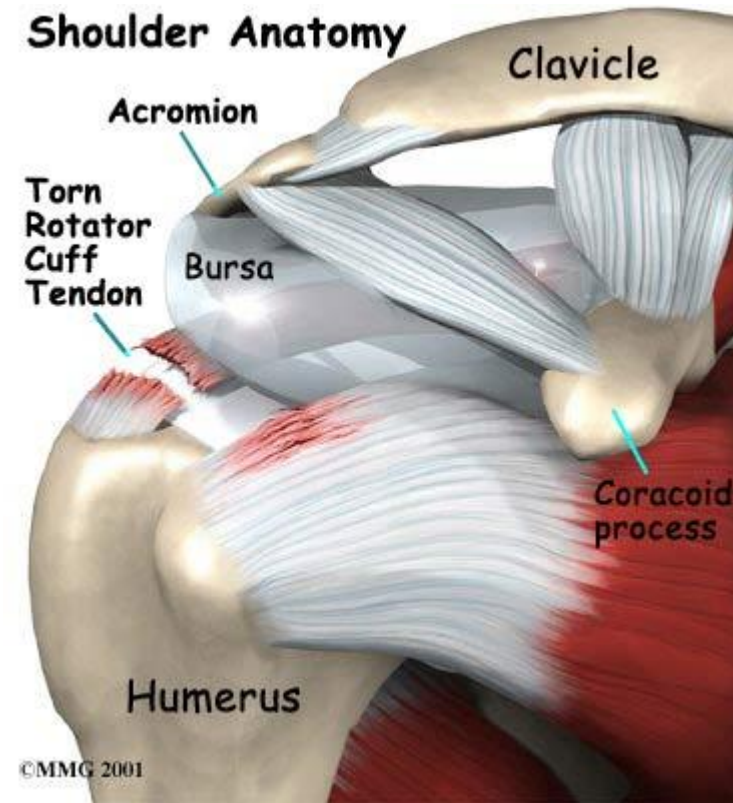
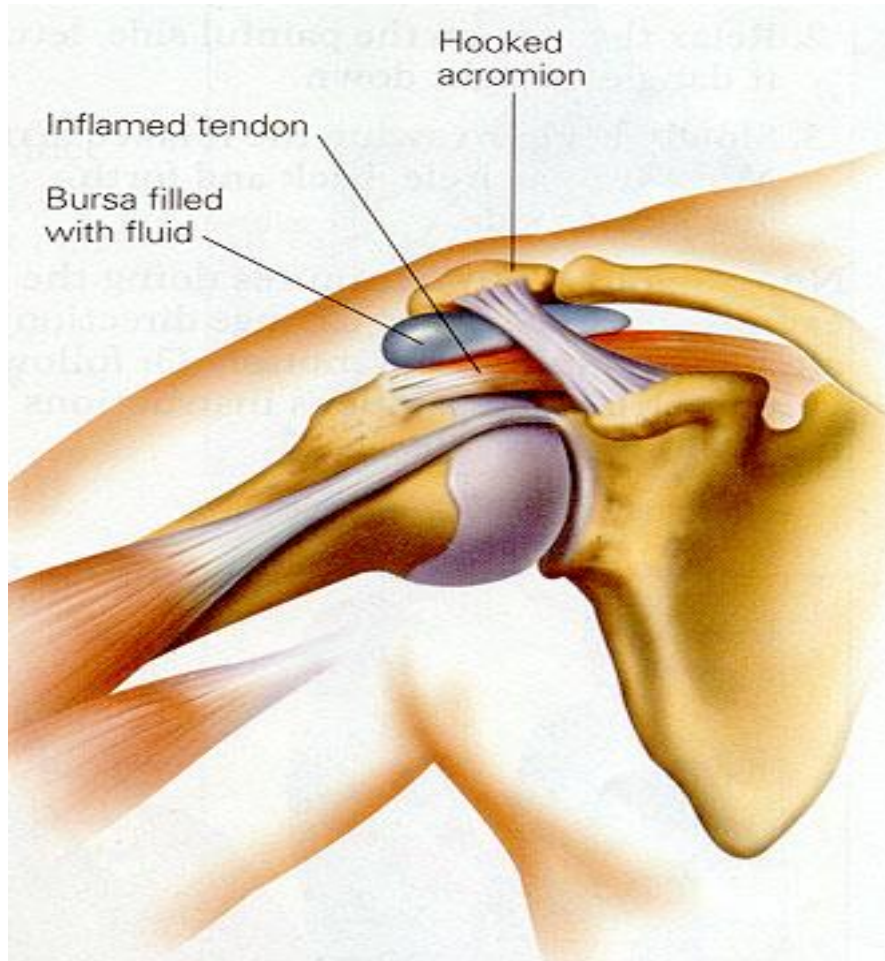
# Tendinitis and Bursitis

- Tendinitis - Inflammation of a tendon caused by prolonged or abnormal use.
- Bursitis – Inflammation of the Bursa (fluid filled sac like structure in joints that help decrease friction between surfaces during movement of that joint).
- When one or both of these are present the term impingement syndrome is often used.

# Biceps Tendinitis



# Impingement syndrome





# Tearing of the Labrum

## Glenoid Labrum

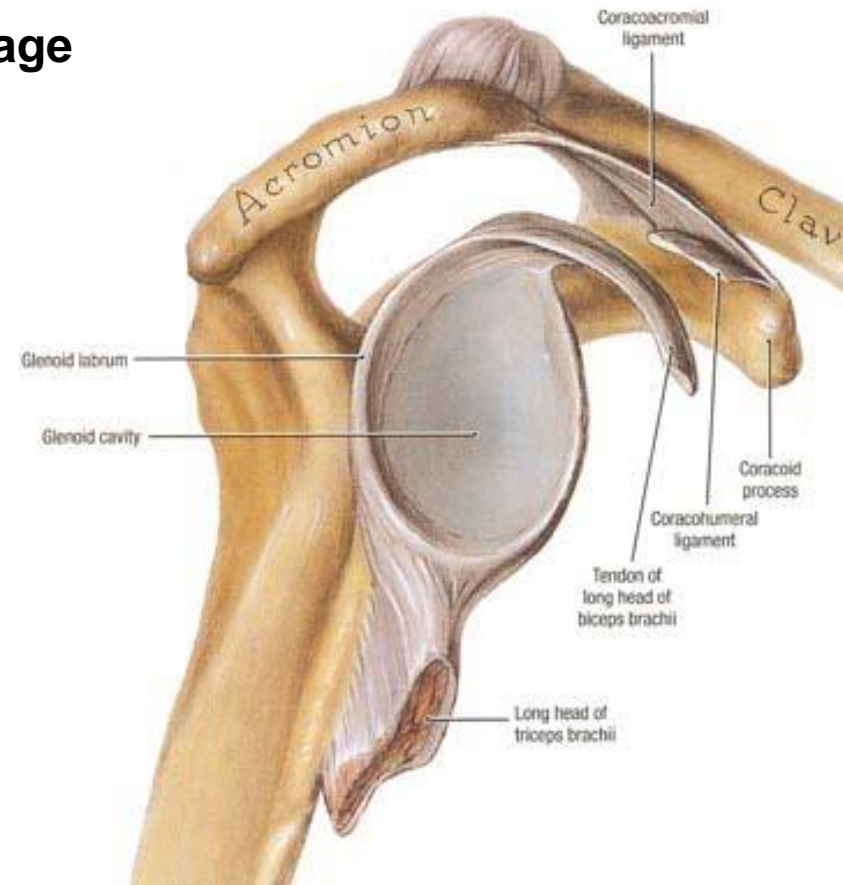
The “lip of the glenoid” is a *meniscus (rim) of fibrocartilage around the glenoid fossa* (the “socket” of the scapula)

This labrum

**deepens the socket by 5°**  
**widens the socket by several millimetres**

results in **much greater static stability**  
than provided by the bones alone

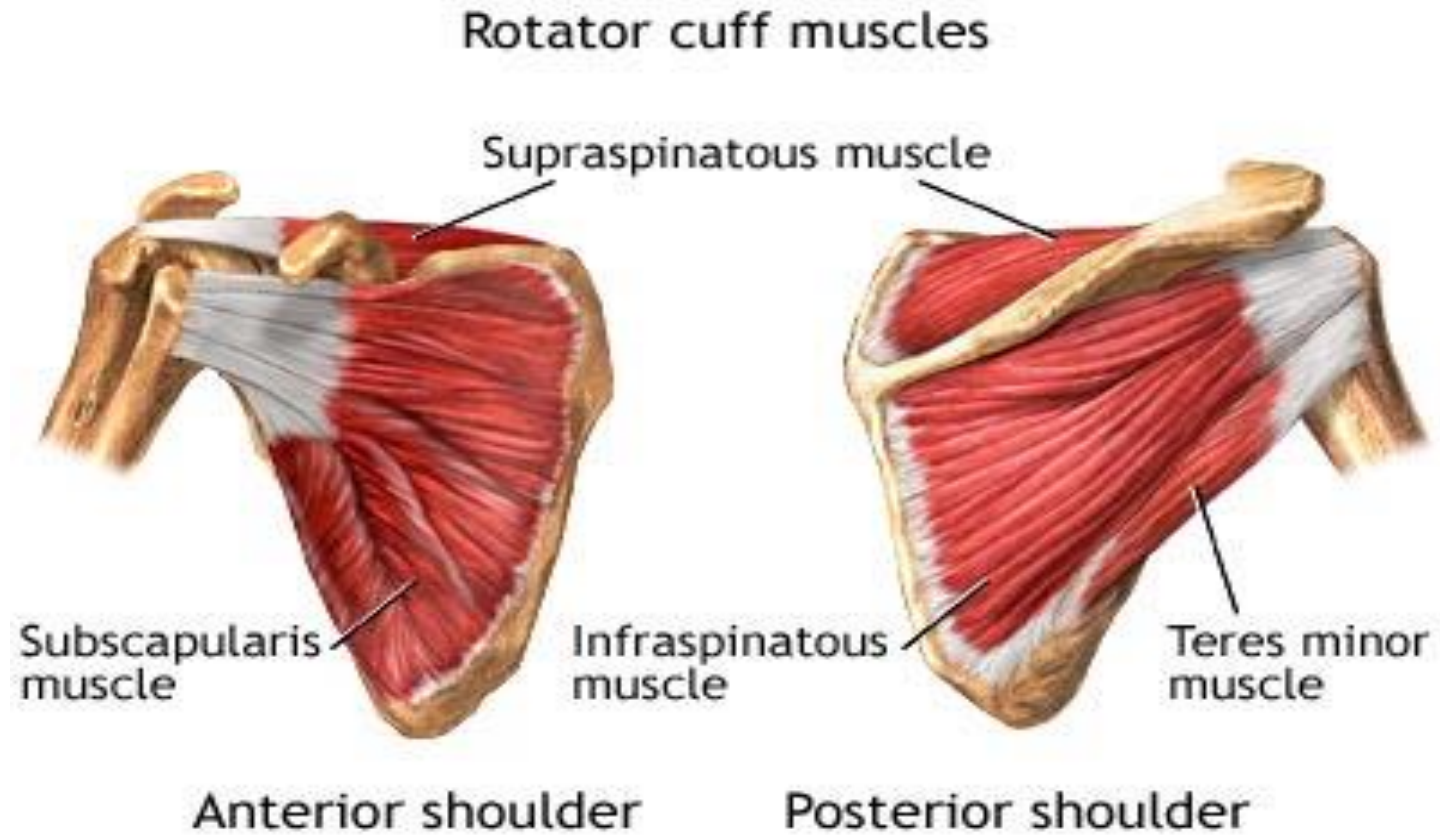
<https://www.youtube.com/watch?v=ZAIR61e0MAQ>



# Rotator Cuff Muscles

- ***subscapularis***
- accelerates IR (concentric action)
- decelerates ER (eccentric action)
- Acting **together, the rotator cuff muscles**
- **rein in the head of the humerus, and hold it in the glenoid fossa** during motion produced by prime movers
- ***supraspinatus***
- depresses the humeral head during elevation
- initiates elevation / active in most movements
- isolated by scaption-in-internal-rotation (SIR)
- ***infraspinatus / teres minor***
- accelerate ER (concentric action)
- decelerate IR (eccentric action)

# Rotator cuff muscles





# Strengthening GH Stabilizers

- **Basics**
- **SIR (scaption in internal rotation)**
  - Works the supraspinatous
- **ERN (external rotation in neutral)**
  - Works the infraspinatous and teres minor
- **SER (scaption in external rotation)**
  - Works the supraspinatous and deltoid
- **IRN (internal rotation in neutral)**
  - Works the subscapularis

# Dislocations and Separations



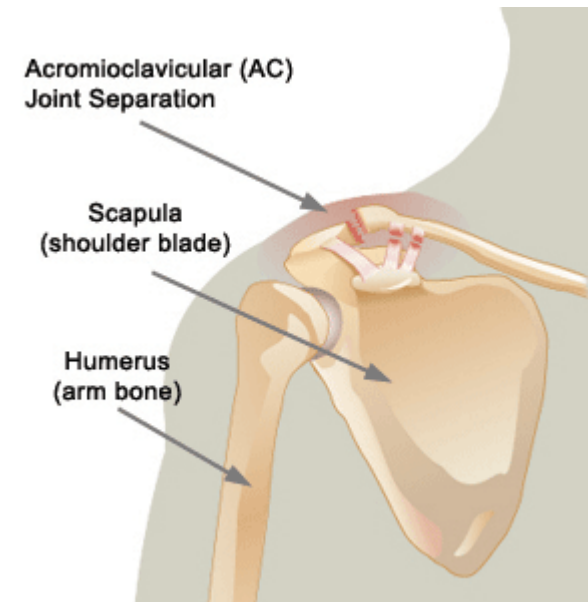
# Dislocations and Separations

- A dislocation occurs when a bone is displaced from its original location. Depending on the severity, tendons and ligament may be sprained or torn.
  - The joint looks deformed/awkward
  - Painful when touched
  - The joint is not useable

Medical attention is required! Do not try to put it back in place yourself!, you may cause more damage!

# Dislocations and Separations

- Separations – Occur when the ligaments holding a joint together tear and separate from each other. Eg. Acromioclavicular (AC) joint and sternoclavicular (SC) joint



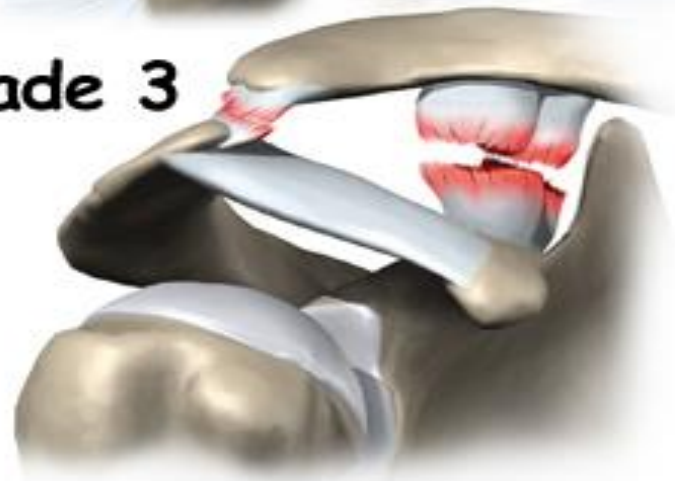
**Grade 1**



**Grade 2**

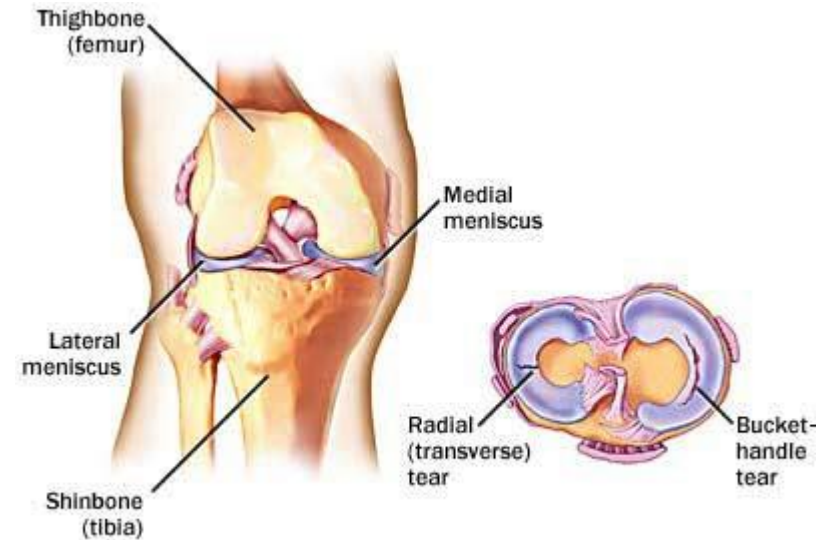


**Grade 3**



# Cartilage damage

- Normally occurs to hyaline cartilage which is located at the ends of bones and free moving joints. Often damage or tearing occurs due to vigorous lateral movements.



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- <https://www.youtube.com/watch?v=9EgRHfoleLc>

# Shin Splints

- Caused by inflammation or tearing away of the muscles in the lower leg from the periosteum of the tibia. Yet another example of repetitive stress syndrome.

