

Treatment

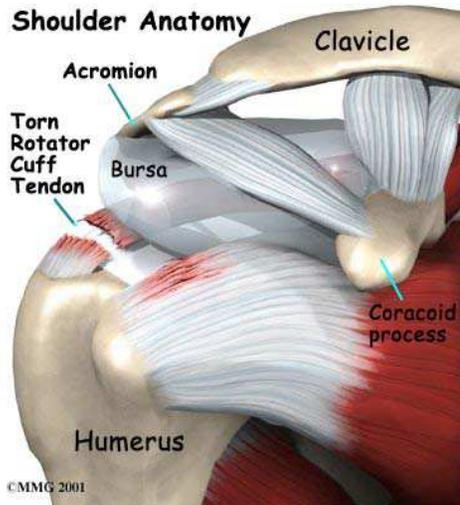
Conservative Treatment Options (Grade 1 & 2):

- Rest, Ice
- Manual treatment; ART ®, massage therapy and friction therapy
- Ultrasound, Laser
- Electrical Stimulation
- Stretches for the posterior capsule of shoulder
- Exercises to strengthen the rotator cuff muscles
- Treatment should begin with stretches and local treatment on the lesion site, then move onto strengthening and sport specific exercises.

Surgical Treatment Options (Grade 3):

- A surgical consult and imaging is recommended to determine the best treatment pattern for a complete tear.
- If a tear isn't detected early, surgical repair may not be possible and the patient may always have shoulder pain and/or decreased range of motion

Shoulder Anatomy



Strengthening Exercises

The first exercises done should work on scapular (shoulder blade) control and stabilization.

- If the scapula is allowed to move freely with activity, it will roll forward and down causing excess stress on the rotator cuff muscles/tendons
- A stable scapula promote proper positioning of the shoulder allowing the arm to move freely within the joint
- Stabilizing the scapula will also ensure that the rotator cuff muscles have a stable base to work from.

Once good scapular control is gained, the patient can start to work on strengthening the rotator cuff muscles. You want to focus on:

1. Selectively loading the rotator cuff muscles
2. Eccentric exercises (done when the muscle is in a lengthened position)
3. Incorporating sport specific movements once the cuff muscles become stronger.

The anterior capsule and internal rotators should be strengthened first to push the head of the humerus back into a proper position.

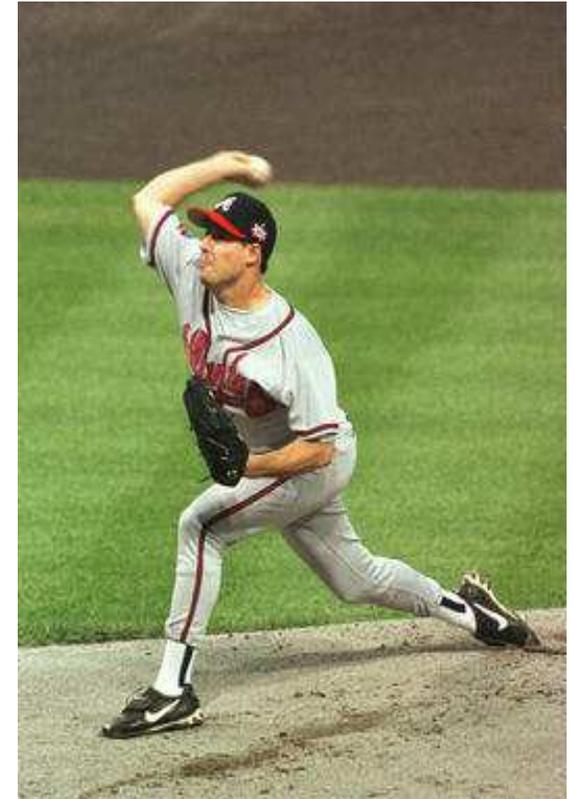
A good off season program for overhead athletes that works on strengthening the rotator cuff muscles, will help to avoid injury in the future.



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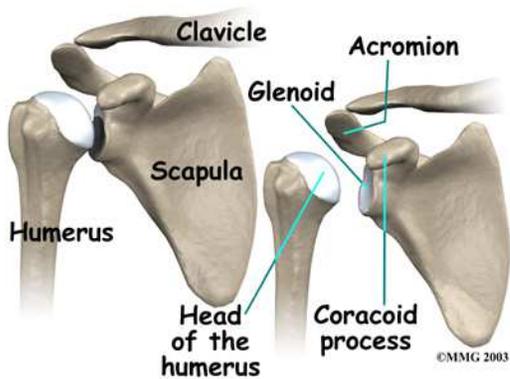
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Rotator Cuff Strain



Shoulder Anatomy

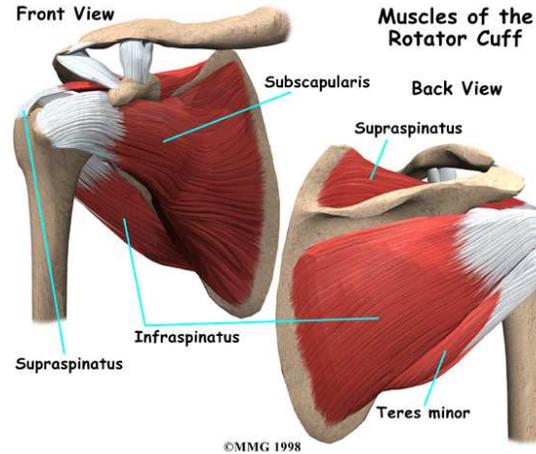
- The shoulder is a ball and socket joint designed for maximum mobility, but has little skeletal stability. The muscles surrounding the shoulder need to be strong in order to stabilize the joint.
- Many sport activities, especially those involving repetitive, overhead movements such as throwing, swimming, racket sports, volleyball, and hitting, place a lot of stress on the supportive muscles around the shoulder.



- The muscles that hold the head of the humerus in place and allow for proper movement of the shoulder joint are called the Rotator Cuff or “SITS” muscles.
- There are four rotator cuff muscles;
 - **S**ubscapularis (internal rotation)
 - **I**nfraspinatus (external rotation)
 - **T**eres minor (external rotation)
 - **S**upraspinatus (abduction and external rotation)

Rotator Cuff Muscles

- The external rotators are responsible for decelerating the arm during the follow-through phase of throwing, and are more susceptible to injury



Rotator Cuff Strain

A strain is a stretch, tear or rip in a muscle or tendon. The supraspinatus muscle is most often strained.

There are three degrees of rotator cuff strains:

1. **Grade 1** – some muscle fibers have been stretched/ torn and there is some pain with active movement but usually full range of motion
 - Pain with moving the arm out to the side, and forward in front of body
2. **Grade 2** – more muscle fibres than a grade 1 tear have been torn and active contraction of the muscle is very painful
 - Decreased pain-free range of motion, and may be a loss of stability which may be even more pronounced if accompanied by a labral tear

3. **Grade 3** – a complete rupture of the muscle or its tendon, with significant impairment or total loss of movement, and intense pain (Full thickness tear) which can come from acute trauma or repetitive stress on the muscles.

- Orthopaedic assessment is recommended to detect a full thickness tear and/or imaging such as MRIs or ultrasounds. If a full tear is detected, it can only be corrected with surgery.

Common Causes

Failure of the rotator cuff muscles, due to injury, is one of the most common injuries in sport. The main causes for rotator cuff strains are:

- **F**alling **O**n **O**ut-stretched **H**and (FOOSH)
- Large increases in repetitive stresses/overuse injury (i.e. throwing)
- Improper biomechanics (i.e. excessive scapular motion)
- Lifting heavy objects away from body
- Protracted shoulder posture
- People over 45 who do a lot of heavy lifting and manual work are also more susceptible to injury
- Going from doing low intensity exercises in the off season, to high volume/intensity, repetitive overhead movements
- Overhead athletes will often have a higher than normal range of external rotation due to excessive stretching of the internal rotators.
- With overuse and injury of external rotators, the posterior capsule becomes shortened, pushes the head of the humerus forward and limits internal rotation.
- Improper position of the humeral head can lead to impingement of the surrounding tendons.