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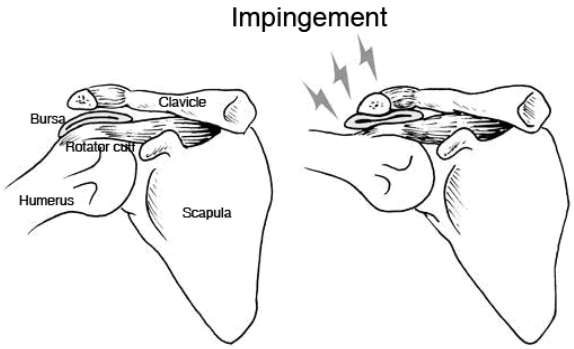
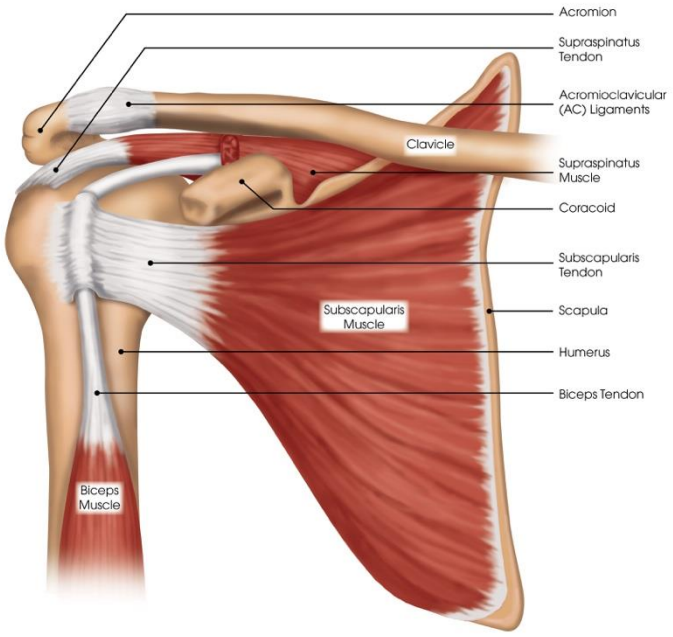
SHOULDER, KNEE & SPORTS MEDICINE

Swimmer's Shoulder

Swimmer's Shoulder is an overuse injury caused by repetitive trauma. It can also be referred to as impingement syndrome. It is characterized by pain in the shoulder due to irritation or inflammation of the rotator cuff tendons or the bursa (subacromial bursa) sitting between the rotator cuff and the bony roof of the shoulder (coracoacromial arch).



The rotator cuff is a series of four muscles which run along the scapula (shoulder blade) and around the glenoid (shoulder socket) surrounding and attaching to the humeral head (ball of the shoulder) by their tendons. The muscles of the rotator cuff work to keep the humeral head centered in the glenoid (socket) as we move our arm. As a result of injury, overuse, fatigue, or relative weakness of the rotator cuff or scapular muscles, the humeral head may not stay well centered when we elevate our arm. This movement of the humeral head can result in contact (impingement) of the rotator cuff with the overlying bony-ligamentous roof (coracoacromial arch). This contact can result in pain and inflammation from the bursa situated between those structures which results in rotator cuff weakness and poor shoulder muscular control. It creates a cycle of pain with repetitive use. This process does not usually result in a rotator cuff tear, but it can be extremely painful and make it difficult for someone to raise their arm.



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Frequent Signs and Symptoms

- Pain around the shoulder, often along the side of the upper arm
- Pain that is worse with shoulder reaching out from the body or overhead
- Occasional aching when not using the arm
- Pain that awakens you at night
- Occasional loss of strength or difficulty raising the arm
- Occasional crepitation (a crackling sound) of the bursa when moving the arm
- Biceps pain and inflammation (in the front of the upper arm)

Etiology (Causes)

- Dramatic changes in shoulder activity
- Inactivity and rotator cuff or scapular muscle weakness
- Repetitive overhead use, such as swimming, painting, throwing, etc.
- Age-related narrowing of the space between the roof of the shoulder (coracoacromial arch) and the rotator cuff
- Unstable Os acromiale

Risk Factors

- Overhead sports, such as baseball, tennis, swimming or volleyball
- Weightlifting and bodybuilding to focus on only certain muscles group, which creates muscle imbalances
- Repetitive overhead labor/work
- Previous injury to rotator cuff, including impingement
- Poor physical conditioning (strength and flexibility)
- Inadequate warm-up or pre-season conditioning before practice or play
- Increasing age
- Age-related narrowing of the space between the roof of the shoulder (coracoacromial arch) and the rotator cuff
- Training errors

Prevention

- Appropriately warm up and stretch before practice or competition.
- Allow time for adequate rest and recovery between practices and competition.
- Proper preseason conditioning that is task specific (overhead throwing, swimming, hitting, etc.)
- Maintain appropriate conditioning:
    - Cardiovascular fitness
    - Shoulder flexibility
    - Muscle strength and endurance, particularly of the rotator cuff and scapular muscles

- Use proper technique.

Outcomes

The prognosis for swimmer's shoulder/impingement is usually excellent. A full recovery can be expected usually within six to eight weeks by eliminating the aggravating activities and performing therapeutic exercises for the rotator cuff and scapular muscles. Supervision by an experienced physical therapist or athletic trainer is strongly recommended because it is easy to perform the exercises incorrectly and make the condition worse. For swimmers and other overhead athletes, it is also very important to gradually return to activity to avoid reaggravation. Keeping in the pool by kicking or utilizing nonpainful strokes can also be helpful while recovering.

Potential Complications

- Prolonged recovery time if not appropriately treated or if a gradual return to activity with regards to intensity, frequency, duration is not followed.
- Chronically inflamed tendon causing persistent pain with activity that may progress to constant pain (with or without activity)
- Shoulder stiffness, frozen shoulder, or loss of motion
- Rotator cuff tendon tear may also be present
- Recurrence of symptoms, especially if activity is resumed too soon or incompletely treated.

Treatment Considerations

Initial treatment consists of therapeutic exercises to restore rotator cuff and scapular muscle strength, endurance, and mechanics to allow proper non-painful motion of the shoulder. Avoiding activities that aggravate the symptoms will also help to relieve the inflammation and pain. Supervision by an experienced therapist is strongly recommended. A steroid injection to the inflamed area around the tendon (within the bursa) is sometimes recommended for patients who are extremely limited by pain.

If a proper course of conservative treatment does not relieve the symptoms, a MRI may be ordered to rule out a rotator cuff tear. MRI is limited and sometimes may miss smaller or partial thickness tears. If the patient has failed therapy or has a negative MRI but a history suspicious for a tear (injury or older age), arthroscopic surgery may be recommended to potentially address a rotator cuff tear or perform a subacromial decompression to open the space between the rotator cuff and roof of the shoulder (coracoacromial arch) and alleviate the impingement contact and pain. Return to full activity is usually possible in six weeks following therapy alone but may be anywhere from three to six months if surgery is performed. Most young athletes do not need surgery.

Possible Medications

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 10 days before surgery), or other minor pain relievers, such as acetaminophen, are infrequently recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Pain relievers are usually not prescribed for this condition.
- Steroid injections reduce inflammation can be helpful in certain cases but should be used with proper discretion.

Modalities

Cold is used to relieve pain and reduce inflammation. Cold should be applied for 15 to 20 minutes every two to three hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage with a cloth between the ice and your skin to prevent burning /freezing your skin.

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