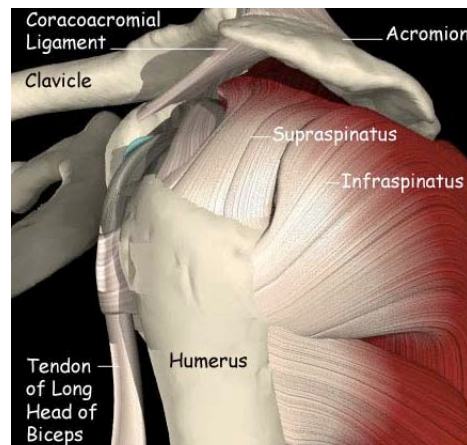
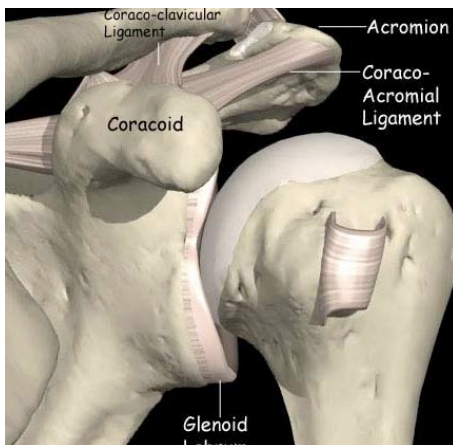


**SHOULDER IMPINGEMENT SYNDROME***Introduction:*

The ball of the shoulder joint sits against its shallow socket (glenoid) like a golf ball on a golf tee. It is kept in place in large part by the actions of the rotator cuff muscles. The cuff is made up of four muscles: the supraspinatus, infraspinatus, subscapularis, and teres minor. These muscles come from the shoulder blade (scapula) and wrap around the humeral head to keep it in place during movements of the arm. There is a narrow gap between the upper surface of the cuff and the roof of the shoulder formed by the acromion. There is a lubricating layer (bursa) sitting between the rotator cuff and the acromion.

Impingement is one of the common causes of pain in the adult shoulder. As the arm is lifted, the acromion rubs, or "impinges" on, the surface of the rotator cuff. This causes pain and limits movement. The pain may be due to a bursitis, inflammation, of the bursa overlying the rotator cuff or a tendonitis of the cuff itself. In some cases, a tear of the rotator cuff tendons may cause impingement pain.

*Who gets impingement?*

Impingement is common in both young athletes and middle-aged people. Young athletes who use their arms overhead for swimming, baseball, and tennis are vulnerable to impingement as an overuse phenomenon. Those who do repetitive lifting or overhead activities, for example electricians, painters or construction workers are also susceptible. Pain may begin with a minor traumatic event or insidiously arise with no apparent cause.

How is impingement syndrome diagnosed?

The symptoms and examination of the shoulder will suggest a diagnosis of impingement, however other problems, such as a partially torn rotator cuff or inflammation of the biceps tendon can mimic impingement.

Shoulder X-rays will be taken to see whether there are any bone spurs contributing to the impingement and to generally assess the shoulder joint. An ultrasound scan is often used to assess the condition of the rotator cuff muscles. In some cases, an MRI will be used to further assess the rotator cuff.



How is impingement treated?

Initial treatment is nonsurgical.

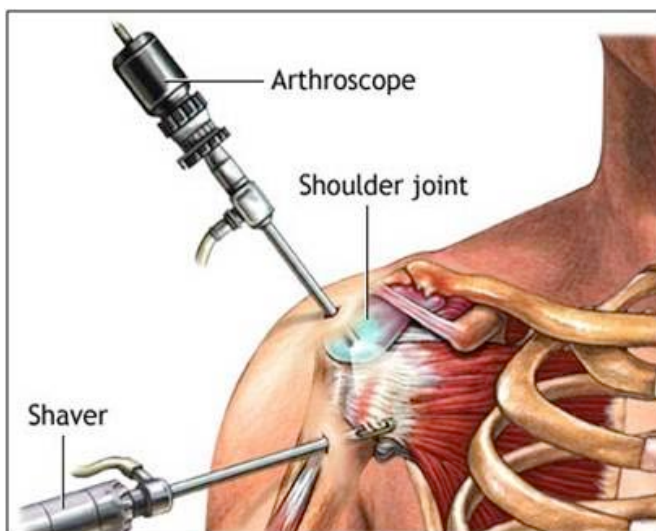
- Activity modification to avoid painful movements.
- Oral nonsteroidal anti-inflammatory medication.
- Stretching exercises to improve range of motion and often a program of physiotherapy to strengthen the muscles around the shoulder.
- If the inflammation aspect of the impingement is not settling, or is limiting the rehabilitation process, an injection of a local anesthetic and cortisone to the affected area may be used.

Non-surgical management is the mainstay of treating uncomplicated impingement. About 2/3 of patients improve enough not to require surgery.

Surgical Treatment

If symptoms continue in spite of non-operative treatment, Surgical treatment is recommended. This is known as subacromial decompression. The goal of surgery is to remove the impingement and create more space for the rotator cuff. This allows the humeral head to move freely in the subacromial space and to lift the arm without pain.

Decompression is usually performed as an arthroscopic procedure. Two or three small puncture wounds are made. The joint is examined through a fiberoptic scope connected to a television camera. Small instruments are used to remove bone and soft tissue. In general, any other conditions present in the shoulder at the time of impingement surgery will be treated at the same time. These can include acromioclavicular arthritis, biceps tendonitis, or tears of the rotator cuff.



*Rehabilitation:*

After surgery, the arm may be placed in a sling for a short period of time. This allows for early healing. As soon as comfort allows, the sling may be removed to begin exercise and use of the arm. The surgeon will provide a rehabilitation program based on the patient's needs and the findings at surgery. This will include exercises to regain range of motion of the shoulder and strength of the arm. It typically takes two to four months to achieve complete relief of pain, and may take up to a year.

What are the risks of surgery?

The likelihood of a life-threatening surgical complication, or damage to major blood vessels or nerves is very rare and unusual. The most common and important risks of surgery that have been reported are:

Continued pain: 5%

Usually all the pain is removed. Some patients experience mild pain on overhead activities. Rarely is the pain not improved by surgery. Very occasionally (less than 0.5%) the surgery can provoke an excessive pain response called a regional pain syndrome. This is impossible to predict and often requires physical therapy and medication to overcome.

Infection: less than 0.1%

This is usually superficial in the wounds and is easily treated with antibiotics. Rarely, the infection can be deep inside the joint and this requires surgery to wash the joint out.

Nerve damage: less than 0.1%

The axillary nerve runs close to the bottom of the joint and, if damaged, can cause numbness over the shoulder, weakness of the deltoid muscle and difficulty in raising the arm.

Stiffness: 1-2%

The shoulder will often become stiff after surgery and this usually improves with physiotherapy. Rarely the shoulder can become very stiff and require manipulation or arthroscopic release surgery. This risk is higher if you have diabetes or previous frozen shoulder problems.