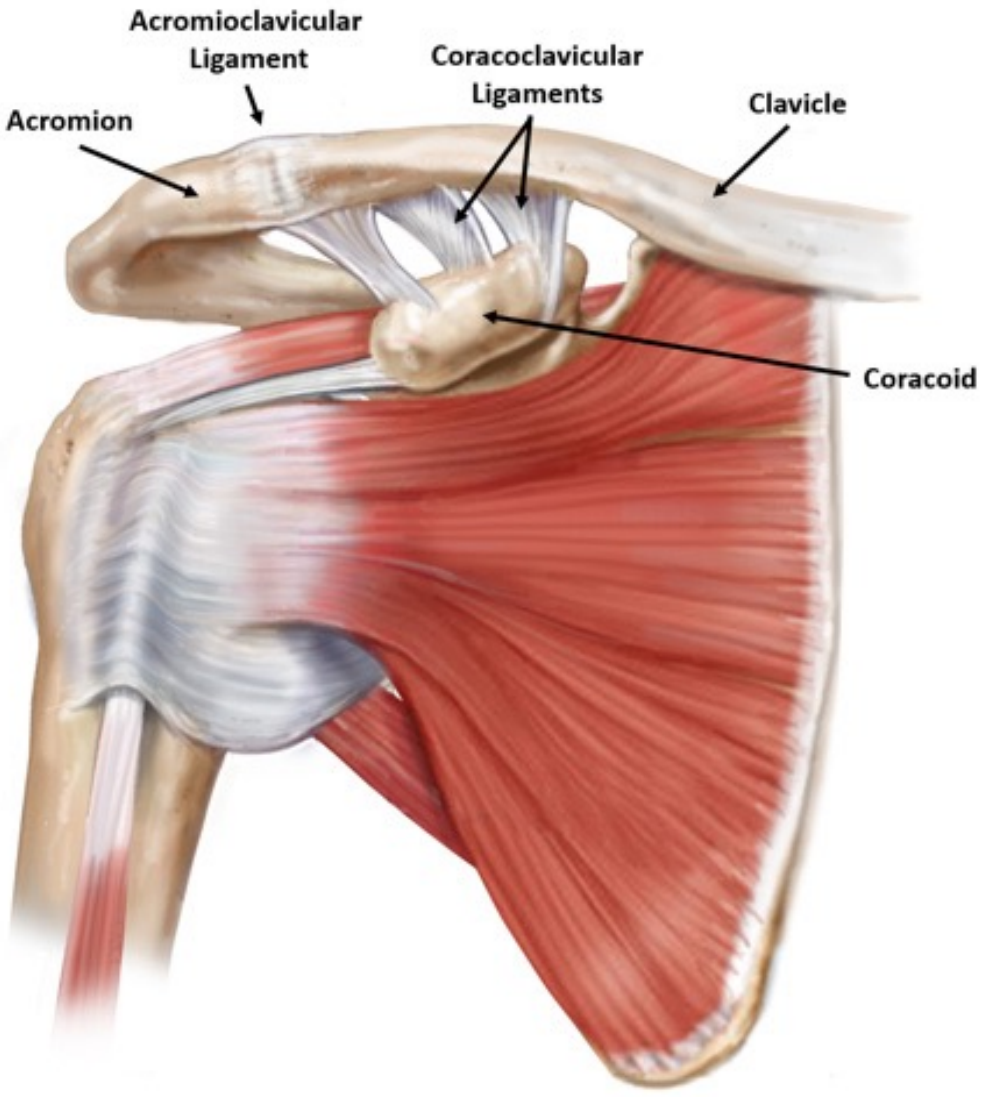
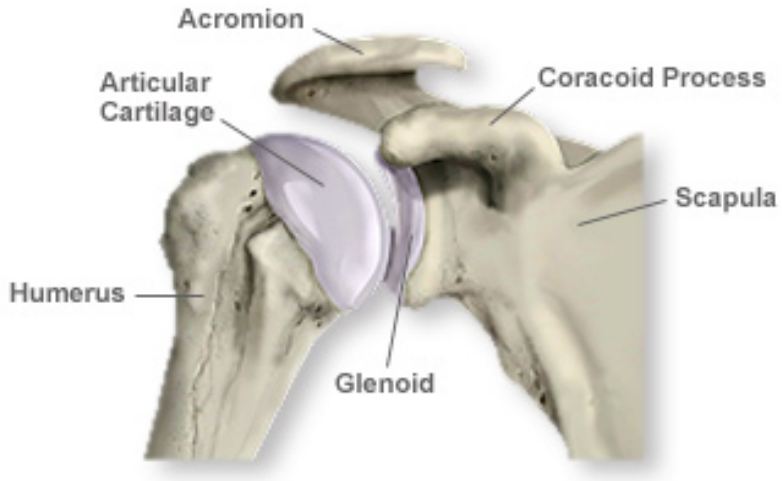
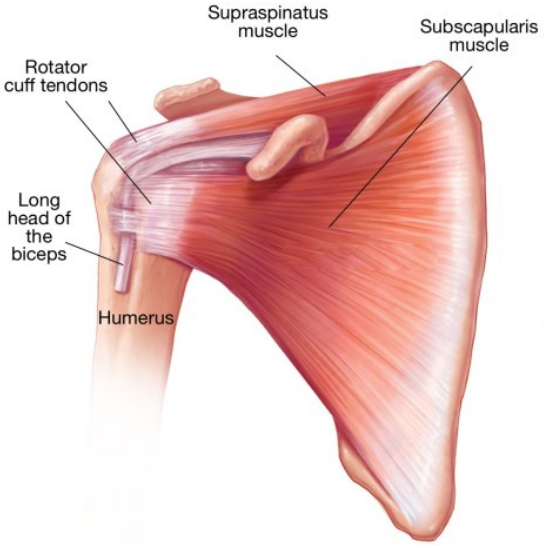
STEWART
ORTHOPAEDICS

Acromioclavicular (AC) joint injuries



Normal anatomy of the shoulder





The shoulder is made up of three bones: The upper arm bone (humerus), the shoulder blade (scapula), and the collarbone (clavicle). The shoulder is a ball-and-socket joint: the ball, or head, of the humerus fits into a shallow socket (glenoid) in your shoulder blade.

The rotator cuff is a group of four muscles that come together as tendons to form a covering around the head of the humerus. The rotator cuff attaches the humerus to the shoulder blade and helps to lift and rotate your arm. Your rotator cuff also helps to secure the humeral head within the shoulder socket.

There is a lubricating sac called a bursa between the rotator cuff and the bone on top of your shoulder (acromion). The bursa allows the rotator cuff tendons to glide freely when you move your arm.

The Acromioclavicular (AC) joint is located at the tip of the shoulder where the acromion portion of the shoulder blade (scapula) and collarbone (clavicle) join together. The AC joint is not as mobile as the large main shoulder joint and only moves when your arm is overhead or across the chest (adducted). The joint is partly filled with a thick pad of cartilage, known as the meniscus, which allows the joint to move. The AC joint is stabilised by its capsule and additional ligaments called the coraco-clavicular ligaments and acromio-clavicular ligaments.

The Acromioclavicular Joint is usually injured by a direct fall onto the point of the shoulder. The shoulder blade (scapula) is forced downwards and the clavicle (collarbone) forced upwards damaging the ligaments and joint capsule. The degree of damage to the joint is traditionally classified by the joint displacement and injury to the ligaments which support the AC joint.

Treatment:

Traditionally the grade of the injury determines the treatment, however the evidence for this is poor. Nowadays, we treat according to the symptoms - i.e. pain and functional limitations - with guidance from the literature around the relevance of the grade of injury.

Considerations for surgery:

1. Most people with ACJ injuries can cope, unless an overhead worker or a high demand athlete.
2. The long-term outcomes are similar with or without surgery
3. Traditional techniques carry a failure rate of approximately 20%

The main goals of treatment, whether surgical or nonsurgical, are to achieve a pain-free shoulder with full range of motion, normal strength and no limitations in activities. The demands on the shoulder will differ from patient to patient, and these demands should be taken into account during the initial evaluation.

Type I and 2:

Most types I and 2 AC joint separations are treated non-surgically. 27% of conservatively treated types I and 2 AC joint separations may require further surgery at 26 months after injury (Mouhsine et al).

Type 3:

Type 3 injuries are usually evaluated on a case-by-case basis, taking into account hand dominance, occupation, heavy labor, sporting requirements, scapulothoracic dysfunction, and the risk for re-injury.
In a review of 1172 patients, 88% who were treated operatively and 87% who were treated non-operatively had satisfactory outcomes. In this study some patients needed further surgery (59% operative versus 6% nonoperative). Pain and range of motion were not significantly affected by the decision to have surgery or not.

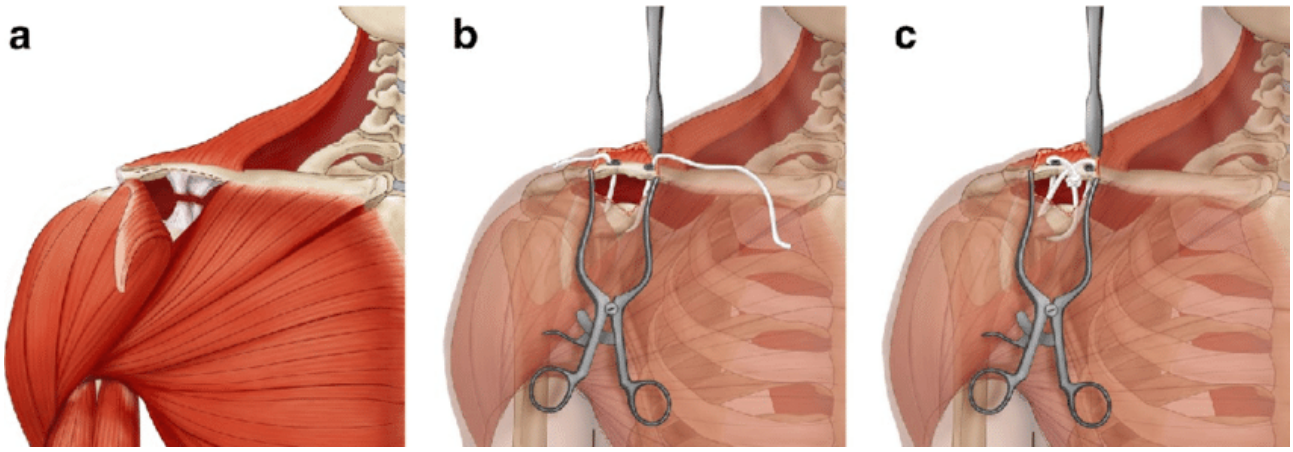
Type 4, 5 & 6:

Complete AC joint injuries (types 4, 5, and 6) are usually treated surgically because of the significant morbidity associated with persistently dislocated joints and severe soft tissue disruption. The shoulder presents with a severe step-off deformity due to downward displacement of the arm and shoulder blade (scapula) and upward displacement of the collarbone.
For unstable AC Joints and symptomatic complete dislocations (Grade 4, 5 & 6) injuries the collarbone and shoulder blade need to be re-aligned and fixed in place.

Surgical technique:

ACJ ligament reconstruction can be done as either an ‘open’ surgical technique or through a ‘keyhole’ arthroscopic technique. There are numerous different methods described to fix or reconstruct the ACJ ligaments. The newest and most commonly used techniques involve using an artificial ‘ligament’ which is then passed between parts of the

shoulder blade in the front and the collarbone. This artificial ligament supports the joint while scar tissue forms in place of the damaged ligaments.



ACJ Arthritis

Arthritis of the AC joint is a degenerative disease of the acromioclavicular joint between the collarbone (Clavicle) and the acromion part of the shoulder blade (scapula).
Arthritis may be due to normal age related wear and tear of the cartilage within a joint, or it may occur due to a previous injury or infection within the joint. This results in a loss of cartilage and over time the joint can wear out. Arthritic joints become larger, and develop bony spurs around the joint. As with arthritis of other joints in the body there is often pain and swelling in the joint but it may also be completely painless.

Causes:

The principal cause of AC joint arthritis is overuse. As a person uses his/her arm and shoulder, stress is placed on the joint. This stress produces wear and tear on the cartilage, the cartilage becomes worn over time, and eventually arthritis of the joint may occur. Another cause is an old injury to the AC joint, such as ACJ Dislocation. Any activity that can put pressure on the joint, either normal or excessive, may eventually cause the arthritis condition.

Persons who must use their arms for extended periods of time are susceptible to AC joint arthritis. Constant overhead lifting, such as is engaged in by weightlifters or construction workers who work overhead can increase the risk of arthritis. Other susceptible individuals are athletes participating in contact sports or engaging in any activity which may result in a fall on the end of the shoulder. Any blunt force to the shoulder in the course of work, household activities or accident may cause, over time, arthritis of the AC joint.

Treatment:

1. Rest

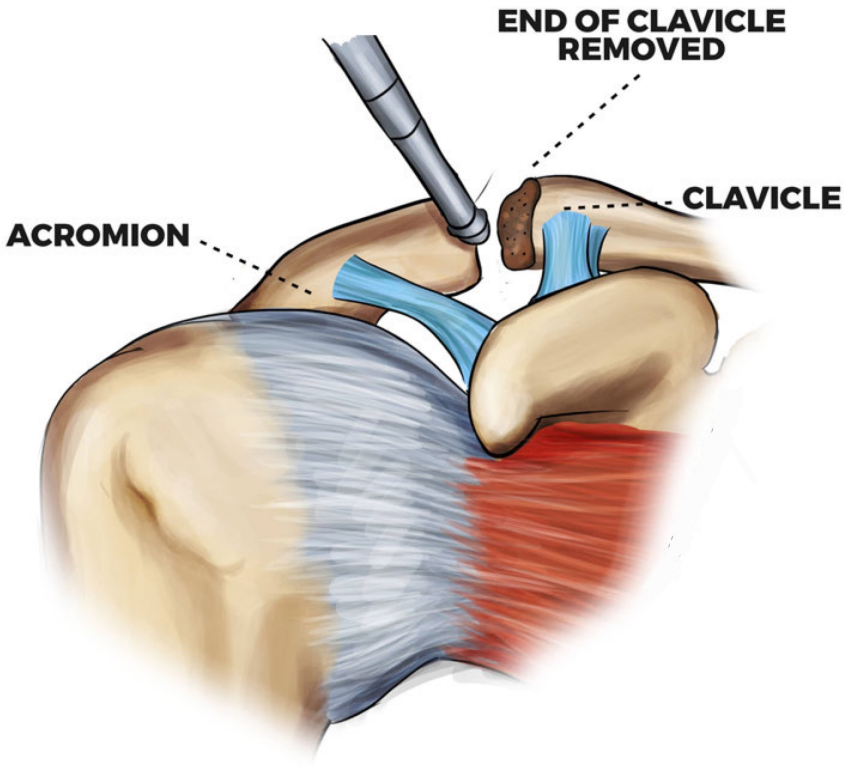
2. Physiotherapy – to prevent any further stiffness and regain range of motion
3. Painkillers and anti-inflammatories
4. Injections into the painful joint - this usually provides good temporary relief.
5. Surgery

Surgery:

Required for advanced disease, with pain not controlled with injections or analgesia. Surgery usually involves removal of the AC joint. This may be done as an open procedure or arthroscopically (keyhole). The operation aims to remove the painful and damaged Acromioclavicular Joint (ACJ) without destabilising it. An Arthroscopic Subacromial Decompression (ASD) is often done as part of the procedure as Subacromial Impingement is often coexistent.

Below is the procedure:

- The shaver is inserted from the front of the AC Joint and the worn surfaces of the joint removed completely
- The joint capsule and ligaments are removed from the underside of the acromion
- A small amount of bone is removed from the medial portion of the acromion, so that the whole lateral end of the clavicle is visible.
- The lateral end of the clavicle is removed, while preserving the superior capsule and ligament to preserve stability.



Should you elect for surgical intervention you will be admitted into the hospital on the morning of the surgery.
Please take note of the following:

- Ensure that you do not eat or drink anything on the day of surgery, unless otherwise instructed by Dr. Stewart or his receptionist. You can drink a small amount of water to take your chronic medicine on the day of surgery
- Remember to bring all your chronic medication with you for your hospital stay
- If you are taking any “blood thinners” such as Warfarin, Ecotrin, Plavix or Xarelto - please inform Dr. Stewart of this and please consult with your physician or cardiologist who prescribed the medication. This medication needs to be stopped five days before surgery.
- Please ensure that you have received medical aid pre-authorisation prior to the day of surgery. It is your responsibility to contact your medical aid to obtain pre-authorisation. Please forward the authorisation number to admin@stewartorthopaedics.co.za at least one day before admission.

On the day of surgery you will be seen by an anaesthesiologist who will discuss the anaesthetic with you. The surgery takes approximately 2 hours, depending on exactly what procedures are being done. After the surgery you will be seen by a physiotherapist to commence your rehabilitation. You may go home the same day provided you have been seen by a physiotherapist.

During keyhole surgery your shoulder is ‘inflated’ with water so that the surgeon can see inside the joint with the camera. This water leaks out into the surrounding tissues and results in some swelling of the shoulder post operatively. This swelling takes approximately 24-48 hours to subside and will either be absorbed by your body or leak out through the small incisions. You may wake up with a compression bandage around the shoulder to assist with absorption of the water. Do not worry if the bandages are wet or slightly blood stained when you wake up - this is normal, and the dressings will be changed before you go home.

After Surgery

After surgery you will wake up in the ward and your arm will be in a sling. You will have a waterproof dressing on the shoulder and you will be allowed to shower or bath, however do not submerge the dressing for a prolonged period of time. When showering or bathing take the sling off and let your arm hang at the side. Do not attempt to lift or rotate your arm. Lean forward and let your arm hang forward in order to wash under your arm. Make sure this area is thoroughly dry afterwards to avoid the risk of a sweat rash or infection.
A physiotherapist will see you in the ward after your surgery where they will teach you exercises which you are required to do at home approximately 3 - 4 times per day.

You will be discharged from hospital provided your pain is well controlled. In the immediate post operative period you will experience some pain and discomfort in the shoulder which can last up to 6 weeks, however it should improve after the first 2 weeks. You will be discharged with medication prescribed for the pain, please ensure that you take it as prescribed. Should you require additional analgesia then you can either contact Dr. Stewart’s rooms or your GP.
You will be given an Ice-pack during your hospital stay. Please ice your shoulder 5 - 6 times per day for a 20 min duration for the first 7 days after surgery.
You may notice some swelling of your hand, fingers and forearm. This is normal and should resolve by doing the exercises prescribed by the physiotherapist.

Wearing your sling - You will need to wear your sling for the first 6 weeks if a biceps tenodesis and sub-acromial decompression was performed, or 2 weeks if only a sub-

acromial decompression was done. You may remove your sling to shower and do your physiotherapy exercises.

Driving - You are not permitted to drive a vehicle while wearing a sling. Therefore driving is not recommended for between 2 - 6 weeks after the surgery.

Follow up - Please make an appointment between 10-14 days after the surgery to see Dr. Stewart in the rooms for a wound inspection and to remove the stitches. Please do not remove your wound dressing until he has seen you. If the dressing comes loose then a similar wound dressing can be purchased from your nearest pharmacy.
Dr. Stewart will review your progress every 6-8 weeks for approximately 6 months, or longer if required.

Returning to work - Most patients will be able to return to light office work between 4-7 days after the surgery. If your job requires any manual labour or repetitive overhead lifting then it is unlikely you will be able to return to normal duty within 3 - 6 months. If you are required to perform these duties at work then you should discuss with your employer about the availability of 'light duty' or a temporary alternative role within the workplace.

Complications

All surgeries carry the risk of potential complications. In most cases the decision to proceed with surgery is made because the advantages of surgery outweigh the potential disadvantages.
The potential complications associated with arthroscopic shoulder surgery are exceptionally rare, however, in order to make an informed decision the following complications are the most common:

Shoulder stiffness - This is the most common complication. Almost all patients will experience some degree of stiffness, mostly mild and lasting only a few weeks. Severe or prolonged stiffness can be prevented by strict adherence to the physiotherapy protocol.

Infection - All efforts are made to minimise the risk of infection, however, some patients, especially diabetics and smokers, are at an increased risk of getting an infection. In order to prevent the risk of infection the surgical procedure is performed in a sterile environment. Antibiotics are given at the time of the procedure and occasionally for 24hours afterwards and occlusive dressings are used until the wound has healed.
Post surgical infection may be a simple infection involving only the skin and wound edges, but sometimes it may involve the bone or joint. Despite adequate antibiotic treatment, a post surgical infection often requires additional surgical procedures in order to remove any infected tissue or fluid.

Deep Vein Thrombosis (DVT) - This term refers to a blood clot which forms in the deep veins of your leg. Risk factors include smoking, being overweight, the use of the oral contraceptive pill and prolonged periods of inactivity. Blood clots are incredibly uncommon after shoulder surgery. Treatment of a DVT involves taking blood thinning medication for between 3 - 6 months to try and dissolve the clot.

Anaesthetic complications - Your anaesthesiologist will explain the most common potential complications.

Nerve damage - This rare complication is usually a result of ‘bruising’ to the nerves and can result in some numbness, tingling or weakness around the shoulder or in the arm and hand. In most cases it will resolve completely within 6 - 12 weeks.

Other rare or unusual complications which haven’t been discussed here can result from surgery or anaesthesia. If you are concerned about any specific complication or the advantages and disadvantages of the decision to proceed with surgery you can discuss these with Dr. Stewart before the operation.

Recovery

In order to ensure the best possible outcome following surgery, it is essential that you visit a physiotherapist regularly as well as completing a home-based rehabilitation program on a daily basis. A physiotherapist and biokineticist play a vital role in ensuring that your shoulder returns to normal function. A complete recovery can expect to take in excess of 3 - 6 months.