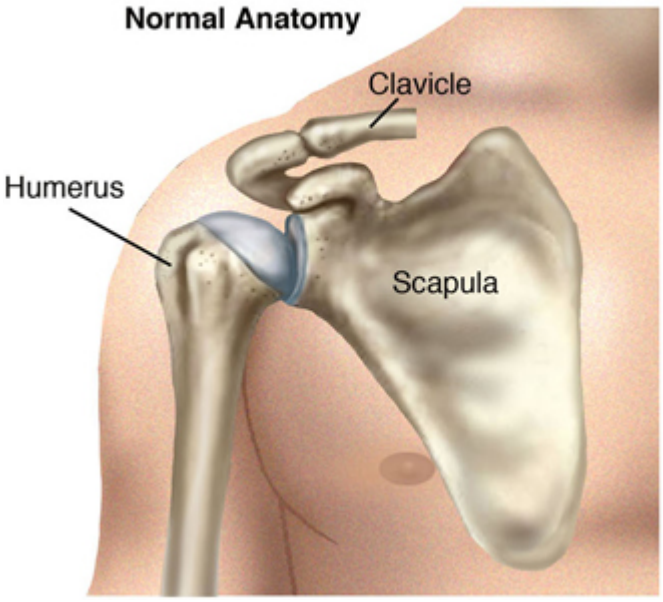
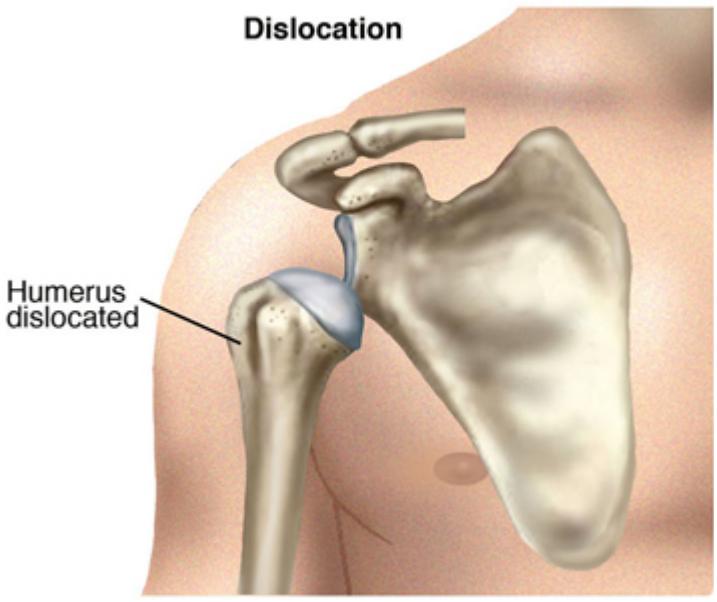
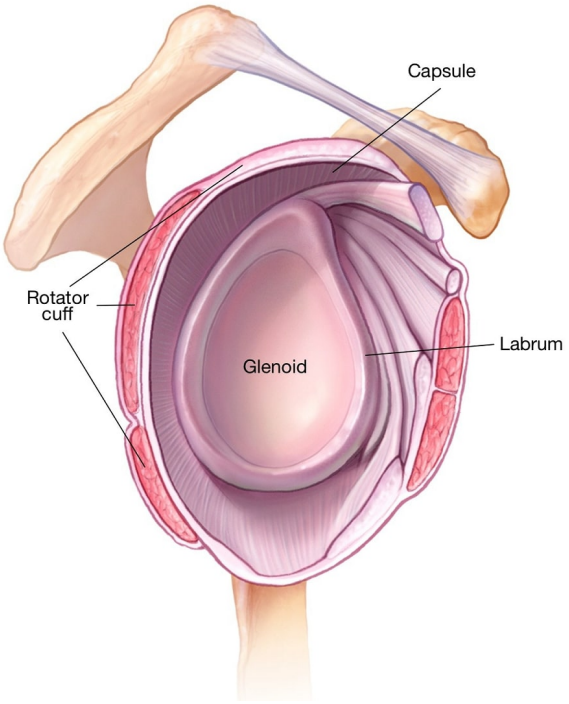
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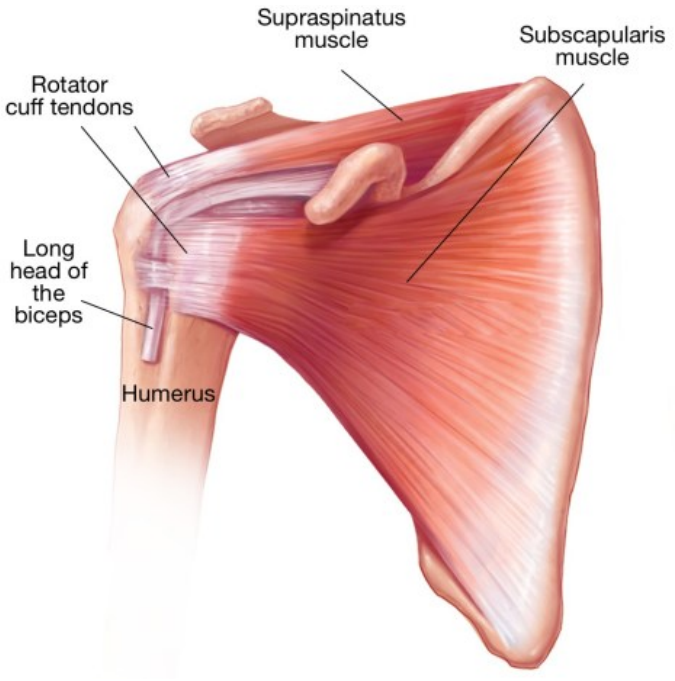
Shoulder instability





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 glenoid is surrounded by a rim of cartilage called the labrum. The labrum helps to deepen the socket and provide stability to the humeral head. There are three ligaments which run in the front and back of the joint and the entire joint is surrounded by a fibrous capsule.

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. The 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 humeral head is held inside the joint socket by the following structures:

- The shape of the bony glenoid (socket) with a rim of cartilage (labrum)
- The fibrous capsule surrounding the joint
- The ligaments which run around the front and back of the joint
- The strong muscles and tendons which support the joint

The shoulder is the most mobile joint in the body, it is also the most frequent joint to be dislocated. A first time dislocation usually occurs from a traumatic injury such as a fall, rugby tackle or motorcycle / bicycle accident. The most common dislocation is anterior where the humeral head moves forwards out of the socket and towards the chest. A posterior dislocation is less common and may result from an epileptic seizure.
At the time of a dislocation the humeral head will tear the rim of labrum cartilage off the front of the glenoid socket (known as a **Bankart Lesion**) and stretch / partially tear the ligaments and capsule in the front of the joint. It may also break a small piece of bone off the front of the glenoid socket **(Bony Bankart)** or cause a small impaction fracture in the head of the humerus **(Hillsachs Lesion)**.
These injuries which occur at the time of initial dislocation make the shoulder more unstable and the risk of re-dislocation increases significantly with each subsequent dislocation.

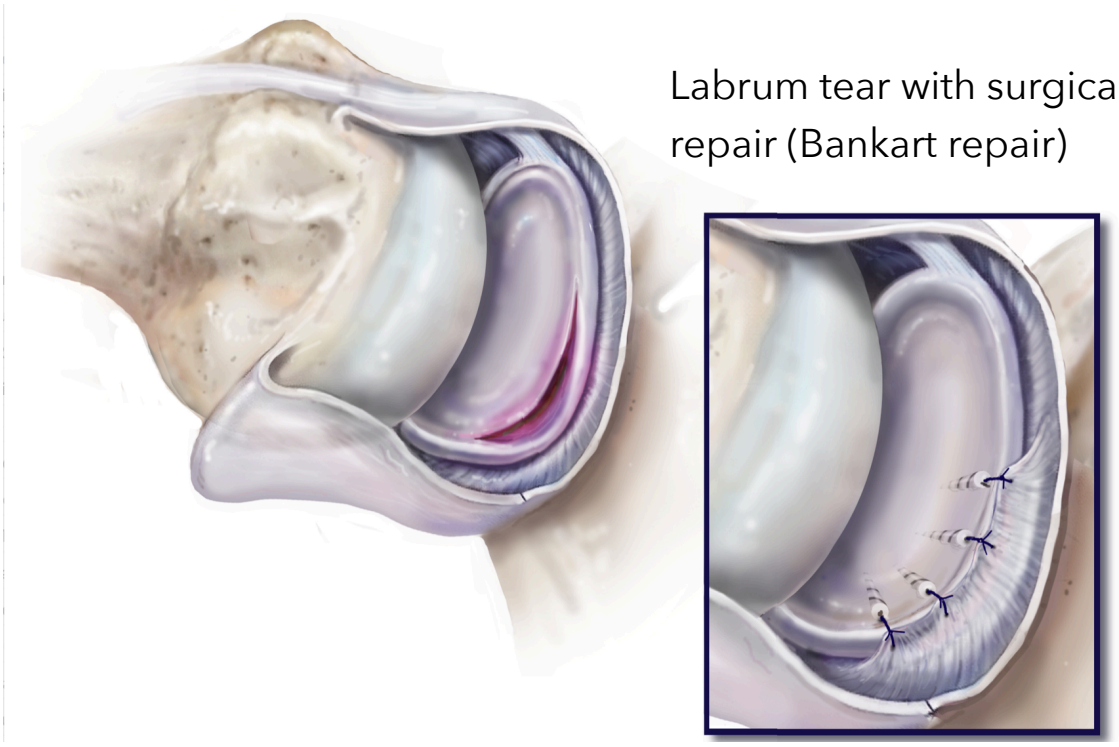
Some patients may experience partial dislocations where the head of the humerus comes partially out of the joint but goes back in without any orthopaedic intervention. This can occur if a patient has naturally loose ligaments and joint capsule - such as gymnasts, ballerinas and some swimmers.

Imaging tests
In order to identify and assess the extent of all the damaged structures within the shoulder joint after a dislocation, an Xray, CT scan and an MRI may be done.

- **Xray / CT -** used to assess the bones of the joint to look for fractures
- **MRI -** used to assess the soft issues such as the cartilage labrum, ligaments and joint capsule

Risk of re-dislocation:
The risk of having another shoulder dislocation on the same shoulder depends on:

- **Age -** The younger you are, the more chance that you will dislocate again. If you are under the age of 30 years you have a risk of approximately 70-80% that you will dislocate the same shoulder again.
- **Choice of sport -** Contact sports have a much higher re-dislocation rate than non-contact sports. Contact sports include - rugby, football / soccer, surfing, kite-boarding, skiing etc.
- Racquet sports such as tennis and squash may also increase your risk of re-dislocation
- **Number of dislocations -** each time you dislocate your shoulder you increase the instability of the joint and it becomes easier to re-dislocate.
- **Associated injuries -** injuries to the shoulder, which occur at the time of dislocation, such as a labrum tear or an impaction fracture of the humeral head will make your joint more unstable and easier to re-dislocate.



Labrum tear with surgical repair (Bankart repair)

Non-surgical treatment

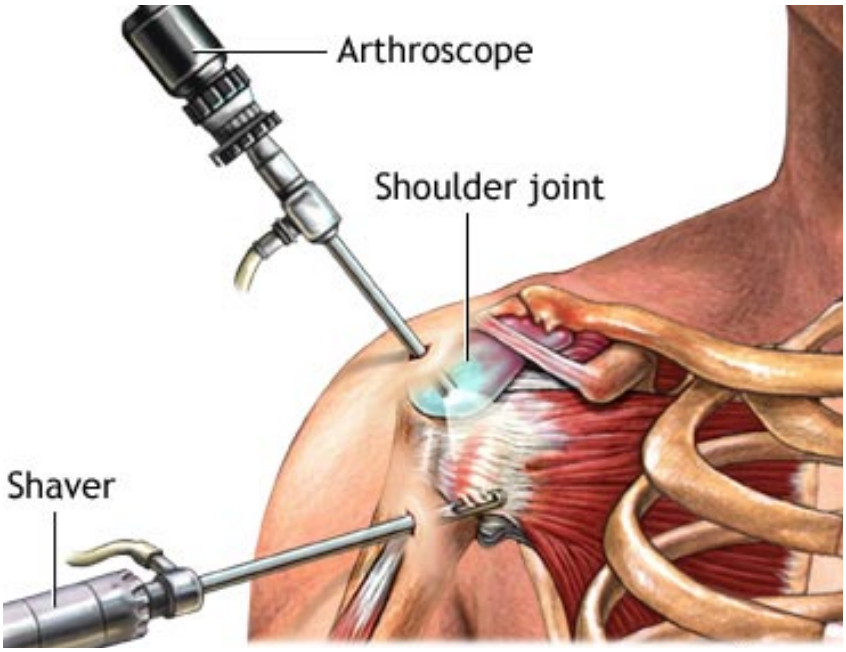
- **Rest -** I recommend wearing a sling 24 hours a day for the first 2-3 weeks while the ligaments and torn capsule are healing
- **Activity modification -** Avoid activities that cause a feeling of apprehension that the shoulder may dislocate. This position of your shoulder when your hand is on top of your head is the typical position which will give a feeling that the shoulder is about to dislocate
- **Non steroidal anti-inflammatory medication -** Medication such as Voltaren and Naproxen can reduce pain and inflammation around the shoulder.
- **Physiotherapy -** Specific exercises under the guidance of a physiotherapist can restore movement and strengthen your shoulder. Strengthening the rotator cuff muscles that support your shoulder can relieve pain and prevent further instability

Surgical management

The decision to choose surgical management over non-surgical management should depend on factors such as your age, number of dislocations, associated injuries in the shoulder and desired level of activity you wish to return to.
There are two different types of surgery which are commonly performed. Each type has different indications.

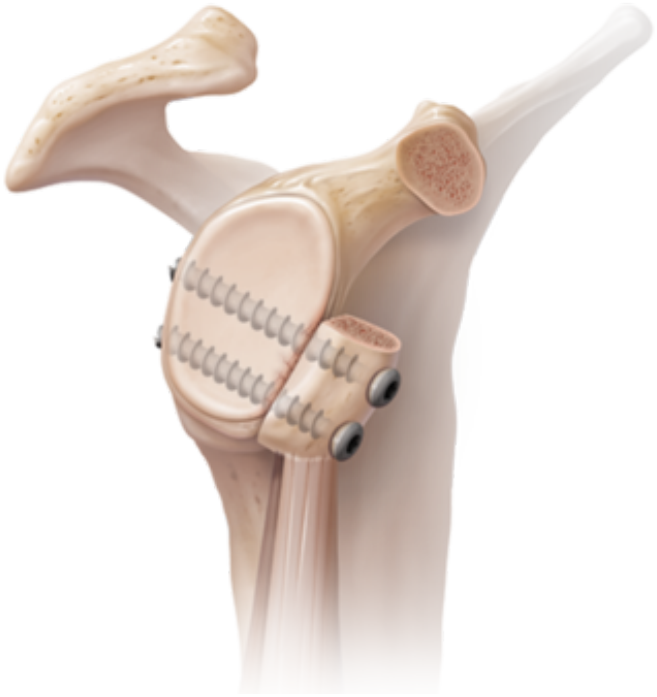
1. **“Keyhole” (Arthroscopic) surgery -** This is a minimally invasive technique which allows the surgeon to look inside the joint using a camera, and repair any structures through very small incisions. Minimally invasive surgery typically results in less injury to surrounding tissues, resulting in less postoperative pain, a shorter hospital stay

and a quicker recovery time than traditional “open surgery”. The aim of this surgery is to repair the torn labrum cartilage by stitching it back down onto bone. **(Bankart repair)**



It may not be possible to do a minimally invasive “keyhole” technique on every patient, especially if you have had many dislocations. In order to decide if you are a suitable candidate, a CT scan and/or an MRI will be necessary.
The success rate of a Bankart repair is approximately 70 - 90%. There is a higher rate of re-dislocation associated with patients who return to contact sports, especially rugby.
For those patients who are not suitable candidates for a minimally invasive Bankart repair, or for patients who have dislocated despite having this surgery then an “open” **Laterjet** procedure is recommended.

A Laterjet procedure is an “open” surgery which means having a cut made on the front of your shoulder.
A 1,5 - 2 cm piece of bone is removed, with its attached tendon, from the front of your shoulder blade and attached to the front of the glenoid socket using two screws. This bone and tendon acts as a ‘block’ to prevent the shoulder joint from dislocating out the front.
This procedure has a success rate higher than 90%.



Laterjet procedure

Should you decide on surgical management 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 and get pre-authorisation. Please forward the authorisation number to admin@stewartorthopaedics.co.za at least one day before to 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 procedure is being done. After the surgery you will overnight in hospital and physiotherapy will commence the following day.

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 the day after surgery 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 minute duration.
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 - Your sling will need to remain on 24 hours a day, even at night while you are sleeping. The only time you may remove your sling is to shower and do your physiotherapy exercises.
If you have had 'Keyhole" surgery for a Bankart repair you will need to wear your sling for 6 weeks. If you have had 'open' surgery for a Laterjet procedure you will only need the sling for 2 weeks.

Driving - You are not permitted to drive a vehicle while wearing a sling. Therefore driving is not recommended for up to 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 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.

Returning to sport - under no circumstances are you allowed to return to sport within 6 months of surgery. Provided you have followed the stringent physiotherapy rehabilitation protocol you should be ready to return to sport after 6 months.

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.

Non-union - Non-union is a term which is used when the piece of bone used in a Laterjet procedure does not grow onto the glenoid socket with time. This process should usually take approximately 12 weeks but can take up to 6 months. Smokers are at a very high risk of having a non-union, therefore all smokers should stop smoking at least 6 weeks before surgery, and only start smoking again once the bone pieces have grown together. If you develop a non-union there is a very high chance your surgery will fail.

Re-dislocation - the re-dislocation rate for Bankart repair surgery is approximately 10 - 30% and less than 10% for the Laterjet procedure. As discussed previously there are many factors which may increase your risk for re-dislocation.

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. Please adhere to the rehabilitation protocol you will be given to prevent any complications. 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 6 - 9 months.