

Information for Patients about Shoulder Surgery

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Information for Patients about Shoulder Surgery

Introduction

We have put this information booklet together to educate our patients about their shoulder condition, treatment options and post-surgical care.

Please keep this booklet for future reference. It is not intended to be a detailed source of information and you may also wish to refer to our website www.allanwangorthopaedics.com.au for animated videos of surgical procedures. If you require further information or have concerns regarding your treatment please contact the office to discuss with Dr Wang or his staff.

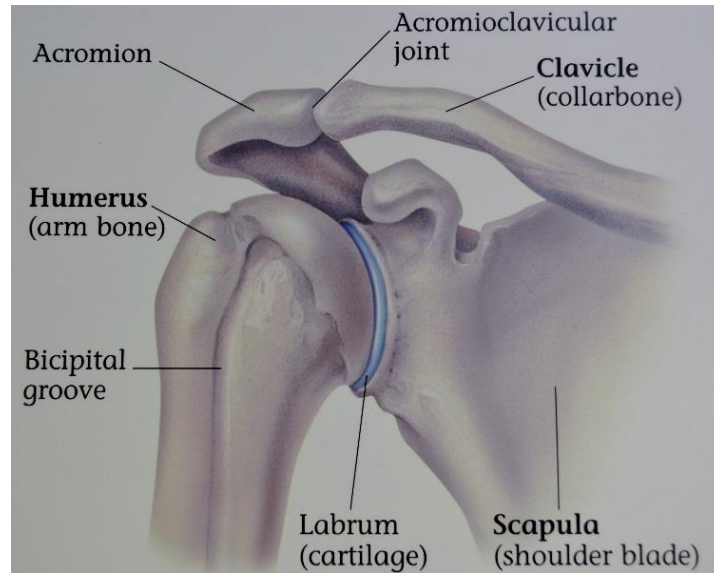
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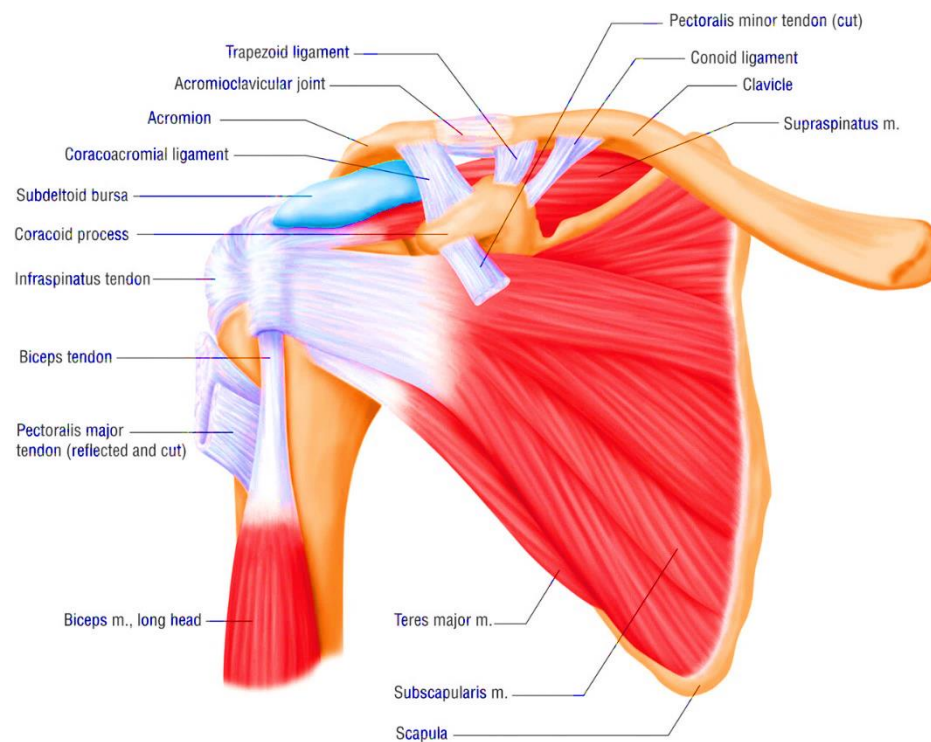
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Shoulder Anatomy

Bone and Joints of the Shoulder



Important Muscle Groups of the Shoulder



Shoulder Impingement and Rotator Cuff Tendon Disorders



Figure 1: Tendonitis

What is Impingement Syndrome?

The movement of the shoulder joint is dependent on the surrounding muscles and tendons - the rotator cuff complex. The rotator cuff comprises of four tendons. Supraspinatus tendon is the most frequently injured because when the arm is elevated, the tendon can rub ('impinge') against the undersurface of the acromion bone at the top of the shoulder. (*Fig 1*)

The subacromial bursa which surrounds the rotator cuff tendon can also become swollen and inflamed (bursitis). Elevation of the arm can cause the bursa to impinge against the acromion as well. (*Fig 2*)

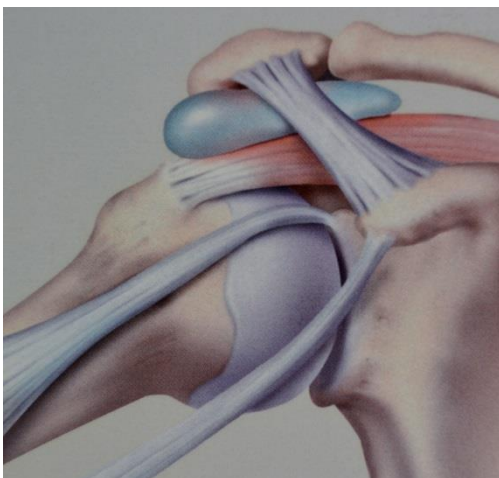


Figure 2: Bursa swelling and impingement

Impingement is more likely if the acromion bone has a downward curve or has a spur. Spurs from an arthritic acromioclavicular (AC) Joint may also contribute to symptoms.

What causes Impingement Syndrome?

Rotator cuff tendon damage and bursitis can result from a sudden traumatic injury such as a fall or heavy lifting. Degenerative Tendon damage may also occur slowly from repetitive activity and overuse, or as part of the aging process. Tendon damage varies from tendon fraying to partial tears to full thickness tears and multiple tendon tears can occur. (*Fig 3*) Over time, the torn tendon can retract, and its muscle undergoes atrophy and these longstanding injuries can become more difficult to treat.

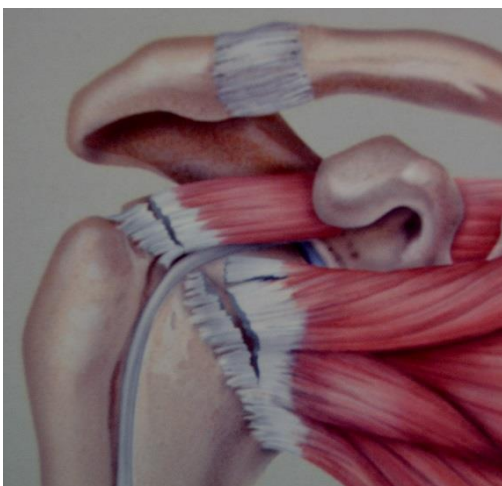


Figure 3: Rotator cuff tear

Symptoms from Impingement Syndrome

You will notice pain, especially reaching overhead, and at night lying on the injured shoulder. Weakness and loss of shoulder movement may occur. These symptoms are called the "Impingement" Syndrome.

What treatment is available?

In mild cases, your shoulder symptoms will improve with rest, anti-inflammatory tablets, some physiotherapy and maybe one or two cortisone injections.

When symptoms are chronic or are more severe, your doctor will order shoulder X-rays and an ultrasound or MRI scan. If there is a bone spur on the acromion, surgery may be required to remove the bone spur (acromioplasty) to prevent ongoing tendon impingement and further tendon damage.

If there is a tear in the rotator cuff tendon, surgery is often required, as the tendon cannot heal by itself and the tendon tear may enlarge in future. Larger or multiple tendon tears will require more extensive surgery and occasionally the tendon damage may not be fully repairable.

What happens at Surgery?



Figure 4

At surgery, an arthroscopy is performed thru small keyhole incisions. The ball and socket joint is inspected. A frayed or torn rotator cuff tendon tear can be confirmed and need debridement or repair. **(Fig 4)** If damage to other structures is identified eg. Biceps tendon and glenoid labrum, they may need surgical attention as well.

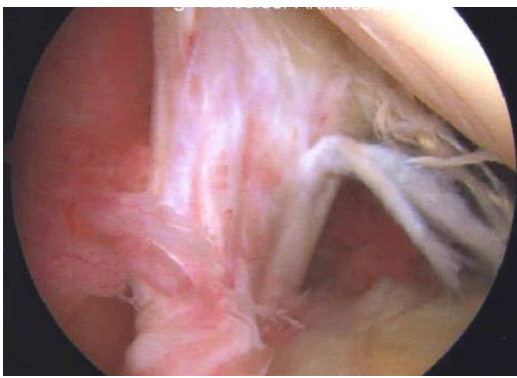


Figure 5

A partial tear or subluxation of the **long head of Biceps tendon** is quite a common arthroscopic finding and maybe contributing to pain. **(Fig 5)** This Biceps tendon damage is treated by release (**tenotomy**) or surgical repair (**tenodesis**) with surgical anchors. Tenotomy may lead to a change in the biceps muscle contour in the upper arm ("popeye muscle"). However as the Biceps is formed by two tendons, the other half of biceps compensates well after tenotomy and good arm function and strength recovers after long bicep tenotomy. Tenodesis is an option in younger and more active patients though early recovery will be slower than tenotomy.

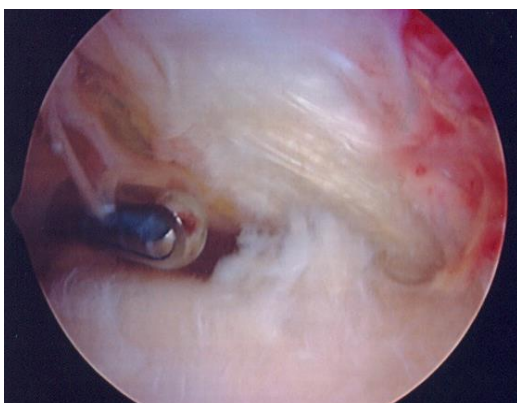


Figure 6

Acromioplasty ± AC Joint Excision

The arthroscope is then placed in the subacromial space. The thickened ligament and inflamed bursa are debrided. **(Fig 6)**

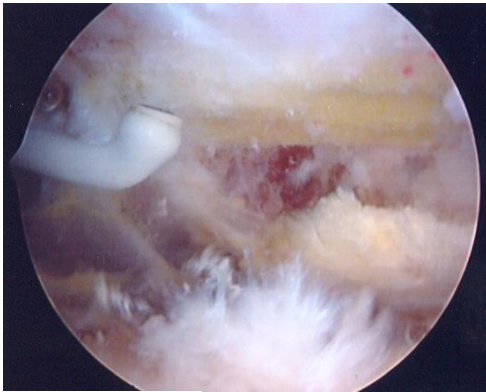


Figure 7

Any spurs on the underside of the acromion are shaved away and the acromion flattened (**acromioplasty**). (*Fig 7*)

This allows clearance for the underlying rotator cuff tendon to glide smoothly without impingement.

If a small tendon tear is noted – a debridement and trimming of the tear is often sufficient.

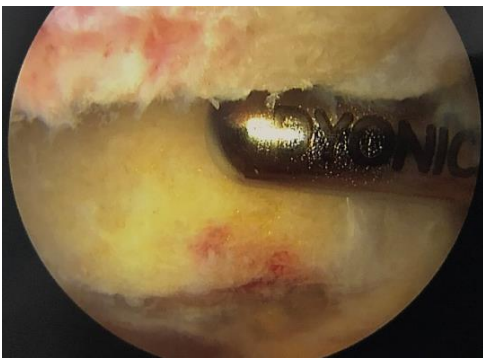


Figure 8

If the **AC joint** is arthritic, the end of the clavicle and its bone spurs are also shaved (**AC excision**). (*Fig 8*)

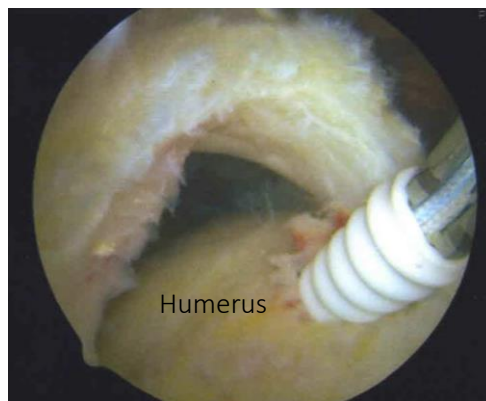


Figure 9

Rotator Cuff Repair Surgery

If a large partial thickness or full thickness tendon tear is noted, surgical repair is performed with sutures and small non metallic surgical anchors passed into the bone. (*Fig 9*)

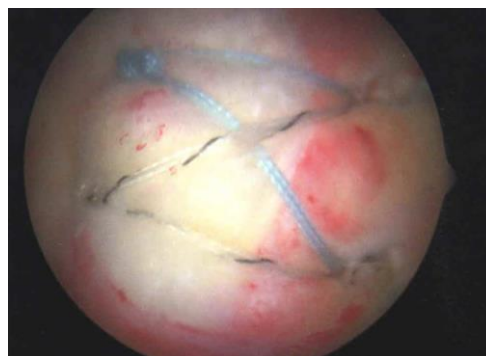


Figure 10

Rotator cuff tears can be repaired arthroscopically with minimal skin scarring. (*Fig 10*)

Larger full thickness rotator cuff tears may require repair using a skin incision on the side of the arm.

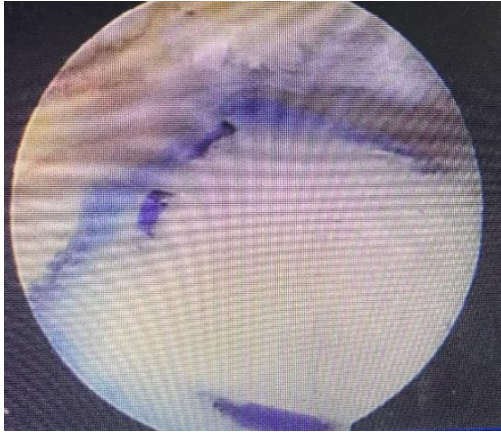


Figure 11

More recent surgical advances include using a collagen patch (**Fig 11**) to augment a partial rotator cuff tear or to reinforce a rotator cuff repair, or addition of growth factors (platelet rich plasma).

Tendon Transfers are possible to substitute for an irreparable tendon tear.

These innovative treatments are showing promising results in improving tendon healing.

What are the possible risks of Rotator Cuff Surgery?

Large and longstanding tendon tears may not be fully repairable at the time of surgery or may not heal well after surgery. Infection can occur, this is very uncommon. The shoulder may be stiff and sore for some months after rotator cuff repair. A frozen shoulder may develop. Re-tearing of and failure of the cuff tendon repair may occur. Occasionally further surgery is required.

Platelet Rich Plasma Therapy (PRP)

What is PRP?

Platelet Rich Plasma (PRP) is a derivative of your own blood. A sample (usually 50-60ml) is taken from an arm vein, placed in a centrifuge and spun down for approximately 15 minutes.

The red cell fraction is discarded. The plasma fraction contains your own platelets and proteins (growth factors) and is ready to use for your tendon or joint condition.



How does PRP work?

The healing of injured, inflamed or degenerative tissue involves a complex series of cellular processes.

These cell interactions are regulated and promoted by an array of growth factors contained within the harvested platelets.

Platelet rich plasma has shown benefits during treatment of rotator cuff tendon tears, lateral epicondylitis of the elbow (tennis elbow) and early degenerative joint disease (osteoarthritis)



Currently Dr Allan Wang uses the Arthrex Angel™ system for PRP formulation. This system is widely used in the USA and Australia

What is the Scientific Evidence to support use of PRP?

Dr Allan Wang practices “Evidence Based Medicine” where peer reviewed scientific papers support the treatments he recommends.

Below are selected publications which you can refer to for further information:

1. Ryan et al: Platelet-Rich Product Supplementation in Rotator Cuff Repair Reduces Re-tear Rates and Improves Clinical Outcomes: A Meta-analysis of Randomized Controlled Trials. Arthroscopy 2021
2. Wang et al: Do postoperative platelet rich plasma injections accelerate early tendon healing and functional recovery after arthroscopic supraspinatus repair. Am J Sports Med 2015
3. Mazzocca et al: The positive effects of different platelet-rich plasma methods on human muscle, bone and tendon cells. Am J. Sports Med 2012
4. Solomon: Editorial Commentary: Leucocyte poor platelet rich plasma decreases re-tear rate in arthroscopic rotator cuff repair: Platelet rich plasma type matters. Arthroscopy 2021
5. Smith et al: Intra-articular autologous conditioned plasma injections provide safe and efficacious treatment for knee osteoarthritis Am J. Sports Med 2016
6. Lebedzinski et al: A randomised study of autologous conditioned plasma and steroid injections in the treatment of lateral epicondylitis. Int. Orthop 2015

Shoulder Joint Instability and Labrum Tears

Anatomy

The shoulder joint is a ball and socket joint held together by tendons, capsular ligaments and a fibrous cartilage which deepens the socket called the labrum. (Fig 1)

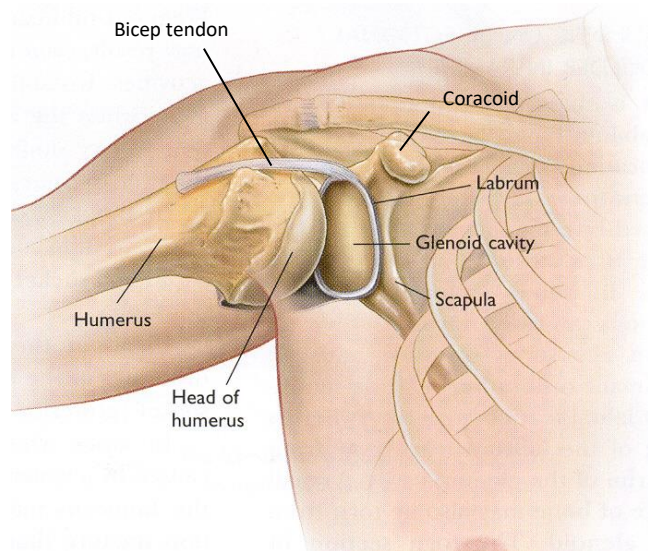


Figure 1: Normal Shoulder Anatomy

What is Shoulder Instability?

Falling or wrenching injuries can cause the shoulder joint to dislocate, sublux (partially dislocate) or feel unstable with painful clicking or a loose sensation. Treatment includes wearing a shoulder brace, followed by physiotherapy and modifying sports or work activities. Further investigations including x rays and MRI scans will show the extent of damage to bone and soft tissue structures.

Bankart Tear

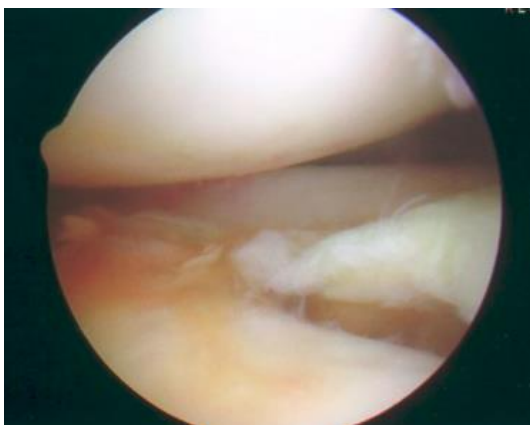


Figure 2

If the shoulder has dislocated a common type of damage is an anterior labrum tear with separation from the glenoid socket (Bankart tear). (Fig 2) If physio isn't helping or you wish to remain very active, your shoulder is at risk for recurrent dislocation. **Bankart labrum repair surgery** may be necessary. This is arthroscopic keyhole surgery.

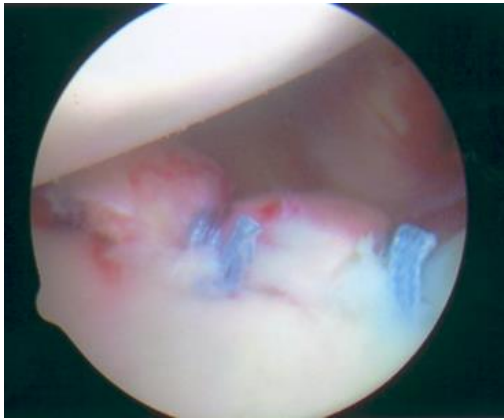


Figure 3

The **ANTERIOR** labrum is repaired to the edge of the socket (glenoid) with bone anchors and the capsular ligaments are tightened with sutures. (*Fig 3*) The posterior labrum can also tear, causing posterior shoulder pain and clicking. A **POSTERIOR** Bankart arthroscopic repair or debridement (clean up) may be required.

Bone Injury

With severe or multiple dislocations, bone damage occurs. The edge of the glenoid bone socket may fracture or erode. The posterior aspect of the humeral head may be damaged (Hill Sach lesion) which puts the shoulder joint at greater risks for re injury. (*Fig 4*)

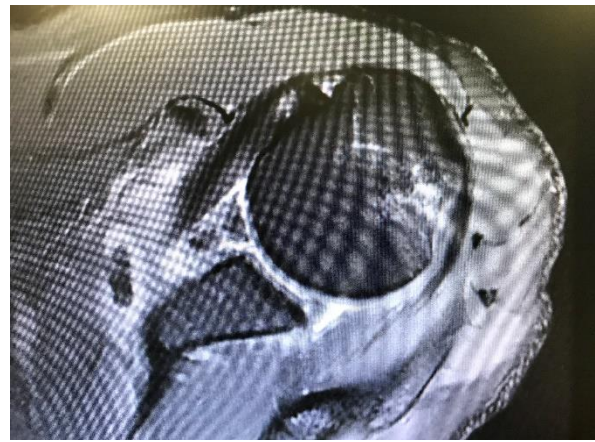


Figure 4

SLAP Tear

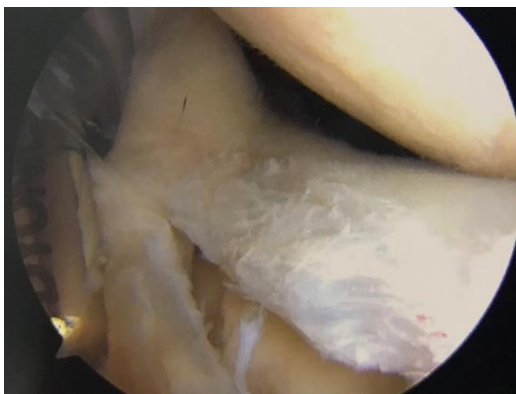


Figure 5: SLAP Tear

Another common type of damage is the **SUPERIOR** labrum tear or SLAP tear (Superior Labrum tear from Anterior to Posterior). (*Fig 5*) SLAP tears can be traumatic or degenerative. The biceps tendon attaches to the superior labrum. Depending on the grade of SLAP tear, SLAP tears can be debrided or can also be repaired arthroscopically with suture anchors. Another surgical treatment for SLAP tears is detachment of the biceps tendon from the superior labrum there by reducing the stress on the SLAP injury.

The bicep tendon can then be repaired outside the shoulder joint with suture anchors (**tenodesis**) or left to reattach spontaneously further down the arm (**tenotomy**).

Multidirectional Instability

Some patients will have generalized looseness (hypermobility) of their joints (fingers, kneecaps, ankles etc) and may develop pain, a loose sensation and lack of confidence in using their shoulder. The instability may be in one or more directions. Physiotherapy and taping often restore adequate stability for these patients. Occasionally surgical tightening of joint laxity is required, but due to lax collagen, shoulder joint looseness can recur.

Latajet Surgery

After severe or multiple dislocations, other joint damage can occur. Rotator cuff tendons may tear and may also require surgical repair. Joint surfaces are scuffed and subjected to abnormal shear forces and chondral damage and arthritis can develop. Bone damage or fractures may need screw fixation. In the presence of bone damage, multiple dislocation, previous failed surgery with scarred and poor quality labrum and capsule tissue, joint hyperlaxity and young patients playing contact sport, arthroscopic Bankart

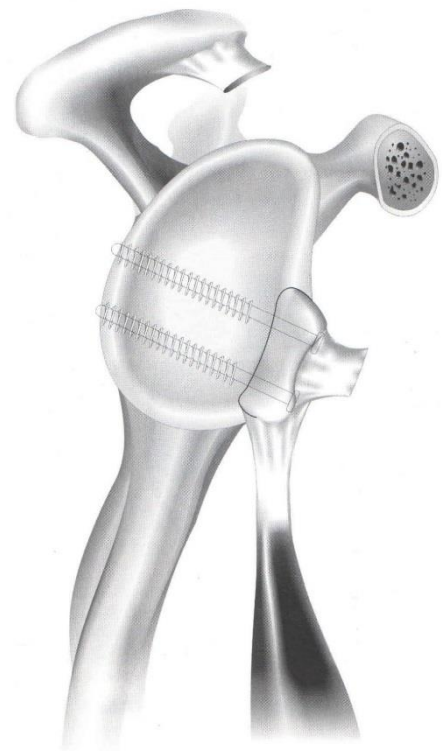


Figure 6

repair may not be appropriate. Bone graft surgery from the pelvis or transferring of the bony coracoid to reconstruct the anterior glenoid damage may be required (Latajet procedure).

This is an open surgical procedure, not keyhole surgery. Two screws usually fix the coracoid bone to reinforce the glenoid. (*Fig 6*)

After Surgery

A sling is worn full time for four to six weeks. Physio is then required for 2-3 months to recover overhead movement. Progress continues for 6 months and vigorous work activity and sports are restricted during this time to reduce the risk of the repair breaking down.

Complications after shoulder instability and stabilisation surgery are very uncommon.

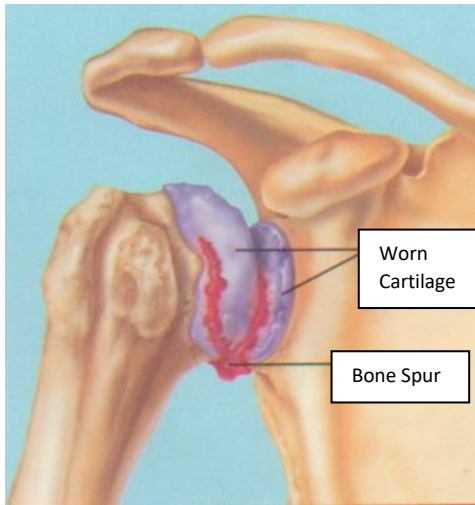
They include:

- Recurrent dislocation/ instability
- Infection
- Stiffness of the shoulder joint
- Development of arthritis due to the previous dislocations.
- Implant loosening or breakage.
- Bone non union/ screw problems after the Latajet procedure.

The final level of functional recovery depends on the degree of bony and soft tissue damage to the shoulder joint.

Total Shoulder Replacement (TSR)

What is Shoulder Arthritis?



In a normal shoulder joint, cartilage covers the head of the humerus bone and the scapula socket (glenoid). The cartilage allows smooth and painless gliding of the joint surface on shoulder movement. In shoulder arthritis, the cartilage layer wears through and the exposed bone surfaces grate causing joint pain and stiffness. **(Fig 1)** In addition the muscles and tendons surrounding the shoulder joint (rotator cuff) may have coexisting wear and tear damage and this also affects shoulder movement and strength.

Figure 1

What are the types of Total Shoulder Replacement (TSR)?



Figure 2: TSR

A TSR is a procedure when the arthritic bone ends are surgically removed and replaced with metal and plastic components. **(Fig 2)**

Occasionally only half the shoulder is replaced (hemiarthroplasty), with a metal humeral head. Not replacing the glenoid (socket) avoids the risk of future glenoid component loosening and is an option in the younger more active patient. However some pain may persist and hemiarthroplasty usually needs conversion in future to a total shoulder replacement.

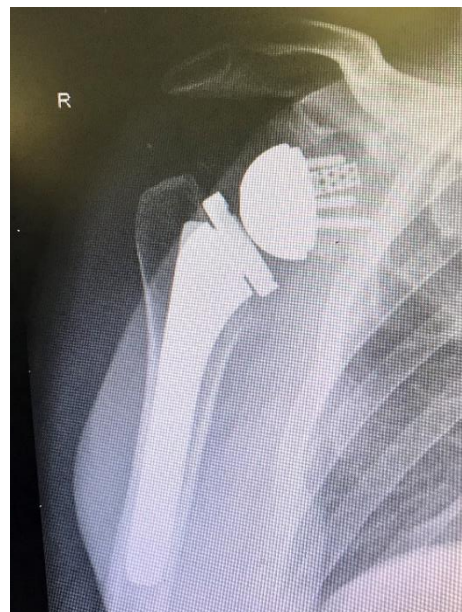


Figure 3: Reverse TSR

Another common type of shoulder replacement is the “reverse TSR”, where the prosthetic socket is placed on the humerus and the prosthetic head placed on the glenoid. **(Fig 3)** This reverse design of TSR uses the large and strong deltoid muscle to move the shoulder, rather than the small rotator cuff muscles.

A Reverse TSR is indicated for arthritis with rotator cuff tendon damage or end stage rotator cuff disruption. Reverse TSR is also used for revision surgery, arthritic bone defects and severe fractures.

When is a TSR required?

The main reason to undergo TSR is severe chronic shoulder pain and disability. Other treatments such as physiotherapy, pain medication, injections, or arthroscopic (keyhole) surgery may have been unsuccessful in managing symptoms. Patients undergoing TSR have shoulder pain severe enough to interfere with daily activity, disturbing sleep, and requiring regular pain medication.

Most patients undergoing TSR will also have stiffness and weakness in shoulder movement. This may interfere with overhead reaching or behind the back activity. A TSR will usually lead to substantial improvement in shoulder pain, movement and strength. However movement of the artificial joint will not be normal, and some precautions in use of the TSR are recommended even in the long term.

What happens in hospital?

Pre admission is performed before surgery. A CT scan of your shoulder is performed for pre-operative planning of your surgery. (*Fig 4,5*) Blood tests, ECG and urine tests may be required. Any sites of infection such as skin rashes, dental sepsis need to be dealt with before surgery. Dr Wang will ask you to use a chlorhexidine skin disinfectant starting several days prior to surgery.

Usually you are admitted the day of surgery. The anaesthetist may contact you beforehand to discuss general anaesthetic and nerve blocks to help keep you comfortable after surgery.

TSR Surgery takes approximately 90 minutes. Dr Wang uses computer navigation to assist accurate bone shaping and placement of the prosthetic components. (See video on website)

Following surgery, you will remain in hospital for two to three days. During this time, you will continue antibiotics, anticoagulant injections and stockings, then the surgical drain and intravenous line are removed, and you will be discharged with a prescription of pain medication. Dr Wang may arrange for you to see a Restorative care physician before or during your hospital stay. If you do not have someone at home with you, it may be possible to arrange transfer to a rehabilitation unit.



Figure 4

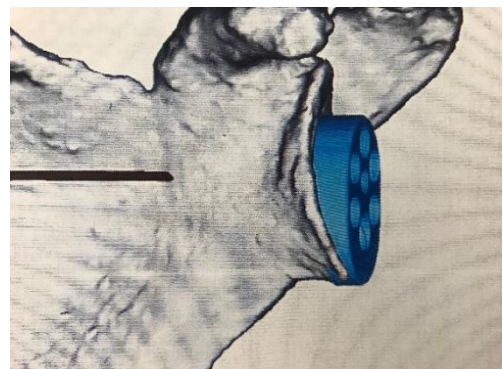


Figure 5

How long is the recovery?

A sling is required to immobilise the shoulder for four to six weeks. (Fig 6)

Pain Management

You will be prescribed pain medication to take home. Generally you will need **Tapentalol Slow Release** morning and night and regular **Panadol Osteo** (morning, lunchtime and night). For breakthrough and very severe pain you will also be prescribed **Oxycodone** (tradenname Endone or Oxynorm) 1 to 2 (5mg) tablets once or at most twice a day. This is a narcotic prescription. Oxycodone should be taken as little as possible. It may make you lightheaded and nauseous and should not be combined with alcohol or sleeping pills. Oxycodone is addictive and has the risk of overdose.

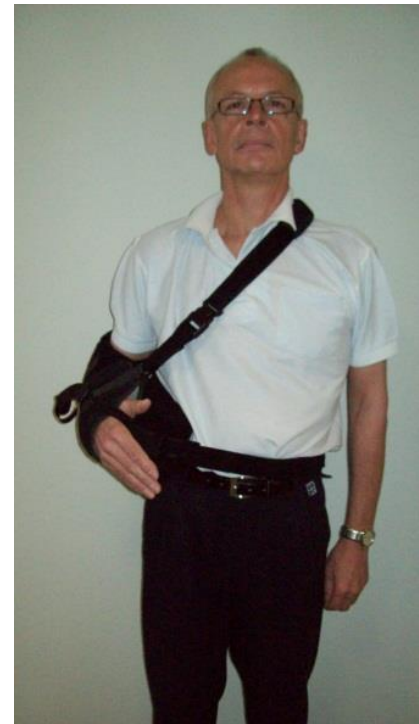


Figure 6

No shoulder exercises are permitted for two weeks. However in the sling, you should squeeze a soft ball or clench your fist several times a day to prevent finger stiffness. You should go for frequent short walks for general well-being and to prevent thrombosis in your legs. After your postsurgical review with Mr Wang, very gentle passive movement exercises are allowed.

Physiotherapy and hydrotherapy can begin at the two weeks postsurgical review. Shoulder comfort, range of motion and strength gradually improve for many months. However a TSR does not recover normal shoulder function. Even long term, some patients with a TSR may have some discomfort, stiffness, they may not sleep comfortably on the affected shoulder, and may need to limit heavy gardening and sporting activity. Functional improvements and strength will slowly improve for up to 12 months. Rehabilitation Times will vary depending on the extent of your surgery. It is best to start slowly and gently with your rehabilitation exercises, rather than risk an early mishap or re-injury to your shoulder which may affect your final outcome.

What are the possible complications of TSR?

TSR is major surgery and usually performed in older patients with severe shoulder disability. Complications are rare, but can occasionally occur. These include:

1. Infection

This occurs in approximately one percent of cases despite routine antibiotic prophylaxis. There is a higher risk in patients with diabetes or skin rashes. Most infections are minor, and can be treated if detected early with antibiotics and a surgical wash out. Very rarely, infections can be serious with antibiotic resistant bacteria and the TSR components may need removal and possible replacement at a later date when the infection has settled. Even more rarely, the infection may still not settle and more radical surgery such as a shoulder fusion may be required.

Infection may occur many years after surgery and it is important that any future episodes of skin infection, dental sepsis or other infections are promptly treated with antibiotics to prevent the spread of infection to your TSR.

2. Thromboembolism

This is uncommon compared to hip and knee replacement. Nevertheless blood clots can form in the legs (deep venous thrombosis) and can travel to the lungs (embolus) after shoulder surgery. You will be fitted with compression stockings before surgery, and post operatively, will receive anticoagulant injections until you are fully mobile. These anticoagulant injections may cause bleeding problems such as wound ooze and bruising down the arm or swelling (hematoma), but will prevent thromboembolism.

3. Damage to bone, nerves or blood vessels

TSR surgery is performed close to arteries and nerves. Damage to these structures is possible, but this is very rare. Bone quality is usually weakened in chronic arthritis or osteoporosis. Rarely the bone may fracture when implanting the prosthesis. After surgery, rehab exercises, daily activity and sports should be undertaken carefully as rarely a traumatic fracture or bony stress fracture can occur around the prosthesis.

4. Prosthesis Complications

A TSR is not as sturdy as total hip and total knee replacements. The socket component is small and may loosen in bone or dislodge after an injury such as a fall. Over many years the plastic bearing surface may wear out. Also the joint replacement may dislocate, where the humeral head separates from the socket. This may occur following a specific injury such as a fall, or progressively over years if the rotator cuff tendons surrounding the TSR breakdown.

If prosthesis complications occur, further surgery may be required. The implants may need adjustment in position, or replacement. Most shoulder replacements last ten to fifteen years before revision surgery is required. Younger more active patients are more likely to require revision surgery than sedentary patients.

5. General Medical Complications

In older patients, medical conditions, eg. pre-existing cardiac respiratory or vascular disease may be exacerbated by anaesthesia, or surgery. Mr Wang may refer you to the appropriate specialist to optimise your general medical condition prior to your TSR surgery.

Frozen Shoulder “Adhesive Capsulitis”

What is Frozen Shoulder?

The shoulder joint is a ball and socket joint held in place by the surrounding muscles and tendons and enclosed by the joint capsule. The joint capsule can become inflamed for several reasons including minor trauma, surgery, medical conditions including diabetes or following a stroke.

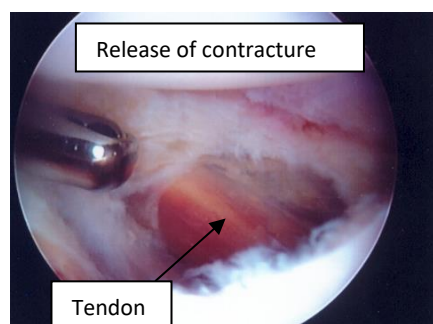
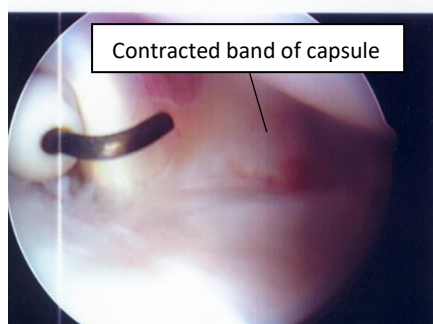
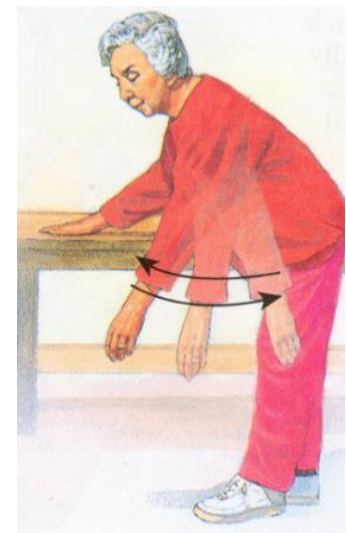
Symptoms

When the capsule is inflamed (capsulitis), you will notice pain felt over the front and side of your shoulder and down the arm. The pain may be severe and disturb your sleep. Over several months, the inflammation settles and the pain lessens but the capsule thickens and contracts causing shoulder stiffness ("adhesive capsulitis"). The stiffness may stop you reaching overhead or getting your hand behind your back. It may put more strain on the base of the neck causing neck pain. Frozen shoulder may continue for one or two years, but in most cases the condition will resolve on its own accord.

How is it treated?

When the pain is severe, usually tests including X rays and scans are done to exclude other causes for shoulder pain. These causes include arthritis, acromial bone spurs and tendon tears, bone lesions or referred pain from your neck. However if these tests are normal, treatment for frozen shoulder comprises pain medication, physiotherapy, massage and gentle home exercises and hydrotherapy. The warm water helps to relax tight muscles and buoyancy aids assist in recovery of motion. Attention to posture is important, as a "slouch" will often cause secondary neck pain. One or two cortisone injections under radiology guidance into the shoulder joint capsule is helpful to reduce the inflammation.

If the pain is settling but the stiffness is severe, a manipulation under general anaesthetic can be performed to breakdown the contracted capsule. Also an arthroscopic surgical release of the joint contracture is occasionally required and can improve shoulder movements quite quickly.



Warm the shoulder under a hot shower and then gently swing your arm using gravity, forward and backwards; and side to side.

General Risks of Shoulder Surgery

Potential Risks of undergoing Shoulder Surgery

- There are risks in undergoing any medical treatment.
- You may choose a non surgical treatment approach such as ongoing medications/ physiotherapy/ injection therapy. However even this approach has risks eg. A rotator cuff tear will enlarge and may become non repairable.
- Your general medical condition may increase your risk for undergoing an anaesthetic. You should be in touch with your anaesthetist regarding any cardiac, vascular or respiratory conditions, and the medications you take, and drug allergies. Bruising and haematomas can occur especially if you are on anticoagulation medication.
- The general risks of shoulder surgery are listed below:
 - Post operative pain
 - Swelling
 - Bleeding
 - Reoperation
 - Thromboembolism
 - Infection
 - Joint stiffness
 - Nerve problems
 - Drug reactions
 - Implant loosening
- Please speak to Dr Wang or your own doctor if you have any further concerns.

Rehabilitation after Shoulder Surgery

Post Operative Instructions

Rotator Cuff Repair / Bankart Labrum Repair

1. You will stay in hospital overnight.
2. Antibiotics are provided to minimize the risk of infection.
3. You will wear compression stockings. Do some ankle/ leg exercises and short walks around the ward to prevent thromboembolism.

4. Pain Management

A **prescription for pain tablets** will be provided by the hospital on discharge. Generally take **Tapentalol Slow Release** regularly: 1 tablet morning and night with meals and this will reduce the need for stronger medication.

For breakthrough pain eg. after exercise or at bedtime, take **Oxycodone** (tradenname Endone or Oxynorm) 1 to 2 (5mg) tablets once or at most twice a day. This is a narcotic prescription. Oxycodone should be taken as little as possible. It may make you lightheaded and nauseous and should not be combined with alcohol or sleeping pills. Oxycodone is addictive and has the risk of overdose. In addition, you can take Paracetamol or **Panadol Osteo** 2-3 times a day.

Ice packs will help reduce pain, and reduce swelling and bruising. A haematoma (collection of blood) may form down your arm especially if you are on blood thinner medication. This haematoma will resolve over time.

5. Abduction Sling instructions on Use

If a **sling** has been applied, please keep this on day and night to prevent tension and stress on the surgical repair. Learn how to apply the sling while you are in hospital.

How to put your sling ON:

1. Support your operated arm with the good hand and lower your arm into the sling which is resting on the table.
2. Gently slide elbow right back until the arm is resting fully in the sling.
3. Bring the neck strap around the back of your neck, and fasten both front clips.
4. Apply the velcro straps for thumb and forearm.

5. Step away from the table and adjust the bolster to ensure it is sitting on your waist and not crossing over the midline (belly button).
6. Secure waist strap.
7. The sling should support the weight of your arm when you are upright.
8. Your shoulders should rest at the same level.
9. The sling can be removed only for washing, dressing and gentle exercises.
10. You should not sleep on the affected side. Initially you may be more comfortable sleeping in a recliner chair or slightly sitting up, rather than fully flat.
11. In the shower, your arm should still be supported. The ward nurse will provide you with a shower sling (“collar and cuff” sling), that you can get wet.
12. The sling will be required for 5-6 weeks after surgery. You cannot drive a motor vehicle during this time.



6. Post Operative Exercises

- Gentle exercises will decrease stiffness of the shoulder and other joints in the upper limb. Do your exercises slowly and gently, to the point of discomfort never pain.
- Before exercising, warm up with a warm shower or hot pack. After exercising apply a cold pack. Do your exercises for 2-3 minutes twice daily.
- For the initial 4-6 weeks after surgery, shoulder exercises are “**PASSIVE**”. (Page 19)
- Your rehabilitation exercises will be progressed after review by Dr Wang and his practice physio, to include **Assisted** exercises, then **Resistive** exercises then finally **Strengthening** – Sport and work specific exercises.
- During the “Assisted” and “Resistive” rehab stages, please follow the **SHOULDER PRECAUTIONS** (Page 22)

Passive Shoulder Exercises

1. “Cradle the Arm and Rock the Baby” Exercise:

- Stand or sit and bend forward at the waist.
- Hold the operated arm at the elbow with your opposite hand.
- Use your opposite hand to support the weight of the operated arm at the elbow.
- Do NOT let the arm hang or swing unsupported.
- Slowly move your operated arm side to side, then forward and back, then circle clockwise and anti-clockwise five times each. (*Figs 1 & 2*)
- Only move as far as is comfortable.
- Do these exercises twice a day.

“Rock the baby” Forwards and Backwards



Figure 1

“Rock the baby” Side to Side

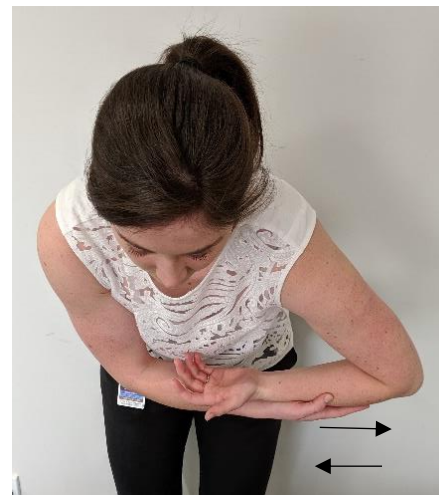


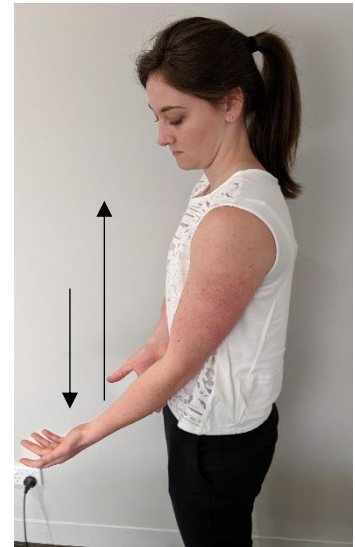
Figure 2

2. “Open the Gate” External Rotation



3. "Straighten and bend Elbow"

- Gently and slowly bend and straighten your elbow of the operated arm using your non operated hand holding the forearm. Repeat five times.
- Gently clench your hand to make a fist and stretch your fingers out straight five times.
- Finger swelling and stiffness is common and tingling from subclinical carpal/ cubital tunnel syndrome may occur. This usually resolves when the swelling goes down.



4. Make sure your posture is good and avoid slouching. Do some gentle and slow neck stretches.



Drop your ear towards your shoulder

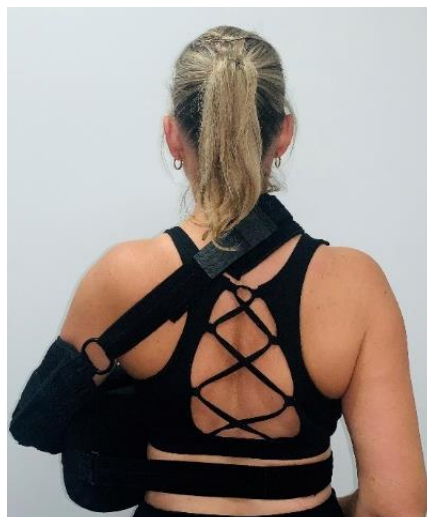


Look over your shoulder



Gently pull your head straight

5. Do some scapular setting exercises, gently pull your shoulder blades down and back towards your lower spine. Hold for 5 seconds.



Assisted Shoulder Exercises

When the sling has been removed and the shoulder is comfortable, more active rehabilitation exercises can begin. The following are guidelines and you will be supervised by your physiotherapist or exercise physiologist.

Overhead pulley



Stick Exercises (later)



- The aim of these exercises is to recover overhead movement of the operated arm, with the assistance of the good arm (via the pulley or stick).
- Use your good arm to control movement of the operated arm.
- Do these exercises to discomfort, never pain. Warm up first (eg hot shower).
- Do the exercises SLOWLY and smoothly, count 3 seconds to elevate the arm, hold the elevation for 3 seconds then count 3 seconds to lower the arm.
- Cool down with a cold pack afterwards.
- Continue exercises to your neck and upper back. Maintain good posture.

SHOULDER PRECAUTIONS:

1. After the sling has been removed, please still be very protective of your operated shoulder. Any activity or exercise that HURTS potentially HARMS your shoulder repair, and should be avoided. PAIN is a warning to slow down or stop.
2. In general, don't lift or push greater than 1.0kg with the operated arm.
3. Avoid sudden movement or impact movement
4. Avoid the risk of re-injury. It is a good idea to wear the sling on as protection of your operated arm in busy shopping centres, or for support when out on long walks. It is best to avoid climbing a ladder or riding a bicycle due to the risk of falling on your shoulder.
5. Do not swing the operated arm when you walk. The tension on the repair site may snap sutures or dislodge anchors and damage the reconstruction.
6. Do not reach behind your back or lift the operated arm actively sideways until Dr Wang gives the okay.
7. Avoid any manipulation of your shoulder joint.

Resistive Shoulder Exercises

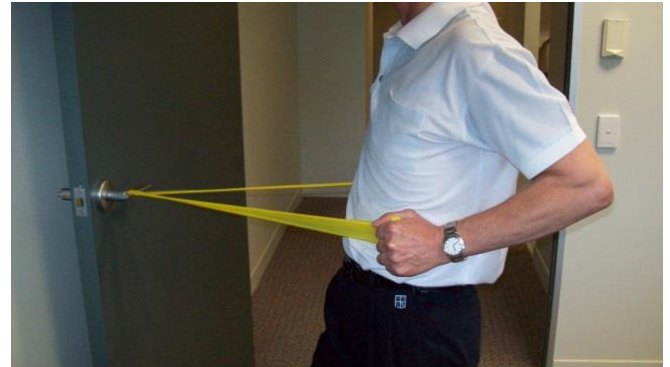
These exercises begin toning and strengthening your shoulder muscles. This can start at 8-12 weeks after surgery after Dr Wang gives the okay. Aim to progress slowly and carefully to prevent a flare up of pain and re-injury.

1. Spider Climbs the Wall



Use your fingers to slowly climb the operated arm forwards then sideways up a wall. Elevating your arm activates your shoulder muscles. Slowly descend the wall using similar finger action. Initially stand close to the wall and only elevate your operated arm to the point of discomfort.

2. Theraband Exercises



Your physiotherapist will start you on light elastic bands (red, yellow) and later progress to stronger bands (green) and add exercises as comfort allows. The above four exercises are good to start with.

Avoid sideways Arm Raises with weights or elastic bands. (Abduction movements)

3. Supine Circles

- Lie on your back, and using your operated shoulder, elevate the arm so it is vertical.
- Use the index finger, draw circles: clockwise then counter clockwise then figure of 8 movements.
- Initially circle movements are small and performed slowly. After several weeks of practice, draw larger circles.
- When you can do movements comfortably, hold a 500gram weight (eg. Water bottle, can of spaghetti) and practice small then larger circular arm movements.
- This exercise will rehab your deltoid and rotator cuff muscles.



4. Hydrotherapy

Advanced Strengthening Exercises

- These advanced exercises can commence at 3-4 months after surgery and should be initiated under direct supervision by your physio.



External Rotation in Abduction –
Make a Stop Sign



Mini Push ups against a Wall
(ball optional)

Studies show most patients recover good function for daily activities by four months after surgery. However functional improvements and strength will slowly improve for up to 12 months. Rehabilitation times will vary depending on the extent of your surgery. It is best to start slowly and gently with your rehabilitation exercises, rather than risk an early mishap or re-injury to your shoulder which may affect your final outcome.

Post Operative Instructions

Acromioplasty ± AC Joint Excision

Pain Management

A **prescription for pain tablets** will be provided by the hospital on discharge. Generally take **Tapentalol Slow Release** regularly: 1 tablet with meals morning and night and this will reduce the need for stronger medication.

You can take Anti-inflammatory medication (eg Celebrex, Naprosyn, Mobic, Voltaran etc) as well. For breakthrough pain eg. after exercise or at bedtime, take **Oxycodone** (tradename Endone or Oxynorm) 1 to 2 (5mg) tablets once or at most twice a day. This is a narcotic prescription. Oxycodone should be taken as little as possible. It may make you lightheaded and nauseous and should not be combined with alcohol or sleeping pills. Oxycodone is addictive and has the risk of overdose.

PRECAUTIONS:

1. Wear the sling for 4-5 days after surgery. When the sling has been removed, please be very protective of your operated shoulder. Any activity or exercise that HURTS potentially HARMS your shoulder at this early stage after surgery.
2. In general, don't lift or push greater than 1.0kg with the operated arm for the first 2-3 weeks.
3. Avoid sudden movement.
4. Avoid the risk of re-injury. It is a good idea to wear the sling as protection in busy shopping centres, or for support when out on long walks.
5. Please keep your hospital dressings on.
6. Generally it is best to remain off work and driving a motor vehicle until you are reviewed by Mr Wang one to two weeks after surgery.

POST OPERATIVE EXERCISES:

You will be given a set of basic exercises while in hospital. Please start these a few days after discharge and Dr Wang will see you with his practice physiotherapist at your post-operative review.

- a. The aim of these exercises is to recover overhead movement of the operated arm, with the **assistance** of the good arm. Use your good arm to control movement of the operated arm.
- b. Do the following exercises to discomfort, never pain. Warm up first (eg hot shower), do the exercises SLOWLY and smoothly. Do two exercise sessions per day, each session need be only 2-3 minutes. Cool down with a cold pack afterwards.
- c. Your physiotherapist may also attend to your neck and upper back. Maintain good posture. Squeeze your shoulder blades together. Tuck your chin in.
- d. It is normal to have some pain for 6-8 weeks after acromioplasty. Sleeping on your affected shoulder or heavy or impact activity should be avoided for 2-3 months.

Assisted Exercises



1. "Pray and Lift"

Restores Forward Elevation

Count 3 seconds up, hold 3 seconds and 3 seconds down



2. "Spider climbs the wall"

Restores Sideways Elevation (abduction)

Use your fingers to climb the arm slowly upwards in abduction



3. "Open the Gate"

Restores External Rotation

Keep the elbow by the side and using the opposite (left) arm, gently push the operated right arm outwards, hold, and then pull the arm inwards



4. "Stand Easy"

Restores behind the back movement

Use the opposite (left) arm to gently pull the operated right arm posteriorly then elevate the right hand higher up your back.

Post Operative Instructions

Rehabilitation after Total Shoulder Replacement

Please read the section on total shoulder replacement before doing any rehabilitation exercise.
(Page 12)

After your post operative review with Dr Wang and his practice physio, you can start some gentle **PASSIVE** exercises to the shoulder. (Page 20)

When the sling is removed at 4-6 weeks after surgery, you can start some **ASSISTED** exercises.
(Page 22)

Possibly Dr Wang may also allow some selected **RESISTIVE** exercises at 6 weeks after surgery.
(Page 23)

Please follow the **SHOULDER PRECAUTIONS**. (Page 23)

Some restrictions with your total shoulder replacement should apply even long term eg. chopping firewood, water skiing. Generally you should not lift more than 10kg with the operated arm. Please discuss any concerns with Dr Wang.