

# Rotator Cuff Tear

## Surgical Reconstruction

### A Patient Information Guide



**NAME:** \_\_\_\_\_

**SURGICAL DATE:** \_\_\_\_\_

#### **IMPORTANT CONTACT INFORMATION:**

Dr Wong's Rehab team: [drwongrehab@apexorthorehab.ca](mailto:drwongrehab@apexorthorehab.ca)

Apex Orthopedic Rehabilitation: (902) 835-2932

Orthofit: (902) 233-0181

Dr Wong's office: (902) 473-7626, [info@drivanwong.com](mailto:info@drivanwong.com)

QEII Ortho clinic: (902) 473-1501

## TABLE OF CONTENTS

Anatomy and Rotator Cuff Injuries .....	Page 4
Procedures .....	Page 6
Frequently Asked Questions.....	Page 8
Surgical Checklist.....	Page 10
Preoperative Appointment.....	Page 11
Post Op Protocol.....	Page 15
0-4 weeks.....	Page 17
4-8 weeks.....	Page 20
8-14 weeks.....	Page 24
14 weeks + .....	Page 27
Post Op Progress Reports.....	Page 31

# ANATOMY AND ROTATOR CUFF TEARS

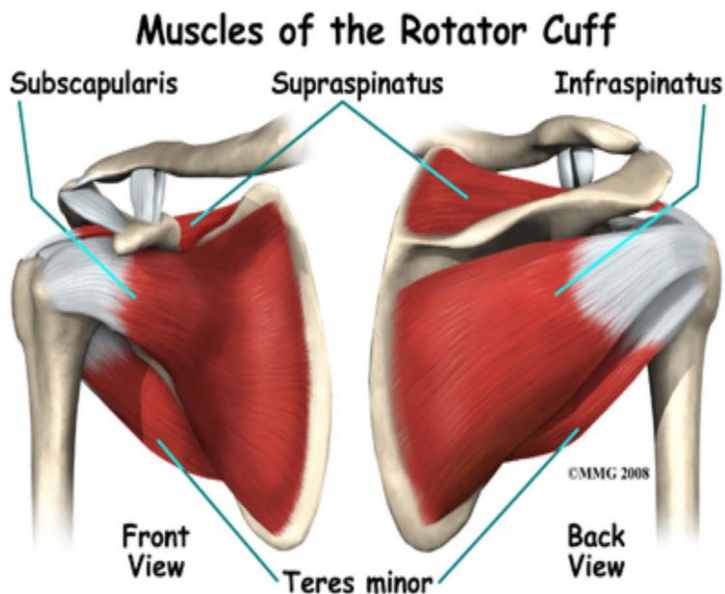
- Shoulder Joint Anatomy
- What is a Rotator Cuff Tear?
- Muscles of the Rotator Cuff
- Common Types of Rotator Cuff Injuries
- Common Symptoms of Rotator Cuff Injuries
- FAQ – PREHAB, SURGERY, AND REHAB

## What is the Rotator Cuff?

The “**Rotator Cuff**” refers to the group of muscles attaching the upper arm bone (humerus) to the shoulder blade (scapula). These muscles are important in shoulder movements and stability. The tendon, or piece that attaches the muscle to the bone, can become irritated, damaged, or completely torn.

### The Muscles of the Rotator Cuff:

The rotator cuff muscles are important in shoulder movements and in maintaining joint stability. These muscles attach to the scapula and connect to the head of the humerus, forming a cuff at the shoulder joint.



- **Infraspinatus** - The **infraspinatus muscle** is a triangular-shaped muscle that is located at the back of the shoulder joint, on the back surface of the scapula. It attaches to the top of the humerus. This muscle is one of the four muscles that form the rotator cuff, which functions to stabilize the shoulder joint. Like all rotator cuff muscles, the infraspinatus functions to stabilize the shoulder joint. Specifically, the infraspinatus functions to keep the head of the humerus in its correct position against the scapula while the humerus is moved throughout the shoulder joint.
- **Supraspinatus**- The **supraspinatus muscle** runs along the top of the shoulder blade and inserts via the tendon at the top of the arm (humerus bone). It is one of the rotator cuff muscles. This muscle is used to lift the arm up sideways and is also important in throwing sports as it is the muscle that holds the humerus in the shoulder when you release what you are throwing.  
The supraspinatus muscle tendon is often ruptured in sudden forceful movements of the upper limb and is the most commonly ruptured rotator cuff muscle. The muscle can also degenerate in the elderly leading to increased instability and loss of function at the shoulder joint. The supraspinatus tendon can also become inflamed, leading to supraspinatus tendinitis which is often associated with shoulder impingement syndrome.

- **Teres Minor Muscle**- The **teres minor muscle** is one of four muscles of the rotator cuff. It's narrow and elongated in shape and sometimes may be fused with infraspinatus. Its main function is to stabilize the humerus in the glenoid fossa when the shoulder moves.
- **Subscapularis**- The **subscapularis muscle** is one of the four rotator cuff muscles, helping to stabilize the joint during shoulder movements. It is the largest and strongest cuff muscle, providing over half of your total cuff strength. Its role is to turn the arm inwards and is a key muscle in doing any lifting movements across your chest or twisting inwards. It is essential for overhead sports, such as swimming, racquet sports and throwing. Tears of the subscapularis tendon are less common than supraspinatus and infraspinatus tendon tears, however they can be much more painful. Often times the long head biceps tendon can also be torn, the biceps tendon then also becomes painful and weak.

### **Common Types of Rotator Cuff Injuries:**

- **Tendinitis/ Tendinosis**: this refers to irritation or inflammation of the rotator cuff tendons.
- **Partial thickness tear**: this refers to tendon damage that does not create a full hole in the tendon.
- **Full thickness tear**: this refers to tendon damage that goes through the entire thickness of the tendon.

### **Common Symptoms of Rotator Cuff Injuries:**

- Shoulder pain that is worse when reaching overhead or behind your back
- Weakness or difficulty lifting objects
- Limited range of motion
- Night pain and difficulty sleeping on the injured shoulder

## Procedures

- **Rotator Cuff Repair**

The rotator cuff mobilizes and stabilizes the shoulder joint. Rotator cuff injuries are one of the most common soft tissue injuries that occur in the shoulder. The gold standard surgery in Canada is the Rotator Cuff Repair. During this procedure the damaged tissue in the shoulder joint is removed, and if possible, the torn portion of the rotator cuff is repaired back to the greater tuberosity, which is the original insertion site of the rotator cuff.

- **Rotator Cuff Reconstruction**

The Rotator Cuff Reconstruction is an innovative surgery that performs the same procedural steps in original rotator cuff repair, although instead of just attempting to repair the torn rotator cuff to the greater tuberosity, a tissue graft is used to augment the repair in the rotator cuff tear. The use of an acellular dermal matrix can give the rotator cuff repair more stability and give the patient further mobility.

- **Biceps Release/Tenodesis**

The biceps muscle is in the front of your upper arm. It has two tendons that attach it to bones in the shoulder. The long head attaches to the top of the shoulder socket (glenoid), the short head of the biceps tendon attaches to the front of the shoulder blade at the coracoid process. The long head of the biceps tendon can often times become irritated, inflamed or torn. In some cases, the long head of the biceps tendon may be too damaged to repair, so the damaged tendon is released from its attachment and sometimes repaired onto the humerus. This is called a biceps release or biceps tenotomy.

## **DEFINING YOUR TREATMENT:**

### **PreHab Treatment**

There is approximately a 12-24+ month wait to have surgery. During this time all patients should have some form of prehab education and should be monitored during this time. It is common to have weakness and muscle imbalance as a result of having shoulder instability for many years. The best non-operative treatment is to improve and strengthen any muscle imbalances/weakness. Common weaknesses will be in the muscles that stabilize the shoulder blade that allow for proper shoulder and shoulder blade movement. Your shoulder should be assessed by a Physiotherapist to address any imbalances around the shoulder joint and be provided with a home exercise program with appropriate follow up and progressions.

### **Post-Op Treatment**

There is a specific protocol that will be provided to you for your treating therapist that outlines your rehab from day zero.

The main goals are:

- **Phase 1 (0-2 weeks):** Protection; begin passive range of motion (PROM).
- **Phase 2 (2-4 weeks):** Mobility; regain full passive range of motion (PROM) and working into active assisted (AAROM).
- **Phase 3 (4-8 weeks):** Mobility & Patterning; regain full active range of motion (AROM).
- **Phase 4 (8+ weeks):** Progressive strengthening & patterning

With each phase there will be criteria that you will need to meet in order to progress to the next phase. These will be assessed by Dr Wong's Rehab team and provided to your caring physiotherapist.

Other important timelines are: Return to work 2-4 months and return to sport 6-8 months.

## FREQUENTLY ASKED QUESTIONS

### 1. How long is the surgery?

This will depend on how much surgery is required in the joint. Typically, this surgery will last 1-2 hours.

### 2. Where are the incisions?

This surgery is done completely arthroscopically, typically using 2-4 one cm incisions.

### 3. Are there risks of having surgery?

- a. **Infection:** The risk of infection is reportedly about 0.8% and when recognized, is treated with cleaning out the joint and with antibiotics. Preventative measures are taken such as: cleansing of the skin prior to surgery, careful surgical techniques, small incisions, and pre-operative antibiotics. If an infection develops, you may require antibiotics.
- b. **Swelling:** Swelling around the joint is normal after surgery. This can be alleviated by applying ice or using a cryotherapy device such as a Polar Care Unit.
- c. **Wound Healing Problems:** Incisions are quite small and therefore complications are rare. Occasionally, blisters occur but these are usually treated with local dressing changes. Most wounds heal to a neat scar, but a thickened, red and painful scar can occur and may require treatment.
- d. **Numbness:** Numbness down the arm can occur after surgery; the likely cause is the swelling around the shoulder and will subside.
- e. **Blood Clots:** Blood clots (deep vein thrombosis) can develop after surgery. Risk factors include: a family history of clotting, a history of prior clots, patients over 40, obesity, cigarette smoking, women, birth control pills, history of cancer, and immobility. Preventative measures include early mobilization, compression stockings, home care exercises such as ankle pumps, smoking cessation, and discontinuing the use of birth control pills for a week prior to surgery and for a least 1-2 weeks after surgery. If you or a direct relative has had a blood clot in the past, please advise the hospital before surgery. Long trips including air travel should be avoided in the first 7 days after surgery to minimize the risk of developing blood clots. **If you suddenly get short of breath and/or have chest pain after surgery, you need to go to the nearest emergency room or call 911 immediately. A pulmonary embolism is a medical emergency and can cause death.**
- f. **Shoulder Stiffness:** Scar tissue can develop fast after surgery. Patients are instructed to start their post-surgical exercises within 2-3 days after surgery to decrease swelling and maintain mobility.
- g. **Injury to Artery or Nerve:** An injury to a major artery or nerve is rare after surgery.
- h. **Severe Pain:** Severe pain after surgery is rare but can occur. If you experience excessive pain in the hospital, you may require staying in recovery longer. If the pain is not controlled, you may be admitted overnight. Medication may be prescribed for pain management.

### 4. How long do I have my brace?

The shoulder joint and surrounded musculature is not strong enough to support the shoulder immediately after surgery and rest is required for healing. You will be instructed to wear your brace for up to 8 weeks post surgery.

### 5. How do I sleep?

Sleeping in the brace can be very difficult. We recommend a lazy boy chair/recliner. If you do not own a recliner, try using pillows to prop yourself, lying flat on your back can be uncomfortable.



**6. When can I shower?**

You may shower 5 days after your surgery with a waterproof band aid over each incision.

**7. When can I drive?**

You should never operate a vehicle while taking prescription medications; this can affect your ability to drive. The protocol will outline specifically when you are able to drive; generally, it is 6 weeks after your operation. It is very important that you do not drive before it is safe to do so, if you are questioning this please consult with your Doctor.

**8. How long is physiotherapy and how often?**

The goal of physiotherapy is to control pain and swelling, restore function, restore range of motion, strengthen and prepare you for return to work or sport. This can vary from patient to patient; generally, physiotherapy will be 2-3x weekly for 12 weeks. It is very important you follow the recommended rehabilitation protocol outlined in physiotherapy unless you are advised otherwise. Progression through a rehabilitation program may be different between patients. Most patients will continue with home or with a gym-based exercise plans for 6-12 months.

**9. What happens after surgery?**

You will be seen by Dr Wong's Rehab team 2-5 days after surgery for wound care and baseline measurements. Physiotherapy should be booked 2-3 days after this appointment. You will be reassessed at regular intervals for 2 years after your surgery (typically the appointments are at 2 weeks, 6 weeks, 12 weeks, 6 months, 12 months and 24 months). At your 2-week Dr. Wong appointment, you will have your staples removed and will be instructed to arrive one hour prior for x-rays.

**10. When can I return to work?**

Every patient will progress differently, generally a return-to-work program will begin within 6-12 weeks of surgery. This will depend on what your occupation is. A return-to-work program may be set up for you, this may include modified duties or hours. It is very important to follow the program set up by your therapy team, returning to work too quickly or without proper training can cause issues with recovery or cause re-injury.

**11. When can I return to sport?**

Return to sport will depend on the patient and the sport. Sport specific retraining is indicated between 4-6 months after surgery (pool program at 4 months; land training 5-6 months). The goal for return to sport is 6-12 months. It could take up to 2 years for maximum function and performance.

**12. Can I re-injure my shoulder?**

Yes, it is possible to re-injure your shoulder after surgery. It is extremely important to follow the protocol outlined for you, this will minimize your chances of re-injury.

## SHOULDER SURGERY CHECKLIST



### **Before Surgery:**

- Make sure you have been working on regaining strength and mobility of the shoulder as well as core strength.
- You should know the date and location of your surgery.
- You should make arrangements with work/school that you will be missing time.
- You have been to your pre-operative appointment, and received your shoulder brace, and other recommended surgical equipment.
- No liquids or food after midnight prior to surgery.

### **Day of Surgery:**

- Bring your health card to the hospital
- Wear loose fitting clothing
- Bring all surgical equipment to the hospital
  - **Shoulder Brace**
  - **Cold therapy unit + shoulder pad and barrier**
- Bring all medications (or list of medications) that you take on a regular basis.
- If you have a sleep apnea machine, please bring it with you to the hospital.
- You will need transportation after surgery, and someone should stay with you for 24 hours after the surgery.

### **After Surgery:**

- You should have a follow-up appointment booked within 2-5 days after surgery.
- You should have physiotherapy booked within 5-7 days after surgery, 2-3x week.
- You should have information on your 2 week follow up at the Orthopedic Clinic.

# PREOPERATIVE APPOINTMENT

- SURGICAL CHECKLIST
- PREOP FORMS

## PRE OP SHOULDER CONSULTATION – DR. IVAN WONG

### MINIMIZE INFLAMMATION AND SWELLING:

- BREG Polar Care Kodiak Device (cryotherapy): 2-3 hours on, 40-60 minutes off - Instructions are given with your unit.
- Hand pumps and gripping exercises (instructions with exercises).
- Wound Care: must stay clean and dry at all times during the healing process. You will be unable to shower for the first 5 days until your dressing is removed. When your dressing is removed it will be replaced with a waterproof Band-Aid. **You will be given a box of XL Waterproof Band-Aids at your first follow-up appointment.**
- You will need to see a doctor to have your staples removed 10 – 14 days after surgery. If you do not see Dr. Wong within 14 days after your surgery, you should make an appointment with your family doctor to have them removed.

### POST-OP MOBILITY:

- **Absolutely NO active shoulder mobility or muscle activation for 0 – 6 weeks after surgery.**
- Your brace is to be worn at all times for 8 weeks, it may be removed for showering, changing, and home exercise plan.
- No pushing, pulling, or lifting even with your brace on.
- Your physiotherapist will be working on restoring range of motion of the shoulder.
- We recommend massage therapy starting at 3 weeks after surgery. This will help reduce scar tissue and help restore range of motion in conjunction with physiotherapy.

### EARLY SHOULDER/NECK ROM:

- Postural awareness.
- Range of motion exercises will be done by your physiotherapist.
- Post-Op exercises: all instructions are on the exercise sheets; exercises are to be done as directed on your exercise sheet.
- 

### FOLLOW-UP APPOINTMENTS:

- There will be a series of follow up appointments booked after surgery – these appointments will be given to you by Dr. Wong's office.
- **You will need to visit Apex Orthopedic Rehabilitation before every appointment with Dr. Wong.** This is to provide Dr. Wong with a progress report. These are setup to provide communication between our team, Dr. Wong, and your Physiotherapist.
- Follow up appointments will be at: **2-5 days, 2 weeks, 6 weeks, 12 weeks, 6 months, and 12 months.**
- **We ask that you bring your form W to your 2-5 day visit.**
- Physiotherapy should start at 5 days after surgery (2 – 3 per week).
- 

### BREG SHOULDER BRACE INFORMATION:

- This BREG brace is an immobilizer, it is worn to protect and support your shoulder while it heals. **There should be no muscle movement.**
- Your brace is to be worn at all times for 8 weeks after surgery. It can only be taken off to shower, to dress, and to do any exercises given to you by your physiotherapist.
- When your arm is not in your brace, it must be supported. You may let your arm hang in the resting position when showering and dressing.
- When you are getting dressed always dress the affected arm first, followed by the unaffected arm.
- You can remove the brace to shower, but your arm must be supported at all times. You may let the arm hang to your side or sit and rest arm on your leg.
- Sleeping can be difficult. **You are required to sleep with your brace on.** We recommend a lazy boy or a recliner. If you do not have either, mimic that position in bed, using pillows to support you back and elbow. We recommend you sleep on you back, sleeping on your side could cause the brace to rotate and shift around the body, causing the shoulder to rotate.



## PreOp Shoulder Surgery Physiotherapy Checklist

Name: \_\_\_\_\_ DOB: \_\_\_\_\_ Sx Date: \_\_\_\_\_

BASELINE MEASUREMENTS	
GH general AROM	
GH Flexion Strength	
GH Abduction Strength	
GH Ext Rot Strength	
GH Int Rot Strength	
Scap. Posn/Rhythm	
OUTCOME SCORE	

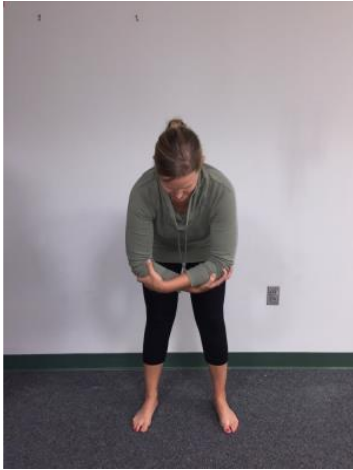
CHECKLIST		
<input type="checkbox"/>	<i>Review of surgery and answer questions</i>	
<input type="checkbox"/>	<i>Importance of early PASSIVE movement and exercises – in brace – 6 weeks RCR, 8 weeks Graft, 3-6 weeks latarjet</i>	
<input type="checkbox"/>	<i>Review exercises to begin as soon as possible</i>	
<input type="checkbox"/>	<i>Overview of protocol, RTW (3-6 months), RTS (8-12 months) No Driving while in brace</i>	
<input type="checkbox"/>	<i>Plan for physiotherapy – ideal: 2-3x/week for 6 weeks, 1x/ until 10 weeks, biweekly until 3-4 months, every 6-8 weeks until 1 year. PROM (0-6w) – AAROM (6-10 w) – AROM(10+ weeks)-Strengthen (12+w)</i>	<i>Location:</i>
<input type="checkbox"/>	<i>Follow ups with rehab team and Dr Wong 2 weeks, 6 weeks, 12 weeks, 6 months, 1 year, 2 year. Importance of doing outcome measure (emailed to patient).</i>	
<input type="checkbox"/>	<i>Schedule 2-5 day appointment</i>	<i>Date:</i>
<input type="checkbox"/>	<i>If Local schedule 2w, 6w on the Wed/Thurs/Friday before actual (instead of day of Wong visit)</i>	<i>2 week date: 6 week date:</i>
<input type="checkbox"/>	<i>Provide 0-2 week protocol and exercises</i>	
<input type="checkbox"/>	<i>Provide contact information (drwongrehab@apexorthorehab.ca)</i>	

I acknowledge that all of the above information has been provided to me and that I was able to discuss any questions I had with the providing physiotherapist.

Name: \_\_\_\_\_ Signature: \_\_\_\_\_

PT: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

## EXERCISES TO BEGIN AS SOON AS POSSIBLE AFTER SURGERY



### **Cradle Pendulums**

Support your affected arm by holding your bent elbow with the other hand. Gently lean forward at the waist and gently rock the affected arm side to side as if you were rocking a baby. Keeping your arm supported by the opposite side the whole time. You can also perform small circles or rock forward and backward.

*Hold: 5 minutes, Complete 2 sets, Perform 2 times*

### **RCR Active Wrist Movements**

With your surgical arm in the slingshot brace, actively move your wrist up and down into flexion and extension and side to side or radial and ulnar deviation. Also perform wrist circles.

*Repeat 20 times, Complete 2 sets, Perform 2 times per day*



### **Elbow Extension Stretch**

Place your elbow on the edge of a table or on a pillow on your lap (DO NOT PUT WEIGHT THROUGH ELBOW) and use your other hand to press it into a more straightened position.

*Repeat 10 times, Hold for 2 seconds, Complete 3 sets, Perform 2 times per day*

## EXERCISES TO BEGIN AS SOON AS POSSIBLE AFTER SURGERY (cont'd)

### Cervical Side Bend

Tilt your head away from surgical shoulder – hold where you feel a comfortable stretch.

Repeat 3 times, Hold 30 seconds, Complete 1 set, Perform 2 times per day



### Cervical Rotation

Turn your head away from surgical shoulder – hold where you feel a comfortable stretch

Repeat 3 times, Hold 30 seconds, Complete 1 set, Perform 2 times per day



### Posture Correction

Sit tall, lift your sternum. Correct head position with a chin tuck, and gently retract your scapulas.

Repeat 3 times, Hold 30 seconds, Complete 1 set, Perform 2 times per day.



# SHOULDER ROTATOR CUFF RECONSTRUCTION REHAB PROTOCOL

- CHECKLISTS FOR EACH PHASE
- DETAILED PROTOCOL FOR EACH PHASE
- EXERCISE DESCRIPTIONS FOR EACH PHASE



## **ARTHROSCOPIC ROTATOR CUFF RECONSTRUCTION**

*This protocol is intended to provide clinicians with guidelines for the post-operative management of a patient who has undergone an arthroscopic Rotator Cuff reconstruction. This protocol is not a substitute for a clinician's clinical reasoning during a patient's post-operative healing/progress. Clinical reasoning should be based on individual symptoms, physical signs, progress, and/or the presence of operative complications. If a clinician requires assistance or guidance at any stage of recovery, they should consult with Dr. Wong's office.*

### **POSTOPERATIVE GUIDELINES:**

- Physiotherapy commencing at 3-5 days post-op
- Protect surgical repair
  - It is crucial to allow the shoulder's soft and bony structures to repair.
  - 14 weeks is required for sufficient tendon, graft to bone healing post operatively.
  - Avoid over stressing subscapularis repair
- Range of motion must be achieved before strengthening
  - Gaining ROM too slowly may result in longer stiffness.
  - Strengthening when full range of movement is not available can lead to compensatory movement strategies and faulty muscle activation, and risks failed tissue repair (NO strengthening until 12 weeks.)
  - Exercises must not reproduce pain

### **Returning to Work:**

- These decisions are determined by Dr. Wong in conjunction with an occupational therapist. Decisions generally occur between 3-6 months post-surgery.
- Often associated with graduated hours and modified duties

### **Returning to Sport:**

- These decisions are determined by Dr. Wong – and usually occur between 6 to 12 months post-surgery.
- Timelines vary and are dependent on contact vs. non-contact sport, as well as level of play.

## Exercise Program Rotator Cuff Reconstruction: 0-4 weeks



### **Cradle Pendulums**

Support your affected arm by holding your bent elbow with the other hand. Gently lean forward at the waist and gently rock the affected arm side to side as if you were rocking a baby. Keeping your arm supported by the opposite side the whole time. You can also perform small circles or rock forward and backward.

*Hold: 5 minutes, Complete 2 sets, Perform 2 times*

### **RCR Active Wrist Movements**

With your surgical arm in the slingshot brace, actively move your wrist up and down into flexion and extension and side to side or radial and ulnar deviation. Also perform wrist circles.

*Repeat 20 times, Complete 2 sets, Perform 2 times per day*



### **Elbow Extension Stretch**

Place your elbow on the edge of a table or on a pillow on your lap (DO NOT PUT WEIGHT THROUGH ELBOW) and use your other hand to press it into a more straightened position.

*Repeat 10 times, Hold for 2 seconds, Complete 3 sets, Perform 2 times per day*

## Exercise Program Rotator Cuff Reconstruction: 0-4 weeks

### Cervical Side Bend

Tilt your head away from surgical shoulder – hold where you feel a comfortable stretch.

Repeat 3 times, Hold 30 seconds, Complete 1 set, Perform 2 times per day



### Cervical Rotation

Turn your head away from surgical shoulder – hold where you feel a comfortable stretch

Repeat 3 times, Hold 30 seconds, Complete 1 set, Perform 2 times per day



### Posture Correction

Sit tall, lift your sternum. Correct head position with a chin tuck, and gently retract your scapulas.

Repeat 3 times, Hold 30 seconds, Complete 1 set, Perform 2 times per day.



**\*Maintain wrist mobility by moving wrist around and squeeze the ball provided in the brace throughout the day.**

## ARTHROSCOPIC ROTATOR CUFF RECONSTRUCTION

### *Phase I (Protection): 0-4 weeks*

#### **Restrictions/Precautions for Phase I:**

- x Shoulder PROM (NO active range of motion for 8 weeks), all directions
- x Remain in brace (include sleeping); remove only for showering and ROM exercises
- x Avoid getting incisions wet
- x No driving for 8 weeks (or while in brace)
- x No mobilizations/manipulations/traction to GHJ
- x No lifting/pushing/pulling objects with operative shoulder

#### **Short Term Physiotherapy Goals for 0-2 weeks:**

- ✓ Education: posture, joint protection, positioning, hygiene, restrictions, ADLs
- ✓ Immobilization with sling (abduction pillow/wedge) to protect surgical site (8 weeks total)
- ✓ Minimize pain and inflammatory response
- ✓ Maintain/restore ROM of uninvolved joints (neck, thorax, elbow, wrist/hand)

***Physiotherapy management for Phase 0-2 weeks Post Rotator Cuff Reconstruction: it is very important that these patients have PROM post-op to prevent adhesions.***

#### **1. Manual therapy (2-3x/week by physiotherapist)**

- PROM is required early to prevent stiffness. Emphasis should be on shoulder flexion and abduction.
- Gentle PROM can be started on day 3 post-operatively. Do not stress end ranges.

#### **2. Brace Use**

- Ensure arm is immobilized in sling to protect surgical site.
- Ensure sling is adjusted (if required) to optimize posture (eg. Symmetrical shoulder height)

#### **3. Hygiene/wound management**

- Surgical dressing can be removed 3-5 days post-operatively. Stitches and staples get removed at 2 weeks post-operatively. Ensure wound is dry and clean. Use waterproof bandages until wounds are closed.

#### **4. Exercise**

- PROM
  - Pendulum Cradles,
  - Neck, thoracic, elbow, wrist/hand AROM
- Postural training/Correction
  - Eg: sternal lifts, Chin tucks, Pelvic tilts
- Grip strength
  - Ball squeezes
- Scapular stability
  - Shoulder/scapula retraction
- General Fitness
  - Gentle walking. Ensure surgical site is not compromised in any way

#### **5. Modalities**

- Use ice or a cryotherapy unit as directed for pain and inflammatory control

## **ARTHROSCOPIC ROTATOR CUFF RECONSTRUCTION**

### ***Phase II (Mobility): 4-8 weeks***

#### **Requirements to progress to Phase II:**

1. Follow-up with Dr. Wong at 2 weeks
2. Appropriate healing from surgery
3. ROM guidelines met but not exceeded
4. Pain control within allowed ROM

#### **Restrictions/Precautions for Phase II:**

- x Remain in brace (include sleeping); remove only for showering and ROM exercises
- x Progress to AAROM at 6 WEEKS, NO active motion of the shoulder until 8 weeks
- x Do not over stress GRAFT JACKET with terminal stretching (beyond R2) within first 8 weeks
- x No joint mobilizations (arthrokinematics)/manipulations/traction to GHJ
- x Avoid active release techniques
- x No lifting/pushing/pulling objects with operative shoulder
- x No arm use beyond ROM guidelines/restrictions

#### **Short Term Goals of Phase II:**

- ✓ Education: posture, joint protection, positioning, hygiene, restrictions, ADLs
- ✓ Immobilization with brace to protect surgical procedure
- ✓ Minimize pain and inflammatory response
- ✓ Maintain/restore ROM of uninvolved joints (neck, thorax, elbow, wrist/hand)
- ✓ Achieve recommended ROM through gentle and pain-free ROM activities
- ✓ Normalize scapular position and mobility (dissociation from GHJ)
- ✓ Improve stability and neuromuscular control of cervical spine (if necessary)

## Management Recommendations for Phase II:

### 1. Manual Therapy (2-3x/week)

- Passive ROM (passive physiological ROM) within end of a joint's available ROM
- Soft tissue massage to shoulder complex (as needed, 3.5 weeks post surgery)
- Cervical, thoracic and rib 1 mobilization may be indicated to gain full shoulder ROM

### 2. Mobility – PROM (all directions) and AAROM (AROM at 8 weeks IF near full PROM)

### 3. Exercise (see attached)

- PROM- cradle rocks
- AAROM (week 6) – pulleys
  - Can progress to wall walking or a stick/cane for AAROM if appropriate timeline and follow ROM restrictions. Ensure patient does not push beyond R2
- Neck, thorax, elbow, wrist/hand: general ROM (as needed) eg: thoracic rotation
  - Scapular setting to restore optimal position (counteract anterior tilt, depression and downward rotation)
  - Unilateral scapular/depression/protraction/retraction (commence in sling); progress to scapular clock exercises (as able)
  - Humeral head alignment/setting
  - Proprioceptive awareness

### 4. Pool Therapy

- PROM and AAROM in the pool is an excellent way to restore shoulder mobility.

### 5. Massage Therapy (3.5 weeks post surgery)

- Rotator Cuff and surrounding musculature; periscapular musculature
- Scar massage

### 6. Modalities (if no contraindications present)

- Pain management (e.g., ice, heat, TENS, IFC, US, acupuncture)

## EXERCISE PROGRAM: ROTATOR CUFF RECONSTRUCTION: 4-8 WEEKS



### ***Scapular Setting/Scapular AROM***

Sitting tall with arm supported. Pull surgical shoulder blade down and end (as shown with arrow). Repeat this with both shoulder blades when able.

*15 repetitions, 3 sets, 3 second hold*



### ***Humeral Head Setting***

Standing in good posture with theraband (for feedback reasons only!) wrapped around shoulder and fixed in front of you. Gently slide your shoulder back. Do not move the elbow. Visualize moving the ball of your shoulder to the middle of the socket.

*30 reps, 3 sets, 3 second hold*



### ***Shoulder Pulleys (flexion and abduction)***

(Week 6)

Sitting comfortably in ideal posture (shoulder blade down and in, looking straight ahead). Step 1: Using non-surgical arm pull down and pulley to have surgical arm raise out in front of you. Step 2: With surgical arm to the side, pull down on pulley with non-surgical arm to have surgical arm raise to the side.

*5 minutes each direction, 3x/day*

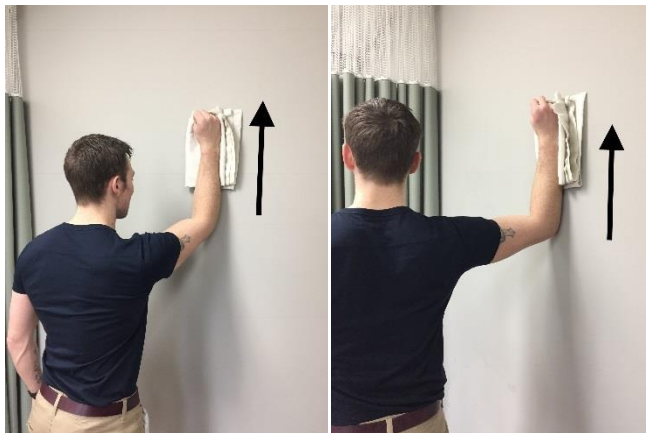
High achievers (90% restoration of PROM, full AAROM with pulleys, minimal pain with movement, greater than week 6):



**AAROM STICK FLEX/ABD/ER** 15 Repetitions, 3 sets, 3 second hold

Standing in an ideal posture, Step 1: using non-surgical arm to assist raise surgical arm in front of you. Step 2: Using non-surgical arm to assist raise surgical arm to the side. With both steps be sure your shoulder blade does not rise until near the end of movement. Step 3: Using your non-surgical arm, assist your surgical arm to be rotated away from your body (ensure elbow does not move away from side – place towel between elbow and body)

\* If unable to control shoulder blade trial this exercise laying on your back.



**SCAPULAR STABILIZATION WITH AROM (7 weeks post – if near full AAROM)**

Maintaining ideal posture and shoulder blade position slide a towel along the wall raising the arm in front of you. Repeat with raising the arm to the side. Be sure not to arch the spine.

15 Repetitions, 3 sets, 3 second hold



**PRONE SCAPULAR RETRACTIONS**

Lay on your stomach with a towel roll under your forehead. Tuck chin gently towards spine to ensure ideal neutral posture. Slide your surgical shoulder blade down and in. Hold this position. When able perform this exercise with both shoulder blades together.

15 Repetitions, 3 sets, 3 second hold



## **ARTHROSCOPIC ROTATOR CUFF RECONSTRUCTION**

### ***Phase III (Neuromuscular Retraining): 8-14 weeks***

#### **Requirements to progress to Phase III:**

1. Follow-up with Rehab team and Dr. Wong at 6 weeks
2. Compliant with recommendations/restrictions to ensure appropriate healing from surgery
3. ROM guidelines met but not exceeded
4. Pain control within allowed ROM

#### **Restrictions/Precautions for Phase III:**

- x Brace removed at 8 weeks
- x Continue to avoid any pain or apprehension with stretching. Mobilize shoulder gently being respectful of end range resistance and surgical site.
- x Avoid exercises that promote hyper-extension, anterior translation and shoulder impingement
- x No mobilizations (arthrokinematics)/manipulations/traction to GHJ
- x No lifting/pushing/pulling objects with operative shoulder

#### **Short Term Goals of Phase III:**

- ✓ Education: restrictions
- ✓ Eliminate pain and inflammation
- ✓ Restore full active shoulder mobility with correct movement patterns/motor recruitment
- ✓ Improve scapular awareness and stability
- ✓ Improve neuromuscular control and endurance of rotator cuff musculature
- ✓ Increase endurance of cervical spine stabilizing musculature (if applicable)

## Management Recommendations for Phase III:

### 1. Manual Therapy

- Restore full mobility (Passive Physiological ROM, Muscle Energy, capsular stretching)
- Maintain tissue health (continued massage therapy as required)
- Gentle graded mobilizations can occur at 12 weeks

### 2. Mobility – AROM

- Perform AROM in all movement planes of the shoulder with good scapular control and avoidance of compensatory movements
  - i. May begin in scapular plane to maximize humeral head/glenoid congruency

### 3. Muscle Activation/Endurance

- *Scapular stabilization*
  - i. Restore and challenge optimal mechanics and positioning of scapula
  - ii. Include OKC & CKC exercises. Consider requirements for ADLs, sport, and work
- *Rotator Cuff:*
  - i. Progress from dynamic relocation training for head of humerus positioning to recruitment
  - ii. As motor recruitment improve, begin to focus on endurance (8 weeks)
  - iii. May begin strength/hypertrophy > 14 weeks as long as exercise is pain-free

### 4. Pool therapy

- Patients can progress well with ROM and strengthening using water to facilitate mobility and to a resistance. Swimming can start at week 14.

### 5. Proprioceptive Awareness – OKC and CKC intermediate exercises

- *May include gentle perturbations to GHJ*

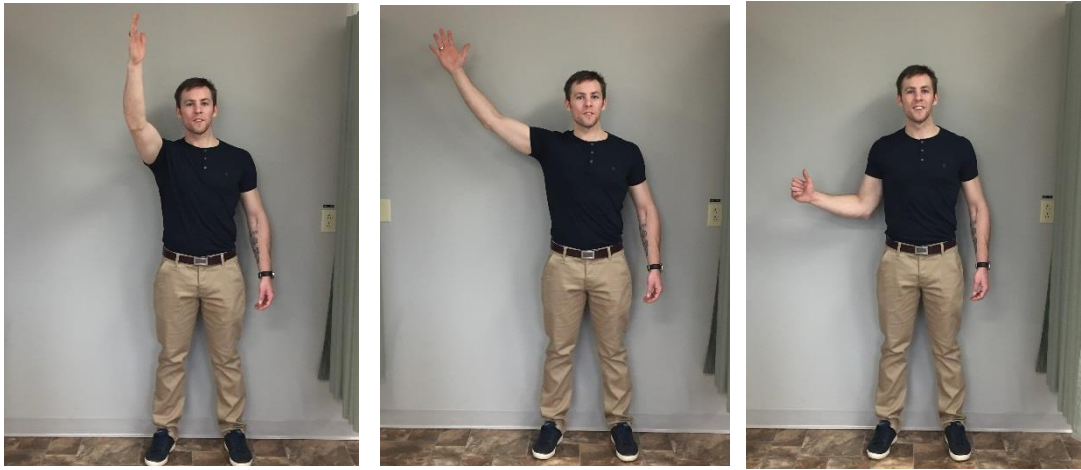
### 6. Modalities (if no contraindications present)

- Pain management (as needed)
- Neuromuscular Electrical Stimulation (as needed)

### 7. Massage Therapy

- Can be useful to help mobilize neck, thoracic spine and shoulders. Ensure massage therapist aware of postoperative restrictions (ie, NO ER, NO Hand Behind Back, NO shoulder traction)

## EXERCISE PROGRAM: ROTATOR CUFF RECONSTRUCTION: 8-14 WEEKS



### ***AROM FLEXION, ABDUCTION, EXTERNAL ROTATION***

Standing in good posture slowly raise your arm straight in front of you. Do not allow your shoulder blade to raise towards your ear. Slowly return to starting position. *15 Repetitions, 3 sets, 3 second hold*

Standing in good posture, slowly raise your arm to the side not allowing shoulder blade to raise. Slowly return. *15 Repetitions, 3 sets, 3 second hold*

Standing in good posture, gently rotate your surgical arm away from you without allowing the elbow to come off of your side

\*this is best to be done in a door frame to maintain shoulder blade position

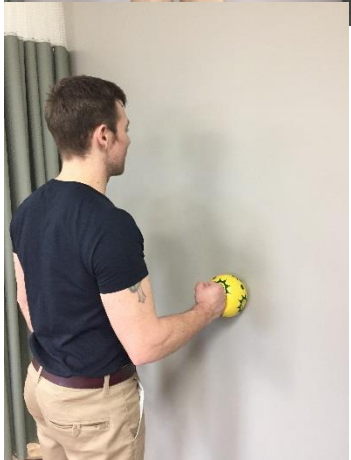


### **SCAPULAR STABILITY WITH ROLLER**

#### ***(Serratus Anterior engagement)***

Standing with forearms against a roller on wall, elbows under wrist, lumbar spine neutral. Push slightly into roller as you slide up the wall. Do not let your neck muscles take over. You can add a resistance band around the forearms to make this exercise more challenging.

*15 Repetitions, 3 sets, 3 second hold*



### **HUMERAL HEAD POSITIONING WITH RC ACTIVATION**

Standing in good posture facing wall, place small soft ball on wall maintain position with fist. Keeping shoulder centered gently push fist into ball (just feel activation). *15 Repetitions, 3 sets, 3 second hold*  
Standing in good posture side onto wall, place small soft ball on wall maintain position with elbow. Keeping shoulder centered gently push elbow into ball (just feel activation).

*15 Repetitions, 3 sets, 3 second hold*

## **ARTHROSCOPIC ROTATOR CUFF RECONSTRUCTION**

### ***Phase IV (Strength and Function): 14<sup>+</sup> weeks***

#### **Requirements to progress to Phase IV:**

1. Follow-up with rehab team and Dr. Wong at 12 weeks
2. Compliant with recommendations/restrictions to ensure appropriate healing from surgery
3. Full active shoulder mobility within correct movement patterns
4. Improved neuromuscular control and stabilization of scapula
5. Improved neuromuscular control and recruitment of rotator cuff musculature

#### **Restrictions/Precautions for Phase IV:**

- x No manipulations to GHJ
- x Light-to-moderate lifting/pushing/pulling objects with operative shoulder
- x Plyometric retraining must be cleared by Dr. Wong

#### **Short Term Goals of Phase IV:**

- ✓ Increase strength and endurance of rotator cuff musculature (OKC & CKC), particularly overhead
- ✓ Improve functional strength of shoulder girdle
- ✓ Introduce return to work retraining
- ✓ Introduce sport-specific retraining (approx. 16<sup>+</sup> weeks post-op)

## **Management Recommendations for Phase IV:**

1. **Manual Therapy**
  - a. PROM all directions (as required)
  - b. Mobilizations may be required at the upper thoracic spine, 1<sup>st</sup> rib, etc. if proper patterns are not achieved.
2. **Muscle Endurance and Strength**
  - a. Scapular stabilization/peri scapular strengthening
  - b. Rotator Cuff: Progress from one dimensional movements to multi-dimensional (eg. ABER/IR, PNF patterns, etc)
3. **Pool therapy**
  - a. Pool therapy for sport specific retraining, higher function
4. **Modalities (if no contraindications present)**
  - a. Pain management (as needed)
  - b. Neuromuscular Electrical Stimulation (as needed)
5. **Massage Therapy-** can be useful to help mobilize neck, thoracic spine and shoulders.

### **Return to sport criteria (typically 6-12 months post surgery):**

1. Full PROPER active range of motion bilaterally
2. 90% return of strength (using handheld dynamometer, compared to opposite limb)
3. Completed sport specific re-training (pool therapy is recommended for sport specific retraining)
4. Cleared by orthopedic surgeon and rehab team

### **Patient Discharge Criteria from Physiotherapy**

1. Full PROPER active range of motion bilaterally
2. 90% return of strength (using handheld dynamometer, compared to opposite limb) and maintaining
3. **Typically, patients should be monitored until 12 months post op to ensure maintenance of strength and function.**

## EXERCISE PROGRAM: ROTATOR CUFF RECONSTRUCTION: 12+ WEEKS



### **RESISTED SCAPULAR RETRACTION**

Standing in good posture, (with resistance band anchored in front of you at shoulder level). Pull back on the resistance band by squeezing your shoulder blades down and in. Do not allow your shoulders/neck to squeeze towards your ears.

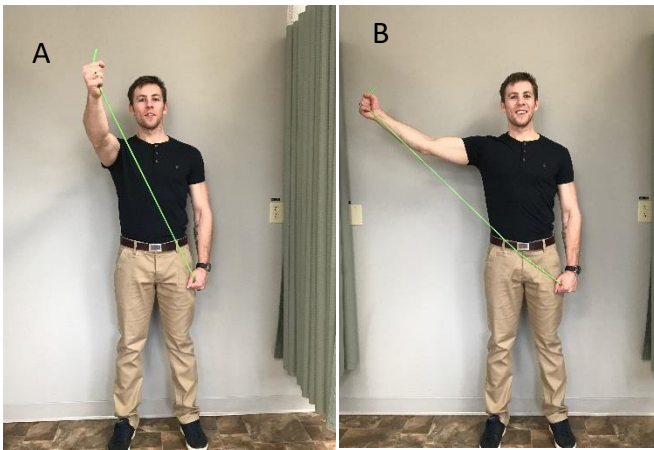
*15 Repetitions, 3 sets, 3 second hold*



### **PROGRESSIONS OF PRONE SCAPULAR RETRACTIONS**

Laying on your stomach with neck/head in good posture, squeeze both shoulders blades down and in (sliding shoulders away from ears). Hold. You should feel this at the bottom of our shoulder blades, not in your neck! Progress to lifting arms of the table. Over time, progress to have arms out to the side, and the above your head

*15 Repetitions, 3 sets, 3 second hold*



**RESISTED SHOULDER FLEXION, ABDUCTION, EXTERNAL AND INTERNAL ROTATION**

A. Standing in good posture, holding theraband in one hand (or under your foot), pull the theraband straight out in front of you (flexion), hold just above shoulder level then return to starting position. Repeat 15 repetitions before moving to next motion.

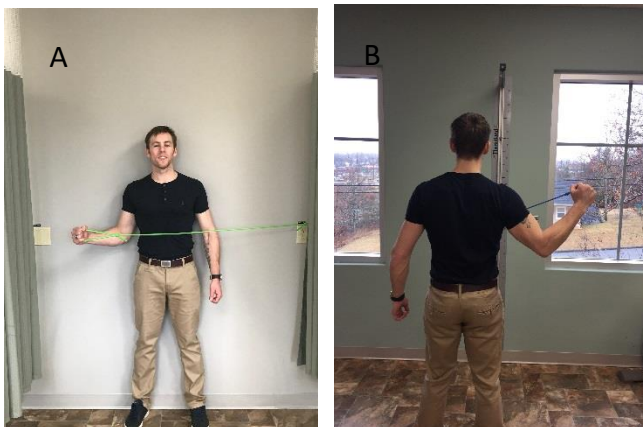
B. Holding theraband in one hand (or under your foot), pull the theraband away from you (1/2 of snow angel) (abduction), hold just above shoulder level then return to starting position. Repeat 15 repetitions before moving to next motion.



C. Standing in good posture, anchor theraband on the same side as your surgical shoulder pull the theraband in front of you (internal rotation) without allowing the elbow to slide onto your stomach. Repeat 15 repetitions before moving to next motion.

Complete 3 sets of the above exercises

**\*\*When full Active external rotation and ease of above resisted exercises move to this progression**



A. Standing in good posture, anchor theraband on the opposite side of your surgical shoulder pull the theraband away from of you (external rotation) without allowing the elbow to slide away from your side. Repeat 15 repetitions 3 sets

B. (progression from A.) Standing in good posture, anchor theraband in front of you. Have elbow approximately 45 deg off of side, pull the theraband away from of you (external rotation) without allowing the elbow to move up or down. Repeat 15 repetitions 3 sets



C. (progression from B). Standing in good posture, anchor theraband in front of you. Have elbow approximately 90 deg off of side, pull the theraband away from of you (external rotation) without allowing the elbow to move up or down. Repeat 15 repetitions 3 sets

# POST OP REASSESSMENT FORMS

To be completed by Dr Wong's Rehab Team

2 weeks, 6 weeks, 12 weeks, 6 months, 1 year, 2 years