



UNIVERSITY OF CALGARY
Sport Medicine Centre

POST-OPERATIVE ROTATOR CUFF REPAIR REHABILITATION PROTOCOL

UNIVERSITY OF CALGARY SPORT MEDICINE CENTRE

SURGEON'S INSTRUCTIONS

POST-OPERATIVE ROTATOR CUFF REPAIR REHABILITATION PROTOCOL

PATIENTS

The following program should be used as a guide during rehabilitation after surgery in consultation with a physiotherapist or athletic therapist. A therapist can teach and individually modify the exercises. Your surgeon will advise when you should start physiotherapy/ athletic therapy at your first follow-up appointment.

PHYSIOTHERAPISTS/ATHLETIC THERAPISTS

Please use this protocol and the information below to guide this patient's rehabilitation. It is also recommended to consult the operative report for further information on the surgical procedure.

THE FOLLOWING FORM IS TO BE FILLED OUT BY THE SURGEON FOR THE THERAPIST

SURGEON:	<input type="checkbox"/> Dr. Boorman	<input type="checkbox"/> Dr. Bois	<input type="checkbox"/> Dr. Mohtadi	<input type="checkbox"/> Other
TENDONS REPAIRED:	<input type="checkbox"/> Supraspinatus	<input type="checkbox"/> Infraspinatus	<input type="checkbox"/> Subscapularis	<input type="checkbox"/> Teres Minor
TEAR SIZE:	<input type="checkbox"/> Full thickness	<input type="checkbox"/> Partial thickness		
BICEPS:	<input type="checkbox"/> Tenodesis	<input type="checkbox"/> Tenotomy		
ADDITIONAL SURGICAL PROCEDURES:	_____			

MOVEMENT RESTRICTIONS:

WEAR SLING FOR:	_____ weeks
PROTECTION OF BICEPS REQUIRED?	<input type="checkbox"/> NO
	<input type="checkbox"/> YES no active elbow flexion for 4-6 weeks no elbow flexion strengthening for _____ weeks
PROTECTION OF SUBSCAPULARIS REQUIRED?	<input type="checkbox"/> NO
	<input type="checkbox"/> YES passive external rotation allowed at _____ weeks active external rotation allowed at _____ weeks
START PASSIVE RANGE OF MOTION, OR ROM EXERCISES AT	_____ weeks
FLEXION ROM:	restrict to _____ degrees until _____ weeks
	restrict to _____ degrees until _____ weeks
EXTERNAL ROM:	restrict to _____ degrees until _____ weeks
	restrict to _____ degrees until _____ weeks
START ACTIVE ASSISTED/ ACTIVE RANGE OF MOTION EXERCISES AT	_____ weeks
NO RESISTED ROTATOR CUFF STRENGTHENING EXERCISES UNTIL	_____ weeks

OVERVIEW OF EXERCISE PROGRESSIONS

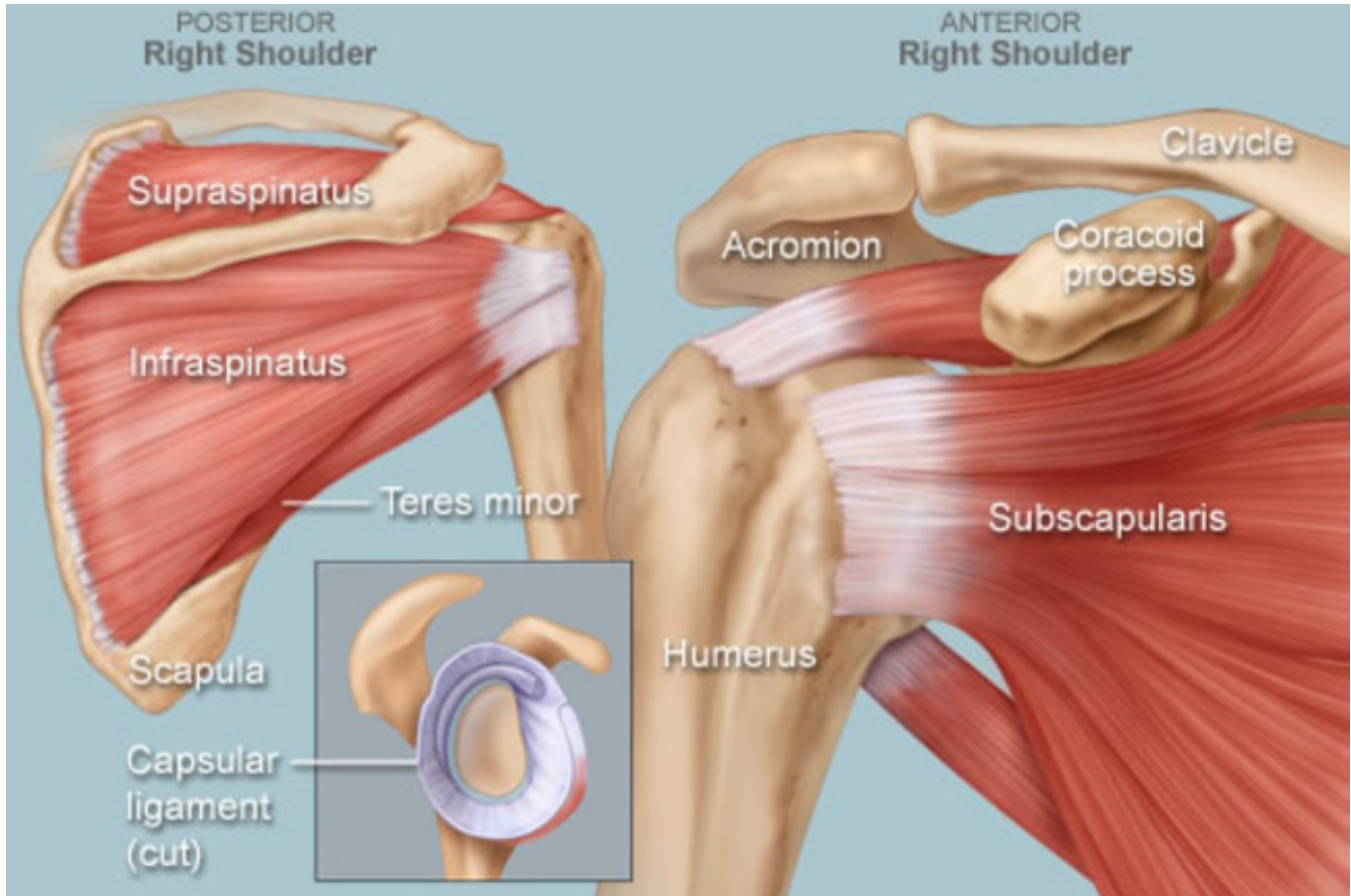
This table provides an overview of the exercise progressions. The timelines for each stage are a general guideline and it is important to adapt the progression based on each individual's presentation. Criteria for progression are presented at the end of each stage and it may be beneficial to continue with exercises from previous stages.

STAGE 1 RECOVERY FROM SURGERY	STAGE 2 RANGE OF MOTION	STAGE 3 STRENGTHENING	STAGE 4 RETURN TO ACTIVITY
0-6 WEEKS (SLING DISCHARGE)	4-6 WEEKS	*12-20 WEEKS	20+ WEEKS

*(all resisted rotator cuff exercises restricted until >12 weeks, see surgeon's instructions on page 2)

RANGE OF MOTION (ROM)	STAGE 1	STAGE 2	STAGE 3	STAGE 4
Neck, Hand and Wrist Range of Motion (ROM)	✓			
Elbow ROM (**see restrictions on cover page)	✓			
Pendulum (Passive sway of arm; +/- exercise ball,+/- scapular setting)	✓			
Passive Supine ROM (Elevation and external rotation **see cover page)	✓	✓		
Passive Table Slides (**see restrictions on cover page)	✓	✓		
Seated Thoracic Extension (on Towel/Ball)	✓	✓		
Active Assisted and Active Shoulder ROM & Elevation/Press Program		✓		
Flexion Stretch on Table/Wall		✓	✓	
Pulleys (Flexion, Scaption)		✓	✓	
Internal Rotation ROM (AssistedTowel Stretch)		✓	✓	
AROM Patterns			✓	
MUSCLE STRENGTH & ENDURANCE				
Scapular Setting/Postural Awareness	✓			
Ball on Table with Scapular Setting		✓		
Isometrics (Flex/Ext/Abd/ER/IR)		✓		
Prone Scapular Retraction		✓		
Scapular Rows with Resistance		✓		
Biceps Triceps Strength (Shoulder in neutral,**see cover page)		✓		
Active Assisted Upper Bike Ergometer		✓		
Side Lying ER No weight → progress weight slowly,+/- EStim)		✓	✓	
Resisted Shoulder Strengthening with Bands (ER, IR)			✓	
Foam Roller Y on Wall			✓	
Ball on Wall			✓	
Tennis Ball on Plate			✓	
Subscapularis Hug			✓	
Alphabet with Band/Weight			✓	✓
Resisted ER/IR Strengthening at 45° → 90° abduction			✓	✓
Resisted Patterns			✓	✓
Resisted Wall Washes			✓	✓
Wall Push Up and Push Up Plus (Wall → Plinth → Floor)				✓
Ball Tosses (Two → One Handed, Chest Pass → Overhead)			✓	
Advanced Proprioceptive Drills → Body Blade, Planks on Bosu			✓	
Functional/Sport Specific Drills				✓

OVERVIEW OF ANATOMY



WHAT IS THE ROTATOR CUFF?

The rotator cuff is made up of four muscles that help stabilize the shoulder:

- Supraspinatus
- Infraspinatus
- Subscapularis
- Teres Minor

In rotator cuff repair surgery one or more of these muscles are reattached to the bone using anchors/sutures. The sutures/anchors hold the tendons so they can heal back to the bone.

STAGE 1 RECOVERY FROM SURGERY

This stage involves the initial recovery period after surgery and generally lasts until 4-6 weeks post operative.

STAGE 1 GOALS

- Patient education
- Control pain and inflammation
- Protect repaired and healing tissue
- Early protected passive shoulder range of motion
- Maintain mobility of joints surrounding shoulder

STAGE 1 PATIENT EDUCATION

Sling Use/Driving

Do not attempt to lift the operative arm without assistance or use the muscles in the operative shoulder (i.e., lifting, carrying, pushing, pulling, driving, moving in bed).

The sling is for comfort and protection and should be worn for 4-6 weeks after surgery (see front page of booklet for time frame under Movement Restrictions). It can be removed when sitting comfortably at home with arm supported, for showering and range of motion exercises.

Do not drive until the surgeon allows you to stop using the sling and when you are no longer on narcotic medications.

Sleeping - It is recommended that the sling is worn while sleeping. If there is difficulty finding a comfortable sleeping position, it may be easier to sleep in a reclining chair or propped up with pillows in bed. The weight of the arm can also be supported on a pillow.

Pain Control

Icing: use cryocuff, an ice pack or a bag of frozen peas. Do not get dressings wet (use plastic bag/wrap between shoulder and ice pack) and add a fabric layer between to prevent frostbite. For the first 48 hours following surgery ice for 20 minutes every hour when awake. After this, reduce icing to every 2-3 hours or as needed.

Medication: follow instructions from surgeon.

Return to Work

Timelines depend on the type of work and the surgery performed. Light desk work duties can often be tolerated by 3-6 weeks. Return to work when it is deemed safe to do so by the surgeon.

STAGE 1 REHABILITATION EXERCISES

To maintain range of motion and prevent stiffness from developing, it is important to keep moving with the exercises below.

NECK RANGE OF MOTION EXERCISES

NECK ROTATION AROM

Sets: 2 | Reps: 10 | Frequency: 5x/day

Preparation:

Sit with good posture

Execution:

Look over your left shoulder as far you comfortably can
Now look over your right shoulder as far as you comfortably can



Start position



Turn neck right



Turn neck left

NECK SIDE FLEXION AROM

Sets: 2 | Reps: 10 | Frequency: 5x/day

Preparation:

Sit with good posture

Execution:

Slowly lower your left ear to your left shoulder as far as you comfortably can
Raise your head up, then lower your right ear to your right shoulder as far as you comfortably can



Start position



Bend neck right



Bend neck left

NECK FLEXION + EXTENSION AROM

Sets: 2 | Reps: 10 | Frequency: 5x/day

Preparation:

Sit with good posture

Execution:

Slowly lower your chin towards your chest as far as you comfortably can
Raise your head, looking up towards the ceiling as you comfortably can



Start position



Lower chin to chest



Look up to ceiling

STAGE 1 REHABILITATION EXERCISES

WRIST RANGE OF MOTION EXERCISES

WRIST CIRCLES

Sets: 2 | Reps: 10 | Frequency: 5x/day

Preparation:

- Assume good posture with your upper back straight

Execution:

- Draw circles with your wrist
- Use your index finger as an imaginary pencil



Make wrist circles



Make wrist circles



Make wrist circles

HAND SQUEEZE (BALL)

Sets: 2 | Reps: 10 | Frequency: 5x/day

Preparation:

- Hold a squeeze ball in the palm of your hand

Execution:

- Squeeze the ball
- Hold, relax, repeat



Hold ball



Squeeze with all fingers

ELBOW RANGE OF MOTION

ELBOW FLEXION AND EXTENSION AROM

Sets: 2 | Reps: 10 | Frequency: 5x/day

Preparation:

- Assume good posture with your upper back straight

Execution:

- Bend elbow up
- Straighten elbow down

Note: You may need to use your non-operative arm to help move your elbow if your biceps tendon is affected



Arm straight



Bend elbow

STAGE 1 REHABILITATION EXERCISES

SHOULDER PENDULUM

SHOULDER PENDULUM | LATERAL

Sets: 3 | Duration: 1 min | Frequency: 5x/day

Preparation:

- Lean slightly forwards and let your weak arm dangle towards the floor

Execution:

- Sway your hips to get your arm moving left and right



Arm swings left and right



Hips do the work

SHOULDER PENDULUM | FORWARD/BACKWARD

Sets: 3 | Duration: 1 min | Frequency: 5x/day

Preparation:

- Lean slightly forwards and let your weak arm dangle towards the floor

Execution:

- Sway your hips to get your arm moving toward and backward



Arm swings forward and backward



Hips do the work

SHOULDER PENDULUM | CIRCLES

Sets: 3 | Duration: 1 min | Frequency: 5x/day

Preparation:

- Lean slightly forwards and let your weak arm dangle towards the floor

Execution:

- Sway your hips to get your arm moving in small circles



Arms swing in circles - hips do the work

STAGE 1 REHABILITATION EXERCISES

EXTERNAL ROTATION OF SHOULDER

Ensure you are aware of the range of motion restriction for external rotation, as outlined in the Surgeon's Instructions on page 2.

SHOULDER EXTERNAL ROTATION PROM (STICK)

Sets: 2 | Reps: 10 | Frequency: 5x/day

Preparation:

- Lie on your back with your arm by your side
- Support the elbow of the operated arm on a towel, if needed
- Keep the elbow in (touching your side)
- Hold a stick in both hands in front of you as shown

Execution:

- Use the unaffected arm and stick to rotate your arm outwards
- Do not use the muscles in the operative arm to move the shoulder
- Stop at the point of a gentle stretch or pain



Start position



Rotate arm outward

ELEVATION OF SHOULDER

SHOULDER FLEXION AAROM

Sets: 2 | Reps: 10 | Frequency: 5x/day

Preparation:

- Lie on your back as shown
- Hold your surgical arm with the opposite hand

Execution:

- Use uninvolved arm to slowly lift surgical arm through pain free range
- Do not use the muscles in the involved arm to move the shoulder
- Stop once a gentle stretch or pain is felt



Start position



Used uninvolved arm to slowly lift surgical arm through pain free range



Do not use the muscles in the involved arm to move the shoulder



Stop once a gentle stretch or pain is felt

STAGE 1 REHABILITATION EXERCISES

SHOULDER TABLE SLIDE | PASSIVE

Sets: 2 | Reps: 10 | Frequency: 5x/day

Preparation:

- Sitting on a stool or chair, rest surgical arm on table

Execution:

- While keeping surgical arm relaxed push chair/stool back until a comfortable stretch is felt in the shoulder



Start position



While keeping surgical arm relaxed push chair/stool back



Continue until a comfortable stretch is felt ...



THE SHOULDER BLADE (SCAPULA)

SCAPULAR RETRACTION

Reps: 10 | Hold: 5-10 sec | Frequency: 5x/day

Preparation:

- Sit or stand with good posture
- May be helpful to stand against a wall to feel the movement

Execution:

- Use the muscles between your shoulder blades to pull them together and slightly downward
- Relax and repeat



Stand tall with shoulders relaxed



Use muscles to squeeze your shoulder blades together and slightly downward; head stays still

STAGE 1 REHABILITATION EXERCISES

UPPER BACK

If having difficulty with upper back stiffness, you can try the exercise below.

THORACIC EXTENSION (CHAIR)

Reps: 10 | Hold: 5-10 sec | Frequency: 5x/day

Preparation:

- Sitting with good posture
- Cross your arms over your chest
- The chair should have a firm and straight back support lower than your shoulders
- You may place a towel or ball behind the back

Execution:

- Arch your back slightly
- Movement should not occur at the lower back



Sit up straight



Arch upper back

STAGE 1 MOVING ON TO STAGE 2

STAGE 1 OTHER CONSIDERATIONS

Manual Therapy Considerations *for physiotherapists or athletic therapists*

- Soft tissue massage (avoid muscle bellies of repaired muscles)
- Address cervical/thoracic spine issues (joint mobilization and soft-tissue massage)
- No glenohumeral (shoulder) joint mobilization in stage 1

CRITERIA FOR PROGRESSION TO STAGE 2

1. Pain adequately controlled at rest
2. Good postural awareness and ability to properly set shoulder blade with arms at side
3. Demonstrates progression of passive/assisted range of motion
4. Sling discharge (*see cover page for instructions from surgeon)

STAGE 2 RANGE OF MOTION

STAGE 2 GOALS

- Progressive pain-free range of motion:
Passive ROM → Active-Assisted ROM → Active ROM (PROM → AAROM → AROM)
- Improve shoulder blade control
- Continued protection of repaired and healing tissue
- Improved body/joint awareness

STAGE 2 PATIENT EDUCATION

Avoid UNASSISTED shoulder motion and RAPID MOVEMENTS/GESTURES with operative shoulder.

Do not use the muscles in the operative shoulder to move it out to the side (abduction), behind the back or across the body. The operative shoulder/arm can be used for light activities such as eating, hygiene, reading, computer use and dressing, but should not be used to lift more than the weight of a cup of coffee.

Heat/Ice

A heating pad for 15-20 minutes can be used to loosen up the shoulder before exercising. Ice can be used for 15-20 minutes after completing exercises and as required for pain relief

Return to Work

It is possible to return to sedentary work that involves no lifting or overhead work in this phase of recovery. Specific restrictions and return-to-work plan for heavier occupations should be discussed with the surgeon.

General Fitness/Activity

It is important to keep active, despite the post-operative shoulder restrictions. Activities such as walking, treadmill or stationary bike are great options to keep active and not stress the shoulder. Using the sling or placing hand of operative arm in a pocket/jacket can reduce stress on the shoulder

STAGE 2 REHABILITATION EXERCISES

PROGRESSING SHOULDER ELEVATION AND EXTERNAL ROTATION

Gradually progress through pain free ROM to 120-140° (*see Surgeon's Instructions on pg 2)

Progress to full ROM and begin to work into scaption plane at 6-8 weeks

SHOULDER PRESS (STICK)

Preparation:

- Lie on your back holding stick as shown

Execution:

- Press stick up with non-operated arm
- Keep hands aligned overtop of the shoulders

Progressions:

Supine with stick → Supine with towel → AROM Supine → 45° reclined (e.g., recliner chair) → standing

Sets: 2 | Reps: 10 | Frequency: 3x/day



Start position



Press stick up

SHOULDER FLEXION AAROM | FULL RANGE (STICK)

Preparation:

- Lie on your back as shown

Execution:

- Use your strong arm to help raise your affected arm forwards above your head
- Raise up all the way in pain free range of motion
- Return in a controlled manner to the original position

Progressions:

Supine with Stick → Supine with Towel → Supine AROM → Supine with 1lb Weight

Sets: 2 | Reps: 10 | Frequency: 3x/day



Lie on back, hold stick



Use strong arm to raise affected arm



Raise all the way overhead

SHOULDER FLEXION PROM | FULL RANGE (PULLEY)

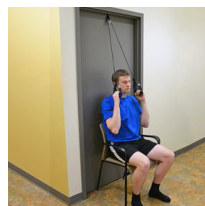
Preparation:

- Sit with your back to the door
- Pulley anchored overhead

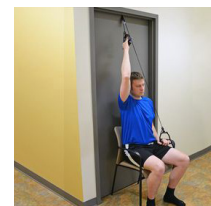
Execution:

- Pull down with one arm to raise the affected arm

Sets: 2 | Reps: 10 | Frequency: 3x/day



Back to door, pulley anchored above



Pulley assists arm overhead

STAGE 2 REHABILITATION EXERCISES

INTERNAL ROTATION EXERCISES

At 6-8 weeks can begin gentle internal rotation ROM in supine with arm slightly away from body and using non-operative arm with a stick to assist into internal rotation.

At 8 weeks can begin gentle cross body stretching using non-operative arm to bring operative arm across the chest.

At 10-12 weeks work into gentle assisted stretching behind back with towel or strap.

SHOULDER INTERNAL ROTATION STICK AAROM (6-8 WEEKS)

Preparation:

- While holding a stick, lie on your back with arm out to the side at shoulder height, elbow bent to 90 degrees

Execution:

- Rotate hand toward ground
- Slowly return to start position

Sets: 2 | Reps: 10 | Frequency: 5x/day



Start position



Rotate hand toward ground

CROSS BODY STRETCH (8+ WEEKS)

Preparation:

- Sit or stand with good posture

Execution:

- Reach across your chest
- Use your other arm to pull a little bit further

Sets: 3 | Hold: 20-30 sec | Frequency: 3x/day



Start position



Pull arm across chest

SHOULDER INTERNAL ROTATION STRETCH WITH TOWEL (10-12 WEEKS)

Preparation:

- Sit or stand with good posture
- Hold the towel behind back with the arm to be stretched on the bottom

Execution:

- Use strong arm to pull bottom hand up back

Sets: 3 | Hold: 20-30 sec | Frequency: 3x/day



Start position



Pull hand up back with strong arm

STAGE 2 REHABILITATION EXERCISES

STRENGTHENING (4-8 WEEKS)

BALL ROLLING (TABLE)

Sets: 3 | Hold: 20-30 sec | Frequency: 2x/day

Preparation:

- Place hand on ball on table

Execution:

- Start with elbow bent to 90 degrees and ensure proper shoulder blade positioning while moving ball on table in circular motion or spelling the alphabet out with your finger
- Begin facing the table, progress to arm at side or with external rotation



Roll the ball in gentle circles to get your shoulder moving

ISOMETRIC STRENGTHENING

This exercise is intended to 'wake up' and activate the rotator cuff, not strengthen.

Amount of force is low (30% of max contraction) so ensure gentle pressure - as if pressing into a balloon.

SHOULDER EXTERNAL ROTATION ISOMETRIC

Reps: 10 | Hold: 5 sec

Preparation:

- Stand with good posture facing a wall or doorframe
- Hold your arm by your side, elbow at 90 degrees, palm facing away from wall or doorframe

Execution:

- Rotate your hand outwards into the wall or doorframe
- Keep your elbow at your side



Rotate hand outward into doorframe

SHOULDER INTERNAL ROTATION ISOMETRIC

Reps: 10 | Hold: 5 sec

Preparation:

- Stand with good posture facing a wall or doorframe
- Hold your arm by your side, elbow at 90 degrees, palm facing wall or doorframe

Execution:

- Rotate your hand inwards into the wall or doorframe



Rotate hand into doorframe

STAGE 2 REHABILITATION EXERCISES

SHOULDER FLEXION ISOMETRIC | ELBOW BENT

Reps: 10 | Hold: 5 sec

Preparation:

- Stand in front of a wall or doorframe, elbow bent as shown

Execution:

- Push your fist against the wall

TIP:

- Use a pillow to avoid hurting your hand



Push fist against wall

SHOULDER ABDUCTION ISOMETRIC | ELBOW BENT

Reps: 10 | Hold: 5 sec

Preparation:

- Stand beside a wall or doorframe, elbow bent as shown

Execution:

- Push elbow outward against the wall

TIP:

- Use a pillow to avoid hurting your elbow



Push elbow outward against wall

SHOULDER EXTENSION ISOMETRIC | ELBOW BENT

Reps: 10 | Hold: 5 sec

Preparation:

- Stand in front of a wall or doorframe, elbows bent as shown

Execution:

- Push elbow backward against the wall

TIP:

- Use a pillow to avoid hurting your elbow



Push elbow backward against wall

STAGE 2 REHABILITATION EXERCISES

STRENGTHENING (>8-10 WEEKS)

Resisted strengthening of the muscles that support and stabilize your shoulder blade and muscles in your arms pariscapular and distal muscles can begin at this time. All isolated rotator cuff strengthening must be restricted until you reach the criteria to progress to Phase 3.

SHOULDER EXTERNAL ROTATION AROM

Sets: 3 | Reps: 10 | Frequency: 1x/day

Preparation:

- Lie on side
- Hand on stomach

Execution:

- Rotate hand up
- Start moving to neutral only, then progress higher



Lie on side, hand on stomach

Rotate hand up toward the ceiling

ROW | BILATERAL + NEUTRAL (BAND)

Sets: 3 | Reps: 10 | Frequency: 1x/day

Preparation:

- Stand with good posture, feet shoulder-width apart, one foot slightly in front

Execution:

- Using the muscles between your shoulder blades, pull your shoulder blades back and down
- At the same time perform a rowing motion keeping your elbows close to your body
- Return to the start position in a slow and controlled fashion



Start position

Row against resistance

TRICEPS EXTENSION | UNILATERAL (BAND)

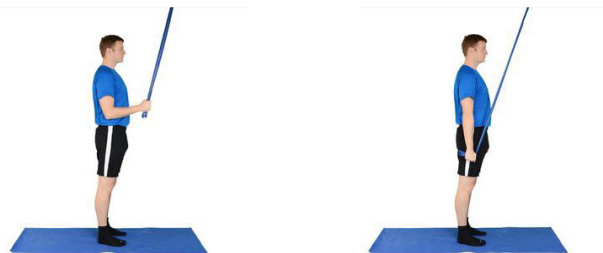
Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Stand with good posture
- Hold band or tubing in hand

Execution:

- Straighten elbow against resistance
- Only elbow should move



Start position

Straighten elbow

STAGE 2 REHABILITATION EXERCISES

ELBOW FLEXION CONCENTRIC (BAND)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Sit or stand with your arm at your side
- Hold a band in your hand

Execution:

- Bend on your elbow up towards your chest
- Return to the start position



Hold band,
palm up



Bend elbow up

ARM BIKE

Sets: 1 | Reps: 3-5 minutes | Frequency: 3-4x/week

Preparation:

- Sit with good posture as shown

Execution:

- Encourage proper shoulder blade position/posture and ensure movement of the surgical arm is ASSISTED in a slow controlled manner
- Ensure motion is below shoulder height. Consider performing cycling motion backwards to encourage shoulder blades to move back



Start position



Cycle arms against
resistance



SHOULDER D1 PATTERN

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

If full functional AROM has been achieved, you can begin PNF patterns below shoulder level with stick and progress overhead and to AROM as able

Preparation:

- Stand with good posture
- Have your arm down at your side, rotated in, thumb pointed down

Execution:

- Bring your arm and hand upward and across your body
- As you do so, rotate your hand outward
- Finish with your thumb pointed upward and your hand slightly above your head



Hand down by your
side thumb down



Rotate arm up and
across body, thumb
points up

STAGE 2 REHABILITATION EXERCISES

SHOULDER D2 PATTERN

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

If full functional AROM has been achieved, you can begin PNF patterns below shoulder level with stick and progress overhead and to AROM as able

Preparation:

- Stand with good posture
- Start with your arm across your body with your hand rotated in, thumb pointed down

Execution:

- Bring your arm up and across your body diagonally
- As you do, rotate your hand outward
- Finish with your hand above your head and out to the side



Start position



Bring your arm up and across your body diagonally

STAGE 2 MOVING ON TO STAGE 3

STAGE 2 OTHER CONSIDERATIONS

Hydrotherapy

- If incisions are adequately healed, it can be helpful to do range of motion exercises in the pool. Do not perform any swimming motions or strokes at this time.

Manual therapy for physiotherapist/athletic therapist consideration

- Do soft tissue/scar massage (as per stage 1, can begin gentle release of repaired rotator cuff)
- Address cervical/thoracic spine issues (joint mobilization and soft-tissue massage)
- No glenohumeral joint mobilization until eight weeks, then gradually start grade 1-2 mobilization
- Gentle therapist-assisted range of motion and passive scapular mobilization

CRITERIA FOR PROGRESSION TO STAGE 3

1. Sufficient passive and active range of motion without pain and compensation from other muscles
2. Must be able to move the arm separate from the shoulder blade
3. Ability to perform 2 sets of 10 of flexion to at least AROM 90-110°, PROM 120-140°
4. Good scapular positioning and postural awareness at rest and dynamic scapular control with range of motion exercises

STAGE 3 STRENGTHENING

This stage involves the start of targeted rotator cuff strengthening at approximately 12 weeks and lasts until 4-5 months.

STAGE 3 GOALS

- Achievement of full functional range of motion
- Initial rotator cuff strengthening
- Improve proper movement of your arm and shoulder blade
- Continued protection of healing/repared tissues

STAGE 3 PATIENT EDUCATION

Continued Protection of the Rotator Cuff Repair

It is important to be aware that the rotator cuff repair is continuing to heal at this point. Here are some points to keep in mind during this stage:

- No overhead lifting or above shoulder and restrict lifting to light objects (< 20 lbs)
- Avoid long, outstretched arm positions (e.g., reaching for pot at back of stove)
- Avoid quick movements (e.g., reaching to catch a falling object)

Patients may begin to return to activities of daily living such as cooking, gardening and light cleaning (no vacuuming or raking, keep laundry baskets light) keeping in mind the considerations listed above. It is important that activities are paced throughout the day.

Strengthening Exercises

Strengthening of the rotator cuff can begin at 12 weeks (or the timeline indicated on the first page), if you are progressing well and meet the criteria listed at the end of stage 2.

All resisted exercises should be performed in a pain-free range of motion and below shoulder height, initially.

Strengthening exercises should be performed maximum 1-2 times per day and parameters should focus on gradually building endurance (i.e., begin with 2-3 sets of 10 and work up to 4 sets of 15). Can also consider performing strengthening exercises every other day and continue range of motion exercises daily.

Begin with light resistance band or light weight initially. It is acceptable to progress to the next level of resistance once the exercise can be done correctly with 3-4 sets of 15 reps.

Progression of exercise bands (yellow → red/orange/pink → green → blue/purple)

STAGE 3 STRENGTHENING

Range of Motion (ROM)

If full active ROM has not been achieved, it is important to continue to work on ROM exercises listed in stage 2. Internal rotation ROM exercises can be started as early as eight weeks, but can be progressed to hand behind the back using a towel-assisted stretch now.

STAGE 3 REHABILITATION EXERCISES

STRENGTHENING - EARLY STAGE 3

SHOULDER EXTERNAL ROTATION CONCENTRIC | NEUTRAL (BAND)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Standing, elbow at 90 degrees
- Tuck a folded towel between your body and your elbow

Execution:

- Gently pull shoulder blades together
- Keeping elbow close to body, slowly rotate hand outward
- Return to start position



Start position



Rotate hand outward

SHOULDER INTERNAL ROTATION CONCENTRIC - NEUTRAL (BAND)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Stand with good posture
- Tuck a folded towel between your body and your elbow as shown

Execution:

- Keeping elbow close to body, rotate hand inward, toward your stomach
- Return to start position



Start position



Rotate hand inward

SHOULDER EXTERNAL ROTATION ECCENTRIC | FULL RANGE (DUMBBELL)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Lie on side
- Elbow bent, hand resting across stomach

Execution:

- Rotate hand toward ceiling, keeping elbow tucked against body
- SLOWLY lower hand back down to stomach, "fighting" the resistance



Elbow tucked, hand toward ceiling



Slowly lower hand toward stomach



Fight the resistance

STAGE 3 REHABILITATION EXERCISES

ALPHABET (WEIGHT OR BAND)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Lie on your back
- Hold dumbbell

Execution:

- Keep elbow straight and shoulders relaxed
- Raise arm up to 90 degrees
- Lie back with arm at 90 degrees flexion, draw back shoulder blade slightly and spell three to five letters of the alphabet in the air, and repeat 10 times

Start with light weight (1 lb) or band resistance around back



Start position



Raise arm up to 90 degrees, spell 3-5 letters of the alphabet

SHOULDER 'Y' (FOAM ROLLER, WALL)

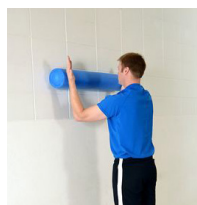
Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

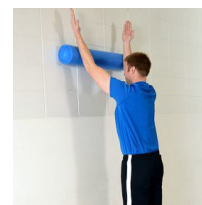
- Stand near a wall with foam roller under forearms as shown

Execution:

- Slide hands up the wall into a 'Y' position



Stand near a wall with foam roller under forearms



Slide hands up the wall into a 'Y' position

SHOULDER CIRCLES | FLEXION (BALL)

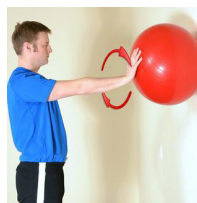
Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Stand with good posture, hand on ball at shoulder height

Execution:

- Make small circles with ball
- Do both clockwise and counter-clockwise



Good posture - do both clockwise and counter-clockwise

STAGE 3 REHABILITATION EXERCISES

STRENGTHENING - LATE STAGE 3

SHOULDER FLEXION CONCENTRIC | EARLY RANGE (DUMBBELL)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Stand tall
- Hold a free weight by your hip

Execution:

- Keep elbow straight and shoulder relaxed
- Slowly raise arm forward to 45 degrees
- Lower arm back to start position



Start position



Raise arm out front to 45 degrees

SHOULDER SCAPTION CONCENTRIC | EARLY RANGE (DUMBBELL)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Sit or stand with good posture
- Hold dumbbell in your hand

Execution:

- Raise arm up and out the the side at a 45 degree angle in a controlled manner
- Lower arm backdown to starting position



Start position



Raise arm out to side at a 45 degree angle

SHOULDER INTERNAL ROTATION CONCENTRIC | 45° ABDUCTION (BAND)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Stand with good posture
- Arm at 45 degrees, elbow bent
- Hold cable/tubing as shown

Execution:

- Keeping elbow stationary, slowly rotate arm against resistance, towards body
- Return to start



Start position



Rotate arm inward

STAGE 3 REHABILITATION EXERCISES

SHOULDER EXTERNAL ROTATION CONCENTRIC | 45° ABDUCTION (BAND)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Stand with good posture
- Arm at 45 degrees, elbow bent
- Hold cable/tubing as shown

Execution:

- Keeping elbow stationary, slowly rotate arm against resistance, away from body
- Return to start position



Arm out to the side at a 45 degree angle, elbow bent to 90 degrees



Rotate arm downwards

SHOULDER D1 PATTERN - ASCENDING (BAND)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Stand with good posture holding band in hand
- Have your arm down at your side, rotated in, thumb pointed down

Execution:

- Bring your arm and hand upward and across your body against resistance
- As you do so, rotate your hand outward
- Finish with your thumb pointed upward and your hand at shoulder level



Hand at side



Raise arm upward and across

SHOULDER D2 PATTERN - ASCENDING (BAND)

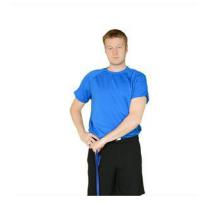
Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Start with your arm across your body with your hand rotated in, thumb pointed down

Execution:

- Bring your arm up and across your body diagonally
- As you do, rotate your hand outwards
- Finish with your hand at your shoulder height



Arm across body



Raise arm up and out to the side

SHOULDER CIRCLES (FRISBEE, BALL)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Place a small ball on an upside down Frisbee upside or use as a plate

Execution:

- Move ball around in circular motion without it touching the edges



Move ball around in circular motion



Avoid touching the edges



Move around the whole circle

STAGE 3 MOVING ON TO STAGE 4

STAGE 3 OTHER CONSIDERATIONS

General Fitness

Continue cardiovascular endurance exercise and consider incorporating lower extremity, core and back strength into the exercise regime.

Manual Therapy - for physiotherapist/athletic therapist consideration

Continue as per stage 2; can progress glenohumeral mobilization to grade 3-4.

Can begin supine rhythmic stabilization for proprioception.

CRITERIA FOR PROGRESSION TO STAGE 4

1. Full functional range of motion without compensation from other muscles.
2. Demonstrates adequate endurance and correct technique with strengthening exercises (i.e., 4 sets of 15 reps with medium resistance).
3. Able to perform activities of daily living and exercises with minimal pain and no compensatory patterns.

STAGE 4 RETURN TO ACTIVITY

This stage involves functional and activity specific strengthening and starts at 5-6 months after surgery

STAGE 4 GOALS

- The goals of this phase are specific to each patient based on the work and recreational activities to which the patient is looking to return

STAGE 4 PATIENT EDUCATION

Weight Bearing Activities

Activities with weight bearing need to be performed with caution as they can compress and aggravate the rotator cuff. Progress gradually when moving into weight bearing exercises (e.g., push-ups on wall → on knees). No overhead lifting or above shoulder and restrict lifting to light objects (< 20 lbs)

Gym Routines

Discuss with the surgeon as to when it is appropriate to return to gym routines (~6 months post operatively). It is recommended that heavy weights are not used, especially in overhead positions.

It is not recommended to perform incline bench press, military press, dips, upright rows and chin-ups.

Long-term Protection of Rotator Cuff

To protect the repair and maintain the long-term health of the rotator cuff, avoid heavy lifting with the arm extended and overhead. Unless otherwise recommended, continue to work on strength and range of motion exercises for 6-12 months post-operatively. Also, it's important to incorporate rotator cuff strengthening exercises into a regular workout regime in the long term to keep the muscles and tendons strong and healthy.

STAGE 4 REHABILITATION EXERCISES

EXERCISES - STAGE 4

Exercises from stage 3 can be continued as required to achieve full functional range of motion and strength. Stage 4 exercises focus on specific functional demands required by each patient for their occupation and recreational activities. Be mindful that stage 4 will be different for everyone depending on their specific functional requirements, tissue quality and expected surgical outcome.

Exercises should be performed once per day focusing on developing muscular endurance. All exercises should continue to be performed in a pain-free range and with proper technique. Exercises from stage 3 can be progressed to functional positions relevant to each patient's occupation and recreational activities. Physiotherapists/athletic therapists will be able to assist patients with appropriate exercise prescription and the surgeon will provide guidance on time lines for return to occupational and recreational activities.

IR/ER PROGRESSION

Move from 45 degrees of abduction to 90 degrees of abduction

SHOULDER EXTERNAL ROTATION CONCENTRIC | 90° ABDUCTION (BAND)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Stand with good posture
- Raise arm out to the side at shoulder height, elbow bent to 90 degrees

Execution:

- Keeping elbow stationary, rotate arm upward
- Return to start position



Rotate arm upwards



Slowly lower down

SHOULDER INTERNAL ROTATION CONCENTRIC | 90° ABDUCTION (BAND)

Sets: 3 | Reps: 10 | Frequency: 3-4x/week

Preparation:

- Stand with good posture
- Raise arm up and out to the side at shoulder height, elbow at 90 degrees

Execution:

- Keeping your elbow stationary in the air, rotate your arm downward
- Raise your arm to the start position



Start position



Rotate arm downwards

STAGE 4 REHABILITATION EXERCISES

PUSH-UP PROGRESSION

PUSH-UP (WALL)

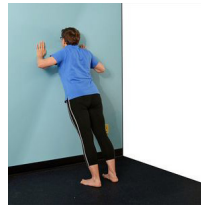
Sets: 3 | Reps: 15 | Frequency: 3-4x/week

Preparation:

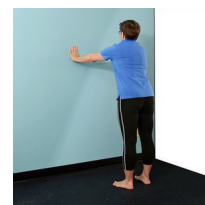
- Stand facing a wall
- Place your hands on the wall at shoulder height; elbows straight

Execution:

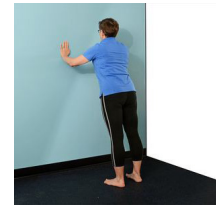
- Lean forward allowing your elbows to bend and move outward until your nose is near the wall
- Push yourself back from the wall using your arms



Hands against wall



Push-up



Press shoulder blades forward

PUSH-UP | INCLINE (TABLE)

Sets: 3 | Reps: 15 | Frequency: 3-4x/week

Preparation:

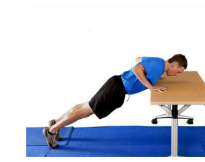
- Plank position with hands on a secure table

Execution:

- Lower chest towards support surface
- Press back to start position



Body in a straight line



Lower chest down



Press up

PUSH-UP | KNEES

Sets: 3 | Reps: 15 | Frequency: 3-4x/week

Preparation:

- Lie on stomach
- Hands beside shoulders
- Engage core, squeeze buttocks

Execution:

- Imagine your body is a solid plank of wood. Push-up onto knees, without sagging
- Pause at the top of each push-up to push your shoulders slightly forward
- One the way back down, touch your nose to the floor

Important:

- Keep hips and back straight
- Keep chin tucked



Start position



Push up on knees

STAGE 4 REHABILITATION EXERCISES

PUSH-UP | TOES

Sets: 3 | Reps: 15 | Frequency: 3-4x/week

Preparation:

- Lie on stomach
- Hands beside shoulders

Execution:

- Press body away from floor
- Lower body down with control



Hands by shoulder



Push. Maintain a plank position

ADVANCED PROPRIOCEPTION

Other examples include:

- Bodyblade
- Push-ups on unstable surface (Bosu Ball, pillow, wobble board)

BALL TOSS (WALL)

Sets: 3 | Reps: 20 | Frequency: 3-4x/week

Preparation:

- Stand a few feet away from the wall

Execution:

- Toss ball against wall

Progression:

- Start with two hands at chest level, progress to one hand overhead



Stand a few feet from a wall



Toss ball against wall

FUNCTIONAL/SPORT SPECIFIC DRILLS

It is important for patients to practice the specific drills and functional tasks they will need to perform prior to returning to game play, etc.

These will be unique to each patient and can include skills such as throwing, stick/puck handling or lifting mechanics.

STAGE 4 MOVING ON

CRITERIA FOR RETURN TO SPORT/WORK/ACTIVITY

1. Discuss with the surgeon the time lines for return to sport and recreational activities involving the use of the surgical arm, as well as contact sports.
2. Discuss with the surgeon about returning to occupations that involve medium to heavy lifting (30+ lbs.) and overhead work/ lifting.
3. Follow up with a physiotherapist or athletic therapist for return to sport and sport specific exercises.



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POST-OPERATIVE SHOULDER ROTATOR CUFF REPAIR REHABILITATION PROTOCOL

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