Rehabilitation Program Following Shoulder Latissimus Dorsi Transfer

Richard Holtby
Assistant professor, Department of Surgery
University of Toronto
ACTIVITIES OF DAILY LIVING
FOLLOWING YOUR SHOULDER SURGERY

**Before Your Surgery**
- You can prepare your home so that things are easier to do after your surgery:
- Practice doing things using only the arm that will not be operated (e.g. preparing meals, washing yourself, wiping yourself after using the toilet with one hand).
- Make sure you have a few extra pillows. You will need these to support your shoulder when sleeping on your back or unoperated side.
- Prepare and freeze meals in advance, purchase easy to prepare meals or frozen dinners that are easy to open.
- Ask your friends and family for assistance with cleaning and meal preparation.
- A reusable hot/cold pack is helpful for any swelling or tense muscles that you may experience after surgery.
- A “reacher” can help picking things up from the floor and getting hard to reach items. Reachers are available at the hospital gift shop or medical supply stores.
- An electric can opener and an electric toothbrush may be helpful (especially if you are having surgery on your dominant arm).
- Move your nightstand close to your unoperated side. Make sure you can easily reach the lamp and are able to turn it on with your unoperated arm.

**After Your Surgery**

**Sleeping**
You should sleep on your back or unoperated side. When sleeping on your back, support your operated shoulder by placing a pillow underneath. When sleeping on your side, a pillow can be placed across your chest to support your operated arm. You may be more comfortable sleeping in a sitting position. Your surgeon will likely request that you sleep with you sling on.

**Bathing**
A non-slip mat in your shower/bath tub will improve safety. Your arm can hang gently at your side while bathing. Don’t forget to wash underneath your operated arm. You can increase your independence with bathing by using a long-handled sponge to wash your back and legs using your unoperated arm. You may cover your bandage with plastic while showering. Your nurse will speak to you regarding care of your incision and bandage.

**Keeping the arm elevated around 30 degrees while washing is necessary to minimize unwanted stress to the transferred tendon.**

**Dressing**
Loose fitting clothing and button-up shirts are ideal. You may do up/undo buttons using your operated arm. Dress your operated arm first, then your unoperated side. When undressing, begin with your unoperated arm, then your operated arm. Bras should be fastened in front, turned to the back using your unoperated arm and then the straps pulled up last. Your sling should be worn over your clothes. If you wear shoes with laces, you may want to consider elastic shoelaces or slip-on shoes - it is difficult to tie laces with one hand.

****If you have any questions or concerns about this information please speak to your Occupational Therapist or Nurse. ****
USE OF THE ULTRASLING

- The Ultrasling is designed to keep your operated shoulder in a comfortable position, away from your body, after your surgery.
- The Ultrasling is to be worn for 6 weeks, following Latissimus Dorsï Transfer.
- The Ultrasling should be removed for bathing, dressing and exercising.
- Follow your restrictions during the immobilization period as outlined by your surgeon.
- There is a charge to cover the cost of the sling. The bill will be given to you for payment at the Business Office when you are discharged from the hospital.

Applying your sling

- It may be helpful to support your arm on a firm surface while placing the wedge under the arm of your operated shoulder, however the arm can hang at your side. Position the wedge such that the narrow edge is towards the back of your body.
- Wrap the waist strap around your back, through the silver ring at the front of the wedge and secure on the strap using the Velcro tab. The wedge should sit on, or just above your hip.
- Place your forearm in the sleeve of the sling. Your elbow should be bent at approximately 90 degrees (L shape) to allow your forearm to rest comfortably in the sleeve of the sling.
- Secure the sleeve by closing the forearm snaps using your non-operated hand. Start at the wrist and work your way to the elbow.
- There are two Velcro wrists straps on the sleeve, one on each side of the wrist (one strap is attached to the wedge and other strap attached to the sleeve). Place each strap through one of the silver rings and secure the Velcro strap on the sleeve.
- The black thumb loop is optional. Some patients find using this thumb loop makes their thumb sore.
- Bring the shoulder strap over your non-operated shoulder, through the remaining silver ring (located in the middle of the two silver rings used for the wrist strap) and attach the Velcro tab. To adjust the strap, tighten or release the Velcro tab.

Removing your sling

- First undo the forearm snaps. Then release the wrist, shoulder and waist straps in this order.
- Slide the sling out from under your arm.

Should you have any questions about your surgery, you can contact your surgeon. Any questions about your exercise program can be directed to the Rehabilitation Department at (416) 967-8626.

The following exercise program has been designed to provide guidelines and basic instructions for you and your physical therapist to help restore your shoulder’s range of motion and strengthen your muscles.
PHASE I: DAY 1 TO 6 WEEKS AFTER SURGERY

**Precautions:**
- Do not lift any objects with operated arm.
- Do not support your body weight with operated arm for bed mobility and transfers.
- No active range of motion or strengthening exercises.

**Elbow, Wrist and Hand Mobility**
- After your shoulder surgery, it is important to maintain full mobility of the joints below the affected shoulder.
- Elbow, wrist and hand exercises can be performed in the sling by undoing the forearm snaps and wrist strap to free the elbow, wrist and hand while exercising. Do not move the arm away from body unless fully supported. These exercises should be done **4-5 times** throughout the day.

**Elbow:**
In sitting or lying, gently bend and straighten your elbow. Assist with other hand, if needed.
Make sure that your elbow straightens fully.
Hold 5 seconds, Repeat 10 times.

**Wrist/Hand:** Repeat each exercise 10 times.

1. Bend your wrist forward, backwards and in a circular motion.
2. With your palm open, move hand from side to side.
3. Open and close your hand, making a fist.
4. Squeeze a soft ball.

**Shoulder Posture:**
While your arm rests in the sling, frequently squeeze the shoulder blades together while shoulders remain relaxed (do not shrug up shoulders).
PHASE II: 6 WEEKS AFTER SURGERY

You should remove your sling completely unless advised otherwise. You will see your surgeon approximately 6 weeks following surgery. The appointment will be given to you on the day of surgery.

PENDULAR EXERCISES:
Bend forward and support your unoperated arm on a table. Relax and let gravity help you to swing the operated arm forward and backward, and clockwise and counterclockwise.

Perform this exercise 10 times, 4–5 times a day.

ACTIVE ASSISTED RANGE OF MOTION EXERCISES:
These exercises involve moving the arm with assistance.

FLEXION: To improve your overhead elevation (flexion), you need to move your arm upward. You can use a cane or your good arm to assist with the movement. Keep your shoulder blades squeezed and do not shrug up your shoulders. Hold 5 seconds, Repeat 10 times
External Rotation:

This movement occurs when your arm rotates outward. To increase your external rotation, use a cane and push the cane towards the operated arm. Your elbows should be kept at a right angle and tucked at side. **DO NOT MOVE BEYOND 45 DEGREES** for the first 8 weeks. Hold 5 seconds, Repeat 10 times.

Internal Rotation:

This movement is usually limited and painful following Rotator cuff surgery. To improve your inward rotation, you can either use a towel or your good arm to pull the operated arm upwards and across your back. Perform this exercise very gently to increase your range gradually.

Hold 5 seconds, Repeat 10 times.
Sub-maximal Isometric Exercises: Isometric strengthening exercises are performed with your elbow tucked into your side without movement of the arm.

External Rotation:
- press the hand of your operated arm outward against your other hand or a wall.
  Hold 5 seconds,
  Repeat 10 times.

Abduction:
- push the elbow of the operated arm into your other hand or into a wall.
  Hold 5 seconds,
  Repeat 10 times.

Extension:
- push the elbow of your operated arm backwards into a wall or the back of a chair.
  Hold 5 seconds,
  Repeat 10 times.

Internal Rotation:
- push the hand of your operated arm inwards against your other hand.
  Hold 5 seconds,
  Repeat 10 times.

PHASE III: 10 WEEKS AFTER SURGERY

PRECAUTIONS
No forceful stretching or passive range of motion especially into internal rotation and extension.
No strengthening exercises with weight or elastic bands
No weightbearing on the operated arm for bed mobility and transfers
Rehabilitation Program Following Latissimus Dorsi Transfer

Flexion With Arms on Table: active-assisted movement

- Sit with arms on table and hands in a prayer pose.

- Keep palms together and elbows on table while sliding elbows together.

- Lift elbows off table to shoulder height with other hand assisting.

- Maintain shoulder blades squeezed and avoid shrugging up shoulders.

  Hold 5 seconds, Repeat 10 times.

Flexion With Ball on Wall: active-assisted movement

- With ball on the wall, place operated hand on ball. Press hand into ball and roll ball upward on the wall (avoid lifting the ball). Repeat 10 times

  *If needed can assist movement with the help of the other hand either on the ball or by holding the wrist of the operated arm.*
ACTIVE RANGE OF MOTION: These exercises involve moving the arm actively without assistance within a “painfree range”. Follow the same instructions for Active Assisted Exercises without using any support from the unoperated arm or cane.

Flexion Lying On Your Back:

- Lift arms up with elbows bent and tucked at sides.
- Keep shoulder blades squeezed and avoid shrugging up shoulders.

- Hold 5 seconds in overhead position as the tummy squeezes in,
- Keep elbows bent as you lower arms.

Hold 5 seconds, Repeat 10 times.

Flexion With Back To Wall:
Standing with back against wall, feet shoulder width apart and heels 3 inches from wall, put head against wall with eyes level (do not tilt head)

- Lift arms up with elbows bent and tucked at sides (keep elbows pointing forward).
- Keep shoulder blades squeezed and avoid shrugging up shoulders.
- Continue lifting arms overhead to touch wall with finger tips.
- Slowly straighten elbows to bring arms toward wall (keep shoulder blades squeezed and thumbs pointing towards the wall).
- Hold 5 seconds in overhead position as the tummy squeezes in, then bend elbows as you lower arms

Hold 5 seconds, Repeat 10 times.
PHASE IV: 12 WEEKS AFTER SURGERY

PRECAUTIONS (until cleared by surgeon)
No overhead heavy lifting
No carrying heavy objects, especially with the arm in elevation
No Contact sports

We recommend that the strength exercises be performed under supervision of a Physical Therapist.

STRENGTHENING EXERCISES: Rotator cuff muscles become weak while your arm is in the sling. Once you are able to move your shoulder throughout it’s full range of motion without pain, you can progress to strengthening exercises with resistance such as light weights or elastic bands (i.e. Thera-Band®)

External Rotation:
- Keep elbow tucked into a rolled towel in armpit.
- Your elbow should remain bent at a right angle (90 °)
- Move your hand out to no more than 45 degrees against the tension of the elastic band.

Hold 5 seconds, Repeat 10 times.

Internal Rotation:
- Keep your elbow bent at a right angle (90°) and tucked at your side into a rolled towel.
- Move your hand across your stomach to about 45 degrees.

Hold 5 seconds, Repeat 10 times.

External Rotation with Arm on the Table:
- Raise the hand of your operated arm off table against resistance from band held in other hand (keep elbow on table).
- Slowly lower hand back to table while maintaining resistance from band.

Hold 5 seconds, Repeat 10 times.
Shoulder Girdle Stabilization:

Starting Position:
- Stand with back against wall and stomach muscles tight.
- Elbows tucked into side and bent at 90 degrees.
- Hold ends of band in each hand, slightly pulling outwards against band (palms face each other).

Action:
- Squeeze shoulder blades in and down.
- Lift elbows forward and up maintaining outward pull on band.

Keep elbows pointing forward. Only lift to shoulder height.

Hold 5 seconds, Repeat 10 times.

*** If you find this exercise is too difficult in the beginning, do the same exercise while lying on your back and then progress to standing as able***

Progression:
- Standing with feet slightly away from wall.
- Repeat above exercise while doing a 1/4 squat.
- Keep trunk straight (chest up) and buttocks out.
- Knees are NOT ahead of toes.

Hold 5 seconds, Repeat 10 times.
Press Ups Against A Wall:

- Stand with feet away from the wall and hands on wall at shoulder height.
- Push hands into wall to straighten arms, then bend elbows slowly.
- Repeat 10 times.

Keep your hands at shoulder level and your back straight.
Your weight remains on the toes.

**Progression:**

Complete above exercise at the edge of a counter top i.e. kitchen counter.

Triceps Pull Downs:

**Start Position:**

- Place band over top of door and close door (tie a knot in the band if it slips out).
- Facing door hold other end of band in the operated hand.

**Action:**

- Pull band down and backwards (making sure elbow is straight).
- Slowly return to start position.

Hold 5 seconds, Repeat 10 times.
Biceps Muscle Strengthening:

Start Position:
- Stand on one end of band with your foot. Hold other end of band in operated hand.
- Pull band up towards shoulder slowly.
- Lower band down to starting position slowly.

Hold 5 seconds, Repeat 10 times.

Serratus Anterior Muscle Strengthening:

Start Position:
- Sit on a chair with a towel roll at low back.
- Rest straight arms on a table in front of you.

Action:
- Slide arms on the table to reach ahead, keeping your back against the chair.
- Do not shrug your shoulders. Hold 5 seconds, Repeat 10 times.

Same as above exercise while pulling on band:
- Arms straight with hands at shoulder level.
- Keep arms straight while you pull on band.
- Slowly return to start position.

Hold 5 seconds, Repeat 10 times.
These exercises are designed to improve the coordination between your arm muscles and your shoulder blade muscles. Avoid strenuous hyperextension (moving your arms backwards) by limiting your movement to neutral position (in line with your body).

**Lats/ Pull Downs:**

***Squeeze shoulder blades at all times***

**Start Position:**

- Place band over top of door and hold on to the band with a firm grip with each hand.
- Face the door with your feet shoulder width apart, in a squat position (make sure your knees do not go ahead of toes).
- Tighten stomach muscles.

**Progression:**

***Do not move elbows behind your body***

- Pull down the band, while tightening up stomach muscles to maintain the squat position.
- Keep your arms out to the side and pull down with the elbows in a 90 degree angle, while maintaining the squat position.
- Elbows move down to be in line with the body.
- Slowly bring arms back up into the starting position.

Hold 5 seconds, Repeat 10 times.

**Rowing:** ***Squeeze shoulder blades at all times***  

***Do not move elbows behind your body***

- Place band around doorknob. Hold band in each hand, palms face each other.
- Squat with knees never ahead of toes, tighten stomach muscles.
- Squeeze shoulder blades together by pulling band apart while moving elbows backwards to be in line with the body.
- Slowly return to start position.

Hold 5 seconds, Repeat 10 times.