TOTAL SHOULDER REPLACEMENT - PATIENT INFORMATION

OVERVIEW

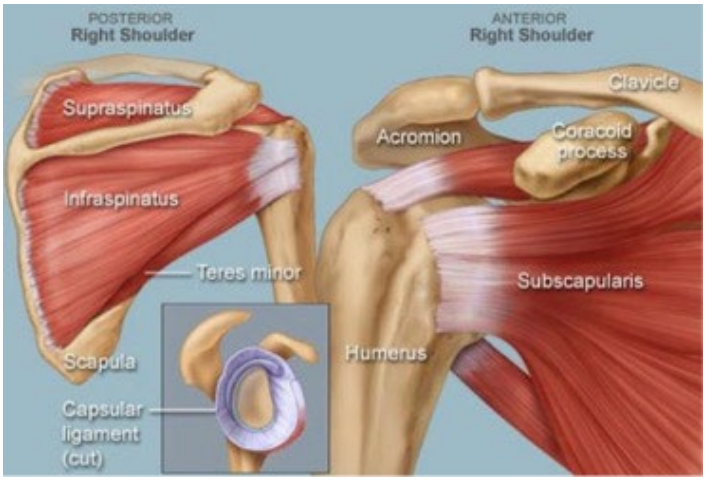
The total shoulder replacement is a treatment option for patients with the following conditions:

1. shoulder arthritis with an intact rotator cuff
2. shoulder arthritis with a torn but repairable rotator cuff

For patients with shoulder arthritis and a deficient or irrepairable rotator cuff, alternative treatments are required (see patient information on reverse total shoulder replacement).

A total shoulder replacement involves removal of the degenerate joint surfaces. On the cup side of the joint an artificial cup made of ultra-high molecular weight polyethylene is cemented into the bone of the scapula (wingbone). On the humerus (upper arm bone) side of the joint a stem is placed inside the bone. The stem may be cemented or uncemented depending on the quality of the bone. On top of the stem a metal (cobalt chrome) head is seated.

Exposing the shoulder to do the operation involves releasing 2 muscles. The **long head of biceps** is released from its attachment and stitched into the upper part of the humerus at the end of the procedure. The second muscle that must be released is called **subscapularis**. It is a very important rotator of the shoulder. It is vitally important that this muscle heals. This is the main reason why it is vitally important that your post-operative physiotherapy must follow specific steps and timeframes.



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THE SURGERY

You will be admitted to the hospital on the morning of your operation. A cannula or drip will be placed in your arm or hand. You will then be taken around to the theatre where I will see you before your surgery and put a mark on the shoulder that is to be operated on.

This operation is usually done under a general anaesthetic with a nerve block that is done by the anaesthetist who will discuss the risks and benefits with you. The nerve block involves an injection into the side of the neck that is done under ultrasound guidance. The block will make the entire arm go numb (in most circumstances) for 12-24 hours and provides very good immediate post-op pain control. You will then be taken into the operating room and after the general anaesthetic is administered the surgery will begin.

RISKS OF THE SURGERY

Risks of the anaesthetic – risks of major complications are very rare but include:

1. heart attack
2. stroke
3. death
4. DVT and PE
5. allergic reactions

Risks of the surgery include:

1. wound infection
2. deep infection around the replacement requiring more surgery
3. fracture of either the scapula or humerus requiring more surgery
4. loosening of the replacement requiring more surgery
5. nerve injury
6. failure of healing of the subscapularis resulting in functional limitation
7. failure of the long head of biceps resulting in prominent biceps
8. late failure of the rotator cuff requiring revision to a reverse TSR
9. ongoing pain and/or restriction of range of motion

This list is not exhaustive but includes the common and significant complications.

REHABILITATION

The main goals of your post-operative rehabilitation are:

1. **protect the joint to prevent dislocation:** need to avoid combined external rotation (arm rotated out) and abduction (arm out from body)
2. **allow for healing of the subscapularis:** the subscapularis muscle is under tension in a position of external rotation. If this muscle does not heal daily tasks like reaching behind your back and pushing up off a chair may be difficult
3. restore a **functional range of motion**
4. restore **strength**

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TOTAL SHOULDER POST-OP PHYSIOTHERAPY PROTOCOL

This protocol is designed as a guide to you and your physiotherapist. Your progression through the post surgical period is case dependent and may be altered and need to be modified according to your underlying medical issues, physical findings or the presence of post-operative complications. Please let me know if you or your physiotherapist have specific concerns regarding your ability to comply with the protocol.

This protocol is specific to a Standard Total Shoulder Replacement and, while similar, has specific differences to that for Reverse Total Shoulder Replacement. If you have had a reverse TSR please see the specific information download for that procedure.

The start of this protocol is delayed for 3-4 weeks following a revision or in the presence of poor bone stock. I will let you know if this is the case.

PHASE ONE

Immediate post-op to week 6 – GOALS:

1. wound healing and management of swelling: ice and anti-inflammatories
2. prevention of dislocation
3. healing of subscapularis (through prevention of tension on subscapularis)
4. maintain passive range of motion
5. maintain full finger, wrist and elbow range of motion
6. independent dressing and transfers (with adjustments)

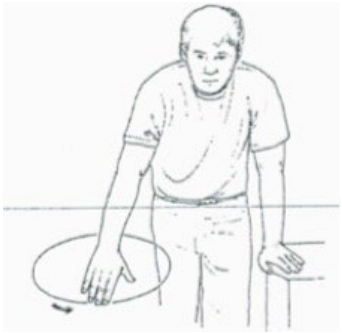
Precautions:

1. sling is work for 6 weeks post-operatively
2. sling may be removed for exercises and showering
3. when lying on your back the elbow should be supported by a towel
4. no active exercises (you lifting the shoulder)
5. no supporting of body weight, pulling, or pushing with the shoulder
6. keep wound dry for 2 weeks; no pool for 4 weeks

Exercises weeks 2-6: These exercises should be performed with the help of your physiotherapist until you have the correct technique and are confident. Isometric deltoid contractions can be done in combination with the below exercises from week 2 onwards.

PENDULUM

Lean forward so your operated arm hangs. Swing it in clockwise then counter clockwise circles.



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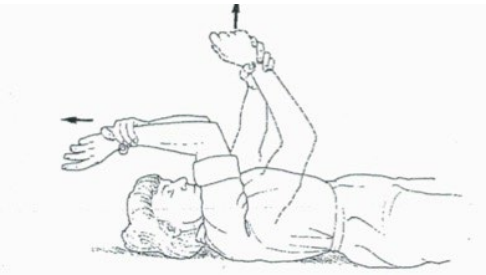
PASSIVE ROTATION EXERCISES

Use a stick guided by your good arm to gently rotate the operated arm outwards. Keep your operated elbow by your side. Generally you can rotate from hand on belly to 20 degrees past neutral (hand pointing forwards).

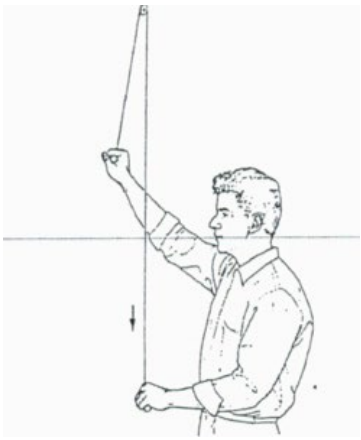
PASSIVE ELEVATION EXERCISE

Use your good arm to lift your affected arm up in front of you. Initially you may need someone to help lift your arm for you. Lift slowly and gradually.



PULLEY EXERCISES

Set up a pulley with a handle at each end of the rope. Use your good arm to move the rope up and down, keeping the operated arm relaxed.



PHASE TWO

From week 6-12 – Active Range of Motion + Early Strengthening – GOALS:

1. continue progression of passive range of motion
2. weaning from sling by week 7-8
3. gradually restore active range of motion
4. continue with wound massage and swelling reduction
5. re-establish dynamic shoulder and scapular stability

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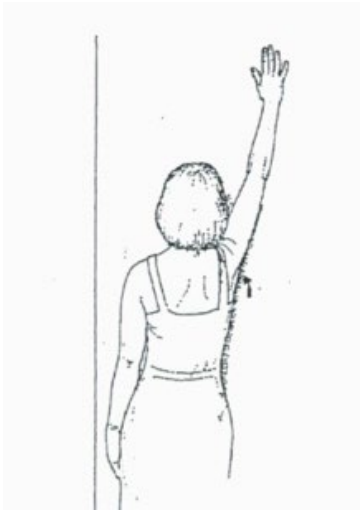
Precautions:

1. avoid combined shoulder abduction and external rotation
2. weight lifting restriction during this period is 500g
3. no supporting of body weight, or forceful pulling or pushing is permitted

Exercises with Physiotherapy: Full passive range of forward flexion, abduction and rotation

ACTIVE RANGE OF MOTION INCLUDING WALL SLIDE

Slide your hand up the wall in front of you with the use of the non-affected arm to assist you.



Begin scapulothoracic joint mobilisation

Encourage use of operated arm for light daily activities

Isotonic activation of all components of deltoid

PHASE THREE

After 12 weeks – GOALS:

1. Strengthening
2. Enhance endurance
3. Enhance functional use of arm

Exercises with Physiotherapy:

1. begin theraband activities and progress bands as pain + strength tolerates
2. progress strengthening to include weight bearing through arm, pulling etc
3. may gradually return to gym and recreational activities by 4-6 months

The therapy protocol lasts for 6 months. You will make improvements from a pain, range and power point of view out to 12 months from the operation.

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The diagrams and exercises given here are a guideline. Additional exercises may be suggested by your physiotherapist. Provided they adhere to the general guidelines of passive range for the first 6 weeks, active from weeks 6-12, and no resistance till after 12 weeks they are likely to be appropriate. The restriction of external rotation to neutral for the first 6 weeks is also critical.

I will generally see you 2 weeks, 6 weeks, 12 weeks and 24 weeks after the surgery.

This information is not exhaustive and if you have further questions I would be happy to answer them.

Regards,

Luke McDermott.

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