



VERSO

Reverse Total Shoulder Replacement

Rotator cuff tear arthropathy is a problem that occurs when a patient has both shoulder arthritis and an irreparable rotator cuff tear. This condition results in a weak and painful shoulder joint. When the rotator cuff is torn, the shoulder can wear out, leading to shoulder arthritis.

The shoulder is a ball and socket joint with a large range of movement. The joint sometimes needs replacing. This is usually when severe arthritis affects the joint surfaces and the shoulder becomes painful and difficult to move.

The rotator cuff is the group of tendons and muscles that surround the shoulder joint. These muscles and tendons are important in performing shoulder tasks (such as lifting your arm overhead), and keeping the ball of the ball-and-socket shoulder joint centered.

The reverse shoulder replacement was specifically designed for this problem of rotator cuff tear arthropathy or when there is arthritis with torn or non-functioning rotator cuff.

In a traditional shoulder replacement, the ball of the top of the arm bone (the humerus) is resurfaced or replaced with a metal ball. The socket of the shoulder blade (scapula) may be retained or replaced with a plastic socket. The absence of a rotator cuff causes the implant to move abnormally resulting in unusual forces on the artificial joint. This leads to a poor functional result and early failure of the replaced joint.

What is a reverse shoulder replacement?

The reverse shoulder replacement uses a ball-and-socket joint as well, but the ball is placed on the shoulder blade, and the socket is placed on top of the arm bone. This is the reverse of our normal anatomy, and thus the name "reverse shoulder replacement."

Why reverse the anatomy?

The reverse shoulder replacement is designed for patients who do not have a functioning rotator cuff, and therefore do not have "normal" shoulder anatomy. By reversing the ball and the socket, the large deltoid muscle which forms the contour of the shoulder becomes more efficient mechanically and is able to lift the arm up overhead, to compensate for the torn rotator cuff.

Are there problems with a reverse shoulder replacement?

Loosening of the implants, Fracture of the arm bone or socket, instability or dislocation of the ball from the socket, and persistent pain. Over time, the prosthesis could erode and damage bone stock.

What is the **VERSO** reverse shoulder replacement?

This is a special bone conserving reverse total shoulder replacement. It follows the basic principles of reverse replacements, but is bone preserving and causes less bone erosion over the longer period. It was developed at the Reading Shoulder Unit, over a period of 10 years. The prosthesis uses special coating called hydroxyapatite that allows the bone to bond onto the prosthesis over 12 weeks, thus avoiding the use of bone cement with its problems. It has a special screw-in base plate and ball for the shoulder blade, and a short socket for the top of the arm bone. It has been implanted in patients for over 14 years with very promising early results.

Who is a good patient for a reverse shoulder replacement?

Patients interested in a reverse shoulder replacement must have significant pain from shoulder arthritis, and an irreparable rotator cuff tear or non-functioning rotator cuff muscles. Patients who do not have this combination of conditions can usually undergo [other surgical procedures](#) to address their problem.

The deltoid muscle should be functioning.

Patients interested in having this procedure should discuss all of their options with their orthopaedic surgeons. Certainly, a reverse shoulder replacement should only be performed if simpler, [non-operative treatments](#) have failed to alleviate symptoms.



The Operation

The operation is performed under a general anaesthetic with a nerve block. Sometimes, it is possible to perform the procedure under nerve block alone, especially in patients who may be a high risk for general anaesthetic.

The new reverse ball and socket joint is inserted sacrificing only a minimum quantity of bone to preserve as much good bone stock as possible in the event of future surgery.

General Advice

The operation lasts approximately 90 minutes. You will usually be in hospital for about 2 – 3 days after your operation. Following your surgery, your arm will be in a sling for 24-48 hours. This is for comfort only and you may take it off as you wish. It is advisable to use the sling in crowded places for the first 3 weeks.

You will NOT be allowed to push yourself up from chairs using the operated arm for the first 6 weeks (after that, you will be allowed to do anything you like!).

A physiotherapist will see you in hospital to give you advice about using your arm and exercises. Outpatient physiotherapy will be arranged when you are discharged.

Your arm will be painful at first and in the first three to four weeks you will be quite one handed which will significantly affect your daily activities.

As your pain improves so will the amount you can use your arm.

Driving and most light activities are usually possible three to six weeks after the surgery. However, the strength in your arm will take longer to improve, and will be dependent on the amount of pain and stiffness you had prior to the surgery.

A doctor or physiotherapist will discuss this with you.

Risks and Complications

As with all surgery there is a risk of some complications. These are rare, but you should be aware of them before your operation. They include:

- Complications relating to the anaesthetics
- Infection
- Dislocation
- Bleeding
- Failure to achieve successful result
- Fracture of the arm bone or the acromion
- Unwanted prolonged pain and/or stiffness
- Damage to the nerves or blood vessels around the shoulder.
- Loosening and Wear
- Implant failure
- A need to redo the surgery / Need for revision

If you require further information please discuss with the doctors either in clinic or on admission.

What to expect

Following your operation, you will have a scar approximately 3 inches long on the front of your shoulder. Your arm will be supported in a sling and a physiotherapist will teach you how to take it on and off to do your exercises. You will be in hospital for about 2-3 days.

General guidelines

Pain:

A nerve block is usually used during the operation which means that immediately after the operation the shoulder and arm may feel numb. This may last a few hours. After this your shoulder will be painful and this may last a few weeks. You will be given painkillers to help this whilst in hospital. These should be continued after you are discharged home.

Wearing a Sling:

You will return from theatre wearing a sling. This is used ONLY for the first 1-2 days following your operation (while the nerve block is still working and you do not have control of your arm). It is important that you remove the sling immediately as the nerve block wears off to exercise. You can stop wearing the sling as soon as you feel comfortable.

The Wound:

Keep the wound dry until it is healed. This normally takes 10 to 14 days. Your stitch is dissolvable and needs only to be trimmed at your clinic visit.

If your wound changes in appearance, weeps fluid or pus or you feel unwell with a high temperature, contact your GP and the Consultant via the hospital where you were operated.

Driving:

This is usually possible after a few weeks, but will be dependent on your recovery.

Returning to work:

This is dependent upon your occupation. Light activities which involve using your arm in front of your body may be resumed when you feel comfortable usually after about three weeks. If you carry out heavy work, you may need to discuss this with the Consultant.

Leisure activities:

Gentle swimming and exercises in water can begin as soon as the wound has healed, usually at 10 days - 2 weeks post surgery. Golf at 6 weeks.

Follow up appointments:

You will have an appointment to see the doctor/specialist physiotherapist three weeks after your operation.

Progress:

This is variable and dependent on the amount of movement and the strength of your muscles prior to surgery. Following discharge your pain will slowly decrease and you will become more confident. You will be able to use your arm in front of you for light activities and progress. After six weeks your strength will start to improve.

Exercises:

You will start exercises on the first day after your operation. A physiotherapist will see you to teach you these and progress them. Outpatient physiotherapy will be arranged for when you are discharged.

You should do your exercises **YOURSELF 5 times a day, every day!**

Stretching Exercises

These exercises should be carried out 5 times daily.

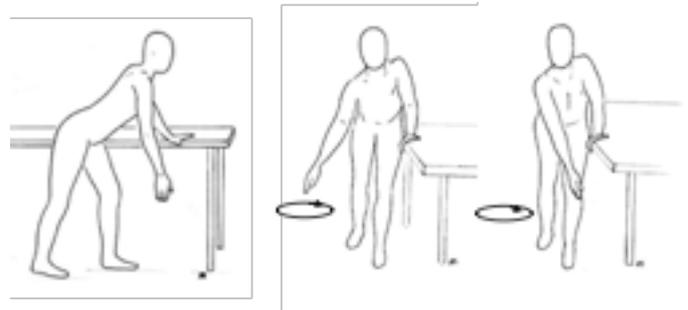
Warm up exercise

Pendular exercises:

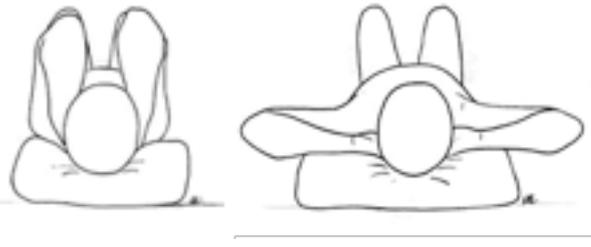
Lean well forward using a table or worktop for support.

- Let your arm hang down as relaxed as possible. Swing your arm in a small circle, clockwise then anticlockwise. Repeat x10 in each direction.
- Swing your arm forwards and backwards in line with your body, parallel to your feet, not across the body. X 20.

The addition of a weight 0.5 – 1Kg. helps the quality and comfort of the movement. (Fill a plastic milk bottle with water 500ml or 1 litre.)





<p>Passive assisted elevation: Flexion Stretch in lying supine. Lying on your back, grasp around your wrist or forearm, and raise the arm overhead as far as possible until you feel resistance. Hold 10 seconds. Then lower. Pause and repeat exercise X 5-10 times.</p>	
<p>External rotation stretches Lie down with a folded towel under your upper arm. Grasp the end of a walking stick in your affected hand as shown. Keeping the elbow tucked into your side, push the stick outwards away from the body, hence turning the upper arm. Stop at pain or resistance, and then hold for 10 – 15 seconds. Pause and repeat exercise X 5 - 10 times.</p>	
<p>‘Siesta’ stretches Hands behind head stretch (when able to do exercise 3): Lying on your back, place your hands behind your head and gently stretch the elbows downwards towards the floor. You may push the elbow down with the other hand. Hold for 10 seconds and relax. Repeat 10 times. Another way: Interlock your fingers together on your chest, and lift both hands and place behind your head. Then drop your elbows outwards as shown. (You should feel a pull in the front of your shoulders.) Hold 10–15 seconds. Repeat exercise X10 times.</p>	
<p>Posterior stretch for tight posterior capsule: a) The Sleeper Stretch Lie on the affected side with your upper arm and your elbow both at 90°. With your other hand GENTLY push downwards on the back of the wrist as shown. Hold for 10 – 15 seconds. Relax back to start position, Pause and repeat exercise X 5 - 10 times.</p>	
<p>Posterior stretch in standing: Take your affected arm across your body to rest the hand on the opposite shoulder. Grasp the elbow with your good hand, gently pushing the elbow back and keep pressure on as you pull the elbow and arm across your chest until you feel a stretch. Hold 10-15 seconds. Pause and repeat exercise X 5-10 times.</p>	

Avoid increased pain when stretching, but expect some discomfort.



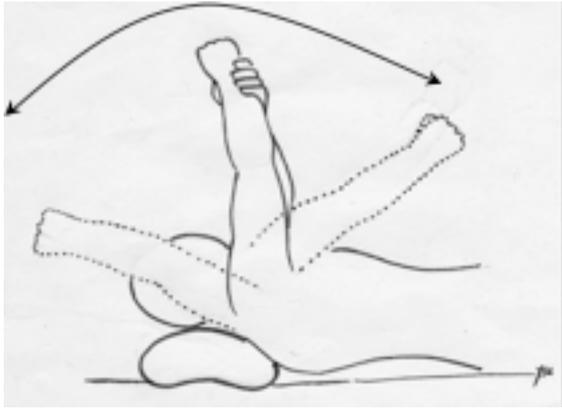
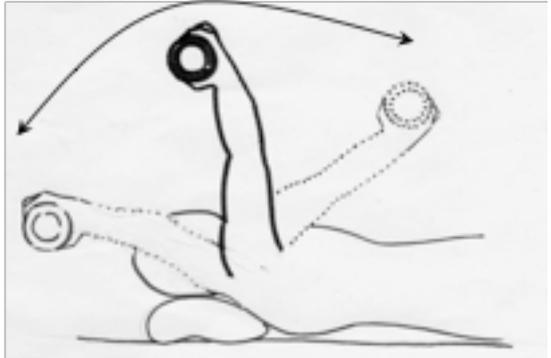
Anterior Deltoid Exercises

The deltoid muscle – must be re-educated to compensate for the torn rotator cuff. The function within this muscle is crucial to achieving a successful result from your reverse shoulder operation

The following exercises should be done **five times a day** to strengthen your deltoid muscle. It will reduce your pain and improve both the range of movement and your arm function.

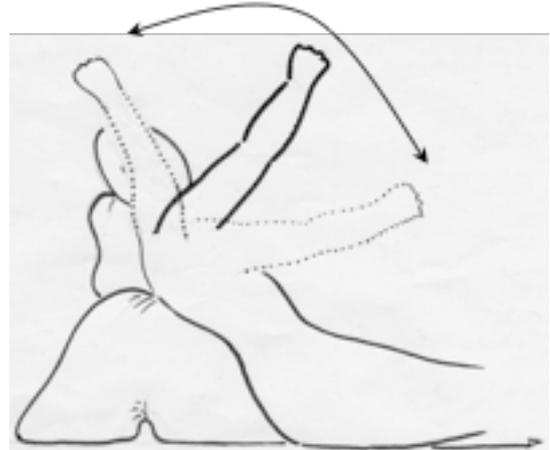
These exercises must be done for at least 12 weeks and must always be performed starting lying down to begin with.

You will be taught the exercise by the physiotherapist after your operation and at the unit.

<p>While standing, bend forward and let your arm dangle free and perform gentle pendulum movement for about 5 minutes. This will help you in relieving pain and free up your muscles around the shoulder.</p>	
<ul style="list-style-type: none"> • Lie down flat on your back, with a pillow supporting your head. • Raise your weak arm to 90 degrees vertical, using the stronger arm to assist if necessary. The elbow should be straight and in line with your ear. • Hold your arm in this upright position with its own strength. 	
<ul style="list-style-type: none"> • Slowly with your fingers, wrist and elbow straight move the arm forwards and backwards in line with the outside of the leg, as per diagram (gentle movement from both sides of the arm upright position.) Keep the movement smooth and continuous for 5 minutes or until fatigue. 	
<ul style="list-style-type: none"> • As you get more confidence in controlling your shoulder movement, gradually increase the amplitude of movement until your arm will move from the side of your thigh to above your head, touching the bed, and return. Keep the movement smooth and continuous for 5 minutes or until fatigue. 	
<ul style="list-style-type: none"> • As you get more confidence in controlling your shoulder movement, a lightweight e.g. a tin of beans or small paperweight, should be held in the affected hand. • Repeat as above (5 and 6). 	



- Having more confidence in controlling your shoulder movement gradually go from lying down to sitting and eventually standing. At this stage you may recline the head of your bed or put some pillows underneath your back to recline your position. Repeat the same exercise again, this time against some gravity.
- Start again from holding your arm in the upright position with its own strength.
- Repeat as above (5, 6, and 7).
- Start first without any weights



- and **progress to use the same lightweight you used before in the lying down position.**

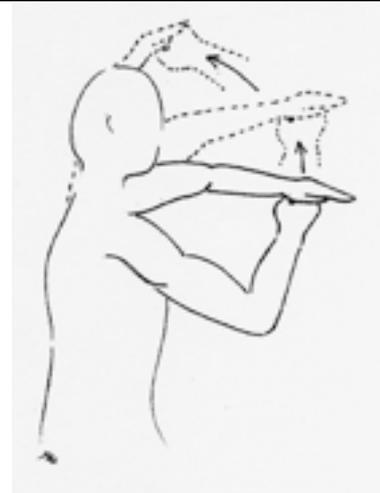


Another useful exercise for re-education of concentric contracture of the deltoid muscle:

Performing the exercise:

Make a fist with the hand of the affected side. The flat hand of the opposite side is providing resistance. Push your affected side hand against resistance from the other hand. While doing this, you will notice that you can fully elevate your arm (above your head).

Repeat these exercises in order to 'learn' and re-educate your Deltoid muscle to perform this 'concentric contracture' even without pushing against your other arm.





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