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Reverse geometry shoulder replacement

This information aims to help you gain the maximum benefit and understanding of your operation.

It includes the following information:

- Key points
- About your shoulder
- About the shoulder replacement operation
- Risks and alternative solutions
- Frequently asked questions
- Exercises
- Contact details
- Useful links

Key points

You may have been recommended to have a reverse geometry shoulder replacement if your shoulder muscles and tendons are torn or damaged. If you are considering having this operation, remember:

1. This operation is aimed at regaining the movements of the shoulder needed for most daily activities.
2. This is a good operation for pain relief but it is less reliable at improving all movements of the shoulder.
3. It will alter the look and shape of your shoulder – it will become thinner and bonier.
4. Most people go home on the second day after the operation.
5. You will have a general anaesthetic (you will be asleep).
6. You may be given an injection to numb the arm so that you do not have pain when you wake up. The arm may feel ‘dead’ for up to 48 hours afterwards.
7. You will be in a sling for up to 3 weeks.
8. You will not be driving for at least 6 weeks.
9. It will be up to 3 months before you can return to work.
10. You can return to sport in a progressive fashion but not competitively for 3 months.
11. This is a safe, reliable and effective operation for 90% (9 out of every 10) people.
12. This is not a quick fix operation – symptom improvement may take many months.
13. www.shoulderdoc.co.uk is a reputable and useful British website for further information.

Why the shoulder needs a reverse geometry replacement

Normal shoulder movement requires a combination of factors working together:

1. The ball and socket joint (glenohumeral joint) being in good condition.
2. The surrounding muscles (rotator cuff tendons) being in good working order.
3. The overlying deltoid muscle being in good working order.

If only the ball and socket is damaged, such as in osteoarthritis, then a routine shoulder replacement is the best option. However, if the rotator cuff muscles are not in good working order because they are torn or damaged then a normal shoulder replacement cannot work. In these circumstances, the only option to improve movement is to use a reverse geometry shoulder replacement. Good movement is then very dependent on the quality of the overlying deltoid muscle. If the deltoid muscle is not in good working order then the reverse shoulder replacement will not work well.

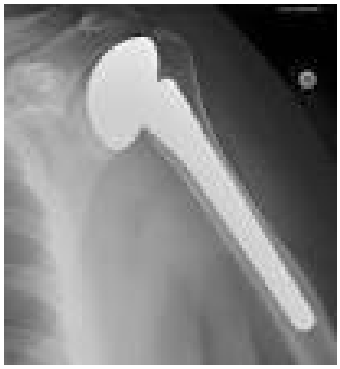
The commonest reasons for doing a reverse shoulder replacement

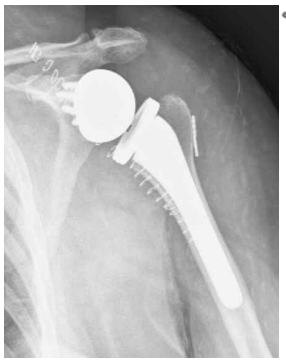
1. Cuff tear arthropathy – the combination of arthritis of the glenohumeral joint and badly damaged rotator cuff muscles.
2. Severe trauma to the shoulder.
3. Very poor movement despite previous surgery to repair the rotator cuff tendons.
4. Pain and poor movement despite previous surgery for trauma to the shoulder.

About the reverse geometry shoulder replacement

This operation swaps the normal arrangement of the ball and socket as shown in the pictures below. This changes the mechanics of the shoulder in order to allow the deltoid muscle, which is now the main muscle for lifting the arm, to work better.

Standard Shoulder Replacement ***Reverse Shoulder Replacement***






The main reason for doing the operation is to reduce the pain in your shoulder and restore function for daily activities. Ultimately, you may also have more movement in your shoulder, but this depends on how stiff the joint was before the operation and on the strength of the undamaged muscles, mainly the deltoid, around the shoulder.

About the operation

You will have a full general anaesthetic (i.e. you will be asleep).

You are sat up on the operating table. A 10cm cut is made over the top or front of the shoulder. The underlying muscle is carefully split to expose and inspect the bones. The ball of the

shoulder is cut off. A metal ball is screwed into the glenoid bone (socket of the shoulder joint). A stem is placed down the shaft of the humerus. A plastic socket is fitted onto the stem and then linked to the new metal ball. The wound is closed.

A side effect of this reverse shoulder surgery is a change in the shape and bulk of the shoulder. It will often appear thinner and bonier which can affect how your clothes sit over the shoulder; this is particularly noticeable in women.

What are the risks of the operation?

All operations involve an element of risk. We do not wish to over-emphasise the risks, but feel that you should be aware of them.

They include:

a) **Anaesthetic complications** such as sickness and nausea or rarely cardiac, respiratory or neurological (less than 1% each, i.e. less than one person out of 100).

b) **Infection:** This is our major worry. Infection may occur after any operation and the risk is higher if you have had previous surgery to the shoulder. Thankfully, it is uncommon but if it occurs, it can be difficult or impossible to treat and may render your shoulder worse than before. The risk, when there has been no previous surgery, is about 1.5% (i.e. 2 people in 200). If you have previously had an operation, the risk is around 5% and if there has been a previous infection then it may be higher.

c) **Less than perfect movement:** This is to be expected! The operation cannot make the movement perfect. The level of movement gained after the operation depends mostly on the strength and quality of your existing muscles and can only be partially improved with physiotherapy. The aim of the operation is to relieve pain and make your movement better but not perfect.

d) **Permanent nerve and blood vessel damage** around the shoulder (less than 1% i.e. less than one person out of 100). Temporary nerve injury is quite common but usually resolves naturally within a year.

e) **Dislocation:** The highest risk is in the first 6 weeks after surgery and can be minimised by avoiding specific activities such as being pulled up by the operated arm or by not pushing up out of a chair.

f) **Fracture of the shoulder blade (acromion):** This can happen after several months, usually without an injury. It can cause pain and may be difficult to fix.

g) **Revision surgery:** As with all joint replacements, the components can loosen and wear out. This is not normally a problem until several years after the operation but because this is a relatively new operation, we do not yet know how long the average replacement will last.

h) **Change in shoulder shape:** This is not really a complication but you should be aware that, especially if you are slim, there will be a noticeable change in shape of your shoulder with marked prominence of the bony bits!

i) **Fracture:** Breaking the humerus (arm bone) or glenoid (socket) during the operation.

Please discuss these issues with your surgeon if you would like further information.

Alternative options

You have probably tried most of these options before considering surgery. They include:

1. Simple painkillers.
2. Anti-inflammatory drugs.
3. Altering your activities to avoid painful movements such as bringing crockery and jars down from high shelves to surfaces at waist height or below.
4. Physiotherapy – specifically trying to strengthen the anterior deltoid muscle.
5. Cortisone injections may provide some short lasting benefit in some people.

Questions that we are often asked about the operation

Will it be painful?

- During the operation, local anaesthetic will be put into your shoulder to help reduce the pain.
- The anaesthetist may discuss the option of numbing the whole arm for a few hours after the operation.
- Be prepared to take pain-killing tablets as soon as you start to feel pain.
- Take the tablets regularly for the first two weeks and after this time only as required.
- If stronger tablets are required or if you know you cannot take paracetamol or anti-inflammatories, talk to your GP.
- The amount of pain you will experience will vary and each person is different. Therefore, take whatever pain relief you need.
- You may find ice packs over the area helpful. Use a packet of frozen peas, placing a piece of wet paper towel between your skin and the ice pack. Use a plastic bag to prevent the dressings getting wet until the wound is healed. Leave on for 5 to 10 minutes and you can repeat this frequently (4-8 times) throughout the day.

Please purchase packets of tablets such as paracetamol (painkillers) and anti-inflammatories (e.g. nurofen, ibuprofen, diclofenac) before coming into hospital.

Do I need to wear a sling?

- The sling is for comfort and to protect the shoulder after the operation. You can take it on and off as you wish and you do not need to have your arm strapped to your body.
- The therapists and nurses will show you how to take the sling on and off. You will gradually wear the sling less over 2-3 weeks.
- You may find it helpful to wear the sling at night (with or without the body strap), particularly if you tend to lie on your side. Alternatively, you can use pillows in front of you to rest your arm on.
- If you are lying on your back to sleep you may find placing a thin pillow or folded towel under your upper arm will be comfortable.

Do I need to do exercises?

- Yes, the physiotherapist will see you while you are in hospital and you will be taught the appropriate exercises. You will start exercises to move the shoulder on the first day after the operation. You will then need to continue with exercises when you go home and outpatient physiotherapy appointments will be organised for you.
- You will need to get into the habit of doing regular daily exercises at home for several months. They will enable you to gain maximum benefit from your operation. The exercises aim to stop your shoulder getting stiff and strengthen muscles. They will be changed as you progress and made specific to your shoulder and lifestyle.

When can I go home?

- Most people stay for two nights after the operation. You can stay longer if necessary because of pain or home circumstances.

How do I look after the wound?

- Keep the wound dry until it is healed. This is normally for 10-14 days. You can shower or wash and use ice packs but protect the wound with cling film or a plastic bag.
- Avoid using deodorant, talcum powder or perfumes near or on the scar.
- There is one long dissolvable stitch that looks like fishing line. Leave this alone, it does not need to be removed and the ends will drop off after two or three weeks.

When do I return to the clinic?

- It is usually arranged for two to three weeks after discharge that you are seen by a physiotherapist. Please discuss any queries or worries you may have with them.
- You may not need to see the consultant for up to three months after the operation.
- A further appointment, with an X-ray of the shoulder, is planned for one year after the surgery.

Are there things that I should avoid?

For the first six weeks

1. Avoid leaning with all your body weight on your arm with your hand behind you, e.g. pushing through the arm to get out of a chair or out of bed.
   If you use a walking aid, it cannot be used on the operated side for the first six weeks.
2. Avoid taking your arm out to the side and twisting it backwards. For example, when putting on a shirt or coat, put your operated arm in its sleeve first. Try not to reach up and behind you (e.g. seat belt in car). Avoid forceful movements of the arm across your body as well. It is normally too painful / difficult to do.
3. Don’t let anyway try to pull you up by your recently operated arm

How am I likely to progress?

This can be divided into four phases:

Phase 1: Immediately after the operation until you are discharged.

- You will start to move the shoulder with the help of the physiotherapist, but to begin with, you will be quite one-handed. If your dominant hand (right hand if you are right-handed) is the side with the operation, your daily activities will be affected and you will need some help.
- Activities that are affected include dressing, bathing, hair care, shopping and preparing meals. The physiotherapist will discuss ways and show you how to be as independent as possible during this time.
- Before you are discharged from hospital, the staff will help you plan for how you will manage when you leave. Please discuss any worries with them.

Phase 2: After you have been discharged and for up to six weeks after the operation.

- The pain in your shoulder will gradually begin to reduce and you will become more confident.
- Wean yourself out of the sling slowly over this time, using it only when you feel necessary.
- Do not be frightened to try to use your arm at waist level for light tasks. You will be seeing a physiotherapist and doing regular exercises at home to get the joint moving and to start regaining muscle control. If you feel unsure about what you can or cannot do, please discuss this with the physiotherapist. Lifting your arm in front of you may still be difficult at this stage.

Advice for activities during first 6 weeks:

1. **Getting on and off seats**. Raising the height can help, e.g. extra cushion, raised toilet seat, chair or bed blocks. Avoid leaning on the operated shoulder.
2. **Getting in and out of the bath**. Using bath boards may help. (Initially you may prefer to strip wash or shower.) Avoid leaning on the operated shoulder.
3. **Hair care and washing yourself**. Long handled combs, brushes and sponges can help to stop you twisting your arm out to the side.
4. **Dressing**. Wear loose clothing, with either front fastening or that you can slip over your head. For ease, also remember to dress your operated arm first and undress your operated arm last. In addition dressing sticks, long handled shoe horns, elastic shoe laces, sock aids and a ‘helping hand’ can help.
5. **Eating**. Use your operated arm as soon as you feel able for cutting up food and holding a cup. Non-slip mats and other simple aids can help.
6. **Household tasks/cooking**. Do light tasks as soon as you feel able, e.g. lift kettle with small amount of water, light dusting, ironing, rolling pastry. Various gadgets can help you with other tasks.

Phase 3: From 6 to 12 weeks

The pain should be lessening. The exercises are now designed to improve the movement available and get the muscles to work, taking your arm up in the air or away from your body when you are sitting or standing. Overall, you will have an increasing ability to use your arm for daily tasks.

Phase 4: After 12 weeks

You can progress with more stretches if this is necessary for the activities that you want to do. You should find that you will regain the strength in them with regular exercise. Strength can continue to improve for many months, even up to 18 months.

Not all movement can be restored with this operation but often you can find small ‘trick’ movements that enable you to do what you want to do.

When can I return to work?

Return to work depends very much on your specific job and whether or not you need to drive. It is illegal to drive while wearing a sling. If you can get to work then desk workers can return as soon as you feel able, sometimes after about 3 weeks although you will have to be able to work one-handed. Most people need about 6-8 weeks off work although heavy manual workers will require about 3 to 6 months off work. Prolonged, heavy overhead activity will never be possible. You will usually be signed off work for 3 weeks and this can then be reviewed at your first clinic appointment. Your employers need to know this.

When can I drive?

It is illegal to drive while wearing a sling. You may start to drive once the sling has been discarded but not until you are able to safely control the car. This time period is very variable but is normally about 6-8 weeks after the operation. You may find it is more difficult if your left arm has been operated on because of the need to use it for the gear stick/handbrake. Check you can manage all the controls and it is advisable to start with short journeys. The seat belt may be uncomfortable initially but your shoulder will not be harmed by it.

When can I participate in my leisure activities?

Your ability to start these activities will be dependent on pain, range of movement and the strength that you have in your shoulder following the operation. Please discuss activities in which you may be interested with the therapists or hospital doctor. Start with short sessions, involving little effort and gradually increase.

General examples:

- Gardening (light tasks e.g. weeding) after 6-8 weeks (avoid heavier tasks e.g. digging).
- Swimming – breaststroke after 6 weeks, freestyle 3 months. You may have difficulty with vertical steps into the pool!
- Bowls – after 3-6 months.
- Golf – after 3 months.

These are approximate and will differ depending upon each person’s individual achievements. However, they should be seen as the earliest that these activities may commence. Racquet sports should be avoided completely.

Exercises – General points

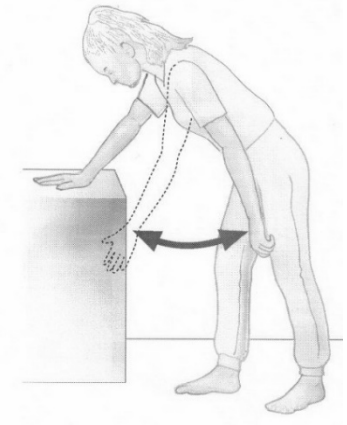
- Use painkillers and/or ice packs to reduce the pain before you exercise.
- It is normal for you to feel aching, discomfort or stretching sensations when doing these exercises. However, if you experience intense and lasting pain (e.g. more than 30 minutes), it is an indication to change the exercise by doing it less forcefully, or less often. If this does not help, discuss the problem with the physiotherapist.
- Certain exercises may be changed or added for your particular shoulder.
- Do short, frequent sessions (e.g. 5-10 minutes, 4 times a day) rather than one long session.
- Gradually increase the number of repetitions that you do.
- Aim for the repetitions your therapist advises, the numbers stated here are rough guidelines.
- After 3-4 weeks, you can increase the length of time exercising.

Phase 1 exercises

From operation day to 10-14 days after (shown for left arm).

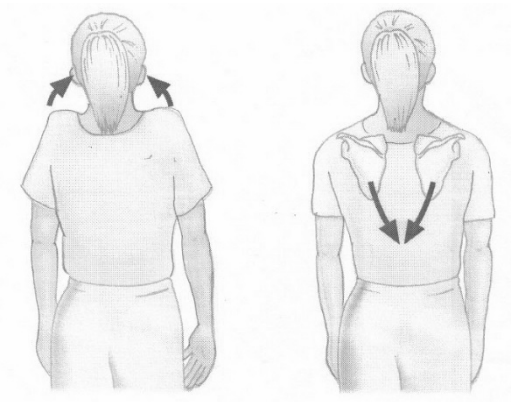
1. **Lean forwards.**

Let your arm hang freely.
Start with small movements.
Swing your arm:
(i) forwards and backwards
(ii) side to side
(iii) in circles
Repeat each movement 5 times.



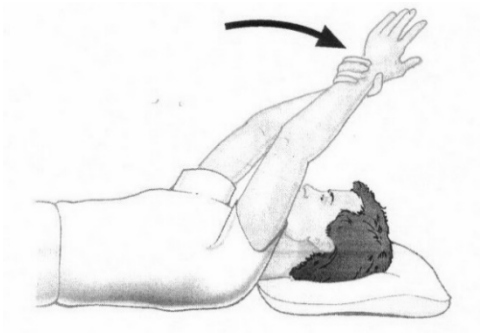
2. **Sit or stand.**

Shrug shoulders up and forwards.
Then roll them down and back.
Repeat 10 times.



3. **Lying on your back.**

Support your operated arm with the other arm and lift up overhead.
Start with your elbows bent, then progress to having arms straight.
Do not force the movement.
Repeat 10 times.



Phase 2 exercises

From 10-14 days after your operation

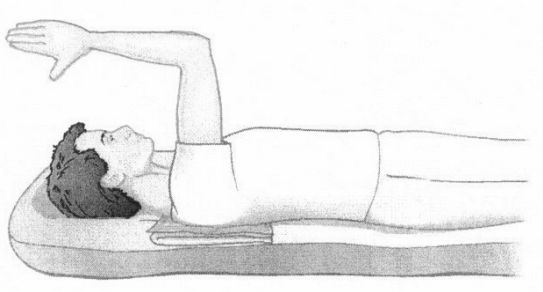
4. **Lying on your back, elbow bent.**

Hold your operated arm up as before (in exercise 3), but once it is vertical try to keep it there without the support of the other arm.

Gradually lower and raise your arm in an arc, until you can lift it from the bed.

Once this is easy progress to exercise 7 in standing.

Repeat 10 times.



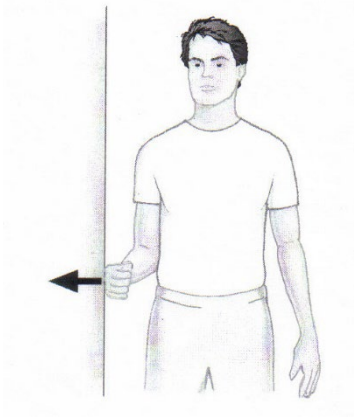
5. **Standing with your operated arm against a wall.**

Bend your elbow.

Push your **hand** into the wall.

Hold for 10 seconds.

Repeat 5 times.

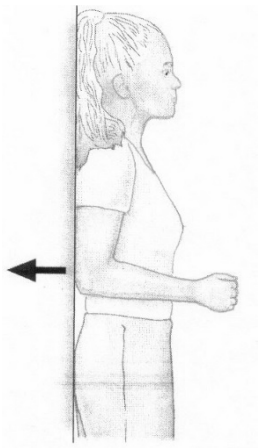


6. **Stand with back against wall.**

Keep arm close to side, elbow bent.

Push the elbow back into the wall. Hold for 10 seconds.

Repeat 5 times.



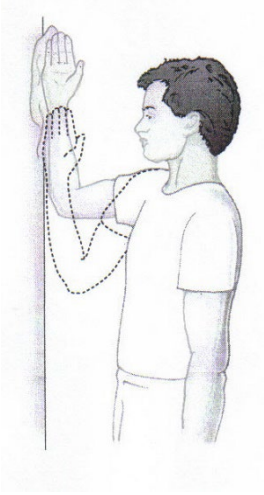
7. **Standing facing a wall.**

Elbow bent and hand resting against wall. Use a towel between the hand and wall (to make it easier).

Slide your hand up the wall. At first, you can give support to your elbow with your other hand.

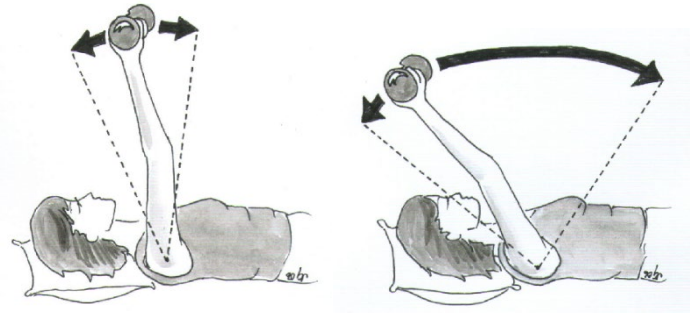
Gradually stretch higher up the wall then come down slowly trying to make the movements smooth.

Repeat 5 times and progress by moving away from the wall.



Start the following exercises 3 weeks after operation

8. **Lying on your back**



The next progression is to add a small weight e.g. a tin of beans, small bottle of water. Hold this in the hand of your bad arm and continue to move the arm from your side to above your head and back again in a smooth movement for up to 5 minutes or until the arm gets tired.

Phase 3 continued and Phase 4

There is great variation in what people can achieve during rehabilitation; therefore, it is not possible to give all potential exercises. The physiotherapist will design an ongoing exercise programme for you that is specific to your shoulder and your needs. The main focus of the exercises will be on strengthening the deltoid muscle to take over the lifting of your arm, especially in front of the body.

Keep the exercises going until you feel there is no more improvement. This may continue for a year to 18 months… so think positive, keep at it and enjoy them.

Contact details

Clinical Admin Team (CAT5)

Tel: 0118 322 7415

Email: CAT5@royalberkshire.nhs.uk

Useful links

www.readingorthopaediccentre.com

www.shoulderdoc.co.uk

This leaflet is not a substitute for professional medical care and should be used in association with treatment at your hospital. Individual variations requiring specific instructions not mentioned here might be required. It was compiled by Mr Harry Brownlow (Consultant Orthopaedic Surgeon), Mr Amar Malhas (Consultant Orthopaedic Surgeon), Catherine Anderson (Specialist Physiotherapist) and is based on the information sheet produced by Jane Moser (Superintendent Physiotherapist) and Professor Andrew Carr (Consultant Orthopaedic Surgeon) at the Nuffield Orthopaedic Centre in Oxford.

Contacting the ward

If you have any concerns or problems following your discharge, you can contact the ward for general advice by telephoning:

Chesterman Ward	0118 322 8847
Redlands Ward	0118 322 7484 / 7485
Trauma Unit	0118 322 7541
Adult Day Surgery Unit	0118 322 7622
Pre-op Assessment	0118 322 6546

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Please ask if you need this information in another language or format.

RBFT Department of Orthopaedics, April 2025
Next review due: April 2027