

## Shoulder and elbow joint replacement

This booklet provides information  
and answers to your questions  
about these surgical procedures.



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and print our booklets entirely  
from charitable donations.

# What are shoulder and elbow joint replacements?



If you're thinking about having a shoulder or elbow joint replacement then you'll probably have a lot of questions. In this booklet we'll explain each operation in detail, when you might need them and what you can expect before and after your surgery. We'll also point out the possible complications of these operations and tell you where you can find more information.

At the back of this booklet you'll find a brief glossary of medical words – we've underlined these when they're first used.

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# At a glance

## Shoulder and elbow joint replacement

Shoulder and elbow joints that are affected by arthritis can become painful and difficult to move, but joint replacement surgery can help ease these symptoms. The operations (sometimes called arthroplasty) replace the surfaces of a joint with parts made of metal and plastic.

### Do I need a shoulder or elbow joint replacement?

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You may need a joint replacement if:

- your pain can't be eased enough by other methods, such as drugs, injections or physiotherapy, and is affecting your quality of life
- you can't use your arm easily
- you have a bone fracture close to the joint that can't be fixed.

You should speak with your orthopaedic surgeon and any other healthcare professionals involved with your arthritis, as well as family and friends, before deciding to have joint replacement surgery.



The main aim of surgery is to reduce pain.

### What should I ask my hospital team?

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You might want to ask your hospital team the following questions:

- What can I expect from surgery?
- What can I expect if I don't have surgery?
- What are the alternatives?
- What are the risks?
- How long will I be in hospital?
- When will I get back to my normal activities?
- What if I have problems after surgery?

### What are the possible advantages?

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Possible advantages can include:

- less or even no pain, especially at night and during activities
- improved limb function
- improved quality of life.

### **What are the possible disadvantages?**

Possible disadvantages include:

- replacement joints not being as good as natural joints
- limited movement compared to a healthy natural joint
- replacement joints wearing out quicker than natural joints.

### **What are the possible complications?**

The main possible complications of surgery include:

- infection
- stiffness
- pain
- loosening of the replacement parts
- fracture of the bone during or after surgery

- poor healing of the wound
- wound haematoma (bleeding)
- damage to nearby nerves causing temporary or, rarely, permanent numbness or weakness.

### **How long will my joint replacement last?**

There's a very good chance that your shoulder or elbow joint replacement will last for 10 years. After this time it may loosen and wear out. A second joint replacement (revision surgery) may then be possible.



## Introduction

Shoulder and elbow joints that are affected by arthritis can become painful and difficult to move. Often this lack of movement is caused by the joint surfaces not moving smoothly on each other or by tendons and ligaments tightening (contracting) around the joint. The joint may be too painful to move. Joint replacement can help ease these symptoms. The operations (sometimes called arthroplasty) replace the surfaces of the joint, which are normally made of bone covered with cartilage, with parts made of metal and plastic.

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**i** See Arthritis Research UK booklets *Osteoarthritis; Rheumatoid arthritis; What is arthritis?*

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**Finding out as much as you can about the operation and understanding the process will help you feel less worried and more in control.**

## Do I need a shoulder or elbow joint replacement?

You may need a joint replacement if your pain can't be reduced enough by other methods such as drugs, injections or physiotherapy and if the pain is affecting your quality of life. Increasingly often, a replacement may be carried out to deal with fractures close to the joints. This is only the case if the fracture can't be fixed reliably and your lifestyle or physical activities are suitable for a shoulder or elbow replacement.

**!** Arthritis tends to get worse over time, but this happens at a different rate for everybody. Your surgeon will advise you if waiting would be harmful or make your arthritis more difficult to deal with in the future.

Joint replacement surgery should be considered carefully in consultation with your surgeon and any other healthcare professionals who are helping you (such as a GP, physiotherapist or nurse) and with your family and friends. Your surgeon will be able to advise you on what the surgery will involve and of the pros and cons of having or delaying an operation.



## **What are the possible advantages of shoulder or elbow joint replacement surgery?**

In most cases you can expect that your joint pain will disappear or be much reduced once the wound has healed. Because the joint will be less painful, you'll probably notice that your range of movement increases. However, this may take several months of hard work and may not happen at all for some people.

Shoulder and elbow joint replacements are very successful and most people are delighted with the results and the improvement to their quality of life.

## **What are the possible disadvantages of shoulder or elbow joint replacement surgery?**

A replacement joint can never be as good as a natural joint and extreme movements such as hanging washing or reaching for high shelves are often not possible, although most people will be able to carry on with simple everyday activities. You should discuss with your surgeon before an operation how much they expect your movement to improve, as each case is slightly different.

Replacement joints will also wear out after a time, but it's likely that they'll last for 10 years.



## What are the alternatives to joint replacement surgery?

Most people with arthritis of the shoulder or elbow joint will receive other treatments from either their GP, physiotherapist or a rheumatologist before they see a surgeon for a joint replacement. These may include:

- drug treatments, including painkillers and non-steroidal anti-inflammatory drugs (NSAIDs)
- disease-modifying anti-rheumatic drugs (DMARDs) if you have rheumatoid arthritis
- injections of steroid and other drugs into the joint
- injections of local anaesthetic to numb nerves
- physiotherapy.

If these treatments don't improve the pain, you may need surgery.

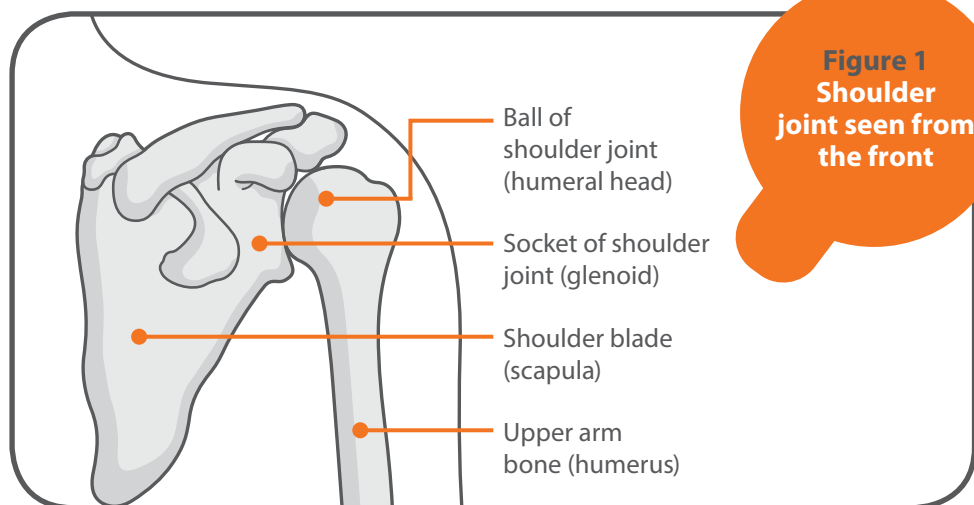
In some cases, other operations are more helpful than joint replacement, such as:

- cleaning out the joint (debridement) to ease pain
- removal of the lining of the joint (synovectomy) if it's very inflamed (this isn't usually carried out on the shoulder joint)
- removal of part of the bone (the radial head) at the elbow.

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**i See Arthritis Research UK drug leaflets** *Drugs and arthritis; Local steroid injections; Non-steroidal anti-inflammatory drugs (NSAIDs); Painkillers (analgesics).*

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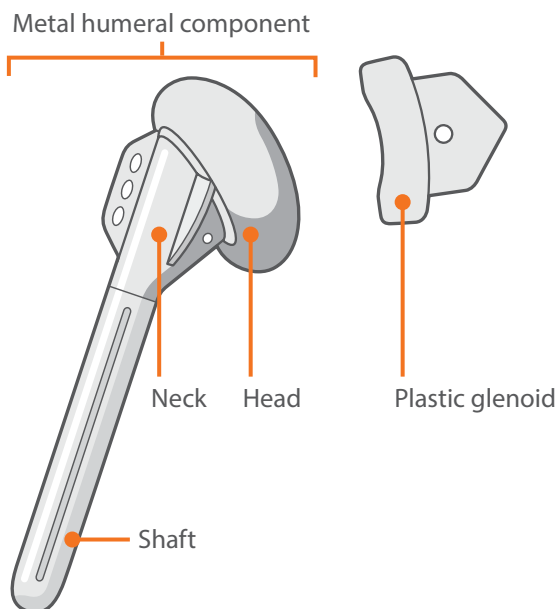
## What are the different types of shoulder and elbow joint replacement?

### Shoulder replacement

The shoulder is a ball-and-socket joint (see Figure 1). The end of the upper arm bone (the humeral head) forms the ball, while part of the shoulder blade (called the glenoid) forms the socket. Shoulder replacement surgery replaces the ball and sometimes the socket with man-made (artificial) parts (components) – see Figure 2. There are several types of shoulder replacement surgery:

**Hemiarthroplasty** is where the ball part of the joint (the humeral head) is replaced with an artificial ball component with a stem that extends into the shaft part of the bone (see Figure 3). This is usually used for fractures but is also used in many cases of arthritis.

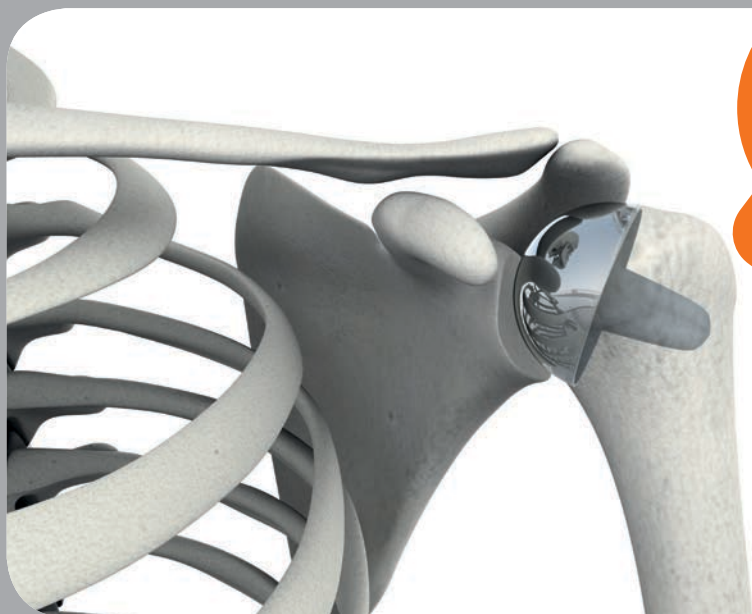
**Shoulder resurfacing** is a different type of hemiarthroplasty where, instead of removing the humeral head and replacing it with an artificial ball on a stem, a metal cap is fitted over the ball part of the joint (see Figure 4). This means less bone has to be removed during the operation.



**Figure 2**  
The parts of  
an artificial  
shoulder joint



**Figure 3**  
A hemiarthro-  
plasty showing  
stemmed  
component  
in place



**Figure 4**  
A shoulder  
resurfacing  
component  
in place

**Total arthroplasty** is where both the ball and socket are replaced with artificial components. This is increasingly used for very specific kinds of arthritis depending on the patient's age, how badly worn the natural joint is and the state of the tendons around the joint.

**Reverse anatomy arthroplasty** is where the artificial components are fitted in reverse – that is, the socket to the upper arm bone and the ball to the shoulder blade. Currently this is only used in patients with severe arthritis of the shoulder joint and very poor tendon cover around the joint. It can sometimes be used if a patient has both a severe joint fracture and poor tendon function.

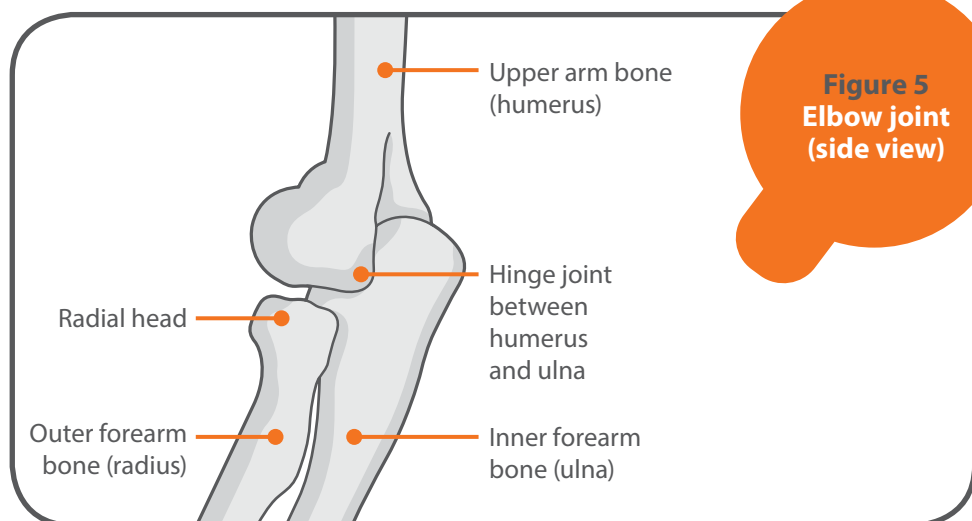
Your surgeon will decide beforehand which type of replacement will be most suitable for your shoulder problem.

They'll discuss this and all possible complications with you, and you'll be given time to think things through before you make your decision.

The operation will be carried out using a general anaesthetic (in which case you'll be asleep) and/or a local anaesthetic (which numbs the nerves to the arm and shoulder). The shoulder joint is normally opened from the front or top and the muscles moved out of the way (retracted). The damaged bone of the humeral head is then removed and the remaining bone is prepared for the artificial component to be fitted.

## Elbow replacement

Figure 5 shows a healthy elbow joint. In elbow replacements, both sides of the joint are replaced, usually with cement.



The upper arm and forearm components (humeral and ulnar components) are made of both metal and plastic.

The operation will be carried out using a general anaesthetic (in which case you'll be asleep) and/or a local anaesthetic (which numbs the nerves to the arm and shoulder).

The elbow joint is usually opened from the back and the muscles moved back. The parts of the bone with damaged joint surfaces are then removed and the shafts of the ulna and humerus prepared to have the components inserted, which are usually cemented in. Most designs have a hinge, or pivot, between the two halves (known as 'linked' prostheses) – see Figure 6.

If arthritis affects only the radial head, a metal radial head replacement is occasionally used. This operation leaves the rest of the elbow joint unchanged. This may also be used for some fractures.

## How should I prepare for surgery?

Once you've decided to go ahead with surgery, your name will be put on a waiting list and the hospital will contact you, usually within 6–12 weeks.



## Pre-admission clinic

Most hospitals invite you to a pre-admission clinic, usually about two to three weeks before the surgery. A pre-admission clinic is a chance to discuss any worries you have about the operation and to find out more about preparing for, and recovering from, surgery.

During the clinic, you'll be examined to make sure you're generally well enough for the anaesthetic and the operation.

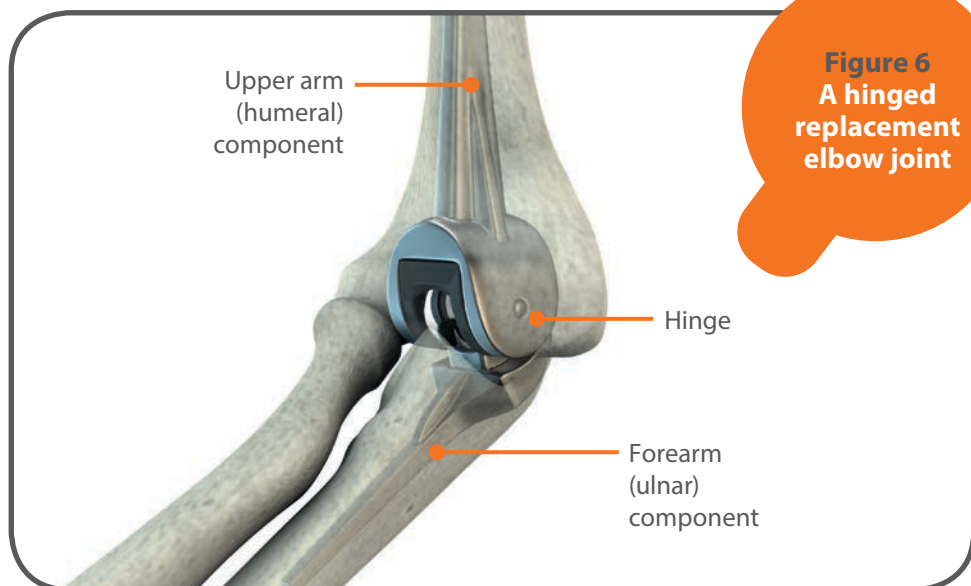
This may involve the following tests:

- blood tests to check for anaemia and to make sure your kidneys are working properly
- x-rays of the affected body part
- a urine sample to rule out infection
- an electrocardiogram (ECG) scan to make sure your heart is healthy.

The hospital team will probably tell you at this stage whether the operation will go ahead as planned.

You should discuss with your surgeon, anaesthetist or nurse at this pre-admission clinic whether you should stop taking or change the dose of any of your medications before you have surgery.

You may also see an occupational therapist during the clinic. They'll discuss with you how you'll manage at home in the weeks after your operation and advise you on aids and appliances that might help. If you're not invited to see an occupational therapist and you're anxious about coping at home after the operation, you should ask about home help and/or useful aids when you go for your pre-admission clinic.



**Figure 6**  
**A hinged**  
**replacement**  
**elbow joint**

In some hospitals you'll see a physiotherapist in this clinic as well. You'll be able to discuss your exercise plan before and after the operation.

It's also advisable to have a dental check-up and get any problems dealt with well before your operation. There's a risk of infection if bacteria from dental problems get into the bloodstream.

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**i See Arthritis Research UK booklets**

*Meet the rheumatology team;  
Occupational therapy and arthritis;  
Physiotherapy and arthritis.*

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## Going into hospital

You'll probably be admitted to hospital early on the day of surgery, though it may be earlier if you haven't attended a pre-admission clinic or if you have another medical condition that needs checking before surgery can go ahead.

### Figure 7 Pre-admission checklist – before you go into hospital, you should think about the following:

Do you have someone to take you to and from hospital?

Have you set up your home ready for your return, with everything you need within reach?

Do you have any specialist equipment ready for when you leave hospital?

Do you need someone to stay with you for a while after your operation?

You'll be asked to sign a consent form before surgery.

Just before your operation is due to start you'll be taken (usually in your bed, but you may be walked) from the admission ward to the operating theatre. If you're feeling worried, you may be given a sedative medication (a pre-med) while waiting in the admission ward, which may make you feel a little drowsy. You'll then be given an anaesthetic. This may be either a general anaesthetic or local anaesthetic (also called a regional block). A general anaesthetic will affect your whole body and make you lose consciousness, or put you 'to sleep'. A local anaesthetic doesn't put you to sleep but stops you feeling anything in the affected area. Having local anaesthetic usually involves an injection to the base of the neck or in the armpit. Some anaesthetists use an ultrasound scan to help to guide the needle to the right spot. You can take a book or some music along to relax you if you like, but you may also be sedated to keep you relaxed during the course of the operation if needed.

## What will my recovery involve?

### After the operation

The operations usually take around one and a half hours. Giving the anaesthetic takes about half an hour, and recovery before going back to the ward takes another half an hour to an hour.

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### Shoulder and elbow joint replacement

You'll be taken to a recovery room or high-care unit until you're fully awake and the doctors feel that your general condition is stable. Then you'll be taken back to the ward.

Sometimes the local anaesthetic from the operation wears off in the middle of the night. This can cause disturbed sleep and tiredness. You'll probably be given painkillers before you go to sleep to make sure you'll be more comfortable. The drip and any drains are usually removed within 24 hours. After that you'll be able to start gently moving your arm again.

You'll usually be in hospital for two to three nights after your surgery. During this time medical, nursing, physiotherapy and occupational therapy staff will be involved in your care. You'll be given drugs after the operation to keep your arm as free from pain as possible. These may include:

- local anaesthetic
- patient-controlled analgesia (PCA) – a system where you can control your own supply of painkiller going into a vein by pressing a button
- painkilling injections or tablets.





X-rays of your new joint will be taken during your stay in the hospital. Your arm will be in a sling or splint to protect it. If a tube was placed in the wound during the operation to allow blood to drain out, it'll normally be removed after a day (this isn't painful and is usually done on the ward).

It's important during the first few days after your surgery that you keep your hand and forearm raised (preferably above the level of your heart) and exercise your fingers on a regular basis. These exercises are simple to do and include making a full fist and stretching your fingers.

If you had a shoulder replacement, you'll be in a sling to support your shoulder. You may need to keep it on for up to four weeks but different surgeons have different procedures.

After an elbow replacement, some surgeons use a plaster support (called a slab) behind the elbow to keep it in a fairly straight position for a few days.

You won't be able to move your elbow in the slab, but once it's removed you can start moving your elbow again.

## **Physiotherapy and occupational therapy**

Your physiotherapist will see you in hospital after the operation to help get you moving and advise you on exercises to strengthen your muscles.

Either your physiotherapist or occupational therapist will tell you the dos and don'ts after your surgery. It's very important to follow this advice.

In the case of elbow replacement, it's best to avoid extreme movements until the wound is healed – which is usually within 10 days of the surgery.

Before you leave hospital, the occupational therapist will assess your physical ability and your circumstances at home, and they may provide you with equipment if you need it.

**!** Because there are several different types of shoulder and elbow surgery, there's no specific method of aftercare. Post-operative care differs between procedures, or between units/surgeons, so we can't recommend specific exercise plans. We suggest that you discuss with your surgeon what to expect after the operation.

**Most people are ready to leave hospital within two to three days.**



## Going home

How soon you can go home depends on how well the wound is healing and whether you'll be able to get about safely.

You'll need to attend the outpatients' department, usually two weeks after the operation, for a routine check-up to make sure your recovery is going well and your wound is healed. You may also be offered outpatient physiotherapy if your doctors feel that this will help your recovery.

If you stopped taking any of your regular drugs or had to alter the dose before the operation, it's very important to talk to your rheumatologist or other healthcare professional for advice on when you should restart your medication.

## Looking after your new joint

If you had both sides of your shoulder replaced (total shoulder replacement), you should avoid heavy loads to help

your new joint last. This is especially important if you've had a reverse anatomy arthroplasty.

After elbow replacement surgery, you shouldn't lift objects heavier than a small bag of sugar for the rest of your life. The current available and recommended artificial elbow joints aren't designed for any heavier work and you could reduce the life of these joints by over-stressing them. This will mean the joint implant may fail sooner than expected.

## Getting back to normal

Some patients spend longer in rehab than others. Usually after six weeks the pain will have eased enough for you to lift your arm and perform daily activities such as dressing, feeding and washing yourself.

## Can I work and drive afterwards?

You'll be able to return to work after your joint replacement, but this may take up to three months depending on the type of work you do.



Heavy manual activities aren't recommended at any time following shoulder or elbow replacements. This is because heavy activity can loosen the replaced parts in the bone and damage the artificial joint.

You'll be able to drive after your joint replacement as long as you can safely control the vehicle and do an emergency stop. It's important to check with your insurance company, and you need to be confident that you can control the vehicle at all times.

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**i See Arthritis Research UK booklets**

*Everyday living and arthritis;  
Work and arthritis.*

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## What are the possible complications of shoulder or elbow joint replacement surgery?

As with any operation, a very small number of people may have problems after a shoulder or elbow joint replacement. Most of these problems are quite minor and can be treated easily. The main problems include:

- infection
- loosening of the replacement parts
- fracture of the bone during or after the operation
- poor healing of the wound
- wound haematoma (bleeding)

**You'll be able to drive after your joint replacement as long as you can safely control the vehicle.**

- nerve injury resulting in temporary or, rarely, permanent loss of function.

The risks need to be taken into account when deciding whether to have the operation. You should discuss this with your surgeon beforehand. In most cases, infections can be cleared up with tablets or with injections of antibiotics directly into a vein (intravenous antibiotics), but in some more serious situations you may need to have a further operation to treat the infection and replace the components.

- !** Your orthopaedic surgeon will discuss all these possible complications with you in detail before asking you to give written consent to the procedure. You'll be able to ask any questions addressing any concerns you may have at this stage and prior to the operation itself.





## How long will my joint replacement last?

There's a very good chance that your shoulder or elbow replacement will last for 10 years. After this time it may loosen and wear out. A second joint replacement (revision surgery) may then be possible, although it's usually less effective in easing symptoms.

### Revision surgery

In a revision operation, the original components will be removed, along with any cement that may have been used. The shaft of the humerus will often have become thinner by the time revision surgery is needed, and because further bone is removed during the operation, the humerus is more prone to fracture.

If the original surgery was a shoulder resurfacing operation, revision surgery is usually a little easier because less bone will have been removed in the first operation. In this case, the component forming the new bone surface is usually replaced with a stemmed component.

## Research and new developments

The number of reverse shoulder arthroplasty surgeries has increased dramatically over recent years. It's not clear how long this type of joint replacement lasts, and this is currently being studied.



## Glossary

**Anaemia** – a shortage of haemoglobin (oxygen-carrying pigment) which makes it more difficult for your blood to carry oxygen around your body. It can be caused by some rheumatic diseases such as rheumatoid arthritis or lupus, or by a shortage of iron in your diet. It can also be a side-effect of some drugs used to treat arthritis.

**Anaesthetic** – a drug that's used during surgery to stop you feeling any pain. It's given by an anaesthetist. You may be given a local, spinal or general anaesthetic, depending on the type of operation.

**Arthroplasty** – the medical name for a joint replacement operation.

**Cartilage** – a layer of tough, slippery tissue that covers the ends of the bones in a joint. It acts as a shock absorber and allows smooth movement between bones.

**Disease-modifying anti-rheumatic drugs (DMARDs)** – drugs used in rheumatoid arthritis and some other rheumatic diseases to suppress the disease and reduce inflammation. Unlike painkillers and non-steroidal anti-inflammatory drugs (NSAIDs), DMARDs treat the disease itself rather than just reducing the pain and stiffness caused by the disease. Examples of DMARDs are methotrexate, sulfasalazine and leflunomide. Other anti-TNF drugs such as gold, infliximab, etanercept and adalimumab can also be used if you still have active symptoms despite being treated with DMARDs.

**Electrocardiogram (ECG) scan** – a test that records the electrical activity of the heart using a machine called an electrocardiograph. The aim of an ECG is to detect unusual heart rhythms and to identify heart problems.

**Ligaments** – tough, fibrous bands which hold two bones together in a joint.

**Non-steroidal anti-inflammatory drugs (NSAIDs)** – a large family of drugs prescribed for different kinds of arthritis that reduce inflammation and control pain, swelling and stiffness. Common examples include ibuprofen, naproxen and diclofenac.

**Occupational therapist** – a trained specialist who uses a range of strategies and specialist equipment to help people to reach their goals and maintain their independence by giving practical advice on equipment, adaptations or by changing the way they do things (such as learning to dress using one-handed methods following hand surgery).

**Orthopaedic surgeon** – a surgeon who specialises in treating problems affecting the bones, joints and other structures involved in making the body move. Treatments offered include joint replacements and surgical repairs to tendons.

**Physiotherapy** – a therapy given by a trained specialist (physiotherapist) who helps to keep your joints and muscles moving, helps ease pain and keeps you mobile.

**Rheumatoid arthritis** – an inflammatory disease affecting the joints, particularly



the lining of the joint. It most commonly starts in the smaller joints in a symmetrical pattern – that is, for example, in both hands or both wrists at once.

**Rheumatologist** – a specialist with an interest in autoimmune diseases and diseases of joints, bones and muscles.

**Tendon** – a strong, fibrous band or cord that anchors muscle to bone.

**Ultrasound scan** – a type of scan that uses high-frequency sound waves to examine and build up pictures of the inside of the body.

## Where can I find out more?

If you've found this information useful you might be interested in these other titles from our range:

### Conditions

- *Osteoarthritis*
- *Rheumatoid arthritis*
- *What is arthritis?*

### Therapies

- *Meet the rheumatology team*
- *Occupational therapy and arthritis*
- *Physiotherapy and arthritis*

### Self-help and daily living

- *Everyday living and arthritis*
- *Work and arthritis*

### Drug leaflets

- *Drugs and arthritis*
- *Local steroid injections*
- *Non-steroidal anti-inflammatory drugs (NSAIDs)*
- *Painkillers (analgesics)*

You can download all of our booklets and leaflets from our website or order them by contacting:

### Arthritis Research UK

Copeman House, St Mary's Court  
St Mary's Gate, Chesterfield  
Derbyshire S41 7TD  
Phone: 0300 790 0400  
[www.arthritisresearchuk.org](http://www.arthritisresearchuk.org)

### Related organisations

The following organisations may be able to provide additional advice and information:

### Arthritis Care

Floor 4, Linen Court, 10 East Road  
London N1 6AD  
Phone: 020 7380 6500  
Helpline: 0808 800 4050  
Email: [info@arthritiscare.org.uk](mailto:info@arthritiscare.org.uk)  
[www.arthritiscare.org.uk](http://www.arthritiscare.org.uk)

Offers self-help support, a helpline service (on both numbers above), and a range of leaflets on arthritis.

Links to sites and resources provided by third parties are provided for your general information only. We have no control over the contents of those sites or resources and we give no warranty about their accuracy or suitability. You should always consult with your GP or other medical professional.

**Please note:** We've made every effort to make sure that this content is correct at time of publication. If you would like further information, or if you have any concerns about your treatment, you should discuss this with your doctor, rheumatology nurse or pharmacist.

## Notes

## Notes



## We're here to help

Arthritis Research UK is the charity leading the fight against arthritis.

We're the UK's fourth largest medical research charity and fund scientific and medical research into all types of arthritis and musculoskeletal conditions.

We're working to take the pain away for sufferers with all forms of arthritis and helping people to remain active. We'll do this by funding high-quality research, providing information and campaigning.

Everything we do is underpinned by research.

We publish over 60 information booklets which help people affected by arthritis to understand more about the condition, its treatment, therapies and how to help themselves.

We also produce a range of separate leaflets on many of the drugs used for arthritis and related conditions. We recommend that you read the relevant leaflet for more detailed information about your medication.

Please also let us know if you'd like to receive our quarterly magazine, *Arthritis Today*, which keeps you up to date with current research and education

news, highlighting key projects that we're funding and giving insight into the latest treatment and self-help available.

We often feature case studies and have regular columns for questions and answers, as well as readers' hints and tips for managing arthritis.

### Tell us what you think

Please send your views to:

**[feedback@arthritisresearchuk.org](mailto:feedback@arthritisresearchuk.org)**

or write to us at:

Arthritis Research UK, Copeman House, St Mary's Court, St Mary's Gate, Chesterfield, Derbyshire S41 7TD

A team of people contributed to this booklet. The original text was written by consultant trauma and orthopaedic surgeon John Williams, who has expertise in the subject. It was assessed at draft stage by specialist registrar in trauma and consultant orthopaedic surgeon Amar Rangan and clinical specialist physiotherapist Colin Waldoock. An **Arthritis Research UK** editor revised the text to make it easy to read, and a non-medical panel, including interested societies, checked it for understanding. An **Arthritis Research UK** medical advisor, Prof. Mark Wilkinson, is responsible for the content overall.

## Get involved

**You can help to take the pain away  
from millions of people in the UK by:**

- volunteering
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- taking part in a fundraising event
- making a donation
- asking your company to support us
- buying products from our online and high-street shops.

To get more **actively involved**, please  
call us on **0300 790 0400**, email us at  
**[enquiries@arthritisresearchuk.org](mailto:enquiries@arthritisresearchuk.org)**  
or go to  
**[www.arthritisresearchuk.org](http://www.arthritisresearchuk.org)**



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Registered Charity No 207711  
© Arthritis Research UK 2011  
Published December 2013 2056/SHEL/13-1

