Hand and wrist surgery

This booklet provides information and answers to your questions about these surgical procedures.
What is hand and wrist surgery?

For most people with arthritis-related problems in the hands or wrists, surgery is unnecessary. But if you’re facing hand or wrist surgery you’ll probably have lots of questions on your mind. In this booklet we’ll explain when surgery might be needed and what you can expect from the process. We’ll also look at what happens before and after surgery and suggest where you can find out more.

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

www.arthritisresearchuk.org
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Do I need surgery?
Most people with arthritis-related problems in their hands or wrists don’t need surgery. The decision whether to operate will be based on:

- the severity of symptoms (pain or loss of hand function)
- the needs of the patient
- response to other treatments.

What are the common types of hand and wrist surgery?
The following operations can help with hand or wrist problems:

- carpal tunnel release
- Dupuytren’s contracture fasciectomy
- trigger finger release
- tendon repair
- ganglion removal
- knuckle (MCP joint) replacement
- thumb joint surgery
- wrist joint surgery
  - wrist fusion
  - wrist joint replacement.

What are the benefits?
The benefits of having surgery include:

- pain can be much reduced
- improved hand function
- appearance of hands can be improved (not always the case depending on the procedure).

What are the disadvantages?
The disadvantages of having surgery include:

- some operations restrict joint movement
- replacement joints aren’t as hard-wearing
- complications of surgery.
What are the possible complications?

Every possible care is taken to prevent complications, but in a few cases these do happen.

They may include:

- infections
- stiffness
- haematoma (bleeding)
- reduced function.
How the hand and wrist work

Our hands play a very important part in everyday activities, and if we’re to lead an active, independent life the joints in our hands need to work properly. We also care about how our hands look because they’re always on view and we use them to help us communicate when we meet and talk to people.

This booklet describes how the hand and wrist work, the common musculoskeletal and arthritis-related problems that occur, the type of surgery carried out to treat these conditions and what you should expect if you need an operation.

The normal structure of the hand and wrist is shown in Figure 1.

The movement and power are controlled by muscles and tendons in the hand and forearm:

- The **flexor** group, on the inside or front of the arm, control bending of the fingers and wrist – these pass over the front of the wrist and are held in place by a strong fibrous band called the flexor retinaculum, or carpal tunnel ligament.
- The **extensors** on the outside or back of the forearm allow the hand to open up.

![Figure 1: The normal structure of the hand and wrist](Image)
• Small muscles in the hand itself (the lumbricals and interossei) allow fine movement.

The tendons in the hand are covered by a layer of synovium, the same tissue that lines the joints. The tendon and synovium are covered by a tendon sheath, which is a bit like the protective covering on the brake cable of a bicycle.

The sense of touch in the hand is supplied by two main nerves, the median or carpal tunnel nerve and the ulnar or ‘funny bone’ nerve. The median nerve passes under the carpal tunnel ligament and supplies sensation to the majority of the hand (from the thumb to half of the ring finger). It also provides power to muscles at the base of the thumb. The ulnar nerve supplies sensation to the little finger and half the ring finger and power to all of the other small muscles in the hand.

There are also two arteries (radial and ulnar) that supply blood to the hand. They can both be felt on the front of your wrist. The radial artery (nearer the thumb) is often felt to take your pulse. The ulnar artery on the opposite side of the wrist is much more difficult to feel.

Do I need surgery?
For most people with musculoskeletal and arthritis-related problems in their hands or wrists, surgery is unnecessary. The decision whether to operate depends on a number of factors:
• the severity of symptoms (pain or loss of hand function)
• the needs of the patient
• response to other treatments, including drugs.

Surgery is rarely carried out to improve the look of the hands, although an improvement in their appearance may be a welcome additional benefit.

⚠ You may feel nervous, stressed or scared if you’ve been told you need surgery. Finding out as much as you can about the operation and understanding the process will help you feel less anxious and more in control.

Understanding what’s involved in your operation will help you feel more relaxed and in control of your treatments.
What are the benefits of hand and wrist surgery?
The main benefits of hand and wrist surgery are:
• pain can be much reduced
• improved hand function
• appearance of hands can be improved (although this isn’t always the case, depending on the procedure).

What are the disadvantages of hand and wrist surgery?
There are some disadvantages to hand and wrist surgery:
• replacement joints, e.g. new knuckle joints, aren’t as hard-wearing or durable as natural joints
• some operations restrict joint movement
• complications of surgery, e.g. swelling, stiffness or infection.

What are the common types of hand and wrist surgery?
Surgery can help with a number of hand and wrist conditions:

Carpal tunnel release
Carpal tunnel syndrome occurs when pressure is put on the median nerve as it passes through the wrist under the carpal tunnel ligament (see Figure 1). This results in pins and needles and numbness in the fingers. Surgery is sometimes needed to relieve pressure on the nerve.
In the operation, the surgeon is able to relieve the pressure by dividing the carpal tunnel ligament. This is often done under local anaesthetic, where only your arm is made numb, which means that an overnight stay in hospital isn’t usually needed. Following the operation you may need to wear a bulky bandage on your wrist and hand for a week or two. Stitches are removed between 10–14 days. During this time you’ll have full use of your fingers and thumb, although you should avoid heavy tasks.

It’s important that you move your fingers to prevent the nerve and tendons becoming caught up in the scar tissue which may form after the operation. People who have this operation will normally recover from the effects of surgery in less than a month. Improvements in sensation may take longer to recover, especially if you’ve had carpal tunnel syndrome for a long time. In a small number of people, the scar may ache and be sensitive for some months, but this usually settles without further treatment.

Trigger finger release
In this condition the affected finger can often bend normally but becomes stuck in a curled position. This is caused by the tendon which allows the finger to bend becoming thickened, so that it becomes stuck in the tunnel where the tendon enters the finger. With some effort or help from your other hand, the finger will ‘trigger’ straight – this gives the condition its name.

A local injection helps in most cases. If this fails, a minor day-case operation (with no overnight stay in hospital) may be needed to open the tunnel and free the tendon. The usual recovery time is 1–2 weeks.

Tendon repair
As mentioned above, there are two main groups of tendons that control the hand and wrist – the flexor tendons, which enable you to grip and to curl the fingers into a fist, and the extensor tendons, which open the fingers up.
Tendon rupture in the hand and wrist (see Figure 2) isn’t common, and when it occurs it’s usually as a result of rheumatoid arthritis or other types of inflammatory arthritis.

Early treatment is needed if surgery is to be successful and other tendons protected from rupture. In many cases undamaged flexor tendons from other fingers are used to repair the ruptured tendon. If the tendon has ruptured because it has rubbed against rough bone in the wrist, then the bone will have to be smoothed or removed to prevent the repaired tendons from rupturing again.

Repaired tendons need at least 6 weeks to heal. During this time you won’t be able to use your hand at all and must only do the exercises shown to you by the hand therapist. You’ll have to wear a splint on your hand day and night to protect the healing tendons from damage. It’s important that the splint and the movement in your fingers are checked regularly. This usually means seeing a therapist frequently, and it’ll be around 2–3 months before recovery is complete.

See Arthritis Research UK booklets
Rheumatoid arthritis; Splints for arthritis of the wrist and hand; What is arthritis?

Ganglion removal
Joints and tendons are lubricated by a thick fluid called synovial fluid. Sometimes this fluid leaks out of the joint or tendon sheath. The fluid then concentrates and becomes very thick and sticky and may form pockets of fluid (cysts), known as ganglions. These ganglions feel firm or hard when pressed. They’re commonly found on the back of the wrist, but they can occur elsewhere. They’re commonly associated with osteoarthritis when seen on the tips of the backs of the fingers.

Ganglions sometimes disappear on their own, but if they become painful or restrict movement the fluid can in some cases be removed using a needle.
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Sometimes minor surgery is needed to remove them, although this might not stop them coming back.

See Arthritis Research UK booklet Osteoarthritis.

Knuckle (MCP joint) replacement
Rheumatoid arthritis of the knuckles (metacarpophalangeal or MCP joints) may cause damage and deformity, with the result that the fingers ‘drift’ sideways away from the thumb (see Figures 3 and 4). This may be very painful and significantly reduce hand function. If the use of the hand is badly affected then surgery can be carried out to replace the knuckles with small artificial joints that act as flexible hinges. This operation reduces pain, improves the positioning of the fingers and therefore improves hand function.

This type of surgery is now performed frequently as day surgery, although some hospitals may recommend an overnight stay. Immediately after the operation the hospital staff will make sure your hand is rested for a few days before the process of rehabilitation is started. A hand therapist will teach you exercises that will help you to move your fingers. These exercises are essential for your recovery and should be practised at home for several months. For several weeks you’ll need to wear a splint during the day between exercises. It may be worn overnight for several months.

It’ll be several months before the hand is strong enough to work properly. Your occupational therapist will advise on adaptations around the home which will help in the recovery period.

Your new joints will never be as hard-wearing as natural joints, so some care will always be needed using the hand. Your occupational therapist or physiotherapist will advise you on how to take care of the new joint(s).

The MCP joint of the thumb is often affected by rheumatoid arthritis, but it’s unusual to replace it with an artificial one. Instead, a surgeon may deliberately stiffen the joint, allowing the joints next to it to make up for its loss of movement. This operation is usually effective at relieving pain and improving pinching movements.

See Arthritis Research UK booklets Occupational therapy and arthritis; Physiotherapy and arthritis.

Thumb joint surgery
Trapeziectomy (removal of the trapezium)
Arthritis in the joint at the base of the thumb may cause pain and interfere with simple tasks. In most people the pain will go through good and bad phases, and the condition will often become painless if given enough time. But for some people the pain persists and an operation is needed.
Hand deformities caused by severe rheumatoid arthritis which could be helped by joint surgery.

The hand before and after surgery to replace the knuckles (MCP joints) with artificial joints.

The operation involves the removal of the joint and affected bone (the trapezium). Sometimes the space this leaves is filled with a silicone rubber spacer or a metal and plastic joint. Surgeons may also use tissue from the surrounding tendons to fill the space. After the operation the base of the thumb is put in a splint for 6 weeks. It’ll take several months and exercises to restore movement and to strengthen the thumb before it feels comfortable.

**Wrist joint surgery**
Arthritis in the wrist joint is common in people with rheumatoid arthritis. Some people may need an operation if the joint is very painful and not responding to other treatment. If the wrist is badly affected, moving the hand up, down and sideways may be very painful and it’ll be very difficult to twist the forearm to place the palm of the hand upwards (this action is called supination).

There are two surgery options:

**Wrist fusion**
Your surgeon may suggest this operation if the wrist is badly damaged. The operation usually eliminates pain and increases strength but prevents the up and down movement in the wrist. However, the rotation or supination of the hand is usually improved.

Following the operation, some tasks will be difficult at first – including cleaning yourself and getting dressed. However, your occupational therapist will help you overcome these problems. The hospital stay only lasts a few days. After the operation, you’ll need to keep the wrist still for 6–8 weeks in a lightweight cast, but your fingers will be free for light activities such as eating or writing.
Wrist joint replacement
This is not yet a common operation. The aim is to keep some wrist movement and eliminate pain. You’ll only be in hospital overnight but it’ll be several months before recovery is complete. After the operation the wrist is kept still for 2–6 weeks before you start rehabilitation, which is aimed at improving the movement in the wrist and function in your hand. The physiotherapist or hand therapist will explain what you can and can’t do with the replacement joint and how to keep it in good condition.

How should I prepare for surgery?

Pre-admission clinic
Before the operation you’ll be asked to sign a consent form, which gives the surgeon permission to carry out the treatment. It’s important to ask any questions you may still have at this stage. Ask the doctor, nurse or therapist to explain anything you don’t understand. A doctor or nurse will check your general health to ensure there won’t be problems with a general anaesthetic, if this is being used.

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.

Surgery can be performed using either a local or general anaesthetic, and your surgeon will discuss the best option with you. If a local anaesthetic is chosen you’ll be fully awake during the operation, but you won’t experience any pain or discomfort. If the operation needs a general anaesthetic you’ll usually be in hospital for a little longer. This will depend on the type of operation and your own health, as well as home or other circumstances that might affect your recovery. You should talk to the doctor if you have any worries.

Remember to ask the doctor, nurse or therapist to explain anything you don’t understand about your operation. This will help if you’re feeling a little worried.
What will my recovery involve?

After the operation
Different surgeons have different ideas about the treatment required after an operation. This is affected by the type of operation and your own physical health. Support will be given by the nurse, physiotherapist or hand therapist. After you’ve been discharged from hospital an appointment will be made for you to come in as an outpatient so that your progress can be checked. Sometimes your GP will help with this aftercare. A district nurse may be asked to remove stitches and change dressings.

Because there are many different types of hand and wrist surgery, there’s no specific method of aftercare. Your post-op management will differ between procedures or between units/surgeons. We suggest that you discuss with your surgeon what to expect after the operation.

Getting back to normal
Very often after operations on the hand and wrist it’s necessary to wear splints to protect the healing tissues and bone, which can make everyday tasks difficult. To minimise these difficulties it’s a good idea to make preparations before the operation. Simple things like choosing clothes with wide arms, stocking up the freezer or arranging to have some help in the home will all make it easier to manage one-handed. It’s a good idea to arrange help with transport, as you’ll probably have to attend hospital regularly to see your doctor or therapist.

An occupational therapist will be able to advise you before your operation if you have any concerns about coping at home afterwards.

See Arthritis Research UK booklet
Everyday living and arthritis.

What are the possible complications of hand and wrist surgery?
For people who are generally healthy the risk of a serious complication from an operation is very small. Every possible care is taken to prevent complications but in a few cases these do happen. For example, some people can develop an infection, but this can be treated with antibiotics. Some people may develop swelling and stiffness, but physiotherapists and occupational therapists can help with exercises and other advice.

Bleeding and wound haematoma
A wound haematoma is when blood collects in a wound. It’s normal to have a small amount of blood leak from the wound after any surgery. Usually this stops within a couple of days. But occasionally blood may collect under
the skin, causing a swelling. This can either discharge itself, causing a larger but temporary leakage from the wound usually a week or so after surgery, or it may require a smaller second operation to remove the blood collection. Drugs like aspirin and antibiotics can increase the risk of haematoma after surgery.

⚠️ Remember, surgery is not usually necessary for most people who have arthritis in their hands or wrists. But if you do need surgery, it’s usually very helpful in reducing pain and improving hand function.
Glossary

Carpal tunnel – the passageway within the wrist through which the flexor tendons, which bend the fingers, and the median nerve pass.

Hand therapist – a therapist who restores hand function and can assist with emotional and psychological support. Hand therapists also treat other upper limb disorders that affect hand function.

Hand therapy – the management of hand injuries and disorders using physical methods such as exercise, splinting and looking after wounds.

Ligaments – tough, fibrous bands anchoring the bones on either side of a joint and holding the joint together. In the spine they are attached to the vertebrae and restrict spinal movements, therefore giving stability to the back.

Median nerve – the nerve that controls movement of the thumb and carries information back to the brain about sensations felt in the thumb and fingers.

Occupational therapist – a therapist who helps you to get on with your daily activities (e.g. dressing, eating, bathing) by giving practical advice on aids, appliances and altering your technique. They are often involved in providing your post operative splints and rehabilitation after the operation, and helping you get back to normal life including work.

Osteoarthritis – the most common form of arthritis (mainly affecting the joints in the fingers, knees, hips), causing cartilage thinning and bony overgrowths (osteophytes) and resulting in pain, swelling and stiffness.

Physiotherapist – a trained specialist who helps to keep your joints and muscles moving, helps ease pain and keeps you mobile.

Rheumatoid arthritis – a common 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.

Synovium – the inner membrane of the joint capsule that produces synovial fluid.

Tendon – a strong, fibrous band or cord that anchors muscle to bone.
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**
- *Carpal tunnel syndrome*
- *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*
- *Splints for arthritis of the wrist and hand*

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

**Arthritis Research UK**
PO Box 177
Chesterfield
Derbyshire S41 7TQ
Phone: 0300 790 0400
www.arthritisresearchuk.org

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

**Arthritis Care**
18 Stephenson Way
London NW1 2HD
Phone: 020 7380 6500
Helpline: 0808 800 4050
www.arthritiscare.org.uk

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

**NRAS (National Rheumatoid Arthritis Society)**
Unit B4 Westacott Business Centre
Westacott Way, Littlewick Green
Maidenhead SL6 3RT
Phone: 0845 458 3969
Helpline: 0800 298 7650
www.nras.org.uk

A national charity which focuses specifically on rheumatoid arthritis.
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 of our booklet

Please send your views to: feedback@arthritisresearchuk.org or write to us at: Arthritis Research UK, PO Box 177, Chesterfield, Derbyshire S41 7TQ.

A team of people contributed to this booklet. The original text was written by Prof. John Stanley, who has expertise in the subject. It was assessed at draft stage by orthopaedic hand and wrist surgeon Meg Birks, consultant and honorary clinical senior lecturer in rheumatology Dr Fraser Birrell, clinical specialist occupational therapist Sarah Bradley and consultant rheumatology nurse Diana Finney. 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, 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
- Supporting our campaigns
- Taking part in a fundraising event
- Making a donation
- Asking your company to support us
- Buying gifts from our catalogue

To get more actively involved, please call us 0300 790 0400 or e-mail us at enquiries@arthritisresearchuk.org

Or go to:
www.arthritisresearchuk.org