

Hand and wrist surgery

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

Arthritis Research UK produce and print our booklets entirely from charitable donations.

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.

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At a glance

Hand and wrist surgery

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:

- how bad your symptoms are (pain or loss of hand function)
- your needs
- your 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.

Surgery isn't often needed for people with arthritis, but it can help ease pain and improve hand function.

What are the possible advantages?

The advantages of having surgery can include:

- less pain
- improved hand function
- improved appearance of hands.

What are the possible disadvantages?

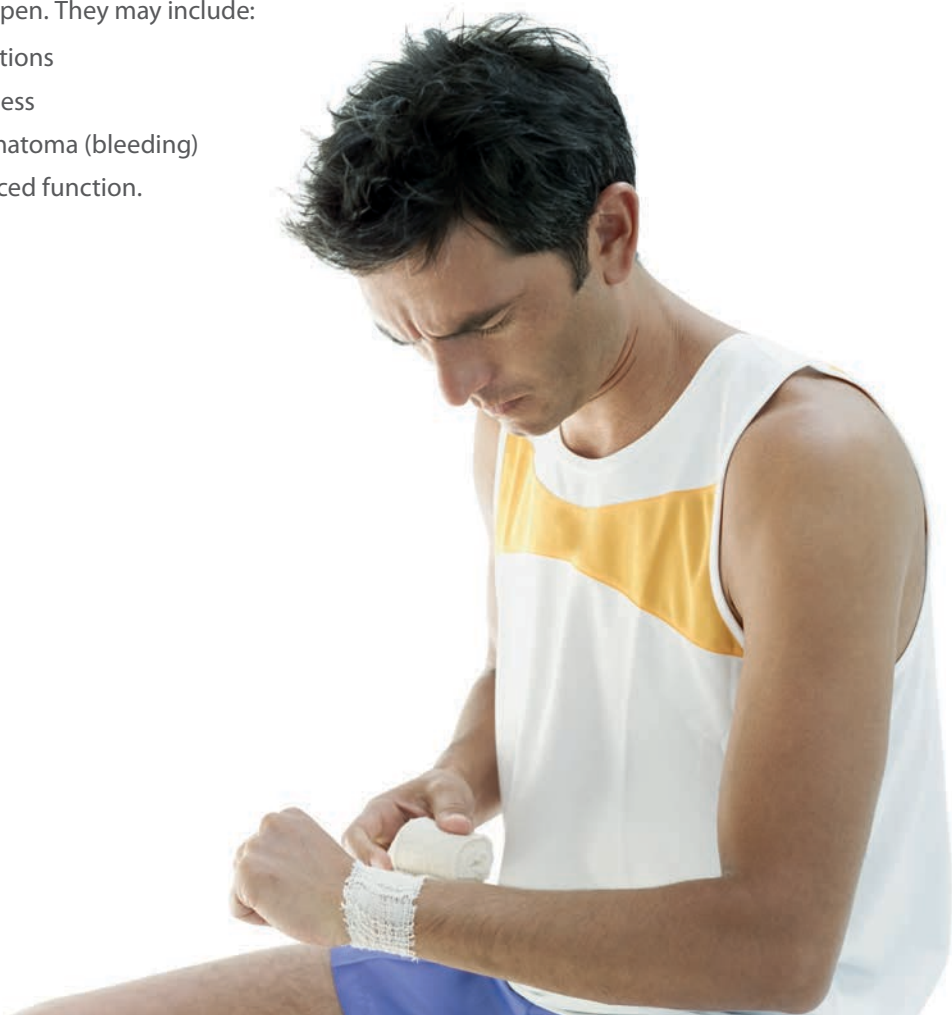
The disadvantages of having surgery can include:

- reduced joint movement, depending on the operation
- replacement joints wearing down more quickly than natural joints
- possible complications.

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 do the hands and wrists work?

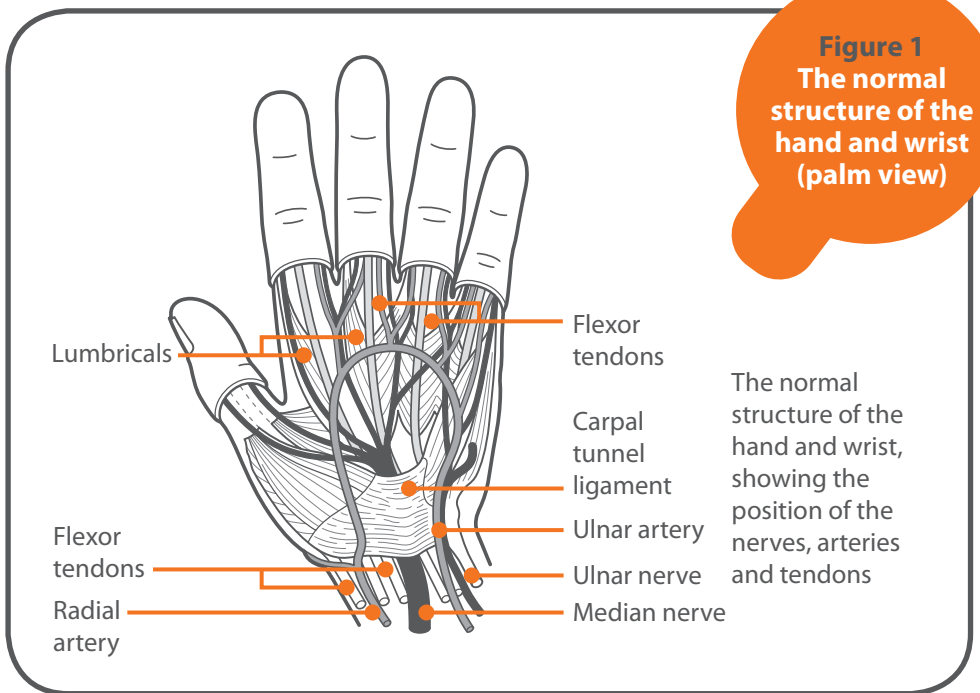
Our hands play a very important part in everyday activities, and if we're to lead an active, independent life the joints in our hands need to work properly. We also care about how our hands look because they're always on view and we use them to help us communicate when we meet and talk to people.

This booklet describes how the hands and wrists 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.



- 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 gives feeling to most 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 gives feeling to the little finger and half the ring finger, and it powers all of the other small muscles in the hand.

There are also two arteries (radial and ulnar) that supply blood to the hand. You can feel these on the palm-side 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 will depend on a number of factors:

- how bad your symptoms are (pain or loss of hand function)
- your needs
- your response to other treatments, including drugs, splinting and exercise.

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

- ❗ 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 calmer 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 possible advantages of hand and wrist surgery?

The main advantages of hand and wrist surgery can be:

- long-lasting pain relief
- better hand function
- better-looking hands (although this isn't always the case, depending on the procedure).

What are the possible disadvantages of hand and wrist surgery?

There can be some disadvantages to hand and wrist surgery:

- Replacement joints, for example new knuckle joints, aren't as hard-wearing or long-lasting as natural joints.
- Scars are unavoidable at the site of the cut (incision).
- Some operations reduce joint movement.
- There are possible complications of surgery, for example swelling, stiffness or infection.
- Occasionally small nerves around the incision can be damaged, leading to patches of numbness.

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 happens when pressure is put on the median nerve as it passes through the wrist under the carpal tunnel ligament (see Figure 1). This causes pins and needles and numbness in the fingers. Surgery is sometimes needed to ease pressure on the nerve.



In the operation, the surgeon is able to ease the pressure by splitting the carpal tunnel ligament. This is often done under local anaesthetic, where only your arm is made numb, which means that you probably won't need to stay in hospital overnight. Following the operation you may need to wear a bulky bandage on your wrist and hand for a week or two. Stitches are removed after 10–14 days. During this time you'll be able to use your fingers and thumb, although you should avoid heavy tasks.

It's important that you move your fingers to reduce swelling and to prevent the nerve and tendons becoming caught up in the scar tissue which may form after the operation. You should recover from the effects of surgery in less than a month, although it may take longer to get all the feeling back in your hand, 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.

i See Arthritis Research UK booklet *Carpal tunnel syndrome*.

Dupuytren's contracture fasciectomy

Dupuytren's contracture is a condition caused by tissue forming in the palm of the hand and the fingers. It's often painless and may only cause skin nodules, but it can also form bands that make the fingers curl down into the palm

of the hand. You may need surgery to remove the tissue and release the fingers, although it's not always possible to make this completely better.

The operation is generally performed as a day case, so you won't need to stay in hospital. It'll take two to three weeks for the skin to heal and up to 12 weeks before you have full use of your hand. You'll be seen by a hand therapist who will start you on exercises and monitor your movement and function. A night extension splint may be made for you, although this won't always be needed.

Trigger finger release

If you have trigger finger, 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 it becomes stuck in the tunnel where the tendon enters the finger. You may need to use your other hand to help straighten your finger, which will 'trigger' straight – this gives the condition its name.

You may be referred to a hand therapist for a splint to be made for you to stop your finger triggering while you're using it. A local steroid injection helps in most cases. If this fails, you may need a minor day-case operation to open the tunnel and free the tendon. You should recover in one to two weeks.

Tendon repair

As mentioned above, there are two main groups of tendons that control the hand and wrist – the flexor tendons, which help

you to grip and to curl your fingers into a fist, and the extensor tendons, which open your fingers up. Sometimes these tendons can tear or snap, which is called tendon rupture. 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.

You'll need early treatment if surgery is to be successful and to protect the other tendons in your hand 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, the bone will have to be smoothed or removed to prevent the repaired tendons from rupturing again.

Repaired tendons need at least six 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 your 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, which usually means seeing a hand therapist frequently. It'll be around two to three months before your hand is completely recovered.

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

Ganglion removal

A thick fluid called synovial fluid helps joints and tendons to move smoothly. Sometimes this fluid leaks out of the joint or tendon sheath. The fluid then becomes very thick and sticky, and it may form pockets of fluid (cysts), known as ganglions, which feel firm or hard when pressed. They're often found on the back of the wrist, but they can occur elsewhere. They're commonly associated with

Tendon rupture of the ring finger and little finger extensor tendons stops these fingers from straightening.

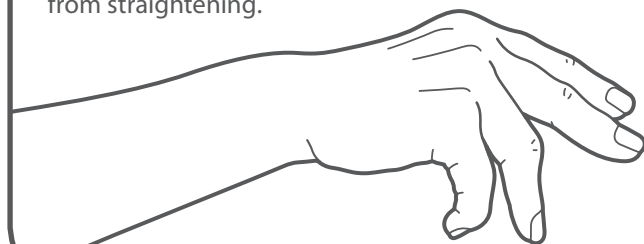


Figure 2
Tendon rupture



osteoarthritis in the tips of the backs of your fingers and in the wrist.

Ganglions sometimes disappear on their own, but if they become painful or reduce movement the fluid can sometimes be drained using a needle.

You may need minor surgery to remove them, although it's likely that they'll come back.

i See Arthritis Research UK booklet *Osteoarthritis*.

Knuckle (MCP joint) replacement

Rheumatoid arthritis of the knuckles (metacarpophalangeal or MCP joints at the base of your fingers) may cause damage and deformity, which can cause your fingers to 'drift' sideways away from the thumb (see Figures 3 and 4). This may be very painful and greatly reduce hand function. If it becomes difficult to use your hand, surgery can be carried out to replace the knuckles with small artificial (man-made) joints that act as flexible hinges. This operation reduces pain and improves the positioning of the fingers, and so improves hand function.

Knuckle replacement is now often performed as day surgery, although some hospitals may recommend that you stay overnight. Straight after the operation the hospital staff will make sure your hand is rested for a few days before you begin rehabilitation. A hand therapist will teach you exercises that will help you to

move your fingers. You need to do these exercises for several months to help your recovery. You'll need to wear a splint for several weeks during the day when you're not exercising, and you may need to wear it overnight for several months. An occupational therapist can discuss ways of managing at home one-handed.

Your new joints won't be as hard-wearing as natural joints, so you'll always need to take some care when you use your hand. Your hand therapist will advise you on how to look after your 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 easing pain and improving pinching movements.

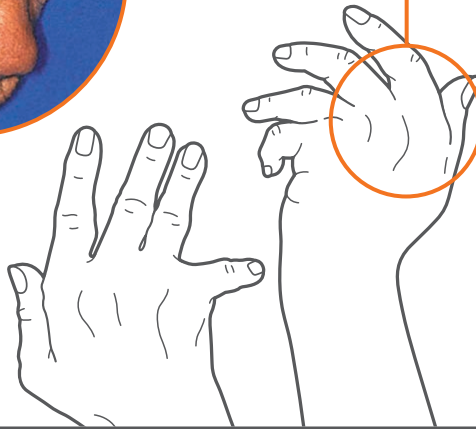
i See Arthritis Research UK booklets *Looking after your joints when you have arthritis; Occupational therapy and arthritis; Physiotherapy and arthritis*.

Thumb joint surgery

Trapeziectomy (removal of the trapezium)

Your trapezium is a bone in your wrist at the base of your thumb. If you have arthritis in the joint here, it may cause pain and make simple tasks more difficult. In most people the pain will go through

Figure 3
Knuckle
(MCP joint)
arthritis



Hand deformities caused by severe rheumatoid arthritis which could be helped by joint surgery

Before surgery

After surgery

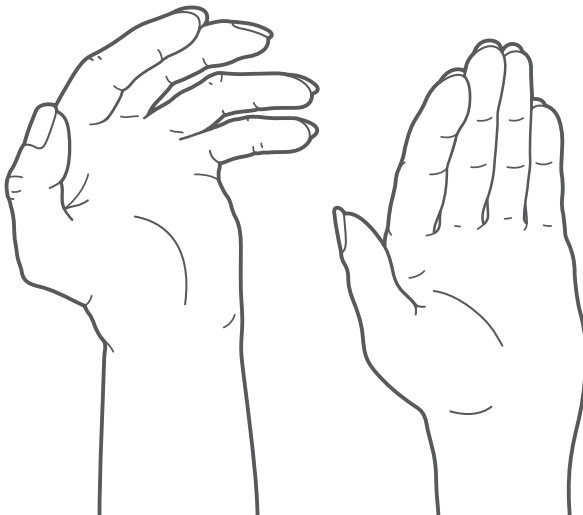


Figure 4
Knuckle
(MCP joint)
arthritis

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

good and bad phases, and the condition will often become painless if given enough time. But if your pain carries on, you may need an operation to remove the joint and your trapezium.

Sometimes surgeons may make sure you can't move your thumb/wrist for a couple of weeks to allow for scar tissue to fill the gap removing the trapezium leaves, or occasionally they use a tendon to fill the space.

After the operation you'll be referred to a hand therapist who'll give you a splint for the base of your thumb. You'll need to wear the splint for six weeks. Your hand therapist will also give you exercises, which you'll need to do for several months to get movement back 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 so the palm of the hand faces upwards (this action is called supination).

There are two surgery options:

Wrist fusion

In a wrist fusion operation, the bones in your wrist are fixed to the bones in your hand. This stops the movement between them in order to reduce pain. Your surgeon may suggest this if the wrist is badly damaged. The operation usually gets rid of pain and increases strength but usually stops you from moving your wrist up and



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down. However, you'll probably find it easier to turn your hand.

Following the operation, you'll need to stay in hospital for a few days. You'll need to keep your wrist protected for six to eight weeks in a lightweight cast, but your fingers will be free for light activities such as eating or writing. You may find some tasks are difficult at first – including cleaning yourself and getting dressed – but your occupational therapist will help you overcome these problems.

Wrist joint replacement

Wrist joint replacement isn't yet a common operation. The aim is to keep some wrist movement and get rid of pain. You'll only be in hospital overnight but it'll be several months before your wrist is completely recovered. After the operation the wrist will be kept protected for two to six weeks before you start rehabilitation, which is aimed at improving the movement in the wrist and function in your hand. Your [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

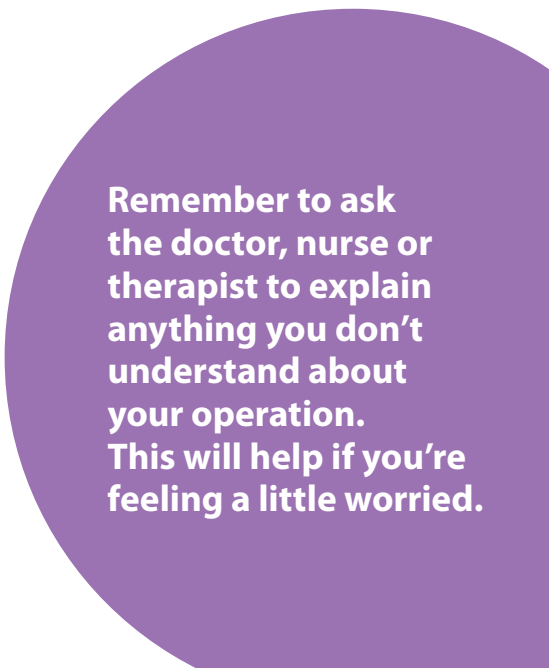
Before the operation you'll be asked to sign a consent form, which gives the surgeon permission to carry out the treatment. It's important to ask any questions you may still have at this stage. Ask the doctor,

nurse or therapist to explain anything you don't understand. A doctor or nurse will check your general health to make sure there won't be any problems with a general anaesthetic, if this is being used.

You should also discuss with your surgeon, anaesthetist or nurse at this pre-admission clinic whether you should stop taking any of your medications or make any changes to the dosage or timings before you have your surgery. Different units may have different advice.

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 your bloodstream.

Surgery can be performed using either a local or general anaesthetic, and your



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.

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 any issues that might affect your recovery – for example, if you live on your own. You should talk to the doctor if you have any worries.

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 health. You should discuss with your surgeon what to expect after the operation. Your nurse, occupational therapist, physiotherapist or hand therapist will be able to offer support. 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 or practice nurse may be asked to remove stitches and change dressings.

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 for advice on when you should restart your medication.

Getting back to normal

After the operation, you may need to wear splints to protect the healing tissues and bone, which can make everyday tasks difficult. To reduce 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.

i See **Arthritis Research UK** booklet *Everyday living and arthritis*.

What are the possible complications of hand and wrist surgery?

If you're 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, hand therapists and occupational therapists can help with exercises and other advice.

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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 isn't 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.

Research and new developments

Arthritis Research UK are currently funding a research project to develop a 'virtual surgery' tool for arthritis-related hand and wrist problems which involves a computer-based program that allows surgeons to make more informed decisions for their patients' treatment.



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 trained specialist who restores hand function and can assist with emotional and psychological support. Hand therapists also treat other upper limb disorders that affect hand function. They're often involved in providing your post-operative splints and rehabilitation, and helping you get back to normal life, including work.

Ligaments – tough, fibrous bands anchoring the bones on either side of a joint and holding the joint together.

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.

Nodule – a small lump of tissue which forms under the skin. Nodules are most common on the elbows, where they're usually painless.

Occupational therapist – a trained specialist who helps you to get on with your daily activities (for example dressing, eating, bathing) by giving practical advice on aids, appliances and altering your technique. They're often involved in providing your post-operative splints and rehabilitation, and can help 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*
- *Looking after your joints when you have 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:

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St Mary's Court

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Derbyshire S41 7TD

Phone: 0300 790 0400

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

www.arthritiscare.org.uk

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

National Rheumatoid Arthritis Society (NRAS)

Unit B4 Westacott Business Centre

Westacott Way, Littlewick Green

Maidenhead SL6 3RT

Phone: 0845 458 3969

Helpline: 0800 298 7650

Email: helpline@nras.org.uk

www.nras.org.uk

A national charity which focuses specifically on rheumatoid 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.



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
or write to us at:
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Chesterfield, Derbyshire S41 7TD

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 occupational therapist in hand therapy Kirsty Bancroft, GPwSI (MSK disorders) Dr Chandu Prasannan and rheumatology and hand therapy occupation therapist Caroline Wood. 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
- supporting our campaigns
- 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** or go to **www.arthritisresearchuk.org**



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