

Carpal tunnel syndrome

This booklet provides information and answers to your questions about this condition.



What is carpal tunnel syndrome?



Carpal tunnel syndrome is a condition that causes pain or aching, tingling or numbness in the affected hand. In this booklet we'll explain more about the condition, the possible causes and what treatments are available.

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.

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At a glance

Carpal tunnel syndrome

What is carpal tunnel syndrome?

Carpal tunnel syndrome is a common condition in which a nerve is squeezed where it passes through the wrist. This nerve, called the median nerve, controls muscles that move your thumb; it also carries information back to the brain about sensations in your thumb and fingers. Treatment is usually successful and, if it's treated early, very few people are left with long-term hand problems.

What are the symptoms?

Symptoms tend to be worse at night and may disturb your sleep. They can include:

- pain, aching, tingling or numbness in the affected hand
- more pain in the thumb, index and middle fingers, though sometimes it can feel like your whole hand is affected
- an ache in your forearm.

Women are more likely to develop carpal tunnel syndrome, but it can affect anyone.

What causes it?

In most cases there isn't an obvious cause. However, possible causes include:

- arthritis of the wrist, particularly from rheumatoid arthritis
- fluid retention – this can affect women during pregnancy
- an underactive thyroid gland
- diabetes.

There is more chance of you developing carpal tunnel syndrome if your job places heavy demands on your wrist or if you use vibrating tools.

How is it diagnosed?

There are a number of ways in which carpal tunnel syndrome can be diagnosed:

- examination of the hand and wrist
 - the thumb, index and middle finger may be insensitive to a gentle touch or pin prick
 - abnormalities or signs of muscle wasting at the base of the thumb
- nerve conduction tests.

What treatments are there?

Treatments can often help, including:

- a resting splint for your wrist – if symptoms are worse at night
- a working splint – if symptoms are brought on by particular activities
- steroid injections
- carpal tunnel release surgery if your symptoms persist despite treatment, or if your hands are weak.



What is carpal tunnel syndrome?

Carpal tunnel syndrome is a condition in which the median nerve is squeezed where it passes through the wrist (see Figure 1). This nerve controls some of the muscles that move the thumb; it also carries information back to the brain about sensations in your thumb and fingers.

When the nerve is squeezed it can cause pain or aching, tingling or numbness in the affected hand. Women are more likely than men to develop carpal tunnel syndrome but the condition affects people of all ages.

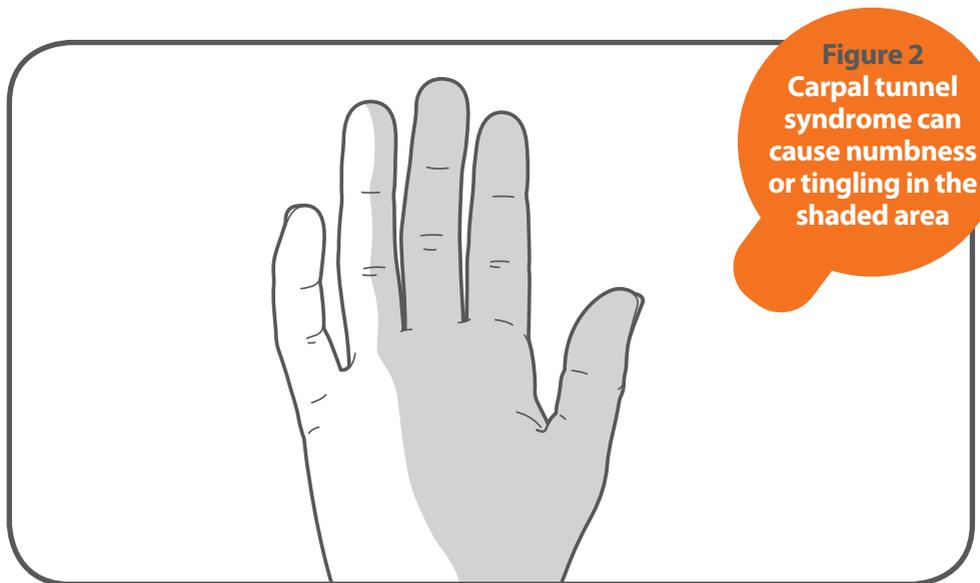
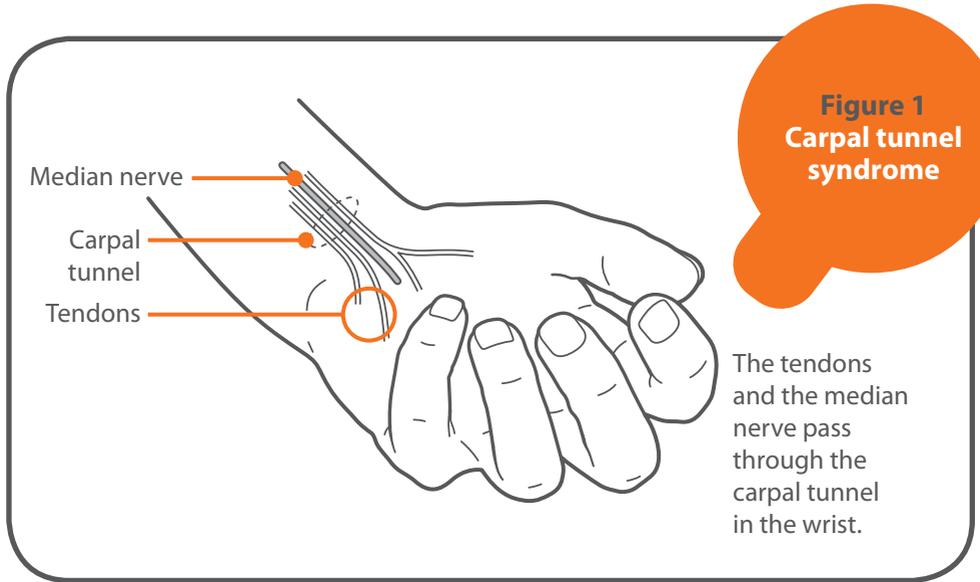
'Carpal' is a medical term that refers to the wrist. A 'syndrome' is a combination of problems which doctors recognise as a particular disease or disorder.

What are the symptoms of carpal tunnel syndrome?

Carpal tunnel syndrome causes pain, aching, tingling or numbness in the hand. It tends to come on gradually, over a period of weeks. The symptoms are usually worse in the thumb, index and middle fingers, but sometimes it may feel like your whole hand is affected (see Figure 2). You may also have an ache in your forearm. It can affect either one or both hands.

The symptoms tend to be worse at night and may disturb your sleep; you may notice it most when you wake up in the morning. Hanging your hand out of bed or shaking it around will often relieve the pain and tingling.

You may not notice the problem at all during the day, though certain activities – such as writing, typing, DIY or housework – can bring on symptoms. However, if the nerve is badly squeezed you may have symptoms throughout the day. Your hand may feel weak, or the fingers numb, or both. You may have a tendency to drop things and you may find that activities which require fine finger movements, like writing or sewing, become more difficult.



Using vibrating tools can increase your risk of developing carpal tunnel syndrome.

What causes carpal tunnel syndrome?

The median nerve is very sensitive to pressure, and it may not be possible to say what the cause is in your particular case. However, some of the possible causes are:

- arthritis of the wrist, particularly from rheumatoid arthritis, if there is swelling of the wrist joint or the tendons that run through the carpal tunnel
- fluid retention – this can affect women during pregnancy or can be related to periods
- an underactive thyroid gland
- diabetes
- a fracture of the wrist leading to narrowing or distortion of the tunnel
- occasionally, some medications can cause it, particularly anastrozole (a treatment for breast cancer).

Your risk of developing carpal tunnel syndrome may be greater if your job places heavy demands on your wrist, or if you use vibrating tools.

i See **Arthritis Research UK booklet** *Work-related joint disorders*.

How is carpal tunnel syndrome diagnosed?

Examination of the wrist

Your doctor will examine your hand and wrist to try to confirm the diagnosis and to assess how severe it is. If the wrist is swollen due to arthritis or tendon swelling, this could be the cause of your symptoms. If you've had the condition for some time there may be signs of muscle wasting at the base of the thumb. If the problem is severe, the thumb, index and middle fingers may be insensitive (numb) to either a gentle touch or a pin prick.

Your doctor may also tap over the median nerve on the palm side of your wrist (Tinel's test) or ask you to bend your palm towards your forearm for up to a minute (Phalen's test). These tests can help to confirm carpal tunnel syndrome, and may set off your symptoms.

Tests

Sometimes the condition can be mistaken for something else. For example, pressure on nerves in the neck due to disc problems or arthritis can cause similar symptoms. A nerve conduction test may help if there is any doubt about the diagnosis or to see how severe the compression of the nerve is. Small electrodes are placed on the skin just above the wrist to stimulate the median nerve. If you have carpal tunnel syndrome there will be a delay before the impulse arrives in the thumb muscles.

The length of the delay can be measured and this will give an indication of how badly the nerve is being squeezed.

What treatments are there for carpal tunnel syndrome?

There are many different treatments which can help people with carpal tunnel syndrome. Importantly, if there is a particular cause for your problem (e.g. underactive thyroid gland, arthritis) then your symptoms may improve simply by treating that.

Your doctor will advise you which treatments are available, and they will help to decide which is most appropriate for you. The decision is usually affected by how severe the compression of the

nerve is. If it's severe and there is weakness of your hand muscles, then it's important to get treatment quickly, and you'll normally be advised to have surgery.

Simple treatments can often help, including:

- a resting splint for your wrist – particularly if your symptoms are worse at night (see Figure 3)
- a working splint – if your symptoms are brought on by particular activities – to hold your wrist slightly extended back.

An occupational therapist or physiotherapist will be able to advise you about the different types of splint. Similarly, some therapists recommend certain exercises of the wrist which might help prevent the median nerve becoming stuck to nearby tendons, and this may improve symptoms.



Figure 3
Sleeping in
a wrist splint
can help

i See Arthritis Research UK booklets
Occupational therapy and arthritis;
Physiotherapy and arthritis; Splints for
arthritis of the wrist and hand.

Drugs

A steroid injection can be helpful, although the effect may wear off after weeks or months. A small quantity of steroid is injected into the carpal tunnel, which helps to reduce any swelling. The injection may be uncomfortable, but it can be very effective. A steroid injection into the wrist joint itself may help if you have arthritis in your wrist.

i See Arthritis Research UK drug leaflet *Local steroid injections.*

Surgery

You may need surgery if there is severe compression of the median nerve or if the numbness and pain doesn't improve with other treatments.

Carpal tunnel release surgery relieves pain by reducing the pressure on the median nerve. Surgery usually takes place as a day-case and you can expect to recover in less than a month. The operation is normally carried out under a local anaesthetic and usually leaves only a small scar.

If you've had carpal tunnel syndrome for a long time – especially if you have muscle-wasting or loss of sensation – the operation may not bring a complete recovery, but the pain should be greatly reduced. For most people surgery is very successful.

i See Arthritis Research UK booklet
Hand and wrist surgery.

Self-help and daily living

No particular diet has been shown to help either to relieve or prevent carpal tunnel syndrome. However, a healthy balanced diet and regular exercise are important for your general health. Yoga has also been shown to improve pain and function in those people with mild symptoms.

If you think your work may be causing your symptoms you should discuss this with your supervisor or an occupational health nurse. If necessary, your local JobCentre Plus office can put you in touch with a Disability Employment Advisor who'll be able to advise on changes to your equipment or working techniques.

i See Arthritis Research UK booklets
Diet and arthritis; Work and arthritis.

Research and new developments

There is ongoing research looking into the causes of carpal tunnel syndrome, particularly whether it can be prevented by altering the way people carry out different tasks with their hands in the workplace. Other treatments, such as acupuncture, are also being evaluated.



Glossary

Diabetes – a medical condition that affects the body's ability to use glucose (sugar) for energy. The body needs insulin, normally produced in the pancreas, in order to use glucose. In diabetes the body may produce no insulin or not enough insulin, or may become resistant to insulin. When the body is unable to use glucose obtained from foods the level of sugar in the blood increases. If untreated, raised blood sugar can cause a wide variety of symptoms.

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.

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.

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

Thyroid gland – a gland at the front of the neck that produces various hormones which help to regulate the body's internal processes, such as metabolism, reproduction, growth and development.

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

- *Rheumatoid arthritis*

Therapies

- *Occupational therapy and arthritis*
- *Physiotherapy and arthritis*

Surgeries

- *Hand and wrist surgery*

Self-help and daily living

- *Diet and arthritis*
- *Looking after your joints when you have arthritis*
- *Splints for arthritis of the wrist and hand*
- *Work-related joint disorders*

Drug leaflet

- *Local steroid injections*

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

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Chesterfield

Derbyshire S41 7TQ

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www.arthritisresearchuk.org

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

Disability Employment Advisers

Your Jobcentre or Jobcentre Plus office can put you in touch with your local Disability Employment Adviser.
www.jobcentreplus.gov.uk



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 Dr Jonathan Barnardo, who has expertise in the subject. It was assessed at draft stage by consultant and reader in rheumatology Dr Gabrielle Kingsley, and physiotherapists Nicola Scrafton and Karen Smith. An **Arthritis Research UK** editor revised the text to make it easy to understand, and a non-medical panel, including interested societies, checked it for understanding. An **Arthritis Research UK** medical advisor, Dr Ben Thompson, 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



Providing answers today and tomorrow

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calls charged at standard rate

www.arthritisresearchuk.org

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