

Carpal Tunnel Syndrome

Carpal tunnel syndrome can cause pain and other symptoms in the hand. It is caused by pressure on a nerve going to the hand. Treatment is usually effective.

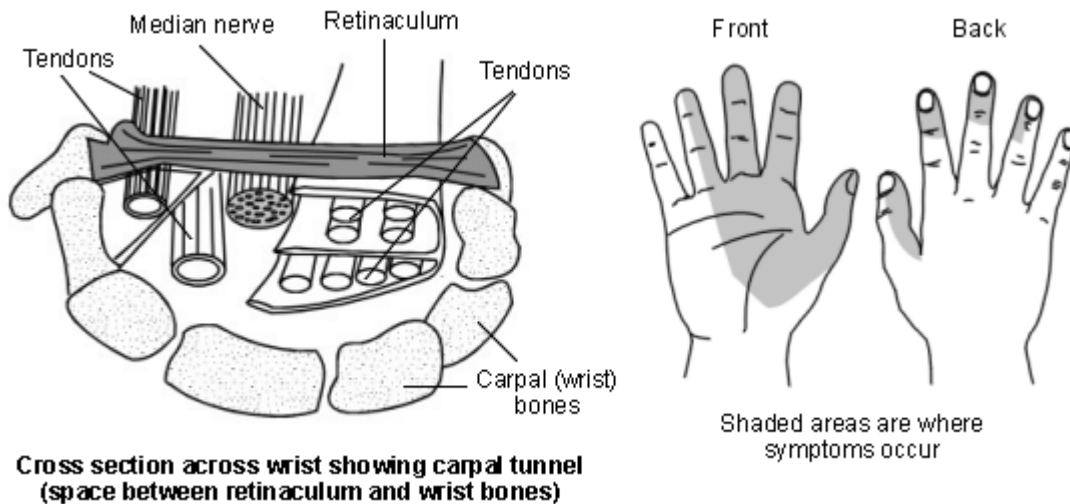
What is the carpal tunnel?

There are eight small bones called carpal bones in the wrist. A ligament (also called retinaculum) lies across the front of the wrist. Between this ligament and the carpal bones is a space called the carpal tunnel. The tendons that attach the forearm muscles to the fingers pass through the carpal tunnel. A main nerve to the hand (median nerve) also goes through this tunnel before dividing into smaller branches in the palm.

The median nerve gives feeling to the thumb, index and middle fingers, and half of the ring finger. It also controls the movement to the small muscles at the base of the thumb.

What is carpal tunnel syndrome?

This syndrome is a set of symptoms caused by compression (squashing) of the median nerve in the carpal tunnel. About 1 in 1000 people develop this syndrome each year. Most cases occur in people in their 40's and 50's, but it can occur at any age. It is also common during pregnancy. Women are affected 2-3 times more often than men.



What are the symptoms of carpal tunnel syndrome?

- **'Pins and needles'**. This is tingling or burning in part or all of the shaded area shown above. The index and middle fingers are usually first to be affected.
- **Pain or aching** in the same fingers may then develop. The pain may travel up the forearm.
- **Numbness** of the same finger(s), or in part of the palm, may develop if the condition becomes worse.
- **Weakness** of some muscles in the fingers and/or thumb occurs in severe cases. This may cause poor grip and eventually lead to wasting of the muscles at the base of the thumb.

Symptoms vary from mild to severe depending on how 'squashed' the median nerve becomes. One or both hands may be affected. Symptoms tend to come and go at first, often after you use the hand. Typically, symptoms are worse at night and may wake you up. The symptoms may be eased for a while by raising the hand up or hanging it down. 'Flicking' the wrist may also give relief. Symptoms persist all the time if the condition becomes severe.

What causes carpal tunnel syndrome?

- **Unknown.** In most cases it is not clear why it occurs. It is thought that some inflammation develops in a tendon going through the carpal tunnel which causes swelling. There is little space to expand in the narrow carpal tunnel, and this may lead to pressure on the nearby median nerve. Tendon inflammation can occur if you over-use your hand. Carpal tunnel syndrome is more common in manual workers, especially if you have a job where you use a lot of wrist movement such as scrubbing or wringing.
- **Bone or arthritic conditions of the wrist** such as rheumatoid arthritis or wrist fractures may lead to carpal tunnel syndrome.
- **Various other conditions** are associated with carpal tunnel syndrome. For example: pregnancy, obesity, an underactive thyroid, diabetes, the menopause, other rare medical illnesses, and a side-effect of some drugs. Some of these conditions cause water retention (oedema) which may affect the wrist and cause carpal tunnel syndrome.
- **Rare causes** include cysts, growths, and swellings coming from the tendons or blood vessels passing through the carpal tunnel.

Do I need any tests?

A test to measure the speed of the nerve impulse through the carpal tunnel is often advised (nerve conduction test). A slow speed of impulse down the median nerve confirms the diagnosis. Sometimes the symptoms are so typical that no tests are needed to confirm the diagnosis.

What are the treatments for carpal tunnel syndrome?

General measures

Try not to over-use your wrist by squeezing, gripping, wringing, etc. If you are overweight, losing some weight may help. Painkillers may be prescribed to ease the pain. If the condition is part of a more general medical condition (such as arthritis) then treatment of that condition may help.

Non-surgical options

- **Not treating** is an option, particularly if symptoms are mild. In some cases symptoms go over time without treatment. In up to 1 in 3 cases the symptoms go without treatment within six months. (In about 2 in 3 cases that develop during pregnancy the symptoms go after the baby is born.) The situation can be reviewed if symptoms get worse.
- **One or two steroid injections** into, or near to, the carpal tunnel is an option. Steroids reduce inflammation. The steroid is combined with a local anaesthetic to make the injection painless. One study found that a single injection eased symptoms in about 3 in 4 cases. Symptoms returned in some people but about half of the treated people were free of symptoms a year later. Another study found that two steroid injections given 14 days apart was as good as surgery (in cases where there was no wasting of the muscles when surgery is usually needed.) Other studies report variable success rates with steroid injections.
- **Steroid tablets** reduce inflammation and are likely to ease symptoms. A short course of tablets may be an option. However, long-term steroid tablets are not advised as side-effects are likely to develop. Therefore, if symptoms return after a course of steroids then surgery should be considered.
- **A splint** to keep the wrist in a fixed position and 'rested' may cure the problem. It is worn for a few weeks (especially at night).
- **Ultrasound treatment** has been reported to ease symptoms in some cases. It is not clear how this works, but it may help to reduce inflammation. Ultrasound is painless. However, it requires 20 or more treatment sessions and it may not be available in your area.

Surgery

A small operation can cut the ligament over the front of the wrist and ease the pressure in the carpal tunnel. This usually cures the problem. It is usually done under local anaesthetic. You will not be able to use your hand for work for a few weeks after the operation. A small scar on the front of the wrist will remain. There is a low risk of complications from this operation.

Which is the best treatment for me?

A non-surgical option may be advised if symptoms are mild. For example, if symptoms 'come and go' and mainly consist of tingling, pins and needles or mild discomfort. A steroid injection is probably the most effective non-surgical treatment.

If you try a non-surgical treatment and it does not work, do return to your doctor. In particular, if you have constant numbness in any part of your hand, or if you have any weakness of the muscles next to the thumb. These symptoms mean that the nerve is not working well and is at risk of permanent damage.

Surgery probably gives the best chance of long-term cure. It is quite a common operation. It is done if symptoms persist despite other treatments, or if symptoms are severe and the nerve is in danger of permanent damage.

Treatment for severe symptoms

If you have severe symptoms, in particular, wasting of the muscles at the base of the thumb then you will probably need surgery. This is to decompress the trapped nerve quickly which aims to prevent any permanent long-term damage to the nerve.

Carpal tunnel syndrome during pregnancy

Symptoms commonly go after the baby is born. Therefore a non-surgical treatment is usually advised at first. Surgery is an option if symptoms persist.

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