

Carpal Tunnel Syndrome

Patient information for patient's under Mr Whitaker's care

What is it?

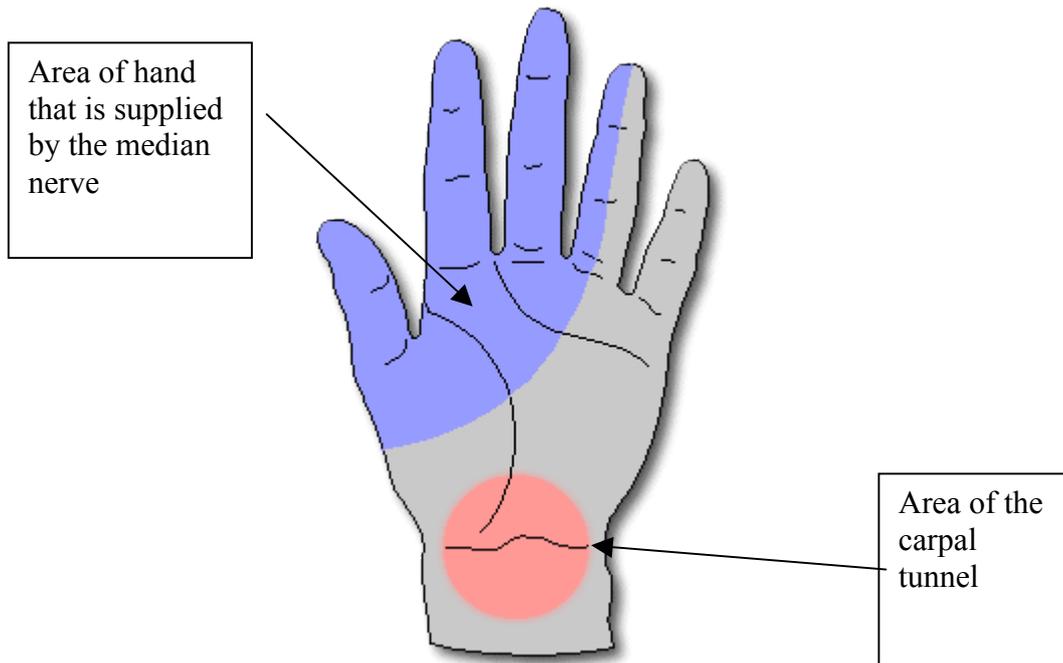
Carpal tunnel syndrome is the effect of pressure on the **median nerve**, one of the three main nerves of the hand. It can result in a variety of problems, including pain, tingling, numbness, swelling, weakness or clumsiness of the thumb, index, middle and ring fingers. Stiffness and coldness of the fingers and hand.

Certain occupations carry a higher risk of developing the condition, but the occupation by itself may not cause the problem:-

- Typists and word processors
- Assembly workers
- Checkout operators
- Hairstylists
- Musicians
- Construction workers
- Meat cutters Butchers

Certain medical conditions can also contribute to the syndrome,

- Inflammation or swelling of the tendons (tendinitis)
- Wrist injuries including fractures
- Crushing injuries
- Rheumatoid /osteoarthritis
- Hypothyroidism
- Obesity
- Diabetes
- Pregnancy
- Fluid retention
- Menopause
- Ganglions in the carpal tunnel,
- Can run in families.



What caused it?

Women are three times more likely to suffer with the condition. Carpal tunnel syndrome develops in people who have a tendency toward swelling or inflammation in their hands.

Like a telephone cable, the median nerve is a connection between the fingers and the spinal cord. It passes through a protective conduit (tunnel) deep in the wrist (carpus), along with the nine tendons which bend the fingers. The nerve and each of the tendons are each nearly as wide as a pencil. The tunnel is only a little over an inch wide, just big enough to hold the nerve and tendons. When the tendons are irritated, the lining around the tendons (synovium) swells up and puts pressure on the nerve. This pressure cuts off the blood supply to the nerve.

Tendon swelling (tendinitis) results from a person's own tendency to collect fluid around their tendons and joints. This may be aggravated by repetitive or strenuous activities.

Swelling from nearby problems, such as trigger finger, basal joint arthritis, rheumatoid arthritis or effects of a wrist fracture may aggravate or bring on carpal tunnel syndrome.

Early on, symptoms occur during sleeping hours. This is because the swelling is relieved by normal use of the hand, which pumps extra fluid out of the carpal tunnel. The fluid pressure builds up only when the hand is at rest - especially during sleep. Bending the wrist may also increase pressure on the nerve.

In more advanced cases, symptoms occur during waking hours. At this stage, scar tissue may form around the nerve from repeated episodes of pressure. Nerve damage (bruising) is suspected when any symptoms occur regularly during the day.

What can you do to help?

Avoid activities that make the condition worse, to give internal inflammation time to settle.

"Over the counter" non-steroidal anti-inflammatory medication (NSAID), such as aspirin and ibuprofen. Check with your pharmacist regarding possible side effects and drug interactions.

Use a splint or brace from your doctor that supports and keeps the wrist in a neutral position (neither bent forward or backwards) and prevents it moving. The splint is used while sleeping. Splints do need to be fitted as badly fitting splints can aggravate the condition.

Wait and watch.

What can a therapist do to help?

Provide a hand splints to support the wrist.

Help identify aggravating activities and suggest alternative postures.

What can a doctor or nurse practitioner do to help?

Confirm that this actually is the problem. This may require special nerve tests done by a neurologist (a doctor who studies the function of nerves).

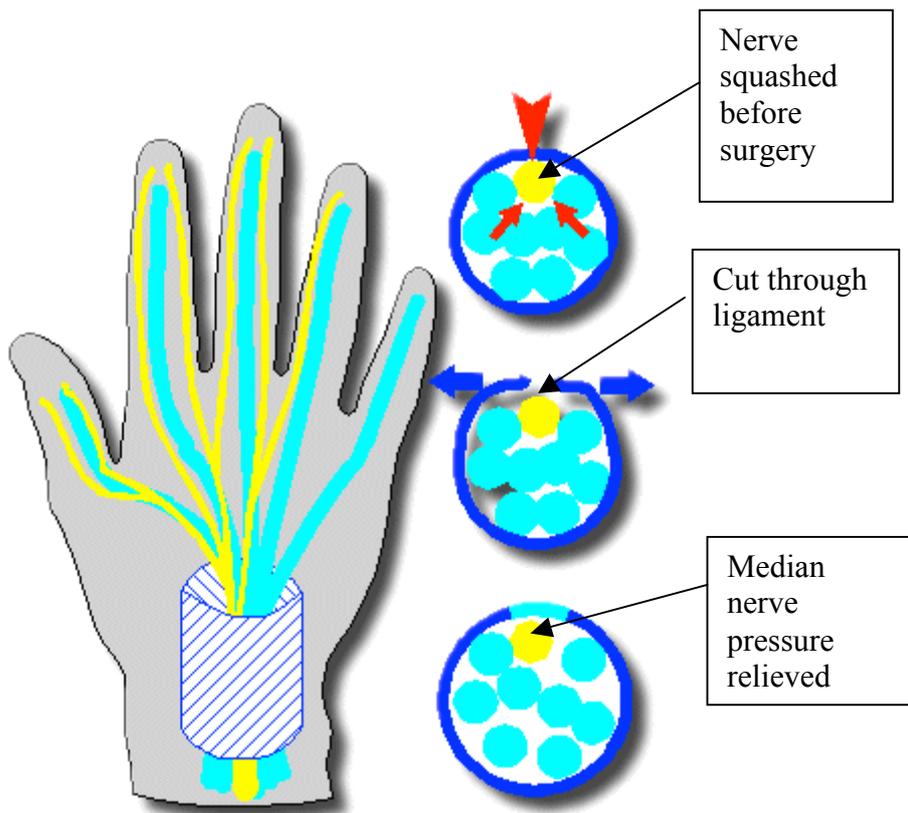
Advise or prescribe stronger NSAID medication or cortisone-type medication.

Prescribe hand therapy and/or a custom prescription splint.

The most effective treatment, not necessarily a permanent cure, without surgery is a cortisone injection into the carpal tunnel. Depending on several

factors, these measures can provide long-term relief in 5 to 60 per cent of patients. This treatment does carry some risk. Conservative treatment is usually not recommended for patients who have evidence of nerve damage.

Surgery for carpal tunnel syndrome is intended to provide more space for the nerve and tendons and relieve pressure on the nerve, so that swelling will not put dangerous amounts of pressure on the nerve. It is usually done through an incision on the palm or the front of the wrist.



An incision is made to open the carpal tunnel.

The tunnel opens up. It heals with more space inside for the nerve and tendons - like letting out the waist band in a pair of trousers

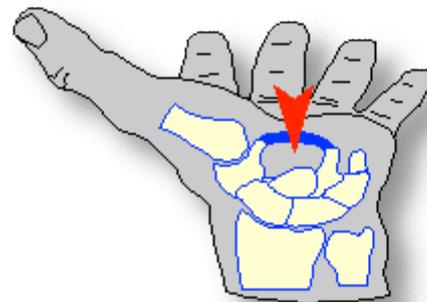
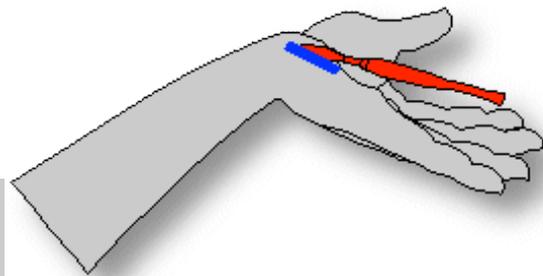
How successful is treatment?

Swelling, stiffness aches and pains in the hand may well be due to other problems in the hand and wrist and may persist to some extent following any form of treatment.

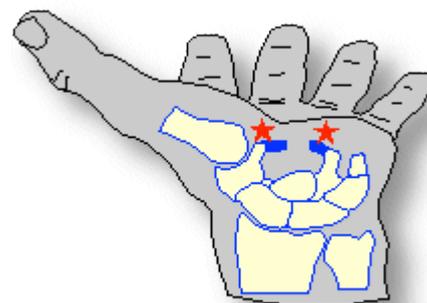
Nerve damage existing before treatment may lead to incomplete recovery.

With this in mind, the great majority of patients are improved with appropriate treatment. Most reports indicate that if carpal tunnel syndrome is the only problem, over 95% of patients have a satisfactory outcome from surgery.

There are many different techniques used for the surgery - whether it involves a cut in the palm, the wrist, smaller or longer cuts or different instruments, the one thing in common is that the thick layer of ligament in front of the nerve is cut.



After surgery, the healing edges of the ligament beneath the skin are usually tender for at least four to six weeks after the procedure. Temporary tenderness on each side of the palm where the ligament is attached to the bones on each side of the palm is common after surgery and is called "pillar pain". This generally resolves gradually. Hand therapy is often helpful during recovery.



What happens if you have no treatment?

It depends most importantly on whether or not the problem actually *is* carpal tunnel syndrome and whether or not there are *other* medical conditions contributing to the overall picture.

Mild carpal tunnel syndrome can improve without treatment in as many as one in three people.

The chances of getting better without surgery are **less** when

both hands are involved.

the **longer** the problem has been going on.

the **older** the person is.

the **more severe** the symptoms of numbness and tingling are.

The longer the nerve is irritated, the longer numbness or tingling are constant, the harder it is to have a full recovery - even with surgery.

If the problem is severe, surgery is a reasonable step to prevent further nerve damage even if full recovery cannot be guaranteed. It will prevent the symptoms from worsening.