
Carpal tunnel syndrome

Summary

- Carpal tunnel syndrome is a painful disorder of the hand caused by pressure on nerves that run through the wrist.
 - Anything that aggravates and inflames the tendons can cause carpal tunnel syndrome, including repetitive hand movements, pregnancy and arthritis.
 - Treatment options include rest, splinting, cortisone injections, fluid tablets and surgery.
 - Rest your hand for at least four weeks after surgery.
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Carpal tunnel syndrome is a painful disorder of the hand caused by pressure on nerves that run through the wrist. Symptoms include numbness, pins and needles, and pain (particularly at night). Anything that causes swelling inside the wrist can cause carpal tunnel syndrome, including repetitive hand movements, pregnancy and arthritis. Possible treatments include rest, splinting, cortisone injections and surgery.

The carpal tunnel

The carpal tunnel is a narrow passageway in the wrist, which opens into the hand. It is surrounded by the bones of the wrist (underneath) and the transverse carpal ligament (across the top). The median nerve runs through the carpal tunnel and gives feeling to the thumb, forefinger, middle finger and half of the ring finger.

Many tendons also pass through this carpal tunnel and if any swelling occurs, the large median nerve can easily be compressed, causing carpal tunnel syndrome.

Flexor tendons run through the carpal tunnel into the hand. These tendons are covered by a smooth membrane called the tenosynovium and allow hand movement. Any thickening from inflamed tendons or other causes of swelling can reduce the amount of space inside the carpal tunnel. If left unchecked, the median nerve is squashed against the transverse carpal ligament until the nerve cannot function properly. Numbness and pain are the result. It can affect one or both hands.

The muscles of the thumb are also serviced by the median nerve. A person with advanced carpal tunnel syndrome may find they cannot properly use or move their thumb any more, and may find it difficult to grasp objects.

Symptoms of carpal tunnel syndrome

The symptoms of carpal tunnel syndrome include:

- Numbness
- Pins and needles
- Pain, particularly at night
- Darting pains from the wrist
- Radiated or referred pain into the arm and shoulder
- Weakness of the hand
- The little finger and half of the ring finger are unaffected.

Causes of carpal tunnel syndrome

In some cases the cause cannot be found. Sometimes there is a combination of factors such as:

- Arthritis – various types of arthritis, especially rheumatoid arthritis, can cause inflammation and swelling
 - Pregnancy – the hormones associated with pregnancy cause general fluid retention, which can compress the nerve. Carpal tunnel syndrome triggered by pregnancy usually goes away soon after birth
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- Wrist fractures – bone fragments can irritate the tenosynovium or reduce the amount of space in the carpal tunnel
- Congenital factors – some people have a smaller carpal tunnel than others
- Overuse injury – the tendons in the carpal tunnel can become irritated and inflamed by awkward postures or repetitive hand movements.

Risk factors of carpal tunnel syndrome

Some people are at higher risk of developing carpal tunnel syndrome, including:

- Women between the ages of 40 and 60 years
- Pregnant women
- People with certain types of arthritis
- Anyone who experiences a period of rapid weight gain
- People who use their hands repetitively in their day-to-day activities, such as typists or assembly line workers.

Non-surgical treatment for carpal tunnel syndrome

You cannot 'work through' carpal tunnel syndrome. At first, the pain and stiffness may be slight. But they may increase until your hand hurts all the time. You can suffer permanent damage if the cause is not addressed.

Non-surgical treatments can include:

- Plenty of rest for the affected hand
- Physiotherapy
- Wearing splints on the affected wrist and hand at night
- Diuretic medications to reduce your body's retention of fluid by increasing the amount of urine passed
- An injection of local anaesthetic and a corticosteroid medication into the affected area to reduce the swelling.

Surgery for carpal tunnel syndrome

Surgery is one treatment option for carpal tunnel syndrome. The surgeon makes an incision (cut) less than 5 cm long in your palm, and perhaps into the wrist as well, to expose the transverse carpal ligament. The surgeon then cuts the ligament to reduce pressure on the underlying median nerve. The incision in the palm is sutured (sewn) closed.

The body's healing process will rejoin the severed ends of the transverse carpal ligament and the resulting scar tissue should not press so hard on the underlying nerve. The surgeon may operate on one or both wrists at the same time.

The pain and numbness might improve immediately, or over time. Generally, you should rest your hand for a number of weeks after the operation.

Medical issues for carpal tunnel syndrome surgery

Before undergoing the operation, your doctor will discuss some questions with you, such as:

- Whether the operation will be performed under local or general anaesthetic
- With general anaesthetic, whether you need to go into hospital the night before
- Whether any of the medications, herbs, or vitamin and mineral supplements you usually take might interfere with surgical medications.

Immediately after surgery for carpal tunnel syndrome

After the operation, you can expect that:

- If you had a general anaesthetic, nurses will check your temperature, pulse, breathing, blood pressure and wound site frequently.
- You should not eat anything for at least four hours after the operation.
- Your wrist may be placed in a sling to help reduce swelling.

- Your wrist may be quite painful or uncomfortable for a couple of days. Your doctor will order analgesia (pain-relieving medication).
- You should exercise your hand and wrist as soon as possible, following your doctor's advice.

Complications of surgery for carpal tunnel syndrome

Some of the possible complications of a carpal tunnel operation include:

- Injury to the median or ulnar nerve
- Injury to surrounding blood vessels
- The transverse carpal ligament isn't cut through completely, so you need a second operation.

Self-care after surgery for carpal tunnel syndrome

Follow your doctor's advice, but general suggestions include:

- If you go home within a day or two of surgery, you will probably need some help around the house.
- Continue your medication as ordered by your doctor.
- Cold packs applied at regular intervals can help reduce post-operative swelling.
- Rest the hand as much as you can for at least four weeks following surgery.

Long-term outlook after surgery for carpal tunnel syndrome

Your symptoms should ease dramatically after surgery. However, pain around the surgery site may linger for some months. See your doctor if you are concerned about the amount of pain or discomfort. If you have non-absorbable sutures, your doctor will need to remove these about two weeks after the operation. If you have any increased swelling, redness or heat, see your doctor immediately, since these symptoms could indicate infection.

Where to get help

- Your doctor
- Physiotherapist
- Australian Physiotherapy Association Tel (03) 9092 0888

Things to remember

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This page has been produced in consultation with and approved by:

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