



KATARZYNA MACKENZIE

PLASTIC SURGEON

Carpal Tunnel Syndrome and Decompression

Carpal tunnel syndrome is a common condition that causes pain, numbness, and tingling in the hand and arm. Carpal tunnel syndrome occurs when the tunnel becomes narrowed or when tissues surrounding the flexor tendons swell, putting pressure on the median nerve.

In most patients, carpal tunnel syndrome gets worse over time, so early diagnosis and treatment are important.

Length of surgery	30 minutes
Anaesthesia	Local anaesthetic
Hospital stay	Day case
Risks/complications of surgery	Frequent: Swelling, stiffness, discomfort on movement Infrequent: Infection, bleeding (haematoma), delayed wound healing, painful scar, damage to the nerve, recurrence, incomplete resolution of symptoms, complex regional pain syndrome, triggering
Recovery	1-2 weeks until return to office work 3-16 weeks until swelling disappears 6-8 weeks until return to gym and other strenuous activities 6-10 weeks no heavy lifting 3-6 months until final result
Driving	2 weeks
Hand position	Elevation above the heart level
Follow up	1 week, 6 weeks, 3 months, 6 months
Duration of results	Permanent but depending on severity

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Carpal tunnel decompression information sheet

Any hand surgery procedure is a personal choice and understandably there are a number of questions that arise. This information sheet is a general guide for patients considering carpal tunnel syndrome treatment under the care of Dr Mackenzie. It should provide the answers to some questions that you may have. There are many factors that can affect your individual operation, your recovery and the long-term result. Some of these factors include your overall health, previous surgery, any bleeding tendencies that you have and your healing capabilities, some of which will be affected by smoking, alcohol and various medications. Such issues that are specific to you need to be discussed with Dr Mackenzie and are not covered here. Please feel free to ask her any further questions before you sign the consent form.

What is carpal tunnel syndrome?

Carpal tunnel syndrome is a set of symptoms (e.g. "pins and needles", numbness, weakness) that are caused by compression of the median nerve at the wrist. The median nerve supplies sensation to the thumb, index, middle and inner part of the ring finger. Early on, symptoms can often be relieved with simple measures like wearing a wrist splint or avoiding certain activities. If pressure on the median nerve continues, it can lead to nerve damage and worsening symptoms. To prevent permanent damage, surgery to take pressure off the median nerve may be recommended for some patients.

What are the symptoms of carpal tunnel syndrome?

Symptoms usually begin slowly and can occur at any time. They may include:

- Numbness, tingling, burning, and pain—primarily in the thumb and index, middle, and ring fingers
- Tingling is often worse at night or first thing in the morning. It may be provoked by activities that involve gripping an object, for example a mobile telephone or newspaper, especially if the hand is elevated
- Occasional shock-like sensations that radiate to the thumb and index, middle, and ring fingers
- Pain or tingling that may travel up the forearm toward the shoulder
- Weakness and clumsiness in the hand—this may make it difficult to perform fine movements such as buttoning your clothes
- Dropping things—due to weakness, numbness, or a loss of proprioception (awareness of where your hand is in space)

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What are the risk factors for carpal tunnel syndrome?

In most cases it is not clear why carpal tunnel syndrome occurs. Most cases of carpal tunnel syndrome are caused by a combination of factors. It is often associated with:

- Older age
- Pregnancy – fluid retention and hormonal changes can cause swelling of the carpal tunnel, which usually disappears after childbirth
- Repetitive hand use-repeating the same hand and wrist motions or activities over a prolonged period of time may aggravate the tendons in the wrist, causing swelling that puts pressure on the nerve
- Hereditary- the carpal tunnel may be smaller in some people or there may be anatomic differences that change the amount of space for the nerve—and these traits can run in families
- Joint dislocations and fractures of the wrist – they can put pressure on the median nerve
- Bone or arthritic conditions of the wrist, such as rheumatoid arthritis – this can cause a thickening of the ligament that covers the carpal tunnel
- Other health conditions such as obesity, an underactive thyroid, diabetes, alcoholism and the menopause
- Side effects of some medicines – the combined oral contraceptive pill may disrupt the hormonal balance enough to cause carpal tunnel syndrome
- Cysts, growths and swellings coming from the tendons or blood vessels passing through the carpal tunnel – although this is rare

How is carpal tunnel syndrome diagnosed?

Dr Mackenzie will take a detailed history including complete medical history, how the hands have been used, and any prior injuries.

That will be followed by examination of the hand and wrist. An x-ray may be taken to check for arthritis or a fracture. In some cases, laboratory tests may be done. Electrodiagnostic studies will be requested to confirm the diagnosis, check for other possible nerve problems and determine how well the median nerve itself is working and how well it controls muscle movement.

Why do I need surgery?

If your symptoms are constant and are not relieved by non-surgical measures, surgery may be needed.

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What is the treatment?

Non-surgical treatment

Non-surgical treatments are usually tried first. Treatment begins with:

- Wearing a wrist splint at night- that helps relieve symptoms that may prevent sleep
- Taking nonsteroidal anti-inflammatory drugs, such as ibuprofen, to relieve pain
- Cortisone injections can be given though they provide only temporary relief of symptoms, but may provide evidence of confirmation of the diagnosis
- Changes to the work station can- raising or lowering the chair or the computer keyboard to bring the patient into proper alignment
- Changes in the hand/wrist positions used in jobs and other activities can also be tried, along with activity modification

Surgical treatment

When symptoms are severe or do not improve, surgery may be needed to make more room for the nerve. The goal of surgery is to increase the size of the tunnel in order to decrease pressure on the nerves and tendons that pass through the tunnel.

This operation can be performed under local anaesthetic and involves a short incision at the base of the palm to release the ligament causing pressure on the nerve.

What happens during surgery?

In most cases, carpal tunnel surgery is done as a day case. The surgery can be done under general anaesthesia, which puts you to sleep, or under local anaesthesia, which numbs just your hand and/or arm. In some cases, you will also be given a light sedative through an intravenous line inserted into a vein in your arm. Dr Mackenzie will make a small 4 cm incision in the palm of your hand and view the inside of your hand and wrist through this incision. During the procedure, Dr Mackenzie will divide the transverse carpal ligament (the roof of the carpal tunnel). This increases the size of the tunnel and decreases pressure on the median nerve. Dr Mackenzie will inspect the median nerve. Wound will be closed and bulky dressing applied.

The surgery takes about 30 minutes.

After surgery, the ligament may gradually grow back together—but there will be more space in the carpal tunnel and pressure on the median nerve will be relieved.

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What is the recovery after surgical decompression?

It is very important to elevate your hand as often as possible, following your operation as it helps to reduce the swelling. You will be encouraged to move your fingers to reduce swelling and prevent stiffness.

You can expect some pain, swelling, and stiffness after your procedure. Discomfort around the cut area may last for several weeks or months.

Your grip will be temporarily weaker than usual following carpal tunnel surgery, but strength should return 2-3 months after surgery.

The numbness and tingling may disappear quickly or slowly, depending on the degree of nerve compression. If your thumb muscles have been without nerve supply for more than 12 months, they are unlikely to regenerate at all.

You can have a bath or shower 24 hours after your operation, but keep your wounds dry until they have healed. It is helpful to wear a large plastic bag over your arm for showering or bathing.

You can drive a car when your hand feels comfortable and strong. It usually takes at least 2-3 weeks before you can drive a car.

Stiches are removed 10 to 14 days after surgery.

Self-care activities, light lifting and gripping may be permitted soon after surgery.

If you have another condition that causes pain or stiffness in your hand or wrist, such as arthritis or tendonitis, it may slow your overall recovery.

Recovery may take several months. Carpal tunnel symptoms may not completely go away after surgery, especially in severe cases.

When can I return to work?

This will depend on the type of work you do, but it may be one to two weeks after your operation.

Heavier activities with the affected hand are restricted for 4 to 6 weeks.

Recovery times vary depending on the patient's age, general health, severity of carpal tunnel syndrome, and the length of time symptoms have been present.

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Strength and sensation continue to improve over the following year.

What are the risks of surgery?

Complications associated with this surgery are rare, but can include:

- Infection – this can be settled by taking antibiotics
- Swelling-may last for a few months
- Stiffness 4 in 100 patients and can last from weeks to 6 months. Hand physiotherapy may be required
- Painful scar
- Wound healing problems
- Bleeding/haematoma
- Damage to the median nerve or its branches-very rare
- Recurrence-2-3%
- Incomplete resolution of symptoms in severe nerve compression
- CRPS-complex regional pain syndrome-5%
- Exacerbation of finger triggering