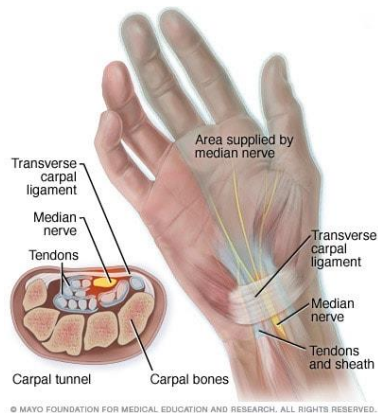


Carpal Tunnel Syndrome

What is it?

Carpal tunnel syndrome, or CTS, occurs when one of the three major nerves in the hand, called the median nerve, is compressed as it passes through the carpal tunnel (1). The carpal tunnel is a small tunnel on the palm side of the hand that carries structures from the forearm through the wrist, in to the hand. It is made up of a floor of wrist bones and a roof that consists of the thick ligament called the transverse carpal ligament. Within it are tendons that control the movements of the fingers and thumb as well as the median nerve. As the nerve crosses through the tunnel, it is compressed and the pressure on the nerve causes the symptoms of CTS.



Symptoms of the CTS include:

- Numbness and tingling – this generally affect the thumb, index, middle and ring fingers. It very rarely affects the little finger. The tingling feeling is also often worse at night. Initially, the numbness and tingling may be intermittent with periods of normal feeling in between. However, at the condition progresses, the altered sensation and tingling feeling may become continuous.
- Pain – some people also complain of pain the wrist and in some cases, the pain spreads up the forearm as well.
- Clumsiness and weakness – people often report clumsiness when using the affected hand due to the reduced/altered sensation in the fingers. In severe cases of CTS, the muscles of the thumb and fingers can also weaken and become smaller which weakens the grip strength.

Causes of Carpal Tunnel Syndrome

Often, no identifiable cause is found but risk factors include:

- Idiopathic

- Pregnancy, Diabetes, Obesity
- Having a job or hobby that requires frequent bending of the wrist or gripping
- Family history
- Previous injury to the wrist

How is it diagnosed?

CTS is diagnosed clinically – your doctor will speak and examine you thoroughly and based on that, a diagnosis of CTS is made. Often, you may also be referred for nerve conduction studies which is a test where small electrical wires, called electrodes, are placed on your skin (2). These will be placed over the length of your arm, from your shoulder to your fingertips. The electrodes will then be used to send very small electric shocks to measure how well the nerve is functioning. Rarely, x-rays and blood tests may also be required.

What are the treatment options available?

Non-surgical treatments of CTS include wrist splints for symptoms are night, painkillers (such as ibuprofen and paracetamol), and steroid injections into the wrist (3). These treatments are aimed at relieving the symptoms associated with CTS.

Surgical treatment is often required (3). The surgery, called a Carpal Tunnel Decompression

(CTD) and can be either done as an open or endoscopic procedure.

Open Carpal Tunnel Decompression involves making a small incision over the wrist (about 2 to 3 inches) and opening the roof of the carpal tunnel (the transverse carpal ligament (TCL)) to reduce the pressure on the median nerve.

Endoscopic Carpal Tunnel Decompression is minimally invasive surgery, involving a small transverse scar at the wrist crease. The carpal tunnel is decompressed using an endoscope which has a small blade attached which enables the TCL to be cut.

Advantages of Endoscopic Carpal Tunnel Decompression

1. Earlier return to work
2. Less overall pain
3. Return of grip strength in the first 3 months is better
4. Higher patient satisfaction.

The open CTD surgery is done under local anaesthesia. Alternatively the surgery can also be done under regional anaesthesia (injections into the shoulder to numb the whole arm), or general anaesthesia (patient put to sleep). Rarely, some patients (up to 3%) require a further operation (3).

The operated hand will have a small dressing over the wound (which must remain dry for 2 weeks) with a bulky dressing on top. The sutures are removed in clinic at the 10-14 day mark. A referral to the hand therapist will be made for rehabilitation post surgery.

Frequently asked questions (FAQs)

How long will recovery from surgery take?

You might notice some pain in your wrist for a few days after surgery. Following that, if the surgery is successful you may notice a gradual improvement in your symptoms for up to 1 year. On average, it takes about 3 months to regain normal strength and to have a fully comfortable scar (4).

When can I drive/return to work?

With regards to driving, you should only drive once your wound has fully healed and you can fully control the wheel and the car. This may take up to 2 to 3 weeks.

You can work once you feel your hand is ready for it, although this may vary according to your job. For desk-based jobs, you may be able to return to work after a few days but for heavy duties e.g. using machinery, lifting heavy objects, this may take up to 6 weeks before you can return to work.

References

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