

Contact Us

NNI@Changi General Hospital (CGH)
2 Simei Street 3, Singapore 529889
Email: appt_centre@cgh.com.sg

NNI@KK Women's and Children's Hospital (KKH)
100 Bukit Timah Road, Singapore 229899
Email: centralappt@kkh.com.sg

NNI@Khoo Teck Puat Hospital (KTPH)
90 Yishun Central, Singapore 768828
Email: ktph.appt@ktph.com.sg

NNI@Sengkang General Hospital (SKH)
110 Sengkang East Way, Singapore 544886
Email: appointments@skh.com.sg

NNI@Singapore General Hospital (SGH)
Outram Road, Singapore 169608
Email: appointments@sgh.com.sg

NNI@Tan Tock Seng Hospital (TTSH)
11 Jalan Tan Tock Seng, Singapore 308433
Email: appointments@nni.com.sg

NNI@Woodlands Health (WH)
17 Woodlands Drive 17, Singapore 737628
Email: appt@wh.com.sg

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National Neuroscience Institute (NNI)
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Neurology Department



Carpal Tunnel Syndrome

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Speak to your doctor for more details

Updated March 2024



National
Neuroscience Institute
SingHealth

Understanding Carpal Tunnel Syndrome (CTS)

Carpal Tunnel Syndrome (CTS) is caused by nerve compression at the wrist when it passes through the carpal tunnel on the palm side of the wrist (Figure 1).

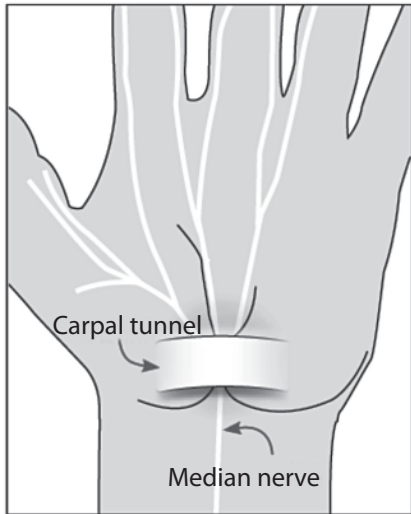


Figure 1
Nerve compression at the carpal tunnel

The carpal tunnel is a passageway for nerves and tendons that control finger sensations and movements respectively.

Swelling or thickening of structures in or around the carpal tunnel may press on the median nerve, leading to tingling, numbness, pain and weakness, usually most prominent over the first three fingers.

Signs of Carpal Tunnel Syndrome

CTS symptoms often develop gradually and is more severe in the dominant hand.

The first symptoms include tingling or numbness of the thumb, index and middle fingers which may come and go initially. You may also experience weakness in hand grip with the tendency to drop objects. It may first be noticed when holding objects or driving.

Commonly, it improves with shaking of the affected hand. Occasionally, there may be pain or an abnormal feeling that the hand "is swollen".

Over time, the condition may worsen and result in persistent numbness, permanent weakness and wasting of the thumb muscles.

Diagnosing Carpal Tunnel Syndrome

Nerve conduction study is frequently done to confirm the diagnosis. It usually takes about 30 to 45 minutes and does not require anaesthesia.

During the test, small and safe doses of electric currents are delivered to stimulate the nerves in order to assess their function. A peripheral nerve ultrasound may also be done to confirm nerve compression.

Preventing Carpal Tunnel Syndrome

- Minimise repetitive wrist movement for prolonged periods by taking frequent breaks.
- Avoid bending the wrist excessively up or down. A relaxed middle position is best.
- Adopt a good posture and adjust your keyboard/ computer mouse to avoid straining your wrist.

Risk Factors

- Repetitive wrist movement e.g. working with vibrating tools, prolonged typing or computer use
- Pre-existing medical conditions such as diabetes, obesity, rheumatoid arthritis, thyroid disorders, fluid retention, kidney failure or wrist injury
- Pregnancy
- Female
- People who are born with narrow carpal tunnels

Living with Carpal Tunnel Syndrome

Mild to moderate cases of CTS may be managed in various ways:

- Wear a brace to keep the wrist in a neutral position especially during sleep or inactivity
- Avoid repetitive movements or overbending of the hand and wrist for prolonged periods e.g. continuous typing, handphone usage
- Lose excess weight
- Steroid injection

In moderate or advanced stages where there is significant nerve damage, surgery may be advised to relieve symptoms and prevent further damage. The outcome for surgery is generally good for most patients.

Surgery is done under regional anaesthesia as a day procedure. Side effects are uncommon and include wound infection, pain in the scar and nerve damage.