

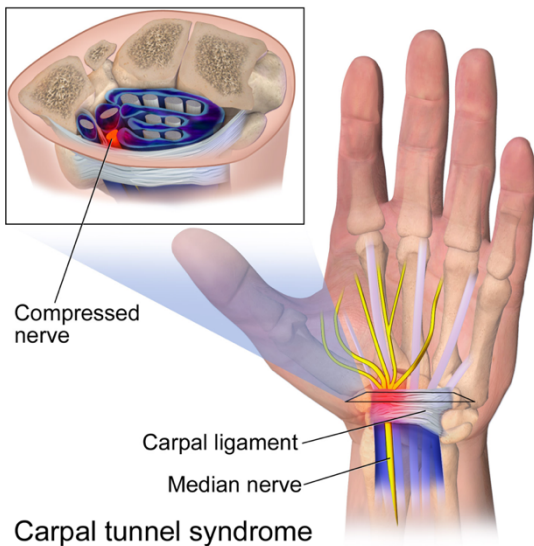


CARPAL TUNNEL SYNDROME

Patient Information Brochure

What is the Carpal Tunnel?

The median nerve is one of the major nerves of the upper limb. It relays sensation from the thumb, index, middle and half of the ring finger and controls the muscles at the base of thumb. This nerve passes from the forearm into the hand through a tunnel at the wrist. This tunnel is known as the carpal tunnel. The floor of this tunnel is formed by the bones of the wrist and roof of this tunnel is formed by a ligament known as the transverse carpal ligament (TCL). The tendons that move the fingers and the thumb accompany the nerve in the tunnel.



What causes Carpal Tunnel Syndrome?

An increase in pressure within the tunnel leads to increased pressure on the median nerve. This compression of the median nerve in this tunnel results in carpal tunnel syndrome. The cause of increased pressure is not known in the majority of patients. Possible causes include thickening of the TCL, swelling of the lining of the tendons (synovitis), fracture, dislocations, or arthritis. Fluid retention during

pregnancy and keeping the wrist bent for long periods of time can also lead to carpal tunnel syndrome.

What are the symptoms?

Patients typically present with numbness, tingling, and/or pain on the affected side. These symptoms are often felt during the night and may wake you from sleep. They may also affect you during the day especially if you do activities that keep the wrist bent. Persistent compression may lead to clumsiness when using the hand and a weaker grip. Long standing compression can result in loss of sensation and wasting of the muscles at the base of the thumb.

Who is at risk of getting CTS?

The risk factors that are strongly positively correlated with carpal tunnel syndrome are female gender, middle age, obesity and diabetes mellitus. The explanation for the greater risk in women is unknown. The hand-intensive nature of housework and typing may contribute to a higher incidence in women. Hormonal changes, however, appear to play a major role as evidenced by an increased incidence in CTS symptoms while taking oral contraceptives and during pregnancy, the postpartum period, and menopause.

How is it diagnosed?

Your surgeon will check the sensation of the fingers and the strength of the muscles at the base of the thumb. In addition, your surgeon will carry out a series of provocative tests that



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reproduce the symptoms by compressing the median nerve. You may also be sent for nerve conduction studies and an ultrasound examination of the nerve to determine the severity of nerve compression and extent of nerve dysfunction.

What is the treatment?

Conservative treatment measures are tried initially. Surgery may be required in patients that do not improve with conservative treatment measures or in patients that present with severe and/or long-standing symptoms. Conservative measures include activity modification, nerve and tendon gliding exercises, use of splint, anti-inflammatory medication to decrease the swelling around the nerve and vitamins to improve nerve function. Activity modification includes avoidance of wrist flexion or extension for prolonged activities at work. The splint is usually worn at night and prevents you from bending your wrist. The splint may be useful during the day also especially if your work requires repetitive bending of the wrist. Anti-inflammatory medications include analgesics and steroids (oral or injectable).

What self-help measures can sufferers take to relieve pain and prevent further damage?

Modify/ avoid activities that predispose to symptoms. Use ergonomic modifications at workplace, eg: wrist rest for computer keypads. Anyone who does repetitive tasks should begin with a short warm-up period, take frequent break periods, and avoid overexertion of the hand and finger muscles whenever possible. Maintaining a good

posture is extremely important in preventing carpal tunnel syndrome, particularly for typists and computer users. A keyboard operator should sit with the spine against the back of the chair with the shoulders relaxed, the elbows along the sides of the body, and wrists straight. The feet should be firmly on the floor or on a footrest. Typing materials should be at eye level so that the neck does not bend over the work. Keeping the neck flexible and head upright maintains circulation and nerve function to the arms and hands. See your hand surgeon early and follow-up regularly, if symptoms persist or worsen.

What will happen if CTS is not treated?

The natural history of carpal tunnel syndrome is unclear. However, most experts believe that often the condition is progressive and will worsen over time without treatment. Patient will progress from intermittent nocturnal symptoms to persistent diurnal symptoms and eventually anaesthesia of the radial three digits and wasting of the thenar muscles. In addition, waiting too long may also significantly reduce the benefits of surgery.

What are the chances of the condition recurring after treatment?

The incidence of re-occurrence of CTS symptoms after surgery has been reported as varying between 5-15%. The most frequent causes for these symptoms to reappear are the proliferation of a perinervous fibrotic scar and a hypertrophic tenosynovitis of the flexor tendons. Rarely, it may follow an incomplete division of the transverse carpal ligament.