



Carpal Tunnel Syndrome (CTS)

What is Carpal Tunnel Syndrome?

Carpal tunnel syndrome is a painful progressive condition caused by compression of a key nerve in the wrist. It occurs when the median nerve, which runs from the forearm into the hand, becomes pressed or squeezed at the wrist. Symptoms usually start gradually, with pain, weakness, or numbness in the hand and wrist, radiating up the arm. As symptoms worsen, people might feel tingling during the day, and decreased grip strength may make it difficult to form a fist, grasp small objects, or perform other manual tasks. In some cases no direct cause of the syndrome can be identified. Most likely the disorder is due to a congenital predisposition - the carpal tunnel is simply smaller in some people than in others. However, the risk of developing carpal tunnel syndrome is especially common for employees performing assembly line work.

Is There Any Treatment?

Initial treatment generally involves resting the affected hand and wrist for at least 2 weeks, avoiding activities that may worsen symptoms, and immobilizing the wrist in a splint to avoid further damage from twisting or bending. Non-steroidal anti-inflammatory drugs, such as aspirin, ibuprofen, and other nonprescription pain relievers, may ease pain. Cool (ice) packs and prednisone (taken by mouth) or lidocaine (injected directly into the wrist) can relieve swelling and pressure on the median nerve and provide immediate, temporary relief. Stretching and strengthening exercises can be helpful in people whose symptoms have abated. If symptoms last for 6 months or more, doctors may recommend surgery to sever the band of tissue around the wrist and reduce pressure on the median nerve.

What is the Prognosis?

Recurrence of carpal tunnel syndrome following treatment is rare. The majority of patients recover completely. To prevent workplace-related carpal tunnel syndrome, workers can do on-the-job conditioning, perform stretching exercises, take frequent rest breaks, wear splints to keep wrists straight, and use correct posture and wrist position. Wearing fingerless gloves can help keep hands warm and flexible.

What Research is Being Done?

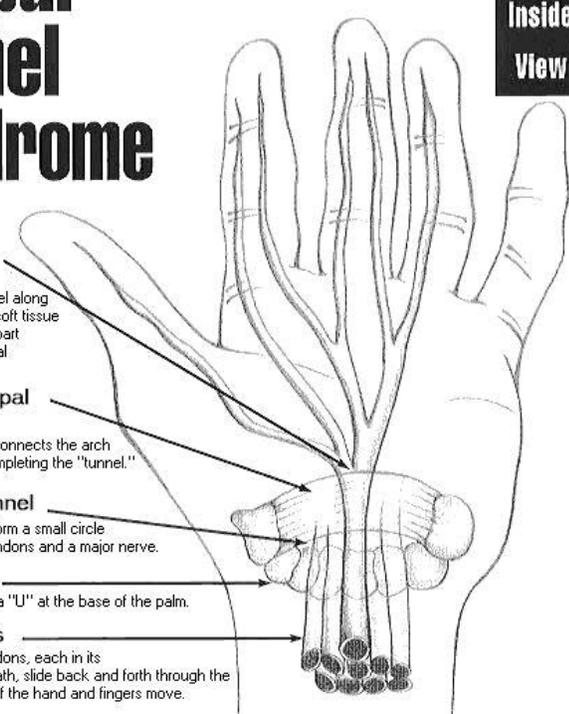
The National Institute of Neurological Disorders and Stroke (NINDS) conducts research on nerve-related conditions such as carpal tunnel syndrome in its laboratories at the National Institutes of Health (NIH) and also supports research through grants to major medical institutions across the country. Current studies include several randomized clinical trials to evaluate the effectiveness of educational interventions in reducing the incidence of carpal tunnel syndrome. Another clinical study is collecting data about carpal tunnel syndrome among construction apprentices to better understand specific work factors associated with the disorder and develop strategies to prevent its occurrence among construction and other workers. Scientists are also investigating the use of alternative therapies, such as acupuncture, to prevent and treat this disorder.

This fact sheet is not intended to be exhaustive. The discussion and best practices suggested herein should not be regarded as legal advice. Readers should pursue legal counsel or contact their insurance providers to gain more exhaustive advice

For additional information on this topic please contact ACWA JPIA Risk Control Department, Terry Lofing, Administrative Assistant (tlofing@acwajpia.com) or 800-231-5742

Carpal Tunnel Syndrome

An
Inside
View



Median Nerve
The only nerve that travels through the tunnel along with the tendons. This soft tissue carries sensations from part of the hand to the central nervous system.

Transverse Carpal Ligament
A very strong ligament connects the arch of the carpal bones, completing the "tunnel."

The Carpal Tunnel
Bones and a ligament form a small circle through which travel tendons and a major nerve.

Carpal Bones
Eight small bones form a "U" at the base of the palm.

Flexor Tendons
Nine tiny but tough tendons, each in its lubricating lining or sheath, slide back and forth through the tunnel as the muscles of the hand and fingers move.

Because bones, ligaments and tendons cannot be compressed, the soft median nerve is the only component in the carpal tunnel that can be pinched. When the lubricating linings around the tendons thicken because of repetitive or too forceful hand movements, the resulting pressure on the nerve causes pain, weakness, numbness, tingling or a burning sensation: carpal tunnel syndrome.

How is Carpal Tunnel Syndrome Recognized?

The evaluation of occupational carpal tunnel syndrome includes identifying workplace risks. Evaluation begins with a discussion of the individuals' employment and requires a detailed description of all the processes involved in a typical day's work. It also requires consideration of the frequency, intensity, duration and regularity of each task performed at work. Diagnosis of carpal tunnel syndrome is confirmed by performing certain tests to detect damage to the median nerve.

-)] **Tinel's test** - The physician taps the median nerve at the wrist. A tingling response in one or more fingers indicates damage to the median nerve.
-)] **Phalen's test** - The patient puts the backs of the hands together and bends the wrists for one minute. Tingling of the fingers indicates damage to the median nerve.

Electromyography - Electrodes are placed on the forearm and electrical current is passed through the patient. Measurements on how fast and how well the median nerve transmits messages to muscles indicate if there is damage to this nerve.

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