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Carpal Tunnel Syndrome

A dark brown rectangular box with a slightly irregular right edge, containing the author's name.

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Carpal Tunnel Syndrome

With the computer-intensive tasks being performed by so many office workers today, more people are wondering: What is carpal tunnel syndrome? How is it diagnosed? And how is it most likely to be treated?

The carpal tunnel is a narrow opening between the hand and arm created by the wrist bones, or carpus, through which pass nine tendons and the median nerve. Carpal tunnel syndrome (CTS) occurs when the median nerve is pinched, pressured, or damaged — usually due to internal swelling in the wrist. According to the National Institute of Occupational Safety and Health, CTS occurs in a number of ways. Repetition, force, vibration, and perhaps to some degree, posture — or a combination of all of these — may damage or infringe upon the median nerve. Friction, injury, fractures, fluid retention, and infection are other common causes of median nerve damage.

Most parts of the body can adapt to this type of swelling, but in the wrist there is no place for the swelling to go. The result is a buildup of pressure in the tunnel. The pressure not only causes the median nerve to malfunction, it also obstructs bloodflow which slows healing and causes further cell degeneration.

The most common treatment for CTS is anti-inflammatory medication. By reducing the swelling and pressure in the tunnel, the median nerve is allowed to return to its normal function. In some instances, a brace is worn on the wrist. The brace is intended to keep the wrist straight and avoid nerve impingement. Braces are often used in conjunction with medication. Generally, a brace should only be worn at night to prevent awkward posturing during sleep. Wearing the brace during the day may cause the muscles to atrophy, compounding the problem. In rare cases, a person may require carpal tunnel release surgery. The transverse carpal ligament is severed, creating more room in the carpal tunnel to lower pressure. The surgery is expensive, requires many weeks for recovery, and is not guaranteed to have lasting positive results.

Early recognition and proper diagnosis are key factors in the successful treatment of CTS. A case left ignored or untreated may lead to surgery or permanent disability. If workers familiarize themselves with the early warning signs of CTS, they may prevent months or even years of unnecessary pain, lost wages, and medical costs. CTS is extremely responsive to intervention if caught in its early stages.

There are two common tests used by physicians to diagnose CTS.

- The first is called Phalen's test. It is performed by having the patient place the backs of the hands firmly together with the arms parallel to the floor and the fingers pointed towards the floor for one minute. If symptoms appear (tingling, numbness, etc.), this is an indication of CTS.
- The second test is Tinel's test, which is performed by tapping the wrist on the palm side of the hand. If the symptoms appear, this is an indication of carpal tunnel problems. If either of these tests yields positive results, the physician is likely to order an EMG (electromyography), which can detect an unusual delay in nerve impulses to the hand in 85 percent of patients with CTS.

Without these physician-directed tests, a person may be concerned by symptoms they have experienced. So just what is likely to be CTS?

Classic CTS: Tingling, numbness, or decreased sensation in at least two of the first three fingers of either hand, with possibly some pain in or near the wrist area. Consult a physician.

Probable CTS: Any of the above symptoms and possibly tingling, numbness, decreased sensation, or pain in the palm. If symptoms exist only in the palm, it is probably not carpal tunnel syndrome. However, if the pain is persistent, disturbs your sleep, or decreases your normal activity level, consult a physician.

Not CTS: If there are no symptoms in any of the first three fingers, it is probably not carpal tunnel syndrome. However, if a person experiences symptoms in the last two fingers, it may be a related condition known as ulnar nerve entrapment. Consult a physician.

Not only can CTS manifest its symptoms in one or both hands, it may also radiate up the arm to the shoulders and neck. What's more, for unknown reasons, most CTS sufferers report that their symptoms appear in the middle of the night forcing them to get up and shake out their hands and arms. They also report some hand stiffness upon waking. However, CTS pain may appear at any time of day and is not restricted to early-morning or late-night episodes.

If a person experiences any unusual symptoms, of course, they should see a physician immediately. But it's also important to take care of the hands. Whether experiencing symptoms of CTS or not, workers should limit activities at home and at work that force them to significantly deviate the wrists up, down, left, or right, use a pinch grip, or activities that incur significant vibration, cold, or weight on the wrist area.

The best way to treat CTS is to avoid it in the first place. It's important for workers to take a mini-break at least every hour. The break time can be used to perform stretches for the neck, back, arms, and fingers or to perform tasks utilizing different muscle groups.