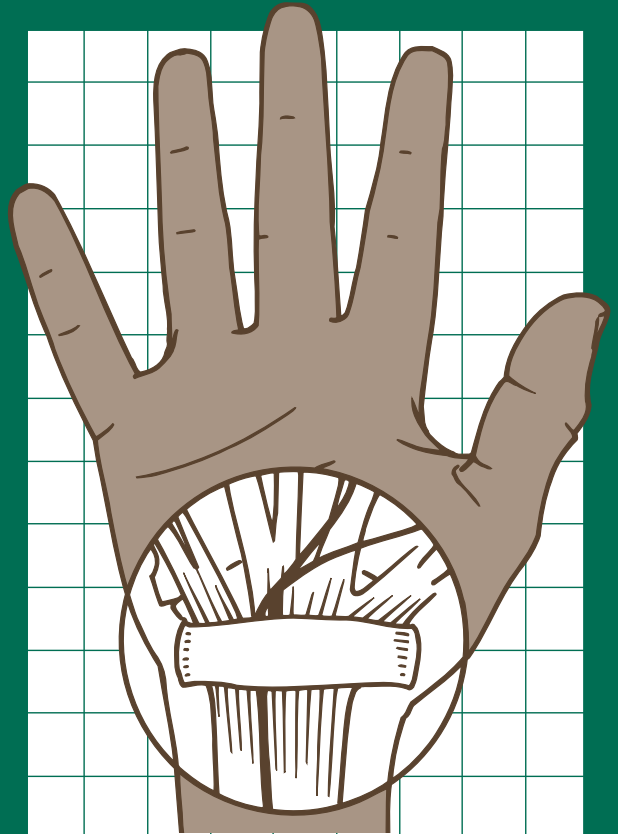

What You Need To Know About

CARPAL TUNNEL SYNDROME

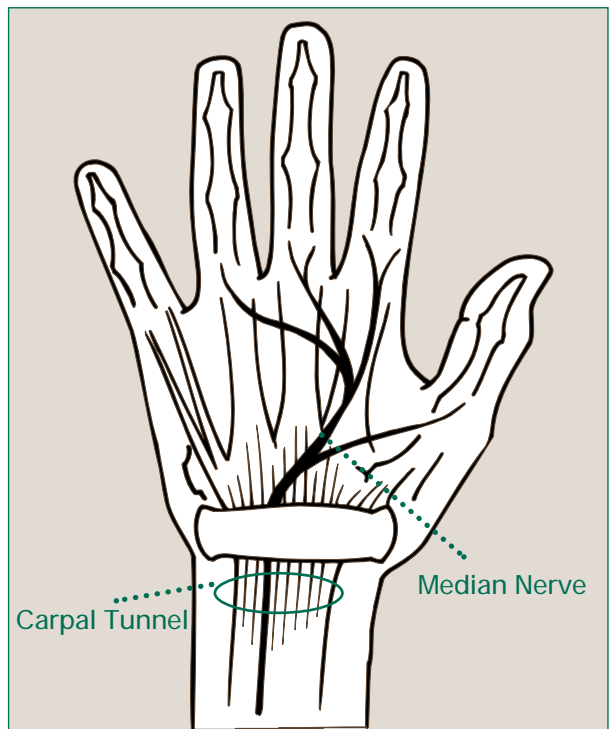
A Physical Therapist's Perspective



American Physical Therapy Association

What Is Carpal Tunnel Syndrome?

You've probably already heard about carpal tunnel syndrome (CTS) and its effect on different occupations, like computer programmers and assembly line workers. Maybe you even know someone who has CTS or you yourself are suffering from it. But what exactly is CTS, and how do you keep from getting it?



The carpal tunnel is a narrow tunnel in the wrist formed by ligament and bone. The median nerve, which carries impulses from the brain into the hand, passes through the carpal tunnel, along with the tendons that enable the hand to close. When stressed, the tendons swell inside the tunnel and compress the median nerve. Besides repeated movements, other conditions can lead to compression of the median nerve: arthritis, diabetes, fluid retention, gout and malaligned fractures, or chemical imbalances, emotional stress, and sometimes hormonal changes in women.

Carpal tunnel syndrome is a condition that may be caused by repeatedly performing stressful motions with your hand or holding your hand in the same position for long periods of time. CTS is classified as a cumulative trauma disorder, an ailment that attacks the body's musculoskeletal system. The musculoskeletal system is made up of muscles that pull on tendons and move the bones at joints. The joints are held together by ligaments. Carpal tunnel syndrome specifically affects the sensitive nerves of, and the blood supply that feeds, the hands and wrists.

Carpal tunnel syndrome has been around for a long time. Meatpackers began complaining of pain and loss of hand function in the 1860s. Back then, these complaints were largely attributed to poor circulation.

But the nature of work has changed over the years. Today, more jobs are highly specialized and require use of only a small number of muscles repeatedly. With the growing numbers of people using computers and keyboards, plus the focus on better health care for workers, carpal tunnel syndrome is of real concern to both employers and the health care professions.

Recent studies have shown that carpal tunnel syndrome, like all other cumulative trauma disorders, is on the rise while other workplace injuries have leveled off. Many companies are turning to physical therapists for help in designing and implementing health promotion and injury prevention programs to protect their employees from CTS.

This booklet explains what carpal tunnel syndrome is and the role physical therapists play in treating this debilitating disease and in educating people about possible risk factors. It also tells you how you can avoid CTS both at work and at home.

What Are The Symptoms?

People with CTS usually experience feelings of numbness, weakness, tingling, and burning in their fingers and hands. If not treated, the symptoms may escalate into acute, persistent pain. CTS can become so crippling that people can no longer do their work or even perform simple tasks at home. At its most extreme, carpal tunnel syndrome forces people to undergo surgery and miss many days of work, or prevents them from working at all because their hand functions are permanently impaired.

Who's At Risk?

Carpal tunnel syndrome strikes men and women of all ages, and is often found in workers whose tasks require repeating the same motion in the fingers and hand for long periods of time.

CTS has surfaced among meatpackers, assembly line workers, jackhammer operators, and employees who spend hours working at a computer or typewriter. Carpal tunnel syndrome shows up in athletes as well as homemakers.

The U.S. Department of Labor has cited carpal tunnel syndrome, as well as other cumulative trauma disorders, as the cause of 48 percent of

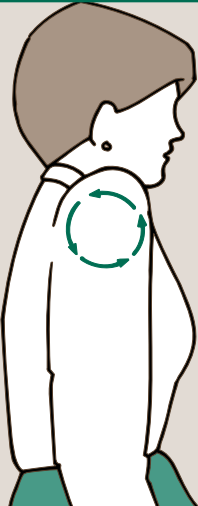
Some of the Symptoms of CTS

- tingling in the fingers
- numbness in the fingers
- aching in the thumb, perhaps moving up as far as the neck
- burning pain from the wrist to the fingers
- change in touch or temperature sensation
- clumsiness in hands
- weakness of grip, ability to pinch and other thumb actions
- swelling of hand and forearm
- change in sweat functions of hand

all industrial workplace illnesses. The disease affects more than five million Americans.

CTS's impact on American businesses is devastating. It shows up in the workplace in the form of fatigue, poor work performance, discomfort and pain, and poor employer/employee relations. The high cost of treatment for an employee with CTS, plus the lost productivity when that employee is absent for a long period of time, strains the company's ability to operate efficiently and can lead to morale problems when other employees have to take over the absent workers' responsibilities.

Stand in a relaxed position with your arms at your side. Shrug your shoulders up, then squeeze your shoulders back, then stretch your shoulders down, then press them forward. Count to seven as you complete one rotation of your shoulders. Repeat four times.



How Physical Therapists Can Help

Physical therapists with specialized training in cumulative trauma disorders have been working in industrial and corporate settings for many years to meet the health care needs of America's workforce. They work closely with employers to educate employees about CTS—what causes it and how to avoid it through proper use of the musculoskeletal system. Physical therapists can target and correct poor work habits and improper work designs, such as tools, furniture,

equipment, and work space. They also can assess the risk potential of an individual and determine if that person is physically unsuited for a particular job.

Among their many responsibilities, physical therapists teach health awareness and job safety. A typical education program includes exercises employees can do at work and at home, adjustments to the overall work environment and individual work stations, plus early detection of symptoms to avoid painful and costly surgery.

Physical therapists also work with employers and their engineering departments to design and modify the work environment, helping to remove the causal factors of CTS.

If you or anyone you know has symptoms of carpal tunnel syndrome, consult a physical therapist or other qualified health care practitioner for an evaluation and individualized treatment.

In the Workplace

A physical therapist will begin by observing how employees work and evaluating the ergonomics of the work environment. Ergonomics is the study and control of the effects of postures, stresses, motions, and other physical forces on the human body engaged in work. For instance, computer programmers may be sitting in

Hand Tools in the Workplace

These are just a few of the questions a physical therapist may ask when evaluating tools used in the workplace:

- Are hand tools operable with a straight-wrist position?
- Are they well-balanced and easy to hold?
- Are they designed to eliminate sharp edges or ridges that might impair circulation or exert pressure on the nerves?
- Are they designed to keep vibration to a minimum?



When using a keyboard or typewriter, move only the fingers—always maintain a straight-wrist position. If your keyboard has a pad at the bottom, use it to rest your wrists during breaks.

If your work includes using a typewriter, computer, or other keyboard, be sure to practice proper body mechanics. This means good posture—sit with the spine against the back of your chair, shoulders relaxed, elbows along the sides of the body, wrists straight, and feet flat on the floor. Typing materials and monitors should be at eye level so that you don't have to bend your neck over your work. It is important to maintain good posture at the work site to assist the circulation and nerve function to the arm/hand region.

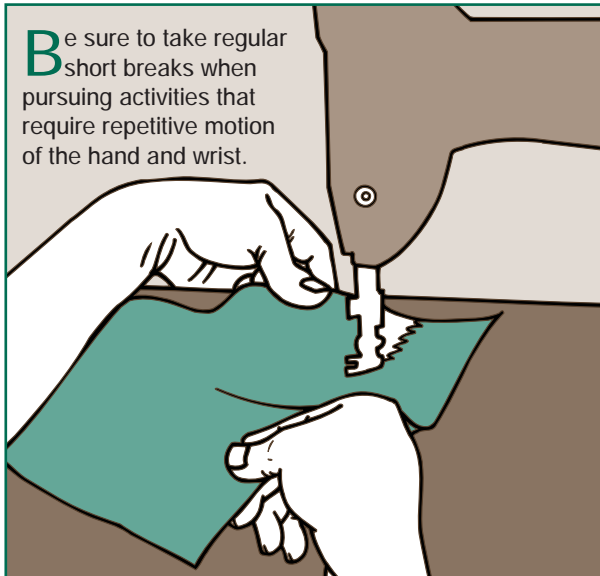
a chair that forces them to slouch. Their computer screen may be too high, causing stress in the neck and shoulders, and the keyboard may be in a position that forces continued pressure on the wrist muscles. Factory workers standing on their feet all day may have to use tools that are designed for individuals with a larger grip. Their work station may be too high or too low, forcing them into an awkward body position. This action puts added strain on the neck, shoulders, and arms.

A physical therapist can show employees how to adjust their work area, handle tools, or perform tasks in a way that puts less stress on the body. They may teach employees a number of exercises to increase flexibility of their arm/hand region while they are at work. Frequent brief stretching and relaxation exercises can help reduce injuries and improve productivity in the workplace. Physical therapists also suggest short rest breaks after two hours of using the hands.

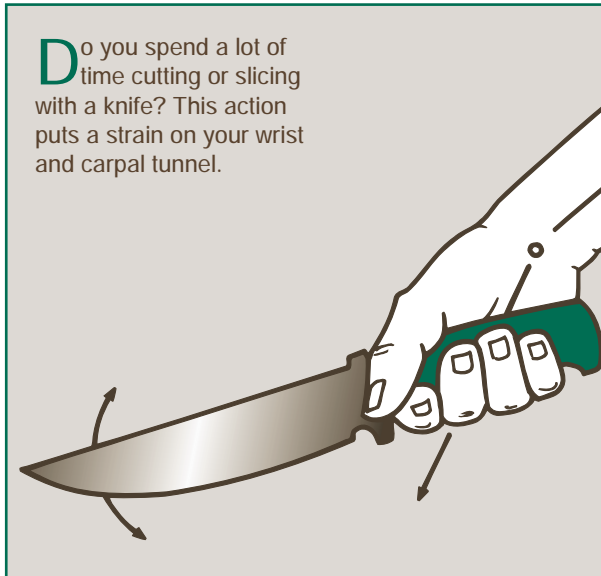
Sit upright. Place your right hand on top of your left shoulder. Hold that shoulder down as you slowly tip your head away to the right. Keep your face pointed forward, or even turned slightly toward the right shoulder to stretch all the muscle fibers. Hold this stretch gently for five seconds. Do this once for each side.



Be sure to take regular short breaks when pursuing activities that require repetitive motion of the hand and wrist.



Do you spend a lot of time cutting or slicing with a knife? This action puts a strain on your wrist and carpal tunnel.



At Home

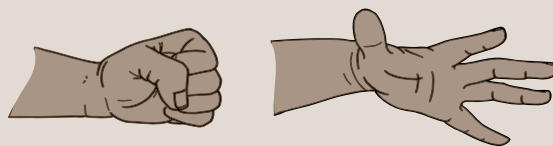
Many activities outside of work may contribute to carpal tunnel syndrome: knitting, sewing, or needlepoint; cooking and housework; TV computer games and home computer work; playing sports or cards; and hobbies or projects like carpentry or using power tools for extended periods of time.

You can do the same exercises at home that you do at work. You should also take frequent breaks and examine the tools you use at home that could be causing strain on your hands. You may need to wear a wrist splint at night, while playing sports, or when working at home. The wrist splint assists in maintaining the wrist in a neutral or straight position and allows the wrist to rest.

Your physical therapist will help you design an exercise program that allows you to enjoy daily activities at home. To begin with, your physical therapist will instruct you on exercises to stretch the forearm muscles to reduce tension on tendons that pass through the wrist. After swelling in

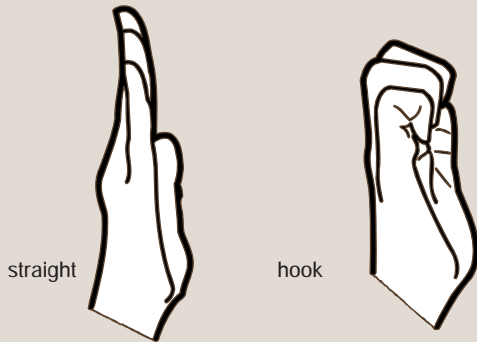
the wrist decreases, your physical therapist will give you some isometric strengthening exercises that are correct for your particular injury.

You can do these isometric and stretching exercises at work or at home. They'll strengthen the muscles of your wrists and hands, as well as in your neck and shoulders, improving the blood flow to those areas.

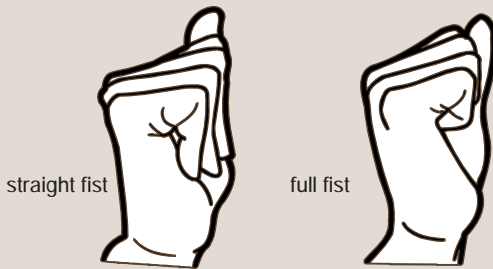


Make a loose fist, then release, fanning out fingers. Repeat five times

Fist Extension Exercises



The tendons in the wrist need to glide freely as the wrist and the fingers move. These are three different exercises to help the tendons in the wrist glide more easily...



Start with the fingers in the straight position and then move the fingers into the hook fist position. Hold this position for five seconds, then relax. Repeat four more times. Repeat the same series for the straight fist and the full fist positions.

About APTA

The American Physical Therapy Association (APTA) is a national professional organization that represents more than 75,000 members throughout the United States.

Physical therapists are vital members of the multi-disciplinary health care team. They provide treatment and can refer clients to other health care specialists. APTA serves its members and the public by promoting understanding of the physical therapist's role in the health care system. APTA also promotes excellence in the field with improvements in physical therapy practice, research, and education.

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- Fitness: A Way Of Life
- Fit Kids
- Fit Teens
- For The Young At Heart: Exercise Tips
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- For Women Of All Ages
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- Taking Care Of Your Shoulder
- The Secret Of Good Posture
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Bulk quantities available. Send for the APTA Resource Catalog, APTA, 1111 North Fairfax Street, Alexandria, VA 22314-1488. Or order via the Internet at www.apta.org

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