

# Carpal tunnel syndrome?

By Katharine Leppard, MD

**D**oesn't that only affect people who type all day? No, it is actually the most common pinched nerve in the general population and can affect anyone.

Doesn't that only affect the dominant hand? No, it can affect the non-dominant hand and sometimes both hands.

Numb hands are not normal, and can be caused by a number of different medical conditions. Often the onset of numbness is so gradual and slow that people think that it is normal to have numb hands, other think that numbness is simply a sign of aging, and do not seek medical attention until pain or weakness occurs.

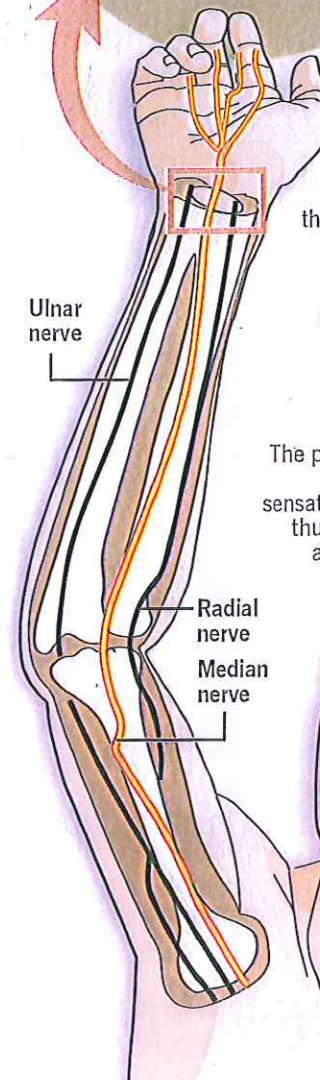
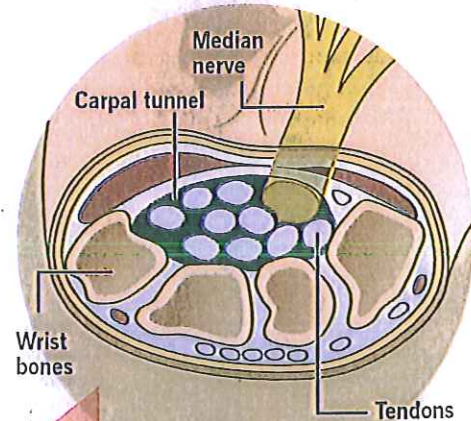
The most common pinched nerve is carpal tunnel syndrome (CTS), or entrapment of the median nerve at the wrist. The carpal tunnel is a narrow passage in the wrist formed by the carpal bones of the wrist and the transverse carpal ligament. Inside the tunnel are the tendons that flex the fingers and the median nerve. Anything that narrows the carpal tunnel such as arthritis, or thickens the finger flexor tendons such as age or repetitive hand use, can pinch the median nerve. Conditions that cause swelling such as pregnancy can also pinch the median nerve. Conditions such as diabetes, age over 40, obesity, rheumatoid arthritis, hypothyroidism, and past injury to the wrist all have increased risk of developing carpal tunnel syndrome. Women are three times more likely than men to develop carpal tunnel syndrome as the tunnel typically is smaller in women.

The most common first symptom of carpal tunnel syndrome is numbness or tingling. The classic pattern of numbness includes the thumb, index, middle and half of the ring fingers, the little finger is not involved. Symptoms usually start gradually. Typically the numbness starts at night, patients will shake their hands to awaken them. As the condition worsens, the numbness becomes more frequent, often awakening people at night, and also occurring during the day with activity such as gripping or driving. The fingers can feel swollen, even when no visible swelling is present. This can progress to severe pain not only in the hands, but radiating up into the arm. Weakness and muscle wasting can occur if pressure on the nerve persists. I have patients tell me they have trouble with buttons or zippers, as they cannot feel the button or the metal tab of the zipper. I have patients give up sewing because they cannot feel the needle. I also have had a few patients over the years, where the first symptom was severe left hand and arm pain that awoke them at night, and they went to the emergency room thinking they were having a heart attack. Left untreated, carpal tunnel syndrome can lead to considerable discomfort, impaired function of the hand and permanent weakness.

Diagnosis starts with physical examination testing strength, sensation and reflexes. There are provocative tests for the carpal tunnel region such as tapping on the nerve or placing the wrist in positions that pinch the nerve. Definitive diagnosis is

## Carpal tunnel syndrome

Numbness, tingling or loss of function in the hand can result from stressful, repetitive twisting of the wrist. This condition is known as carpal tunnel syndrome.



### HOW IT'S

#### CAUSED

The median nerve travels through the carpal tunnel in the wrist. It carries signals to and from the fingers.

Tendons swell and pinch the median nerve.

The patient feels pain and a pricking sensation in the hand, thumb, and middle and third fingers.

made by an EMG (electromyography) study. This is a medical test that consists of two parts, nerve conduction studies and electromyography. In nerve conduction studies, a small electric signal is applied to the skin over the nerve, and the physician measures how quickly and how well the nerve carries that electric signal. In the second part of the test a small wire with a microphone on the tip is briefly inserted in specific muscles to measure the electrical activity of the muscle and the nerve that innervates that muscle.

Definitive diagnosis is very important. There are a number of medical conditions that can cause numb hands, and sometimes there is more than one nerve being pinched at a time. Accurate treatment depends on accurate diagnosis. This is especially important for people with neck pain. I have many patients who have lived with neck pain

for years that later in life develop hand numbness. Given the history of neck pain, the first thought is that now they have a pinched nerve in the neck. This often prompts a cervical MRI study, which commonly show disc protrusions. It is important to know that disc protrusions are present in nearly everyone after the age of 40, and that these bulging discs do not always cause nerve compression. EMG studies are particularly helpful and important in situations like this.

Treatment depends on the severity of the nerve compression. If there is moderate to severe compression of the nerve, surgical decompression is indicated. In mild cases of nerve compression treatment can include activity modification, NSAIDS, a cortisone injection, or wearing a wrist splint at nighttime. The wrist splint maintains the wrist in a neutral position, this po-

sition gives the median nerve the most space in the tunnel for the period that the person is asleep, and in effect rests the nerve. If a person sleeps with their hands curled up, this causes compression of the nerve, irritates the nerve and can trigger numbness. Often in the case of mild carpal tunnel syndrome, patients will eventually pursue surgery to eliminate the problem. Carpal tunnel surgery is one of the most common surgeries in the U.S.

Numb hands can occur from a variety of causes, some of them are quite serious. It is important to seek medical evaluation for numb hands; remember, numb hands are not normal. Early diagnosis and treatment are important to prevent permanent nerve damage.

*Dr. Leppard is with Medical Rehabilitation Specialists and may be reached at 719-575-1800*

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Katharine Leppard, MD, PT

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3470 Centennial Blvd, Suite 110, Colorado Springs, CO 80907  
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Katharine Leppard M.D.