

# Carpal Tunnel Syndrome



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Many patients ask me “why do I get carpal tunnel syndrome? I don’t even use a computer!” In reality, carpal tunnel syndrome (CTS) has been around for a lot longer than computers have. In this brief article, I’d like to explain to you what CTS is, what causes it, and how or why you should get it treated.

## The Carpal Tunnel—Definition

The carpal tunnel is a compartment in your wrist that normally doesn’t expand. It is surrounded by wrist bones and one large ligament (the transverse carpal ligament). The tunnel is filled with nine long flexor tendons and the median nerve. The median nerve provides sensation to the thumb, index, middle and half of the ring finger. In addition to supplying sensation, the median nerve also innervates specific thumb muscles, most notably the ones that allow us to oppose our thumb.

## CTS—Causes

CTS occurs when there is too much pressure in the carpal tunnel. Considering the carpal tunnel does not expand, anything that produces pressure in it causes compression of the structures that pass through. Pressure can build up in the sheaths that lubricate long flexor tendons (called tenosynovium). When pressure builds up in the tunnel, the nerve gets compressed and then loses function—causing numbness in the fingertips and weakness in the thumb muscles. The most common cause of CTS is idiopathic (no associated medical condition). Other associated conditions are wrist arthritis, trauma, diabetes, thyroid conditions, and even fluid retention during pregnancy.

## CTS—Symptoms

CTS presents with numbness or tingling in the fingertips and sometimes loss of

grip strength. One of the hallmarks of CTS is hand pain at night that may be relieved by shaking one’s hand or suspending it off the side of the bed. During the day, the numbness or tingling can be felt with driving, writing, typing, or reading.

## CTS—Diagnosis

CTS is diagnosed by a combination of classic symptoms (hand numbness, night pain) in combination with specific exam findings. Your physician can examine your median nerve function by testing sensation, strength and nerve irritability. Sometimes, nerve studies (called nerve conduction studies and electromyography) are used to assist in diagnosis.

## CTS—Treatment Options

When caught early, CTS sometimes can be effectively treated without surgery. Nonoperative measures include minimizing compromising positions, like prolonged wrist flexion. A common way to treat CTS nonoperatively is with nighttime wrist splints. Wrist splints keep the wrist in a neutral position, minimizing pressure on the median nerve. Vitamin B6 or oral non-steroidal anti-inflammatory drugs (i.e. ibuprofen) can also be taken to decrease the pressure in the carpal tunnel. For those who type regularly throughout the day, an ergonomic assessment may be helpful to optimize one’s workspace.

## CTS—Surgical Release

Carpal tunnel release surgery is a very short procedure done as an outpatient. Typically this is done under local anesthetic with intravenous sedation. A small incision is made in the base of the palm and the transverse carpal ligament is released. This decompresses the median nerve. The wound is closed with a few sutures and a small dressing is applied. Full finger motion is encouraged. While the surgical incision area can be temporarily painful after surgery, it is okay to try and use the hand regularly as soon as possible.

## CTS—Surgical Indications

The most important reason to consider surgery for CTS is to avoid further nerve damage. Permanent nerve damage from CTS could not only cause permanent numbness in the thumb and fingers, but also loss of thumb opposition (inability to prepare the thumb for grasping). Optimally, surgery should be done before nerve damage is permanent.

If you have any questions, please ask your surgeon or physician.

If you are interested in seeing a CTS surgery done online, find the link on our website [www.oahct.com](http://www.oahct.com) under Dr. Caputo’s page.

