

Carpal Tunnel Syndrome

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Carpal tunnel syndrome is an extremely common disorder affecting the hand, present in approximately 1 in 100 people. It is a condition characterized by numbness and tingling in the fingers. Pain can extend to the elbow, shoulder or neck and can occur any time, either in the day or night. People oftentimes complain of awakening from their sleep and oftentimes shake their hands to try to restore sensibility. Symptoms often occur during the day when one talks on the telephone, holds a book or newspaper. Many people awaken in the morning with their hands numb and tingling and it will take some time before the symptoms diminish.

What Is Carpal Tunnel Syndrome?

To understand carpal tunnel syndrome, one needs to learn about the basic structures occurring at the wrist and hand level. The basic supporting structures are the bones of the wrist, which include the forearm bones, the wrist bones, medically known as the carpal bones, and the bones of the hand. The flexor tendons are the structures that extend from the muscles to the fingers like the strings of a marionette. They allow us to perform the multiple activities during the day. There are three main nerves to the hand to control the muscles and tendons known as motor nerves and it gives us the ability to feel, which the sensory nerves are. The nerve involved with carpal tunnel is known as the median nerve which generally gives sensation of the thumb, index, long and ring fingers. There is also a small branch of the nerve that goes the muscles base of the thumb.

The median nerve involved with carpal tunnel syndrome runs with the tendons in the area appropriately called the carpal tunnel. The bones of the wrist cover this tunnel on three sides and on the palm side, there is a thick ligament called the transverse carpal ligament that forms the roof of the tunnel. It is within this tunnel that pressure builds up that can cause the classic symptoms of numbness and tingling.

Causes of Carpal Tunnel Syndrome

Idiopathic: Many cases of carpal tunnel have no known cause and are thought to be anatomic abnormalities that make an individual at risk.

Overuse: There is some information to suggest that overuse of the fingers or wrist or certain positions, for extended periods of time, can contribute to pressure on the nerve.

Injuries: An injury to the wrist involving bleeding, such as with a fracture, can cause increased pressure within the tunnel leading to symptoms either early or late in the course after a fracture or dislocation.



Medical Conditions: Pregnancy, diabetes and thyroid problems are all known causes of carpal tunnel syndrome.

Understanding Carpal Tunnel Syndrome

In many cases the long-term consequences of numbness and tingling can be prevented through simple modifications. Altering the way one does certain activities, whether be at work, home or at recreation, can significantly improve and sometimes eliminate the symptoms of numbness and tingling.

Medical Interventions

Oftentimes wearing a proper splint, time or over the counter medications can significantly help.

Prescription medication known as anti-inflammatories can oftentimes help relieve the swelling. An injection of Cortisone can be helpful either temporarily or permanently to improve and eliminate the symptoms associated with this condition. Sometimes, physical therapy can be helpful.

Scientific studies have not today shown any predictable benefit from vitamins, though there have been anecdotal reports that vitamin B6 is helpful, though studies are not conclusive.

How to Diagnose Carpal Tunnel Syndrome

An early, thorough approach is very beneficial to diagnose, treat and prevent ongoing symptoms of carpal tunnel syndrome; one is history. It is very important to obtain a thorough history of other medical conditions, injuries and the characteristics of the condition. It is helpful to write down certain information that you can pass on to the doctor at the time of the examination.

Physical Examination

A thorough examination of the area is very helpful to either rule in or rule out the diagnosis. Most patients do not have textbook-like symptoms and it is important for you and me to look at the characteristics and the physical examination findings.

Three commonly used maneuvers are a Tinel's test, tap over the nerve, the second is the Phalen's maneuver, which is performed by flexing the wrist and seeing if this causes characteristic numbness, and the third is termed a forearm compression test where wrist pressure is placed over the nerve to determine the distribution of tingling.

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Carpal Tunnel Surgery

When conservative measures fail, surgery is also an option for a carpal tunnel syndrome with success rates in the 85% to 95% range. Surgery is done on an outpatient basis under a local anesthetic. I do it with the anesthesiologist present, who can let you be as awake as you want, or you could also be somewhat sleepy. In most cases, the surgery takes under 10 minutes and it involves a small incision in the middle of the palm to release the ligament over the nerve. After surgery, you will be in a bulky dressing for two days after surgery. Then, you will see the therapist who will remove the dressing, place a lighter dressing, and begin an exercise program. Approximately one week after the surgery, you will see me for suture removal. At that time, you can let the incision get wet and begin wrist exercises.

Most of the surgery I do is performed on an outpatient basis. I operate at Saint Raphael's Hospital, Temple Surgical Center, Shoreline Surgery Center, Milford Hospital and Yale. My secretary organizes my surgical schedule and will find the location that works best for the surgery. I feel equally comfortable at all facilities. If you have any questions, please talk to me or my staff.

To assure your understanding, I recommend a preoperative appointment to discuss the surgery, risks and benefits and answer any questions. You will also see me the day of surgery. If any questions come up, we will answer them then. Though the surgery is quite safe, there are some inherent risks. Please see the surgery section. These risks include the risk of anesthesia, infection, nerve, vessel, or tendon injury, stiffness, and pain. Usually, surgery goes very well and the success rate is high but unfortunately, the results of surgery cannot be guaranteed.

For five to seven days before surgery, you should stop taking Aspirin or anti-inflammatories such as Advil, Aleve, or Motrin unless recommended otherwise by your primary care doctor or cardiologist. These medications can prolong your bleeding and can lead to complications. If it is medically safe, you should avoid these medications, Tylenol (Acetaminophen) is usually okay. Unfortunately, the surgical facilities do not tell me until the day before what time your surgery will be. Though you can request the specific time for surgery, unfortunately, this is usually outside of our control. The facility will call you the day before surgery, tell you where and when to come and will give the details.

Surgery: As with any surgical procedure, you should not have to eat or drink after midnight the night before; this includes coffee, orange juice or even water in the morning. For most surgeries, daily medications prescribed by your regular physician can be taken with a sip of water, but please discuss this with me and my staff if you have any questions.



Most patients will receive an intravenous dosage of an antibiotic at the time of surgery; this does keep the risk of infection under 1%. These procedures are considered "clean" procedures and if you have artificial joints or heart valves, the antibiotic given at surgery will generally suffice, unless the surgeon who implanted your device has told you otherwise, please let us know.

The day of surgery, you will have a very large bulky dressing that looks like a boxing glove. Please wear a loose-fitting garment since the dressing is big, to help control swelling. In most cases, the therapist will remove it in two days, and you will be placed in a smaller dressing to. For a complex surgery, the dressing may stay on up to 10 days, but this will be clearly noted in your postoperative appointment cards. When you leave surgery, you will have a packet that includes a prescription for pain medication, two appointment cards; one to see the therapist for the dressing and the second to see me for your postoperative check. You will also be given a series of instruction sheets that is also included in this website, postoperative instructions.

Two days after surgery, I encourage you to return as quickly as you can to normal activities using your fingers and a week later, the wrist. Most people ask "how long does it take to recuperate after the surgery?" There is no hard and fast answer. As I mentioned, two days after the surgery, you should begin moving your fingers and a week later, your wrist. I encourage you to return to normal activities as quickly as you can, progressively use the hand more and more every day. Driving is fine once you feel you have control of the car and you are off narcotic medications. Keyboarding is fine as soon as you start to get comfortable; heavy lifting usually takes three to four weeks.

The surgery is successful in most cases. There are risks included, but are not limited to the risk of anesthesia, infection, nerve, vessel, or tendon injury, recurrent scar tissue, pain, reflex sympathetic dystrophy, (abnormal pain output); these complications occur less than 5% of the time.

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