

What is Carpal Tunnel Syndrome?

Carpal tunnel syndrome is a compression neuropathy of the upper extremity. Compression neuropathy means that a nerve is getting compressed by another structure somewhere in the arm or leg. In the case of carpal tunnel syndrome, the median nerve is compressed or pinched as it passes through the carpal tunnel just below the wrist in the palm of the hand.

What Does it Feel Like?

The median nerve supplies sensation to the tips of the thumb, index finger, middle finger, and part of the ring finger. Compression of the median nerve at the carpal tunnel, therefore, causes numbness in most, if not all, of those fingers.

The symptoms may start gradually and increase over time to constant numbness. One of the most frequent complaints of patients with carpal tunnel syndrome is nighttime awakening from sleep. Often patients have the feeling that their hand is “asleep” and they have to shake it to wake it up, restore normal feeling in the hand and get rid of the pain. Patients who have continued numbness may feel as if they have lost the ability to hold things in their hands, especially between the thumb and index finger. This especially causes problems with fine motor movements such as handling buttons or other small objects.

How Does the Doctor Diagnose it?

Sensation in the tips of the fingers supplied by the median nerve is compared to sensation elsewhere in the hand or the body (either the small finger or unaffected opposite hand). Muscle strength in the hand is also tested.

When your physician suspects carpal tunnel syndrome, the next step to definitively make the diagnosis is performance of an electromyography (EMG) test. The EMG test records impulses the nerves are sending along their path from the spinal cord. The EMG test is helpful to confirm the diagnosis of carpal tunnel syndrome and quantify its severity.

What Can be Done About it?

Patients with mild to moderate carpal tunnel syndrome (occasional numbness, no muscle wasting) may benefit from non-operative treatment. Non-operative treatment consists of wearing a brace or splint at night and during periods of heavy activity. Wearing a splint at night on the wrist prevents it from going into extreme flexion or extension and compressing the nerve. With relief on the nerve just at night, the symptoms may go away or become more tolerable. Cortisone injections are another alternative to relieve pressure on the median nerve and provide immediate, temporary relief of mild or intermittent symptoms.

Surgical treatment for carpal tunnel syndrome is called “carpal tunnel release”. This is done through an incision about one inch long in the palm of your hand near the wrist. The transverse carpal ligament that is the roof of the carpal tunnel is then cut. Once this ligament is cut, the space in the carpal tunnel is increased and the nerve is less likely to be

constricted by surrounding structures. After surgery, the pain associated with the numbness and nighttime awakenings go away rather quickly. The numbness takes longer to resolve, and depending on its severity, may not resolve completely.

The operation is performed on an outpatient basis in the hospital or at an ambulatory surgical center. Various types of sedative and local anesthetics are used according to your surgeon's and anesthesiologist's preference to make you relaxed and make sure you have no pain during the operation. Skin sutures are used to close the wound and either a soft bandage or splint is applied to the wrist. The procedure generally takes no more than 20 minutes. After surgery, the patient is permitted to move the fingers and thumb freely. The only important restriction is not getting the incision wet for the first seven to 10 days. Patients are free to return to work as early as a few days after the operation if they have a job that permits it.