

CARPAL TUNNEL SYNDROME



■ ■ ■ Description

Carpal tunnel syndrome is a nerve disorder in the wrist that causes pain, hand weakness, and loss of feeling, often in the thumb and first three fingers. It involves compression, stretching, or irritation of the median nerve at the wrist joint and may greatly decrease athletic performance in sports that require strong hand or wrist action.

■ ■ ■ Common Signs and Symptoms

- Tingling, numbness, or burning pain in part of the hand or fingers that may awaken you at night
- Sharp pains that may shoot from the wrist up the arm or to the fingers, especially at night
- Morning stiffness or cramping of the hand
- Thumb weakness, frequent dropping of objects, inability to make a fist
- Shiny, dry skin on the hand
- Reduced performance in any sport requiring a strong grip

■ ■ ■ Causes

Pressure on the median nerve at the wrist is caused by swollen, inflamed, or scarred tissue. The sources of pressure include:

- Inflammation of the tendon sheaths, often due to repetitive or forceful gripping or squeezing during sports, home activities, or work
- Scarring or shortening of the ligament that covers the median nerve
- Fracture, sprain, or dislocation of the forearm or wrist
- Prolonged hyperextension (wrist bent backward) or hyperflexion (wrist bent downward) of the wrist

■ ■ ■ Risk Increases With

- Diabetes mellitus
- Hypothyroidism (underactive thyroid gland)
- Menopause or amenorrhea
- Raynaud's disease
- Pregnancy
- Rheumatoid arthritis
- Gout
- Kidney disease
- Ganglion cyst
- Tasks that require repetitive hand or wrist action
- Repetitive jolting or shaking of the hands or wrist
- Prolonged forceful weight-bearing on the hands

■ ■ ■ Preventive Measures

- Wear a wrist brace that keeps your hand and wrist straight if your home activities, work, or sport involves repetitive grasping activities.

- Periodically change the position of your wrists if your activity requires prolonged hyperextension of the wrist (cycling, weightlifting) or results in repetitive jolting or shaking of the hands or wrist.
- Use proper technique in activities that result in the wrist position in neutral to slight extension.

■ ■ ■ Expected Outcome

Carpal tunnel syndrome is usually curable with appropriate treatment and sometimes resolves spontaneously. Surgery may be necessary at times, especially if muscle wasting or nerve changes have developed.

■ ■ ■ Possible Complications

- Permanent numbness and a weak thumb or fingers in the affected hand
- Permanent paralysis of some of the hand and finger muscles

■ ■ ■ General Treatment Considerations

Initial treatment consists of rest from the offending activities and the use of medications to help reduce inflammation. A wrist splint worn at night is often recommended as well to keep the wrist in a neutral position. Discomfort improves by wiggling the hands or dangling arms. If you awaken at night with pain in your hand, hang it over the side of the bed and rub or shake it. Activity modification, including technique changes and varying the position of the wrist often, are also helpful. Occasionally a cortisone injection may be given to reduce inflammation.

Surgery is performed to free the pinched or compressed nerve when these conservative treatments fail. Surgery, which is performed on an outpatient basis (you go home the same day), provides almost complete relief of all symptoms in 95% of patients. Allow at least 2 weeks for healing. Surgery is not usually recommended if carpal tunnel syndrome is the result of repeated jolting or shaking of the hand or wrist or to prolonged hyperextension. This is because these sources of carpal tunnel syndrome are usually caused by stretching of the nerve and not compression. Thus relieving compression will not relieve the symptoms.

■ ■ ■ Medication

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.

- Cortisone injections reduce inflammation. However, they are not always recommended.
- Vitamin B6 (pyridoxine) may reduce symptoms; use only if prescribed for your disorder.

■ ■ ■ Notify Our Office If

- Symptoms get worse or do not improve in 2 weeks despite treatment
- You also have a current or recent history of neck or shoulder injury that has resulted in pain or tingling elsewhere in your arm

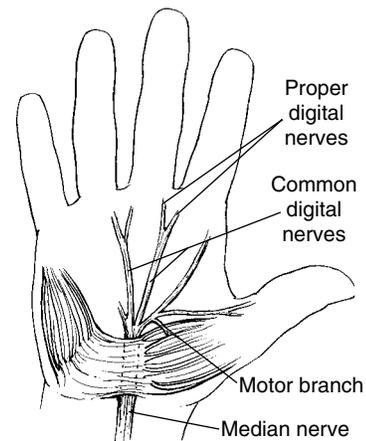


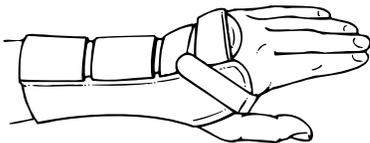
Figure 1

From Jobe FW: Operative Techniques in Upper Extremity Sports Injuries. St. Louis, Mosby Year Book, 1996, p. 633.

EXERCISES

Carpal Tunnel Syndrome

There are no specific stretching or strengthening exercises associated with treating Carpal Tunnel Syndrome. The primary method of intervention for Carpal Tunnel Syndrome involves the use of a splint to place the wrist in a position where it will place a compressive or excessive stretching force on the nerve. This splint (illustrated below) keeps the wrist in a neutral position. It should be kept on when you typically have pain. If pain usually occurs at night when sleeping or on awaking, wear the splint at night. If pain usually occurs during the day, wear the splint during the day.



Prevention:

- Do not bend the wrist all the way up or down when sleeping or using your hand. Keep the wrist in a neutral (straight) position. Wear a wrist splint to support the wrist in a neutral position if symptoms are present.
- Avoid activities that require repetitive hand and wrist motion, such as stapling and hammering.
- Avoid prolonged grasping of items, such as the steering wheel of a car, a pen, a vacuum cleaner, a rake, a newspaper, and shopping bags.
- Do not use a strong grip when completing activities such as those listed.
- Correct the positioning of your work station to decrease strain on the wrist and hand.
- Alternate work tasks, avoiding prolonged wrist flexion.
- Pinching activities such as needlework and writing may irritate your carpal tunnel. Avoid these activities or complete them for short periods of time to decrease the stress to the carpal tunnel.
- Use a felt tip or roller ball pen and/or build up the grip on a pen to decrease the forces required for writing.

Notes:

(Up to 4400 characters only)

Notes and suggestions