



# Carpal Tunnel Syndrome and Ulnar Nerve Compression

## (Peripheral Nerve Entrapment)



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The causes of peripheral nerve entrapment are lack of normal blood supply and compression of the nerve.

### I. Carpal Tunnel Syndrome

Compression of the median nerve at the wrist causes carpal tunnel syndrome (CTS). Frequently associated with repetitive motion of the wrist, the tunnel becomes narrowed.

**Symptoms:** Classic signs of carpal tunnel syndrome include pain and numbness in the first three digits of the hand and half of the ring finger. Symptoms may be worse at night, and patients may feel they have to shake the hand back and forth to

alleviate symptoms.

**Diagnosis:** The diagnosis can be made by the history of symptoms and a physical exam. On exam, tapping over the wrist will produce pain or electric shock-like symptoms (Tinel's sign); holding the wrist in a flexed position reproduces carpal tunnel syndrome symptoms (Phalens's test). Electromyogram (EMG) and nerve conduction studies may be ordered, but results can be normal in 25% of cases.

**Conservative Treatment:** Splinting the wrist in a neutral position may be helpful. However, if no improvement occurs after about two (2) weeks, further splinting is not likely to be effective. Local injections of xylocaine or steroids usually offer only temporary relief. The use of NSAID's (Advil, Motrin) can be helpful in mild to moderate cases.

**Surgical Treatment:** Surgery is indicated in patients with motor weakness of the hand, or persistent hand or arm pain and numbness. The procedure is performed on an out-patient basis, and takes about 15-30 minutes. A local anesthetic with a little IV sedation seems to work best. Frequently, both hands are symptomatic and require surgery. It is easier on the patient if only one hand is operated on at a time. Surgical

success rates are greater than 90%, and most patients return to regular activities without restrictions.

### II. Ulnar Nerve Compression

Ulnar nerve compression occurs most frequently at the elbow and sometimes at the wrist.

**Symptoms:** Pain and/or numbness occur in the little finger and half of the ring finger. There may be muscle weakness of the hand, and the patient may complain of dropping objects easily.

**Diagnosis:** Tinel's sign (tapping produces pain or electric shock-like symptoms) at the elbow may be present. Electromyogram (EMG) and nerve conduction studies aid the diagnosis but may be normal as in carpal tunnel syndrome.

**Treatment:** Non-surgical treatment is limited. When trauma is the cause, elimination of the repetitive trauma represents the best non-surgical treatment. Surgery is performed on an out-patient basis. The nerve is moved or "transposed" out of the tunnel compressing it. Patients tend to present much later than those with carpal tunnel syndrome, which may slow recovery. Nonetheless, dramatic improvement of symptoms may be noted after surgery.