

# InfoSheet – Cubital Tunnel Syndrome

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## WHAT IS CUBITAL TUNNEL SYNDROME?

**Cubital tunnel syndrome** is a condition that affects the **ulnar nerve** where it crosses the elbow. The symptoms are very similar to the pain that comes from hitting your *funny bone*. The funny bone is actually the ulnar nerve on the inside of the elbow that runs in a passage called the cubital tunnel. Sometimes this area becomes irritated from repeated injury or pressure, leading to a condition called cubital tunnel syndrome.

## SYMPTOMS

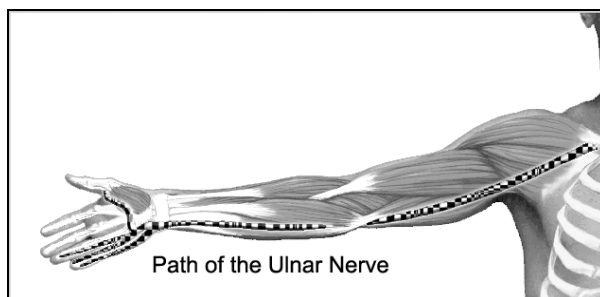
Early signs of trouble include numbness on the inside of the hand and in the ring and little fingers. This may later develop into hand pain and clumsiness in the hand and thumb, as the muscles that are affected grow weaker. The numbness is brought on by activities that keep the elbow bent, such as driving, and holding a telephone handset. When more severe, it may wake you at night. Tapping on the nerve as it passes through the cubital tunnel will cause an electric shock sensation down to the little finger. This is commonly referred to as a **Tinel's Sign**.

## ANATOMY

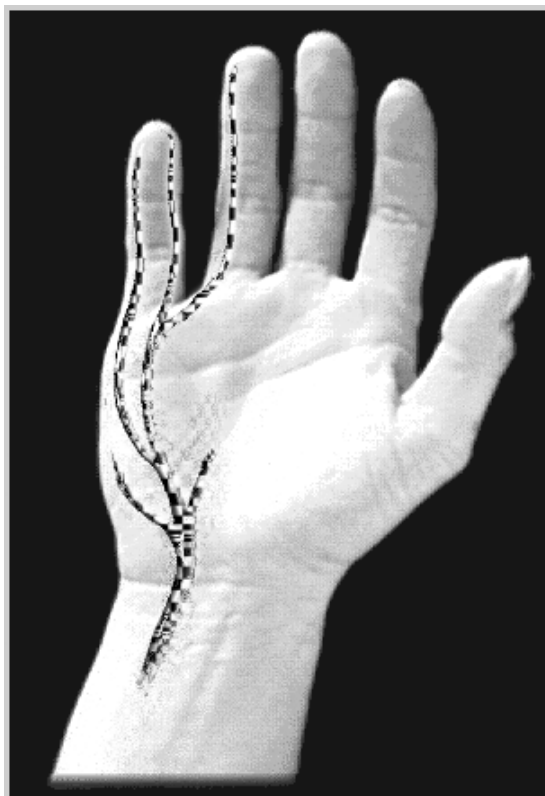
The ulnar nerve actually starts at the side of the neck, where the individual **nerve roots** exit the spine through small openings between the vertebra called **foramen**. The nerve roots then join to form three main nerves that travel down the arm to the hand. The **ulnar nerve** is one of those nerves.

After leaving the side of the neck, the ulnar nerve then travels through the

armpit, down the arm to the hand and fingers. At the inner portion of the back of the elbow, the ulnar nerve passes through a tunnel of muscle, ligament and bone - the cubital tunnel.



The nerve ends in the hand, supplying feeling to the **small finger** and **half of the ring finger**. In addition, these nerves cause movement in the small muscles of the hand.



## CAUSES

There are several possible causes of cubital tunnel syndrome. Frequent bending of the elbow such as pulling levers, reaching, or lifting are common sources of problems. Even anatomy may play a role. The ulnar nerve actually stretches several millimeters when the elbow is bent. Sometimes the nerve will shift or actually snap over the bony medial epicondyle causing irritation.

Leaning on the elbow, or constant direct pressure on the elbow may eventually cause cubital tunnel syndrome, causing prolonged pressure and irritation on the nerve. This may occur while driving long distances or while running machinery equipped that is equipped with an elbow rest. A direct blow or injury to this area may damage the ulnar nerve.

## DIAGNOSIS

Your doctor will need to know which fingers are affected by numbness, whether you have any weakness in your hand, and what type of activities you do.

There are several places along the arm where the ulnar nerve may be pinched. The physical examination will try to locate the point of compression that is causing your symptoms. Special tests may be required to study the nerve. One common test is the **nerve conduction test (NCV)**. It is used to measure the speed of information traveling down the nerve. Impulses are slowed when the nerve is compressed or constricted. The NCV is sometimes combined with an **electromyogram (EMG)**. The EMG is done by testing the muscles of the forearm that the ulnar nerve controls. Special instruments can be used to determine if the muscles are working properly or not. If the muscles are not

working properly, then the nerve may not be working well. (This is similar to checking to see if the wiring on a lamp is faulty by plugging in a new light bulb. If you know that the bulb is good and it doesn't work, then something must be wrong with the wiring!)

## PREVENTION/TREATMENTS

The early symptoms of cubital tunnel syndrome will usually respond to stopping the activity that is causing the symptoms.

**Patient: Doc, it hurts when I do this!  
Doctor: Then don't do it!**

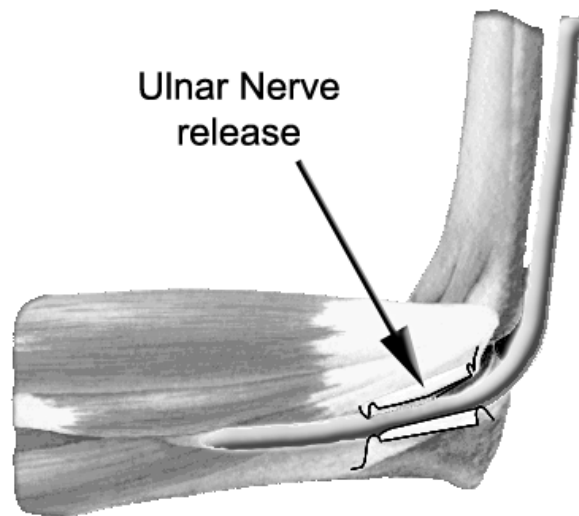
Take frequent breaks or limit the amount of time you are performing tasks that require repeated bending and straightening of the elbow. If the symptoms are worse at night, a lightweight elbow splint may be worn at night to limit movement and reduce further irritation. In some cases a foam elbow pad, like those worn by athletes, can be worn with the pad to the inside (in the bend of the elbow) to keep the elbow straight while you sleep. If the cause is direct pressure, an elbow pad with the pad to the outside may protect the nerve from chronic irritation from elbow rests, tabletops, etc.

Anti-inflammatory medications will help the symptoms, **but every effort should be made to eliminate the offending activity**. A physical therapist may be able to help evaluate your work situation and suggest modifications.

If the symptoms fail to respond to activity modifications and conservative medical treatment, surgery may be required to stop progression of damage to the ulnar nerve.

There are three main varieties of surgeries for cubital tunnel syndrome: Milder cases may be treated by an ulnar

nerve decompression, in which the ligament across the ulnar nerve is opened.



More advanced cases may do better with an ulnar nerve transposition, where the nerve is moved from behind the axis of the elbow to the front of that axis, where it will be loose. The nerve may be placed either under the skin (subcutaneous transposition) or under the muscles (submuscular transposition). For another variant of cubital tunnel syndrome, where the nerve slides back and forth across the elbow (subluxation of the ulnar nerve), smoothing of the bony corner of the cubital tunnel (a medial epicondylectomy) may be useful.

The symptoms typically improve following these types of surgeries, although if the compression was serious and long-standing, complete recovery may not always occur.

These surgeries can usually be done as an outpatient. Surgery can be done using a **general anesthetic** (where you are put to sleep) or some type of **regional anesthetic**, such as an **axillary block**. A regional anesthetic is a type of anesthesia where the nerves going to only a portion

of the body are put to sleep. Injections of medications similar to novocaine are used to block the nerves for several hours.

Following surgery, the elbow is wrapped and may be splinted. A gradual return to activities is advised.