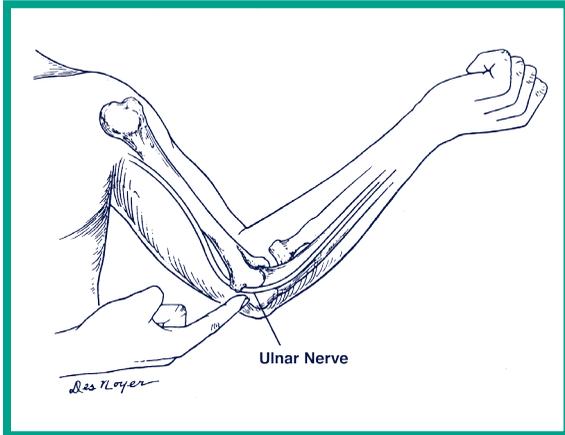


## WHAT IS CUBITAL TUNNEL?

Cubitus is Latin for elbow. The cubital tunnel is an anatomic passageway between the bony prominence of the inside of the elbow (medial epicondyle) and the tip of the elbow (olecranon process). Through this passageway travels the ulnar nerve as it crosses behind the elbow. To keep the nerve from displacing with motion of the elbow, the tunnel is completed by a covering of tissue called fascia. There is an entrance to the tunnel formed by the medial intermuscular septum and another covering layer of fascia called the arcade of Struthers. The exit of the tunnel is created by the two muscle origins of the flexor carpi ulnaris.

Cubital tunnel syndrome occurs when there is compression or injury of the ulnar nerve in the cubital tunnel. Although shielded from injury from the sides by the medial epicondyle and olecranon, the ulnar nerve is only superficially covered by a soft tissue between these bony prominences. In most individuals, the ulnar nerve is easily felt about the cubital tunnel. Anyone who has ever struck their “funny bone” knows how easily the ulnar nerve may be affected by direct injury.

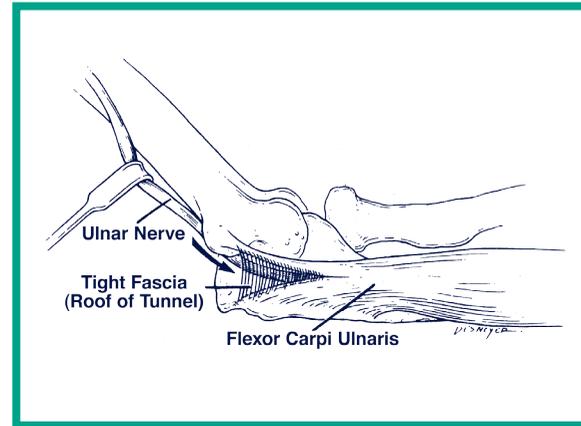


Areas of Cubital

## WHAT ARE THE CAUSES?

There are many ways in which the ulnar nerve may be injured or compressed in the cubital tunnel:

1. Either a severe, direct impact to the inner aspect of the elbow or chronic pressure to this area (such as supporting the arm by resting on the elbow) may produce swelling and inflammation within the cubital tunnel irritating the ulnar nerve. Over time, this may lead to the formation of scar tissue in and about the ulnar nerve.



### Path of Ulnar Nerve

2. The fascial covering of the cubital tunnel may lose its ability to stabilize the ulnar nerve with elbow motion. The nerve then becomes exposed to repetitive trauma as it slides in and out of its normal position.

3. Injury to the bones of the elbow joint may produce changes in the alignment or carrying angle of the joint. This may place tension on the ulnar nerve or narrow the size of the cubital tunnel.

4. As the floor of the cubital tunnel is formed by the elbow joint, arthritis may produce swelling or enlargement of the joint which in turn narrows the cubital tunnel compressing the ulnar nerve.

5. Tumors such as ganglion cysts or anomalous structures such as an extra muscle may compromise the space available for the ulnar nerve within the cubital tunnel.

## WHAT ARE THE SYMPTOMS?

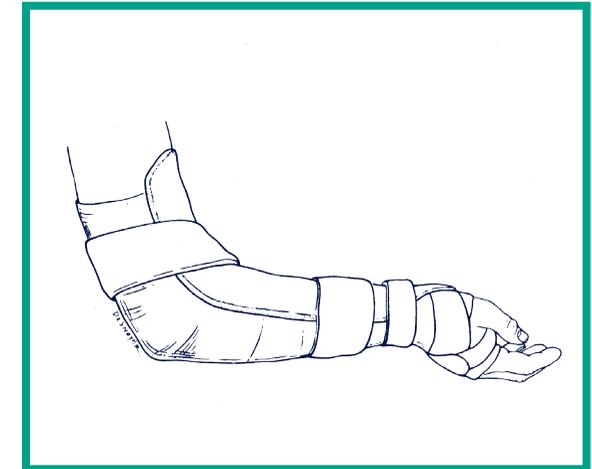
The ulnar nerve provides sensation to the little finger and half of the ring finger. It supplies several muscles in the forearm but most importantly controls many of the small muscles in the hand responsible for coordinating finger motion and pinch. Patients with this condition commonly exhibit symptoms of intermittent numbness or tingling in the ring and little fingers of the affected extremity. These symptoms may occur with prolonged flexion of the elbow or resting against the elbow. There may be an associated, aching discomfort along the inner forearm or elbow. If nerve damage persists, there is loss of sensation in the ring and little fingers. Eventually there is loss of pinch and grip strength.

Tapping over the ulnar nerve at the cubital tunnel may produce “electric shocks” or tingling (Tinel’s sign) radiating into the ring and little fingers. Bending the elbow may reproduce the aching discomfort about the elbow and forearm or the tingling in the fingers. With more severe disease, decreased sensation occurs in the ring and little fingers. Strength testing documents decreased pinch and grip strength. Pinching may require excessive flexion of the end joint of the thumb (Froment’s sign). There may be difficulty crossing the index and middle fingers. Severe cases will reveal loss of muscle bulk or wasting over the little finger aspect of the palm and along the back of the first web space.

Other conditions resembling cubital tunnel syndrome include compression of the nerves in the neck and shoulder area, or compression of the ulnar nerve in the wrist. These conditions can often be excluded by physical examination, however, it may be necessary to obtain special x-rays, vascular tests, or nerve testing to help with the diagnosis.

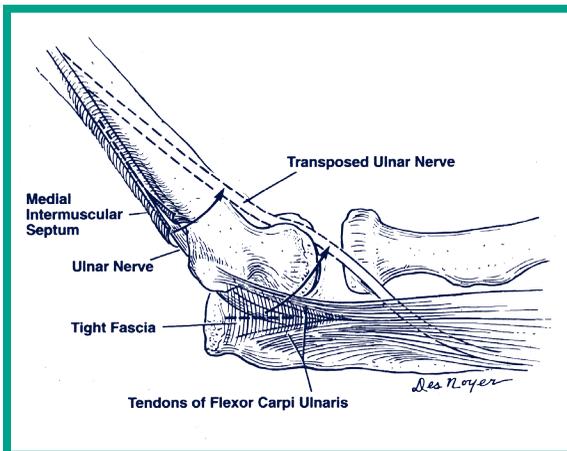
## HOW IS IT TREATED?

In early stages of cubital tunnel syndrome, symptoms may be alleviated by avoiding activities requiring prolonged or repetitive elbow flexion or resting against the elbow. To prevent elbow flexion, particularly at night, it may be necessary to use a long-arm splint. An elbow pad worn during the day can be beneficial in protecting the cubital tunnel from direct pressure. At times, an oral anti-inflammatory medication is helpful in alleviating symptoms.



Long-Arm Splint

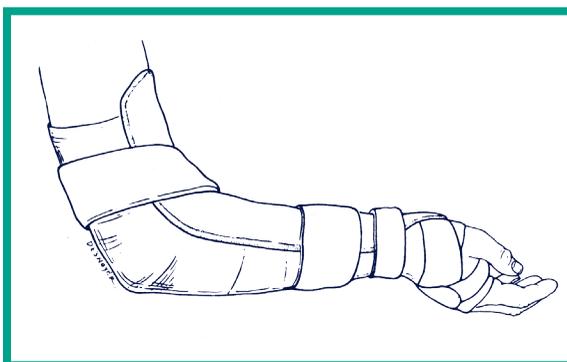
When cubital tunnel syndrome is severe or fails to improve with conservative management, surgery may be indicated. The goal of surgery is to relieve the compression of the ulnar nerve within the cubital tunnel. The simplest approach involves dividing the tissue overlying the ulnar nerve at the elbow. If the ulnar nerve is more severely affected, it may be necessary to move the nerve out of the cubital tunnel to the front of the elbow.



### *Transposition of the Ulnar Nerve*

The nerve can be placed in the fatty layer of soft tissue or within the flexor muscles of the forearm.

Following surgery, the arm is immobilized in a long-arm bulky dressing with a plaster splint.



### *Long-Arm Compressive Dressing*

Elevation and finger motion is important to prevent swelling. This dressing is usually removed at 10 to 14 days after surgery to permit suture or staple removal. Additional elbow immobilization may be required up to 3 weeks following surgery. Once therapy is started at the elbow, splinting between exercises is sometimes helpful for comfort and protection until normal motion has been restored. Strengthening of the extremity begins 4 to 8 weeks after surgery depending upon the procedure performed.

### **WHAT ABOUT RECOVERY?**

Recovery from cubital tunnel surgery requires 2 to 3 months before resuming unrestricted use of the extremity. Months may be required before the maximum benefits of surgery are achieved. In severe cases with loss of sensation and muscle wasting, complete recovery may not be possible. With proper diagnosis and appropriate treatment, progression of this condition may be prevented.

# CUBITAL TUNNEL SYNDROME



**The Louisiana Hand  
and Elbow Center**

T (985) 625-2200  
F (985) 625-2206

604 North Acadia Road, Suite 508  
Thibodaux, LA 70301



**The Louisiana Hand  
and Elbow Center**