

Cubital Tunnel Surgery (Ulnar Nerve)



Ulnar nerve entrapment, also known as cubital tunnel syndrome, is a condition involving a pinched nerve within the elbow. It causes numbness and tingling that gradually appear in the ring and little fingers and sometimes in the back of the hand. Find out how this condition can be properly treated.

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One of the most common nerve problems that happen around the elbow is irritation or compression (squeezing) of the ulnar nerve as it passes past the elbow joint. The ulnar nerve starts in the armpit area and runs down the upper arm and through a passage along the inner side of the elbow called the cubital tunnel. The ulnar nerve passes behind the bone on the medial (closest to your body) side of the elbow called the medial epicondyle. This is where your “funny bone” or “crazy bone” is located.

The ulnar nerve can be injured when it strikes a hard surface, or it can gradually loosen and start slipping back and forth over the medial epicondyle bone. When this happens, you may experience numbness and tingling down the arm into the ring and pinky fingers or even weakness of the hand’s ability to grasp or pinch.

Damage to the ulnar nerve can be caused by repetitive motion, pressure on the elbow from prolonged bending, or a poor sitting or sleeping position. It can also be caused by cysts, tumors, or bone spurs in the cubital tunnel where the nerve is located.

The ulnar nerve is vulnerable to injury because there is very little natural padding keeping it from rubbing against the elbow bone and external surfaces. The extent of damage to the nerve and any loss of hand function may be determined by x-rays and electromyography or nerve conduction studies. Recently, MRI studies have been used to diagnose this condition, as well as understand the amount of injury to the ulnar nerve.

Why treatment is required

Ulnar nerve entrapment, or cubital tunnel syndrome, causes numbness and tingling that gradually appears in the ring and little fingers and sometimes in the back of the hand. People may have an aching pain on the inside of the elbow. Pain and symptoms can often be worse at night. Left untreated, cubital tunnel syndrome can result in loss of hand strength and muscle function.

This is one condition where exercise and physical therapy are not always the prescribed first steps. Milder cases can often be treated with pain control and night splinting. However, if you’ve injured the ulnar nerve to the point of numbness and weakness in the hand, Dr. Romeo will likely recommend surgery, as the loss of function can become permanent if not addressed.

How treatment is performed

The goal of ulnar nerve decompression surgery is to decompress or relieve pressure on the nerve by opening the cubital tunnel. This involves making a

long cut on the inner aspect of the elbow. The nerve is located and any tissues pressing down tightly on the nerve are loosened or cut away. Sometimes, the surgery stops here and a decompression is all that is required.

But if the nerve is unstable or moves out of the tunnel when the elbow is bent, then it is moved to the front of the medial epicondyle bone. The nerve is held in place in its new position with a sling made of the body's own connective tissue. Moving the nerve is called an ulnar nerve transposition and many throwing athletes undergoing ulnar decompression surgery will require this step.

During an ulnar nerve transposition, Dr. Romeo essentially creates a new pathway for the nerve, giving it more space and protection from contact with the elbow bones. Also, because the nerve is in front of the elbow joint, flexion of the elbow does not cause any pressure on the ulnar nerve. In this new space, the nerve is better protected from pressure and is well connected to the circulatory system, providing ample blood supply for healing.

Risks and benefits

Ulnar nerve transposition has a very high success rate, but patients also need to stay alert for complications such as:

- » Recurrence of numbness, tingling, or weakness in the fingers and hand
- » Worsening symptoms
- » Signs of infection

Physical therapy

In the first few weeks after surgery, it's important to move the wrist, shoulder, and hand on the affected side. Light sport-related exercises often begin around week six with a full return to throwing or overhead throwing activities at week twelve. This course of physical therapy will encourage flexibility and motor coordination in your hand and arm.

Pain control

During the first two to four weeks after surgery, elevating your arm often and wiggling your fingers can help prevent swelling. Also, ice packs should be applied three to four times a day for twenty minutes at a time. Dr. Romeo will give you specific instructions to manage any post-op pain.



"It may take three to six months to make a complete recovery."

Recovery time

After surgery, a splint is applied to the elbow for two to four weeks so that it stays bent while healing. Once the splint and sutures are removed, you will begin with the bending of the elbow as well as rotation of the forearm. A strengthening program begins at six weeks. Sports-specific training begins at three months. It may take three to six months to make a complete recovery.

Results

Results vary for each person, depending on the severity of their condition before surgery. After the initial recovery process of three to six months, many people continue to see improvement for an additional twelve months after surgery.

If the person was experiencing numbness before their surgery, relief is often immediate following surgery, but in some cases, it can take weeks or months to improve. Depending on the extent of their nerve damage before surgery, some people may never recover normal sensation. However, in this case, surgery will prevent symptoms from getting worse.

Although a relatively minor procedure for the elbow, evaluation of Major League Baseball's HITS database shows that some high-level baseball players who undergo ulnar transposition may not return to the same level of performance.

FAQs

How is cubital tunnel syndrome diagnosed?

In order to diagnose cubital tunnel syndrome, a medical provider will conduct a complete medical history and physical exam. Additional diagnostic tests may include:

- » Nerve conduction test (measures how well signals are sent along nerves)
- » Electromyogram (EMG) (measures how well muscles react to nerve signals)
- » X-ray (checks for abnormalities in the bones, like spurs or growths)
- » MRI (evaluate the structural integrity of the nerve)

How can cubital tunnel syndrome be prevented?

To prevent cubital tunnel syndrome:

- » Reduce resting on your elbows
- » Put a cushion on a hard surface where you regularly rest your elbows
- » Avoid keeping your elbows bent for prolonged periods of time (like when talking on the phone)
- » Prop your elbows up at night with cushions to relieve pressure
- » Use a splint to help keep your elbows in a gently bent position
- » Regularly stretch your wrist and forearm muscles
- » Gently massage your forearm muscles to break up scar tissue
- » "Ulnar nerve flossing" stretches

Want to learn more? Find relevant videos, animations, and research material related to this procedure at anthonyromeomd.com. →



For more information about causes and treatment of ulnar nerve entrapment or cubital tunnel syndrome, please request an appointment with experienced Chicago orthopaedic surgeon Dr. Anthony Romeo.

Please visit our website to find out how to schedule your appointment.