KATARZYNA MACKENZIE

PLASTIC SURGEON

Cubital Tunnel Syndrome and Decompression

Cubital tunnel syndrome, also known as ulnar neuropathy, is a condition that happens when the ulnar nerve, which passes through the cubital tunnel (a tunnel of muscle, ligament, and bone) on the inside of the elbow, is injured and becomes inflamed, swollen, and irritated. This can cause tingling, pain and numbness, particularly in the little finger.

In most patients, cubital tunnel syndrome gets worse over time, so early diagnosis and treatment are important.

Length of surgery	1 hour
Anaesthesia	General anaesthetic
Hospital stay	Day case
Risks/complications of surgery	Frequent: Swelling, stiffness, discomfort on movement Infrequent: Infection, bleeding (haematoma), delayed wound healing, painful scar, numbness, damage to the nerve, recurrence, incomplete resolution of symptoms, complex regional pain syndrome
Recovery	2-3 weeks until return to office work 3-16 weeks until swelling disappears 6-8 weeks until return to gym and other strenuous activities 6-10 weeks no heavy lifting 3-6 months until final result
Driving	2-4 weeks
Hand position	Elevation above the heart level
Follow up	1 week, 6 weeks, 3 months, 6 months
Duration of results	Permanent but depending on severity

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Cubital tunnel decompression information sheet

Any hand surgery procedure is a personal choice and understandably there are a number of questions that arise. This information sheet is a general guide for patients considering cubital tunnel syndrome treatment under the care of Dr Mackenzie. It should provide the answers to some questions that you may have. There are many factors that can affect your individual operation, your recovery and the long-term result. Some of these factors include your overall health, previous surgery, any bleeding tendencies that you have and your healing capabilities, some of which will be affected by smoking, alcohol and various medications. Such issues that are specific to you need to be discussed with Dr Mackenzie and are not covered here. Please feel free to ask her any further questions before you sign the consent form.

What is cubital tunnel syndrome?

The cubital tunnel is made up of the bones in your elbow and the forearm muscles which run across the elbow joint. Your ulnar nerve passes through the tunnel to supply sensation to the fingers, and information to the muscles to help move the hand.

Cubital tunnel syndrome is compression or irritation of the ulnar nerve in a tunnel on the inside of the elbow (where your 'funny bone' is). The ulnar nerve provides sensation to the little finger and part of the ring finger, and power to the small muscles within the hand, therefore numbness or tingling of the little and ring fingers are usually the earliest symptom.

Early on, symptoms can often be relieved with simple measures like wearing a splint or avoiding certain activities. If pressure on the ulnar nerve continues, it can lead to nerve damage and worsening symptoms. To prevent permanent damage, surgery to take pressure off the ulnar nerve may be recommended in severe cases.

What are the symptoms of cubital tunnel syndrome?

Symptoms usually begin slowly and can occur at any time. They may include:

- Numbness, tingling, burning, and pain—primarily in the little and ring. The symptoms are often felt during the night, but may be noticed during the day when the elbow is bent for long periods of time
- Occasional shock-like sensations that radiate to the little and ring fingers
- Pain or tingling that may travel up the forearm toward the shoulder
- Weakness, clumsiness in the hand and difficulty with finger coordination (such as typing or playing instruments) due to muscle weakness in the hand and arm
- Aching pain on the inside of the elbow

- In severe cases sensation may be permanently lost, and some of the muscles in the hand and base of the little finger may reduce in size

What are the risk factors for cubital tunnel syndrome?

In most cases it is not clear why cubital tunnel syndrome occurs. Most cases of cubital tunnel syndrome are caused by a combination of factors. It is often associated with:

- Fracture or dislocation of the elbow
- Pregnancy – fluid retention and hormonal changes can cause swelling of the cubital tunnel, which usually disappears after childbirth
- Swelling of the elbow
- Joint dislocations and fractures of the wrist – they can put pressure on the median nerve
- Bone or arthritic conditions of the elbow
- Repetitive or prolonged activities that require the elbow to be flexed
- Cysts, growths and swellings coming near the elbow join

How is cubital tunnel syndrome diagnosed?

Dr Mackenzie will take a detailed history including complete medical history, how the hands have been used, repetitive movements, and any prior injuries.

That will be followed by examination of the hand, arm and neck to determine which nerve is compressed. An x-ray may be taken to check for arthritis, fracture or bony spurs. In some cases, laboratory tests may be done. Electrodiagnostic studies will be requested to confirm the diagnosis, check for other possible nerve problems and determine how well the ulnar nerve itself is working and how well it controls muscle movement.

How to prevent cubital tunnel syndrome?

- Keep your arms flexible and strong
- Avoid resting on your elbows – especially on a hard surface
- Warm up before exercising or using your arms for sports or other repetitive movements

Why do I need surgery?

If your symptoms are constant and are not relieved by non-surgical measures, surgery may be needed. 85% of patients responds to some form of surgery to release the ulnar nerve.

What is the treatment?

Non-surgical treatment

Non-surgical treatments are usually tried first. Treatment begins with:

- Wearing a wrist splint or padded brace at night to keep the elbow in a straight position
- Using an elbow pad (to protect against chronic irritation from hard surfaces)
- Taking nonsteroidal anti-inflammatory drugs, such as ibuprofen, to relieve pain.
- Avoid or modify any provocative activity where appropriate

Surgical treatment

When symptoms are severe or do not improve, surgery may be needed to make more room for the nerve. The goal of surgery is to increase the size of the tunnel in order to decrease pressure on the nerve that passes through the tunnel.
Surgery frequently improves the numbness, but its chief objective is to prevent the progressive muscle weakness and wasting that tends to occur in severe untreated cases.

Several operations are used, including simple opening of the roof of the tunnel (decompression) or moving the nerve into a new location at the front of the elbow (transposition).

What happens during surgery?

In most cases, cubital tunnel surgery is done as a day case. The surgery is done under general anaesthesia, which puts you to sleep. Dr Mackenzie will make a 6-8cm incision on the inside of the elbow and view the inside through this incision. During the procedure, Dr Mackenzie will divide the ligament (the roof of the cubital tunnel). This increases the size of the tunnel and decreases pressure on the ulnar nerve. Dr Mackenzie will inspect the ulnar nerve. The wound will be closed with dissolvable and bulky dressing and splint applied. Cubital tunnel release tends to work best when the nerve compression is mild or moderate and the nerve does not slide out from behind the bony ridge of the medial epicondyle when the elbow is bent.

In many cases, the nerve is moved from its place behind the medial epicondyle to a new place in front of it. Moving the nerve to the front of the medial epicondyle prevents it from getting caught on the bony ridge and stretching when you bend your elbow. This procedure is called an anterior transposition of the ulnar nerve.

The surgery takes about 1 hour.

After surgery, the ligament may gradually grow back together—but there will be more space in the cubital tunnel and pressure on the ulnar nerve will be relieved.

What is the recovery after surgical decompression?

It is very important to elevate your arm as often as possible, following your operation as it helps to reduce the swelling. You will be encouraged to move your hand straight away to reduce swelling and prevent stiffness.

Depending on the type of surgery you have, you may need to wear a splint for 2-4 weeks after the operation (after transposition). Generally, 5-7 after surgery, the bulky dressing is removed, and you will be instructed in range-of-motion exercises for your hand, wrist, elbow and shoulder.

You can expect some pain, swelling, and stiffness after your procedure. Discomfort around the cut area may last for several weeks or months.

Your grip may be temporarily weaker than usual following cubital l tunnel surgery but strength should return 2-3 months after surgery.

The numbness and tingling may disappear quickly or slowly, depending on the degree of nerve compression. If your hand muscles have been without nerve supply for more than 12 months, they are unlikely to regenerate at all.

You can have a bath or shower 48 hours after your operation, but keep your wounds dry until they have healed. It is helpful to wear a large plastic bag over your arm for showering or bathing.

Recovery may take several months. Cubital tunnel symptoms may not completely go away after surgery, especially in severe cases.

Hand therapy is sometimes needed after surgery.

When can I return to work?

This will depend on the type of work you do, but it may be one to two weeks after your operation.

For the first 4-6 weeks, you should avoid excessive weight-bearing through your elbow and the heel of your hand e.g. pushing up from a chair and heavy gripping tasks. Expect 4 weeks off work if your job involved heavy duties/manual work.

Typically, patients are able to drive from 2-3 weeks after the procedure.

Hand can be used to complete light tasks, such as dressing and eating meals.

Heavier activities with the affected hand are restricted for 4 to 6 weeks or longer, depending on the technique used.

Recovery times vary depending on the patient's age, general health, severity of carpal tunnel syndrome, and the length of time symptoms have been present.

Strength and sensation continue to improve over the following year.

What are the risks of surgery?

Complications associated with this surgery are rare, but can include:

- Infection – this can be settled by taking antibiotics
- Bleeding/haematoma
- Swelling-may last for a few months
- Stiffness which can last from weeks to 6 months. Hand physiotherapy may be required
- Persistent pain
- Ulnar nerve instability 1.3%
- Wound healing problems
- Damage to the ulnar nerve or its branches-very rare
- Recurrence 2-8%
- Incomplete resolution of symptoms in severe nerve compression
- CRPS-complex regional pain syndrome-5%