

Ulnar nerve dysfunction

Definition

Ulnar nerve dysfunction is a problem with the nerve that travels from the shoulder to the hand, called the ulnar nerve. It helps you move your arm, wrist, and hand.

Alternative Names

Neuropathy - ulnar nerve; Ulnar nerve palsy; Mononeuropathy; Cubital tunnel syndrome

Causes

Damage to one nerve group, such as the ulnar nerve, is called mononeuropathy. Mononeuropathy means there is damage to a single nerve. Diseases affecting the entire body (systemic disorders) can also cause isolated nerve damage.

Causes of mononeuropathy include:

- An illness in the whole body that damages a single nerve
- Direct injury to the nerve
- Long-term pressure on the nerve
- Pressure on the nerve caused by swelling or injury of nearby body structures

Ulnar neuropathy is also common in those with diabetes.

Ulnar neuropathy occurs when there is damage to the ulnar nerve. This nerve travels down the arm to the wrist, hand, and ring and little fingers. It passes near the surface of the elbow. So, bumping the nerve there causes the pain and tingling of "hitting the funny bone."

When the nerve compressed in the elbow, a problem called cubital tunnel syndrome may result.

When damage destroys the nerve covering (myelin sheath) or part of the nerve itself, nerve signaling is slowed or prevented.

Damage to the ulnar nerve can be caused by:

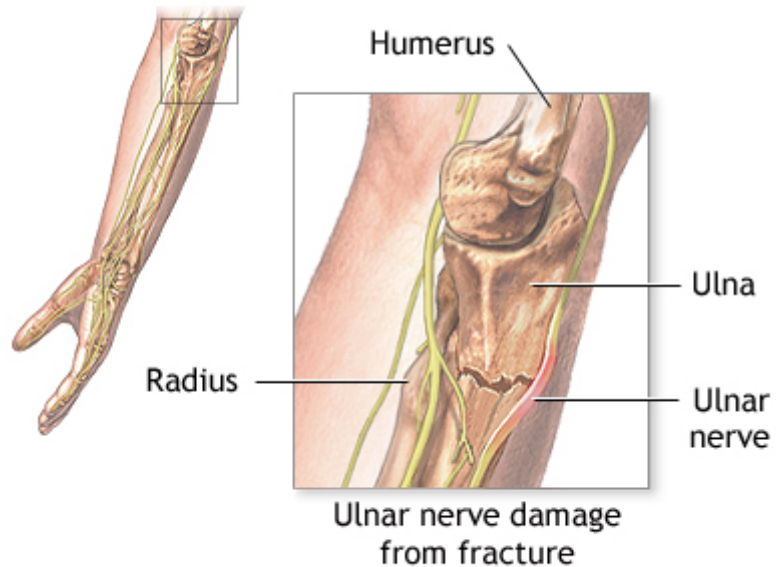
- Long-term pressure on the elbow or base of the palm
- An elbow fracture or dislocation
- Repeated elbow bending, such as with cigarette smoking

In some cases, no cause can be found.

Symptoms

Symptoms may include any of the following:

- Abnormal sensations in the little finger and part of the ring finger, usually on the palm side
- Weakness, loss of coordination of the fingers
- Clawlike deformity of the hand and wrist



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- Pain, numbness, decreased sensation, tingling, or burning sensation in the areas controlled by the nerve

Pain or numbness may awaken you from sleep. Activities such as tennis or golf may make the condition worse.

Exams and Tests

The health care provider will examine you and ask about your symptoms and medical history. You may be asked what you were doing before the symptoms started.

Tests that may be needed include:

- Blood tests
- Imaging tests, such as MRI to view the nerve and nearby structures
- Nerve conduction tests to check how fast nerve signals travel
- Electromyography (EMG) to check the health of the ulnar nerve and the muscles it controls
- Nerve biopsy to examine a piece of nerve tissue (rarely needed)

Treatment

The goal of treatment is to allow you to use the hand and arm as much as possible. Your provider will find and treat the cause, if possible. Sometimes, no treatment is needed and you will get better on your own.

If medicines are needed, they may include:

- Over-the-counter or prescription medicines (such as gabapentin and pregabalin)
- Corticosteroid injections around the nerve to reduce swelling and pressure

Your provider will likely suggest self-care measures. These may include:

- A supportive splint at either the wrist or elbow to help prevent further injury and relieve the symptoms. You may need to wear it all day and night, or only at night.
- An elbow pad if the ulnar nerve is injured at the elbow. Also, avoid bumping or leaning on the elbow.
- Physical therapy exercises to help maintain muscle strength in the arm.

Occupational therapy or counseling to suggest changes in the workplace may be needed.

Surgery to relieve pressure on the nerve may help if the symptoms get worse, or if there is proof that part of the nerve is wasting away.

Outlook (Prognosis)

If the cause of the nerve dysfunction can be found and successfully treated, there is a good chance of a full recovery. In some cases, there may be partial or complete loss of movement or sensation.

Possible Complications

Complications may include:

- Deformity of the hand
- Partial or complete loss of sensation in the hand or fingers
- Partial or complete loss of wrist or hand movement
- Recurrent or unnoticed injury to the hand

When to Contact a Medical Professional

Call your provider if you have an arm injury and develop numbness, tingling, pain, or weakness down your forearm and the ring and little fingers.

Prevention

Avoid prolonged pressure on the elbow or palm. Avoid prolonged or repeated elbow bending. Casts, splints, and other appliances should always be examined for proper fit.

References

Craig A, Richardson JK, Ayyangar R. Rehabilitation of patients with neuropathies. In: Cifu DX, ed. *Braddom's Physical Medicine and Rehabilitation*. 5th ed. Philadelphia, PA: Elsevier; 2016:chap 41.

Jobe MT, Martinez SF. Peripheral nerve injuries. In: Azar FM, Beaty JH, Canale ST, eds. *Campbell's Operative Orthopaedics*. 13th ed. Philadelphia, PA: Elsevier; 2017:chap 62.

Mackinnon SE, Novak CB. Compression neuropathies. In: Wolfe SW, Hotchkiss RN, Pederson WC, Kozin SH, Cohen MS, eds. *Green's Operative Hand Surgery*. 7th ed. Philadelphia, PA: Elsevier; 2017:chap 28.

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