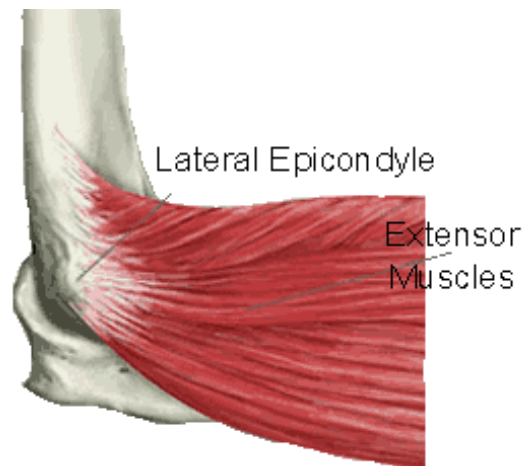


# Lateral Epicondylitis

**Introduction** Lateral epicondylitis is sometimes referred to as Tennis Elbow - not because only tennis players get the problem, but because the backhand swing in tennis is a common activity that can cause the problem. There are many other activities that can result in lateral epicondylitis - such as painting with a brush or roller, running a chain saw, and using many types of hand tools continuously. Each of these activities use the same muscles and can result in lateral epicondylitis when these muscles are overused.

**Anatomy** Lateral Epicondylitis is a common condition that causes pain at the outside bump (or epicondyle) of the elbow. Tennis is not the only cause of this condition, but tennis players do get the condition usually as a result of overuse of the muscles/tendons that they use to hit a backhand shot.



The muscles of the forearm that bend the wrist back (extensors) begin at the lateral epicondyle, from a common tendon attachment. Bending the wrist back (extension), turning the hand palm side up, and lifting an object with the elbow straight are the more common activities that affect these tendons.

**Causes** As we age, a tendon is subject to degeneration within the substance of the tendon. The term degeneration means that wear and tear occurs in the tendon over time and leads to a situation where the tendon is weaker than normal. Degeneration in a tendon usually shows up as a loss of the normal arrangement of the fibers of the tendon. Tendons are made up of strands of a material called collagen (think of a tendon as similar to a nylon rope and the strands of collagen as the nylon strands). Some of the individual strands of the tendon become jumbled due to the degeneration,

other fibers break, and the tendon loses strength. The healing process in the tendon causes the tendon to become thickened as scar tissue tries to repair the tendon. This condition is called tendinosis.

One theory on the cause of tendinosis is that small tears in the tendon occur through overuse. They begin to heal but when re-injured by continued use, the tendons seem to finally give up on trying to heal and a condition called angiofibroblastic degeneration begins to take over. (Think of this as scar tissue that never reaches maturity and remains weak and painful.) Other physicians feel that the tendon changes are primarily a result of decreased blood flow in the area, a sort of heart attack of the tendon. The end result is still the formation of the angiofibroblastic tendinosis tissue. The same events can happen with repeated strains like hammering a nail, picking up a heavy bucket, or pruning shrubs.

**Symptoms** The symptoms of lateral epicondylitis include tenderness and pain at the lateral epicondyle. This pain may be made worse by activities that require extending the wrist or holding an object in the hand with the wrist stiff. Tenderness and pain usually begin at the lateral epicondyle. Pain may spread down the forearm with soreness felt in the forearm muscles. Activities like grasping can make matters worse. Activities such as reaching into the refrigerator to get a gallon of milk can be a painful process! Some patients actually lose some motion in the elbow, usually a few degrees of extension (meaning they can't completely straighten the elbow.)

**Diagnosis** The diagnosis of lateral epicondylitis can usually be made from physical examination alone. X-rays of the elbow may be required if symptoms suggest the possibility of a problem with the joint. There are some cases of lateral epicondylitis that may be confused with a different problem that is very similar. Radial tunnel syndrome, a condition that is caused by compression of the radial nerve as it crosses the elbow, can appear to be very similar to lateral epicondylitis. In some cases of lateral epicondylitis that is not responding to treatment, your doctor may suggest nerve tests of the radial nerve to make sure that radial tunnel syndrome is not the problem.

**Treatment** Ice: Ice decreases the size of blood vessels in the sore area, halting inflammation and relieving pain. Choices of application include cold packs, ice bags, or ice massage. Ice massage is an easy and effective way to provide first aid. Simply freeze water in a paper cup. When needed, tear off the top inch, exposing the ice.

Rub three to five minutes around the sore area until it feels numb.

**Rest:** Resting the sore area will prevent further injury while allowing time to heal. An elbow strap may help rest the area by taking pressure off of the tendon attachment at the medial epicondyle of the elbow. A splint worn for a short period may rest the arm and reduce the pain. Problems can be avoided by taking frequent breaks as you work or play, improving overall arm muscle condition, and limiting heavy pushing, pulling or grasping.

**Exercises:** As healing continues different types of exercises are used. Early on, isometrics help maintain muscle strength without over stressing tissue. Isometrics are exercises where the muscles are simply tightened but no movement occurs. These type of exercises seem to allow the muscles to stay fit, but stress the soft tissues less than other types of exercise. Later, as pain lessens, more vigorous exercises are used to increase endurance and strength.

**Medications:** Anti-inflammatory medications such as aspirin or ibuprofen may be suggested to decrease the inflammation. An injection of cortisone in the area of the medial epicondyle may reduce the inflammation and pain.

If all else fails, surgery is available to treat tennis elbow. The surgery usually involves making a small incision (about 3-4 inches) over the lateral epicondyle. The tendons that attach to the lateral epicondyle are first released and allowed to loosen a bit. The tendons that attach to the lateral epicondyle are then split to reveal the area of angiofibroblastic tendinosis in the tendon. This tissue is removed, and any bone spurs that have formed on the lateral epicondyle are removed as well. This gives a fresh bed of healthy bone for the tendon to reattach itself to. The split in the tendon is then sutured together, as is the skin. It usually takes about 3 months for everything to reach maximal healing.

This surgery can usually be done as an outpatient. The surgery can be done using a general anesthetic (where you are put to sleep) or some type of regional anesthetic. A regional anesthetic is a type of anesthesia where the nerves going to only a portion of the body are blocked. Injection of medications similar to novocaine are used to block the nerves for several hours. This type of anesthesia, for example the axillary block, results in a numb arm.