

# InfoSheet – Lateral Epicondylitis

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## WHAT IS TENNIS ELBOW?

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. Many other activities can result in lateral epicondylitis. These include painting with a brush or roller, running a chain saw, and using many types of hand tools continuously. Each of these activities uses the same muscles and can result in lateral epicondylitis when these muscles are overused.

The elbow pain from lateral epicondylitis is pain on the outside of the elbow and is usually associated with grasping or lifting, especially if the palm is turned down. Activities such as reaching into the refrigerator to get a gallon of milk can become a painful process! When it gets severe, the pain comes without having to do much activity at all.

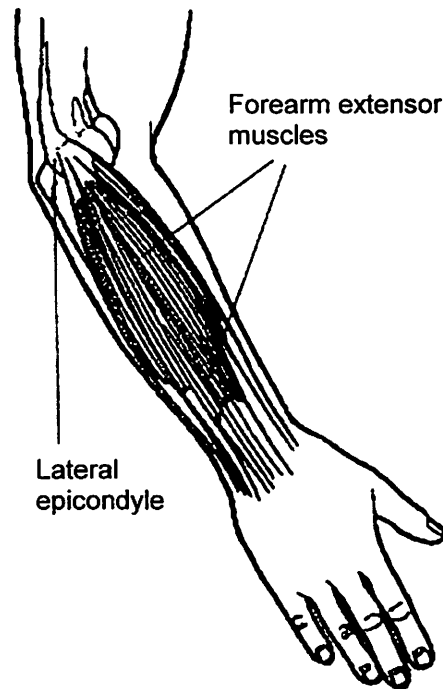
Pain may spread down the forearm with soreness felt in the muscles themselves. Some patients actually lose some motion in the elbow, usually a few degrees of extension (meaning they can't completely straighten the elbow.)

## WHAT CAUSES THE PROBLEM?

While it is given the name tennis elbow, in fact, the vast majority of people with this type of pain do not get it from playing any type of racquet sport. It usually comes from an over use or unusual use of the elbow and hand, as compared to regular activity. It is extremely common in both men and women between the ages of 30 and 50.

Lateral epicondylitis is thought to occur from small tears at the origin of the muscles that straighten out the wrist.

Tendons connect the muscles in your forearm to the bony bump on the outer side of your elbow called the lateral epicondyle. This is actually the end of the long arm bone (humerus). The muscles that attach here are used to bend your hand up at the wrist and to twist the palm of the hand up. When these muscles are overused, the tendons become irritated and may even tear slightly, which can cause scarring.



*Figure – The involved anatomy*

As we use muscles over time, 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**.

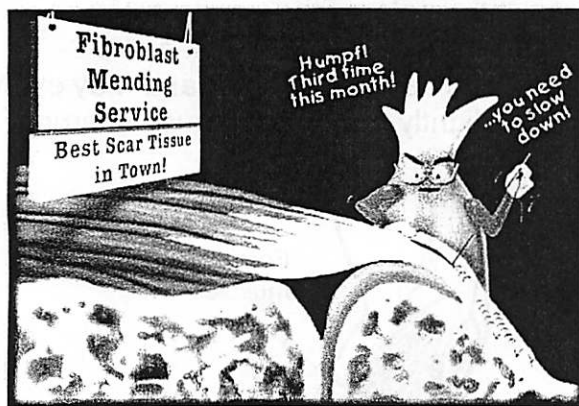


Figure – Healing repeated tendon microtears

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.) The same events can happen with repeated strains like hammering a nail, picking up a heavy bucket, or pruning shrubs.

There are some cases of lateral epicondylitis that may be confused with a very similar but different problem. **Radial tunnel syndrome**, a condition that is caused by compression of the

radial nerve as it crosses the elbow, can appear to be much like lateral epicondylitis.

### **HOW IS TENNIS ELBOW TREATED?**

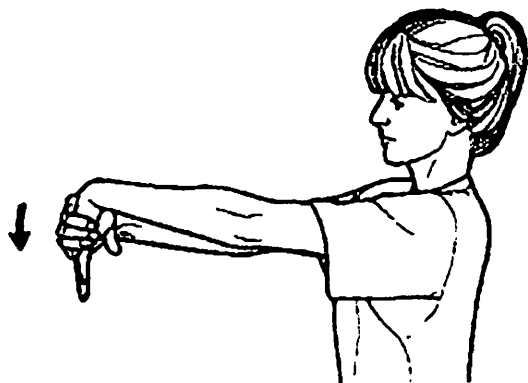
Tennis elbow is very difficult to effectively treat. It tends to be recurrent; once you get it for a first time, it is more likely to come back in the future with similar activities. Each “bout” of tennis elbow commonly lasts as long as three months. ***The most important way to treat it is to try to change the activity or the way that you are doing the activity that cause pain.*** I will state that again just to make sure it sinks in - ***Activity modification is the main treatment for tennis elbow.*** This may involve choosing a different body position or a different tool to perform a task. For example, try to do as much lifting with the palm facing up rather than down.

**Ice:** Ice decreases the size of blood vessels in the sore area, slowing 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 Styrofoam or 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. 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.

**Splinting:** The next line of treatment consists of bracing or splinting. Some people do well with an elastic strap that goes around the top of the forearm,

commonly known as a tennis elbow strap. Other people get no relief from this and do better with a wrist splint, such as the type that people wear for carpal tunnel syndrome. The wrist splint holds the wrist extended, so that the muscles of the forearm are relieved of part of this task.



*Figure – An important type of stretch*

**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, exercises that are more vigorous 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 (or a synthetic variant) in the area of the lateral epicondyle may reduce the inflammation and pain.

**Surgery:** If all else fails, surgery is available to treat tennis elbow. The surgery usually involves making an 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 may be 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. Injections 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 temporarily numb arm.

After such surgery, you would initially wear an elbow splint, and then slowly resume regular activity with or without the help of a hand therapist.