

Elbow Pain

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Tennis Elbow

Pain on the outside (*lateral* side) of the elbow is usually due to the condition known as ‘tennis elbow’. The pain is felt at the attachment of the common *extensor tendon* into the *lateral epicondyle*. The tendon arises from the forearm *extensor* muscles. These muscles function to extend the wrist & fingers (bend them backwards). They also assist in gripping and squeezing actions, and in providing stability at the elbow. There are several of



these extensor muscles in the forearm, however only a few are said to be implicated in tennis elbow. The main one is *extensor carpi radialis brevis* (ECRB). The *extensor digitorum*, *supinator* & *extensor carpi ulnaris* may also be



involved.

What is tennis elbow?

The theory behind tennis elbow is that there is a ‘wear and tear’ at the point of attachment of the tendon into the bone. In time, this can affect other parts of the muscle, leading to tension and pain extending into the forearm. Until recently, the medical term for this condition was ‘*lateral*

epicondylitis’. The ‘*itis*’ implied that there was inflammation present. However research has shown that inflammation is not a factor. A suitable scientific term for tennis elbow has not been widely agreed on, but lateral elbow ‘*tendinopathy*’ or ‘*tendinosis*’ are terms currently used. The pathology is complex, but degeneration is a more accurate description than inflammation. (For a detailed explanation see section on Tendinopathy).

While most cases of lateral elbow pain are likely to be due to disease of the tendon, it is possible for the pain to be due to other causes. These include referred pain from the spine or shoulder, nerve entrapment at the elbow, and joint inflammation.



The prevalence of tennis elbow is around 1% in the general population, and 15% in sports and occupations that heavily load the joint. It is most common in the 45 to 55 year age group. Studies suggest the average length of symptoms will be from 6 to 24 months, and that there will be a high likelihood of recurrence.

Examples of movements that become painful include gripping (such as a tennis racquet, golf club, or knife while chopping food); lifting (shopping bags, the kettle, a cup of coffee); squeezing (shaking hands, using garden shears); twisting (using a screw driver, wringing out clothes, spin bowling); and wrist or finger actions (tennis forehands or backhands, using a computer mouse). Tennis is a

common cause, but any sport that involves gripping a club or racquet can be a problem. Heavy manual work, excessive gardening, and repetitive computer work are common non-sporting activities that cause or aggravate the condition.



In the early stages, the pain is only present with movements that load the extensor muscles. As the condition worsens, all movements of the wrist and hand can become painful. In severe cases there is pain at rest which disturbs sleep. Similarly, as pain worsens it can go from being localized to one point on the elbow, to extending right down the forearm. The muscles can become chronically tense and painful.



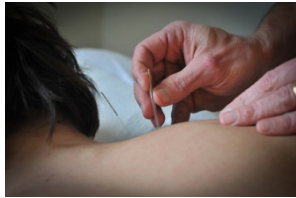



Causes

There are many possible causes or contributing factors:

1. **Overload.** The muscle or tendon can become overworked to the point where tissues start to break down. This can be due to too much heavy load, or lighter repetitive load. It can also be due to doing too much too soon, before the muscles have had time to become conditioned.
2. **Muscle tightness or tension.** Muscles in the front or back of the forearm, and further up the arm, can become tight and put added strain on the elbow.
3. **Muscle imbalance.** Abnormal variation in strength between groups of muscles at the elbow is a common problem in overhead sports like tennis. An imbalance in other parts of the body can also overload the elbow region. For example, a tennis player with a knee injury may compensate all the way along the *kinetic chain*. They may try to make up for a lack of leg drive by adding extra speed or force to wrist and elbow actions.
4. **Shoulder injury.** Problems with movements of the shoulder-blade and shoulder joint can reduce the efficiency of muscles down the arm, creating imbalance and overload.
5. **Joint stiffness.** Restricted movements in joints of the arm or spine can make the forearm muscles work harder to overcome the resistance.
6. **Spinal problems.** Neck or upper back complaints can refer pain and alter muscle

activation throughout the arm.

Treatment

1. **Reduce the load.** In the early stages a reduction in aggravating activities may be necessary. This could involve changing activities and avoiding certain positions that are more likely to cause the pain. Complete rest is rarely necessary and is unlikely to be helpful.
2. **Stretching.** Tight muscles in the forearm, shoulders or spine should be stretched regularly.
 

3. **Massage.** Muscles in the forearm, as well as in the shoulder and upper back can become chronically tense. Massage techniques, including trigger point pressure and other deep tissue releases, can be very effective.
4. **Trigger point dry needling.** For the same reasons as massage, this can be an effective way of relieving muscle tension. Acupuncture needles are used to de-activate painful trigger points in certain muscles, particularly in ECRB or other forearm muscles, and in the shoulders, neck and upper back.
 

5. **Ice.** This can give short term relief after sport or other strenuous activity.
6. **Strengthening.** Finding the right balance of exercises is important for long-term recovery. Your physiotherapist will give you guidance on the correct exercises to do. Strength for the elbow, shoulder and trunk may all be beneficial.
 
7. **Joint mobilisation** to any stiff joints, particularly in the elbow and spine.
8. **Brace or strapping.** A tennis elbow strap or brace is sometimes helpful. Certain strapping techniques can also provide temporary benefit during sport or heavy work.
 

Injections

In the past, when tennis elbow was thought to be an inflammatory condition, cortisone injection was a common treatment. However some good quality studies have shown that at best, cortisone only offers short-term relief. The medium to long term result was found to be worse than for those who had no injection. This is not surprising considering that cortisone is an anti-inflammatory agent, and there is no inflammation with tennis elbow.

There have been recent trials with injecting other substances into the tendon. Plasma Rich Protein (PRP) & autologous blood are natural and safe blood products taken from your own body. The theory behind their use is that they contain concentrated growth factors which can help with healing. Unfortunately there has been no clear evidence to date that they provide any additional benefit to healing.

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