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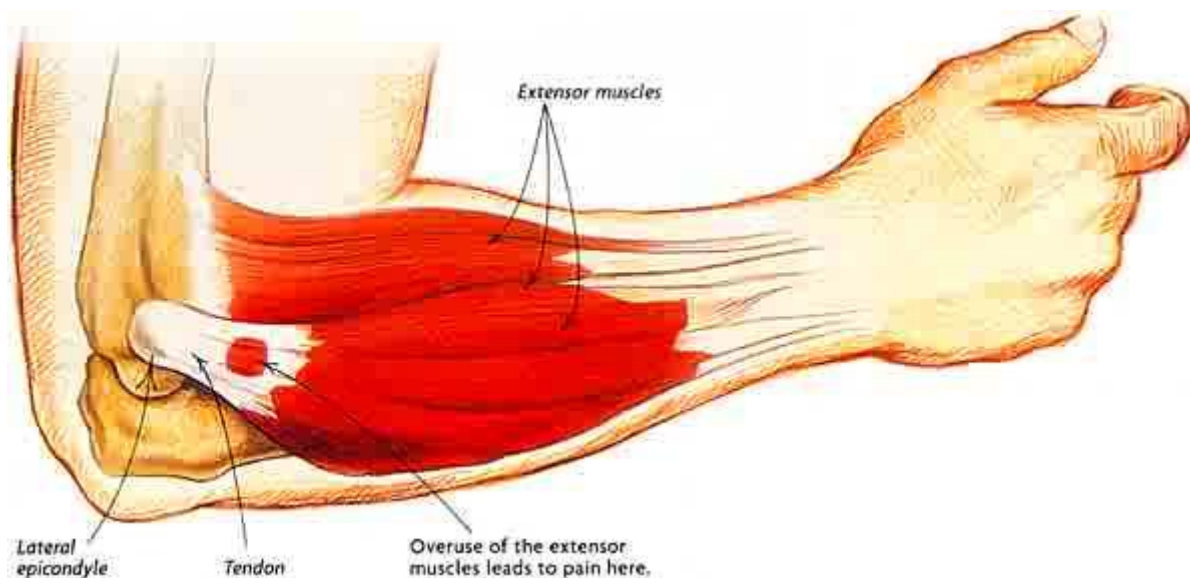
Tennis Elbow (Lateral Epicondylitis)

What is tennis elbow?

Tennis elbow, or Lateral Epicondylitis, is a common overuse injury which typically causes pain on the outside aspect of the elbow, as well as difficulty and weakness with lifting and twisting activities of the wrist. Tennis Elbow is a result of inflammation to the extensor tendons, often from performing repetitive activities such as excessive gripping, twisting, lifting or typing (*refer to page 2 for more 'Causes'*).

The wrist extensors are a collection of muscles which act to extend the wrist and fingers backwards. These muscles have a common bony attachment to the outer aspect of the elbow, called the lateral epicondyle, through the extensor tendon. The muscles then span along the back of the forearm into the wrist and fingers. During a contraction of the extensors, tension is placed through the extensor tendon and its attachment to the lateral epicondyle. If the tension becomes excessive due to too much repetition or high force, damage is caused to the extensor tendon. Tennis elbow is a condition whereby damage, subsequent inflammation, and degeneration of the extensor tendon occurs at the bony attachment to the outer elbow.

Typically the symptoms of tennis elbow occur due to gradual wear and tear associated with over use, and can slowly develop over a period of time. However, direct trauma to the wrist extensors can also lead to similar symptoms.



Causes of tennis elbow

Contrary to what the name suggests, you do not have to play tennis to develop this condition. In fact, tennis elbow is more commonly seen in non-tennis players than in tennis players. Patients typically develop this condition in association with activities involving repeated wrist extension against resistance. This includes sporting activities such as tennis, squash, badminton, as well as manual work such as carpentry, painting, chopping wood, bricklaying, repetitive use of a screwdriver, sewing and knitting or working at a computer. Patients may also develop this condition from other activities involving repetitive or forceful gripping of the hand.

It is common for patients to develop this condition following a sudden increase in activities that place stress on the forearm extensors; such as involvement in a tennis tournament over consecutive days or due to a change in these activities such as hitting balls in the wet, hitting into a strong breeze, tightening the tennis racquet's strings, using a new tennis racquet or technique, or simply hitting the ball too hard. Occasionally, the condition may develop suddenly. This is usually due to a forceful movement involving a heavy lifting or gripping force through the arm. A history of wrist, elbow, shoulder or neck injury may also increase the likelihood of developing this condition.

Signs and symptoms of tennis elbow

The symptoms associated with this condition usually develop gradually over a period of time. Initially, symptoms may present as an ache following an aggravating or unaccustomed activity. This may often be felt first thing in the morning. Patients usually experience localized elbow pain 1-2cm down from the bony lump on the outer aspect of the elbow (lateral epicondyle – figure 1) that increases on firmly touching this region. Occasionally, pain may radiate into the forearm.

In less severe cases of this condition, patients may only experience a minor ache. In more severe cases, pain may be quite incapacitating and can keep the patient awake at night. Usually pain is experienced as an ache that increases to a sharper pain with activity. Occasionally, this condition can be associated with neck or upper back pain on the same side. In longstanding cases muscle weakness and reduced grip strength may also be present. Patients with tennis elbow often experience an increase in pain during everyday activities such as gripping activities, picking up a cup, turning a door knob, opening a jar, shaking hands, carrying groceries or turning the steering wheel of a car. Elbow stiffness may also be experienced and is also typically worse first thing in the morning.

Prognosis of tennis elbow

With appropriate management, most minor cases of tennis elbow that have not been present for long can usually recover within a few weeks. In more severe and chronic cases recovery can be a lengthy process and may take up to 6 months in those who have had their condition for a long period of time. Early physiotherapy intervention is therefore vital to hasten recovery.

Contributing factors to the development of tennis elbow

There are several factors which can predispose patients to developing this condition. These need to be assessed and corrected with direction from a physiotherapist. Some of these factors include:

- excessive or inappropriate activity
- poor sporting technique or equipment
- muscle weakness
- muscle tightness
- joint tightness (particularly the wrist, elbow, neck or upper back)
- poor posture
- inadequate warm-up
- inadequate rehabilitation following a previous elbow injury
- a history of a neck or upper back injury
- a history of injury to the nerves that supply the elbow

Physiotherapy for tennis elbow

Physiotherapy treatment for this condition is vital to hasten the healing process, ensure an optimal outcome and reduce the likelihood of injury recurrence. Treatment may comprise:

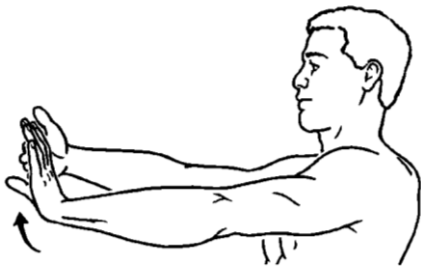
- soft tissue massage
- electrotherapy
- taping
- the use of a tennis elbow brace
- joint mobilization
- dry needling
- ice or heat treatment
- progressive exercises to improve flexibility, strength & posture
- training and activity modification advice and education
- anti-inflammatory advice
- devising and monitoring an appropriate return to sport or activity plan

Exercises for tennis elbow

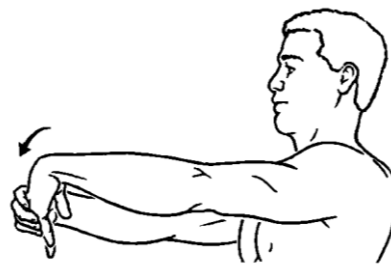
The following exercises are commonly prescribed to patients with this condition. You should discuss the suitability of these exercises with your physiotherapist prior to beginning them. Generally, they should be performed 2 - 3 times daily and only provided they do not cause or increase symptoms.

Your physiotherapist can advise when it is appropriate to begin the initial exercises and eventually progress to the intermediate, advanced and other exercises. As a general rule, addition of exercises or progression to more advanced exercises should take place provided there is no increase in symptoms.

1.



2.



- Keeping elbow straight, grasp affected hand and slowly bend wrist as shown in the above picture '1' until a stretch is felt. **Hold 30 seconds, relax** and then **repeat** a second time.
- Repeat the above instructions for picture '2' stretch.
- Complete the above stretches 2-3 times daily