

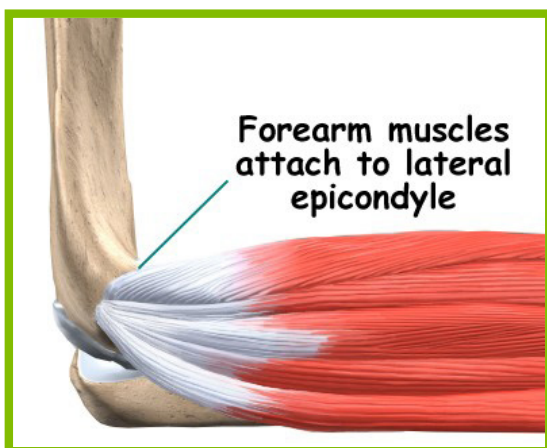
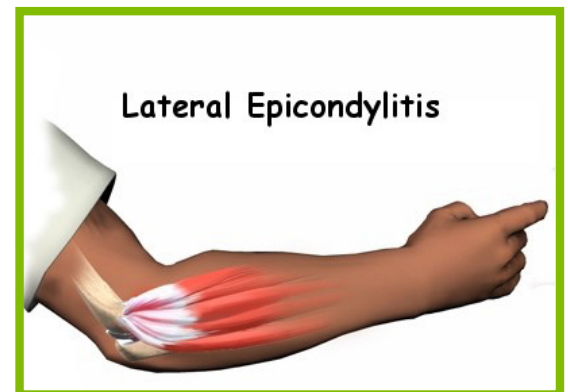
Physio Med Self Help for Tennis Elbow (Lateral Epicondylalgia)

0113 229 1300

Lateral epicondylalgia (previously known as epicondylitis) is commonly known as tennis elbow. This does not mean that only tennis players have this condition. But a backhand racket swing is a common cause of lateral epicondylalgia. Many other repetitive activities with an extended wrist can also lead to tennis elbow: painting with brush or roller, using a chain saw, and using many types of hand tools – even typing with poor technique (overly extended wrists). Any activities that stress the same forearm muscles can cause symptoms of tennis elbow.

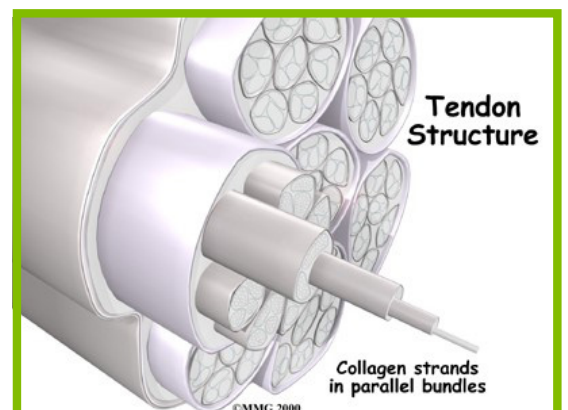
Anatomy of the Area

Tennis elbow causes pain that starts on the outside bump of the elbow, the lateral epicondyle. Wrist extensors are the muscles of the forearm that pull the hand backward. The wrist extensors are on the side of the forearm lined up with the back of the hand. Most of the wrist extensors attach to one main tendon on the lateral epicondyle. This tendon is called the common extensor tendon.

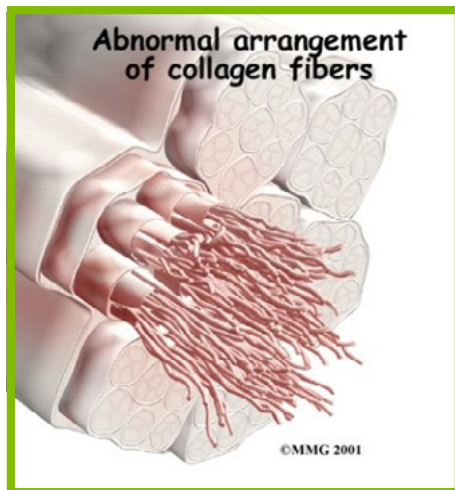
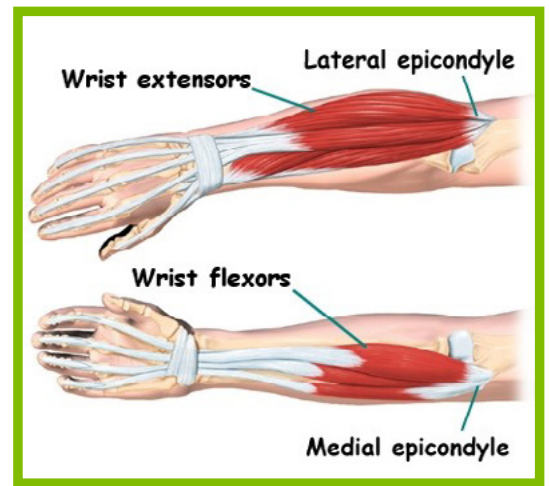


Tendons connect muscle to bone. Tendons are made up of strands of a material called collagen. The collagen strands are lined up in bundles next to each other.

Because the collagen strands in tendons are lined up, tendons have high tensile strength. This means they can withstand high forces that pull against both ends of the tendon. When muscles work, they pull on one end of the tendon. The other end of the tendon pulls on the bone, causing the bone to move.



The wrist flexor muscles contract when you flex your wrist (bend your wrist in the direction of your palm), twist your forearm down, or grip with your hand. The contracting muscles pull on the flexor tendon. The forces that pull on the tendon can build when you grip and swing a racket with your wrist pulled back into extension or do other similar actions.



In some cases, the symptoms of tennis elbow are due to inflammation. In an acute injury, the body undergoes an inflammatory response. Special inflammatory cells make their way to the injured tissues to help them heal.

However, tennis elbow often is not caused by inflammation. Rather, it is a problem within the cells of the tendon. Wear and tear is thought to lead to tissue degeneration. Instead of inflammatory cells, the body produces a type of cells called fibroblasts. When this happens, the collagen loses its strength. The affected area becomes fragile and be easily injured. Each time the collagen breaks down, the body responds by forming scar tissue in the tendon. Eventually, the tendon becomes thickened from extra scar tissue.



Some doctors think that the forearm tendon develops small tears with too much activity. The tears try to heal, but constant strain and overuse keep re-injuring the tendon. After a while, the tendons stop trying to heal. The scar tissue never has a chance to fully heal, leaving the injured areas weakened and painful.

Occasionally the pain may be associated with neck pain and pinched nerves in the neck which may, without you realising, it make the muscles weaker than normal.

NERVES OF THE NECK AND ARM

The brachial plexus which has 3 major trunks of nerves (the median, radial and ulnar nerves) originates from the neck. Each nerve comes out between a pair of neck vertebrae and they join together to form the trunks. The nerves then travel down the arm.

A pinched nerve produces symptoms such as pain, numbness, tingling and hot and cold feelings anywhere down the arm and hand depending on which nerve is affected. Common sites for the nerve to be pinched are up in the neck between the vertebra and also around the outside of the elbow.

The radial nerve can be particularly affected with tennis Elbow – The nerve passes down the back of the upper arm. It then spirals outward and crosses the outside (the lateral part) of the elbow before it winds its way down the back of the forearm and hand. It supplies the extensor muscles of the wrist and fingers and is therefore the most likely nerve root to be involved in tennis elbow.

Potential causes of tennis Elbow and Advice to prevent it

Overuse of the muscles and tendons of the forearm and elbow are the most common reason people develop tennis elbow. Repeating some types of activities over and over again can put too much strain on the elbow tendons. These activities are not necessarily high-level sports competition. It can be associated with certain types of gripping (or holding an object) with an extended wrist such as painting, using tools and other work related activities such as typing with wrists extended upwards away from a straight line.

In both tennis / squash and other activities it may be associated with playing the game after a long break or doing unaccustomed activity such as a lot of DIY and over gripping. It may be due to a racket being too heavy or poor action.

ACTIVITY

- Where possible, try to avoid the repetitive activity
- If avoidance is not possible, break the repetitive task down into shorter sessions and intersperse them with tasks / activities that rest the forearm muscles (this is called pacing)
- Reduce the load i.e., use a lighter / shorter paint roller or racket or type with less force
- Position the task and the arm in the most advantageous position - where less effort is required from the forearm muscles and they are working in their mid-range (not fully bent or extended)
- Work on technique – e.g. tennis stance and swing, when typing use a wrist rest to prevent your wrist resting on the desk while you extend your hand upwards to reach the keyboard
- Do not undertake multiple activities that load the forearm on the same day e.g. DIY, followed by a game of tennis / squash to relax
- After a significant break from your usual level of activity, graduate or phase your return over a sensible period of time
- Graduate or pace an unaccustomed activity

OVER GRIPPING

- Where possible, try to avoid over gripping, ensure that you let go of your mouse / gearstick when not using them
- Try to ensure that you have the right tools for the job (they are correctly maintained) and they fit you
 - » Correct / alter grip during activity
 - » Correct grip size on a racket, mouse is not too small for the hand size
 - » Grip surface is not slippery
 - » No additional friction or stiffness in controls
- Ensure that you use the right tools for the job
 - » Hoists for lifting
 - » Trolleys for carrying
 - » Spanners / wrenches / electronic screwdrivers for loosening and tightening
 - » Loppers instead of secateurs for larger stems
- Avoid serial multitasking with equipment e.g. use your mouse just to position the cursor on the screen and click to change texts or numbers, do not try to use it as a 'pen' to trace around the outside of pictures on the screen (combining clicking, gripping and manipulation of the mouse itself all at the same time!)

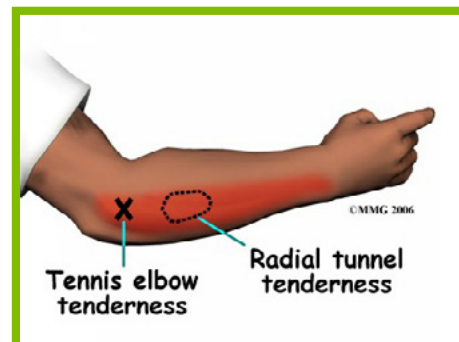
NECK CONDITION

- If you also have a feeling of pins and needles and your grip / wrist extension is particularly weak this may indicate that there is a nerve root from the neck that is pinched. Please seek advice from a physiotherapist.

Symptoms of Tennis Elbow

The main symptom of tennis elbow is tenderness and pain that starts at the lateral epicondyle of the elbow. The pain may spread down the forearm. It may go as far as the back of the middle and ring fingers. The forearm muscles may also feel tight and sore.

The pain usually gets worse when you bend your wrist backward, turn your palm upward, or hold something with a stiff wrist or straightened elbow. Grasping items also makes the pain worse. Just reaching into the refrigerator to get a carton of milk can cause pain. Sometimes the elbow feels stiff and won't straighten out completely.



If you also have a feeling of pins and needles and your grip (stiff wrist / elbow) is particularly weak this may indicate that there is a nerve root from the neck that is pinched.

Aiding Recovery with a Home Exercise Programme

The healing of tennis elbow is often slow when compared to other injuries. This is mainly due to its poor blood supply. The body's tissues need a good supply of the oxygen and nutrients carried in the blood to repair. Activities such as ice, heat, massage and gentle stretching of the forearm and wrist help to promote blood flow. In order to reverse the degenerative aspect of tennis elbow, rehabilitation needs to include loading and strengthening of the tendon at the appropriate time, alongside stretching.

Self Help Treatment Advice

- Application of ice to the forearm extensors to ease pain and reduce spasm. It is advised to apply ice in the form of crushed ice cubes, frozen peas or an ice pack. DO NOT apply directly to your skin. All of these are to be wrapped in a damp tea towel and applied to the knee for approximately 20 minutes. It is advised that you check the skin every 5-10 minutes to avoid the possibility of an ice burn from the cold temperature.
- Self-massage of the tendon and the forearm. This may be painful initially but will increase blood flow and help healing of the tendon and should become easier as you go. Remember to give yourself time with the massage as the tissue needs time to relax and let go as you massage the knots away. This could be done while at lunch or sitting during a tea break at work or watching a favourite programme at home. Gentle heat on the forearm (10 -20 minutes) will also help to relax it and increase the blood flow. When using heat, this should be a mild heat and never feel hot.
- Self-massage of the front of the forearm. This area contains the forearm flexors - muscles that oppose the forearm extensors that you have just massaged (above bullet point). If the forearm extensors are tight, they can cause these muscles to tighten too; therefore can affect healing if not kept supple. Use the same guidance as above.
- Medication can be used to help control pain. The oral forms of these medications are easy to take and manage to control the pain associated with tennis elbow. Please seek advice from your GP or Pharmacist.
- Maintain elbow range of movement with full bending and straightening of the elbow, especially when getting out of bed in the morning or after sitting with it in one position for long periods.
- Maintain wrist range of movement with full bending and extending of the wrist, and turning the palm of your hand to face the ceiling and then the floor (supination and pronation) - especially when getting out of bed in the morning or after sitting with it in one position for long periods.

- Relative rest, especially from gripping or repetitive exercise involving the wrist and forearm (see above prevention section). This may include modifying your work duties for a determined period of time (with the agreement of your manager) to include a reduction of the aggravating activities, pacing, use of correct and properly maintained equipment and workstation and activity assessment by occupational health.
- Take regular breaks (see above bullet point) and stretch while at work, also avoid heavy or power handshakes!
- If you also have a feeling of pins and needles and your grip is particularly weak this may indicate that there is a nerve root from the neck that is pinched. Please seek advice from a physiotherapist who will check your posture and mobility of the joints in your neck and upper back, shoulder and arm. If the nerve is being pinched in the neck it would require specific neck treatment to realign the joints and stretches to maintain mobility in both the muscles and the nerves

GOOD POSTURE

Improving your posture whilst sitting at your desk will optimise the position of your neck joints and also the position of your forearms at the desk. This limits the chance of irritation to the nerves at your neck and also reduces the strain on the muscles in your forearm.

The secret of sitting correctly is to encourage the spine to lengthen into its neutral 'balanced' position. The pelvis should tilt forwards (slightly) allowing the spine to hold its natural 'S' shape. This means that weight is evenly distributed across the intervertebral discs and there is better balance in the supporting musculature. Get your lower back into a good position and your neck will automatically follow!

GOOD SITTING POSITIONS

Sit well back into the chair to maintain support of the spine / pelvis (do not perch on the front of the seat)

Tilt the seat pan forwards (if possible, or flat with a small wedge to create a slight forward tilt) this rotates the top of the pelvis so the spine is in its natural 'S' shape (as seen from the side – this is the postural opposite to the 'C' shape which is to be avoided)

Adjust chair height so that hip is slightly higher than the knee

Adjust the chair back so that it supports your lumbar curve – so that you can relax into it and maintain the 'S' shape

You should now be sat in a balanced upright posture with your ear in line with your shoulder and hip (side view) – do not slouch into a 'C' shape

Move your chair close to the desk to avoid stretching your arms or leaning your upper body forward, you should be able to undertake your task with your elbows resting by your waist, bent to 90 degrees

STRETCHES

Stretches are important to keep the muscles and tendon mobile and flexible and promotes good blood flow to aid healing

WRIST EXTENSOR STRETCH

This movement stretches the muscles in the back of the forearm and also helps to maintain the movement in the wrist.

Extend one arm out with the elbow straight and use the other hand to grasp the opposing hand at the side of the thumb and then bend the wrist downwards to apply the stretch to the area

Hold the stretch for 30 seconds, repeat twice and then do the same on the other arm

Please remember to keep the elbow straight during this stretch

If you do this exercise just twice per day, you will really assist in reducing the stiffness and tightness in the front of the forearm and reducing your pain

WRIST FLEXOR STRETCH

This movement stretches the muscles in the front of the forearm and also helps to maintain the movement in the wrist.

Extend one arm out with the elbow straight and use the other hand to grasp the opposing hand at the side of the thumb and then bend the wrist backwards to apply the stretch to the area

Hold the stretch for 30 seconds and repeat twice and then do the same on the other arm

Please remember to keep the elbow straight during this stretch

If you do this exercise just twice per day, you will really assist in reducing the stiffness and tightness in the front of the forearm and reducing your pain

WRIST EXTENSORS AND FINGER STRETCHES

This stretch incorporates the soft tissues of the hand and fingers which can also get tight as they are so closely linked to the wrist flexors.

Hold your hands in a reverse prayer position (backs of the hands together rather than palms)

Keep your hands and fingers tightly together throughout the whole stretch as you push your wrists downwards in the direction of the floor

Hold for 30 seconds and then relax

TURNING THE PALM OF THE HAND TOWARDS THE CEILING – PRONATOR STRETCH

Although this seems like just a wrist exercise, part of the twisting movement comes from the elbow and the forearm muscles are involved.

Sit comfortably in a chair with your elbow tucked in by your side and your forearm at 90 degrees to your upper arm

Turn your palm up towards the ceiling until you feel a stretch in the wrist or forearm and then hold the end of the movement for 15 seconds

Perform this twice and then repeat on the other wrist or stretch both wrists at the same time

TURNING THE PALM OF THE HAND TOWARDS THE FLOOR – SUPINATOR STRETCH

Like the stretch above, part of the twisting movement comes from the elbow and the forearm muscles are involved.

Sit comfortably in a chair with your elbow tucked in by your side and your forearm at 90 degrees to your upper arm

Turn your palm down towards the floor until you feel a stretch in the wrist or forearm and then hold the end of the movement for 15 seconds

Perform this twice and then repeat on the other wrist or exercise both wrists at the same time

MOBILISING EXERCISES

NECK SIDE BENDS

As mentioned previously, the nerves in your neck and arm may become tight, contributing to your elbow pain. Therefore keeping your neck mobile will help to address this.

Stand or sit tall with a good concave curve in your lower back and feel that the back of your neck is 'long'

Keep your shoulders level throughout this flexibility exercise

Tilt your right ear down to your right shoulder, just to the edge of a pulling sensation and return

to neutral

Repeat on the other side, tilting your left ear down to your left shoulder as far as you can before you feel pulling.

The movement may feel stiff at first and you should work through the stiffness without causing pain

Repeat this gentle loosening movement 10 times

Do this exercise every hour if your neck is stiff and 3 times a day otherwise

RADIAL NERVE MOBILISATION

It is important to keep the nerves around your elbow mobile to prevent any pinching and compression that may occur with the injury. The Radial nerve supplies the wrist extensors.

Stand with your arm by your side

Move your thumb across into the palm of your hand and grip it against your palm as you make a fist using your fingers

Rotate your arm so that your palm is facing away from you and bend your fist upwards away from you

Keeping your arm and fist in the same position and your head facing forwards, raise your arm diagonally away from your body (backwards and sideways) until you feel a pulling sensation / tightness in your forearm

Tilt your head from the left to the right

Keep the arms stretched all the time but tilt your head from left to right about two seconds on each side and repeat 10 times

Any stretch pain that you feel going down the forearm should get better the more you repeat the stretch. If it does not get better or aggravates, stop and seek advice from your physiotherapist

STRENGTHENING EXERCISES

FOREARM MUSCLE STRETCH AND STRENGTHENING

While standing, place the back of your hands on a table shoulder width apart with your elbows straight and your fingers pointing forward

Keep your fingers stretched out and fingers and back of hand flat on the table

Keeping your elbows straight, slowly lean forwards to take your body over your hands

You should feel the outer forearm (extensor) muscles stretch

You will also feel that the shoulder and elbow muscles are working harder as you take greater weight from your body through your arms

Hold this position for 10 seconds and repeat 5 times. Do these 3 times a day

If your hands feel uncomfortable on the table you can use a folded up towel or pillow to cushion the surface

ECCENTRIC STRENGTHENING

Extending a muscle into a stretched or lengthened position against a force (paying out against a load) rather than contracting it into a shortened position against a weight is called an eccentric mode of contraction. This method of strengthening a muscle has been proved to be helpful with a tendinopathy.

For the following exercise the affected hand should be positioned passively by the other hand to start the movement and then the unaffected hand pushes the affected hand down with equal smooth resistance from the affected hand. This action may cause a little discomfort in the tendon at the elbow but it is

advisable to work through a moderate amount of discomfort in order to strengthen the muscles.

The example below is for a right tennis elbow. Reverse with opposite hands for a left tennis elbow.

ECCENTRIC WRIST EXTENSOR STRENGTHENING

Turn your right palm down to face the floor. Bend at your right wrist and hand down to a fully flexed position with your left hand. Keep your right hand shoulder totally relaxed.

Smoothly push up with your right hand and resist your left hand pushing your right hand down

Resist the left hand all the way up to a fully extended wrist position

Push with as much pressure as you can manage causing only moderate discomfort at the elbow

Do 10 repetitions for 3 sets, 3 times a day. This should be undertaken until the pain in the elbow has gone, which may take several weeks

Please remember to use this advice under the guidance of your Physiotherapist.

To find out even more about elbow problems,
visit the 'Know Your Body' section of our site.

www.physiotherapyinleeds.co.uk/body-parts/elbow