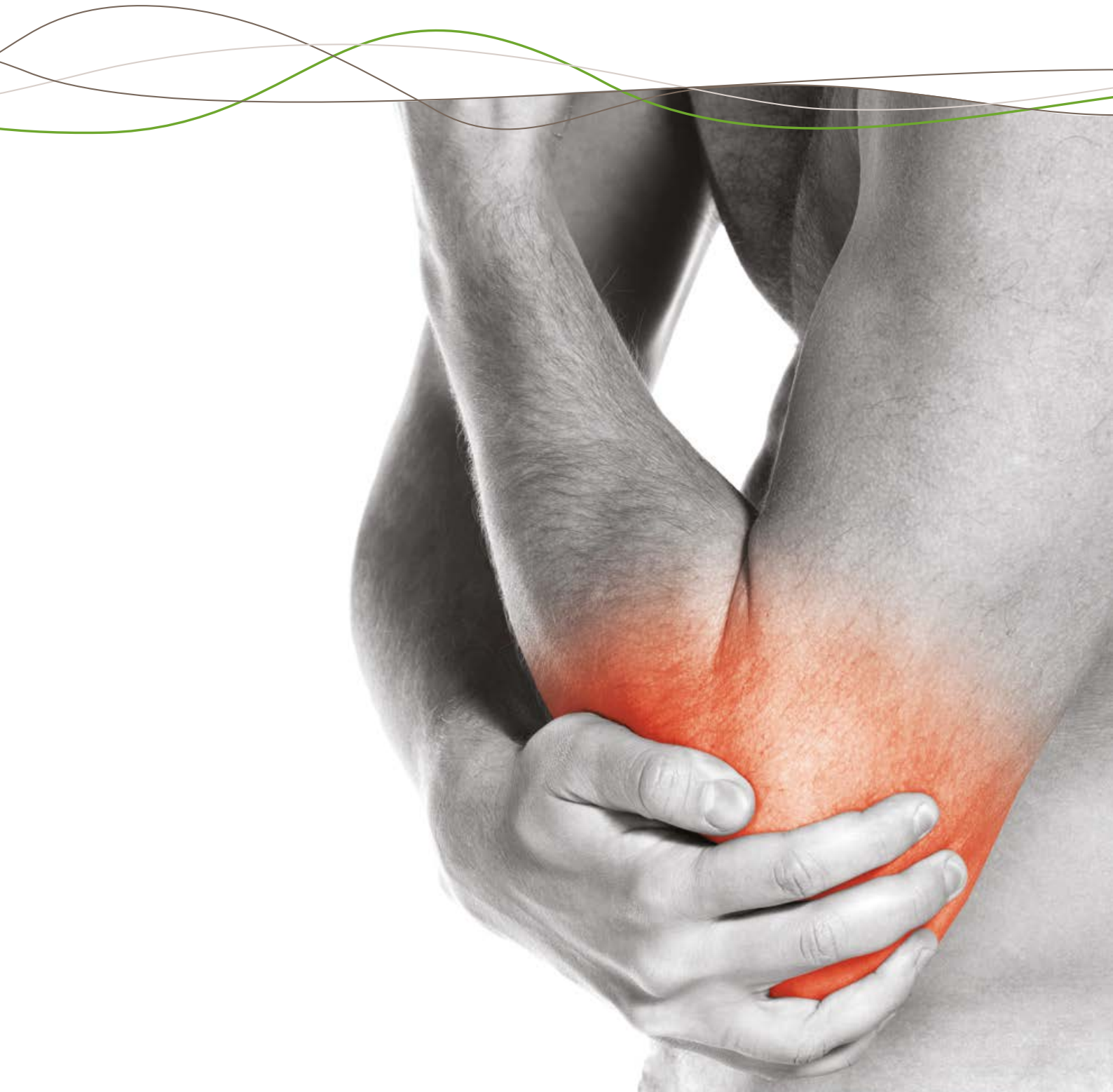


Managing Musculoskeletal Complaints:
Elbow Problems & Conditions



The two most common elbow problems are similar in nature and are most frequently referred to by their non-medical names - tennis and golfer's elbow.

Tennis elbow is on the outside of the arm, medically described as the lateral side, and golfer's elbow is on the inside of the arm, nearest the body, and is medically described as the medial side. Medical terms for these conditions vary, for example epicondylitis simply translated means inflammation (itis) of the prominent bone (epicondyle) - so tennis elbow is often referred to as lateral epicondylitis.

Recent research has revealed that many tennis elbow patients actually have very little inflammation, if any at all, so other terms are used to describe the condition such as tendonosis (inflammation of the sheaf surrounding the muscle) or tendonopathy (meaning the tendon has a pathology rather than is inflamed).

No matter what term is used, there are some things that are key to both conditions.

Key facts

- Most people suffer pain due to repetitive overuse
- The pain comes from damage to mechanical structures which do not heal correctly
- Problems which are not addressed can become long term (chronic) and can take between six months and two years to resolve
- Simple home exercises can be very effective
- Strengthening the muscles is effective in reducing pain in 80-95% of cases
- Using support braces on the elbow or wrist can be very effective
- There are pro-active steps you can take to prevent elbow problems
- Gripping and holding can be difficult when suffering from an elbow condition



Diagnosing the underlying cause of elbow pain can be difficult, however most elbow conditions present as pain on one side of the elbow at the point where the muscles attach to the bone.

Tennis elbow is always on the outside of the arm but the pain can radiate down the outside of the arm towards the wrist, along the forearm. It can be felt by pressing deep into the muscle/bone on the outside part of the elbow.

The muscles that attach to the elbow on the outside (tennis side) of the arm actually move the wrist/hand and are responsible for extending the wrist. This movement is used commonly day to day, for instance when pushing open a door or putting on a jacket. These muscles are also involved in all racquet sports, hence the name tennis elbow.



Golfer's elbow (also known as climber's elbow or pitcher's/Little League elbow in America) affects the inside of the arm and once again can cause pain to travel down the forearm into the wrist.

Pressing on the affected area will normally elicit pain and is a good indicator for the diagnosis of golfer's elbow. The muscles on the inside of the elbow (golfer's side) also move the wrist and hand and are responsible for flexing the wrist.

These movements are used very frequently during the day, particularly when lifting, carrying and gripping. The problem is prevalent in bat/club sports especially where there is a non-overlapping grip.

Although the muscles that attach to either the outside or inside of the elbow do different roles, in real life they often work together. A good example of this is using a hammer where we first use one motion, then the other. A more subtle use of both muscles is using a keyboard or mouse. Here, the outside holds the wrists in position whilst the inside presses the keys and mouse buttons. Both sets of muscles are used for gripping and carrying.

Several movements and actions – when carried out repetitively or in conjunction with each other - are known to aggravate both tennis and golfer's elbow. These include:

- Gripping
- Lifting/carrying
- Working at a computer keyboard/mouse
- Texting
- Writing
- Daily activities (putting on clothes, vacuuming, ironing, preparing food, cleaning, hanging out washing)
- Shaking hands
- Turning a door handle/knob
- Using hand tools (hammers, screw drivers, trowels etc.)
- Using power tools (heavier tools are worse)
- Gardening activities (using lawn mowers/strimmers/hedge trimmers/shears/shovels/secateurs etc)
- Playing some sports (such as golf or tennis)
- Playing some musical instruments (hand held and/or heavier ones are worse)
- Knitting/needle point
- Doing arts and crafts
- Using games console joypads



Protection, Support and Pain Relief

Protecting an injured area from further injury is key but also very difficult, especially if it is the elbow on the dominant arm. It is clearly preferable to avoid activities that hurt but this is not always possible - for example, your arm may hurt when you get dressed but you still have to wear clothes!

Trying to reduce exposure to activities that cause pain is important – so if typing hurts your elbow, try to reduce the amount you type in a day and/or split the typing into shorter bursts (this is known as work pacing). If lifting and carrying hurts, reduce your lifting weights as much as is practical and use a trolley or other mechanical device to transport the load when you can (known as modified duties).

Equally, if eliminating the activity is possible then this is the best option – so if playing sports results in your elbow hurting – either during or after - then you must stop the sport.

These injuries are repetitive and cumulative, so if golf hurts today and you continue to play, the problem will get worse and, in time, more activities will hurt, which adds to the problem and accelerates the condition's deterioration.

If you can't stop an activity that hurts then supports can work well. They may not eliminate all of the pain but they can reduce the overall pressure and ensure there is less repetitive strain on the elbow. Over time this leads to less pain during activities (even without the brace), and therefore less exposure to aggravating factors day-to-day and both a reduction in pain and the actual problem. However, supports are not necessary in every case and can have negative effects if worn over long periods of time.

There are two main types of support:

Elbow supports/braces.

These come in many forms and are often designed for either tennis or golfer's elbow, from a supportive sleeve, to a clasp around the elbow, but they all work on the same principle of taking pressure from the bad spot by moving it down the arm to an area that does not hurt. The obvious limitation is that you need to have a spot down the arm that does not hurt! If your pain goes all the way to your wrist, a support may not be ideal or as efficient as a wrist support/brace.

The most popular brace is a simple clasp, shown here applied for tennis elbow. It has a wide part which sits on the problem and the clasp moves the pressure from the point on the elbow to further down the arm.



These braces are most popular in problems that are smaller in symptom magnitude (they are often used at the end of rehab for return to activity) and for support during activities like tennis, golf, typing and lifting. They should only be used during activity and should not be used in bed at night.

Wrist supports/braces:

This type of support is more restrictive than an elbow brace as it prevents both flexion and extension and protects against both tennis and golfer's elbow. It can also be used during periods of rest, making it a good choice for larger problems. Most wrist braces can be set to take the pressure off one side of the elbow, allowing the problem to rest and repair, and are effective if worn at night to hold the wrist in a good position for healing.



As most wrist supports/braces can be worn for longer periods and remove pressure from the wrist rather than the elbow, they are often the first choice for GPs and hospitals.

They are less functional than an elbow brace and look more medical, but can be worn for longer periods, whilst typing/writing and, most importantly, in bed as a 'resting splint'. However, they should be removed for activities like driving, cooking and operating machinery.

Ice:

Ice can help with relieving pain, reducing inflammation, and limiting the amount of heat in the elbow (most elbows with problems get very hot after repetitive activities). Anything from the freezer can be used to apply ice to your elbow. Frozen peas are the most popular as they mould to the area well, but ice cubes in a towel or an ice pack can also be used. **DO NOT** apply any ice directly to your skin (because ice can stick to skin). Apply the ice through your clothes or use a towel wrapped around the ice instead. Ice should be applied to the elbow for approximately 15-20 minutes no more than once in any hour. Apply as many times as possible until the symptoms of pain/swelling/heat go away.



Controlling the pain:

Pain Killers. Many people find they need pain relief just to perform daily tasks and your pharmacist can offer advice on this. Try not to fully mask the pain as you may well be doing more damage to area. You should not use pain relief to allow yourself to play sports or perform hobbies.

Anti-inflammatories. Some elbow problems don't involve a lot of inflammation and so anti-inflammatories won't work, however, some problems respond very well to this type of pain relief. It is worth remembering long term use can slow the healing process and so should be used judiciously.

Self Massage:

Simply use your thumb to massage up and down the affected area. Make sure to go parallel to the elbow, not straight up and down.



Tennis



Golfer

Use sufficient pressure to feel an effect without creating too much pain (be aware in some cases there may be pain even with a light touch).

Be sensible, if it feels like you are pressing too hard, you probably are.

Perform for one to 20 minutes up to three times per day.

Ice massage:

Ice and massage combined are often reported as the most effective treatment by patients.

Take an ice cube and hold it in a tissue (so it doesn't stick to your fingers).

Apply some massage cream (you can use anything you are not allergic to - people use aqueous cream, E45, or even natural oils like sunflower or olive oil). This helps the cube to move and stops it from sticking to you.

The ice will numb the area so you may have to start gently so as to not elicit too much pain. You can then increase the pressure to go deeper as the ice works.

Perform for five minutes, up to five times per day.



Exercises:

As with all exercises, some are harder than others and some suit some people and not others. The general rules for exercise are:

- Start with the easiest exercises and work your way up
- If an exercise hurts, stop
- If you can do an exercise easily, move up a level
- Can't get the exercises to work for you? See a physiotherapist for specific advice!

Early Level (the easiest ones)

Stretching:

This can be effective if your elbow/wrist is stiff. However, stretching is not effective in every case as many people do not have stiffness. Stretching is not known to make elbow problems worse and could improve them, thereby increasing your chances of recovery.

Tennis elbow stretch:

Stretching the wrist is the most effective way of stretching the outside of the elbow.

Hold your bad elbow/arm out straight (you can be seated or standing) and use your good hand to stretch back the bad wrist, palm down.

This exercise can also be done as the prayer or Namaste stretch.

Use your common sense and only stretch to the point of discomfort, not pain.

Hold for 30 seconds, relax and repeat five times. Do the set of exercises up to five times per day. This is best performed first thing in the morning and last thing at night.



Golfer's elbow stretch:

Stretching the wrist is the most effective way of stretching the inside of the elbow.

Hold your bad elbow/arm out straight (you can be seated or standing) and use your good hand to stretch back the bad wrist, palm up.

This stretch can also be done as the reverse prayer or Namaste stretch.

Use your common sense and only stretch to the point of discomfort, not pain.

Hold for 30 seconds, relax and repeat five times, do the set of exercises up to five times per day. This is best performed first thing in the morning and last thing at night.



Resistance Exercises For Tennis Elbow:

The most popular eccentric resistance exercise (one that involves shortening and lengthening muscles while the muscle is producing force) for tennis elbow is the Tyler exercise using a flexible bar. It is very popular because it was developed by researchers who found it was possible to decrease the pain by an average of 81% and increase strength by an average of 72% just by doing this exercise. Even chronic patients with debilitating symptoms report amazing improvements.

You will need a flexible rubber tennis elbow bar (available for under £15 each from many retailers).

Start by holding the bar in your bad hand (shown here as the right), thumb and bar pointing upwards, wrist in full extension (wrist cocked back) (A).

Now grasp the bar with the good hand at the opposite end, thumb down, wrist in the middle (B).

Twist the top (good) hand inwards into flexion by curling the wrist. Keep holding the bad hand in extension (the bad hand is still cocked back) (C).



Now bring the bar flat in front of you with your elbows out straight (make sure the bar is still twisted with the bad hand extended and the good hand flexed) (D).

Finally, unwind the bar by slowly releasing the tension under control from the bad hand (eccentric wrist extension). This unwind should last about four seconds (E).



Relax and repeat 15 times, then rest for 30 seconds and repeat the set. Repeat the set three times in total and do this daily until symptoms subside.

You need a bar which offers a resistance you can actually perform as the exercise only works if you can twist the bar. As you get stronger, use a harder bar. Most people report good results within six weeks.

Resistance Exercises for Golfer's Elbow:

After the success of the Tyler tennis elbow exercise, the exercise was reversed to help golfer's elbow.

For the Reverse Tyler exercise, a flexible rubber bar is required (available for under £15 from many retailers).

Again, choose a bar that offers a resistance that you can actually perform as the exercise only works if you can twist the bar.

Start by holding the bar in your bad hand (shown here as the right), thumb pointing outwards, wrist in full flexion (wrist flexed) (A).

Now grasp the bar with the good hand at the opposite end, thumb down, hand pointing outwards (B).

Twist from the good hand, turning backwards into extension (cock the wrist) from the good hand. Keep holding the bad hand in flexion (the bad hand is still flexed) (C).



Now bring the bar flat in front of you with your elbows out straight (make sure the bar is still twisted with the bad hand flexed and the good hand extended) (D).

Finally, unwind the bar by slowly releasing the tension under control from the bad hand (eccentric wrist flexion). This unwind should last about four seconds (E).

Relax and repeat 15 times, then rest for 30 seconds and repeat the set. Repeat the set three times in total and do this daily until the symptoms subside.

You need a bar which offers a resistance you can actually perform as the exercise only works if you can twist the bar. As you get stronger, use a harder bar. Most people report good results within six weeks.



Grip Exercises:

Most people suffering from tennis or golfer's elbow find their grip is affected. Restoring grip strength is normally a straightforward process and is best done with graded resistance exercises, which can take many forms:

Putty:

The most popular choice - it offers value for money whilst offering resistances up to high levels.



Balls:

Exercise balls have a long history in restoring and improving grip. They are usually more expensive than putty but are practical as they don't have to be stored in a container and so appear on many office desks (stress balls).



Hand held dynamometers:

The most expensive but the best resistance. Lots of grades available and are often adjustable for hand size.



To perform grip exercises:

Choose a resistance you can grip without pain.

Grip your putty/ball/dynamometer and squeeze slowly for a count of two, then release for a count of four, repeat for one to five minutes (longer is harder). If you can do five minutes easily with one resistance, move up to the next one. Repeat once per day.

Other Resisted Exercises Tennis Elbow:

There are many, varied exercises used for tennis elbow which report variable results. As most of these exercises involve some eccentric (lowering under control) component, they may be effective where the Tyler exercises cannot be performed.

Wrist extension:

This is the classic exercise for tennis elbow. It can be performed with just the weight of the hand, or progressed by using a can of drink for weight. Some people use dumbbells or even use resistance bands at the higher levels.

Choose a weight you can perform without pain and rest the forearm on a supporting surface (most people use the arm of a chair or a table). Face your palm to the floor, then lift your hand up (cocking the wrist) in a slow smooth motion - try to take two seconds to lift it up, then lower the hand back to the resting position. Try to make this phase (the eccentric) twice as long (four seconds).

Repeat 8 to 15 times.

Do two warm up sets with a light weight or no resistance first (if you are only able to lift your hand without resistance then use the other hand to help for the first two sets). Perform 4 sets of 8 to 15 times, 3 times a day. Do not do this exercise first thing in the morning.

Radial deviation:

This is another standard exercise for tennis elbow. It can be performed with just the weight of the hand, or progressed by using a can of drink for weight. Some people use dumbbells or even use resistance bands at the higher levels.

Choose a weight you can perform without pain. Rest the forearm on a supporting surface (most people use the arm of a chair or a table) and face your palm towards your body. Lift your hand up (a hammering action) in a slow smooth motion - try take two seconds to lift it up - then lower the hand back to the resting position - try to make this phase (the eccentric) twice as long (four seconds).

Repeat 8 to 15 times.

Do two warm up sets with a light weight or no resistance first (if you are only able to lift your hand without resistance then use the other hand to help for the first two sets). Perform 4 sets of 8 to 15 times, 3 times a day. Do not do this exercise first thing in the morning.



Other Resisted Exercises for Golfer's elbow:

People have traditionally used a mixture of wrist flexion and hand exercises to address golfer's elbow. Some of these exercises involve an eccentric (lowering under control) component which could be effective where the Tyler exercises cannot be performed.

Wrist flexion:

This is the original exercise for golfer's elbow. It can be performed with just the weight of the hand, or progressed by using a can of drink for weight. Some people use dumbbells or even use resistance bands at the higher levels. Many people can be very strong in this movement.

Choose a weight you can perform without pain. Rest the forearm on a supporting surface (most people use the arm of a chair or a table) and face your palm upwards. Lift your hand up (bending the wrist) in a slow smooth motion - try and take two seconds to lift it up, then lower the hand back to the resting position. Try to make this phase (the eccentric) last twice as long (four seconds).



Repeat 8 to 15 times.

Do two warm up sets with a light weight or no resistance first (if you are only able to lift your hand without resistance then use the other hand to help for the first two sets). Perform four sets of 8 to 15 times, 3 times a day. Do not do this exercise first thing in the morning.

Ulna deviation:

This is another standard exercise for tennis elbow. It can be performed with just the weight of the hand, or progressed by using a can of drink for weight. Some people use dumbbells or even use resistance bands at the higher levels.

Choose a weight you can perform without pain. Stand with your arm relaxed and face your palm towards your body. Push your hand backwards (like moving a hammer behind you) in a slow smooth motion - try and take two seconds to lift it up then lower the hand back to the resting position. Try to make this phase (the eccentric) twice as long (four seconds).



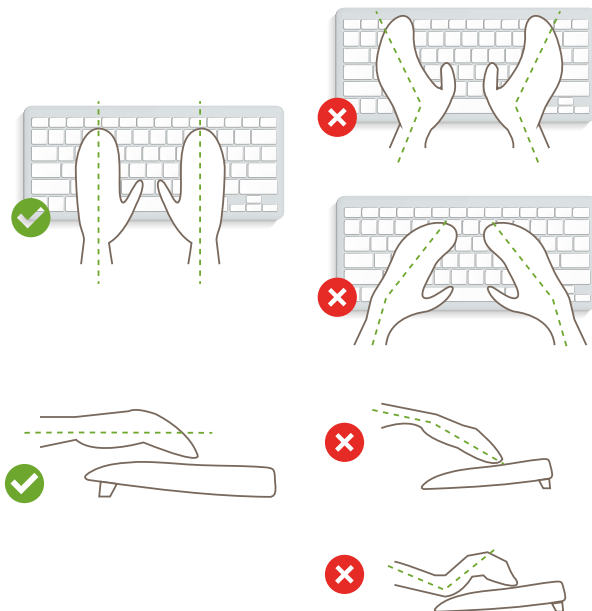
Repeat 8 to 15 times.

Do two warm up sets with a light weight or no resistance first (if you are only able to lift your hand without resistance then use the other hand to help for the first two sets). Perform 4 sets of 8 to 15 times, 3 times a day. Do not do this exercise first thing in the morning.

General Advice:

Keyboard and mouse:

When using a keyboard try, to keep your wrist in a neutral position:



This means keeping your hands parallel to each other, not inwards (ulna deviation) or outwards (radial deviation), to avoid stretching one side of the elbow whilst forcing the other side to work harder. Either of these positions can lead to tennis or golfer's elbow. Ergonomic keyboards are designed to account for this but do not suit everyone.

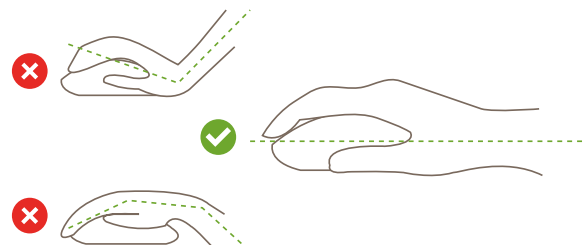
It is also important to keep the hand level over the keyboard (the legs on key boards can help with this). Some people find a small mat in front of the keyboard can help with this.



The key to keyboard use is pacing. Try to keep keyboard use to periods of less than 20 minutes (if possible) then rest the hands and arms for one to two minutes to allow the muscles to reset their resting length. You can do a different task during the rest period (as long as it's not one that is bad for your elbow).

Mouse use:

Using a mouse is a similar principle to keyboard use. Try to keep your wrist in a neutral position. Modern mice are often shaped to keep the wrist more neutral. They are lower in profile to help keep the wrist in a better position.



Try to move the mouse and not your wrist. This prevents you from performing too much radial or ulna deviation (the left to right wrist motions). Hold the mouse so your first and ring fingers are in a straight line with the gap between them across the middle of the mouse (this allows for easy mouse button use).

If the mouse still causes problems then a trackball can be a suitable alternative. On a trackball the fingers move a ball rather than your wrist moving a mouse. This can take the pressure off the elbow to some degree.

Laptops are not ideal computers to work on for long periods. Aside from the obvious issues for the elbows they can have negative effects on the neck, back and shoulders too.



Using/Choosing a Racquet for Sport:

The impact between racquet and any ball produces shock and (unless you meet the ball exactly on your racquet's centre line every time) torsion (twisting force).

These forces are transferred to your arm but the physical properties of your racquet can make these forces higher or lower.

Grip size:

You don't want a handle that is too large or small as either tends to lead to you grabbing too tightly, which in turn increases the strain on your forearm. Too small is worse than too big, because the racquet is more likely to want to turn in your hand.

To find your grip size: Measure your dominant hand even if you use the racquet in both hands.

Hold your hand flat, with the fingers together. Measure from the middle crease of your palm, up between your middle and ring fingers, to the tip of your ring finger.

For most women, this measurement will fall between 10.5 cm (4 1/8") and 11cm (4 3/8"). For most men, the measurement will fall between 11 (4 3/8") and 11.75 (4 5/8") cm.

Generally, if you're between a quarter of a centimetre when you measure you'll be better off with the smaller grip. This is because a grip that's less than 0.25cm (1/8") too small is easily remedied by adding an overwrap (normally 0.125cm or 1/16"), whereas a large grip would have to be shaved down which is not possible on every racket. Be cautious with wrap though as adding multiple overwraps to make up for more than a 0.25 cm (1/8") deficit isn't advisable, as it rounds off the bevel edges too much, affecting grip (as the racquet wants to turn in your hand more).

Overgrips also serve another purpose. A good overgrip can keep your handle dry and prevent slipping. Players often hold racquets too tight to stop them slipping out of the hand and getting damaged.

Racquet weight and balance:

Weight and balance make the biggest difference in how much force is transferred to your elbow. Heavier racquets (at least 298 grams or 10.5 ounces strung, preferably at least 312 grams or 11 ounces) are safer as they absorb more of the stress for you. Correct balance can also help. Try to have a racquet that is balanced head-heavy (within five points of even is best). Weight in the racquet head provides more resistance to torsion. Torsion is particularly stressful to your forearm muscles that get damaged in tennis elbow.

Racquet stiffness:

A more flexible frame absorbs slightly more of the shock of the ball's impact, but it also vibrates more. Many people find frame vibration uncomfortable, but it hasn't been proven to cause tennis elbow. However, shock has and a flexible frame would seem the best choice to reduce the risk of injury. But it's not that simple - a flexible frame also reduces control and power, and can lead to tighter stringing (to increase control) or harder swinging (for more power). Taken together, these two things could increase the risk of injury more than frame flexibility can decrease it.

String tension, gauge, and resiliency:

Looser, thinner, and/or more resilient strings are better. They stretch more and hence spread the force of the ball's impact over a longer period of time, which reduces peak shock. Thinner strings have an advantage in that they increase spin but they also offer less control overall and break more frequently. The most durable strings (Kevlar and similar) are the stiffest. They are much harder on your elbow and so are best avoided.

Golf Advice for Golfer's Elbow:

Workload

Golfer's elbow is the result of the very small amount of strain put on the inside of the elbow, which is then repeated over and over until the minor strain accumulates into an injury. The average golfer shoots to around a 100. Add in one or more practice strokes before most shots and even when putting is eliminated, a normal player is swinging well over 100 times in a round. More shots lead to more accumulated strain. By taking fewer practice strokes, not going to the range and cutting back on the frequency of rounds, you can lower the strain being put on your elbow.

Gloves

Wearing a glove on each hand has been said to help absorb shock from the club. It is more likely that wearing gloves works as it means the player does not have to grip the club as hard to keep hold of it. The glove eliminates moisture and adds friction to the handle leading to fewer 'slips' with the club.

Grips

Golf clubs have naturally small grips. This can be altered slightly by wrapping the grips with additional grip tape. This makes for a larger gripping surface. Larger surfaces require a less tight grip to hold onto the club. The tape also minimises vibrations.

Clubs

Lighter clubs generally require less muscular control and hence are better for injury prevention or when injured. Graphite clubs with titanium heads are generally lighter and are often referred to as the best choice. Clubs that allow more flex absorb more of the impact of a shot regardless of whether they are made of graphite or steel.

You may need a consultation!

Elbow problems can be very difficult and debilitating. Correct advice and treatment can make an enormous difference. If you have persistent pain, contact Physio Med for advice and consultation.

When to seek immediate further advice:

If the pain has persisted for more than two weeks even with exercises or your grip has given way.

Remember, if you try any of the things above and you feel they make you worse not better, contact us for individual advice!!!



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