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Physiotherapy: lateral epicondylitis

Intervention

A physiotherapy program that includes exercise, elbow manipulation (manual therapy) and self-manipulation.

Progressive exercise of the wrist extensor muscles may also be used alone, without elbow manipulation.

Indication

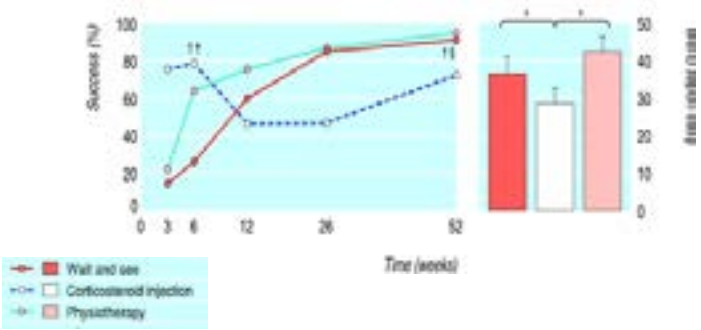
Tennis elbow affects 1–3% of the population; risk factors include smoking, obesity, being aged 45–54 and two or more hours of repetitive movement per day.

Lateral epicondylitis (LE), commonly known as 'tennis elbow', where pain persists for 6 weeks or more; however, earlier institution of exercise might also confer benefit.

LE is a chronic degenerative process stemming from microtrauma (rather than an acute inflammatory process). Hence, the term lateral epicondylalgia is also used.

In most cases, symptoms of LE are self-limiting and usually resolve within 12 months. However, physiotherapy may reduce the time taken to improve pain (i.e. provide short-term benefit) and reduce the recurrence and delayed recovery associated with alternative interventions such as corticosteroid injection (i.e. provide improved long-term outcomes).

When compared with a wait-and-see approach or corticosteroid injection, a physiotherapy program involving exercise is associated with a greater reduction in severity and greater success in both the short and long term.



Significant differences between study arms at six and 12 weeks: †corticosteroid injection v wait and see; ‡physiotherapy v wait and see; §corticosteroid injection v physiotherapy. *Significant differences between groups (P<0.01)

Source: Bisset L, Beller E, Jull G et al. Mobilisation with movement and exercise, corticosteroid injection, or wait and see for tennis elbow: randomised trial. BMJ. 2006;333(7575):939.

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Availability

A physiotherapy program will typically involve eight 30-minute sessions with a physiotherapist. To find a physiotherapist, go to The Australian Physiotherapy Association's Find a Physio webpage.

A low-cost alternative is a home-based exercise program using rubber resistance bands, which may be demonstrated in a general practice consultation.

Description

A physiotherapy program will typically combine exercise and elbow manipulation (manual therapy). Various techniques may be used, including those described here.

Exercise

Figures 1(a) and 1(b) below demonstrate a forearm muscle exercise for the wrist extensor muscles. The exercise involves the application of load while the muscle gradually contracts and moves the wrist from flexion to extension and back to flexion.

Figure 1(a). Starting and ending flexed position – do not go to end of range. Note elbow is flexed and forearm is supported. The other end of the elastic band is fixed by the patient's foot or other hand.

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Description (cont'd)

Figure 1(b). Extended position mid-point of exercise – the target. Note elbow is flexed and forearm is supported on bench.

To perform the exercise: start with the wrist in a flexed position, then move through the range of extension over 4 seconds and then return to a flexed position over 4 seconds. Load is applied using a resistance band or small weight.

The exercise should be supervised f or the first 6–8 weeks to ensure the right load is used and the correct movement/form is performed, and that the load and degree of difficulty is progressed.

Exercise should not provoke pain beyond 2 out of 10 on a scale where 10 is the worst pain imaginable and 0 is no pain. Where moving the wrist through flexion and extension provokes pain, the patient can start with a static (or isometric) wrist extensor exercise demonstrated in Figure 2. Here, without bending the wrist, the patient resists downward pressure applied (by the other hand, physiotherapist or GP).

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Description (cont'd)

Figure 2. Patient performing isometric exercise by using the other hand. Make sure to have the wrist in some extension.

Duration, frequency and progression

In the first 2 weeks, the patient should exercise twice daily, doing 12–15 repetitions. From 2 to 6 weeks, the patient should perform the exercise once daily, doing three sets of 8–12 repetitions on both arms. From 6 weeks onward, the load can be progressed and the patient performs three sets of 6–8 repetitions every other day (if the patient's strength is nearing 80% of the unaffected side).

Additional exercises

If the patient has time, other exercises can be used such as gripping exercise putty, or supination and pronation exercises as shown in Figure 3 and Figure 4. Patients who perform repetitive tasks in their day-to-day work should be specifically assessed for individualised exercises for those tasks once their strength improves (to approximately 90% of the unaffected side).

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Description (cont'd)

Figure 3(a). Resisted supination start position, moving to supination and then back to this neutral position. A progression can be to start in a more pronated position.

Figure 3(b). Resisted supination exercise (at mid-position of supination), with forearm supported on bench.

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Description (cont'd)

Figure 4(a). Resisted pronation: starting in supination the patient pronates the forearm, holding onto the elastic band with the other hand. Forearm is supported on bench.

Figure 4(b). Resisted pronation: target position of pronation is reached before slowly returning to starting supinated position.

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Description (cont'd)

Elbow manipulation (manual therapy)

Two techniques used are the ulnar-humeral lateral glide (Figure 5) and radial head posteroanterior glide (Figure 6).

Figure 5. Ulnar-humeral lateral glide: this involves lateral elbow mobilisation with movement. While the patient performs (and relaxes) their painful action (e.g. gripping), a lateral humero-ulnar accessory glide is applied and sustained. If significant improvement in pain-free grip is observed, repeat the technique for a total 6 to 10 repetitions. A belt may be used to assist with the glide.

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Description (cont'd)

Figure 6. Radial head posteroanterior glide: while the patient performs (and relaxes) their painful action (e.g. gripping), a posterior to anterior glide over the radial head is applied and sustained. If significant improvement in pain-free grip is observed, repeat the technique 6 to 10 times.

See Training for additional instructions.

Tips and challenges

Patients with tennis elbow can be reassured that most cases will improve by adopting a wait-and-see approach.

Wait-and-see approach

The symptoms of LE will usually resolve within 6–12 months if the patient follows simple advice including:

- remain active and do not restrict arm or elbow movements
- do not perform movements and tasks that provoke pain greater than 3 out of 10 (where 10 is the worst pain imaginable)
- do not immobilise the elbow or upper limb
- do not lift an object with hands in the face-down position.

The wait-and-see approach typically results in a good outcome in the long term, but many patients do seek active treatments. Where there has been no improvement after 6–12 weeks of waiting and seeing, physiotherapy may be beneficial.

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Tips and challenges (cont'd)

Other approaches

Corticosteroid injection may provide short-term pain relief (4–6 weeks) but long-term outcomes will likely be worse than adopting a wait-and-see approach or physiotherapy. (See Indication)

Most of the muscles in the upper limb (from the shoulder to the fingers) are weak in patients with long-term LE, therefore patients should be advised to undertake general strengthening exercises for the upper limb. These need to be done with care so to not exacerbate elbow pain.

Grading

NHMRC Level 1 evidence.

Training

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Olaussen M, Holmedal O, Lindeak M et al. Treating lateral epicondylitis with corticosteroid injections or non-electrotherapeutical physiotherapy: a systematic review. BMJ Open. 2013;3:e003564 doi:10.1136/bmjopen-2013-003564. (http://bmjopen.bmj.com/content/3/10/e003564.abstract)

Consumer resources

The Better Health Channel provides some basic information about elbow pain.

Patient.co.uk offers a brief decision aid for tennis elbow (http://patient.info/decision-aids/tennis-elbow-decision) as well as general information (http://patient.info/blogs/sarah-says/2013/07/getting-to-grips-with-tennis-elbow)

RACGP's Patient Information sheet – Exercise for tennis elbow

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