LATERAL EPICONDYLITIS PROTOCOL

PATIENT EDUCATION

WHAT IS LATERAL EPICONDYLITIS?
Lateral epicondylitis is a painful condition involving the tendons and muscles on the outer (lateral) aspect of the elbow, which are responsible for supporting and extending the wrist. Tendons are the structures that connect the muscle to the bone and can be irritated with repetitive use. Lateral epicondylitis is commonly referred to as "Tennis Elbow".

WHAT ARE THE SYMPTOMS OF LATERAL EPICONDYLITIS?
Pain and tenderness over the outer aspect of the elbow is a common symptom and the pain may refer down into the forearm. The pain and/or weakness are often worse with gripping and lifting activities, such as opening a jar or lifting a jug of milk.

WHAT ARE THE TREATMENT OPTIONS FOR LATERAL EPICONDYLITIS?
Lateral epicondylitis typically improves with non-surgical treatment, although it can take time to heal especially if symptoms have present for long periods. The most important component of treatment is a progressive active exercise program that builds strength and endurance in the forearm muscles and tendons.

There are many additional treatments that can be helpful including bracing, injections, ergonomic and activity modifications and physiotherapy.

Bracing
A wrist stabilizing brace helps to reduce symptoms by preventing the wrist from extending. This brace should be comfortable when it is fitted but should fit snugly and prevent the wrist from bending backwards. The brace can be worn daily and throughout the day if the pain is severe. The brace can be taken off for dressing, hygiene and exercises. This brace can be worn at night as needed for pain relief.

An elbow counterforce brace is worn around the forearm just below the elbow joint. There are two areas of padding that should be just below the bony prominences on either side of the elbow. The brace can be worn daily, for use during aggravating activities. This brace should not be worn at night.

Injections
There are a number of different types of injections that have been studied for treating lateral epicondylitis. Although the primary treatment for lateral epicondylitis is an active exercise program, injections can used in addition to active exercise to assist in the recovery process.

Historically, the most common type of injection used for treating musculoskeletal conditions is cortisone or steroid. Although effective in the short term for managing pain, cortisone has been shown to worsen symptoms in the long term. Cortisone is no longer recommended in the treatment of lateral epicondylitis.

Other injection options, including platelet-rich plasma (PRP) and botox are generally not covered by Alberta Health although patients may have coverage through additional insurance. Both have been shown to be effective in managing lateral epicondylitis when used in conjunction with an active exercise program.

Percutaneous tenotomy, a similar procedure to what is performed at surgery, can be performed by a radiologist under local anaesthetic. This has also been shown to be effective when combined with an active exercise program.

These options can be reviewed with you by the assessment team if you would like further information.

Ergonomic Considerations

Many of us spend a significant amount of time working on a computer with forearms resting on the desk and wrists extended in order to use the keyboard. This extended wrist position for prolonged periods can irritate the muscles and tendons in the forearm. With a wrist gel support or a rolled up towel in front of the keyboard and mouse, the wrists rest on the support and allow for a more neutral wrist position while typing.

Overall body posture and neck/head position should also be considered and adjustments to the height of the computer monitor and keyboard/mouse position can help with recovery. As described in the exercises below, adjust your posture frequently throughout the day.

Activity Considerations

It is important to stay active and keep the rest of the body moving despite the injury. Continue to keep active with lower body and core strengthening and cardiovascular activities, such as running, walking, or biking. Other activities such as racquet sports and golfing can be continued with use of a brace if pain free. Other modifications to assist in the recovery include:

- Using a neutral wrist position with activities (see Phase One Exercises for a description)
- When lifting use a palm up position (instead of palm down)
- Using a broader handle or lighter weight racquet for racquet sports

Physiotherapy

A physiotherapist can help guide patients through the recovery process by providing additional education on self-management strategies, detailed and individualized exercise prescription and hands on treatment. Physiotherapists may also consider including dry needling and acupuncture to assist in relieving muscle tension. These additional treatment options can be effective when used as an addition to an active progressive exercise program.

PHASE ONE – Pain Management and Range of Motion

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Phase One focuses on pain management and improving range of motion and movement patterns. It is important to emphasize proper technique with the exercises and to break up the exercises throughout the day. Every few hours throughout the day, choose 1-2 exercises to do at a time as opposed to doing all of the exercises together. Heat (or ice) can be used with 20-minute applications throughout the day as needed for pain relief.

Bracing using a wrist stabilizer brace can be worn initially for 24 hours per day, including sleeping initially to help with pain and avoiding further irritation of the elbow with daily use. If an elbow counterforce brace is used this can worn during aggravating activities and should not be worn for sleeping.

EXERCISES

Active Wrist Flexion and Extension (2-3 sets of 10-15 reps, 2-3 times per day)
Sitting with good posture and wrist in the neutral position. Slowly lower down keeping the 3rd finger in line with the midline of the forearm. Slowly raise back up until the back of the hand is parallel to the floor, keep all of the knuckles level as you move.

Wrist Extension Isometrics (2-3 sets of 10 reps, 5-10 sec hold, 2-3 times/day)

Arm over the end of the table, sitting with good posture and wrist in the neutral position. Gently apply pressure to the back of your hand on the pinky side of the hand while maintaining a parallel position with the floor and wrist neutral position.

Active Supination and Pronation (2-3 sets of 10-15 reps, 2-3 times/day)

With elbow by the side and bent to 90 degrees, rotate the palm up to the ceiling to move into supination. Rotate palm towards the floor to move into pronation. Further stretching can be added by assisting the movement with the opposite hand

Self-Massage and Trigger Point Release (5 minutes, 2 times/day)
Gently massage the muscles in the forearm to help relieve tension. Can use a Flexbar on the table and apply pressure to the muscles to relieve tension while rolling up and down.

Postural Correction (1-2 sets of 10 repetitions, 5 sec hold, 3-5 times/day)
When sitting, rest hands on thighs, gently lift breastbone up towards the ceiling to sit up nice and tall. Using the muscles between the shoulder blades, gently draw them together, ensure elbows stay relaxed. Hold for 5 seconds. Try to do this frequently throughout the day such when sitting at a desk or performing regular activities

CRITERIA FOR PROGRESSION TO PHASE 2

- Pain adequately controlled at rest
- Full wrist and elbow range of motion
- Demonstrates progression of passive/assisted range of motion

ACCESS ORTHOPAEDICS | PHYSIATRY | PHYSIOTHERAPY
110 Quarry Park Blvd SE – Suite 200, Calgary AB T2C 3G3
P. (587) 355-3090 F: (587) 387-3158
www.accessorthopaedics.ca

OTHER CONSIDERATIONS

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Phase Two introduces resisted strengthening exercises which require basic equipment that can be purchased at the clinic, other physiotherapy providers or online. The colours of the band/bar refer to the level of resistance provided.

Yellow (Very Light) → Red (Light) → Green (Moderate) → Blue (Heavy)

Bracing involving a wrist stabilization or elbow counterforce brace should be phased back to use only with aggravating activities and increased loading. A wrist stabilization brace can continue to be worn at night to maintain a resting position while sleeping to avoid a flexed wrist position.

Continue to avoid aggravating activities and introduce load gradually to allow for the tendon to adapt to the changing load. Work on neutral wrist position with activities of daily living (i.e. typing).

EXERCISES

EXERCISE PARAMETERS

Exercises should be performed with **proper technique and control** and should not provoke lateral elbow pain. Exercises should be started at 2-3 sets of 8-10 reps with a 60 second rest break between sets, unless otherwise indicated. It is best to break up the exercises throughout the day rather than doing all of the exercises together at the same time. Once able to do 3 sets of 15 with that resistance, drop the repetitions back down to 2-3 sets of 8-10 but increase the resistance.

Active Wrist Flexion and Extension with Weight (2-3 sets of 10-15 reps, 2-3 times per day)

Sitting with good posture and wrist in the neutral position. Slowly lower down keeping the 3rd finger in line with the midline of the forearm. Slowly raise back up until the back of the hand is parallel to the floor, keep all of the knuckles level as you move. Start with 1-2lbs and gradually increase as strength and pain improve.

FlexBar Eccentric Flexion/Extension

With flex bar in both hands (palm down, elbows straight), grip the bar and rotate the unaffected hand forward while stabilizing the bar with your affected wrist. Slowly allow that affected wrist/hand to roll forward with control. Repeat for wrist flexion by rotating the rotating the wrist back on the unaffected side first, then allow the affected arm/wrist to roll back with control.

Wrist Flexor/Extensor Stretch

Begin gentle stretching of the flexor and extensor compartment of the forearm, initially with the elbow bent and then progressing to elbow straight. Go until you feel a gentle stretch in the forearm. Hold stretch for 10-20 seconds and repeat often throughout the day.

Shoulder Grip with Rice (no more than 5 minutes, once per day)

Do light gripping exercises with affected hand in a bucket of rice. Can work on opening and closing hand in the rice as well as placing small objects such as paperclips in the rice to search for them.

Shoulder Row

Ensure correct scapular positioning prior to initiating rowing motion and maintain this scapular positioning and neutral wrist position while arms are moving forward and back in a rowing motion. Stop once you each midline of the body, use a light resistance (yellow or red band).

Manual Therapy – for Physiotherapist Consideration

- Consider including manual therapy to address joint mobility restrictions, including Mulligan Techniques and assessment/management of entire kinetic chain and spine
- Assess neural mobility and provide neural glide exercises as necessary

CRITERIA FOR PROGRESSION TO PHASE 2

- Pain well controlled at rest and with light activities of daily living
- Wearing brace only for heavier activities of daily living and recreational activities
- Able to perform 3 sets of 15 of Phase Two exercises with proper technique and control with red (or green) resistance

PHASE THREE – Progressive Strengthening

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Phase Three involves functional and advanced strengthening exercises. Individuals can begin to resume recreational activities as tolerated and wearing the elbow counterforce brace as required. Exercises should be continued regularly on a long-term basis to continue to build strength and prevent recurrence of symptoms.

EXERCISES

EXERCISE PARAMETERS

Exercises should be performed with **proper technique and control** and should not provoke lateral elbow pain. Exercises should be started at 2-3 sets of 8-10 reps with a 60 second rest break between sets, unless otherwise indicated. It is best to break up the exercises throughout the day, doing bits but often throughout the day. Once able to do 3 sets of 15 with that resistance, drop the repetitions back down to 2-3 sets of 8-10 but increase the resistance. As a maintenance program, exercises can be done 2-3 times per week.

FlexBar Program – Eccentric and Concentric

Continue Eccentric FlexBar exercises as per Phase Two. Do 2 sets starting with the unaffected hand rolling forward first, then 2 sets of the affected hand rolling forward first (and same for rotating backwards).

Supination/Pronation with FlexBar

Supination – grip close to the end on one side of FlexBar with your affected hand so the long end is out the pinky side of your hand resting flat on the table with palm down, rotate the wrist/forearm so the palm turns up and faces in.
Pronation – grip close to the end on one side of FlexBar with your affected hand so the long end is out the pinky side of your hand, rest it flat on the table with palm facing up, rotate the wrist/forearm so the palm turns up and faces in.

Shoulder Internal and External Rotation

Standing with band tied at waist level, place a small rolled towel/pillow under the elbow. Hold the band like holding a coffee cup, rotate the band outwards (external rotation) while maintaining a neutral wrist position, repeat for internal rotation.

CRITERIA FOR PROGRESSION INTO FUNCTIONAL/WORK/ADL SPECIFIC STRENGTHENING

- Encourage gradual return to activities, with awareness of maintaining neutral wrist position and scapular and postural awareness
- Consider global upper body strengthening including exercises such as biceps/triceps strengthening, lat pull downs, shoulder press, and other similar exercises.

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