

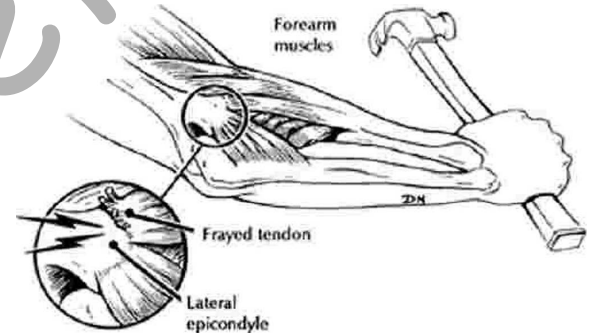
## Tennis Elbow (Lateral Epicondylitis)

Many tennis players develop pain on the outer (lateral) aspect of the elbow. This is a form of tendinitis called lateral epicondylitis or "tennis elbow". Lateral epicondylitis is an overuse injury of the tendons that extend (lift up) the wrist attach to the end of the arm bone in the elbow area.

These wrist extensor muscles pull the wrist and fingers backward and contract strongly with any gripping activity of the hand. A small common extensor tendon at the outside of the elbow anchors a large group of extensor muscles in the forearm. Repetitive gripping and strong use of these extensor muscles can cause tissue failure at the muscle-tendon junction, causing the tendon to become inflamed. This produces the pain on the outside of the elbow.

### Contributing Factors

- Weak muscles
- Overuse - playing or working with excessive and repetitive forceful gripping
- Gripping while extending or twisting of the wrist.
- Improper equipment - incorrect grip size, strings too tight or
- Racquets / tools that are too heavy or unbalanced.
- Poor playing technique - too much wrist action, jerky strokes, poor ball contact.



### Treatment

**Rest.** You may have to temporarily stop the aggravating activity. A period of rest is most important to allow the injury a chance to heal. You will make the condition worse by continuing the activity that causes the injury, especially if you experience pain. Avoid heavy lifting or carrying, opening doors or repeatedly shaking hands.

**Ice.** Apply cold to your elbow three times a day for 20 to 30 minutes at a time in the early painful stage and for 20 minutes after active use of your arm. Protect your skin by putting a towel between your elbow and the ice bag.

**Stretching.** Stretching will help prevent stiffness by making the muscles more-flexible and by breaking down scar tissue.

**Physical Therapy;** Exercises to strengthen the forearm muscles can begin as soon as the pain subsides. Building strength will help protect the injured tendon and prevent the injury from happening again.

**Medication.** Sometimes anti-inflammatory medication helps reduce the pain. If you do not have a problem with this type of medication, you may take Aleve, one or two tablets twice a day with meals. Or, you may take Advil or aspirin. Cortisone will probably reduce the pain for a few months but may not change the length of time it takes the injury to heal. After receiving a cortisone injection, you should not play sports or use the arm forcefully for about two weeks.

**Brace.** A counter-force brace which is an elastic strap that is worn one to two inches below the elbow. This type of brace gives compression to the forearm muscles and helps lessen the force that the muscle transmits to the tendon. At first, the brace may be worn at all times but as the pain subsides, the brace is necessary only for protection during activities that stress the injured arm.

**Surgery.** Surgery is rarely required but is sometimes useful to correct chronic or recurrent tendinitis.

## Returning to Sports

**Warm-up.** Always warm up before you play. Put all of your major joints through their complete range of motion and work up a "sweat" prior to stepping on the tennis court or golf course. Follow this by slowly performing the motions that you use in your sport. In tennis, do easy strokes next, and then slowly increase your intensity until you are sweating again. The forearm muscles should be stretched well after the warm-up.

**Your Racquet.** Use a lighter weight racquet and move your hand up a bit on the grip. Change to a racquet that has greater spring. Reduce the string tension. Grip size can also be an important factor. If possible, discuss equipment with your local pro.

**Your Stroke.** In tennis, the backhand stroke applies the most force to the outer aspect of the elbow, especially if the wrist is used. The two-handed backhand tends to be easier on your elbow. Avoid the shots that aggravate the problem. Reduce wrist motion to a minimum. Lessons may be necessary to alter your strokes.

**Your Game.** When you go back to your sport, start back slowly. In tennis, warm up first and rally at first for only short periods of time, avoiding problem shots. Play less time each day or play doubles. Avoid playing competitive games until your elbow is healed. In golf start with only putting and chip shots. Slowly work up from a few holes to a complete game.

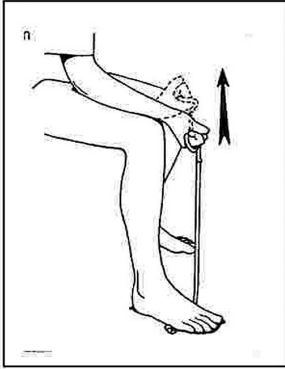
**After the Game.** Stretch the muscle after you are through playing. Apply ice to the elbow for 20 minutes.

## Exercises

Exercises to stretch and strengthen the muscles attached to the injured tendon will help with the healing process. **Stretches and exercises should be avoided if they are painful.** The following exercises can be done every other day until your symptoms subside. Continue to use the exercises as a warm-up before tennis, golf or other gripping activities.

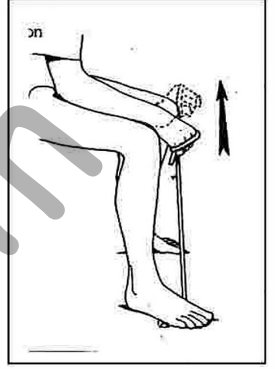
### Resisted Wrist Extension

With tubing wrapped around the hand and the opposite end secured under foot, keep the palm facing down and bend the wrist and hand upward as far as you can. Hold 1 count and lower slowly 3 counts. Repeat 10 to 20 times, two times per day. This exercise can also be done with a dumbbell.



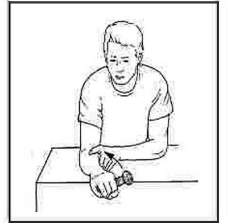
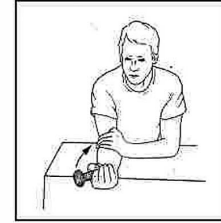
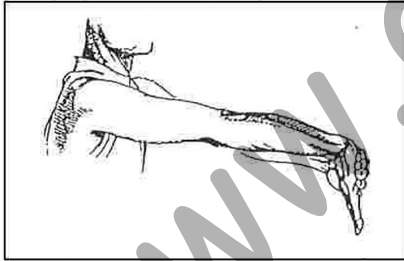
### Resisted Wrist Flexion

With tubing wrapped around the hand and the opposite end secured under foot, keep the palm facing up and bend the wrist and hand upward as far as you can. Hold one count and lower slowly 3 counts. Repeat 10 to 20 times, two times per day. This exercise can also be done with a dumbbell.



### Resisted Forearm Supination and Pronation

Holding a dumbbell, with the forearm supported on your thigh, slowly turn the palm facing up and then slowly turn the palm facing down. Make sure to hold the elbow still and only move the forearm. Repeat 10 to 20 times each way, one to two times per day.

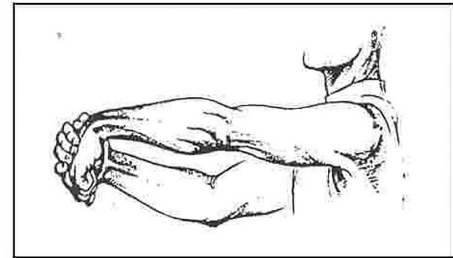


### Wrist Flexor Stretch

Hold the arm with the elbow straight and the palm facing up. Grasp the involved hand at the fingers and stretch the wrist backward, until a stretch is felt on the inside of the forearm. Hold 15 seconds, repeat 3 to 5 times, 2 to 3 times per day.

### Wrist Extensor Stretch

Hold the arm with the elbow straight and the palm facing down. Push downward on the back of the involved hand until a stretch is felt in the muscles on the outside of the forearm. Hold 15 seconds, repeat 3 to 5 times, 2 to 3 times per day.



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