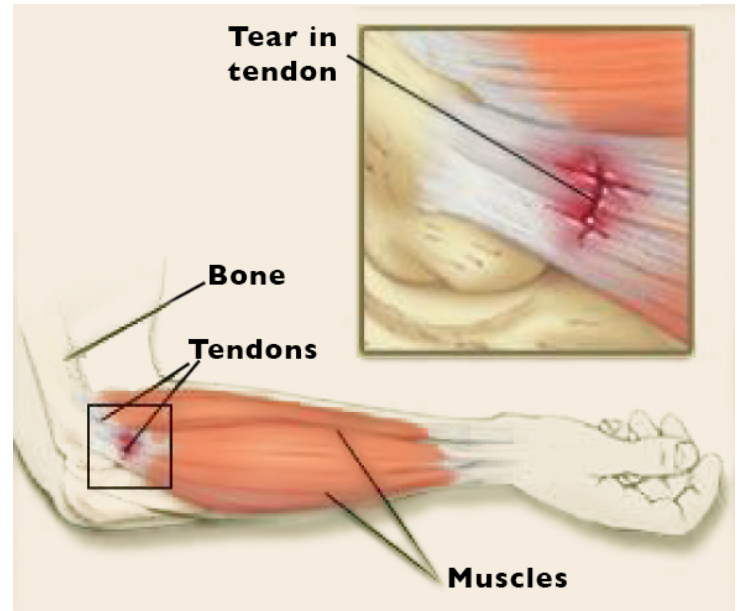


Elbow Pain

The elbow is the joint where three long bones meet in the middle portion of the arm. The bone of the upper arm (humerus) meets the inner bone of the forearm (ulna) and the outer bone of the forearm (radius) to form a hinge joint. The outer bone of the elbow is referred to as the lateral epicondyle and is a part of the humerus bone. Tendons are attached to this area which can be injured, causing inflammation or tendinitis (lateral epicondylitis, or "tennis elbow"). Tennis elbow is an injury to the muscles and tendons on the outside (lateral aspect) of the elbow that results from overuse or repetitive stress. The narrowing of the muscle bellies of the forearm as they merge into the tendons create highly focused stress where they insert into the bone of the elbow.

Tennis elbow most commonly affects people in their dominant arm (that is, a right-handed person would experience pain in the right arm), but it can also occur in the non-dominant arm or both arms.



SIGNS AND SYMPTOMS

General Symptoms

- Pain slowly increasing around the outside of the elbow. Less often, pain may develop suddenly.
- Pain is worse when shaking hands or squeezing objects.
- Pain is made worse by stabilizing or moving the wrist with force. Examples include lifting, using tools, opening jars, or even handling simple utensils such as a toothbrush or knife and fork.
- Difficulty holding onto, pinching, or gripping objects
- Pain, stiffness, or insufficient elbow and hand movement
- Forearm muscle tightness
- Insufficient forearm functional strength
- Point tenderness at or near the insertion sites of the muscles of the lateral or medial elbow

Specific Symptoms

Medial Epicondylitis

- Palpation tenderness of the lateral epicondyle
- Painful resisted wrist flexion
- Palpation tenderness of the medial epicondyle

Lateral Epicondylitis

- Painful resisted forearm pronation (palm facing downward)
- Painful resisted wrist extension
- Painful resisted radial deviation (bending wrist toward pinky)

WHO GETS TENNIS ELBOW?

Tennis elbow affects 1% to 3% of the population overall and as many as 50% of tennis players during their careers. Less than 5% of all tennis elbow diagnoses are related to actually playing tennis.

Tennis elbow affects men more than women. It most often affects people between the ages of 30 and 50, although people of any age can be affected.

Although tennis elbow commonly affects tennis players, it also affects other athletes and people who participate in leisure or work activities that require repetitive arm, elbow, and wrist movement. Examples include golfers, baseball players, bowlers, gardeners or landscapers, house or office cleaners (because of vacuuming, sweeping, and scrubbing), carpenters, mechanics, and assembly line workers.

Rehabilitation: What should I do, when should I do it, and how?

Epicondylitis often becomes a chronic problem if not cared for properly. For this reason, it must be stressed that the rehabilitation process should not be progressed until you experience little or no pain at the level you are performing. Regaining full strength and flexibility is critical before returning to your previous level of sports activity.

In general, the rehabilitation process can be divided into three phases:

Phase I

Goals: decrease inflammation and pain, promote tissue healing, and retard muscle atrophy. During the acute stage of your injury, whether the medial or lateral elbow is affected, follow the RICE principle:

- **R**est - this means avoiding further overuse not absence of activity. You should maintain as high an activity level as possible while avoiding activities that aggravate the injury. Absolute rest should be avoided as it encourages muscle atrophy, deconditions tissue, and decreases blood supply to the area, all of which is detrimental to the healing process. Pain is the best guide to determine the appropriate type and level of activity.
- **I**ce - is recommended as long as inflammation is present. This may mean throughout the entire rehabilitation process and return to sports. Ice decreases the inflammatory process slows local metabolism and helps relieve pain and muscle spasm.
- **C**ompress
- **E**levate - Elevate the elbow if appropriate to assist venous return and minimize swelling.

Phase 2

After the elbow has healed, you want to begin working to increase strength and endurance in the muscles, tendons and ligaments. You will also begin to gradually return to functional activities and return to normal function.

→ Stretching

1. Focus on the gentle stretching exercises. You should work on increasing the range of motion during wrist flexion, wrist extension and wrist rotation.
2. Make certain that the elbow is extended and the arm is straight. Keeping the arm straight increase the range of the stretch.
3. Hold each stretch for 20 - 30 seconds
4. Focus on feeling the muscles gradually relax into the stretch.
5. Repeat at least twice a day.
6. Stretch only to the point of comfortable motion.
7. REMEMBER you want to help the area, NOT re-injure it.

Phase 3

After your pain symptoms have disappeared and you have full range of pain free movement of your arm, you are now ready to begin more sport specific rehabilitation. While Phase 2 focuses on gradually increasing the work capacity of the elbow. Phase 3 begins gradually incorporating the movements of your sport or activity. In many cases, you are now returning to the activity that created the injury. It is very important to gradually work up to prior activity levels. It is very common for people to re-injure themselves at this stage by subjecting themselves far too much strain before the tendons have fully healed. During Phase 3, continue stretching and strengthening exercise from Phase 2.

PREVENTION

To help prevent tennis elbow:

- Apply an ice pack to the outside of the elbow
- Maintain good strength and flexibility in the arm muscles and avoid repetitive motions
- Rest the elbow when bending and straightening are painful

REHAB FOR TENNIS ELBOW: THE SUPER 7

The "super 7" exercises are an important part of treatment for tennis elbow. They are designed to strengthen the muscles in the forearm and increase flexibility through stretching. In most cases these exercises will help relieve elbow pain in about 4 to 6 weeks. Each stretching exercise is held for 15 seconds and repeated 2 or 3 times. This pattern is repeated 5 times a day.

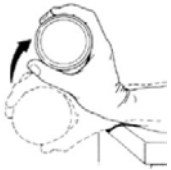


Exercise 1: Stretching the muscles that extend the wrist (extensor muscles)

Straighten the arm out fully and push the palm of the hand down so you feel a stretch across the top of the forearm.

Exercise 2: Stretching the muscles that flex the wrist (flexor muscles)

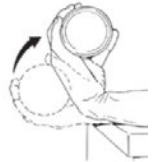
Straighten the arm out fully (palm side up), and push the palm downward to stretch. Strengthening exercises are performed twice a day following the stretching exercises. To perform these exercises, the patient sits in a chair with the elbow supported on the edge of a table or on the arm of the chair the wrist hanging over the edge. Use a light weight such as a hammer or soup can when performing the strengthening exercises. Repeat the exercises 30 to 50 times, twice a day, but do not push yourself beyond the point of pain.

**Exercise 3: Strengthening wrist extensor muscles**

Hold the weight in the hand with the palm facing down. Extend the wrist upward so that it is pulled back. Hold this position for 2 seconds and then lower slowly.

Exercise 4: Strengthening wrist flexor muscles

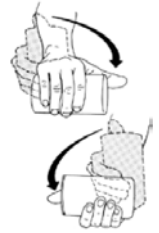
Hold the weight in the hand with the palm up. Pull the wrist up, hold for 2 seconds and lower slowly.

**Exercise 5: Strengthening the muscles that move the wrist from side to side (deviator muscles)**

Hold the weight in the hand with the thumb pointing up. Move the wrist up and down, much like hammering a nail. All motion should occur at the wrist.

Exercise 6: Strengthening the muscles that twist the wrist (pronator & supinator muscles)

Hold the weight in the hand with the thumb pointing up. Turn the wrist inward as far as possible and then outward as far as possible. Hold for 2 seconds and repeat as much as pain allows, up to 50 repetitions.

**Exercise 7: Massage is performed over the area of soreness**

Apply firm pressure using 2 fingers on the area of pain and rub for 5 minutes.

If exercise aggravates any of your symptoms, contact a physician or physical therapist. These exercises can be used to prevent or rehabilitate injuries in people who play sports or in those who do repetitive forearm work.