



# Tennis Elbow Treatment and Prevention

What you need to know to  
stop tennis elbow pain now  
and keep it from ever  
coming back.

*Marin Movement Center*

## What is Tennis Elbow?

The three most common types of elbow pain are 1) Lateral epicondylitis commonly called tennis elbow, 2) Medial epicondylitis, commonly called golfers elbow, and 3) Medial collateral ligament sprain commonly called throwers elbow. The first, tennis elbow, affects the outside of the elbow. The second, golfers elbow, affects the inside of the elbow, and the third, throwers elbow, affects the inside of the elbow. Because of the variety of arm movements required by tennis, for tennis players may develop any one or a combination of all three of these conditions.

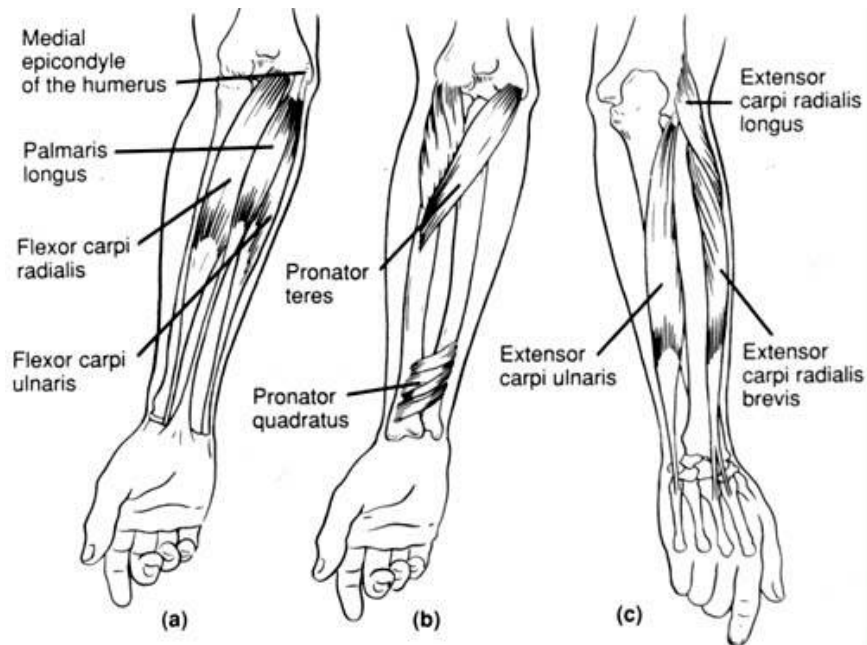
Tennis elbow is an injury to the extensor muscles of the forearm. The pain is caused by micro-tears in the tendons and muscles. These tears cause restriction of movement, inflammation and pain. The tears can cause scar tissue and calcium deposits. If untreated, this can lead to impingement of the nerves, restriction in bloodflow and muscle stiffness.

### Common Symptoms of Tennis Elbow

- Pain is the most common symptom. It usually has a gradual onset but may also come on suddenly.
- Tenderness at the insertion site of the muscle (lateral elbow for tennis elbow and medial for golfers elbow). The pain can be anywhere along the forearm.
- The pain can be aggravated by handshaking, turning a key, screwing, pinching, etc.
- Stiffness or limited elbow or hand movement
- Tightness of forearm muscle
- Weakness of forearm
- Difficulty holding onto or grasping objects

## Anatomy of Tennis Elbow

Three bones make the elbow, the Humerus, the Ulna and the Radius. The key muscles that is involved with tennis elbow are the extensor carpi radialis brevis. See diagram. The key muscle involved in golfers elbow is the flexor carpi radialis.



## Common Causes of Tennis Elbow

Tennis elbow is not limited to just tennis players. It results from repetitive and prolonged activities that stress the forearm muscles.

It may be caused from keyboarding, hammering, tennis, golf, or garden work. Poor posture, lack of warming up the muscles before playing, stress, lack of rest can all cause or aggravate tennis elbow. So can improper equipment like tennis racquets, golf clubs, and work stations.

## How Tennis Players Get Injured

Tennis elbow is caused by improper technique combined with overuse. Common tennis elbow —Lateral epicondylitis can be caused by any of the following:

- One handed back hand where the ball is hit with the front of the shoulder up too high causing overuse of the forearm muscles
- Wrist snap due to late forehand swing preparation. In the attempt to bring the racquet head quickly perpendicular to the ball the forearm muscles are stressed.
- Wrist pronation (palm turned downward) with a snap of the wrist during the serving motion. This increases the stress on the extensor muscles of the forearm.

**Golfers elbow**—Medial epicondylitis can be caused by the following improper tennis techniques:

- A late forehand where the player quickly snaps the wrist to bring the racquet forward.
- “Back scratch” during the serve. This places significant stress on the tissue of the medial elbow.

In swimming, improper pulling techniques especially with back stroke can also cause golfers elbow.

## Keys to Preventing Tennis Elbow

1. Proper warm-up to provide blood flow to the forearm area is crucial to preventing tennis elbow. See next page.
2. Strengthening & Conditioning of forearm muscles is key to preventing tennis elbow. (See the treatment section)
3. Learn new movement routines and undo “bad” posture habits. Only when we move our whole body efficiently is a well balanced way can we prevent overuse injuries. Consult a Feldenkrais practitioner or take a Feldenkrais class to learn how to move in a more organized and efficient way. The club has Feldenkrais classes on Mondays and Thursdays.
4. Learn stress management—stress builds tension and makes you more susceptible to injury.
5. Pace wisely when running around and living a busy lifestyle. Get enough sleep and take rests.
6. Manage your weight if needed. Overweight is an additional factor for wear and tear on the body.
7. Proper technique is essential for preventing overuse injuries such as tennis elbow. Consult your tennis coach for proper gripping technique and stroke mechanics.
8. Poor equipment fit is a common cause of tennis elbow. Work with your tennis coach and the pro shop to ensure the proper fit of your racquet and optimal string tension.
9. Bracing and strapping—Some players benefit from wearing a lateral counter force brace that is worn around the lateral or medial elbow. The brace reduces muscle activity and force. Consult the pro shop. Be aware: Do not become dependent on a brace or strap. If you currently use one, consider weaning yourself off its use as your injury improves. A brace is not a replacement for physical therapy.

## Warming Up Before Sports

Warming up prepares all the muscles and tendons for your workout. This makes the muscles loose, supple and flexible. The time you commit to your warm up should be relative to your level of intensity in your individual sport.

If you just want to increase your general level of health and fitness, 5 –10 minutes is enough. But if you are engaged in a competitive sport such as tennis, you need to include more time and effort to completely warm up.

The foundation for any effective warm up is general warm up and static stretching. The general warm up should consist of light physical activity such as five to ten minutes of walking. The goal is to elevate the heart and respiratory rate which increases blood-flow to the muscles.

Static stretching—Include all the major muscle groups in your stretching. It is extremely important for overall flexibility as it helps the muscles and the tendons to lengthen. This prevents strains, sprains, and muscle tears. Tight muscles get easily injured.

Sport specific warm up — As an athlete, you are preparing your body for the demand of your particular sport. More vigorous exercises are needed reflecting the type of movement and actions required by the specific sport. For tennis players, warming up with a ball machine and running on the court are good ways to safely warm up.

If you don't have time for the “perfect” warm up routine, decide for yourself what your goals are and adjust your warm up accordingly. You can talk to your physical therapist or sports trainer to develop an individual routine that meets your specific needs.

## How Do You Best Treat Tennis Elbow?

Tennis elbow becomes a chronic problem if not cared for properly. The longer you have experienced this condition, the longer the recovery timer is expected. Sometimes it may take as long as two months for a full recovery. The sooner you start the better chance you have of making a full recovery. So start now.

**Pacing**—It is important to start or progress the exercises at the right pace!. This means you should not resume your previous level of sports activities until you have your full strength and flexibility back. Progress your exercises only when you have little or no pain.

**Goal**—Your goal in treatment is to decrease inflammation, decrease pain, decrease swelling and promote tissue healing and slow down muscle atrophy. The most effective initial treatment for soft tissue injuries is the R.I.C.E.R. regimen. This controls the swelling and pain.



## R.I.C.E.R.—The First 72 Hours

### R—Rest

The key rule for any sports injury is “Do no further damage.” Rest does not mean absence of activity. Keep your activity level as high as possible without aggravating the injury. This ensures blood supply to the injured area and prevents muscle atrophy.

### I—Ice

The most important piece. Ice reduces inflammation, relieves pain and muscle spasms. You may continue to apply ice throughout your recovery and while resuming your sport activities. Crushed ice in a plastic bag works very well. Ice packs are convenient. Ice massage with frozen ice in a paper cup is great for localized application. Start with 5 minutes right after exercise.

Apply ice for as long as is comfortable, up to 1 hour at a time. For some people 5 minutes is all they tolerate. Others may stand 20 minutes. Listen to your body. Avoid burning your skin by wrapping a damp towel around the ice pack.

### C—Compression

Use a wide, firm, elastic compression bandage for elbows to cover the injured area. The bandage must cover both the area above and below the elbow. Make sure it is not so tight that it cuts off your circulation.

### E—Elevation

Raise your arm above heart level whenever you can. This encourages blood flow and reduction of swelling.

### R—Referral

Depending on the severity of your injury, your doctor may refer you to physical therapy.

**Avoid** using heat on the injury for the first 24—72 hours. This includes jacuzzi, heat creams, saunas, etc. Also don't massage the area during this initial time period. Follow the R.I.C.E.R. program and you'll cut your recovery time by days or weeks.

## Phase II Treatment — After 72 Hours

Your goals for treating tennis elbow after the first 72 hours are to increase flexibility, increase strength, increase endurance, increase function and to remove scar tissue.

1. **Application of heat.** This is best done by a physical therapist and may include ultrasound, moist heat packs, and light therapy. Your P.T. may also apply Iontophoresis or TENS.
2. **Massage.** This helps to remove scar tissue. It is best done after heat treatment. Your physical therapist can teach you how to massage your own forearm. Creams to use for self-application are Traumeel, Trau-med or Arnica cream.
3. **Stretching.** Gentle stretches for the wrist and forearm help heal the injury. Do a combination of the following:

A. Wrist flexion



B. Wrist extension



Keep your elbow extended for optimum stretch. Hold each stretch for 20—30 seconds. Repeat 5-10 times. Perform the entire routine twice daily. Avoid vigorous stretching. Stretching should not aggravate the injury.

4. **Strengthening.** Do 10 reps of each exercise 3-5 times a day. Remember—stop if you feel pain. Only progress your exercise routine when you are experiencing little or no pain. Before each exercise with weights, do a light warm-up like walking or cycling for 3-5 minutes. You can also warm the elbow directly by using a hot pad. If you have been instructed to wear a brace, use it during the following exercises.

## Strengthening Exercises

Please read and follow the instructions and precautions on the previous page before starting your strengthening program.

**Progression:** Start each exercise with no weights. Do 10-15 reps 3-5 times daily. Progress to 30 reps making sure that you have no pain. Once you get to 30 reps, add one pound of weight and move through the progression again.

**Wrist extension.** Begin with no weight. Follow the progression above. Start with palm down and wrist relaxed. Raise hand to comfort level. Keep forearm neutral, resting on knee. Lower wrist slowly. Repeat.



**Wrist flexion.** Begin with no weight. Follow the progression above. Start with palm facing up and hand in resting position. Curl wrist while keeping forearm neutral, resting on knee. Slowly reverse movement. Repeat.



**Combined extension and flexion or “roll-up”.** Tie a piece of rope about 3 feet long to the center of a broom or mop handle. Hang a 5-pound dumbbell from the rope. Roll the rope up on the handle like a spool, and then roll it back down. Repeat until fatigued. The weights can be increased as needed.

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**Pronation/Supination**—Grasp hammer, wrench or some similar device. Support forearm on knee. Rotate hand to palm down position, repeat. To increase or decrease resistance, move hand farther away or closer toward the head of the hammer.



**Finger Extension.** Place a thick rubber band around your fingers and thumb near the base of your fingers. Palm facing floor. Spread fingers apart and hold for 3 seconds. Release. Repeat until fingers and forearm become tired. If this is too easy, slide rubber band closer to your fingertips. When this gets easy, change to a thicker rubber band.

**Hand Squeeze.** Hold a tennis ball in your palm. Squeeze ball firmly. Hold for 3 seconds. Release. Repeat until muscle becomes tired. You can start with a foam ball and then progress to a tennis ball.

Do the finger extension and hand squeeze several times a day. Continue with both exercises through your entire weight training program. Begin with arm bent at your side — progress over time to arm straight in front. Consider keeping balls and rubber bands handy at your desk or by the phone.

Do all of the exercises with both arms, one arm at a time. If you are unclear about proper progression, consult your physical therapist.

**After exercising,** massage across the area of tenderness with an ice cube for about 5 minutes. If this is not convenient, apply an ice pack for 5-10 minutes. Longer if desired.

## Phase III—Return to Playing

The goals in phase III are to increase your strength, increase your endurance and increase your flexibility. The ultimate goal is to return to your prior level of activity.

Continue your stretch and strengthening routines. Emphasize eccentric movements of the wrists; this means lower the weight in a controlled way! You can also increase the speed of the roll-up exercise.

When your symptoms are resolved and you have normal strength and flexibility, you may gradually return to your previous level of playing activity. Starting with just 15 minutes of forehand you may progress a step at a time to competitive play over the course of several weeks. Take your time before you progress to each new level. Make sure you stay out of the pain zone.

### Other Considerations in Your Recovery

1. **Wrist splint:** Consider wearing one to stabilize wrist joint in neutral. This facilitates power grip and reduces stress on the extensor tendon.
2. **Equipment modification:** Consult with your tennis coach for the following: grip size, racquet material, stringing material, string tension, and head size.
3. **Establish good posture habits.** Excellent source of movement education are Feldenkrais classes. See club schedule for times.
4. **Drink plenty of water** during your recovery time. This helps to flush the waste products from your body.
5. **In very resistant cases** or unusually slow recovery, consider an evaluation of your cervical spine (neck) by your doctor.
6. **Bracing**—see information under prevention section.

Author—**Marion Kregeloh, PT, CFP** is a physical therapist and certified Feldenkrais practitioner with 20 years experience in rehabilitation, work injury recovery, functional integration and aquatic therapy. Her whole body physical therapy methods and educational programs help athletes become independent in their fitness programs and give them tools for life that help prevent future injuries. You can reach her at Marin Movement center 415-461-7528 and at <http://www.MarinMovement.com>.