



Tennis Elbow

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The term tennis elbow is used to describe an overuse pain along the outside of the elbow where muscles attach to bone. Medically it is called lateral epicondylitis. It is inflammation (itis) at the bony attachment of the tendon. Symptoms usually start as a generalized ache on the upper forearm with activity. With time the pain will localize to the bony attachment at the elbow. Occasionally, the pain radiates to the long and ring fingers. To touch there will be pain at the bony attachment (lateral epicondyle) at the elbow. Pain is intensified with resisted wrist back bending and gripping. Pain will generally be present with extreme palm up hand positions. This is because the ligament encircling the head of the radius (annular ligament) and the connections between the muscle that moves the palm upward (supinator) and muscle that moves the hand backward (extensor carpi radialis brevis) cause a traction/pulling on the lateral epicondyle. It is for this reason that tennis and occupations with repetitive forearm rotation are prone to overuse in this area.

If the tennis elbow (lateral epicondylitis) has been present for several weeks there may be pathology besides inflammation. Initially there may be microscopic tears. If the area is not allowed to heal and damage continues, there may be further pathological changes. Calcification may occur at the tendon attachment as the body attempts to heal by adding stronger calcific tissue to meet the overuse demands. Instead of normal tissue there will be a mix of granulation (new, immature) tissue and fibrotic (scar) tissue. The tendon generally also becomes more avascular (loses some of its blood supply). This is problematic because tendons inherently have poor blood supply. (They are white as compared to the bloody muscle tissue.) It is the blood supply that brings the nutrients for repair to the area. As the problem progresses, ruptures may appear in the tendon.

Tennis elbow usually responds to nonsurgical treatment. It is treated in phases.

Phase I of rehabilitation focuses on the reduction of inflammation, control of pain, release of soft tissue tightness, and increase in flexibility. As always with inflammation, the standard treatment of rest (no painful usage or lifting greater than 2 pounds), ice massage (10 times a day for 3 minutes), and anti-inflammatory medication is used. Physical therapy is recommended in this stage. P. T. will include manual therapy for range of motion and treatments to restore normal tissue properties. For example, soft tissue mobilization is performed, the radial head is mobilized, and then the wrist extensor muscles are stretched. Ultrasound, high volt pulsed galvanic stimulation, phonophoresis, or iontophoresis may be used for their anti-inflammatory effects. In this phase all lifting is limited to two pounds. Taping with elastic tape, splints or forearm bands may be used

to reduce painful forces. When the pain is improved and motion is normal in the elbow, wrist, and fingers, then the next phase is entered.

Phase II of rehabilitation involves strengthening the tendons after their full length has been restored. The goal is to prevent future overload of the tendons. It is particularly important that the exercises be eccentric (negatives) and specific at the elbow. Gripping exercises are also used. The exercises are progressed with greater resistance and speed. It is important that the exercises relate specifically to the sport or job. Treatment for pain and inflammation is continued. Stretching continues.

Phase III of rehabilitation focuses on reconditioning and return to function. A program of stretching, ice massage, and strengthening is typical. Functional activities are gradually increased. Modifications in tools and techniques are done as needed for the injured worker. Modifications in racquets and tennis lessons with a pro are recommended to improve technique.

If physical therapy has failed to produce results and it has been present more than six months then a new treatment to consider is extracorporeal shock wave therapy (ESWT). This technique uses a focused wave of sound energy to stimulate new healing. You can learn more about this on the internet by searching for ESWT. This treatment is available in Boulder.

Surgical management is rare and usually only occurs with patients who have chronic symptoms for 1-2 years, whose condition is nonresponsive to physical therapy, and whose pain is incapacitating. The competitive athlete whose elbow is limiting participation in sports is the exception to this rule. Surgery is divided into four types.

1. Repair of the tendon with removal of damaged tissue and bone.
2. Release of tension by cutting some of the tight structures.
3. Decompression of the posterior interosseus nerve.
4. Procedures which reshape ligaments or the radial head.

Avoidance of tennis elbow can be accomplished by keeping your arms flexible and strong. The arms need to be conditioned for the activities that you will do. Overuse is relative. It simply means excessive repetitions or resistance relative to the conditioning of the forearm to gripping and rotation forces.

North Boulder Physical Therapy has a certified hand therapist on staff. Mary Ewers-Dennison, OTR, CHT is able to evaluate tennis elbow, treat it, and teach you how to resolve the condition as quickly as is possible. You can make an appointment to see her by calling **303-413-9903**. If you wish to bill insurance, you may need a physician prescription and insurance authorization. If you have questions, you can call Debra Layne, PT at **303-601-6666**.