

WELLNESS UPDATE 2001, #3

TENNIS ELBOW

Tennis elbow is a term used to describe pain occurring on the outside of the forearm, just below the bend of the elbow. Tennis elbow usually develops gradually. The pain may be reproduced while playing tennis, pounding with a hammer, opening a car door, shaking hands, playing the piano, or working at a computer keyboard.

PREVENTION

Racket Selection

Selecting a racket with a proper grip size may play the biggest role in preventing tennis elbow. Proper grip size allows for better control of the racket and puts the forearm muscles in the most efficient, least stressful, position. **As one wraps their fingers around a properly sized grip, a finger's width (approximately 1/2" to 3/4") should separate the tip of the middle finger and the base of the thumb.**

Racket size and weight are other considerations. Oversized rackets have a larger hitting area and cause fewer off-center hits. They are also heavier and harder to swing than lighter, mid-sized rackets. **The size and weight of the racket should be determined by the size and strength of the player.**

Racket tension is also important. Rackets strung too tightly do not adequately absorb the shock caused by hitting the ball. **String tension 2-3 pounds lower than manufacturer recommendations help decrease shock from hitting the ball. For most players, mid-level string tension seems best** for providing adequate power, while still having good shock absorption.

Warming up

Warming up prior to participation is very important in preventing tennis elbow. Players should take time to do a general body warm-up and make sure the racket arm is stretched and warmed up prior to hitting balls with any great amount of force or attempting to put spin on the ball.

Proper Stroke Technique

Proper stroke technique is also important in the prevention of tennis elbow. **Players who use poor technique are very susceptible to tennis elbow. Proper body and hip rotation will lessen the stress on the elbow and decrease the risk of tennis elbow.**

TREATMENT & REHABILITATION

Early Recognition

When pain is felt on the outside of the forearm, just below the bend of the elbow, **the athlete should eliminate, or alter, motions that cause pain. If the backhand is causing the pain, one should either stop using the backhand until pain subsides, or use a two-handed backhand, if it does not cause pain. If putting top spin on the serve or volley causes pain, one should stop using as much top spin. If playing tennis, in general, causes pain, play should be stopped for several days.**

Ice and Friction Massage

Ice massage and friction massage seem to be very effective when treating tennis elbow. To apply ice massage, freeze water in a paper cup. Rub the frozen water in a constant, circular motion over and around the sore area of the elbow. Ice massage should be done until numbness occurs (approximately 5-7 minutes). When numbness occurs, friction massage should be started. **For friction massage, use the pad of your thumb or index finger to rub back and forth over the sore area. Begin with light pressure and gradually increase pressure until you are pressing firmly.** Continue friction massage until feeling returns to the skin (approximately 5-7 minutes). Repeat the entire treatment once, then finish by using ice massage one final time. **This treatment should be done three times a day, if possible. It should also be completed before participating in an activity which may aggravate the condition. Such activity should be followed by 5-7 minutes of ice massage.**

Support

A tennis elbow strap, or counter force brace, may also be used to help control the pain of tennis elbow. A tennis elbow strap is not a substitute for proper treatment, but may be used in conjunction with it to help a player return to participation more quickly. The idea is to wrap the brace snugly, but not tightly, around the forearm just below the elbow. If a felt pad, air cell, or other type of padding is used with the strap or tape, it should be placed over the point of tenderness. A tennis elbow strap may not allow for unlimited participation, but should allow return to play more quickly.

Medical Referral

Referral to a physician, or other sports medicine professional, is recommended when pain from tennis elbow persists. A sports medicine professional can assist in determining the cause of the problem and in treating it effectively. Anti-inflammatory medication or physical therapy modalities may be suggested to help speed recovery.

STRETCHING AND STRENGTHENING EXERCISES

Stretching and strengthening exercises for the forearm muscles are crucial to the treatment of tennis elbow. These exercises should always be preceded with ice and friction massage as described above, and followed by 5-7 minutes of ice massage.

The following exercises should not be started until the athlete has been pain-free during regular, daily activities for 2-3 days. **Always begin with the stretching exercises (figures A & B), then move on to the strengthening exercises.**

All exercises should be done pain-free. If an exercise causes pain, modify it by reducing range of motion, the amount or weight, or the number of repetitions so it can be accomplished pain-free.

STRETCHING EXERCISES

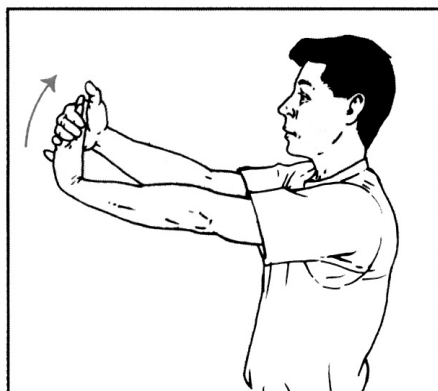


Figure A

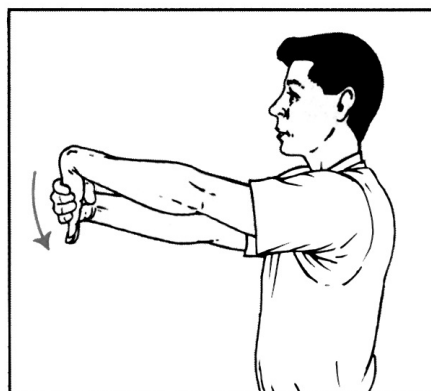


Figure B

(Photo's from: The Physician & Sports Medicine, Volume 18, Number 6, June 1990)

With the arm extended, firmly pull the hand toward you with the fingers pointed up and down. Hold for 4-6 seconds and repeat 4-6 times.

STRENGTHENING EXERCISES

Exercises without weights - do these exercises several times a day.

A. Finger Extension Exercises - place a thick rubber band around the fingers and thumb, near the base of the fingers. With your palm facing the floor, spread your fingers and thumb apart as much as possible. Hold for 3-seconds and release. Repeat until the fingers and forearm are fatigued. To increase resistance, move the rubber band closer to the finger tips.

B. Hand Squeeze - hold a tennis ball in the palm of the hand. Squeeze the ball firmly and hold for 3-seconds and relax. Repeat until the hand and forearm muscles become fatigued.

Exercises with weights

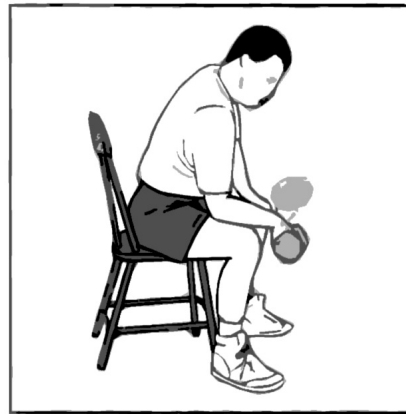


Figure C Wrist Curls Figure D

(Photos from: The Physician & Sports Medicine, Volume 24, Number 5, May 1996)

Sit in a chair with your elbow bent and your forearm resting on your thigh, or a table. Begin with no weight. With your palm down (figure C), slowly extend your wrist up as high as possible without pain. Hold for 2 seconds. Repeat with your palm up (figure D) and bend your wrist as high as possible without pain. When you can accomplish this 30 times, each way, without pain add a 1-pound weight. If using a 1-pound weight is painful, use an 8-ounce canned food item for weight. A 16-ounce canned food item can be substituted for a 1-pound weight. If using a tennis elbow brace, wear it during these exercises.



Forearm Rotation Exercises

Figure E Figure F

Photos from: The Physician & Sports Medicine, Volume 24, Number 5, May 1996)

Sit with your elbow resting on your thigh and palm facing up (figure E). Hold a dumbbell by one end and slowly rotate your forearm until your palm is facing down. Hold for 2-seconds and slowly return to the starting position (figure F). As with figures C & D above, an 8-ounce or 16-ounce canned food item can be substituted for a weight. Begin with one set of 10-15 repetitions daily. Progress to 2 sets of 30 repetitions.

Questions and/or comments about tennis elbow or other areas of student-athlete wellness are welcomed and encouraged. They should be directed to Alan Beste, LAT, Administrative Assistant, Iowa High School Athletic Association, PO Box 10, Boone, IA 50036-0010, (515) 432-2011. <abeste@iahsaa.org>

Sources:

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