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Guide to Elbow Tendonitis (Medial and lateral Epicondylitis)

- What is causing the pain? Insertional tendonitis occurs as a result of repetitive stresses creating micro-tears both within the tenon itself as well as at the area where the tendon inserts to bone. The tears occur in a slow manner, too slow for the body to realize that it needs to heal the tear. The medical term for the degeneration is called "angiofibroblastic hyperplasia" which was termed for the changes to the tendon observed when looked at under a microscope. In tennis elbow or lateral epicondylitis, the extensor muscles are affected, specifically the Extensor Carpi Radialis Brevis creating pain on the outside of the elbow. In golfer's elbow or medial epicondylitis, the Flexor tendons are affected, specifically the Pronator Teres creating pain on the inside of the elbow.

- How to treat this problem?

    - **Rest** - has a very important role in treating tendonitis issues as resting allows the body time to heal. How long do you have to rest, the magic number is shown to be six weeks as the time tendons have the ability to heal as shown in animal models.

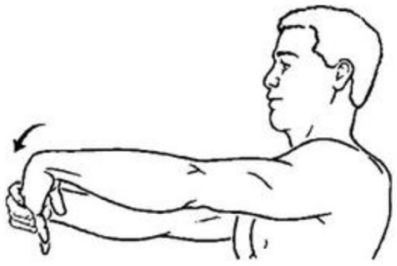
    - **Activity Modification -** When dealing with tennis elbow anything that cases repetitive extension of the wrist should be avoided and in golfer's elbow, anything that causes repetitive flexion of the wrist should be avoided. A common scenario is typing or using a computer mouse which can cause extensor tendon activation, ultimately leading to worsening of symptoms.

Rest and Stretch

Stretching Phase (Begin immediately)

Wrist Extensor Stretch:

- Extend your affected arm in front of you, with the palm facing down. Ensure your elbow remains straight!
- Use your other hand to gently bend your wrist downwards until you feel a stretch on the outer side



of your forearm. Hold the stretch for 15-30 seconds and then release. Repeat 3-5 times on each side.

Wrist Flexor Stretch:

- Extend your affected arm in front of you, with the palm facing up. Ensure your elbow remains straight!
- Use your other hand to gently bend your wrist backward until you feel a stretch on the under- side of your forearm. Hold the stretch for 15-30 seconds and then release. Repeat 3-5 times on each side.

Brace Treatment

Braces should ideally be worn during periods of activity

- Counterforce Brace: This type of brace is a strap or band that is worn around the forearm, just below the elbow (approximately 2 cm). It applies pressure to the muscles and tendons, redistributing the forces exerted during gripping and lifting activities. The goal of these braces is to take pressure off of the insertion site of the extensor or flexor tendons. They should be applied snug but not so tight that they cause numbness or cut off circulation. This brace can be applied either on the outside of the forearm for tennis elbow or on the inside, for golfer's elbow.

- Wrist immobilizer: This brace works for both medial and lateral epicondylitis. This brace works by limiting wrist motion. When wrist motion is limited, the activation of the flexor or extensor tendons is minimized, allowing them time to heal.

In head-to-head studies the wrist brace has been shown to be slightly more effective than the counterforce brace[1].

1. Garg R, Adamson GJ, Dawson PA, Shankwiler JA, Pink MM. A prospective randomized study comparing a forearm strap brace versus a wrist splint for the treatment of lateral epicondylitis. J Shoulder Elbow Surg. 2010;19(4):508–512.

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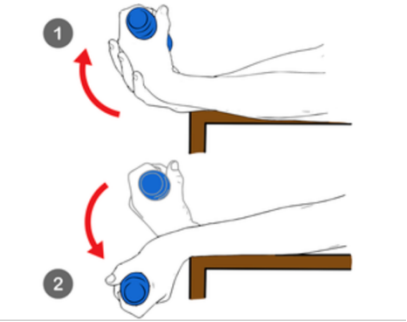
<u>Strengthening Phase</u> (Only begin when painless ~ 6 Weeks)

Begin without using a weight and increase the repetitions until you can complete 20 repetitions. When you can perform 20 repetitions on 2 consecutive days without increasing pain, begin increasing your sets and may begin performing the exercise using a 1-2 lb weight.

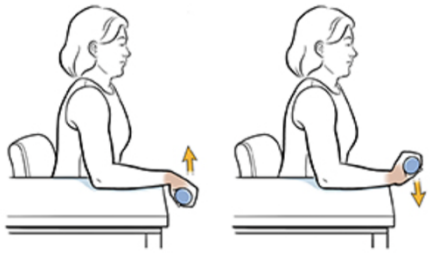
Eccentric Wrist Flexor Strengthening:

- Sit in a chair with your forearm resting on a table, palm facing upward, and your hand hanging off the edge of the table, holding a light dumbbell or a similar weight. Slowly lower the weight by bending your wrist downward for a count of 3. Then lift the weight back up by bending your wrist upward for a count of 1, your other hand can be used to assist. Perform 2-3 sets of 20 repetitions, gradually increasing the weight as tolerated.



Eccentric Wrist Extension Strengthening:

- Hold a light dumbbell or a similar weight in your affected hand with your palm facing downward. Bring your wrist upward for a count of 1 and can use your other hand for assistance. Slowly release your wrist down for a count of 3 to a flexed position. Perform 2-3 sets of 20 repetitions, gradually increasing the weight as tolerated.



Forearm Rotation Strengthening:

- Sit in a chair with your forearm resting on a table, palm facing downward and your elbow bent at a 90-degree angle.
- Hold a small dumbbell or a similar weight in your hand. It can be held in the middle or to one side as pictured.
- Slowly rotate your forearm, turning your palm upward (supination).
- Return to the starting position and then rotate your forearm, turning your palm downward (pronation).
- Perform 2-3 sets of 20 repetitions on each side.

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Thera-Band Flex Bar Instructions for Tennis Elbow

Instructions:

A. Grasp FlexBar® exerciser in front of you with the injured side and extend your wrist.
B. Grasp the upper end of the bar with your other hand facing away from you
C. Twist the bar with the top hand as you stabilize with the bottom hand
D. Hold both wrists steady as you extend both elbows in front of you. The wrist on your injured side should be extended and the other wrist flexed.
E. Slowly release the bar with your injured side while maintaining tension with the uninjured side.

Repeat 10-15 times up to 3 times a day. Begin with the red FlexBar and progress to the next color when you can easily perform 3 sets of 15. Use ice or Biofreeze for any soreness.

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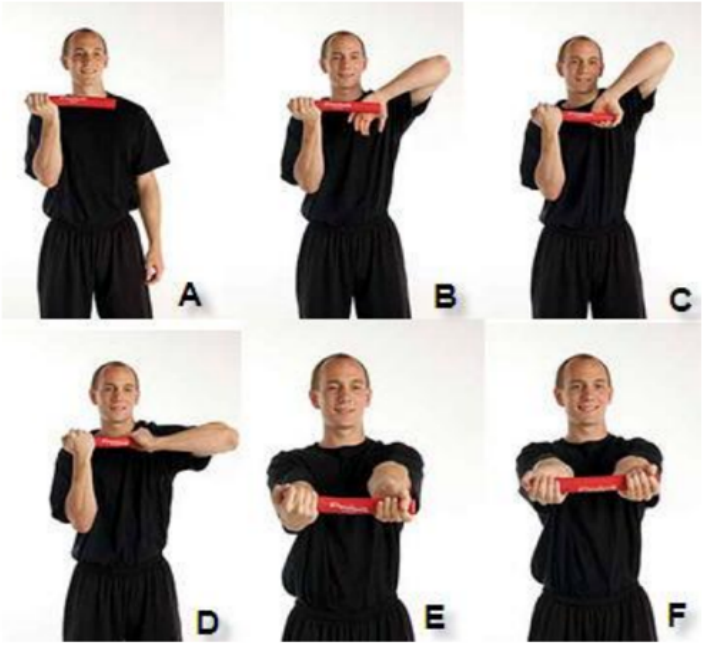
Thera-Band Flex Bar Instructions for Golfers Elbow

TheraBand™FlexBar® Reverse Tyler Twist for Golfers Elbow:

For medial epicondylitis, the TheraBand™FlexBar® will help with rehabilitation of the wrist flexor muscles, also by eccentric loading.

Step 1: Grasp FlexBar® exerciser with the injured side, bending your elbow and holding the bar parallel to the ground.
Step 2: Lift the elbow of your un-injured side upward and rotate your forearm so your palm faces away from you.
Step 3: Grasp the other end of the FlexBar with the un-injured hand facing away from you and pointing downward
Step 4:Twist the FlexBar with the hand on the un-injured side as you stabilize with the injured-side hand
Step 5: Hold both wrists steady as you extend both elbows in front of you. The wrist on your injured side should be flexed toward you and the other wrist extended.
Step 6: Slowly release the FlexBar with your injured side while maintaining tension with the uninjured side

Repeat 10-15 times up to 3 times a day. Begin with the red FlexBar and progress to the next color when you can easily perform 3 sets of 15. Use ice or Biofreeze for any soreness.



Injectional Therapies

- Cortisone - is useful to provide short-term pain relief, however should be paired with therapy to maximize effectiveness. A limit of 1-3 cortisone injections should be considered before moving to other options.

- PRP - The proposed effect of PRP is based on the release of growth factors into the local area of injection to allow healing of the injury. PRP has been shown to be more effective than cortisone in longer-term follow up studies[2]. Interestingly, in a study group of 100 individuals with refractory tennis elbow, meaning they have failed both cortisone and therapy. PRP injections prevented 70% of patients from undergoing surgery. Similar results were also seen between those that underwent surgery and those who received PRP[3].

2. Li A, Wang H, Yu Z, Zhang G, Feng S, Liu L, Gao Y. Platelet-rich plasma vs corticosteroids for elbow epicondylitis: A systematic review and meta-analysis. Medicine (Baltimore). 2019 Dec;98(51):e18358. doi: 10.1097/MD.0000000000018358. PMID: 31860992; PMCID: PMC6940118.

3. Watts AC, Morgan BW, Birch A, Nuttall D, Trail IA. Comparing leukocyte-rich platelet-rich plasma injection with surgical intervention for the management of refractory tennis elbow. A prospective randomised trial. Shoulder Elbow. 2020 Feb;12(1):46-53. doi: 10.1177/1758573218809467. Epub 2018 Nov 12. PMID: 32010233; PMCID: PMC6974885.

Operative Intervention

Recommended as a last resort treatment if all non-surgical efforts have failed. Goals of treatment are to debride the origin of the extensor/flexor tendon to remove any unhealthy tissue and stimulate healing.