

Lateral Epicondylitis Rehabilitation Protocol

Dr. Jonathan Reid

PHASE 1 | WEEK 1-2

Bracing: Wrist brace is worn throughout the day and night, taking off for stretching and range of motion exercises only, twice a day, along with hygiene. An anti-inflammatory medication may be used at this time in conjunction with the wrist brace towards reducing symptoms during the first two weeks.

Rehabilitation: Stretching and range of motion exercises TWICE every day. Brace should be removed for these exercises. Discomfort should not stop you from completing these stretches and exercises. No resistance should be added at this time. It can be helpful to pair these exercises after you have been exercising and your body is warmed up.

Goal: Restrict aggravating activity through the use of the brace and activity modification. Compliance with wearing the brace is critical during these first two weeks. The key goal is to become asymptomatic when in the brace throughout the day, which indicates your readiness to move on to next phase.

PHASE 2 | WEEK 3

Bracing: Wrist brace is worn throughout the day and night, removing for rehabilitation and hygiene.

Rehabilitation: Phase 2 exercises (isometric exercises) follow the stretching and range of motion exercises you have been doing the past two weeks. It is important that your wrist is not moving despite contracting the wrist extensor muscles. Phase 2 exercises should be performed ONCE a day, while continuing to stretch and work on range of motion exercises TWICE a day.

Goal: Begin to expose the muscles and tendons to functional stress/loads.

PHASE 3 | WEEK 4

Bracing: Brace is worn for half of the day by putting on the brace after stretching exercises in the morning and continuously throughout the day until the evening. You should remove the brace for your evening exercises and can keep the brace off for the remainder of the evening and overnight.

Rehabilitation: Phase 3 exercises (resisted isotonic exercises) use the YELLOW band and the SHORT-LEVER technique where your elbow is bent while performing the exercises. Phase 3 exercises should be performed ONCE a day, usually in the evening without the brace in place. Again, these should be performed after you have completed the stretching and range of motion exercises. These exercises should also only be performed after you have warmed up using some form of light/moderate cardio exercises (i.e., walking briskly for 15 minutes, light jog, elliptical).

Goal: Remodeling the tendons in a functional manner

PHASE 4 | WEEK 5

Bracing: Brace is worn only during activities that have been identified as exacerbating symptoms. Brace should be removed thereafter and for the majority of the day and should not be worn at night.

Rehabilitation: Phase 4 exercises should be performed ONCE a day using the GREEN band in the evening after you have warmed up and completed the stretching and range of motion exercises.

Goal: Progressive strengthening

PHASE 5 | WEEK 6

Bracing: Brace should not be worn at any point. Please be sure to monitor symptoms. If you begin to develop symptoms, move back to wearing the brace with particularly exacerbating activities. If you become symptomatic with that modification, begin to wear the brace throughout the day.

Rehabilitation: Phase 5 exercises should be performed ONCE a day using the BLUE band, ONCE a day, in the evening after you have warmed up and completed the stretching and range of motion exercises.

Goal: Progressive strengthening with full return to daily activities without symptoms and while not wearing the brace

MAINTENANCE

Bracing: Brace should continually be weaned as tolerated

Rehabilitation: Phase 4 exercises should be continued, on a daily basis, with stretching and range of motion exercises for at least 2 weeks AFTER you are able to take off the brace for the entire day without a recurrence of your symptoms. After these two weeks, please continue to use these exercises at least 3 times per week.

Goal: Sustainably keep the muscles and tendons strong and solidify functional remodeling

OVERVIEW OF REHABILITATION EXERCISE PROGRAM

Modality	Aim	Exercise	Dosage/Load	Goals	Consideration
Phase 1 Active warm up	Increase blood flow, soft tissue pliability, and temperature	Treadmill walking or upper body ergometer	<10 minutes at a comfortable pace (2.0 mph on flat incline)	Up to 15 minutes	Avoid upper body exercises if very symptomatic
Phase 1 Wrist Extensor Stretches	Increase muscle flexibility and provide short term pain inhibition	Elbow extended with passive stretch into wrist flexion	30 seconds hold for 3 repetitions. Three times per day.	Pain free full stretch of muscles in posterior compartment of forearm	May need to adapt the stretch to accommodate pain
Phase 2	Neuromuscular reeducation of wrist extensors and radial deviators	Unresisted or isometric activation of wrist musculature	Work up to 3 sets of 10 repetitions. Once per day	Perform active range of motion exercises and isometric exercises without pain	Avoid aggravation of symptoms
Phase 3	Light to moderate controlled stress for progressive resisted strengthening of elbow and wrist musculature	Resisted short lever exercises using YELLOW band	Work up to 3 sets of 10 repetitions. Once per day	Progressive isotonic wrist concentric/eccentric exercises without substitution or increasing symptoms	When you are no longer experiencing 24 hour post onset muscle soreness or your pain does not increase >1 level, advance in number of repetitions/ phases
Phase 4	Moderate to heavy loads with longer lever arms for progressive resisted strengthening	Resisted long lever exercises using GREEN band	Elongate lever arm (move from short arm to long lever arm) and work up to 3 sets of 10 repetitions	Progressive isotonic wrist concentric/eccentric exercises without substitution or increasing symptoms	Will typically need to temporarily decrease resistance when advancing to phase 3 exercises with longer lever arm
Phase 5	Moderate to heavy loads with longer lever arms for progressive resisted strengthening	Resisted long lever exercises using BLUE band	Elongate lever arm (move from short arm to long lever arm) and work up to 3 sets of 10 repetitions	Progressive isotonic wrist concentric/eccentric exercises without substitution or increasing symptoms	Continue Phase 4 exercises as you wean completely out of the brace throughout the day and as a maintenance program at least 3 times a week

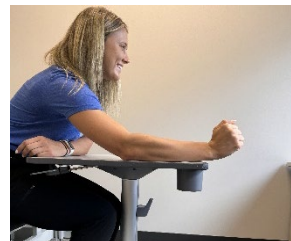
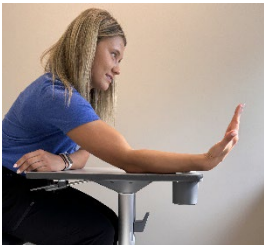
ADDITIONAL MODALITIES

Physical therapy: Physical therapy provides a structured environment where protocol progression can take place with available guidance. Furthermore, physical therapists offer modalities such as soft tissue mobilization to help enhance a regenerative environment (increase fibroblast proliferation, collagen synthesis, blood flow) through the use of deep friction massage or myofascial release of the common wrist extensor tendon.

Icing/cryotherapy: Icing can help calm down acute inflammation and may be of benefit early during the rehabilitation process when the elbow is painful, even at rest. It should be performed for between 15-20 minutes and can be repeated every hour for no more than 4 hours per day. Icing should not be performed before any of the exercise modalities such as stretching, range of motion, or strengthening exercises. Rather, icing can help AFTER these exercises are performed as a cool down.

Counterforce strap: Strap should be placed about 2 finger widths below the painful area and tendon adjusted to comfort. The strap is believed to off-load the common extensor tendon of your elbow and should be worn while performing particularly aggravating activity.

Phase 1: Wrist Strengthening- Range of Motion



- Perform twice daily (AM/PM)
- Perform 3 sets of each exercise of 30 repetitions, alternating between the two

Instructions:

Exercise 1: Start with your forearm flat on the table with your wrist at the end of the table and your palm facing upwards. Extend your wrist all the way down and then all the way up.

Exercise 2: Start with the outside of your forearm flat on the table with your wrist at the end of the table. Place your hand in a fist with your wrist bent all the way up. Bend your wrist all the way down and all the way up, going slower on your way down.

Phase 2: Wrist Strengthening- Range of Motion



- Perform once daily after light aerobic warmup
- Perform 3 sets of each exercise, progressing up to 30 repetitions for each set, alternating between the two exercises

Instructions:

Exercise 1: Start with your forearm flat on the table with your wrist at the end of the table and your palm facing upwards. Apply light pressure with your opposite hand on your affected hand. Extend your wrist all the way down and all the way up, going slower on your way down.

Exercise 2: Start with the outside of your forearm flat on the table with your wrist at the end of the table. Place your hand in a fist with your wrist bent all the way up. Bend your wrist all the way down and all the way up, going slower on your way down.

Phase 3: Wrist Strengthening- Light Lever Short Arm



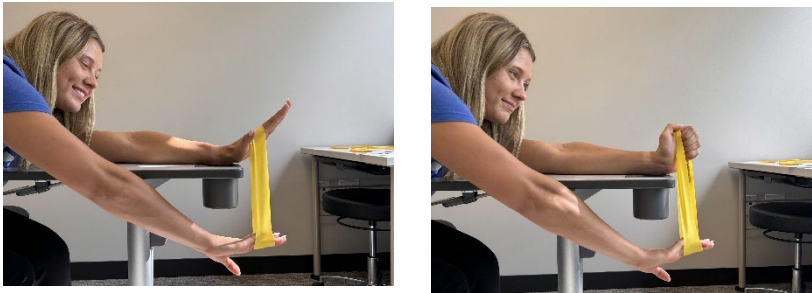
- Perform once daily after light aerobic warmup
- Perform 3 sets of each exercise, progressing up to 30 repetitions for each set, alternating between the two exercises

Instructions:

Exercise 1: Start with your forearm flat on the table with your wrist at the end of the table and your palm facing upwards. You will want to make sure you keep your elbow bent during this phase. Place your unaffected hand underneath the table with the **YELLOW** band wrapped around both hands. Extend your wrist all the way down and all the way up, going slower on your way down.

Exercise 2: Start with the outside of your forearm flat on the table with your wrist at the end of the table and your hand in a fist position. You will want to make sure you keep your elbow bent during this phase. Place your unaffected hand underneath the table with the **YELLOW** band wrapped around both hands. Bend your wrist all the way down and all the way up, going slower on your way down.

Phase 4: Wrist Strengthening – Heavy Lever Long Arm



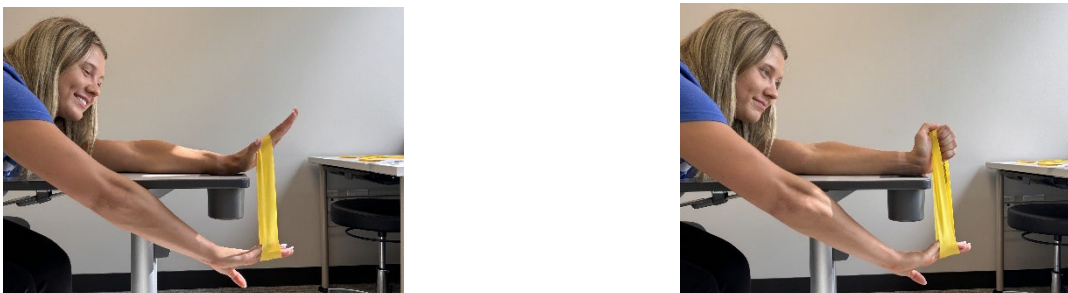
- Perform once daily after light aerobic warmup
- Perform 3 sets of each exercise, progressing up to 30 repetitions for each set, alternating between the two exercises

Instructions:

Exercise 1: Start with your forearm flat on the table with your wrist at the end of the table and your palm facing upwards. You will want to make sure you keep your elbow fully extended during this phase. Place your unaffected hand underneath the table with the **GREEN** band wrapped around both hands. Extend your wrist all the way down and all the way up, going slower on your way down.

Exercise 2: Start with the outside of your forearm flat on the table with your wrist at the end of the table and your hand in a fist position. You will want to make sure you keep your elbow fully extended during this phase. Place your unaffected hand underneath the table with the **GREEN** band wrapped around both hands. Bend your wrist all the way down and all the way up, going slower on your way down.

Phase 5: Wrist Strengthening – Heavy Lever Long Arm



- Perform once daily after light aerobic warmup
- Perform 3 sets of each exercise, progressing up to 30 repetitions for each set, alternating between the two exercises

Instructions:

Exercise 1: Start with your forearm flat on the table with your wrist at the end of the table and your palm facing upwards. You will want to make sure you keep your elbow fully extended during this phase. Place your unaffected hand underneath the table with the **BLUE** band wrapped around both hands. Extend your wrist all the way down and all the way up, going slower on your way down.

Exercise 2: Start with the outside of your forearm flat on the table with your wrist at the end of the table and your hand in a fist position. You will want to make sure you keep your elbow fully extended during this phase. Place your unaffected hand underneath the table with the **BLUE** band wrapped around both hands. Bend your wrist all the way down and all the way up, going slower on your way down.