

POSTEROLATERAL ROTATORY INSTABILITY OF THE ELBOW



■ ■ ■ Description

Posterolateral rotatory instability of the elbow is a sprain (tear) of one of the ligaments on the outer side of the elbow. The lateral ulnar collateral ligament (LUCL) is a structure that helps keep the normal relationship of the humerus (arm bone) and the radial head (one of the forearm bones). The two forearm bones maintain their relationship to each other. This problem occurs after elbow dislocation, falling on an outstretched arm, or surgery on the elbow. This ligament is rarely stressed in daily activities. It prevents the radial head from moving behind the humerus. When torn, this ligament usually does not heal or it may heal in a lengthened position (loose). This problem has only recently been recognized, identified, and characterized. Still more information is being sought with regard to how often it occurs, how often it causes symptoms, and what happens if it goes untreated. Sprains are classified into three grades. In a *first-degree* sprain, the ligament is not lengthened but is painful. With a *second-degree* sprain, the ligament is stretched but still functions. With a *third-degree* sprain, the ligament is torn and does not function.

■ ■ ■ Common Signs and Symptoms

- Occasionally, pain and tenderness on the outer side of the elbow
- Vague elbow pain
- Clicking, snapping, clunking, feeling of the bones of the elbow slipping out of joint, or locking of the elbow, especially when straightening the elbow and turning the palm upward
- Recurrent elbow dislocation
- Pain when using hands to push up when getting out of a chair

■ ■ ■ Causes

- Force that exceeds the strength to the ligament, usually from elbow dislocation, from falling on an outstretched arm, or as a result of surgery for tennis elbow (lateral epicondylitis)

■ ■ ■ Risk Increases With

- Contact sports (football, rugby) and sports in which falling on an outstretched hand is likely
- Previous elbow dislocation, sprain, or fracture
- Poor physical conditioning (strength and flexibility)

■ ■ ■ Preventive Measures

- Maintain appropriate conditioning:
 - Arm, forearm, and wrist flexibility
 - Muscle strength and endurance
- Use proper protective technique when falling.

■ ■ ■ Expected Outcome

If this problem causes symptoms, bracing or splinting may help. Surgery is often necessary to eliminate the instability.

■ ■ ■ Possible Complications

- Frequent recurrence of symptoms, resulting in a chronic problem
- Prolonged healing time if not appropriately treated or if not given adequate time to heal
- Injury to other structures of the elbow, including the articular cartilage, resulting in arthritis of the elbow
- Elbow stiffness with permanent limitation of elbow motion
- Prolonged disability

■ ■ ■ General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain and reduce the swelling of the elbow. Occasionally a splint, brace, or cast may be recommended while the acute phase subsides. Later, rehabilitation to improve strength and endurance and to educate on proper throwing mechanics is initiated. This may be carried out at home, although usually referral to a physical therapist or athletic trainer is recommended. Bracing to prevent full straightening of the elbow or to prevent turning the palm up may be used for treatment. For those who have an acute rupture of the ligament or those who have failed therapy, surgical repair or reconstruction (rebuilding the ligament using other tissue) is recommended. After immobilization or surgery, strengthening and stretching of the injured and weakened joint and muscles (due to the injury and the immobilization) are necessary. These may be done with or without the assistance of a physical therapist or athletic trainer. Return to sports after surgery may take 6 months or more.

■ ■ ■ Medication

- Nonsteroidal anti-inflammatory medications, such as aspirin and ibuprofen (do not take within 7 days before surgery), or other minor pain relievers, such as acetaminophen, are often recommended. Take these as directed by your physician. Contact your physician immediately if any bleeding, stomach upset, or signs of an allergic reaction occur.
- Stronger pain relievers may be prescribed as necessary by your physician. Use only as directed and only as much as you need.

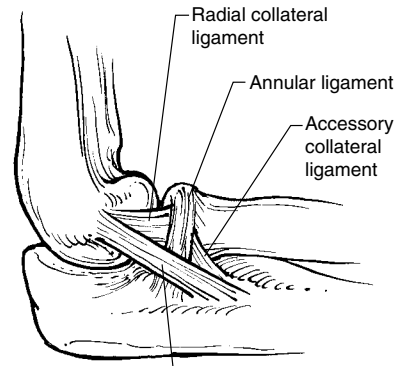
■ ■ ■ Heat and Cold

- Cold is used to relieve pain and reduce inflammation for acute and chronic cases. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain and immediately after any activity that aggravates your symptoms. Use ice packs or an ice massage.

- Heat may be used before performing stretching and strengthening activities prescribed by your physician, physical therapist, or athletic trainer. Use a heat pack or a warm soak.

■ ■ ■ Notify Our Office If

- Symptoms get worse or do not improve in 4 to 6 weeks despite treatment
- You experience pain, numbness, or coldness in the hand
- Blue, gray, or dusky color appears in the fingernails
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)



Lateral ulnar collateral ligament

Figure 1

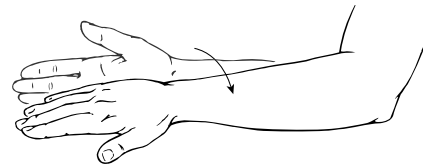
From Jobe FW: Operative Techniques in Upper Extremity Sports Injuries. St. Louis, Mosby Year Book, 1996, p. 395.

EXERCISES

> RANGE OF MOTION AND STRETCHING EXERCISES • Posterolateral Rotatory Instability of the Elbow

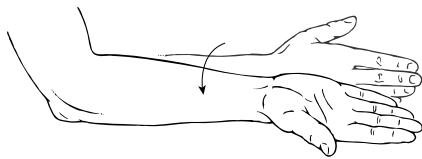
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Flexible tissue is more tolerant of the stresses placed on it during activities.
- Each stretch should be held for 20 to 30 seconds.
- A *gentle* stretching sensation should be felt.



RANGE OF MOTION • Pronation

1. Stand or sit with your elbow bent to 90 degrees.
2. Turn your palm down toward the floor as far as possible.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



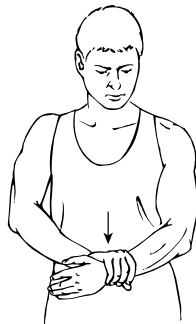
RANGE OF MOTION • Supination

1. Stand or sit with your elbow bent to 90 degrees.
2. Turn your palm upward as far as possible.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



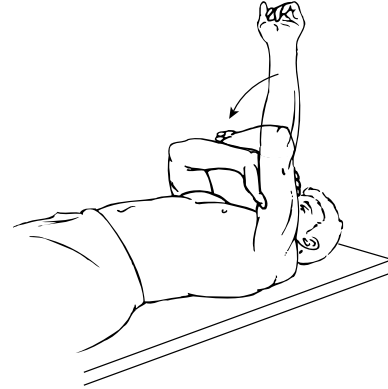
RANGE OF MOTION • Flexion

1. Bend your _____ elbow as far as you can actively.
2. Try to bend it a little farther with the other hand as shown until you feel a gentle stretch.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



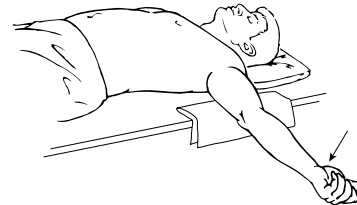
RANGE OF MOTION • Extension

1. Straighten your _____ elbow as far as you can actively.
2. Try to straighten it a little farther with the other hand as shown until you feel a gentle stretch.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



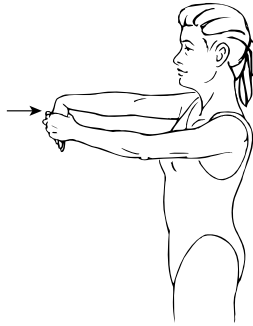
RANGE OF MOTION • Flexion

1. Lie on your back with your _____ arm straight up in the air. Support your arm with the other hand as shown.
2. Let the gravity weight of your hand, wrist, and lower arm bend your elbow until you feel a slight stretch.
3. You may hold a small weight in your hand or wear a weight around your wrist (_____ lbs.) if approved by your physician, physical therapist, or athletic trainer to help stretch farther.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



RANGE OF MOTION • Extension

1. Lie on your back and rest your elbow off the edge of the bed as shown. You may also sit at a table with the upper arm supported in a similar manner.
2. Let the gravity weight of your hand, wrist, and lower arm straighten your elbow until you feel a slight stretch.
3. You may hold a small weight in your hand or wear a weight around your wrist (_____ lbs.) if approved by your physician, physical therapist, or athletic trainer to help stretch farther.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



RANGE OF MOTION • Wrist Flexion

1. Hold your _____ wrist as shown with the fingers pointing down toward the floor.
2. Pull down on the wrist until you feel a stretch.
3. Hold this position for _____ seconds. Repeat exercise _____ times, _____ times per day.
4. This exercise should be done with the elbow **bent to 90 degrees / straight**. (Physician, physical therapist, or athletic trainer should circle one of these.)



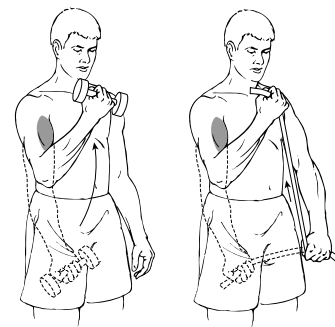
RANGE OF MOTION • Wrist Extension

1. Hold your _____ wrist as shown with the fingers pointing away from the floor.
2. Pull up on the wrist until you feel a stretch.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.
5. This exercise should be done with the elbow **bent to 90 degrees / straight**. (Physician, physical therapist, or athletic trainer should circle one of these.)

> STRENGTHENING EXERCISES • Posterolateral Rotatory Instability of the Elbow

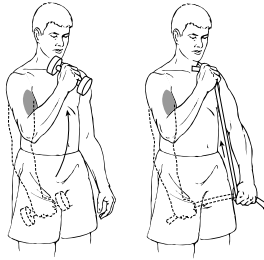
These are some of the *initial* exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- Strong muscles with good endurance tolerate stress better.
- Do the exercises as *initially* prescribed by your physician, physical therapist, or athletic trainer. Progress slowly with each exercise, gradually increasing the number of repetitions and weight used under their guidance.



STRENGTH • Elbow Flexion

1. Stand with your arm straight and your *palm* facing forward.
2. Bend the elbow as shown using a _____ pound weight or rubber band/tubing as shown.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



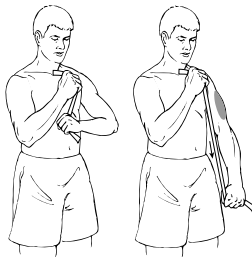
STRENGTH • Elbow Flexion

1. Stand with your arm straight and your *thumb* facing forward.
2. Bend the elbow as shown using a _____ pound weight or rubber band/tubing as shown.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



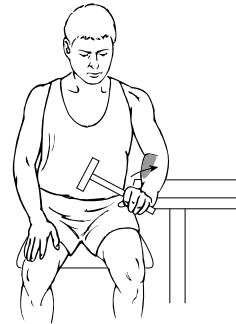
STRENGTH • Elbow Extension

1. Lie on your back with your _____ elbow bent and pointing directly at the ceiling as shown. (You may also do this exercise standing with the arm pointed overhead.)
2. Hold a _____ pound weight in your hand.
3. Straighten the elbow.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



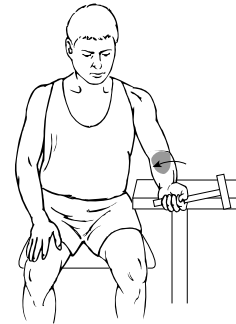
STRENGTH • Elbow Extension

1. Hold the rubber band/tubing with your _____ hand on the bottom as shown.
2. Straighten out your elbow, stretching the rubber band/tubing for resistance.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



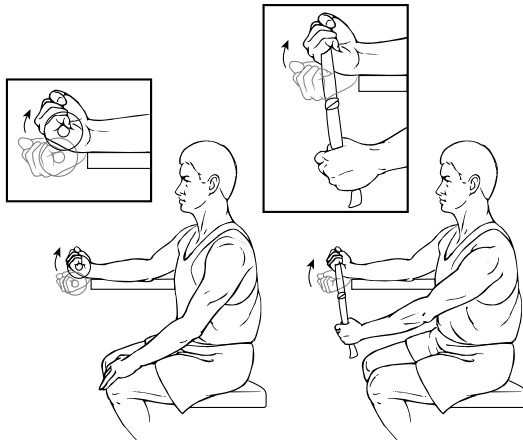
STRENGTH • Supination

1. Sit with your forearm supported on a table and the hand over the edge and your palm facing the floor.
2. Hold a _____ oz. hammer or a stick with a weight on the end in your hand as shown.
3. Turn your palm and hand toward you to a “thumbs-up” position.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



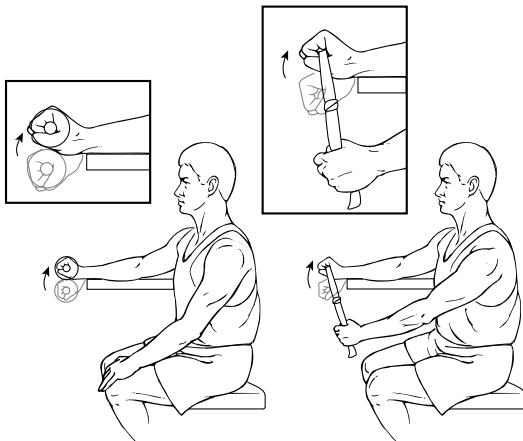
STRENGTH • Pronation

1. Sit with your forearm supported on a table and the hand over the edge and your palm facing up toward the ceiling.
2. Hold a _____ oz. hammer or a stick with a weight on the end in your hand as shown.
3. Turn your palm and hand toward you to a “thumbs-up” position.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



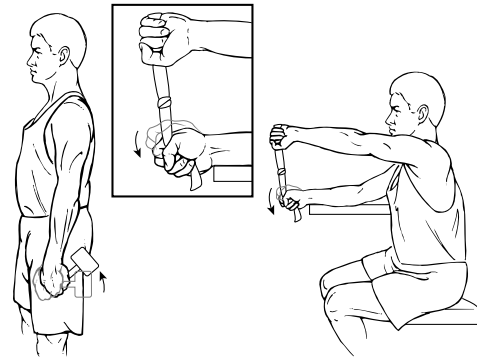
STRENGTH • Wrist Flexors

1. Sit or stand with your forearm supported as shown.
2. Using a _____ pound weight or a piece of rubber band/ tubing, bend your wrist slowly upward toward you.
3. Hold this position for _____ seconds and then *slowly* lower the wrist back to the starting position.
4. Repeat exercise _____ times, _____ times per day.



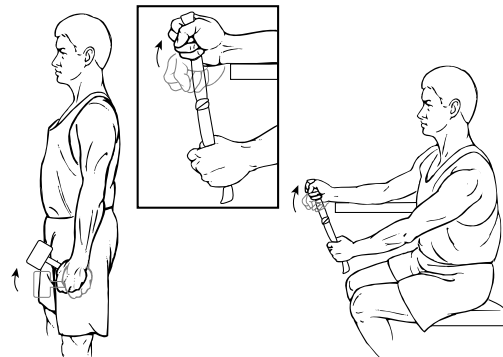
STRENGTH • Wrist Extensors

1. Sit or stand with your forearm supported as shown.
2. Using a _____ pound weight or a piece of rubber band/ tubing, bend your wrist slowly upward toward you.
3. Hold this position for _____ seconds and then *slowly* lower the wrist back to the starting position.
4. Repeat exercise _____ times, _____ times per day.



STRENGTH • Wrist, Ulnar Deviation

1. Stand with a _____ oz. hammer in your hand as shown, or sit holding on to the rubber band/ tubing with your arm supported as shown.
2. Raise your hand upward behind you or pull down on the rubber tubing.
3. Hold this position for _____ seconds and then *slowly* lower the wrist back to the starting position.
4. Repeat exercise _____ times, _____ times per day.



STRENGTH • Wrist, Radial Deviation

1. Stand with a _____ oz. hammer in your hand as shown, or sit holding on to the rubber band/ tubing with your arm supported as shown.
2. Raise your hand upward in front of you or pull up on the rubber tubing.
3. Hold this position for _____ seconds and then *slowly* lower the wrist back to the starting position.
4. Repeat exercise _____ times, _____ times per day.

Notes:

(Up to 4400 characters only)

Notes and suggestions