WRIST EPIPHYSITIS

Description

Wrist epiphysitis is characterized by inflammation of the growth plate (epiphysis) of the wrist, usually the radius (the larger bone). The growth plate of the radius or ulna at the wrist becomes inflamed due to repetitive stress injury, such as with repeated hyperextension (bending the wrist up) and rotation of the wrist (such as with gymnastics and bearing weight on the hands). The growth plate is an area of relative weakness, and injury to it occurs due to repeated stress. It is a temporary condition of the wrist that is uncommon after age 16.

Common Signs and Symptoms

- Slightly swollen, warm, and tender bump of the wrist
- Occasional redness around the back of the wrist
- Pain with activity, especially bending the wrist and bearing weight on the wrist (push ups); in more severe cases, pain during less vigorous activity
- Wrist stiffness
- Numbness or tingling of the hand (rare)

Causes

Wrist epiphysitis results from stress to the growth plate of the wrist (which is still developing during adolescence), causes flare-ups. Repeated stress or injury interferes with development, causing inflammation and eventually premature closure of the growth plate, resulting in shortening of the bone.

Risk Increases With

- Gymnastics, particularly vaulting and using a dowel grip
- Overzealous conditioning routines
- Rapid skeletal growth
- Poor physical conditioning (strength and flexibility)

Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
  - Forearm and wrist muscle strength
  - Endurance and flexibility
- Exercise moderately, avoiding extremes.
- Rest appropriately after vigorous exercise.
- Use proper technique.

Expected Outcome

Mild cases can be resolved with a slight reduction in activity level, whereas moderate to severe cases may require significantly reduced activity for several months.

Possible Complications

- Bone infection
- Growth plate separation, resulting in a fracture
- Persisting loss of full wrist motion
- Premature closure of the growth plate and shortened bone
- Prolonged disability
- Prolonged wrist pain
- Kienböck's disease

General Treatment Considerations

Initial treatment consists of medications and ice to relieve pain, stretching and strengthening exercises (particularly the muscles that bend the wrist), and modification of activities, specifically, bearing weight on the wrists, such as with push-ups and gymnastics. These exercises can all be carried out at home for acute cases. Chronic cases often require a referral to a physical therapist or athletic trainer for further evaluation or treatment. Uncommonly, the affected wrist may be immobilized for a few weeks (with a brace, cast, or splint). Surgery is rarely needed; however, surgery is necessary if a fracture occurs and the growth plate separates. Surgery also may be necessary in an older athlete if the growth plate of the radius or ulna closes prematurely and one bone is significantly shorter than the other. Gradual return to sports is allowed after inflammation is resolved, x-rays are normalized, and wrist motion and strength are fully restored. Follow-up is necessary at least 1 year after injury, and in some cases until all the growth plates are closed.

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.

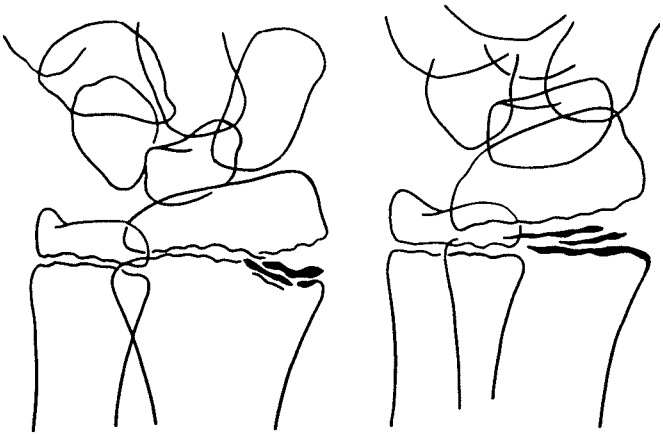


Figure 1
From Staniski CL, DeLee JC, Drez D Jr.: Pediatric and Adolescent Sports Medicine. Philadelphia, WB Saunders, 1994, p. 159.

- Cortisone injections are rarely, if ever, indicated. Cortisone injections may weaken tendons, so it is better to give the condition more time to heal than to use them.

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 heat pack or a warm soak.

Notify Our Office If

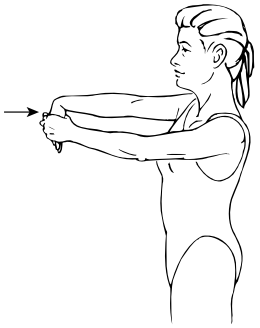
- Symptoms get worse or do not improve in 4 weeks despite treatment
- You develop a fever above 101°F

EXERCISES

➢ **RANGE OF MOTION AND STRETCHING EXERCISES** • Wrist Epiphysitis

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 • 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

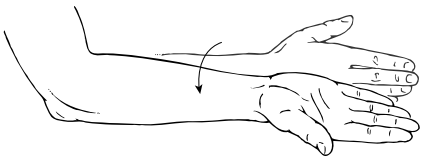
1. Hold your _____ wrist as shown with the fingers pointing away from the floor.
2. Pull up on the wrist until you feel a stretch.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.
5. This exercise should be done with the elbow ***bent to 90 degrees / straight.***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

RANGE OF MOTION · Wrist Extension

1. Place the palm of your _____ hand flat on the top of a table as shown. Your fingers should be pointing backward.
2. Press down, bending your wrist and straightening your elbow until you feel a stretch.
3. Hold this position for _____ seconds.
4. Repeat exercise _____ times, _____ times per day.

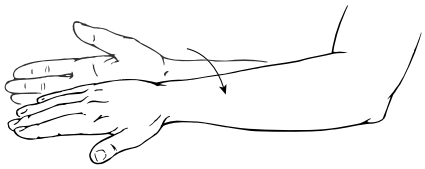
RANGE OF MOTION · Wrist Flexion

1. Place the back of your _____ hand flat on the top of a table as shown. Your shoulder should be turned in and your fingers facing away from your body.
2. Press down, bending your wrist and straightening your elbow until your feel a stretch.
3. Hold this position for _____ seconds.
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.



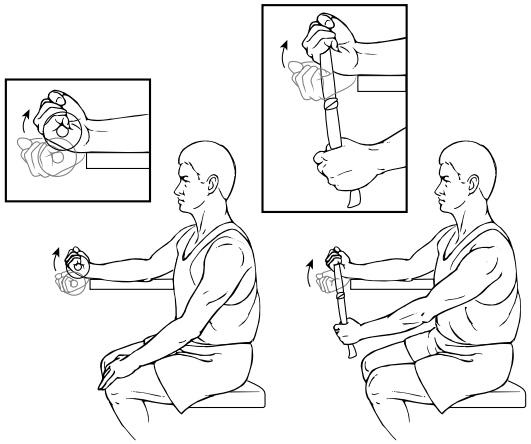
RANGE OF MOTION · Pronation

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.

➢ **STRENGTHENING EXERCISES** · Wrist Epiphysitis

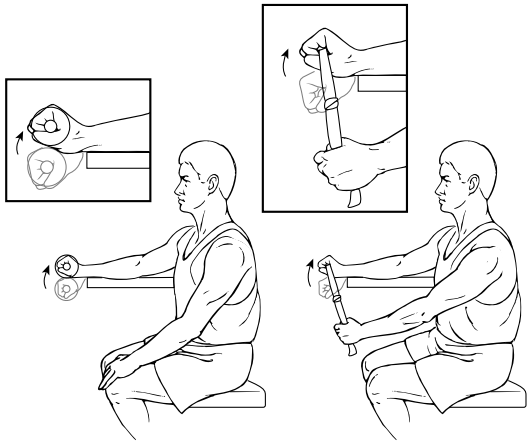
These are some of the ***initial*** exercises you may start your rehabilitation program with until you see your physician, physical therapist, or athletic trainer again or until your symptoms are resolved. Please remember:

- 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.



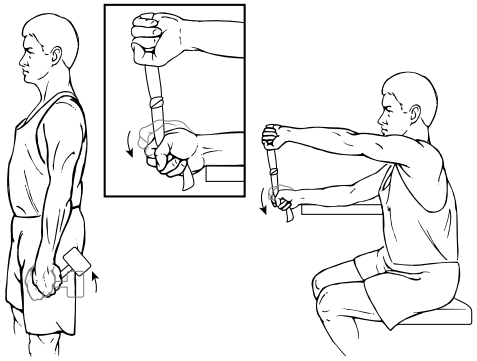
STRENGTH · Wrist Flexors

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.



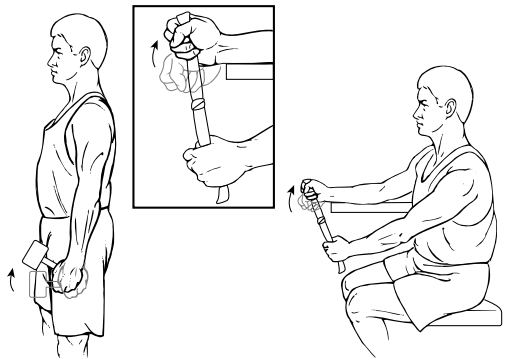
STRENGTH · Wrist Extensors

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.



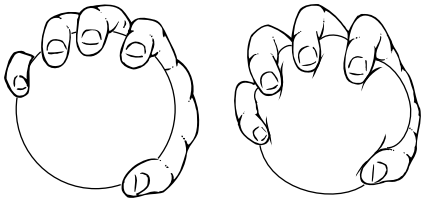
STRENGTH · Wrist, Ulnar Deviation

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.



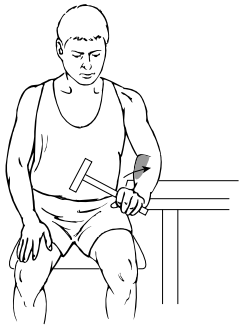
STRENGTH · Wrist, Radial Deviation

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.



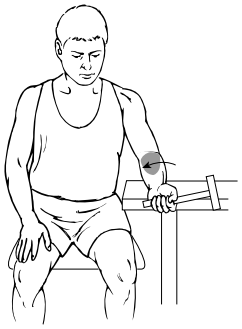
STRENGTH · Grip

1. Hold a wad of putty, soft modeling clay, a large sponge, a soft rubber ball, or a soft tennis ball in your hand as shown.
2. Squeeze as hard as you can.
3. Hold this position for _____ seconds.
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.

Notes: (Up to 4400 characters only)

Notes and suggestions