

HUMERUS FRACTURE (Thrower's Fracture)



■ ■ ■ Description

A humerus fracture is a broken bone (fracture) of the arm (humerus) between the shoulder and the elbow. This may be a complete or incomplete break. This does not include fractures of the shoulder joint or elbow joint.

■ ■ ■ Common Signs and Symptoms

- Severe arm pain at the time of injury
- Tenderness, swelling, and later bruising of the arm
- Later, swelling and bruising in the elbow and hand
- Visible deformity if the fracture is complete and bone fragments separate (displaced) enough to distort normal body contours
- Numbness, coldness, or paralysis below the fracture involving the forearm or hand from pressure on or stretching of blood vessels or nerves (uncommon)

■ ■ ■ Causes

- Direct blow or force to the arm bone
- Indirect stress due to falling on an outstretched hand or violent muscle contraction
- Possibly, throwing hard enough to produce twisting force

■ ■ ■ Risk Increases With

- Contact sports, such as football and rugby
- Sports requiring violent arm muscle contraction, such as arm wrestling
- Sports requiring arm twisting, such as throwing sports (baseball, softball)
- Children younger than 12 years of age, adults older than 60
- History of bone or joint disease, previous immobilization of the arm
- Poor physical conditioning (strength and flexibility)

■ ■ ■ Preventive Measures

- Appropriately warm up and stretch before practice or competition.
- Maintain appropriate conditioning:
 - Cardiovascular fitness
 - Arm strength
 - Flexibility and endurance
- Wear proper protective equipment and ensure correct fit.

■ ■ ■ Expected Outcome

With appropriate treatment and normal alignment of the bones, healing can be expected. Surgery may be necessary to realign fractures that are displaced. Average healing time is 6 to 8 weeks in adults and 4 to 6 weeks in children.

■ ■ ■ Possible Complications

- Nonunion (fracture does not heal)
- Malunion (heals in a bad position)

- Chronic pain, stiffness, loss of motion, or swelling of the shoulder or elbow
- Excessive bleeding in the arm, causing pressure and injury to nerves and blood vessels (uncommon)
- Heterotopic ossification (calcification of the soft tissues)
- Injury to the nerves of the hand or wrist due to stretching from the fracture, causing numbness, weakness, or paralysis
- Shortening of the arm

■ ■ ■ General Treatment Considerations

If the bones are in appropriate alignment (position), the initial treatment consists of ice and medications to help relieve pain. Immobilization by splinting, casting, or bracing and a sling for 6 or more weeks is recommended to protect the bones while they heal. Severe fractures, fractures that are displaced (not in appropriate alignment), and occasionally, nondisplaced fractures may require surgery to restore and maintain the joint to its normal position. Surgery usually includes repositioning the bones and holding the position with rods, plates, screws, or pins. After immobilization (with or without surgery), stretching and strengthening of the injured and weakened joints (elbow and shoulder) and surrounding muscles (due to the injury and the immobilization) are necessary. These usually are done with the assistance of a physical therapist or athletic trainer.

■ ■ ■ 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.
- Strong pain relievers may be prescribed as necessary. Use only as directed and only as much as you need.

■ ■ ■ Cold Therapy

Cold is used to relieve pain and reduce inflammation. Cold should be applied for 10 to 15 minutes every 2 to 3 hours for inflammation and pain. Use ice packs or an ice massage.

■ ■ ■ Notify Our Office If

- Pain, tenderness, or swelling worsens despite treatment
- You experience pain, numbness, or coldness in the hand
- Blue, gray, or dusky color appears in the fingernails
- Any of the following occur after surgery: fever, increased pain, swelling, redness, drainage, or bleeding in the surgical area
- New, unexplained symptoms develop (drugs used in treatment may produce side effects)

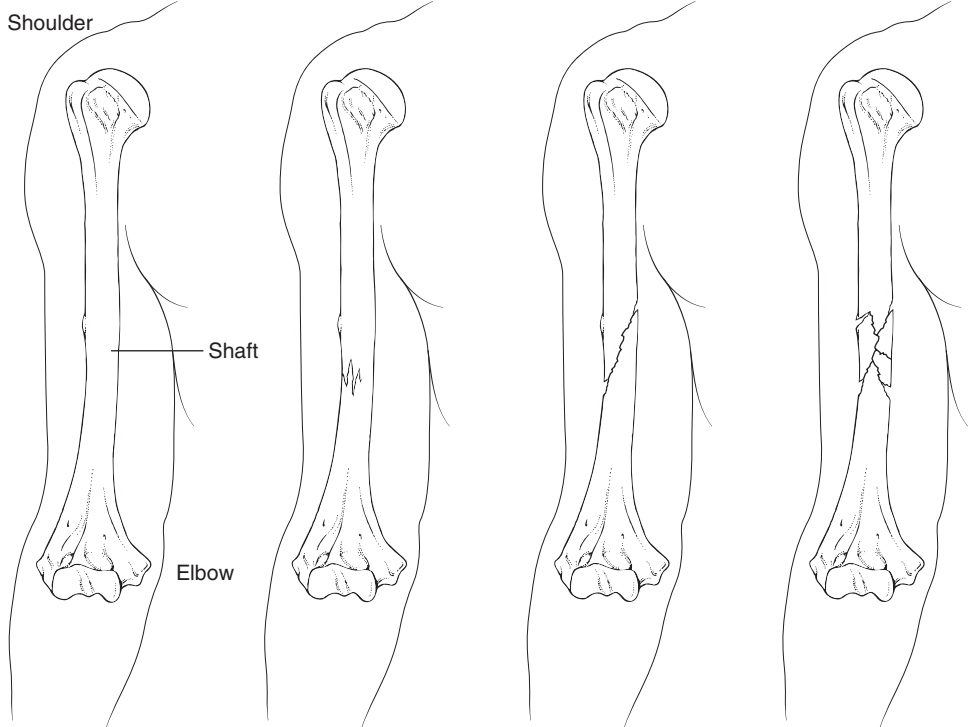
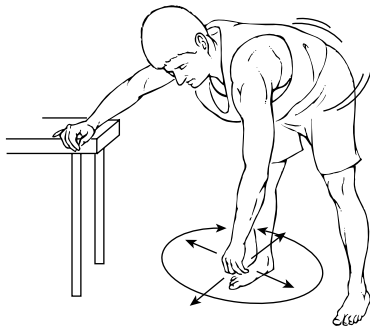


Figure 1

> RANGE OF MOTION AND STRETCHING EXERCISES • Humerus Fracture (Thrower's Fracture)

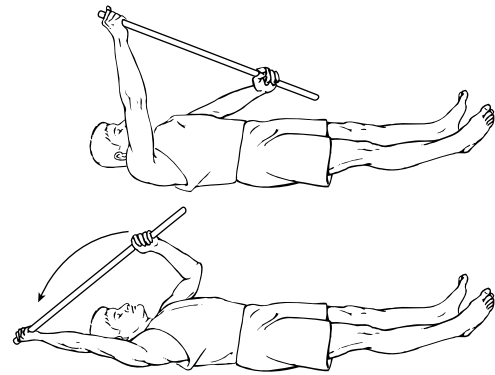
These are some of the *initial* exercises you may start your rehabilitation program with when cleared by your physician/surgeon to begin moving your shoulder and elbow. Continue these until you see your physician, physical therapist, or athletic trainer again. Please remember:

- 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.



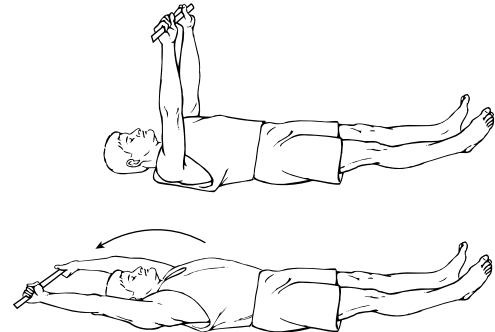
SHOULDER • Pendulum

1. Lean forward at the waist, letting your _____ arm hang freely. Support yourself by placing the opposite hand on a chair, table, or counter as shown.
2. Sway your *whole body* slowly forward and back. This will cause your arm to move. Let your arm hang freely. Do not tense it up.
3. Repeat the above swaying side to side and moving in circular patterns, clockwise and counterclockwise.
4. Do _____ repetitions in each direction.
5. Repeat exercise _____ times, _____ times per day.



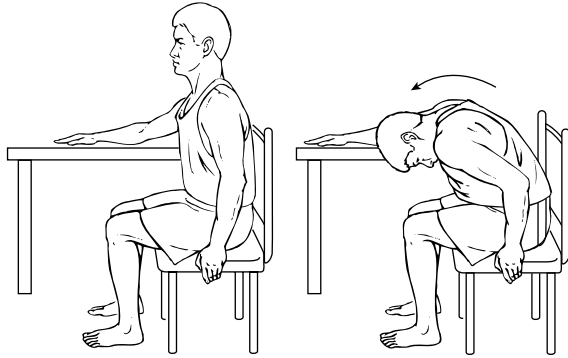
SHOULDER • Flexion

1. Lie on your back. Grasp the bottom of a stick, handle of an umbrella, or blade of a golf club in your _____ hand as shown.
2. Using the stick, raise your arm overhead as shown until you feel a gentle stretch. Lead with the thumb in a "thumbs up" position.
3. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.



SHOULDER • Flexion

1. Lie on your back holding a stick in both hands, keeping your hands shoulder-width apart.
2. Raise both hands over your head until you feel a gentle stretch.
3. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.



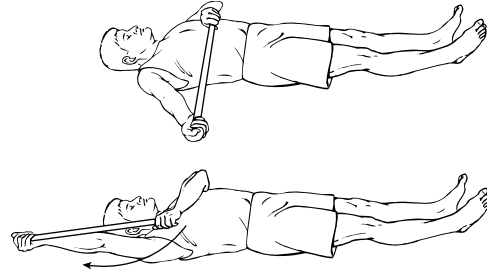
SHOULDER • Flexion

1. Sit in a chair with your _____ arm on a table as shown.
2. Lean forward, sliding your arm forward on the table until you feel a gentle stretch.
3. Return to the starting position.
4. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.



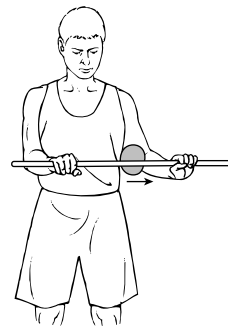
SHOULDER • Flexion

1. While standing near a wall as shown, slowly “walk” your fingers up the wall until you feel a gentle stretch.
2. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.



SHOULDER • Abduction

1. Lie on your back holding a stick, umbrella handle, or golf club in your hand as shown. The hand should be in the “thumbs-up” position.
2. Using the stick, slowly push your arm away from your side and as far overhead as you can without pain. Push until you feel a gentle stretch.
3. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.



SHOULDER • External Rotation

1. Lie on your back or stand with your _____ arm at your side and your elbow bent to 90 degrees. Hold a stick, umbrella handle, or golf club in your hands as shown.
2. Using the stick turn/rotate your hand and forearm away from your body as shown.
3. ***Make sure you keep your upper arm and elbow next to your side.***
4. Repeat exercise _____ times, _____ times per day. Hold each repetition 5 to 10 seconds.



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.



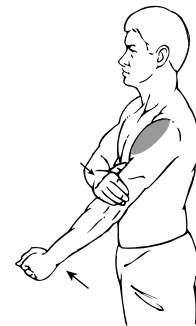
RANGE OF MOTION • Extension

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.

➤ **STRENGTHENING EXERCISES • Humerus Fracture (Thrower's Fracture)**

These are some of the *initial* exercises you may start your rehabilitation program with when cleared by your physician/surgeon to begin moving your shoulder and elbow. *Do not start these exercises until instructed to do so by your physician/surgeon!* Continue these until you see your physician, physical therapist, or athletic trainer again. 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.



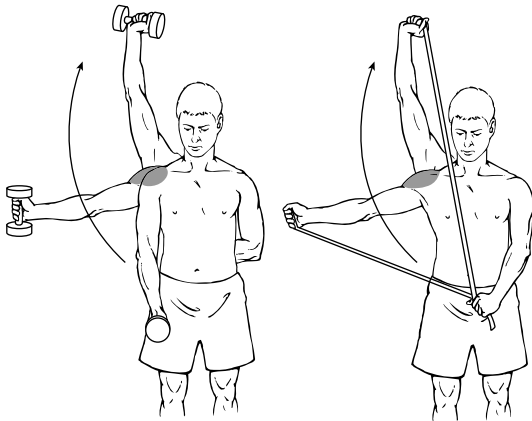
STRENGTH • Shoulder Flexion, Isometric

1. While standing, raise your _____ arm straight in front of your body as shown.
2. Place the other hand on top of your arm and push down. Do not allow your arm to move. Push as hard as you can without having any pain or moving the arm.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



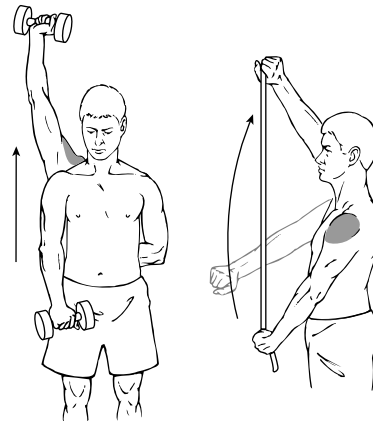
STRENGTH • Shoulder Abduction, Isometric

1. While standing, raise the _____ arm slightly away from the body as shown.
2. Place the other hand on top of your arm and push down. Do not allow your arm to move. Push as hard as you can without having any pain or moving the arm.
3. Hold this position for _____ seconds and then *slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



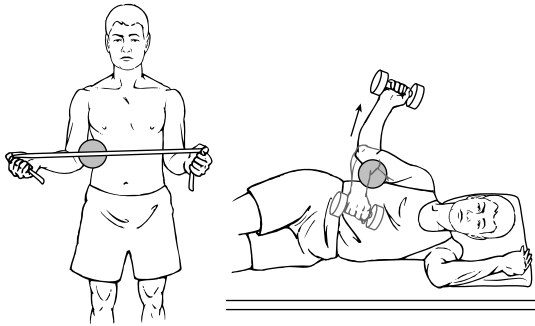
STRENGTH • Shoulder Abduction

1. Stand holding a _____ lb. weight in your _____ hand and your palm facing your body as shown, or hold the rubber band/tubing as shown.
2. Slowly raise the arm up to the side and as far overhead as you can in your *pain free* range. If this is painful, stop and discuss this with your physician, physical therapist, or athletic trainer. *You should not progress above shoulder height unless instructed to do so by your physician, physical therapist, or athletic trainer.* If you are cleared to go above shoulder height, as you raise the arm to shoulder height begin to turn the palm toward the ceiling.
3. *Slowly* return to the starting position.
4. Repeat exercise _____ times, _____ times per day.



STRENGTH • Shoulder Flexion

1. Stand holding a _____ lb. weight in your _____ hand as shown, or hold the rubber band/tubing as shown.
2. Slowly raise your arm overhead as far as you can in your *pain free* range of motion. Do not allow your shoulder to “shrug up” while doing this exercise.
3. Keep your hand in 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.



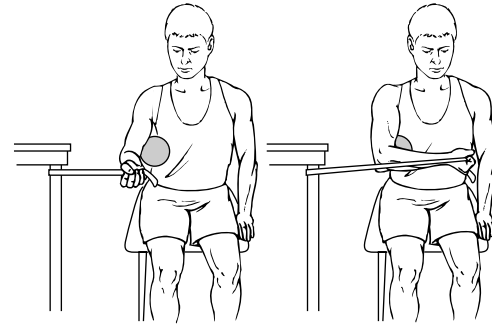
STRENGTH • Shoulder External Rotation

1. Lie on your side with your _____ arm up and the elbow bent to 90 degrees, or stand with your arms at your side and the elbows bent to 90 degrees as shown. Place a small rubber ball (4 to 6 inches in diameter) or rolled-up towel between your elbow and your side as shown.
2. Hold a _____ pound weight in your hand and turn the arm up toward the ceiling, keeping the elbow bent as shown. If using rubber band/tubing, turn the arm(s) out from your side while keeping the elbows bent.
3. Do this slowly and in control through your *pain free* range of motion only. If this is painful, stop and discuss this with your physician, physical therapist, or athletic trainer.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



STRENGTH • Shoulder, External Rotation, Isometric

1. Bend your _____ elbow to 90 degrees as shown, holding your arm slightly in front of your body.
2. Place your opposite hand over your wrist as shown.
3. Try to turn/rotate your arm outward, away from your body, as if it were a gate swinging open. Resist this motion with the opposite hand that is on your wrist. Do not let any motion occur.
4. Hold this position for _____ seconds.
5. Repeat exercise _____ times, _____ times per day



SHOULDER • Internal Rotation

1. Anchor the rubber band/tubing to a heavy/solid object as shown.
2. Place a small ball or towel between your elbow and body as shown in the drawing and bend your elbow to 90 degrees. Squeeze the ball gently to the side of your chest with your elbow.
3. Turn/rotate your arm in toward your body (across your chest/stomach). Do not let the ball move/fall away from the side of your chest.
4. Hold this position for _____ seconds and then *slowly* return to the starting position.
5. Repeat exercise _____ times, _____ times per day.



SHOULDER • Internal Rotation, Isometric

1. Bend your _____ elbow to 90 degrees as shown, holding the arm slightly in front of the body.
2. Place your opposite hand on the inside of your wrist as shown.
3. Try to turn/rotate your arm inward, toward the body, as if it were a gate swinging closed. Resist this motion with the opposite hand that is on the inside of your wrist. Do not let any motion occur.
4. Hold this position for _____ seconds.
5. Repeat exercise _____ times, _____ times per day

Notes:

(Up to 4400 characters only)

Notes and suggestions