

DISTAL RADIUS FRACTURES



What Causes this Condition?

The radius is the bone in your forearm that is on the same side as your thumb. The second long bone in the forearm, the ulna, also can be fractured.

What are the Implications of this Condition?

Besides pain and swelling, a distal radius fracture may result in the inability to move the wrist. The thumb, fingers, forearm, shoulder and elbow also can become stiff due to disuse of the affected hand. Not having full motion at one or more joints can cause inability to perform self-care, work, and leisure activities.

What are the Risk Factors If There is No Treatment?

If untreated or unrecognized, the fracture may not heal in a normal position (malunion) or may not heal at all (nonunion). Other risks include wrist deformity, post-traumatic arthritis, grip

and pinch weakness, nerve compression/irritation at the wrist, CRPS (Complex Regional Pain Syndrome), tendon ruptures, or permanent wrist pain due to changes in joint gliding and/or bone length^(1,2,3).

Ultimately a person's ability to move correctly may be permanently affected. Self-care activities that require reaching behind the back, leaning on arm, holding change, brushing teeth, or feeding self may be extremely difficult or absent. However, if the distal radius fracture is given immediate and appropriate care, the chances of returning to full use are dramatically increased.

Options for Treatment?

The type of fracture determines how it is treated by the physician. Fractures can be stable (stay in place) or unstable, displaced (not lined up) or lined up, or in more than two pieces (comminuted). Also, treatment can be affected by whether the fracture involves the wrist joint. These fracture characteristics can lead the surgeon to use some of the below surgical procedures:

- Closed reduction with cast and/or percutaneous (external) pins for stable,

continued on back

non-displaced, non-articular (not in joint) fractures – pins are inserted through the skin to hold the bone in place

- External fixation for unstable, displaced, intra-articular (in joint) fractures or fractures with several bone fragments (comminuted) – a device that pulls the bones apart is used to keep the bones in the right place
- Open reduction and internal fixation for displaced, intra-articular fractures – the skin is cut and wires, plates and/or screws are placed on the bone to hold it in place

The period of immobilization (wrist cannot be moved) while the bone heals can last 2-8 weeks and is often followed by the use of a soft brace or thermoplastic splint made by a hand therapist. The surgeon will determine how long the bone needs to be immobilized based on how it is healing.

It's important to understand that just because the surgeon is able to repair the fracture, this does not mean that there will be full wrist motion⁽³⁾. Sometimes the severity of the fracture may lead to some long-term limitations in motion. Surgery is often done with the goal of restoring the correct, natural position of the bone ends and the wrist joint. This helps prevent arthritis and provides the best chance for re-establishing motion.

Hand Therapist's Role

Treatment by a hand therapist may be needed even when the wrist is immobilized

Disclaimer: These education topics should not be construed as including all proper methods of care or excluding other acceptable methods of care reasonably directed to obtaining the same results. The final judgment regarding any specific procedure or treatment must be made by the hand therapist in light of all circumstances presented by the patient and the resources available.

© Copyright 2002 by the American Society of Hand Therapists. All rights reserved



in a cast or from the surgery. The hand therapist will teach the patient how to control swelling and pain, how to move thumb, fingers, elbow and shoulder to prevent stiffness, and how to complete daily self-care and home activities with one hand.

After the cast or splint comes off, the hand therapist will instruct the patient in exercises to move the wrist and forearm. A very important part of therapy is teaching the patient the home exercise program so that exercises are done regularly and frequently. Therapy also will include techniques to improve the appearance and mobility of any scars from the surgery, and retraining the injured arm for use with dressing, eating, driving, and work activities. The ultimate goal is to increase strength and flexibility in the involved wrist so that the patient can return to their prior level of activity.

Anything Else That Should Be Known

Anyone who suffers a fracture after age 40, especially postmenopausal women, should be screened for osteoporosis. Having a distal radius fracture can be the first sign that bones are weakened by osteoporosis⁽¹⁾.

References

1. Fedorczyk J: Rehabilitation of distal radius and ulna fractures. Lecture given at APTA 2004 combined sections meeting, Nashville, TN.
2. Laseter GF: Therapist's management of distal radius fractures. In: Mackin EJ, Callahan AD, Skirven TM, Schneider LH, Osterman AL, Hunter JM (eds): Hunter-Mackin-Callahan Rehabilitation of the Hand and Upper Extremity, 5th ed. St Louis, MO: Mosby, 2002.
3. Rettig ME, Raskin KB, Melone, Jr CP: Fractures of the distal radius. In: Lichtman DM, Alexander AH (eds): The Wrist and Its Disorders, 2nd ed. Philadelphia, PA: WB Saunders, 1997.

ASHT
AMERICAN SOCIETY OF HAND THERAPISTS

WWW.ASHT.ORG