

## Distal Radius Fractures

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Distal radius fractures are some of the most common fractures (the medical term for "broken bone"). The radius is the forearm bone on the thumb side (in the x - ray above, it is the one on the right). Distal radius fractures are generally caused by a fall on an outstretched hand. The fracture is almost always within an inch of the wrist joint and may extend into the joint. The radius above is fractured at this location: about one inch from the wrist joint.



Fracture types can be described as "extra - articular" (which means the fracture line does not extend into the joint) or "intra - articular" (which means the fracture line does extend into the joint; this is the more serious type of fracture). They can also be described as "comminuted" (which means the bone is broken into several or many small pieces) or not comminuted. The most serious type of fracture is the comminuted, intra - articular fracture.

**The treatment options** are quite varied, depending on the exact nature of your fracture, your age, and your activity level. The treatment options include a cast, internal fixation with a plate, percutaneous pin fixation, external fixation, or a combination of these modalities. It is an area of

very vigorous research which I have been actively involved in distal radius research since 1993. The treatments, both surgical and non - surgical, have changed greatly in the last few years. There are so many new ways to treat this fracture that it is difficult for most surgeons to keep up with all the new developments in this area. Here are some examples of the kinds of treatment that are available:



This is an example of an internal fixation plate.



This is an external fixator, which is used to treat fractures that are too unstable for a cast. You can shower and use your hand gently with the external fixator in place.

## Treatment of Distal Radius Fractures

The treatment decision is very complex. As noted above, the factors that are important are the exact nature of your fracture, your age, and your activity level. The nature of the fracture relates to the current alignment of your bones (what position they are in) and whether or not that



alignment is acceptable. If it is acceptable, then you will probably get a cast. If it is not acceptable, I may need to reduce the fracture (put the bones in a better position). Sometimes the fracture is of the sort that can be pushed into place without surgery (called a "closed reduction"), and sometimes the fracture needs surgery to push the bones into place (called an "open reduction", because the skin needs to be "opened" for surgery). Usually, if the broken bones need surgery (in medical terms, the fracture needs open reduction), some kind of metal implant will be needed to hold the bones in the proper place while they heal. Most of the time, the metal implant (often called a "plate", but it does not look like a dinner plate! See the photo at the top for an example of a plate) needs to be placed on the bones. As you can see, the treatment decision is very complex.

### **What Can I Expect While It is Healing?**

This is a great and simple question, but the answer is not simple. It depends on many factors: the nature of your fracture, its treatment, your response to treatment, your age, and your activity level, among many other factors. But it is an important question and needs to be answered. Most patients need narcotic pain medication for only a few (less than 5) days, or never. Many times, just prescription - strength, non - narcotic medication is all that is needed.

If you have a cast, it is usually on for six weeks, then hand therapy is started. If you have internal fixation, you get a splint for three days and then hand therapy starts to get your wrist joint moving. No splint is usually needed three days after surgery. Casts must be kept dry (use a plastic bag while showering), and surgical incisions need to be kept dry only for five days. No matter what kind treatment you get, you should be actively exercising your fingers, elbow, and shoulder, so they don't get stiff. I will decide, based on your exact fracture, when you can start strengthening exercises; until then, just work on motion.



## What Can I Expect After It Has Healed?

Everyone wants to know, "Can I return to all my former activities?" This also is a great and simple question, but without a simple answer. Everyone has some stiffness in their wrist after treatment (remember, you fell on your hand hard enough to break the bone, so the joint and all the soft tissues around it are mad at you!). This is why almost everyone is referred to hand therapy as soon as your broken bone can tolerate it safely.

Everyone wants to know, "How much will it hurt?" Most patients will need to take some pain medication for a few days (see above), and some may need it for 10 or so days. Few patients need any pain medication other than aspirin, Tylenol, or Motrin after 10 days. Almost everyone will have some discomfort in their wrist as it heals over a period of three to six months. If you do not develop arthritis, you will not have pain after this. You will still experience some minor discomfort for a year or so.

Almost everyone ends up with some stiffness that is permanent; how much depends on our injury, your age, if you already have some stiffness and arthritis, and how hard you work in hand therapy. The forearm motion that is usually the stiffest is turning your palm up (called "supination") in the position as if you were trying to hold some water in your cupped hand. There



is also some limitation in flexion and extension, which are the motions bending your hand toward your palm or toward the back side of your hand.

Most patients return to normal recreation and work activities, and most do not have permanent pain. The most limiting fracture type is a comminuted, intra - articular fracture, and these patients will have the greatest amount of stiffness, may have pain, and are at risk for developing arthritis. Extra - articular fractures usually do not develop arthritis.

The amount of stiffness is largely what determines what activities you can return to. Most patients, who are active playing non - contact and non - impact sports such as bike riding, swimming, etc., can return to those activities, starting at about 3 months after the fracture. Most patients who are active playing contact sports or sports that involve impact, such as tennis, golf, baseball, football, etc., can return to those activities, starting at about 4 months. Most patients who do heavy labor, such as carpentry, plumbing, etc., can return to work at 2 months with restrictions, and regular work without restrictions at 4 months. Most patients who do lighter labor such as painting, or office work activities such as handwriting, keyboards, telephone, etc., can return to work at 1 to 2 months. I do not allow people to do activities where they are at risk for falling for about four months. These are only general guidelines so you have some idea of what to expect, and your specific restrictions will be determined by your individual circumstances.

**Dr. Bernstein has a particular interest in distal radius fractures.** He has spoken at many national as well as international courses exclusively on distal radius fractures. He is actively involved with developing newer methods of distal radius fracture treatment and with teaching surgeons from around the world about how to treat distal radius fractures.

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