

WRIST FRACTURES

Patient Information Brochure

What is a wrist fracture?

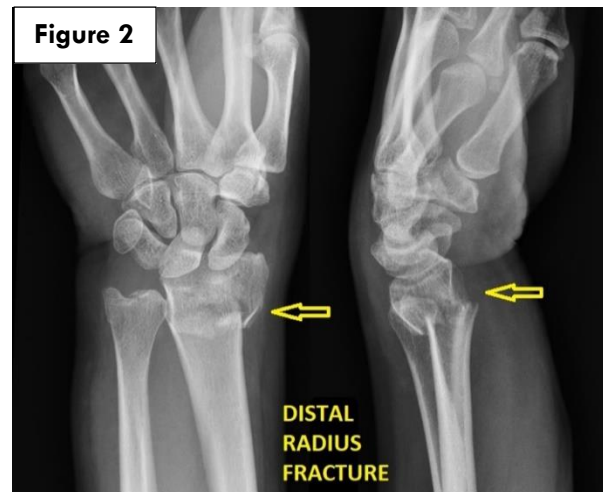
The wrist consists of eight small carpal bones and the end of our two forearm bones; the radius and ulna (Figure 1).



The unique arrangement of these bones permits the wrist to move in different directions, including bending, straightening, rotating, and moving from side to side. Fractures of the wrist frequently occur because of a fall on an outstretched hand although other mechanisms may cause fractures as well. The more violent the injury, the more severe the fracture is likely to be. Elderly who may suffer from osteoporosis may have more brittle bones, increasing the risk of a wrist fracture from a fall.

The most common wrist fracture occurs at the end of the radius and is medically termed a distal radius fracture (Figure 2). The presence of a break in the bone, whether it is a hairline crack or if the break is obviously displaced constitutes a fracture. All fractures are associated with pain and swelling.

Figure 2



The presence of visible deformity or crookedness indicates significant displacement of the fracture. It may be painful to move the wrist and even the fingers sometimes and swelling and bruising may become apparent later after the injury. Occasionally, there may be an open wound over the wrist and sometimes there may be numbness in the fingers. This indicates the presence of an open fracture and median nerve compression correspondingly and require immediate attention.

Fractures of the distal radius vary. Some fractures may be grossly mal-aligned and comminuted (shattered) whilst some may only be slightly displaced. Approximately half of all distal radius fractures will extend to involve the joint surface and may impact subsequent joint motion if not appropriately treated.

How are they evaluated?

The hand surgeon will examine the wrist and order x-rays to diagnose and characterize the fracture. Sometimes advanced imaging techniques such as CT scans and MRIs are required after the x-rays for more complex fractures and when associated soft tissue injury (ligaments, tendons, and muscles) is suspected. Associated injuries may require treatment as well.



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How are they treated?

Two factors are weighed when treatment is planned. Whether a fracture is displaced or undisplaced, as well as fracture stability and severity form the first set of considerations. Patient factors form the second set of considerations. Your age, hand dominance, vocational as well as leisure activities and expectations of functional recovery are important, and the hand surgeon will work closely with you towards achieving your desired recovery goals.

Figure 3



Fractures that are undisplaced or minimally displaced may be adequately treated with a cast or splint (Figure 3). Fractures that remain stable after closed manipulation and reduction may also be treated this way.

Fractures that are unstable, irreducible, displaced, comminuted and extending to the joint may be more appropriately addressed with surgery. This involves setting the fracture in proper alignment and most frequently, maintaining the alignment with a low-profile plate and screws (Figure 4).

Figure 4



This procedure is termed “open reduction and internal fixation”. When significant soft tissue injury is diagnosed with the fracture, this is usually concurrently addressed during surgery for the fracture. Other surgical techniques employed may include external fixation and wires placed into the bone.

Regardless of whether surgery is required or not, during the early convalescing period, keeping the hand elevated and moving the fingers will reduce swelling and mitigate stiffness. Once the fracture has healed with sufficient stability, formal hand therapy rehabilitation may be initiated. This typically commences four to six weeks after cast or splint immobilization and a few days after surgery. The goals of hand therapy are to realize the best possible mobility, dexterity, and strength the injured wrist can potentially recover.

What kind of results can I expect

Results vary according to the type of fracture as well as the type of treatment. Fractures that are treated surgically typically make maximal recovery between three to six months whilst those treated non surgically may take twice as long. Sometimes, associated injuries or severe joint surface injuries will limit the final functional recovery possible. This may manifest as residual stiffness, aching and sometimes pain. Occasionally, additional treatment in the form of reconstructive surgery may be needed. With a collective experience of more than two decades of treating these injuries, our hand surgeons can give you the best advice on how to manage your wrist fracture.