CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION — IN DEPTH

Distal Radius Fracture

X-ray of a displaced distal radius fracture — the most common adult fracture pattern. The end of the forearm bone has snapped just above the wrist joint and shifted out of line.

What you're feeling

The injury usually happens in a split second. You might fall onto an outstretched hand or take a direct blow to the wrist. You likely hear or feel a snap or pop. Pain hits immediately and sharply. Your wrist swells up fast. Bruising often appears within hours. The area feels tender to the touch.

You may notice your wrist looks bent or misshapen. This deformity can be quite obvious. Moving the wrist feels difficult and painful. You might find it hard to grip objects or lift even a light cup. Your hand may feel numb or tingly if nerves are affected. In rare cases, you could experience weakness in both the thumb and little finger nerves at the same time. This combined nerve issue is uncommon but requires specific attention.

In the first few days, pain is often worse at night. Swelling can make the skin feel tight. Simple tasks like turning a doorknob or typing become challenging. You will likely want to keep the arm still to avoid sharp pains. Your surgeon will focus on preventing complications, as soft tissue issues can sometimes be more problematic than the bone break itself.

As healing begins over the next few weeks, the sharp pain starts to settle. It may still ache when you move or bear weight on the hand. Nighttime discomfort usually decreases as swelling goes down. You might feel a sense of relief as the initial shock fades. However, you must remain cautious. Early diagnosis and treatment are vital to avoid long-term consequences. Ignoring signs of injury, such as persistent numbness or inability to move fingers, can lead to arthritis within 10 years if intrinsic carpal ligament injuries are missed.

Your recovery path depends on accurate early assessment. We aim to restore the bone to its natural alignment to support your return to function. While the risk of the bone failing to heal is minimal, soft tissue healing takes time. You may experience some stiffness as you begin gentle movements. This is a normal part of the process. Your surgeon will guide you on when it is safe to start using your hand for daily activities.

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What's actually happening

Your wrist is a complex hinge where your forearm bones meet your hand. When you fall, that force travels up your arm and can crack the end of your radius bone. This is the larger of your two forearm bones. The break often happens near the joint surface. Sometimes, the smaller ulna bone also breaks at its tip.

Think of your wrist like a tent pole. If the pole cracks or bends, the whole structure becomes unstable. Your bones no longer hold your hand in the right place. This makes it painful and difficult to move your wrist or grip objects. The bones may shift out of alignment, a process called displacement. If they are not held steady while they heal, they can grow back in a crooked position.

Your surgeon's main goal is to put the bones back in their correct position. This is called restoration of anatomic alignment. We then hold them there while your body heals them. This might involve using plates and screws inside the bone, or pins and an external frame outside the skin. The choice depends on how severe the break is.

Healing happens when new bone tissue knits the pieces together. In many cases, the risk of the bone failing to heal (nonunion) is very low. However, if the break is severe, we might use bone graft substitutes. These materials act like scaffolding to give the area extra strength and stability while your own bone grows. This support helps you start moving your hand sooner.

Sometimes, the broken bone fragments press on nearby nerves. The median and ulnar nerves run through your wrist. Combined damage to both nerves is exceedingly rare. But if it happens, it needs careful management to avoid long-term issues like numbness or weakness. Early treatment helps prevent these complications.

We also watch for changes in the bone's height. Even with modern fixation methods, some loss of height can occur as the bone settles. This is normal to a degree. We monitor this closely to ensure your wrist remains stable and functional. An associated break in the ulna tip does not usually change the outcome for the radius fracture itself.

What we can do about it

Dr Kieran Hirpara, an upper-limb surgeon at Mater Private Hospital Rockhampton, starts with the least invasive options that suit your condition. We match the treatment to your specific injury pattern, severity, and stability. If your fracture is stable or only slightly displaced, we often begin with non-operative care. This usually involves a sling, splint, or cast to hold the bone in place while it heals. We monitor your progress with repeat X-rays to ensure the bones stay aligned. You will then start a staged return to movement with physiotherapy to restore strength and flexibility.

Surgery is recommended from the outset if your fracture is displaced, unstable, or if you have high functional demands. We may also suggest surgery if non-operative care leaves you with unacceptable pain or if the final position of the bone does not meet your needs. For example, volar plating (using a metal plate on the palm side of the wrist) can provide superior radiological results compared to k-wiring (using thin metal pins). However, these better X-ray images do not always correlate with a better functional outcome at 32 months follow up. We discuss these options with you so you can make a shared decision that fits your life and goals.

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Both paths share the same core goals in the early weeks: controlling your pain, protecting the injury while it heals, and preparing for rehabilitation. We emphasize that complications associated with soft tissues may be more problematic than the bone injury itself. Early diagnosis and treatment of any complications are important to avoid long-term consequences. We also note that combined median and ulnar nerve palsy related to distal radius fractures is exceedingly rare, but if it occurs, it requires a standardised management strategy. Patients are generally referred to our clinic by their GP; if a physiotherapist has suggested you see us, you will still need a referral from your GP in order to be eligible for the Medicare rebate.

What to expect

Your bone typically heals within a few months. The risk of the bone failing to join together is minimal. You will likely wear a cast or splint for several weeks. This keeps the bone steady while it knits back together. Your surgeon will monitor your progress with X-rays to ensure the alignment is correct.

Recovery feels different depending on the treatment path. If you have surgery, your surgeon may use a plate or pins to hold the bone in place. These methods help restore the bone's shape. However, better X-ray results do not always mean better hand function later. Some patients notice a small loss in bone height over time. If you choose non-operative care, your arm will heal in a cast. This avoids surgery but requires careful monitoring to prevent stiffness.

You can expect to return to daily tasks gradually. Bone graft substitutes may help you move your hand earlier. This supports structural stability and encourages early function. Most people resume light activities within weeks. Heavier work or sports may take several months. Your surgeon will guide you on when it is safe to increase activity.

Complications are uncommon but possible. Nerve issues affecting both the median and ulnar nerves are exceedingly rare. If they occur, your surgeon will manage them with a standard strategy. An associated fracture on the pinky side of the wrist does not typically affect your final outcome. Stiffness is a common challenge. Your surgeon will focus on preventing long-term consequences through early diagnosis and treatment of any issues.

Your primary concern during recovery is protecting the healing bone. Avoid heavy lifting until cleared. Keep your hand elevated to reduce swelling. Attend all follow-up appointments so your surgeon can check your progress. Most patients regain good use of their hand. Some may experience lingering stiffness or mild discomfort. Your surgeon will work with you to maximise your recovery.

When to see someone

Seek urgent care if you have a visible deformity, an open wound, numbness or tingling, or cannot use your arm. Early diagnosis is important to avoid long-term consequences of distal radius fracture complications. Soft tissue complications may be more problematic than the bone injury itself. Delayed diagnosis of intrinsic carpal ligament injuries leads to arthritis within 10 years if not treated. See your GP or ask for a specialist review if pain is not settling. Also seek advice if swelling, movement, or function are not improving week on week as healing progresses. Early recognition of associated injuries is associated with improved outcomes.

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In more depth

This section goes further than you need for your own treatment decisions. A broken wrist is worth the extra reading because it is the fracture where the gap between what looks right on an X-ray and what a patient actually notices is widest — and because the commonest operation for it has a higher complication rate than most people are told.

SURGERY IMPROVES FUNCTION, BUT BY HOW MUCH MATTERS

Pooling **2,254** adults, operative treatment of distal radius fractures improved the medium-term DASH score and grip strength compared with non-operative treatment, with **no difference in overall complication rate** [1].

That is a genuine result in favour of surgery, and it should be read alongside its own size. The DASH is scored out of 100, and the differences in this literature are typically modest — real, measurable, and often smaller than patients imagine when they hear "surgery gives a better result". It is a difference in the quality of the recovery rather than the difference between a working wrist and a useless one.

THE PLATE HAS ITS OWN COMPLICATION PROFILE

The volar locking plate is the standard fixation, and it is very good. It is not free.

A meta-analysis restricted to high-quality studies found an overall complication rate of **30.8%** after volar locking plate fixation, and noted the technique may be associated with more hardware-related complications than previously reported [2].

That figure needs context rather than alarm: it counts everything, including minor and self-resolving problems, not 30.8% disasters. But it is the honest denominator, and it is higher than the impression given by "a plate and screws, then straight to moving your hand".

Removal is a related question with a clean answer. Across **3,690** patients there was a strong positive correlation between how often surgeons removed hardware and how often complications were reported, and the authors concluded that **routine removal is not justified** in the absence of plate-related problems [3]. A plate that is not causing trouble should generally be left alone.

THE ULNAR STYLOID FRACTURE YOU WERE TOLD ABOUT PROBABLY DOES NOT MATTER

Most people with a distal radius fracture also break the tip of the ulna, and it is often mentioned as though it were a second, worrying injury.

Pooling **1,403** patients, a concomitant ulnar styloid fracture did **not** affect the outcomes of the distal radius fracture, and the authors advise caution before electing to fix it [4].

So if that fragment was pointed out on your X-ray, its presence alone is not a reason for additional surgery, and not a reason to expect a worse result.

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WHAT ACTUALLY PREDICTS A POOR OUTCOME

Not the ulnar styloid, and not the surgeon's choice of implant so much as the fracture's own behaviour. Where a fracture is managed in a cast, the risk factors for it slipping again after reduction include **initial complete displacement** and other markers of an unstable pattern — the fracture that was badly out of position to begin with is the one most likely to drift back.

That is why a wrist treated in plaster is X-rayed again at one and two weeks. The check is not bureaucratic; it is the window in which a slipping fracture can still be dealt with easily.

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