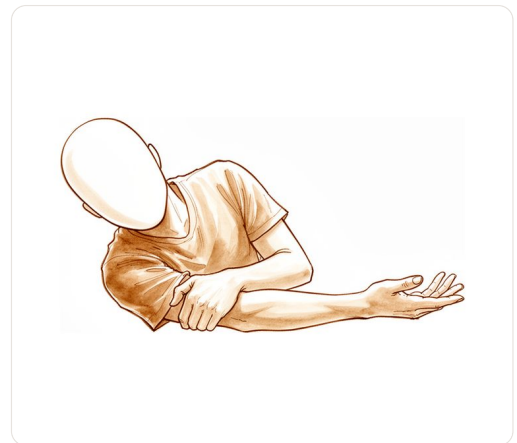


Radial Head Fracture

X-ray showing a fracture of the radial head — a common injury after a fall on an outstretched arm.

Kieran Hirpara © ⓘ 4.0



What you're feeling

You likely felt a sharp pain in the outer part of your elbow, just below the bony bump on the outside of your arm. This often happens after a fall onto an outstretched hand or a sudden impact. You might have heard or felt a snap or pop at the moment of injury.

Your elbow will probably swell up quickly. Bruising may appear on the skin around the joint within the first few days. You will likely find it difficult to bend or straighten your arm. Turning your palm up or down may feel blocked or painful. You might notice a visible deformity if the bone has shifted out of place.

In the first few days, pain is often constant. It can be worse at night when you try to sleep. Simple movements like lifting a cup of tea or opening a door may hurt. You may feel reluctant to move your arm at all. This is your body's natural response to protect the injured area.

As the initial swelling settles, the pain may become more specific to movement. You might feel a dull ache that comes and goes. If your fracture is stable, you may find that gentle movement feels slightly better than keeping it completely still. However, forcing the arm to move will still cause discomfort.

If the injury is more complex, involving other structures in the elbow or forearm, you might feel instability. This can feel like your arm is giving way or not tracking correctly. You may notice pain radiating down your forearm. These sensations indicate that more than just the bone is affected.

Most patients find that the intense, sharp pain subsides into a manageable ache over the first two to three weeks. Night pain usually improves as you find comfortable sleeping positions. Swelling may persist for several weeks, making the elbow feel tight or stiff. You will likely need to avoid heavy lifting or pushing activities during this time.

Your experience will depend on the type of fracture you have. Simple fractures often feel less severe than complex ones. If you have a comminuted fracture, where the bone is broken into multiple pieces, the initial pain may be more significant. Your surgeon will assess the extent of the injury to guide your recovery.

What's actually happening

Your radial head is the rounded top part of one of the two bones in your forearm. It sits inside your elbow joint, acting like a cushion that helps your arm bend and twist smoothly. When you fracture this bone, you have broken that cushion. This disrupts the smooth movement of your elbow and can make the joint feel unstable or painful.

Think of your elbow like a hinge on a door. The radial head is the pin that keeps the door aligned as it swings open and closed. If that pin is cracked or shattered, the door will wobble, stick, or grind. This is why your arm does not work normally right now. You may find it difficult to lift objects or turn your palm upwards.

In some cases, the break is more than just a simple crack. If the bone is shattered into many pieces, or if it has shifted out of place by more than 2 mm, the joint structure is compromised. This displacement can lead to long-term stiffness or arthritis if not managed correctly. Your surgeon will look closely at how much the bone has moved to decide the best path forward.

Sometimes, the force that broke your radial head also tears the ligaments on the outside of your elbow. These ligaments act like strong bands that hold your joint together. When they are torn, your elbow becomes loose and prone to dislocating. This combination of a broken bone and torn ligaments creates a complex instability that requires careful assessment.

Healing depends on the severity of the injury. For minor, stable fractures, your body can knit the bone back together on its own. The pain and swelling will settle as the bone heals over several weeks. However, if the bone is too shattered to repair, or if the joint remains unstable, surgery may be needed. This might involve replacing the broken bone with a metal implant to restore stability and function.

Early movement is crucial for recovery. Keeping your elbow still for too long can cause the joint to stiffen permanently. Your surgeon will guide you on when to start moving your arm gently to regain range of motion. This balance between protection and movement is key to getting your elbow working well again.

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. For stable fractures or those with minimal displacement, we often recommend non-surgical care. This involves wearing a sling, splint, or cast to keep the bone still while it heals. We monitor your progress with repeat imaging to ensure the bone stays in the right position. You will begin gentle movement exercises with a physiotherapist as soon as it is safe. Most patients with these types of fractures recover well without needing an operation.

Surgery is recommended from the outset if your fracture is displaced, unstable, or involves multiple fragments. We may suggest replacing the radial head with a metal implant if the bone is too broken to repair. This approach is also considered for complex injuries that affect the stability of your elbow. In some cases, such as when there is significant displacement between 2 mm and 5 mm, we discuss whether surgery offers a clear benefit over conservative care. For severe patterns like terrible triad injuries, we aim to stabilise the joint to prevent long-term instability. We review the evidence with you, noting that 96% of patients achieve satisfactory functional results with radial head replacement in the long term. This helps you make a shared decision about the best path for your specific injury and lifestyle needs.

Both treatment paths share common goals: managing pain, protecting the injury, and restoring movement. In the early weeks, we focus on keeping you comfortable and preventing stiffness. We advise against using local anaesthetic injections for pain relief in undisplaced fractures, as they do not offer additional benefit over simple aspiration. As your healing progresses, we guide you through staged physiotherapy to regain strength and range of motion. We also assess for any other injuries that may have occurred at the same time, such as ligament damage, to ensure your elbow remains stable. Regular follow-ups allow us to adjust your recovery plan based on how your body responds.

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 recovery path depends on how severe the fracture is. For simple, stable breaks, your surgeon may recommend non-surgical care. You will likely wear a sling or brace for a short period. Long-term outcomes for these cases are excellent. Most patients return to normal daily tasks without significant restriction.

If the bone is broken into multiple pieces or displaced more than 2 mm but less than 5 mm, surgery may not offer extra benefit compared to conservative care. In these cases, your surgeon might still advise rest and gentle movement. For complex fractures that cannot be fixed with screws, your surgeon may recommend replacing the radial head with a metal implant. This is a safe and effective option for unreconstructible breaks.

Healing takes time. Bone typically takes several weeks to knit together. If you have surgery, you will start moving your elbow early to prevent stiffness. Most patients regain good function within weeks to months. For those with complex injuries, the goal is to restore stability. You can expect to return to daily activities as pain allows.

Return to work and sport varies by job demands. Light duties may resume quickly. Heavy manual labour or high-impact sports require more time. Your surgeon will guide you based on your specific healing progress. Most patients achieve satisfactory functional results in the long term.

There are risks to be aware of. Stiffness is common if movement is delayed. In some cases, the bone may heal slowly or in a slightly imperfect position. If you have a metal implant, there is a risk of loosening over many years. Radiographic signs of wear-and-tear arthritis are common after certain procedures, even when function remains good. Neurological complications are rare but possible.

For severe elbow dislocations involving the radial head, treatment is more complex. Your surgeon will address associated ligament injuries to ensure stability. Outcomes are generally similar whether the radial head is removed or replaced in these specific cases. However, revision surgery may be needed if complications arise.

Overall, the majority of patients report good long-term clinical outcomes. You should expect a gradual return to full use of your arm. Patience is key. Follow your surgeon's advice on activity levels to protect your healing elbow.

When to see someone

Seek urgent care if you have deformity, an open wound, numbness or tingling, or cannot use your arm. These signs may indicate serious damage needing immediate attention. If pain is not settling, or if swelling and movement are not improving week on week as healing progresses, see your GP or ask for a specialist review. Early assessment helps prevent complications like elbow instability. Your surgeon can determine if conservative management or further treatment is needed to support your recovery and restore function safely.

In more depth

This section goes further than you need for your own treatment decisions. A radial head fracture is worth the extra reading because the bone itself is often the least important part of the injury – what determines your result is usually whether anything else in the elbow was damaged at the same time.

THE FRACTURE IS A MARKER, NOT JUST AN INJURY

The radial head is a stabiliser. It stops the radius sliding up the forearm and it resists the elbow being pushed sideways. So a force large enough to break it is frequently large enough to damage the ligaments and the coronoid too – the combination known as the **terrible triad**: radial head fracture, coronoid fracture and elbow dislocation.

That is why an isolated, undisplaced radial head fracture and a radial head fracture as part of a triad are entirely different problems with the same name on the X-ray report. The first usually needs early movement and little else. The second is one of the more demanding reconstructions in upper-limb surgery.

Even the surgical approach for the triad is contested. Pooling **866** patients, a combined lateral plus anteromedial approach appeared to offer a favourable balance between functional outcome and complication risk, while purely anterolateral or anteromedial approaches offered advantages in some postoperative measures [1] – a comparison that would not still be open if one route were clearly superior.

FIX IT OR REPLACE IT

Where the head is broken but reconstructable, fixing it preserves your own anatomy. Where it is in too many fragments, replacement is generally preferred over attempting a fixation likely to fail – a failed fixation leaves a stiff, unstable elbow and a harder second operation.

When replacement is chosen, the design debate has been quieter than expected. Comparing monopolar with bipolar radial head prostheses across **591** patients found **no significant difference** in efficacy or safety, with the authors calling for higher-quality randomised trials [2].

That is a useful thing to know if you are told a particular implant is better. On current evidence the distinction has not been demonstrated.

WHY IMPLANTS GET REMOVED – AND IT IS NOT WHAT YOU WOULD GUESS

A meta-analysis of **1,017** radial head arthroplasties found that removal or revision peaked **within two years** of implantation, and that most removals were performed to manage **elbow stiffness and heterotopic ossification** rather than loosening of the implant [3].

So the implant usually is not the thing that failed. The elbow around it stiffened, and taking the metal out formed part of treating that. It reframes what “revision surgery” means here, and it explains why the rehabilitation after this operation matters more than the choice of prosthesis.

It also means published revision rates should be read with the follow-up length in mind. A separate review of **1,272** patients concluded the literature does not provide a reliable estimate of the re-operation rate, and recommended a minimum of **three years** of follow-up with an agreed definition of what counts as a reason for revision [4]. A study reporting twelve months will systematically miss the removals that cluster in the first two years.

THE THING TO PROTECT IS MOTION

The consistent thread is that the elbow’s characteristic failure is stiffness, not instability or implant failure. It is an unforgiving joint: it tolerates immobility badly and loses the last degrees of extension readily. Whatever is done to the bone, the months afterwards are what determine how the arm works.

REFERENCES

1. Zheng M, Wan W, Liang S. Which is the optimal surgical strategy for the terrible triad of the elbow? A systematic review and meta-analysis. J Orthop Surg Res. 2026;21(1).
2. Said E, Ameen M, Sayed AA, Mosallam KH, Ahmed AM, Tammam H. Efficacy and safety of monopolar versus bipolar radial head arthroplasty: a systematic review and meta-analysis. J Shoulder Elbow Surg. 2022;31(3):646-55.
3. Kachooei AR, Baradaran A, Ebrahimzadeh MH, van Dijk CN, Chen N. The rate of radial head prosthesis removal or revision: a systematic review and meta-analysis. J Hand Surg Am. 2018;43(1):39-53.e1.
4. Laumonerie P, Reina N, Kerezoudis P, Declaux S, Tibbo ME, Bonneville N, et al. The minimum follow-up required for radial head arthroplasty. Bone Joint J. 2017;99-B(12):1561-70.