

Proximal Humerus Fracture

X-ray showing a fracture at the top of the upper arm bone, just below the shoulder joint.

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What you're feeling

You likely felt a sudden, sharp pain in your shoulder after a fall or a direct impact. This injury often happens when you try to break your fall with an outstretched arm. You may have heard or felt a snap or pop at the moment of impact. The pain is usually immediate and intense.

Your shoulder will swell quickly. Bruising may appear on the upper arm or chest within the first few days. You might notice a change in the shape of your shoulder, making it look squared off or uneven. Moving your arm will be difficult and painful. You will likely hold your injured arm close to your body to protect it. Simple tasks like reaching for a cup or putting on a shirt will feel impossible right away.

In the first few days, pain may be worse at night, making it hard to sleep on that side. As healing begins over the next few weeks, the sharp pain will gradually settle into a dull ache. You may still feel stiffness and discomfort when you try to move your shoulder. For most people with one-part fractures, this initial phase is managed without surgery. Your surgeon will guide you through this early period to ensure the bone starts to heal in the right position.

What's actually happening

The top of your upper arm bone is a complex control volume. It connects to your shoulder joint and anchors key muscles. When you fracture this area, you are breaking the foundation of that movement system. Think of it like a cracked tripod leg. If one leg shifts out of place, the whole structure becomes unstable and cannot bear weight or move smoothly.

Your shoulder relies on precise alignment to work. Small shifts in the bone position change how the joint moves. Even a shift of 15 degrees can alter the mechanics significantly. This displacement affects your range of

motion and strength. The muscles pulling on the broken pieces can pull them further apart. This makes healing difficult without proper support.

Healing requires the bone to knit back together. For most one-part fractures, your body can heal this on its own. Nonoperative treatment leads to union rates greater than 90% in many cases. Your surgeon will guide you through this process. We focus on keeping the pieces stable while they fuse.

In more complex breaks, the bone fragments may not stay aligned naturally. Surgical options help hold the pieces in place. Locked plates and nails provide stable fixation. This allows the bone to heal in the correct position. For older patients with severe breaks, joint replacement may be necessary. This involves replacing the damaged bone surface with an artificial implant.

Reverse shoulder arthroplasty is a safe option for certain fractures. It demonstrates favourable medium- to long-term survivorship. The incidence of complications remains low. This approach restores function when the natural bone cannot be repaired. Proper technique is essential for success. We ensure the tuberosities, which are the attachment points for your rotator cuff, are managed carefully. If these do not heal correctly, it can limit your shoulder function.

Your recovery depends on how well the tissues heal. Bone knitting and tendon reattachment take time. Stiffness or rotator cuff tears can affect your outcome. We monitor your progress closely. Our goal is to restore your normal movement and strength.

What we can do about it

Dr Kieran Hirpara, an upper-limb surgeon at Mater Private Hospital Rockhampton, approaches this injury by matching the treatment to your specific fracture pattern and health needs. Most one-part fractures are stable and heal well without surgery. In these cases, we use a sling or splint to support your arm while the bone knits together. You will have repeat imaging to check the alignment. Nonsurgical management leads to union rates greater than 90%. For older adults, most fractures are treated this way with good functional outcomes. Children also heal well with non-operative care because their bones remodel quickly.

Surgery is recommended from the outset if your fracture is displaced, unstable, or involves multiple parts. We may suggest an intramedullary nail and plate system to hold the bone fragments in place. For older patients with complex three- or four-part fractures, we may recommend a reverse total shoulder replacement. This procedure aims to restore function and provide durable long-term results. The decision is shared. If non-operative care is an option but the pain or final arm position is unacceptable, surgery becomes the better choice for your quality of life.

Both paths share the same goals in the early weeks. You will need effective pain control to rest comfortably. We protect the injury while it heals, avoiding movements that could shift the bone. Once the initial healing phase passes, we guide you through staged physiotherapy to restore movement and strength. Short and long periods of immobilisation yield similar results for nonoperatively treated fractures, so we tailor the timeline to your comfort and healing progress.

What to expect

Your recovery path depends on your age, the fracture pattern, and whether you have surgery. Most one-part fractures heal well without an operation. For older adults, nonoperative treatment is common and often successful. If your fracture involves three or four parts, your surgeon may recommend surgery to restore function.

Healing takes time. Most proximal humerus fractures heal within a few months. If you have surgery, your surgeon will use plates, nails, or a joint replacement to hold the bone in place. You will wear a sling for a period of time to protect the repair. Short and long periods of immobilisation yield similar results for nonoperatively treated fractures. Your physical therapist will guide you through gentle movements to prevent stiffness.

Return to daily tasks varies. Most people resume light activities as pain allows. Return to work and sport depends on the nature of your job and your healing speed. Surgery for complex fractures leads to overall good long-term outcomes, though complication rates are higher than for simple breaks. You may experience stiffness or soreness for several months.

Be aware of potential complications. The rate of complications following operative treatment is high. These can include slow healing, nonunion (where the bone fails to knit), or healing in a poor position. Infection and nerve irritation are also possible risks. For older patients, surgery carries an increased risk of major adverse events during hospitalization.

Mortality risk is a serious consideration for fragility fractures in older adults. Proximal humeral fractures confer a more than two-fold increase in mortality at 1 year (9.8%). This risk continues to increase to 28.2% mortality at 5 years. This statistic reflects the overall health burden of such injuries in the elderly population, not a direct result of the fracture itself.

Most paediatric patients have favourable results with infrequent complications. For adults under 65, the clinical benefit of surgery over nonoperative management is not always clear. Your surgeon will discuss which path offers the best chance for you to regain strength and mobility. Follow your specific post-operative instructions closely to support your healing journey.

When to see someone

Seek urgent care if you have visible deformity, an open wound, numbness or tingling, or cannot use your arm. These signs need immediate assessment.

If pain is not settling, or if swelling, movement, and function are not improving week on week as healing progresses, see your GP. They can arrange a specialist review. Most simple fractures heal well without surgery, but persistent issues need checking. Your surgeon will guide you based on how your arm is recovering. Do not wait if symptoms worsen. Early advice helps prevent long-term stiffness or disability.

In more depth

This section goes further than you need for your own treatment decisions. A broken shoulder in later life is worth the extra reading because it is one of the clearest cases in orthopaedics where the evidence and everyday practice have not agreed – and where the treatment that sounds more serious is not the one that produces the better arm.

FOR MOST OLDER PATIENTS, AN OPERATION DOES NOT IMPROVE THE RESULT

The comparison has been made repeatedly. Pooling **1,743** patients, a systematic review recommended **non-operative treatment for the average patient over 65 with a displaced proximal humeral fracture**, noting that the pooled effects of observational studies matched those of the randomised trials [1]. An earlier review of **486** patients had already found no demonstrable difference in outcomes between fractures managed surgically and conservatively [2].

This is counterintuitive, because the X-ray of a displaced proximal humerus fracture looks alarming. The bone is in several pieces and clearly out of position. The instinct – the patient's and often the clinician's – is that something so visibly wrong must be put right.

What the trials show is that the shoulder is unusually forgiving of imperfect bony position. It is not a weight-bearing joint, the surrounding cuff and deltoid do much of the work, and the fragments are held by soft tissue that keeps a blood supply to them. A shoulder that heals slightly crooked frequently ends up moving and feeling much like one that was fixed – and it gets there without a wound, an implant, or the risks below.

THE TRIAL CHANGED THE EVIDENCE AND NOT THE PRACTICE

This is the part worth sitting with. PROFHER was the large randomised trial that tested surgery against non-operative treatment for displaced proximal humerus fractures and found no benefit from operating.

A study of **116,868** patients then asked whether practice actually changed after it was published. It did not: **PROFHER did not significantly impact rates of operative treatment**, with no significant change in the rate of operative treatment per year [3].

That is a finding about medicine rather than about your shoulder, and it is a reasonable thing for a patient to know. If you are offered an operation for this fracture, the right question is not whether surgery is ever appropriate – sometimes it clearly is – but what specifically about *your* fracture and *your* arm puts you outside the group in whom it has not been shown to help.

WHEN SURGERY IS CHOSEN, THE OPERATION HAS SHIFTED

None of the above means surgery is never right. Head-splitting fractures, fracture-dislocations, open injuries and younger patients with high demands are all different propositions.

Where an operation is done in an older patient, the field has moved decisively toward reverse total shoulder replacement. Pooling **228,523** patients, reverse total shoulder arthroplasty offered better functional outcomes and complication rates than hemiarthroplasty, and a more favourable revision profile than plate fixation, in elderly patients with these fractures [4].

CQ HAND + UPPER LIMB

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The logic is that a reverse replacement does not depend on the tuberosities healing in good position, and tuberosity healing is precisely what is unreliable in an osteoporotic shoulder. It removes the variable that made the older operations unpredictable.

WHAT ACTUALLY PREDICTS YOUR RECOVERY

Not, mostly, the fracture pattern. A systematic review of **4,323** patients examining biopsychosocial predictors of recovery found that **pre-operative functional status** – how well the arm and the person were working before the injury – predicts functional recovery [5].

That is worth understanding correctly. It does not mean recovery is a matter of attitude. It means the strongest single predictor of where you end up is where you started, which is an argument for realistic expectations, and for taking the rehabilitation seriously in the months when the shoulder feels stiff and progress feels invisible.

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