

Elbow Instability

Ligaments of the elbow — the ulnar and radial collateral ligaments are the main stabilisers.

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What you're feeling

You may feel like your elbow is slipping out of place or giving way. This sensation often happens when you reach for objects or push yourself up from a chair. The pain can be sharp and sudden, or a dull ache that lingers after use. You might notice swelling around the joint, making it feel tight and stiff.

If you have lateral collateral ligament instability, the pain is usually on the outside of your elbow. You may struggle with simple tasks like turning a doorknob or lifting a grocery bag. Your forearm might feel weak when you try to rotate it, such as when using a screwdriver or opening a jar. Many patients report that these symptoms flare up after activity or at night, disrupting sleep.

In more complex cases, the instability involves multiple directions. You might feel pain on both the inner and outer sides of the joint. This can make basic movements difficult, like brushing your teeth or combing your hair. You may also experience stiffness, limiting how far you can bend or straighten your arm. In demanding cases, treatments can be challenging, and some patients continue to feel pain or stiffness long after the initial injury.

If you have refractory lateral epicondylitis, also known as tennis elbow, you might notice that instability symptoms coexist with persistent pain on the outer bump of your elbow. This can make gripping objects painful and difficult. You may find that even light pressure on this area causes discomfort. In some cases, over 85% of patients with this condition also have internal joint abnormalities that contribute to the feeling of instability.

For children, posterolateral rotatory instability might be masked by stiffness or contracture. You might not notice the instability immediately, but radiographs could show signs of joint misalignment. As you grow or become more active, the symptoms may become more apparent, affecting your ability to play sports or perform daily tasks.

If you have had a simple elbow dislocation, you might feel a sense of unease or fear that the joint will dislocate again. This anxiety can limit your confidence in using your arm. While many patients recover well with

conservative treatment, some continue to experience occasional instability or discomfort during specific movements.

Your surgeon will assess these symptoms through a detailed clinical examination and sequential radiographic follow-up. This helps distinguish between healthy hypermobility and true instability. Understanding what you are feeling is the first step toward effective treatment and restoring your confidence in your elbow.

What's actually happening

Your elbow is a hinge joint that relies on a precise balance between bones and soft tissues to stay stable. Think of it like a door hinge that needs both strong metal pins and tight hinges to swing smoothly without wobbling. In your elbow, the bones act as the frame, while ligaments and muscles provide the tension that keeps everything aligned.

When you suffer an injury, these stabilising structures can stretch or tear. This is often described as instability. The ligaments that normally hold your joint in place may become loose or damaged. Without this support, your elbow bones can shift out of their normal position. This shifting causes the pain, swelling, and feeling of the joint giving way that you experience.

The problem is rarely just one broken part. Complex instability usually involves both the bones and the ligaments working together to fail. For example, if the lateral collateral ligament complex is damaged, your elbow may rotate abnormally. This is known as rotatory instability. It can happen in different directions, such as posterolateral or posteromedial patterns. Your surgeon must address all directions of instability to restore full function.

Sometimes, the bone itself is involved. If a piece of bone breaks or wears down, it changes how the joint surfaces fit together. This can lead to abnormal pressure and further instability. In severe cases where the joint is too damaged, replacement options may be considered. However, for most patients, the goal is to repair or reconstruct the torn ligaments and stabilise the bones.

Understanding this mechanical failure helps explain why treatment takes time. The tissues need to heal and strengthen to regain their role as stabilisers. Your surgeon will guide you through this process to ensure your elbow regains its natural movement and strength.

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 begin by understanding how your elbow moves and what causes the instability. For simple dislocations, we use detailed clinical assessments and regular X-rays to track your progress. Most patients who try conservative treatment for simple dislocations achieve good functional results. We focus on restoring the balance between the static structures that hold your joint together and the dynamic muscles that move it.

We usually recommend non-operative care for degenerative or long-standing problems. This includes changing your daily activities, physiotherapy, splinting, and injections. Physiotherapy aims to strengthen the muscles around your elbow to support the joint. You may be given pain medication or anti-inflammatories to manage discomfort. Injections such as cortisone can reduce inflammation, while hyaluronic acid or platelet-rich plasma (PRP) may help lubricate the joint or promote healing. These treatments provide symptom relief, but the duration of effect varies depending on your individual response and the severity of the instability. We monitor your progress closely. If healing does not occur within a reasonable time, we may use an MRI to check for cartilage damage.

Surgery is considered when conservative care has not given enough improvement, or for structural and acute problems where it may be recommended straight away. We address instability by repairing or reconstructing the ligaments that stabilise your elbow. For complex cases involving both directions of instability, we ensure both sides are treated to restore stability. Ligament repair with suture-tape augmentation or tendon grafts can provide acceptable functional outcomes. All patients in our series treated for lateral collateral ligament instability had resolution of their symptoms and regained a near full arc of elbow flexion and forearm rotation. Despite progress in surgical techniques, treatments for elbow instability remain challenging, with high rates of persistent instability, post-traumatic arthritis, stiffness, and pain in demanding cases. We discuss these risks openly so you can make a shared decision about your care.

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 outlook depends largely on whether your elbow instability is simple or complex. Simple dislocations often settle well with careful monitoring and non-surgical care. Most patients see their symptoms resolve and regain a near full range of movement in the elbow and forearm.

Complex instability involves more significant damage to the bones and ligaments that hold your joint together. This type is more challenging to treat. Even with advanced surgical techniques, outcomes can vary. Some patients experience persistent instability, stiffness, pain, or wear-and-tear arthritis in the long term. The long-term results of surgery for these complex injuries are not yet fully known.

If you have minor lateral elbow instability, you may find relief through specific procedures that tighten the supporting ligaments. Many patients report satisfaction and positive results at two years. For more severe cases, such as combined rotatory instability, surgery typically addresses both sides of the joint to restore stability. Ligament repairs using suture-tape augmentation generally offer acceptable functional outcomes. The need for further surgery is comparable to other joint stabilization procedures.

Recovery is a gradual process. You should expect a period where your elbow needs protection while the tissues heal. In demanding cases, the path to full function can be difficult. It is important to understand that while many people regain good use of their arm, some may continue to experience limitations or discomfort. Your surgeon will guide you through this journey, ensuring your treatment plan matches the specific nature of your injury.

When to see someone

Ask for a specialist review if you experience persistent pain not improving with rest, or if your elbow feels weak, unstable, or locks. Symptoms that interfere with sleep or work warrant prompt attention. Seek immediate care for sudden worsening after an injury, as acute dislocations often involve widespread ligament damage. Complex instability involves important bone and ligament stabilizers that function in synchrony to prevent joint movement issues. Simple dislocations may resolve with conservative care, but detailed clinical assessment and sequential radiographic follow-up are essential. Sonography cannot objectively distinguish between healthy and hypermobile joints, making a complete clinical history and examination vital for accurate diagnosis.

In more depth

This section goes further than you need for your own treatment decisions. It is here because “elbow instability” covers several quite different problems with quite different outlooks, and because the single biggest influence on how a simple dislocation ends up is a decision made in the first fortnight – one where the evidence and the instinct to protect the joint point in opposite directions.

“ELBOW INSTABILITY” IS NOT ONE DIAGNOSIS

The term covers everything from a joint that has dislocated once and is now stable, to a joint that gives way on everyday tasks, to a fracture-dislocation where bone as well as ligament has failed. Surgeons have been trying to classify these patterns for well over a century, and still disagree: a review of 130 years of attempts concluded that “uncertainties about both nomenclature and classification still exist”, and prompted a national society working group to try again [1].

This matters to you for one practical reason. When you read outcome figures for “elbow instability”, they may describe a group of patients whose injuries were nothing like yours. The distinction that matters most is **simple** (ligaments only) versus **complex** (ligaments plus broken bone) – those two travel very different paths.

THE TWO DIRECTIONS THAT HAVE NAMES: PLRI AND PMRI

Beyond simple versus complex, the pattern that determines the operation is the *direction* the joint gives way. Two named patterns account for most of it [1].

Posterolateral rotatory instability (PLRI) is the common one, and it is what most people mean by “unstable elbow”. It is the pattern produced by the usual injury: a fall onto the outstretched hand loading the elbow with the forearm turning outwards. The damage runs in a circle around the joint, starting at the **lateral ulnar collateral ligament** on the outer side and progressing forwards and backwards around the capsule, reaching the inner ligament last. Because it begins laterally, the first stage is a subluxation rather than a full dislocation, and the outer ligament is the structure that has to be repaired or reconstructed to fix it. When you read earlier in this section about lateral ligament reconstruction and its 0–33% recurrence range, that is PLRI being treated.

Symptomatically it is the pattern that makes you wary of pushing up out of a chair or loading the arm with the palm turned up – positions that let the joint rotate open.

Posteromedial rotatory instability (PMRI) is less common, easier to miss, and less forgiving. The mechanism is the opposite – a varus (inward-bending) force with the forearm rotating inwards – and it damages the outer ligament while shearing off the **anteromedial facet of the coronoid**, a small shelf of bone on the inner front of the ulna that the joint leans on.

That fragment is the problem. Anatomical work shows that on average **58% of the anteromedial facet is unsupported** by the bone shaft behind it, so it fractures as a separate piece and is easily overlooked on a plain X-ray [2]. Missing it is costly: the joint is left slightly malaligned and grinds. One report described established **arthrosis just 26 months** after the injury in an elbow whose instability had not been addressed [3]. This is why a CT scan is often requested when the injury pattern suggests it, and why a coronoid fragment that looks small can still warrant fixation.

The practical point for you: these are different injuries needing different operations, and “my friend had an unstable elbow and had X done” may not transfer to your elbow at all.

THE FIRST TWO WEEKS MATTER MORE THAN ALMOST ANYTHING ELSE

The instinct after a dislocation is to protect the joint in a cast or a brace. The elbow punishes that instinct. It is unusually prone to stiffening, and the stiffness is roughly proportional to how long it was held still.

One review put numbers on it: after a simple dislocation, a permanent loss of full straightening of **at least 30 degrees** may be expected if immobilisation runs beyond **25 days** – but as little as **3 degrees** if the elbow is moving again within **five days** [4]. That is close to the whole difference between an elbow you forget about and one you notice every day.

A randomised trial (FuncSiE) tested this directly, comparing early movement against three weeks in plaster for simple dislocations. At six weeks the early-movement group had a noticeably larger arc of motion (121° versus 102°), less disability, and returned to work **10 days versus 18**. By one year the two groups were indistinguishable – and, critically, **no elbow in either group re-dislocated** [5]. The protection bought by the plaster was protection against a risk that did not materialise, paid for with stiffness and lost weeks.

This is why your rehabilitation starts early and why a simple sling is used for comfort rather than a hinged brace holding the joint in a fixed arc.

SIMPLE DISLOCATIONS DO WELL – WITH AN HONEST ASTERISK

Most simple dislocations recover without an operation. But “most” is not “all”: roughly **8%** of people treated non-operatively go on to have symptoms of persistent instability, and about **2%** eventually need surgery [6]. A small number of injuries that look simple on the day behave badly afterwards, which is why we review you rather than discharging you at the first sign of a reduced joint.

“TERRIBLE TRIAD” IS A WORSE NAME THAN IT IS AN INJURY

The combination of elbow dislocation with fractures of the radial head and the coronoid was named the “terrible triad” because its early results were dismal. Modern results are much better: a review pooling 37 studies and 1609 patients found an average Mayo Elbow Performance Score of **90 – rated excellent** [7].

The honest half of that sentence is the complication rate, which is not low. Around **30%** of patients have some complication, and **7.8%** need further surgery. The commonest are extra bone forming in the soft tissues (**11%**) and ulnar nerve symptoms (**2.6%**) [7]. So: a good result is now the expectation rather than the hope, but this is an injury with a genuine chance of a second operation, and it is reasonable to know that before you start.

WHEN LIGAMENT SURGERY DOES NOT HOLD, BONE IS OFTEN THE REASON

Repair or reconstruction of the lateral ligament is well established for the commonest pattern of chronic instability. Reported recurrence after it, though, ranges from **0% to 33%** – a spread wide enough to tell you the operation is not the only variable [8].

Part of the explanation is that instability is not always purely a soft-tissue problem. Wear or defects in the bone at the outer side of the joint can keep an elbow unstable even after the ligament has been properly reconstructed, and combined bony lesions act together to raise the risk of failure [8]. Revision surgery is correspondingly harder: the only published series of revision lateral ligament reconstruction reported a **27%** failure rate [8]. The practical implication is that if your elbow stays unstable after a ligament repair, the next question is usually about bone, not about redoing the same soft-tissue operation.

HOLDING THE JOINT REDUCED FROM THE INSIDE

For elbows too unstable to trust to a repair alone, the traditional answer was an external hinged frame worn on the outside of the arm for weeks. An alternative is an **internal joint stabiliser** – a temporary internal device that holds the joint reduced while the soft tissues heal, and is removed later. It allows the elbow to move through a good arc while protected, with the original series reporting a mean flexion of 134 degrees at final follow-up [9].

The reason this approach is preferred here is the same principle as the rest of this page: protection that still permits movement beats protection that prevents it.

REFERENCES

1. Marinelli A, Guerra E, Rotini R. Elbow instability: are we able to classify it? Review of the literature and proposal of an all-inclusive classification system. *Musculoskelet Surg.* 2016;100(Suppl 1):61-71.
2. Doornberg JN, de Jong IM, Lindenhovius AL, Ring D. The anteromedial facet of the coronoid process of the ulna. *J Shoulder Elbow Surg.* 2007;16(6):667-70.
3. Ramirez MA, Stein JA, Murthi AM. Varus posteromedial instability. *Hand Clin.* 2015;31(4):557-63.
4. Martin BD, Johansen JA, Edwards SG. Complications related to simple dislocations of the elbow. *Hand Clin.* 2008;24(1):9-25.
5. Iordens GIT, Van Lieshout EMM, Schep NWL, De Haan J, Tuinebreijer WE, Eygendaal D, et al. Early mobilisation versus plaster immobilisation of simple elbow dislocations: results of the FuncSiE multicentre randomised clinical trial. *Br J Sports Med.* 2017;51(6):531-8.
6. Robinson PM, Griffiths E, Watts AC. Simple elbow dislocation. *Shoulder Elbow.* 2017;9(3):195-204.
7. Stambolic T, Desai V, Bicknell R, Daneshvar P. Terrible triad injuries are no longer terrible! Functional outcomes of terrible triad injuries of the elbow: a systematic review. *JSES Rev Rep Tech.* 2022;2(2):214-8.
8. O'Driscoll SW, Chaney GK. Preoperative and operative risk factors for failed lateral collateral ligament reconstruction. *JSES Int.* 2023;7(6):2578-86.
9. Orbay JL, Mijares MR. The management of elbow instability using an internal joint stabilizer. *Clin Orthop Relat Res.* 2014;472(7):2049-60.

CQ HAND + UPPER LIMB

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