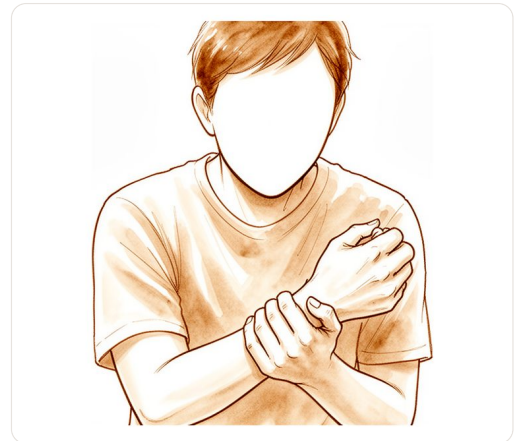


Wrist Ligament Injuries

The scapholunate ligament holds the scaphoid and lunate bones together. When it tears, those two bones drift apart and the wrist starts to wear unevenly.

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What you're feeling

You may notice pain in specific areas of your wrist, often linked to the ligaments that hold your small hand bones together. This discomfort can feel sharp or achy. It might flare up when you twist your wrist or push against a surface. You might also feel a sense of instability, as if your wrist could give way under pressure.

Some people experience a clicking or snapping sensation. This can happen when scar tissue rubs against the ligaments on the back of your wrist. The sound or feeling may be more noticeable when you move your wrist through its full range. In some cases, this snapping causes significant pain that limits how you use your hand.

Nerve symptoms can also occur. You might feel tingling, numbness, or weakness in your hand and fingers. This often points to pressure on the nerves that run through your wrist. If the pressure is severe, it can make it hard to grip objects or perform fine movements. You might drop things more easily or find it difficult to open jars.

Daily tasks may become challenging. Simple actions like turning a key, lifting a kettle, or typing on a keyboard can trigger pain. You might find it harder to support your weight when doing push-ups or leaning on your hands. Nighttime pain is also common, which can disrupt your sleep and leave you feeling tired the next day.

If you have a complex injury involving multiple bones or ligaments, the symptoms may be more severe. You might experience swelling and stiffness that makes it difficult to bend your wrist fully. In some cases, the pain persists even when you are resting. It is important to listen to your body and avoid activities that worsen the pain.

Your surgeon will assess these symptoms to determine the best course of action. Treatment may involve rest, physiotherapy, or surgery depending on the severity of the injury. Early diagnosis and appropriate management can help reduce pain and improve your wrist function.

What's actually happening

Your wrist is a complex joint held together by strong bands of tissue called ligaments. Think of these ligaments like the ropes on a suspension bridge. They keep the small bones in your wrist aligned and stable as you move. When you injure your wrist, one or more of these ropes can stretch, tear, or completely snap. This is often called a ligament injury.

The most common areas for this damage are the triangular fibrocartilage complex (TFCC), the scapholunate (SL) ligament, and the lunotriquetral (LT) ligament. The TFCC acts like a shock absorber or gasket on the side of your wrist near your little finger. The SL and LT ligaments act as stabilisers between the central wrist bones. If these structures are damaged, the bones can shift out of place. This instability causes pain, weakness, and a feeling that your wrist might give way.

Diagnosing these injuries can be tricky. An MRI scan is a common test, but it has limits. A negative MRI result cannot rule out clinically relevant injuries to the TFCC, SL ligament, or LT ligament. This means you can have a significant injury even if the scan looks normal. Because of this, your surgeon will rely on a combination of clinical examination, imaging, and sometimes direct visual inspection using a small camera (arthroscopy) to confirm the diagnosis. Early and accurate diagnosis is essential to prevent long-term wear-and-tear arthritis in the joint.

If the injury is chronic or severe, the bones may not stay aligned on their own. In some cases, surgical repair is needed to tighten or reconnect the ligaments. For specific types of instability, your surgeon might consider procedures like radioscapolunate arthrodesis. This involves joining two bones together using compression screws and bone graft to create a stable, pain-free unit. In a reported series, this approach achieved a 100% union rate at a mean follow-up of 12 months with no complications.

For others, arthroscopic dorsal capsuloligamentous repair can help. This minimally invasive technique repairs the torn ligaments from the outside. In a series of 36 patients, this procedure provided pain relief, allowed recovery of grip strength, and had a low incidence of postoperative wrist stiffness. Notably, all professional athletes in this series returned to preinjury sports levels. Your treatment plan will depend on the specific ligaments involved and the stability of your wrist joint.

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 helping you manage pain and protect the injured ligaments in your wrist. You might use a splint to limit movement and allow healing. Physiotherapy focuses on restoring strength and flexibility without causing further strain. We usually recommend trying this conservative approach for several weeks to see if your symptoms improve.

If simple measures are not enough, we may discuss medical management to help control pain and inflammation. This can include over-the-counter pain relief or anti-inflammatory medications. In some cases, we might suggest an injection into the wrist joint. Cortisone injections can reduce swelling and pain for a

limited time. Hyaluronic acid or platelet-rich plasma (PRP) injections are other options that may support tissue health. These treatments aim to give you relief while your body heals or while you prepare for further steps.

We consider surgery when non-operative care has not given enough improvement, or if your injury is structural and acute. Surgical options depend on the specific ligaments involved and the stability of your wrist bones. For example, we might repair torn ligaments arthroscopically or fuse certain bones to restore stability. Outcomes vary, but some procedures show high success rates, such as a 100% union rate for specific bone fusions at 12 months. 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. A clinic assessment, including examination and imaging, helps us decide the best path for you.

What to expect

Your outlook depends largely on which ligaments are involved and how long you have had symptoms. For many people with chronic tears, such as those in the scapholunate ligament, treatment can provide significant pain relief and help you regain grip strength. In studies of patients undergoing arthroscopic repair for these chronic tears, all professional athletes returned to their pre-injury sports levels. You can also expect a low incidence of postoperative wrist stiffness with this approach.

If you have snapping sensations in your wrist, removing thickened scar tissue often leads to complete resolution of symptoms. For instability on the palm side of the wrist, reconstruction using your own tissue has shown lasting symptom relief and improved outcomes at an average of 34 months after surgery. Similarly, reconstruction of the ulnar collateral ligament provides good patient-reported outcomes with low complication rates at medium-term follow-up.

It is important to know that imaging is not always definitive. A negative MRI result is unable to rule out clinically relevant injury to the triangular fibrocartilage complex, the scapholunate ligament, or the lunotriquetral ligament. This means symptoms may persist even if scans appear normal, and further assessment may be needed.

In more complex cases, such as when bone fusion is required for a preserved midcarpal joint, radioscapolunate arthrodesis achieved a 100% union rate with no complications in appropriately selected patients at a mean follow-up of 12 months. However, revision procedures are technically demanding. If you require revision wrist replacement, it is best performed with multidisciplinary team input in a specialist centre.

While most patients experience improvement, some may face challenges. Nerve injury is a known complication in certain revision elbow procedures, with the ulnar nerve being the most frequently involved. For wrist issues, secondary surgery is not always required; in one series of ten patients undergoing anatomical reconstruction for scapholunate dissociation, no patient required secondary surgery or treatment related to carpal stabilization. Your surgeon will discuss which path offers the most realistic chance of returning to your daily activities and hobbies.

When to see someone

See your GP if you have persistent wrist pain that does not improve with rest. Ask for a specialist review if you notice weakness or instability in your wrist. Seek care if your wrist locks or gives way during movement. You should also consult a doctor if symptoms interfere with your sleep or work. Sudden worsening of pain is another reason to seek help. These signs may indicate a ligament injury that needs proper assessment. Early evaluation helps prevent long-term issues. Your surgeon can guide you on the best next steps for your specific situation.

In more depth

This section goes further than you need for your own treatment decisions. Carpal ligament injuries are worth the extra reading because they include the wrist injury most often missed in an emergency department – one where the bones have visibly dislocated and the X-ray can still be read as normal.

THE PERILUNATE DISLOCATION AND WHY IT IS MISSED

The carpus is a ring of ligaments around the lunate. A high-energy fall can rupture that ring sequentially, so the rest of the carpus dislocates around a lunate that stays in place – or, further along the same spectrum, the lunate itself is extruded forwards.

It is missed because of how it appears on a standard film. On the front-facing view the bones remain roughly in their normal outline and simply lose their orderly arcs; the dislocation is obvious only on the side view, where the lunate tips out of line with the radius and capitate. In a swollen, painful wrist after a fall, with attention on excluding a distal radius fracture, that side view can be under-scrutinised.

The consequence of missing it is serious and time-dependent: the carpus stays dislocated, the ligaments scar in the wrong position, and the blood supply to the lunate is at risk.

OPERATIVE TREATMENT, AND THE QUESTION OF THE NERVE

Where an acute perilunate injury is treated surgically, the technique comparison across **880** patients found closed techniques may produce a smaller post-operative scapholunate gap and better wrist flexion-extension and functional scores than open surgery – though the authors are careful to note these findings may reflect **different cohorts in terms of injury severity**, leaving the causal relationship uncertain [1].

That caveat is important. Less severe injuries are more amenable to closed treatment, so a comparison of this kind partly measures which injuries were selected rather than which technique is better.

A second question is what to do about the median nerve, which runs immediately in front of the displaced lunate and is often compressed acutely. There is a **lack of consensus**, arising from few studies with small samples, with the authors proposing carpal tunnel release **only where median nerve symptoms are present at the time of surgery** [2] – rather than routinely.

THE INSTABILITY THAT IS NOT FROM AN INJURY AT ALL

Not every unstable wrist has been damaged. Palmar midcarpal instability occurs in people with generally lax ligaments, where the carpus clunks as the wrist moves from a neutral position into ulnar deviation, often without any injury preceding it.

The evidence for treating it non-operatively is limited to case reports and expert opinion, but **proprioceptive awareness and neuromuscular rehabilitation show promise** on the basis of analogous evidence in other joints, and are recommended as the first approach [3].

That reasoning by analogy is worth flagging as exactly that. It is, however, mechanically coherent: where ligaments are constitutionally lax, the muscles crossing the joint are the only remaining means of controlling it, and training their timing is the available intervention. This also explains why surgery is approached cautiously here – tightening ligaments in someone whose tissue is lax everywhere tends not to hold.

THE REST OF THE PICTURE

Scapholunate ligament injury, the commonest and most consequential of the carpal ligament problems, is covered on its own page, as is the arthritic pattern that follows an untreated one. Lunotriquetral injury – the equivalent tear on the little-finger side – produces ulnar-sided pain and a clunk, and is discussed alongside the other causes of pain in that region.

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