

Scapholunate Ligament Injury

Scapholunate ligament injury usually follows a fall onto an outstretched hand, with pain felt on the back of the wrist.

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What you're feeling

Most people first notice this after a fall onto an outstretched hand, the classic catch-yourself fall that also breaks wrists. There is pain on the back of the wrist, usually a little towards the thumb side, and it tends to be worse when you push, grip, or bear weight through the hand: doing a push-up, pressing up out of a chair, opening a heavy door, lifting a kettle.

The wrist often feels weak and unreliable. Some people describe a click, clunk or catching sensation when they move it a certain way, as though something inside is shifting. There may be a bit of swelling, and the spot right on the back of the wrist between two of the small wrist bones is often tender to press. Early on it can be easy to brush off as a sprain that “just won’t settle”, and that is exactly the trap: the ligament involved does not heal on its own.

What's actually happening

Your wrist is a cluster of eight small bones held in precise alignment by short, strong ligaments. One of the most important is the **scapholunate ligament**, which ties together two of those bones (the scaphoid and the lunate) in the middle of the wrist. It works like the keystone that keeps the whole carpus moving as a coordinated unit.

When that ligament is torn, the two bones lose their link. The scaphoid tips forward and the bones start to drift out of their normal alignment. At first this may only show up when the wrist is stressed in a certain position (a “dynamic” problem); over time the gap can become fixed (a “static” problem). The reason we take this seriously even when the pain is modest is the long game: a wrist whose bones no longer line up correctly wears unevenly, and over a span of years that abnormal loading can grind down the cartilage and lead to a specific pattern of wrist arthritis. Treating the ligament early is really about heading that off.

What we can do about it

Dr Kieran Hirpara is an upper-limb surgeon at Mater Private Hospital Rockhampton who guides how we manage this condition in our clinic. 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. That lets us start with a thorough assessment of your history, examination, and imaging. For long-standing problems, we typically try non-operative care first and consider surgery only when that has not helped enough.

The right treatment depends a lot on **how long ago the injury happened** and **whether the bones still line up**, which is why getting an accurate diagnosis matters. We usually combine an examination with X-rays (sometimes special “stress” views taken while you clench your fist), and often an MRI. The most reliable way to see the ligament directly is a **wrist arthroscopy** (keyhole camera surgery), which doubles as both the definitive diagnosis and, in many cases, the treatment.

- **Recent injuries** where the ligament can still be repaired are the best scenario. The torn ligament is stitched back down (increasingly through keyhole techniques), sometimes reinforced with nearby tissue, and the bones are held in position with temporary wires while it heals.
- **Older injuries** where the ligament can no longer be simply repaired, but the bones can still be coaxed back into line, are usually treated by **rebuilding** the ligament. Surgeons use a strip of one of your own tendons, or nearby tissue, woven into place to restore the link and pull the scaphoid back upright.
- **Long-standing injuries** where the bones are stiff in a bad position, or arthritis has already set in, are past the point of repair or rebuild. Here we shift to **salvage operations** that aim to give you a strong, much less painful wrist, by fusing or removing selected small bones, accepting some loss of movement in exchange for durable comfort.

Mild, incidental cases that aren't causing trouble can sometimes simply be watched, with hand-therapy to build up the muscles that help stabilise the wrist.

What to expect

This is a wrist injury that rewards being caught early. When a fresh tear is repaired or a reducible one is rebuilt, the goal is a stable, comfortable wrist that lets you return to most activities, though it is normal to lose a little of the extreme range of movement, and recovery is measured in months, not weeks. After surgery you can expect a period in a cast or splint while the repair takes, followed by a structured hand-therapy programme to regain movement and strength. Wires, if used, are usually removed in the rooms after several weeks.

The honest part: no operation makes the wrist exactly as it was, and results are generally better the sooner the injury is treated. If you have reached the salvage stage, the trade-off is real but worthwhile: far less pain and a wrist you can rely on, at the cost of some stiffness. What matters most is matching the operation to your particular injury, which is a conversation worth having properly.

When to see someone

- A wrist that **stays painful, weak or “clicky” more than a few weeks** after a fall, especially pain on the back of the wrist with pushing or gripping. Don't assume a stubborn “sprain” is harmless.
- You've **broken your wrist (a distal radius fracture)** and the wrist remains sore or unstable after the bone has healed. These ligament injuries often travel together and can be missed.
- A persistent **clunk, catch or sense of the wrist giving way**.
- Known scapholunate injury with **new or increasing pain, or swelling that won't settle**: worth reassessing before it progresses.

In more depth

This section goes further than you need for your own treatment decisions. Scapholunate ligament injury is worth the extra reading because it is the wrist injury where the gap between how serious the problem is and how good the solutions are is widest – and the literature says so plainly.

WHY A SMALL LIGAMENT MATTERS SO MUCH

The scaphoid and lunate sit side by side in the first row of carpal bones, bound by a short interosseous ligament. They are shaped to want to rotate in opposite directions under load – the scaphoid to flex, the lunate to extend – and the ligament is what holds them together against that tendency.

When it fails, the two bones separate and rotate away from each other. Because the whole carpus moves as a linked system, that changes how load crosses the wrist, and the altered contact progressively wears the joint in a recognised sequence – the scapholunate advanced collapse pattern.

This is the crucial point for a patient: an untreated complete tear is not a stable situation that either settles or does not. It is the first stage of a predictable arthritic process, and that is what justifies attention to an injury which may not be especially painful at the outset.

THE RECONSTRUCTIONS HAVE NOT BEEN SEPARATED

For chronic injury, many operations exist, which is itself informative. Comparing techniques for chronic scapholunate interosseous ligament disruption across **978** patients, **tenodesis reconstruction produced significantly improved scapholunate gap and angle relative to capsulodesis** on radiographic measures, with the existing data showing some benefit for tenodesis [1].

But radiographic improvement is not the same as clinical superiority, and the broader review is blunt. For chronic non-arthritic scapholunate dissociation across **342** patients, heterogeneity in data collection, a lack of comparative studies and short follow-up meant **no conclusion regarding the superiority of any single technique was possible** – with the authors calling for longer-term comparative studies and natural history studies [2].

THE MISSING NATURAL HISTORY IS THE REAL GAP

That last request is unusual and worth dwelling on. Asking for natural history studies means the field does not reliably know what happens to an untreated scapholunate injury – how many progress to arthritis, over what timescale, and which ones.

Without that, the benefit side of the equation cannot be quantified. We know the arthritic sequence occurs; we do not know the proportion in whom it does, or how fast. Any statement that reconstruction “prevents arthritis” is therefore an extrapolation from mechanism, not a demonstrated outcome.

Two things follow. Timing matters – a ligament repaired early, while the tissue is still repairable and the bones still reduce, is a different proposition from a reconstruction years later. And a recommendation here rests more on the individual findings than on trial evidence, because the trial evidence to appeal to does not yet exist.

WHERE THE PROCESS HAS ALREADY ADVANCED

Once arthritis has developed, the reconstructive question closes and a salvage decision opens instead – most commonly between removing the proximal row of carpal bones and fusing four of them. Those options, and the evidence comparing them, are covered on the SLAC/SNAC wrist page rather than here.

REFERENCES

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2. Naqvi Z, Khor WS, Mishra A, Lees V, Muir L. The management of chronic non-arthritic scapholunate dissociation: a systematic review. *J Hand Surg Eur* Vol. 2017;43(4):394-401.