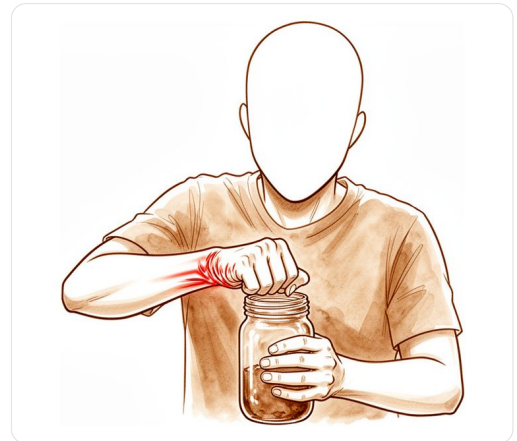


SLAC and SNAC Wrist

The stages of SLAC and SNAC wrist arthritis.

Kieran Hirpara © ⓘ ⓘ 4.0



What you're feeling

You likely feel a deep, aching pain in the side of your wrist, near the base of your thumb. This area is where your scaphoid bone sits. The pain often starts gradually and worsens as the wear-and-tear arthritis progresses. You may notice stiffness when you first wake up in the morning. It can take some time for your wrist to loosen up as you start your day.

Simple daily tasks become difficult because they require twisting or bearing weight through your hand. Opening a jar, turning a key, or pushing yourself up from a chair can trigger sharp pain. You might find it hard to grip objects firmly, such as holding a coffee mug or using a screwdriver. Even light activities, like typing or carrying a shopping bag, can cause discomfort that lingers for hours afterwards.

The pain often flares up after you have been using your hand for a while. You may also feel it at night, especially if you roll onto that arm while sleeping. This can disrupt your rest and leave you feeling tired. Some people report a grinding sensation or clicking when they move their wrist, though this is not always painful.

In advanced cases, the wrist may look slightly swollen or deformed. The bones have shifted out of their normal alignment, which changes how force travels through your hand. This misalignment puts extra stress on the remaining joints, leading to more pain and stiffness. You might avoid using your hand altogether to prevent the ache, which can make the stiffness worse over time.

We understand that living with constant wrist pain is exhausting. It affects your ability to work, play, and care for yourself. Our goal is to help you manage these symptoms and restore function so you can return to the activities you enjoy. We will discuss the best options for your specific situation during your consultation.

What's actually happening

Your wrist is a complex cluster of eight small bones. In SLAC and SNAC wrists, the normal flow of movement breaks down. This usually starts with a damaged ligament or a bone that fails to heal after a fracture. Think of

your wrist like a set of interlocking gears. When one gear slips or sticks, the whole mechanism grinds. The bones no longer slide smoothly against each other. Instead, they rub in abnormal patterns.

This misalignment puts extra pressure on specific areas. Over time, the protective cartilage wears away. This leads to wear-and-tear arthritis. You may feel pain because the bone surfaces are exposed. The joint becomes stiff and weak. Simple tasks like turning a key or pushing up from a chair become difficult. The pain is often worst when you try to bear weight on your hand.

In SLAC wrists, the breakdown begins at the base of the thumb. The scaphoid bone loses its blood supply or fails to unite after a break. This causes the proximal carpal row to drive motion abnormally. The distal carpal row has negligible movement on its own. When the scaphoid is involved, the entire chain of movement is disrupted. Kinematic changes in this instability predict further arthritis. The joint becomes kinematically abnormal. Your surgeon sees this as a pattern of collapse that worsens over time.

In SNAC wrists, the issue often stems from a scaphoid nonunion. The bone fragments do not fuse. This partially uncouples the proximal and distal carpal rows. The normal axis of motion is lost. The wrist moves in a way that causes friction. This friction accelerates the wear-and-tear process. The result is pain and reduced function.

We aim to restore stability by removing the damaged parts. We may fuse specific bones together to stop the painful grinding. This creates a solid, pain-free joint. We focus on preserving as much natural motion as possible. For example, four-corner fusion replicates the normal axis of motion more closely than other methods. We ensure the remaining bones move smoothly. This approach provides reliable, resilient functional results that remain stable over time.

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 with self-management and physiotherapy to reduce pain and improve function. You can modify daily activities to avoid movements that aggravate your wrist. A physiotherapist will guide you through exercises to strengthen the muscles around your wrist and improve your range of motion. We typically recommend giving this approach a fair trial for several weeks to see if it provides enough relief.

If conservative measures are not enough, we discuss medical management to help control your symptoms. This may include pain medication and anti-inflammatories to reduce swelling and discomfort. We may also offer injections into your wrist joint. Cortisone injections can provide significant pain relief for a limited period, often lasting several weeks to months. Hyaluronic acid injections aim to lubricate the joint, while platelet-rich plasma (PRP) injections use your own blood components to support healing. The duration of benefit varies for each person, but these options can help you stay active while avoiding surgery.

Surgery is considered when non-operative care has not given enough improvement or if your condition is structural. We assess whether your specific type of wrist arthritis, such as SLAC or SNAC wrist, responds better to joint-preserving procedures or fusion. For example, four-corner fusion offers reliable, resilient functional results that remain stable over time. Radioscapholunate arthrodesis achieves a 100% union rate at a mean

CQ HAND + UPPER LIMB

Dr Kieran Hirpara — Specialist Orthopaedic Surgeon
Suite 2, Level 1, Mater Private Hospital Rockhampton, 31 Ward Street, The Range, QLD 4700
Phone 07 4863 6556 · office@cqupperlimb.com.au · cqupperlimb.com.au

follow-up of 12 months in appropriately selected patients. We present these outcomes as part of a shared decision, ensuring you understand the benefits and trade-offs of each option.

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 history, examination, and imaging where needed, establishes the diagnosis. For degenerative or long-standing problems, we usually try non-operative care first. For structural or acute problems, surgery may be recommended straight away.

What to expect

Your wrist outlook depends on how much wear-and-tear arthritis has progressed. If you have SLAC or SNAC wrist, your surgeon will look at which joints are affected. When the arthritis is advanced, conservative care often provides only temporary relief. The pain and stiffness tend to persist or slowly worsen over time. Without treatment, the joint surfaces continue to degrade, which can limit your ability to use your hand for daily tasks.

When managed well with surgery, the goal is to stop the bone-on-bone grinding. Procedures like four-corner fusion or proximal row carpectomy remove the damaged parts and stabilise the remaining wrist. This approach reliably reduces pain and restores function. Most patients report good clinical function and significant pain relief after these operations. The results remain stable over many years. Research shows that functional outcomes stay good at long-term follow-up, even if X-rays show some changes in the joint space in 73% of patients.

Recovery is a gradual process. You will likely notice improved pain levels and better wrist motion as you heal. While some patients return to work within six months, full strength and motion take longer to develop. Your surgeon will guide your rehabilitation, focusing on forearm rotation and gentle movement to protect the healing bones. The union rate for these fusions is high, meaning the bones successfully join together. Conversion to a total wrist fusion is rare in the long term, with studies showing low rates of needing further major surgery at ten years or more.

If you are left with mild symptoms or early-stage changes, your surgeon may recommend activity modification or splinting. However, for advanced collapse, surgery offers the most predictable path to pain-free function. You can expect a resilient wrist that supports normal activities of daily living. The key is matching the right procedure to the specific stage of your arthritis. Your surgeon will ensure you understand which option offers the best balance of motion and stability for your individual case.

When to see someone

Ask for a specialist review if you have persistent wrist pain that does not improve with rest. Seek help if you notice weakness, instability, or a feeling of locking or giving way. These symptoms may interfere with your sleep or work. Sudden worsening of pain is also a reason to book an appointment. Early assessment helps your surgeon determine the best path forward. Options may include partial wrist fusion or bone removal to relieve pressure. Proper timing ensures you receive the most suitable care for your specific wrist condition.

In more depth

This section goes further than you need for your own treatment decisions. SLAC and SNAC wrist are worth the extra reading because the choice between the two standard salvage operations is a genuine trade – one gives more movement, the other more strength – and the most recent pooled evidence has begun to favour one of them overall.

TWO OPERATIONS, TWO DIFFERENT COMPROMISES

Once the carpus has collapsed into the arthritic pattern, the joint surfaces cannot be restored, so both operations remove the arthritic contact rather than repair it. **Proximal row carpectomy** removes the entire first row of carpal bones, letting the head of the capitate sit in the socket the scaphoid and lunate vacated. **Four-corner fusion** removes the scaphoid and fuses the remaining four bones into a single block.

Comparing them directly across **240** patients, the compromise is explicit. Four-corner arthrodesis gave **significantly greater radial deviation and grip strength** as a percentage of the opposite side, while proximal row carpectomy produced **better flexion, extension and total flexion-extension arc, along with a lower overall complication rate** [1].

That maps onto how each is constructed. Fusing four bones into a block preserves the attachments that drive grip but eliminates motion between them. Removing a row shortens the carpus and creates a new, more mobile joint, at the cost of the strength that came from the removed structures.

THE LARGER POOLED ANALYSIS FAVOURS CARPECTOMY

More recent and much larger evidence has shifted the balance. Across **3,174** patients with SLAC and SNAC wrists, **proximal row carpectomy resulted in better outcomes and a lower complication rate than four-corner fusion** [2].

The complication difference is the more reliable part of that comparison, and it has a mechanical explanation: four-corner fusion has to achieve union across four bone surfaces, and nonunion, hardware problems and the need for removal are complications that carpectomy simply does not have available to it.

Reviewing the fusion variants themselves does not rescue the difference. Comparing two-corner with four-corner arthrodesis, the techniques showed **similar outcomes and complications** despite the theoretical advantage of the smaller fusion, so both remain reasonable [3].

WHERE THE DECISION STILL GOES THE OTHER WAY

The pooled result does not make carpectomy universally correct. It depends on the head of the capitate and the corresponding surface of the radius being undamaged, because those two surfaces become the new joint. Where arthritis has already reached the capitate – a more advanced stage of the same process – carpectomy has nothing sound to articulate against, and fusion becomes the option.

Age and demand matter too. A younger, heavier-using wrist may favour the strength that fusion preserves, accepting the higher complication rate.

WHEN BOTH HAVE BEEN EXHAUSTED

If salvage fails, or arthritis is too widespread for either, the remaining options are total wrist fusion and total wrist replacement. Both are effective at relieving pain and improving grip, with **comparable complication rates of 17% and 19%** respectively – with functional improvement observed after arthroplasty, but robust long-term data on replacement still lacking [4].

That parity is worth knowing because fusion and replacement are often presented as radically different propositions. They differ in what they leave you with – a strong, painless, immobile wrist versus a mobile one with an implant to outlive – rather than in how often they go wrong.

REFERENCES

1. Saltzman BM, Frank JM, Slikker W, Fernandez JJ, Cohen MS, Wysocki RW. Clinical outcomes of proximal row carpectomy versus four-corner arthrodesis for post-traumatic wrist arthropathy: a systematic review. *J Hand Surg Eur Vol.* 2014;40(5):450-7.
2. Hones KM, Hao KA, Rakauskas TR, Densley S, Hampton H, Kim J, et al. Four-corner fusion versus proximal row carpectomy for scapholunate advanced collapse and scaphoid nonunion advanced collapse wrists: a systematic review and meta-analysis. *J Hand Surg Am.* 2024;49(7):633-8.
3. Hundepool CA, Duraku LS, Quanjel TJ, van Minnen LP, Jansen MC, Zuidam JM. Two-, three-, or four-corner arthrodesis for midcarpal osteoarthritis: a systematic review and meta-analysis. *J Hand Surg Am.* 2025;50(1):93.e1-93.e11.
4. Zhu XM, Perera E, Gohal C, Dennis B, Khan M, Alolabi B. A systematic review of outcomes of wrist arthrodesis and wrist arthroplasty in patients with wrist arthritis. *J Hand Surg Eur Vol.* 2020;46(3):297-303.