CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION

Proximal Row Carpectomy

What you're feeling

You probably came to this because of a wrist that has been getting worse for a long time — often years after an old injury. There may have been a scaphoid (one of the small wrist bones) fracture that never fully healed, or a torn ligament between two of the wrist bones, and the wrist has slowly worn out since.

The day-to-day picture is usually a wrist that **aches deep in the joint**, especially with loading — pushing up from a chair, gripping a tool, twisting a jar lid. It tends to be **stiff**, particularly bending it back (as you would to do a push-up), and your **grip feels weak and unreliable**. Many people get a **catching, grinding or clicking** sensation, and the wrist swells or grumbles after a busy day. Painkillers, splints, activity changes and steroid injections may have helped for a while, but the wear underneath keeps advancing.

What's actually happening

The wrist is not one simple hinge. It is two rows of small bones stacked between the forearm and the hand, and they only glide smoothly while the ligaments holding them stay intact and the cartilage stays healthy.

When a scaphoid fracture fails to heal, or the key scapholunate ligament tears, those bones start to move out of step. Over years this abnormal movement wears the cartilage away in a predictable pattern — a process surgeons call **SLAC** (scapholunate advanced collapse) or **SNAC** (scaphoid nonunion advanced collapse) depending on the original cause. The joint surfaces roughen, bone rubs on bone, and that is the pain and grinding you feel.

The useful thing about this pattern is that it spares certain surfaces until quite late. In particular, the **head of the capitate** (the bone in the centre of the wrist) and the **socket on the radius that the lunate sits in** often stay smooth even when the rest of the wrist is badly worn. A **proximal row carpectomy**, or PRC, takes advantage of that. The surgeon removes the worn-out front row of three small wrist bones (the scaphoid, lunate and triquetrum) and lets the still-healthy capitate head settle into that good socket on the radius. In effect, it builds a simpler, smoother new joint out of the surfaces that have survived.

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What we can do about it

Once the wrist is worn to this stage, the realistic options are the **salvage** operations — procedures that get rid of the painful worn surfaces rather than trying to rebuild the original anatomy.

Proximal row carpectomy (PRC). The whole front row of wrist bones is removed through an incision on the back of the wrist, and the capitate is allowed to rest in the radius socket. It is a relatively quick, single-stage operation with no plates, screws or bone graft, and no bone that has to knit together afterwards.

Four-corner fusion (the main alternative). Here the worn scaphoid is removed but the lunate is kept, and four central bones are fused together with a plate or screws. It addresses the same problem from the other direction. Pain relief, function and patient satisfaction from the two operations are broadly similar. The trade-offs differ: PRC keeps slightly more movement, recovers faster and can't suffer a "nonunion" (failure of bones to fuse), while a fusion may be the more durable choice in a younger, heavier-using wrist.

An important check. PRC only works if the capitate head and the radius socket are genuinely smooth. If the scans or the surgeon's inspection during the operation show those surfaces are already worn, a four-corner fusion (or, rarely, a full wrist fusion) is the safer choice. In younger patients with borderline cartilage, the surgeon can **resurface the joint** — laying a flap of the wrist's own lining tissue over the capitate — to make a PRC last longer.

Which operation suits you best depends on your age, how heavily you use the hand, the state of the cartilage, and what matters most to you — keeping movement versus maximum long-term durability. This is a decision to make together.

What to expect

After a PRC the wrist is supported in a splint or cast for a few weeks while things settle, then a hand therapist guides you through regaining movement and building strength. Most of the recovery happens over the first few months, though grip strength keeps improving for up to a year.

Realistically you keep **roughly two-thirds of the movement** of your normal wrist and about **three-quarters of your grip strength** — enough for most everyday and work tasks, with good, reliable pain relief. Most people are satisfied and would choose the operation again.

It is a salvage operation, not a brand-new wrist, so it is fair to expect some stiffness and the occasional ache with heavy use. Over the very long term a proportion of wrists do eventually wear out at the new joint and may later need a full wrist fusion — but long-term studies show many PRCs are still working well 15 and even 20 years on, and that risk is higher in younger, heavy-demand patients, which is exactly why selecting the right operation up front matters.

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When to see someone

- A wrist that has been **aching and getting weaker for months or years**, especially after an old fracture or ligament injury, and is no longer helped by splints, activity changes or injections — worth a proper assessment of how worn the joint is.
- **Pain that limits your work or daily activities**, or a grip you can no longer trust for gripping, lifting or pushing.
- **Catching, grinding or giving-way** in the wrist, or swelling that keeps returning after use.
- If you have already been told you have a **SLAC or SNAC wrist**, or an old scaphoid nonunion, and want to understand whether a motion-preserving option like PRC is right for you.

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