

Osteochondritis Dissecans of the Capitellum

Osteochondritis dissecans of the capitellum affects the outer elbow in young throwers and gymnasts, from repetitive loading of the joint surface.

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What you're feeling

This usually shows up as a dull, aching pain on the outer side of the elbow, often hard to point to exactly. It tends to be worse with activity, especially throwing, gymnastics, or anything that loads the arm, and eases with rest. Many young athletes notice they can't fully straighten the elbow anymore; that loss of the last few degrees of extension is common and often appears before the pain becomes a real problem.

If a piece of the joint surface has started to loosen, the elbow can begin to catch, click or lock, and it may swell after activity. A true locking episode (where the elbow jams and won't move for a moment) usually means a small fragment of cartilage and bone has broken free and is floating inside the joint. The condition most often affects teenagers who throw (baseball, cricket) or do gymnastics, where the outer elbow takes repeated pounding.

What's actually happening

The outer half of the elbow is a rounded knob of bone called the **capitellum**, capped with smooth cartilage. With repeated heavy loading through a growing elbow, a small patch of bone just beneath that cartilage can lose its blood supply and start to soften. This is **osteochondritis dissecans**, or OCD. The overlying cartilage may stay intact and heal, or the patch can crack, lift, and eventually separate into a **loose body**.

Take care not to confuse this with a milder, self-correcting childhood condition called **Panner's disease**, which affects younger children (typically under 10), settles on its own with rest, and doesn't leave lasting damage. True OCD happens in older children and adolescents and can cause permanent joint damage if a fragment breaks loose.

How the cartilage is doing matters enormously. A **stable** lesion (cartilage still firmly attached, growth plates still open) has a genuine chance of healing with rest alone. An **unstable** lesion (cracked, lifted, or already loose) generally won't heal on its own and usually needs surgery.

What we can do about it

Dr Kieran Hirpara leads our upper-limb service at Mater Private Hospital Rockhampton, where we guide patients from their initial GP referral through a clear assessment of their history, examination, and imaging. For long-standing elbow issues, we typically begin with non-operative care and move to surgery only if rest and rehabilitation do not provide enough relief.

The first and most important step for a stable lesion is simply to **stop the aggravating activity** (no throwing, no weight-bearing on the arm) for several months, with a gradual return once the bone has healed on scans. In younger athletes whose growth plates are still open, many of these lesions heal completely this way. Rest is not “doing nothing”; it is the treatment.

When a lesion is unstable, has already formed a loose body, or fails to settle with rest, surgery is usually recommended. This is almost always done through **keyhole (arthroscopic) surgery** and the choice depends on the lesion:

- **Tidying up and stimulating healing:** removing the damaged fragment and making tiny holes in the exposed bone (microfracture) so a healing layer of new tissue forms. This works well for smaller lesions.
- **Fixing the fragment back down:** if the loose piece is large and of good quality, it can sometimes be pinned or screwed back into place.
- **Resurfacing the defect:** for large lesions, especially ones at the edge of the joint, healthy cartilage-and-bone plugs can be transplanted in to rebuild the surface (a graft procedure).

Your surgeon decides between these based on the lesion's size, location and whether the cartilage is salvageable, usually guided by an MRI scan.

What to expect

The outlook is generally good, particularly when the problem is caught early and the lesion is still stable. Many young patients with stable lesions heal with rest and return to their sport. After surgery for unstable lesions, most patients get good pain relief and a worthwhile return of movement, and the majority of athletes are able to return to sport, though it can take several months and a structured rehabilitation programme.

A few honest caveats. Larger lesions, those reaching the outer edge of the joint, and elbows where the growth plates have already closed tend to do less well and are more likely to need surgery. Some loss of full extension may remain, and over the long term a significant lesion can slightly raise the risk of elbow arthritis later in life, which is exactly why early recognition and protecting the joint matter so much.

When to see someone

- **Persistent outer-elbow pain in a young thrower or gymnast** that doesn't settle with a week or two of rest; get it assessed before pushing on.
- **Loss of full elbow extension:** not being able to straighten the elbow fully is an early warning sign worth checking.
- **Catching, clicking, or the elbow locking up:** this suggests a fragment may have loosened and needs imaging.
- **Swelling after activity** that keeps coming back.
- Any of these in a skeletally immature athlete deserves prompt attention, because lesions caught while the growth plates are still open have the best chance of healing without surgery.

In more depth

This section goes further than you need for your own treatment decisions. Capitellar osteochondritis dissecans is worth the extra reading because it is largely a silent disease of the growing elbow: by the time it causes enough pain to bring a young thrower to a clinic, the lesion has often already advanced past the point where the simplest treatment works.

IT IS COMMONER THAN THE SYMPTOMS SUGGEST

Screening tells a different story from clinic attendance. Among **2,433** adolescent baseball players, the prevalence of capitellar osteochondritis dissecans **including latent cases was 3.4%**. Affected players had started playing at earlier ages, had played for longer, and had experienced more elbow pain [1].

“Including latent cases” is the important qualifier. A meaningful share of these lesions were found by looking rather than because the player complained – which means pain is a late and unreliable signal in a group of athletes who are, in any case, disinclined to report it.

DELAY CHANGES WHAT CAN BE DONE

The consequence shows directly in the treatment options. Across **258** adolescents, **advanced lesions were observed in patients with longer symptom duration** – though once a lesion required surgery, it was the treatment specifics rather than the duration that best correlated with return to sport [2].

Two radiographic findings predict that non-operative management will fail: **enlargement of the radial head and advanced skeletal age on the throwing side compared with the non-throwing side**, both associated with advanced-stage disease across **245** patients [3]. Both describe an elbow that has already remodelled under load, which is a structural statement rather than a symptomatic one.

This is the argument for imaging a young thrower with persistent elbow pain rather than managing it as a soft-tissue problem, and for taking a side-to-side difference seriously.

FOR A STABLE LESION, THE SMALLER OPERATION IS ENOUGH

Where the fragment is stable and the defect small, the debate is between simply cleaning the defect and additionally drilling the bone beneath it to encourage a fibrocartilage repair. Across **327** patients, **both debridement and microfracture produced substantial improvements** in pain, range of motion, outcome scores and return to sport – and because comparable mid-term outcomes were achieved with debridement alone, debridement is a reasonable approach for relatively small defects [4].

FOR A LARGE OR UNSTABLE ONE, THE CALCULUS CHANGES

Where the fragment has detached or the defect is large, the surface has to be replaced rather than tidied, usually by transferring a plug of cartilage and bone. This works, with an important qualification.

Pooling **492** patients, return to sport after operative management was high overall, and patients were **more likely to return to their highest pre-operative level after osteochondral autograft transfer** than after debridement or fixation [5]. But a 2024 review of **470** patients following autograft transfer, while confirming high return-to-sport rates, found athletes should be counselled about **returning at a lower level of performance or needing to change position**, and that **lateral lesion location may negatively affect outcomes** [6].

Both statements are true at once, and the distinction matters for a young athlete: returning to the sport is likely; returning to the same role in it is not guaranteed. Lesion size and position – not the choice between reasonable operations – carry most of the prognosis.

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