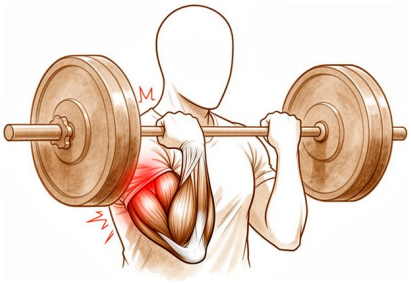
CQ HAND + UPPER LIMB
SPECIALIST ORTHOPAEDIC SURGEON

PATIENT INFORMATION — IN DEPTH

Distal Biceps Rupture

A rupture of the distal biceps tendon at the elbow.



What you're feeling

You might hear or feel a sudden snap or pop in your arm. This often happens when you lift something heavy or fall onto your outstretched hand. The pain is usually sharp and immediate. You may notice swelling and bruising appear quickly around the front of your elbow.

Your bicep muscle may look different. It can bunch up higher in your upper arm, creating a visible dent near the elbow. This change in shape is common after a rupture. You will likely feel weak when trying to bend your elbow or turn your palm upward. Many people find it difficult to hold objects or perform daily tasks with that arm.

In the first few days, pain may be worse at night or when you move your arm. You might feel reluctant to use the limb because of the discomfort. As healing begins, the sharp pain usually settles into a duller ache. Swelling and bruising may spread down your forearm over the first week.

Most patients are able to return to work and sport after surgical repair. However, you should expect some residual impairment compared with how you felt before the injury. One in five patients will have a minor complication after surgery on the distal biceps tendon. These are often sensory nerve injuries that resolve with time. One in twenty patients will have a major complication.

If you chose not to have surgery, thirty-six percent of patients with complete or partial tears eventually undergo conversion to surgery. This is because nonsurgical treatment does not always restore full function. Surgical management of complete tears is a predictor of improved patient-reported outcomes.

All patients undergoing distal biceps tendon repair have significant elongation of their repair site and tendon after surgery. The greatest amount of lengthening is seen in the early post-operative period. Despite this, clinical and functional outcomes at more than one year after distal biceps tendon repair are excellent. You can expect high levels of return to sport following distal biceps repair.

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What's actually happening

Your biceps muscle sits in the front of your upper arm. It ends in a strong tendon that attaches to a small bump on your forearm bone. This connection allows you to bend your elbow and twist your palm upwards. When the tendon tears away from this bone, it is like a rope snapping from its anchor point.

Right now, your arm cannot generate normal twisting or bending strength. The muscle belly may bunch up higher in your arm because it is no longer pulled tight against the forearm. This creates a visible gap and a loss of power. You might find it difficult to lift objects or turn a doorknob.

The goal of repair is to reattach that tendon to the bone. We use special anchors to hold the tendon in place while your body heals itself. Over time, new tissue forms between the tendon and the bone, effectively knitting them back together. This restores the mechanical link needed for strength.

Healing takes time. The initial attachment is strong, but the biological bond strengthens gradually over months. During this period, your surgeon will guide you through specific movements to protect the repair while preventing stiffness.

Complications are possible but not common. Major issues occur in about 7.5% of cases, with a 4.5% chance of needing further surgery. Most people recover well, with excellent long-term function reported for many techniques. Some patients may develop extra bone growth in the forearm muscles, known as heterotopic ossification. This can sometimes limit movement, but many patients maintain good strength despite this change.

If you choose not to have surgery, some people live with reduced strength. However, about 36% of those who initially avoid surgery later decide to have the repair done. This is often because the weakness becomes too limiting for daily tasks or work. Your surgeon will help you weigh these options based on your specific tear and lifestyle needs.

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. 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 establishes the diagnosis. For structural or acute problems, surgery may be recommended straight away, without a preceding non-operative trial.

If your tear is stable or minimally displaced, we may recommend non-operative care. This involves wearing a sling, splint, or cast to protect the tendon while it heals. You will monitor your progress with repeat imaging where needed. Staged return to movement with physiotherapy follows. Nonoperative treatment for partial distal biceps tendon tears yields moderate success rates (47%) with no significant differences between strategies, though injection therapy offers the quickest relief.

If your tear is displaced, unstable, or complete, we recommend surgery from the outset. This aims to reattach the tendon to restore strength and function. Surgical management of distal biceps tears was a predictor of

improved patient-reported outcomes only for patients with complete tears. The majority of patients are able to return to work and sport after surgical repair of distal biceps rupture. Distal biceps repair is associated with a 7.5% major complication rate and a 4.5% reoperation rate. One in 5 patients will have a minor complication and 1 in 20 patients will have a major complication after surgery on the distal biceps tendon.

Both paths share early pain control, protection of the injury, and timely physiotherapy. Early motion after distal biceps tendon repair with cortical button fixation is well tolerated and does not appear to be associated with adverse outcomes. Patients can expect high levels of return to sport following distal biceps tendon repair with some residual impairment compared with baseline. Workers' compensation patients who underwent distal biceps tendon repair took longer to return to work and had worse DASH scores than non-workers' compensation patients.

What to expect

Your arm will feel stiff and weak at first. This is normal. The tendon needs time to reattach to your bone. Most patients notice the greatest lengthening of the muscle in the early weeks after surgery. You will likely feel a difference in how your arm looks and feels for several months.

Healing is a slow process. You can expect significant improvement over the first year. Maximum recovery typically plateaus at 12 months. By this time, most people have regained near-normal strength for bending the elbow and turning the palm upward. Clinical outcomes remain excellent one year after repair, regardless of the fixation method used.

Returning to daily tasks is usually straightforward. Most patients are able to return to work and sport after surgical repair. The average time to return to work is just beyond 14 weeks. However, workers' compensation patients often take longer to return and report lower functional scores than others. You should expect high levels of return to sport by six months, though some residual weakness may remain compared to your baseline.

Non-surgical treatment is an option, but it carries risks. Thirty-six percent of patients who initially avoid surgery eventually require conversion to an operation. Without repair, you may experience lasting weakness and fatigue when lifting objects.

Complications are possible but generally low. Distal biceps repair is associated with a 7.5% major complication rate and a 4.5% reoperation rate. One in five patients will experience a minor complication, such as temporary nerve irritation that causes numbness or tingling. These minor issues usually resolve with time. A small number of patients develop heterotopic ossification, where extra bone forms between the upper and lower arm bones. Even in these cases, biceps strength is often maintained with no measurable difference in clinical outcome compared to those without this condition.

Your surgeon will guide you through a safe rehabilitation plan. Early motion is often well tolerated and does not appear to cause adverse outcomes. We aim to restore your function while protecting the repair.

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When to see someone

Seek urgent care if you notice a visible deformity, have an open wound, experience numbness or tingling, or cannot use your arm. These signs need immediate attention.

If pain is not settling, or if swelling, movement, and function are not improving week on week as healing progresses, see your GP or ask for a specialist review. Your surgeon can assess whether your recovery is on track. Early assessment helps manage any minor issues before they become major problems. Most patients recover well, but timely checks ensure you get the right support.

In more depth

This section goes further than you need for your own treatment decisions. Distal biceps rupture is worth the extra reading because it is one of the few injuries on this site where surgery demonstrably restores something that healing without it does not — which makes the trade-off unusually concrete, and the complication figures unusually relevant.

HERE, THE OPERATION DOES CHANGE FUNCTION

Most of the comparisons on this site end in "no significant difference". This one does not. Pooling **2,481** patients, operative treatment produced **superior elbow and forearm strength and endurance**, along with better DASH and Mayo Elbow Performance scores, than non-operative management [1].

The reason is anatomical rather than statistical. The distal biceps is the main supinator of the forearm — the muscle that turns the palm upwards against resistance. When the tendon detaches from the radius it retracts up the arm, and the muscle can no longer generate that rotation, whatever else heals around it. Elbow flexion is partly covered by brachialis, so bending the elbow recovers reasonably well; supination has no comparable understudy.

That is why the loss shows up most clearly in **endurance** rather than a single maximal effort. Repeated turning — a screwdriver, a door handle, a steering wheel over a long drive — is where the difference is felt.

THE COMPLICATION RATE IS THE OTHER HALF OF THE DECISION

An operation that reliably restores strength is still an operation, and this one has a well characterised profile. In the largest analysis, covering **3,091** patients, the **major complication rate was 4.6%** [2].

Most of what occurs is minor and temporary — numbness over the back of the forearm from traction on a small sensory nerve is the commonest, and usually recovers. The major complications are the ones that shape technique: permanent nerve injury, heterotopic ossification (new bone forming across the forearm and restricting rotation), and re-rupture.

TWO APPROACHES, AND THE TRADE-OFF IS GENUINE

The repair is done either through a single incision at the front of the elbow or through two smaller ones, front and back. Both reach the same bone from different directions, and each avoids a different hazard.

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Across **2,622** patients there were **no significant differences in functional scores**. The single-incision approach gave greater flexion and pronation range of motion and a **lower risk of heterotopic ossification and reoperation**, while the double-incision approach was more favourable on other measures [3]. A 2025 meta-analysis of **2,833** patients found the same shape: single incision associated with more favourable objective function and fewer structural complications, double incision with **reduced risk of certain sensory nerve injuries** [4].

Read together, the choice is between the nerve at the front and the bone at the back. Neither approach is wrong, and both sets of authors call for higher-quality randomised trials before the question is considered closed.

WHY THE TIMING MATTERS MORE THAN IT DOES ELSEWHERE

Because the tendon retracts and the space it occupied scars, delay makes reattachment harder — and where direct repair is no longer possible, reconstruction with a graft becomes necessary. This is the practical reason a distal biceps rupture is treated with more urgency than most tendon injuries, and why a sudden painful pop at the front of the elbow, with visible change in the shape of the muscle, is worth prompt assessment rather than a period of watchful waiting.

Non-operative management remains a legitimate choice, particularly for lower-demand arms and for people who do not need forceful repeated supination. It is a decision to accept a measurable deficit, made deliberately — not a lesser version of the same result.

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