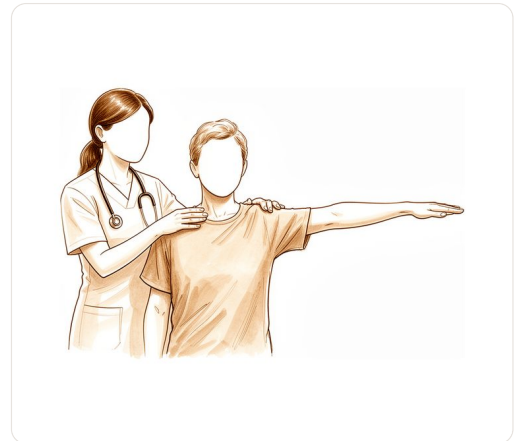


Calcific Tendinitis

Calcific tendinitis of the shoulder: a chalky calcium deposit builds up inside one of the rotator cuff tendons, often the supraspinatus, and can cause sudden severe pain when it inflames the surrounding tissue.

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What you're feeling

You might notice that your shoulder feels stiff or achy, even if you do not have sharp pain. It is common to have calcium deposits in the tendons of your shoulder without any symptoms at all. In fact, only one third of these deposits cause pain. If you are feeling discomfort, it often comes and goes in waves.

When the pain is active, it usually sits on the outside of your upper arm. You may feel a deep ache that worsens when you lift your arm above your head. Simple tasks like reaching for a cup on a high shelf or placing a bag in the boot of your car can become difficult. The pain often flares up at night, making it hard to find a comfortable position to sleep. You might also feel stiffness when you first wake up in the morning.

The intensity of your symptoms can vary. Some days you may feel fine, while on others, even small movements trigger pain. This condition is often self-limiting, meaning it can settle down on its own over time. However, if the calcium deposit is large, you are more likely to need surgery to remove it. Specifically, deposits larger than 1 cm make you nearly three times more likely to require an operation.

If your pain persists, your surgeon will check for other issues. There is a higher chance of having a rotator cuff tear alongside calcific tendinitis than previously thought. Your surgeon may recommend conservative treatments first, such as rest or therapy. These approaches lead to excellent or good results for 72% of patients, regardless of the size or type of deposit. If conservative care does not help, we may discuss other options like shock wave therapy or a minor procedure to wash out the calcium.

What's actually happening

Calcium deposits often form in the tendons of your shoulder. These are rope-like tissues that connect your muscles to your bones. It is a frequent occurrence in the general population. However, most of the time, these deposits cause no trouble at all. Only one third of people with calcific tendon deposits actually experience pain.

When symptoms do appear, the calcium builds up within the tendon fibres. This can make the tissue stiff and inflamed. The resulting irritation causes the sharp pain or stiffness you feel when moving your arm. Your shoulder may feel weak or simply refuse to move through its normal range.

In some cases, the body's natural healing process breaks down the deposit. This can sometimes lead to a tear in the rotator cuff. The rotator cuff is the group of tendons that stabilise your shoulder joint. A tear here is the only factor that affects your complete recovery of shoulder function after treatment.

The shape of your shoulder bone does not seem to influence this condition. Research shows that the space above your joint is similar whether you have calcific tendinitis, a partial tear, or a full tear. The idea that a specific bone shape causes the pain has not been supported by evidence.

If the deposit is large, specifically greater than 1 cm, it is more likely that you will need surgery. Smaller deposits often respond well to conservative treatment. This includes rest, anti-inflammatory medication, or physical therapy. Many patients see clinically significant improvement with these non-surgical methods.

In chronic cases where pain persists, other options like extracorporeal shock wave therapy may be considered. This uses sound waves to break up the calcium. It is generally safe and well-tolerated. However, if you have factors that suggest a poor outcome with this therapy, your surgeon may recommend a different procedure.

Routine exploration of the shoulder joint during surgery is usually not beneficial. Intra-articular pathologies are rare in these cases and often do not require surgical treatment. The focus remains on removing the calcium and repairing any associated tendon damage to restore your movement.

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.

Calcific tendon deposits are common, but only one third cause pain. If you are in that group, we begin with self-management and physiotherapy. Your physiotherapist will guide you through exercises to restore movement and strengthen the shoulder muscles. This approach aims to reduce stiffness and improve function without invasive procedures. We typically recommend a trial of this conservative care for several weeks to see if your symptoms settle.

If pain persists, we move to medical management. We often prescribe oral anti-inflammatory medication to help reduce swelling and discomfort. For more targeted relief, we may offer corticosteroid injections. These injections deliver strong anti-inflammatory medicine directly to the affected area to calm the irritation. While effective for many, the relief is temporary and does not remove the calcium deposit itself. We also consider other injections, such as hyaluronic acid or platelet-rich plasma (PRP), to support tissue healing.

When conservative care reaches its limit, we discuss procedural options. Ultrasound-guided needling (barbotage) uses a needle to break up and wash out the calcium deposits. This is safe and effective for many patients. Another option is extracorporeal shock wave therapy (ESWT), which uses sound waves to treat the area. ESWT is well-tolerated and can significantly reduce pain and improve shoulder function. Radial ESWT, in

particular, has shown a 14.28% reduction in pain and a 43% improvement in shoulder functional status compared to traditional physiotherapy alone.

Surgery is considered only when these non-operative treatments have not given enough improvement. Our surgical option involves arthroscopic debridement, where we remove the calcium deposits and clean the tendon. This is a safe and effective method, whether the calcium is in the tendon or has moved into the bone.

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. We work with you to decide on the best path forward, ensuring you understand the benefits and limits of each option.

What to expect

Calcium deposits in your shoulder tendon are common, but they do not always cause pain. In fact, only one third of people with these deposits experience symptoms. If you are in that group, you may notice that the pain comes and goes. The condition often follows a natural cycle where the calcium can eventually dissolve on its own. This process of resorption happens most frequently in the summer months, though it can occur at other times.

If your symptoms have been present for ten months or less, or if the deposit is small (10.82 mm or less), there is a good chance it will resolve without invasive treatment. Conservative management is the primary choice for most patients, especially in the early stages. With conservative care, 72% of patients achieve excellent or good results. This improvement happens regardless of where the deposit is located or how large it initially appears. Your surgeon will guide you through this phase, focusing on pain relief and maintaining movement.

For those with chronic symptoms, treatments like extracorporeal shock wave therapy (ESWT) or needle lavage can help. ESWT works best for smaller deposits and shorter symptom durations. Needle lavage, which involves washing out the deposit, provides notable pain reduction at two months. However, its effectiveness may decrease over the long term. If your deposit is larger than 1 cm, you are nearly three times more likely to need surgical removal if conservative methods do not work.

Surgical removal of the calcium deposit leads to good short-term outcomes. These results are similar whether or not your surgeon performs additional decompression of the shoulder space at the same time. The key factor for success is the complete removal of the calcium. If any deposit remains, functional recovery may be limited. While rotator cuff tears can occur alongside calcific tendinitis, they are not always present and do not always require separate surgical treatment during this procedure. Your outlook depends largely on the size of the deposit and how long you have had symptoms.

When to see someone

Calcific deposits in the shoulder are common, but only one third cause pain. You may have these deposits without any symptoms at all. However, if you have subacromial pain syndrome, there is a 42.5% chance of

calcific deposits. See your GP if you experience persistent shoulder pain that does not improve with rest. Seek specialist review if the pain interferes with your sleep or daily work. Larger deposits greater than 1 cm are more likely to need surgery. Your surgeon will assess whether imaging is needed to rule out other issues like rotator cuff tears.

In more depth

This section goes further than you need for your own treatment decisions. Calcific tendinitis is worth the extra reading because it behaves unlike most shoulder conditions: the deposit is common in people with no pain at all, the body usually dissolves it without help, and the treatment that removes the calcium is not the one that relieves the pain fastest.

THE DEPOSIT IS A COMMON FINDING, NOT AUTOMATICALLY A DIAGNOSIS

A calcium deposit reported on your scan is easy to read as the cause of the problem, because it is visible and the pain is real. The prevalence data complicate that. Among **1,219** adults, deposits were present in **7.8% of people without symptoms** and **42.5% of those with subacromial pain syndrome** [1]. In a separate series of **302** shoulders, deposits were frequent in the general population and **only about one third were painful** [2].

So the deposit raises the probability that it is the source, substantially – but roughly one in thirteen painless shoulders has one too. What appears to shift a deposit from silent to symptomatic is partly size and position: the highest likelihood of genuinely symptomatic disease was in women aged 30 to 60 with subacromial pain and a deposit longer than **1.5 cm** [1], and pain correlated with location in supraspinatus and with involvement of more than one tendon [2].

IT USUALLY DISSOLVES, AND THAT SHAPES EVERYTHING

The natural course is towards resorption, which is why so many treatments appear to work. The clearest illustration comes from a randomised trial in which every patient had needling and lavage and was then randomised to a steroid or saline injection: at twelve months the calcification had resorbed in **83%** of the saline group and **74%** of the steroid group [3].

Read that carefully, because it contains the counter-intuitive result. The steroid **improved pain for six weeks and function for three months** – and had **no significant effect on whether the calcium disappeared** [3]. Pain relief and calcium clearance are separate processes. A treatment can deliver one without the other, and the visible thing on the scan is not the thing driving the symptoms week to week.

WHICH IS WHY THE NON-OPERATIVE OPTIONS PERFORM ALIKE

If the deposit largely resolves regardless, the treatments are competing to make the interval tolerable rather than to cure. That is what the comparisons show. Across **257** patients, physical therapy, corticosteroid injection and ultrasound-guided barbotage produced **similar rates of avoiding surgery** [4]. In **239** patients the same three approaches were largely successful, with physiotherapy alone carrying the highest failure rate [5].

Among the procedural options, high-energy shockwave therapy is the most thoroughly studied minimally invasive treatment and has been shown safe and effective in the short to medium term, while ultrasound-guided needling has **not** been shown superior to an ultrasound-guided subacromial injection [6]. Pooling **1,258** patients, shockwave, needling and arthroscopy all produced good clinical outcomes [7], and barbotage across **908** patients was safe with a high success rate but has never been compared head-to-head against the other major options [8].

WHAT SURGERY ADDS, STATED PRECISELY

Surgery is not without an advantage, and the size of it is worth quoting rather than characterising. Pooling **2,352** patients from randomised trials, surgical treatment produced **larger improvement in functional scores** and **comparable pain reduction** to non-operative treatment, particularly ultrasound-guided needling – with both routes achieving clinically significant improvement [9]. Among surgical techniques themselves there was **no significant difference**, and removing the deposit alone performed similarly to removing it plus a subacromial decompression [10].

The function-versus-pain split is the useful detail. If pain is the dominant complaint, the evidence does not clearly favour an operation. If stiffness and loss of function dominate and have persisted, it favours one more.

THE ASSOCIATION MOST OFTEN MISSED

Calcific tendinitis is not evenly distributed. In **102** patients, those with an associated endocrine disorder – thyroid disease and diabetes principally – developed symptoms at a **younger age**, had a **significantly more protracted** course, and **more frequently required surgery** [11].

This is worth raising with your GP if your course has been unusually long or began early, not because treating the endocrine condition resolves the shoulder, but because it changes what a realistic timeline looks like. Being told a condition is self-limiting is difficult to reconcile with two years of pain; the endocrine association is one explanation for why the usual reassurance does not fit every case.

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CQ HAND + UPPER LIMB

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