

# The Rotator Cuff Tear

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The Rotator Cuff muscles are a group of deep muscles that directly surround the shoulder joint. Their job is to provide the power to lift and rotate the arm. As one ages these muscles become thinner and more prone to rupture, even with minimal injury.

**Pain** from a rotator cuff tear occurs within the subacromial bursa of the shoulder joint. This bursa, or bag of fluid, lies between the rotator cuff and overlying acromion. If you place your hand on the top of your shoulder, you can feel the acromion. Move your shoulder, and you can see that the acromion stays still while the arm moves below. A normal bursa allows smooth movements, but an inflamed bursa (bursitis) causes intense pain with movement.

**Weakness** from a rotator cuff tear occurs because the muscles are no longer attached to the shoulder bone to help with movement. The other muscles around the shoulder help to move the arm, but lifting of the arm can be difficult without the help of the rotator cuff muscles.

Tears of the rotator cuff can occur slowly over time (Chronic Tears) or more abruptly from an acute injury, such as a fall onto the arm, or sudden pain when lifting (Acute Tear). Tears can also be **partial thickness** or **full thickness**.

## PARTIAL THICKNESS TEARS

A partial thickness tear means that the attachment of the rotator cuff muscles still occurs, but a portion of the tendon has detached. It can be likened to a rope, where many of its strands have broken, but a portion still remains attached. Patients experience pain because the rotator cuff is degenerate and partially weakened from the tear. There can also be irritation when the tear moves below the acromion above, leading to further pain.

Partial rotator cuff tears are initially treated with physiotherapy exercises, as strengthening the rotator cuff muscles can improve shoulder function and reduce the pain in 80% of patients. Cortisone injections can be done by myself, your GP, or a

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radiologist in order to quell the pain and allow exercises. If physiotherapy fails to help the pain after three to six months, then surgery can be considered. I perform an arthroscopic (keyhole) examination of the rotator cuff. Depending on the extent of the tear, the rotator cuff will need to be cleaned of its torn fibres, or repaired. A repair is done similar as described below for Full thickness tears.

## FULL THICKNESS TEARS

A **full thickness tear** occurs when the tendon completely detaches from the bone. When a complete tendon tear occurs, it is unable to repair itself. If left untreated it can get bigger over time, and the muscles of the rotator cuff can become permanently weak. If there is a clear history of an injury resulting in an **acute tear**, I usually recommend a repair in order to allow healing of the tear and to prevent permanent deterioration.

Some patients have **chronic full thickness tears**. These are tears that have been present without history of an injury. These tears are treated differently from **acute** tears because permanent changes to the rotator cuff muscles have already occurred. Because early surgery cannot be considered to prevent these early changes, a trial of non-operative treatment is usually considered. A physiotherapy program and intermittent cortisone injections can help to relieve pain associated with a chronic full thickness tear. If these non-operative measures fail to help over three to six months, then surgery can be considered.

I prefer to perform an arthroscopic (keyhole) repair, utilising very small incisions and minimally invasive techniques. Anchors are placed in the bone, and sutures (strong string) are used to attach the rotator cuff to bone. Several studies have demonstrated that patients have less post-operative pain, less stiffness, and therefore better outcomes with this procedure. The success rate of this procedure is 90%, relieving pain and restoring strength and function to the shoulder.

A rotator cuff repair is a major operation with a twelve month rehabilitation period. The results are generally very good but even an excellent result does not produce a normal shoulder. After a successful surgical repair, the rotator cuff tendon needs to grow new attachments to bone, similar to a newly planted tree grows its roots. The tendon generally takes six months to create a strong attachment. During this time a strict rehabilitation program is required to minimise the chance of re-tear and to ensure the restoration of strength and movement. Outcomes vary from patient to patient due to differing quality of tendon and muscle, and ones unique healing potential.

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