

Biceps Tenotomy vs Tenodesis

What is it?

The biceps muscle—and the tendons that attach it to the shoulder—are often causes of shoulder pain. Biceps tenodesis and tenotomy are two surgical ways of treating biceps injuries as well as SLAP (Superior Labral) tears that haven't responded to non-surgical treatment.

The biceps muscle has a long head that is attached to the upper portion of the shoulder socket (glenoid), as well as a short head attached to the shoulder blade. The long head is much more susceptible to strains, tears and inflammation.

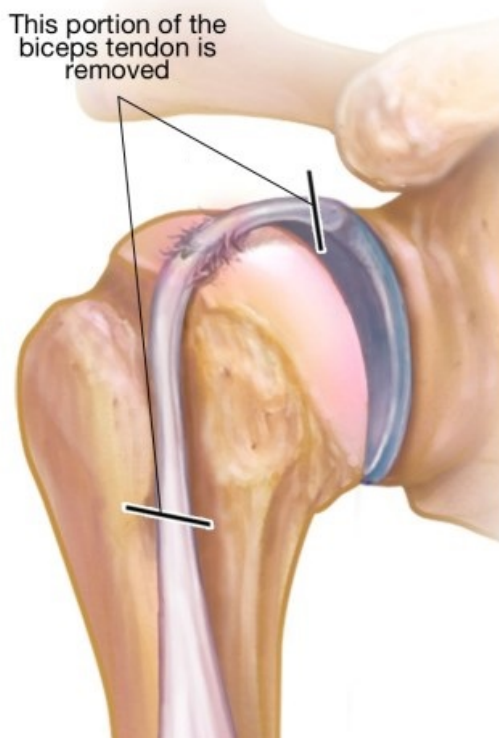
Biceps tenodesis involves cutting the biceps tendon off the labrum, which is the pad of cartilage inside the glenoid, and reattaching it to the humerus (upper arm bone). Biceps tenotomy means cutting off one tendon and not reattaching it, allowing it to heal to the humerus over a few weeks. The biceps will still function well after tenotomy, but there may be a change in the appearance of the arm with some flattening of the biceps.

Why Tenotomy vs Tenodesis

Biceps tenotomy is the simpler surgery with the faster recovery. It simply involves releasing the biceps from in the shoulder and letting it hang down the upper arm and heal in its own. This reduces pain and does not affect the shoulder's stability or integrity, but it does create a cosmetic defect called a Popeye deformity in many cases, which looks like a flattening on top of the biceps and some fullness of the muscle above the elbow. In many arms, this may be barely noticeable. There is usually minimal loss of strength, however some strenuous activities like weightlifting and repetitive turning motions (i.e. using a screwdriver) may cause muscle cramping after a biceps tenotomy.



Biceps tenodesis involves releasing the biceps tendon from the shoulder and reattaching it to the humerus or arm bone. It is a more invasive procedure that has a longer recovery and carries more risks, however it minimises the chances of cramping and the cosmetic Popeye deformity that can occur. It is usually preferred for more active and younger patients, often in manual labour jobs.



Recovery

Because there is no reattachment, people tend to recover more quickly from biceps tenotomy and have a lower risk of surgical complications like infection. However, there is a greater chance of a Popeye deformity and occasional muscle cramping with a tenotomy.

Recovery from tenodesis varies. Patients may need to wear their arm in a sling for a few weeks, and strenuous activities can be resumed in three months. The procedure carries a small risk of the sutures failing and the tendon becoming unanchored.

Complications

Some of these can be serious and can even cause death.

General complications of any operation

General complications of any shoulder surgery

- **Pain** levels felt after surgery vary depending on the type of surgery, individual pain thresholds, nature of the problem for which surgery was done and various other factors. Pain beyond 2-3 months may indicate ongoing inflammation which may need injections to help improve.
- **Stiffness** after shoulder surgery is common and occurs as a result of preexisting pathology, surgical scarring and prolonged post-operative protection in a sling. Most stiffness improves by 6 months, however some patients may require injections or further procedures to help the stiffness.
- **Bleeding** during or after surgery is very uncommon, occurring in less than 1% of patients. It is common to have oozing from the arthroscopic wound ports after surgery as the blood-stained sterile water used during surgery drains out.
- **Infection** of the surgical wound is rare with arthroscopic surgery. Early diagnosis of post-operative infection has a significantly better outcome compared to delayed diagnosis. After your operation, you should contact the rooms immediately if you get a temperature, become unwell, notice pus in your wound, or if your wound becomes red, sore or painful.
- **Unsightly scarring** of the skin is uncommon and most surgical scars have disappeared to a thin pale line by one year after surgery. If you are concerned about your scar please discuss treatments to improve scar healing.
- **Nerve injury** is rare (less than 0.5%) with most shoulder operations, but some larger operations have a higher risk and this will be discussed with you by your surgeon.
- **Vascular injury** is very rare (less than 0.5%) after shoulder surgery.
- **Anaesthetic related** complications such as sickness and nausea are relatively common. Heart attacks, lung infections and neurological problems such as strokes are rare, occurring at less than 1 person in 1,000, but have been reported to occur.

Specific complications of this operation

Tenotomy/Release

- Biceps complications such as cramping, fatigue and weakness are uncommon but can occur.
- Cosmetic deformity in the form of the ‘Popeye’ deformity often occurs.
- Function and pain relief is often good after surgery.

Tenodesis/Reattachment

- Involves a cut further down the arm, and this can get infected.
- Higher risk of damage to nerves in the region of the cut, this may affect sensation, pain and function around the arm.
- The repair may stretch or fail, leading to similar complications seen in tenotomy.
- Fracture/break of the humerus/arm bone can occur through the area of biceps repair. This is rare in the surgical procedure Mr Mattern uses.

How soon will I recover?

You should be able to go home the same day or the next morning. It can take up to a year to get back enough strength in your shoulder to return to normal activities. Regular exercise should help you to return to normal activities as soon as possible. Before you start exercising, ask for advice. You may not get back the same strength that you had before you damaged your shoulder.