

# Split Pectoralis Major Tendon Transfer



Scapular winging is a rare shoulder condition that causes pain and limits function. Many people have been able to return to their full range of motion with the help of a split pectoralis major tendon transfer surgery. Here's what to know.

**"A split pectoralis major transfer can relieve pain and restore shoulder function."**

Scapular (shoulder blade) winging is a relatively rare condition that can cause significant shoulder pain and dysfunction. It is where one or both shoulder blades stick outward from the back. Although this condition can be difficult to treat, a split pectoralis major tendon transfer can relieve pain and restore shoulder function.

## Why treatment is required

A winged scapula is almost always a symptom of damaged nerves or muscles in the upper arm, back, or shoulder. The most commonly injured nerve that cause scapular winging is the long thoracic nerve. Scapular winging can also be caused by injury to the muscles of the upper back, such as the serratus anterior and trapezius. Another cause of scapular winging is muscular dystrophy, such as FSHD, but this is less common.

Injury to the long thoracic nerve can be caused by trauma to the nerves and muscles as well as repetitive movements in sports or everyday activities such as overhead work, digging, washing the car, or trimming the hedges. Non-traumatic causes of scapular winging include viral illnesses, inflammatory conditions, allergic reactions to medication, and exposure to toxins.

People with scapular winging usually feel pain or burning around the shoulder blade along with shoulder and upper back weakness and fatigue. These symptoms can be highly debilitating in everyday life, particularly with overhead activities.

Most people with a long thoracic nerve injury do not require surgery. They can often do physical therapy to strengthen the muscles that help stabilize the scapula. Sometimes, a special shirt or brace is used to help keep the scapula compressed against the back. If this treatment fails, the recommended surgery is a split pectoralis major tendon transfer.

## How treatment is performed

After receiving general anesthetic, the patient is then laid on their side, with the affected shoulder facing up. The first incision is made near the patient's armpit, on the front of the arm. Through this opening, the pectoralis major muscle (chest muscle or "pec") and tendon are identified where they attach to the upper arm. This muscle is then split along a natural separation, and the lower half of the pectoralis major tendon and muscle is separated from where it attaches to the bone. Sutures are placed in the end of the cut tendon to help guide it while being moved.

A second incision is then made on the patient's back, near the bottom of the scapula. The surgeon reaches through the second incision, up to the first incision, and pulls on the sutures attached to the separated portion of the pectoralis. The tendon can be lengthened, if needed, using a tendon graft, acting as an extension cord. Then, the pectoralis tendon is inserted into small holes drilled into the scapula and sewn in place. The extra support from the pectoralis on the front of the scapula helps keep the shoulder blade flat against the chest wall when the arm is raised.

## Risks and benefits

The benefits of a split pectoralis major tendon transfer include:

- » Improved strength when raising the arm and

- reaching overhead
- » Improved shoulder stability
- » Reduced shoulder and upper back pain
- » Improved appearance and alignment of the shoulder blade

Risks of this procedure are relatively rare, and include:

- » Recurrence of winging (approximately 9% of patients)
- » Fluid buildup at the surgical site
- » Wound infection
- » Increased stiffness

## Physical therapy protocols

Immediately following surgery, you will be placed in a sling. Gentle passive range-of-motion exercises of the hand and elbow are started on the first postoperative day. After six weeks, the sling is removed and active range-of-motion exercises begin.

At seven to ten weeks after surgery, scapular exercises along with more advanced movements of the arm and shoulder start.

Twelve weeks after surgery, you can begin resistance weight training, which will typically go on for about three more months.

## Pain control

A regional nerve block is administered using local anesthetic to “freeze” the area being operated on. The nerve block is long-lasting and works for approximately 12–18 hours after surgery. The anesthesiologist uses ultrasound guidance for the safe and effective placement of the medication for the nerve block. Before going home, the arm is placed in a sling with a pillow.

As the nerve block gradually wears off, oral pain medications (pills or tablets) may be used to manage any discomfort. Dr. Romeo uses a variety of pain-control methods (multimodal analgesia), such as Tylenol Extra Strength (acetaminophen) and non-steroidal anti-inflammatory drugs such as Naprosyn (naproxen) or Mobic (meloxicam). Cold therapy or ice



**“Following their recovery, people are typically able to return to their full range of motion with no pain.”**

at the surgical site also helps reduce swelling, pain, and the need for medications. Dr. Romeo recommends using ice or cold therapy three to four times a day for 20 minutes.

Dr. Romeo provides each patient with specific instructions to manage any post-op pain, including enhanced recovery after surgery (ERAS) protocols. Dr. Romeo has managed thousands of surgeries and has detailed pain management plans for all of his patients. He is also committed to managing their pain responsibly to minimize the risk of opioid addiction.

## Recovery time

A split pectoralis major tendon transfer surgery is done on an outpatient basis, meaning you come in and go home the day of surgery. After surgery, you are placed in a sling for six weeks to allow the tendon to heal in its new location. After six weeks, the sling is discontinued and physical therapy begins. People typically reach full recovery six to nine months after surgery.

## Results

This procedure typically achieves the patient’s desired outcome: pain is relived and motion is restored. Unfortunately, patients may not achieve return to normal strength, especially with activities above the shoulder level.

## FAQs

### Are there any alternatives to surgery?

Yes. Physical therapy, bracing to stabilize the scapula against the chest wall, and avoiding overhead motions can be effective nonsurgical options. However, many people have limited function and don’t want to wear a brace indefinitely, so they decide to have surgery.

**Want to learn more?** Find relevant videos, animations, and research material related to this procedure at [anthonyromeo.md.com](http://anthonyromeo.md.com). →



*For more information about scapular winging treatment, please request an appointment with experienced Chicago orthopaedic surgeon Dr. Anthony Romeo.*

**Call our office today to schedule your visit. 331-777-9827**