

Pectoralis Major Tendon Repair



The pectoralis major muscle, also known as the pec, is a large chest muscle that helps with pressing activities of the arm. A common related injury is a tear of the pectoralis tendon while bench-pressing with heavy weights. Although it's a rare injury, a pec tear can result in significant disability in athletes.

"A pectoralis major tendon rupture is most commonly seen in weight lifters."

The pectoralis major is the large muscle on the upper front part of the chest. The tendon of the pec major is attached to the humerus (upper arm bone). Tendons are tissues that connect muscle to a place on the bone called the insertion site. This is where tendons are most likely to rupture (tear). A pectoralis major tendon rupture is a rare shoulder injury that typically occurs in weight lifters. In a pectoralis major tendon rupture, the tendon rips partially or fully off its insertion site at the upper arm bone.

Why treatment is required

A pectoralis major tendon rupture is an injury most commonly seen in weight lifters. Other activities related to this injury include boxing, football, wrestling, water skiing, and rodeo. People with jobs requiring manual labor may also be at risk for pectoralis major tendon tears. Nearly all reported cases have been in men.

Pectoralis major tendon injuries are often caused by eccentric loading. An eccentric load means that a force is being applied to the muscle as it lengthens (like in the lowering phase of a bench press). If the force is too great, the tendon can fail, meaning it starts to detach from the bone. People often feel a popping or tearing sensation when this happens.

It is critical to treat pectoralis major tendon tears because they can be extremely painful and can significantly reduce a person's use of their shoulder. If left untreated, people with this injury may go on to have significant weakness. Since most injuries occur in athletes, it is vital to help preserve their strength.

How treatment is performed

Pectoralis repair surgery is done for tendons that have completely ruptured from the bone. Surgery is

often preferred over nonoperative care for athletes as well as young, active people.

For this surgery, a cut is made above the armpit, the edge of the ruptured tendon is located, and stitches (sutures) are passed through the end of the tendon so that it can be pulled toward the arm bone. Small holes are drilled in the arm bone to allow anchors to be inserted. The anchors are loaded with strong non-absorbable sutures. The sutures are then passed through the torn tendon using a "tension-slide" technique. One piece of the suture is left outside of the tendon, so the surgeon can pull on it to bring the tendon directly down to its insertion site on the bone. In rare circumstances, donor tendons or tissues are required to lengthen the tendon enough so it can be reattached to the bone. These surgical techniques are also used to repair latissimus tendon tears.

Risks and benefits

As with many surgeries, the risks of pectoralis major tendon surgery include:

- » Weakness or stiffness following surgery
- » A recurrent pectoral tendon rupture
- » Risks of anesthesia

- » Infection
- » Nerve or blood vessel injuries
- » Cosmetic deformity with a change of the appearance of the pectoralis major muscle

However, the overall risk of surgery is very low, and it's essential that pectoralis major tendon tears are treated as soon as possible to reach full recovery. The benefits of the surgery far outweigh the risks for most people.

Physical therapy protocols

After surgery, a sling is worn for six weeks. Physical therapy then begins, starting with range-of-motion exercises and progressing to light strengthening exercises. Strengthening of the pectoralis muscle begins twelve weeks after surgery.

Pain control

A regional nerve block is administered using 20–40 mL of 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.

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 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



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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

The estimated time for full recovery from surgery is six months, although continued work on motion and strength allows people to see improvements for up to one year after surgery. See Dr. Romeo's 2021 paper *Return to Work After Pectoralis Major Repair* for more info.

Results

Those who undergo pectoralis major tendon repair surgery generally experience positive outcomes. Most patients are able to regain almost all of their baseline function after surgery, including the ability to return to their sporting activities.

FAQs

How is a pectoralis major tendon tear diagnosed?

Pectoralis major tendon tears can often be identified through a physical examination. The affected arm and chest are often swollen and bruised. A common sign found in people with a pectoralis major tendon tear is called the “dropped nipple” sign. This occurs when the nipple on the side with the tendon tear appears a few inches lower than the other nipple. To confirm the injury, a physician will usually request an MRI or ultrasound.

Want to learn more? Find relevant videos, animations, and research material related to this procedure at anthonyromeomd.com. →



For more information about pectoralis major tendon tear repair surgery, please request an appointment with experienced Chicago orthopaedic surgeon Dr. Anthony Romeo.

Please visit our website to find out how to schedule your appointment.