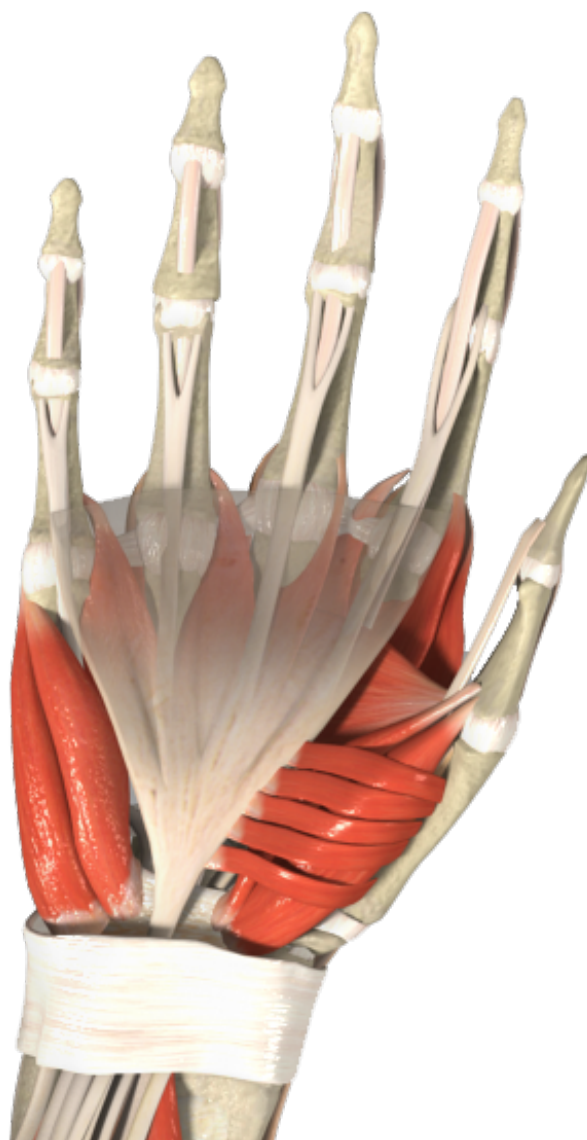


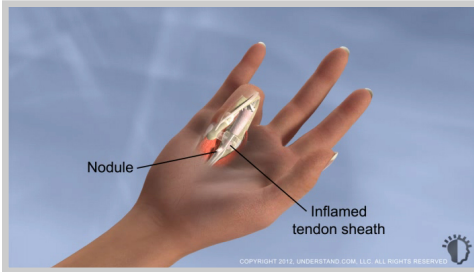
# Trigger Finger Release

Trigger finger, also known as stenosing tenosynovitis, occurs when one of the tendons responsible for bending a finger or the thumb develops a thickening, known as a nodule, and inflammation in the tendon sheath. The thickened tendon and inflamed sheath can prevent smooth gliding during motion, resulting in a popping or catching sensation while attempting to extend the finger from the palm.

The name trigger finger stems from the observation that the bent finger may suddenly release, similar to the trigger motion when firing a gun in which the pulled trigger tightens and suddenly releases right before firing. In severe cases, the finger may lock in a bent position and remain stuck in the palm despite attempts at straightening the finger. In some people, the finger becomes stuck firmly and requires using the opposite hand to straighten it.

Trigger finger is a common hand condition among adults between 40 and 60 years of age and repetitive gripping and grasping is often the underlying cause of the condition. While the condition can occur throughout the day, it is often worse in the morning. Trigger finger occurs more frequently in women than men and in patients with diabetes, gout, kidney disease, and rheumatoid arthritis or other inflammatory conditions.



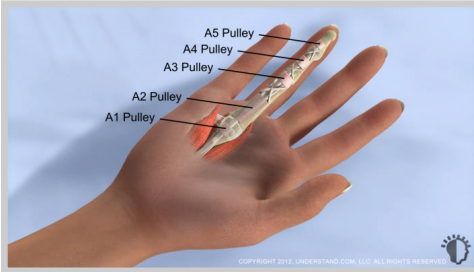


### **Introduction**

Trigger finger, also known as stenosing tenosynovitis, occurs when one of the tendons responsible for bending a finger or the thumb develops a thickening, known as a nodule, and inflammation in the tendon sheath. The thickened tendon and inflamed sheath can prevent smooth gliding during motion, resulting in a popping or catching sensation while attempting to extend the finger from the palm.

The name trigger finger stems from the observation that the bent finger may suddenly release, similar to the trigger motion when firing a gun in which the pulled trigger tightens and suddenly releases right before firing. In severe cases, the finger may lock in a bent position and remain stuck in the palm despite attempts at straightening the finger. In some people, the finger becomes stuck firmly and requires using the opposite hand to straighten it.

Trigger finger is a common hand condition among adults between 40 and 60 years of age and repetitive gripping and grasping is often the underlying cause of the condition. While the condition can occur throughout the day, it is often worse in the morning. Trigger finger occurs more frequently in women than men and in patients with diabetes, gout, kidney disease, and rheumatoid arthritis or other inflammatory conditions.

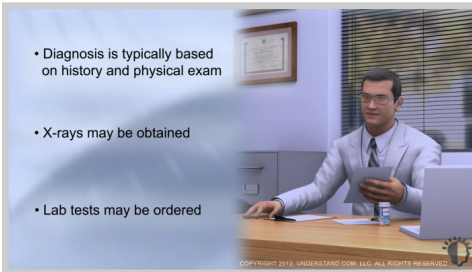
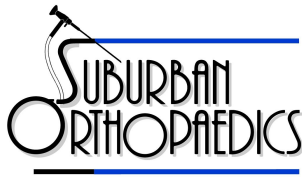


### ***Hand Anatomy and Trigger Finger***

The main force for the ability to bend, or flex, the fingers is provided by muscles in the forearm that connect to the finger bones with tough bands of tissue called tendons. Each finger has two flexor tendons and the thumb has one.

The flexor digitorum superficialis flexes the middle finger joint. The flexor digitorum profundus controls flexion of the entire finger. The flexor pollicis longus controls thumb flexion. These tendons are enclosed in sheaths lubricated with synovial fluid. This allows the tendons to freely glide while holding them next to the bones of the finger. Normally the tendons glide smoothly through the sheaths as the fingers flex and extend.

Thickenings of the sheath in five areas are referred to as annular pulleys, which are numbered A1 through A5. Trigger finger results from a widening of the flexor tendons from forceful gripping or finger flexion that causes bunching of the tendon fibers at the A1 tendon sheath pulley. Inflammation develops, causing the pulley to narrow, and the tendon catching worsens. The difference between the diameter of the tendon and the A1 pulley opening causes the tendon to catch, preventing smooth motion of the tendon pulling into the sheath during finger extension.



- Diagnosis is typically based on history and physical exam
- X-rays may be obtained
- Lab tests may be ordered

### ***Trigger Finger Symptoms, Diagnosis, and Treatment***

Trigger finger can vary in severity and duration. Milder cases may come and go, and may present only a minor annoyance from the catching sensation. However, in more severe cases, and in those that worsen over time, the condition may be painful and can cause difficulty releasing objects. The tendon may become stuck and won't move through the pulley without effort to free it.

Tenderness and swelling are often present in the palm in line with the affected finger. In addition to catching and pain, a palpable nodule is often observed. If the trigger finger exists for a significant period of time, joint stiffness may also occur. Trigger finger is typically diagnosed based on patient history and physical exams. X-rays are often obtained to assess for other joint conditions and lab tests may be ordered to check for underlying diseases such as rheumatoid arthritis, gout, or other inflammatory conditions.

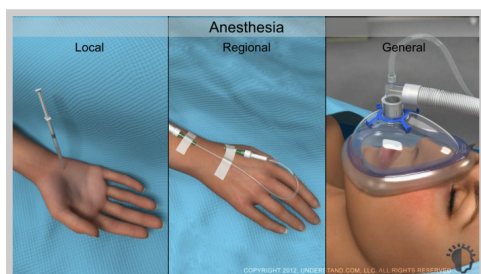
Rest, stretching, splinting, and anti-inflammatory medications may resolve the symptoms. For more significant triggering or pain, a steroid injection into the tendon sheath will often solve the problem. If one or two steroid injections do not resolve the problem, or if the triggering and pain return after a successful injection, the surgeon may recommend a procedure to release the tight A1 pulley.

A procedure, commonly referred to as a Trigger finger release, is typically performed by making a small incision in the palm to access and release the A1 pulley by cutting it open. This allows the thickened tendon and nodule to move past the pulley without getting stuck. Because of the presence of the strong A2 pulley, releasing the A1 pulley has no negative effect on the motion or strength of your hand.

An alternate method to release the A1 pulley is known as a percutaneous release. In this procedure either a small needle or

This content is for informational purposes only. It is not intended to represent actual surgical technique or results. The information is not intended to be a substitute for professional medical advice, diagnosis, treatment or care. Always seek the advice of a medical professional when you have a medical condition. Do not disregard professional medical advice or delay in seeking advice if you have read something in this printout. Copyright © 2012, Understand.com, LLC. All Rights Reserved.

percutaneous release. In this procedure either a small needle or small needle-like device is inserted into the skin and used to sever the A1 pulley. This method is not appropriate for all patients and your surgeon will recommend the procedure that is best suited for your specific condition.

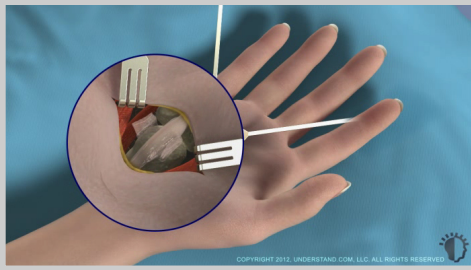


### ***Trigger Finger Release Surgery Preparation***

Trigger finger release surgery, also known as an A1 Pulley Release, may be performed at a hospital, surgery center, or possibly in your surgeon's office. It is typically an outpatient procedure, so you will be allowed home after your surgery.

Local, regional, or general anesthesia will be administered to prevent the sensation of pain. The hand will be cleansed and draped, and a tourniquet, which is similar to a blood pressure cuff, is applied to your arm or forearm to prevent bleeding during the procedure.

Your hand will be positioned palm up and will be marked for the procedure. The incision location varies depending on the finger affected and the surgeon's preference.



### ***Open Trigger Finger Release Procedure***

A small incision is made in the skin. Regardless of the location and orientation of the incision, in most instances there is minimal scarring at the incision site. When possible, the surgeon may create the incision along a crease that will conceal the scar.

After the incision is made, the tissues are gently spread down to the level of the flexor tendon sheath.

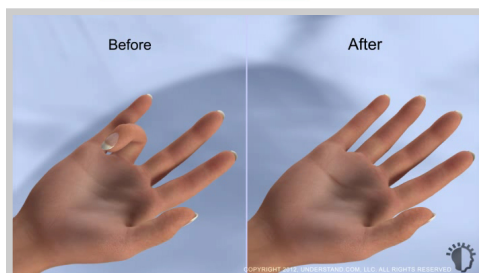
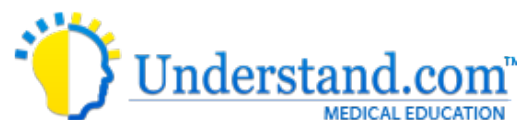
The finger is flexed and extended to visualize the inflammation or nodule as it catches on the A1 pulley.

The tissues are retracted away from the A1 pulley and it is carefully released by cutting it with either scissors or a knife.

Once the pulley is opened, the surgeon will typically use an instrument to inspect the two flexor tendons by pulling them upwards out of the incision to confirm full finger flexion with no catching or locking. The surgeon may move the finger, or if you are awake during the procedure, ask you to move the finger to test that the tendons glide smoothly.

To conclude, the wound is irrigated to remove any tissue residues and the tourniquet is released. A local anesthetic may be injected to minimize pain after the procedure and the incision is closed with a few sutures. Finally a bandage and dressing are applied. The open procedure takes roughly 15 minutes per affected finger to complete.





### **Results and Recovery**

It may take several hours for the anesthetic to wear off and for feeling to return to your hand. Some pain following the procedure is normal but is often minimal due to the small incision and can usually be managed with over-the-counter pain relievers. You will likely be asked to keep the area clean and dry and to keep your hand elevated as much as possible for several days to minimize swelling.

Bandages are generally removed after a few days and sutures are removed in one to two weeks based on healing. The incision will likely be pink or reddish in color as the tissues heal. It may also feel tender and firm for a few months after surgery. Your surgeon may encourage you to open and close the hand several times daily to avoid stiffness in the fingers.

Trigger finger release surgery has a remarkably high success rate, and the majority of patients report excellent results with relieved pain and normal motion.