

## TRIGGER FINGER

Trigger finger is a common disorder of the hand, which causes a painful catching of the fingers or thumb. The medical name for the condition is stenosing tenosynovitis, which refers to an inflammation and narrowing of the outer covering, or sheath that surrounds the tendons that bend the fingers.

The tendons themselves are tough cords that connect the muscles of the forearm to the bones of the fingers and thumb. When the muscles contract, they pull the tendons toward the elbow and cause the fingers and thumb to bend toward the palm.

The tendons on the palm side of the forearm, wrist, hand and fingers are known as the flexor tendons. In the last part of the palm and throughout the fingers, the flexor tendons are enclosed in a protective covering known as the tendon sheath. The sheath is like a tunnel and is lined with a smooth membrane known as synovium that helps reduce friction as the tendons glide. The tendon sheaths have areas of dense fibrous tissue or pulleys that hold the tendons close to the bones much as the eyelets of a fishing pole keep the line from “bowstringing” as the pole bends. The first of the pulleys is in the palm – near the last transverse crease in the palm and is called the A1 pulley - it serves as the entrance point for the tendons as they leave the hand and enter the sheath.

There are two flexor tendons in the sheaths of the four fingers and a single tendon in the thumb. They must glide smoothly through the tendon sheaths in order for the fingers and thumb to bend normally. Any impediment to the movement of the tendons can result in hitches in the smooth finger and thumb motion and even a loss of that motion.

In trigger finger, there is usually a narrowing and inflammation of the first pulley of the tendon sheath. This narrowing may be due to a loss of elasticity of the pulley or even some calcification, (the deposition of calcium salts within a tissue or structure). This results in increased friction between the tendon and the sheath and some abrasion on the tendons, which, in turn, leads to local inflammation of the tendon sheath. The normal thin sheath may then become thickened to several times its normal size and the tendons themselves swell up at the point where they enter the sheath. The combination of a reduced size of the pulley opening and localized swelling of the tendons may severely impair the ability of the tendons to glide freely.

When the enlarged portion of the tendons tries to move through the constricted opening of the sheath it may produce a catching or snapping sensation. Straightening the finger is usually the biggest problem. – As the tendons move into the tendon sheath, the enlarged portion of the tendon will momentarily get caught on the constricted pulley and, as additional straightening force is applied to the finger, the enlarged portion may suddenly enter the sheath producing a painful popping or snapping. When the condition is severe, it may be necessary for the patient to pull the finger into extension with his or her other hand. There are even occasions when the finger or thumb becomes totally locked in flexion and cannot be pulled straight.

### Causes of Trigger Finger

In many cases of trigger finger, the cause is hard to define. Many physicians feel that repeated strain of the area might cause some cases of trigger finger. Tasks that require repeated grasping or the prolonged use of tools (scissors, screwdrivers) that press on the tendon sheath at the base of the finger or thumb may also irritate the tendons and the tendon sheath, causing them to thicken.

Trigger finger is also associated with other conditions, including:

- [Rheumatoid arthritis](#)
- [Gout](#)
- Metabolic disorders like diabetes

### Symptoms of Trigger Finger

One of the first signs of trigger finger may be discomfort or tenderness in the palm directly beneath the affected finger or thumb. This is the area where the tendon sheath enters the finger. The most noticeable symptom for most people, however, is when the finger or thumb actually has the painful “triggering” or locking problem.

Other possible symptoms of trigger finger are:

- Swelling or stiffness in the fingers
- Soreness in the affected finger or thumb

If left untreated, the finger or thumb may actually become closed in a bent position or, less likely, in a straightened position.

### **Treatments of Trigger Finger**

Initial treatment of the condition can include:

- Icing the area
- Avoiding activities that caused the inflammation
- Splinting the affected finger or thumb in an extended position for 10 to 14 days

Your physician may prescribe an oral anti-inflammatory medication to reduce the pain and swelling. In addition, to reduce the inflammation of the tendon sheath, your physician may also give you an injection of corticosteroid (cortisone-like medication) directly to the affected area. If symptoms persist, another injection could be given in three or four weeks, except in cases of rheumatoid diseases. Patients with rheumatoid disease are at an increased risk for tendon rupture and surgery should be considered after one injection fails to relieve the symptoms.

If conservative (non-surgical) treatment does not work or in cases where the finger or thumb is in a locked position, surgery may be recommended. This surgery is performed on an outpatient basis under a local anesthetic.

Frequently, the surgeon simply needs to cut the band that is constricting the tendon as it passes through the sheath. You may be asked to move the tendon during the surgery to make sure it has been released. In other cases, the surgeon may need to remove the part of the tendon sheath that is causing the tendon to get stuck.

Surgery is almost always performed on an outpatient basis under local anesthesia. The choice of incisions is a matter of personal surgeon preference and may be straight, transverse or zigzag. The incision will usually be centered over the beginning of the pulley and is close to the last transverse crease of the palm. In the thumb, the incision is placed where the thumb joins the hand. The surgeon divides the constricted pulley, which immediately allows it to open up and release its hold on the swollen tendon. In some instances, some of the thickened tissues that surround the tendons will be removed. Several small sutures will be used to close the incision and a dressing, which permits some finger or thumb movement will be applied. The dressing may be removed after several days so that full motion can be achieved. It is recommended that the hand be kept clean and dry until the sutures are removed at 10 to 14 days.

The recovery from trigger finger surgery is usually rapid although the surgical site remains tender and somewhat firm for several weeks. Activities that involve pressure against the palm should probably be avoided for two to six weeks after the procedure.

A light dressing will be applied to the hand to allow movement by the fingers and thumb but still protect the wound. Following surgery, it is important to rest and limit the activity of the affected finger or thumb, hand and wrist for four to six months.

### **Possible Complications of Surgery for Trigger Finger**

The complications of trigger finger release surgery are rare, but may hamper the ability to achieve a satisfactory result in some patients. Infection could substantially compromise wound healing and could even create adhesions that limit tendon gliding and finger or thumb motion. Nerve injury although rare, can sometimes result from the retraction used for surgical exposure or direct laceration during the procedure – resulting in transient or even permanent numbness in one or more digits. The improved tendon gliding that is achieved by the surgery is usually permanent but on rare instances it persist or recurs requiring additional treatment. In a few patients, the tenderness in the palm persists for an unusually long time after the procedure.

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