

A trigger finger is a very common and treatable problem. It can occur in both fingers and the thumbs, which have tendons that help them to bend. The flexor tendons that bend the fingers have a lining on the outside. This lining is called tenosynovium. The tendon and lining are covered by a series of thick, soft tissue called pulleys. The tendon and its lining are designed to glide through the pulleys without friction. The pulleys are similar to how a line is held on a fishing rod (Figure 1).

A trigger finger, sometimes referred to as a trigger thumb or stenosing tenosynovitis, can occur if one of three things happen: 1. The tendon enlarges (does not fit through pulley well); 2. The lining increases in thickness (does not fit through pulley well); 3. the pulley becomes thicker (the opening for the tendon gets smaller). The finger tendon and pulley system is designed to have the exact right sizes of each structure. The change in size of any of the important finger structures can cause problems. If the tendon becomes tight within the pulley, the lining gets squeezed and reacts with thickening. The bigger lining then produces more fluid. And the higher volume of fluid increases pressure. The undersurface of the pulley can also change and thicken. This thicker pulley causes friction on the moving tendon. This makes it difficult for the tendon to move back and forth (Figure 2).

The good news is that trigger finger can be diagnosed by the history, symptoms, and a physical exam. It is rare to require other diagnostic testing. It is also helpful to know this problem has several very successful treatments.

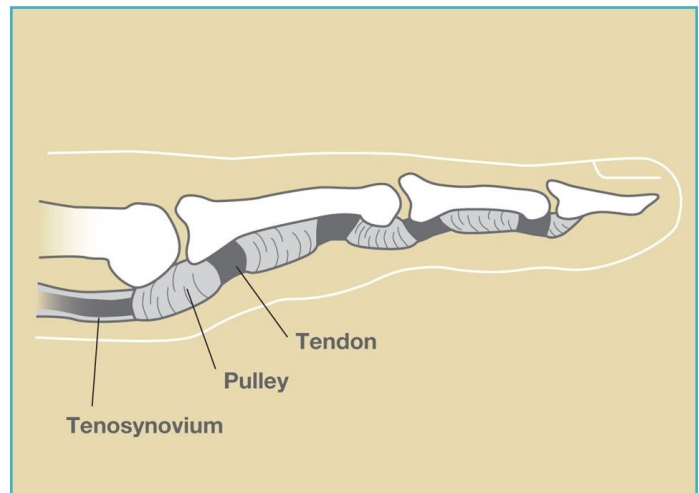
## Causes

Trigger fingers are more common with certain medical conditions. Rheumatoid arthritis, gout and diabetes are risk factors for this condition. Repeated and strong gripping may lead to the condition. In most cases, the cause of the trigger finger is not known.

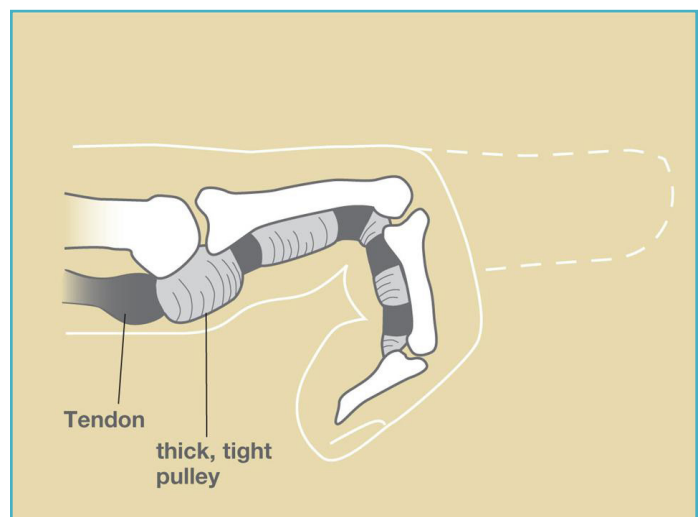
## Signs and Symptoms

Some symptoms of trigger finger can include:

- **Pain:** Trigger finger may start with discomfort felt at the base of the affected finger or thumb, where the finger joins the palm. This may be the only initial symptom. This pain occurs with pressure over the A1 pulley area. The pain is often only present with activity such as gripping. When at rest, it may not hurt. Over time, if there is increased fluid production in the tendon sheath, this may cause pressure and pain even without hand use.
- **Swelling:** Over time there may be the development of a lump at the A1 pulley. This can be due



**Figure 1:** The pulley and tendon in a finger, gliding normally.



**Figure 2:** As in trigger finger, if the pulley becomes too thick, the tendon cannot glide through it.

to a nodular swelling within the tendon or the development of a fluid filled cyst. The cyst is called a flexor sheath ganglion.

- **Stiffness or loss of motion:** A trigger finger may result in loss of the ability to bend the finger. This can be estimated by how far the tip of the finger is from the palm of the hand when the patient is asked to bend the finger as much as they can. This is most common in chronic, untreated trigger fingers. It can be painful to try and bend the finger due to the compression of the fluid. Over time, the person may start to avoid a bent position of the finger to limit pain. Trigger fingers can also result in loss of the ability to straighten the finger. Some

patients will feel pain trying to fully straighten. When the joint does not fully straighten for several weeks, a ligament called the volar plate becomes shortened and limits motion.

- **Mechanical symptoms:** A trigger finger can cause abnormal sensations or movement that are often described as popping, catching, or locking. Sometimes these abnormal sensations occur while bending or straightening the finger, or both. Early on, the symptoms may be mildly painful, but as the tendon and pulley interaction becomes tighter, the pain can increase.

## Treatment

The goal of treatment in a trigger finger is to reduce or eliminate the swelling and catching/locking, allowing full, painless movement of the finger or thumb. The ability to restore the finger to what the patient believes is normal or 100% is easier when the problem is diagnosed and treated as soon as possible.

Common treatment options include, but are not limited to:

- **Splinting at night.** It is estimated that much of the body's fluid volume pools in the legs during the day when we sit and stand due to the effects of gravity. When someone lays flat at night, the effect of gravity on the legs is more similar to the arms, so fluid may shift from the legs to the arms. This may increase swelling in the fingers where pain and locking can be more frequent at night and the early morning. By using a night splint to keep the finger straight, it can prevent painful locking during sleep. However, keeping the finger straight all night could result in the need to spend some time and effort getting it to move smoothly the next morning.
- **Nonsteroidal anti-inflammatory drugs (NSAIDs).** Many times, oral or topical anti-inflammatory medication (like ibuprofen or naproxen) can be tried to relieve pain and improve ability to move the finger through a large arc.
- **Changing your activity.** It may be possible to limit or space out the amount of time spent in forceful, repetitive, or sustained gripping.
- **Steroid injection.** Corticosteroid injections, also known as a cortisone shot, can be given at any stage of symptoms or duration. However, there may be better success when they are given early.

- **Hand therapy.** Patients may benefit from some supervised and home exercises. It can be helpful to have a hand therapist teach concepts and techniques such as passive joint motion, tendon differential tendon gliding, proximal joint blocking to isolate more distal joints, edema control, and other treatments.

If non-surgical treatments do not relieve the symptoms, surgery may be recommended. The goal of surgery is to open the pulley at the base of the finger so that the tendon can glide more freely. The clicking or popping goes away in most cases after cutting the A1 pulley. If there are still mechanical symptoms after a trigger finger release, a flexor tenosynovectomy can be considered. This procedure removes the thickened lining from the surface of the tendons. If there are still mechanical symptoms, then part of the superficial tendon can be removed to reduce the volume of tendon moving in and out of the rest of the pulley system. It is optimal if all the above surgical treatments can be performed during the same procedure.

With surgical treatment, the chances of recognizing and treating all changes to the finger is improved when it is possible for the patient to be awake at the end of the procedure to follow instructions. By having the patient able to actively bend and straighten their fingers several times, the surgeon can verify the mechanical symptoms are absent. Finger motion can return at different speeds depending on each patient and their unique timing of symptom development, when treatments begin, and the effectiveness of each type of treatment. Your orthopaedic hand surgeon will develop an individual treatment plan for you. There are different ways to perform the surgery. There are several different surgical techniques, anesthesia options, and locations where the procedure can occur.

There can be some ongoing stiffness after hand surgery even if there is no more locking, and it may remain long-term. Therefore, hand therapy can be beneficial after surgery whether or not it was used before surgery. There may be some mild to moderate tenderness at the surgery area for up to several months after surgery. However, most patients resume their normal lifestyles within a few weeks.

Learn more about common conditions of the hand and upper extremity, including carpal tunnel syndrome and de Quervain's tenosynovitis, by browsing the full list of diseases and conditions on HandCare.