

Guide to Tendonitis

Introduction

Welcome to Peak Physical Therapy's resource about Tendonitis.

Achilles Tendonitis



Tendonitis—also known as tendinitis—refers to acute (short-term) inflammation of a tendon. Inflammation is characterized by pain, swelling, or irritation. These symptoms develop in response to an injury to initiate the natural healing process.

Tendonitis is a common problem that may occur due to an injury or overuse (e.g., repetitive actions). Tendon problems are particularly prevalent in people who play certain types of sports such as basketball, marathon running, tennis, baseball, and bowling. Furthermore, tendonitis accounts for about 30 percent of all running injuries and 40 percent of all tennis injuries.

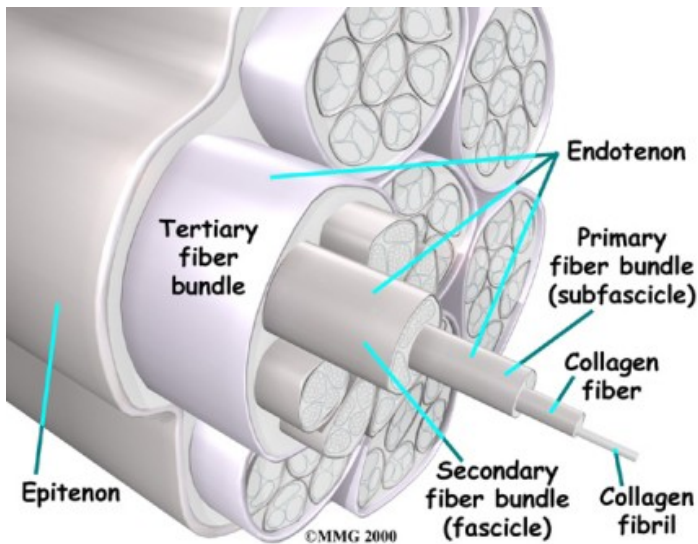
However, tendons do not always become inflamed as a result of an injury. A condition called tendinopathy—in which collagen gradually begins to degenerate or break down over time—may also lead to tendon damage. Nonetheless, tendonitis is still the most commonly used term to describe tendon inflammation.

This guide will help you understand:

- how tendonitis develops
- how health care professionals diagnose the condition
- what can be done for tendonitis
- Peak Physical Therapy's approach to rehabilitation

Anatomy

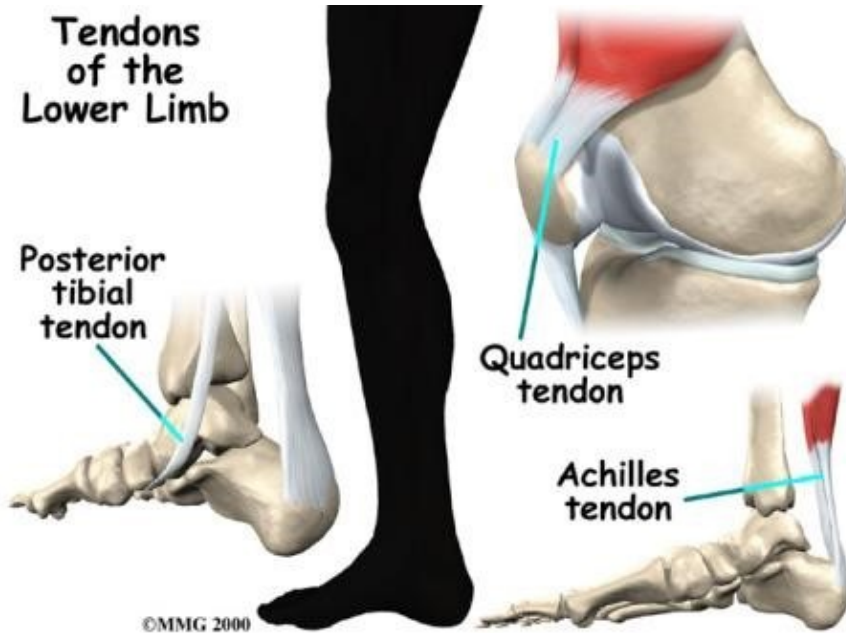
Where does tendonitis develop?



Inflammation can develop in any tendon in the body. Tendons are fibrous structures—made up of mostly collagen fibers—that connect muscle tissue to bone. Collagen is a structural protein that is the key building block of many structures in the body. Collagen helps form robust connective tissue by creating a network of collagen fibers that twist around one another in a manner that is similar to the strands of a nylon rope.

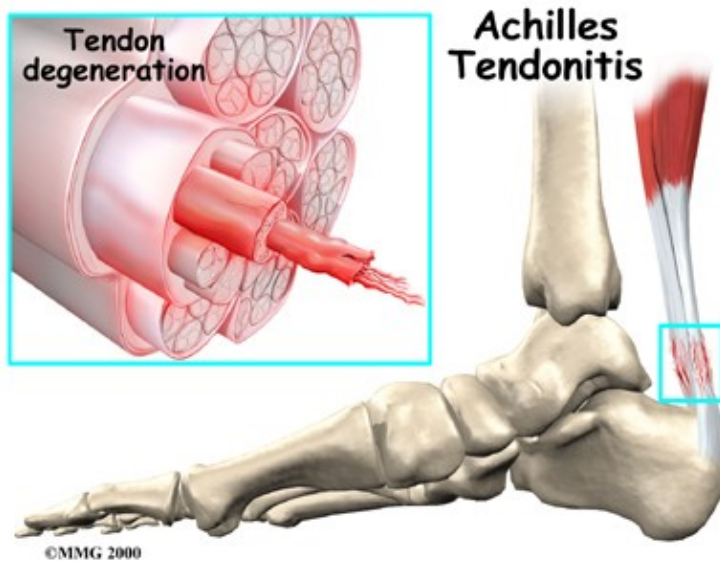
In addition to being made up primarily of collagen, the tendon is surrounded by a protective lining called a tendon sheath. The tendon sheath is filled with a lubricating fluid that helps tendons move easily against surrounding tissue. If the tendon sheath becomes inflamed, it can lead to an issue called tenosynovitis. Both the tendon and its sheath may also become inflamed at the same time.

Doctors use different terms to describe specific types of tendon problems. When tendonitis arises, it is typically observed in the joints—particularly those in the lower limb.



Achilles Tendonitis

Achilles tendonitis is a common issue that develops when the large tendon that extends down the back of the lower leg becomes inflamed. The Achilles tendon connects the calf muscle to the heel bone, and it is the largest tendon in the body. This tendon facilitates standing, walking, running, and climbing.



The robust structure of the Achilles tendon can generally withstand the stress of strenuous movements such as jumping or running, but it is also prone to inflammation due to overuse. Achilles tendonitis also increases the risk of an Achilles rupture, in which the tendon detaches from the heel bone or tears completely in half. Continuing to bear weight upon an inflamed tendon increases susceptibility to a more serious injury (e.g., rupture).

There are two types of Achilles tendonitis: insertional Achilles tendonitis and non-insertional Achilles tendonitis.

Insertional Achilles tendonitis refers to damage of the lower part of the tendon where it inserts (attaches) to the heel bone. This form of tendonitis is common in runners. Non-insertional Achilles tendonitis occurs when collagen fibers in the middle of the tendon begin to develop microscopic tears, usually due to wear and tear. Younger active individuals (athletes) tend to experience this type of tendonitis.

Related Document: [Peak Physical Therapy's Guide to Achilles Tendon Problems](#)

Posterior Tibial Tendonitis

Posterior tibial tendonitis, which is also called tendon dysfunction, is a common problem that affects the ankle and foot. It develops due to inflammation of the posterior tibial tendon. If the tendon tears, it loses the ability to properly stabilize the arch of the foot and can lead to painful flatfoot. This issue is usually caused by age-related degeneration.

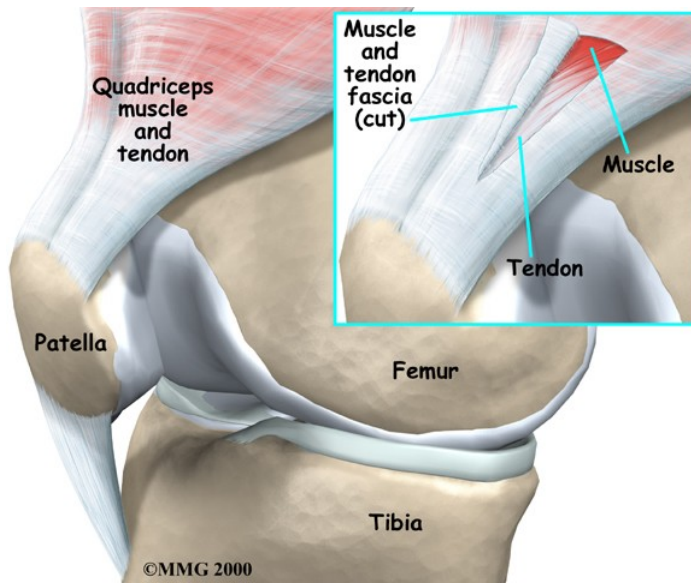
Posterior Tibial Tendon Problems



Related Document: [Peak Physical Therapy's Guide to Posterior Tibial Tendon Problems](#)

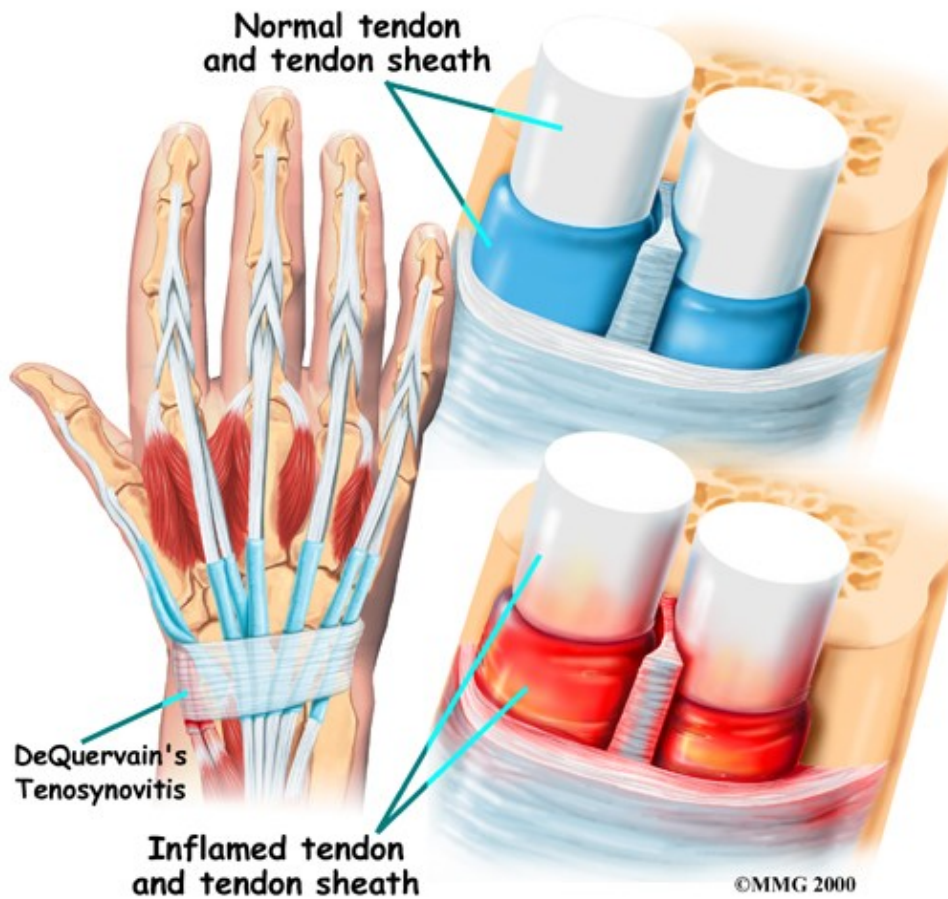
Patellar and Quadriceps Tendonitis

Patellar and quadriceps tendons are located near the knees. Patellar tendonitis refers to inflammation of the tendon that connects the patella (kneecap) to the shinbone. Quadriceps tendonitis occurs when inflammation develops in the quadriceps tendon, which is located directly above the patella where it connects the thigh muscles to the top of the patella. Problems in the knee tendons mostly occur in active individuals who regularly engage in running or jumping. Patellar tendonitis is also called jumper's knee.



De Quervain's Disease and Trigger Finger

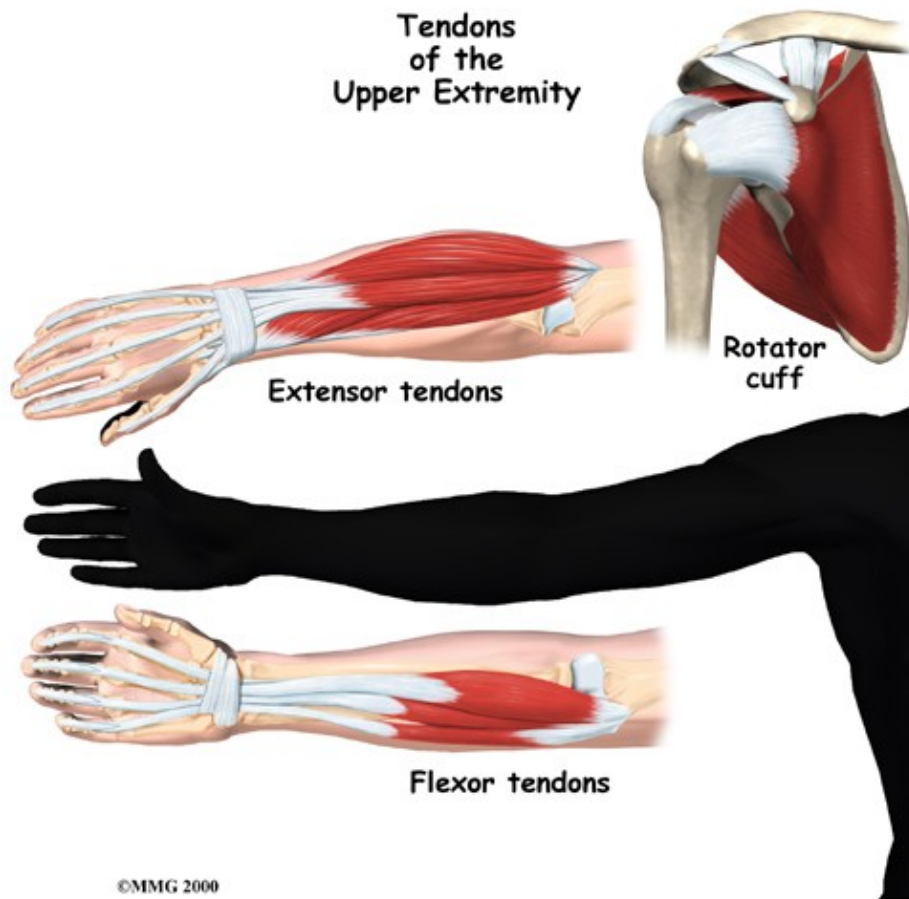
Tendon problems are also common in the hand and wrist. De Quervain's tenosynovitis is characterized by swelling and inflammation of tendons that attach the base of the thumb to the wrist. The tendon sheath also becomes irritated and this leads to pain in the wrist and thumb while moving the hand or grasping an object.



A similar issue is called stenosing tenosynovitis or trigger finger, in which the tendons that allow the fingers and thumb to bend and extend become inflamed. When this occurs, pain and stiffness may develop in the fingers. Eventually, it becomes increasingly difficult to move the fingers or thumb.

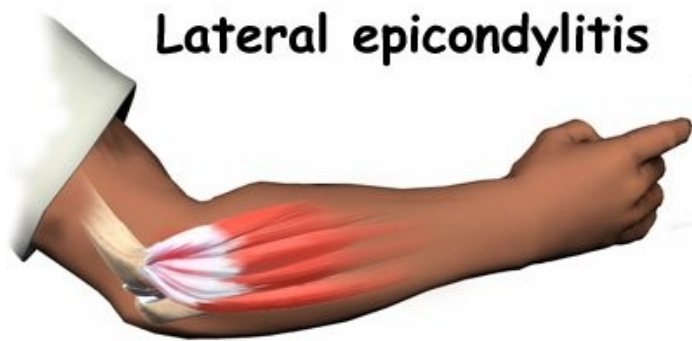
Related Document: [Peak Physical Therapy's Guide to Trigger Finger and Trigger Thumb](#)





Lateral Epicondylitis -- Tennis Elbow

Lateral epicondylitis or tennis elbow is a painful overuse injury. It involves the inflammation or microscopic tearing of tendons that attach the forearm muscles to the outside of the elbow. Repetitive movements, such as swinging a tennis racquet, can cause this type of



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injury.

Medial Epicondylitis - Golfer's Elbow

Medial epicondylitis—also known as golfer's elbow—develops due to inflammation of the tendons that attach the forearm muscles to the inside of the elbow. This type of injury is caused by overuse of the tendons in this region (e.g., repeatedly swinging a golf club). It is associated with tenderness and pain on the inner side of the elbow. Golfer's elbow can also cause pain in the wrist and hand during



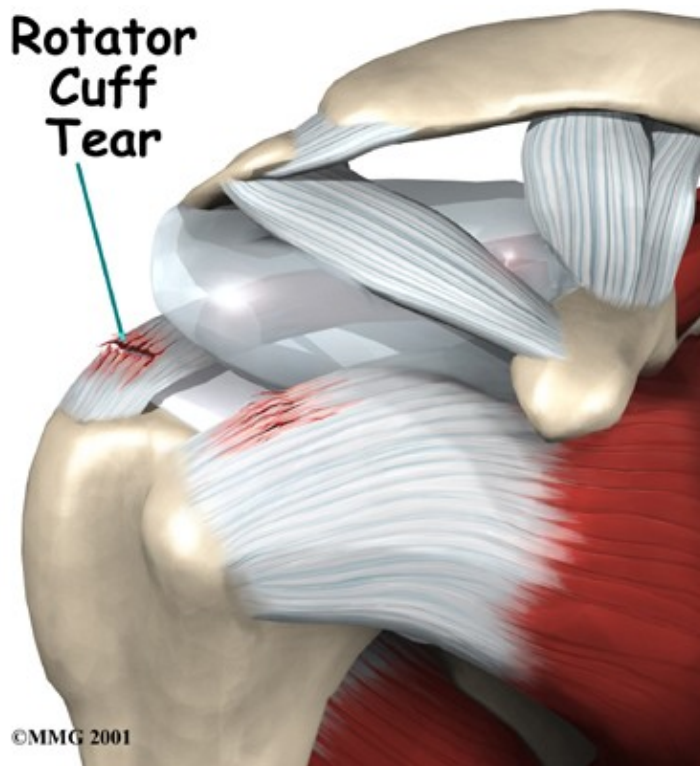
**Area of pain
in medial
epicondylitis**

movement.

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Rotator Cuff Tendonitis

Rotator cuff tendonitis refers to inflammation of the rotator cuff due to repeated stress (e.g., throwing, overhead lifting). This injury is also described as shoulder impingement, biceps tendonitis, or shoulder bursitis. Rotator cuff tendonitis often leads to chronic pain, even while at rest.



The upper portion of the arm bone, called the humerus, is connected to the shoulder by tendons and muscles. Four of these tendon-muscle groups form what is known as the rotator cuff—the structure that stabilizes the shoulder and controls the lifting of the arm.

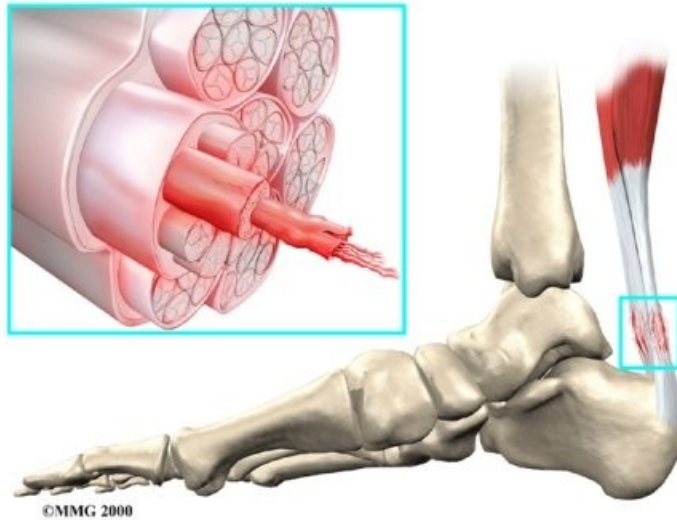
Rotator cuff problems can range from mild damage to partial or complete tears. If left untreated, a severely torn rotator cuff may require surgical treatment.

Related Document: [Peak Physical Therapy's Guide to Rotator Cuff Disease](#)

Causes

Why do I have this problem?

Health care professionals don't know exactly what causes most tendon problems. It is believed that muscles and other connective tissues in the joints become tight, weak, or misaligned. Pain and swelling that develops due to tendonitis may also be caused by the inflammation of tissue surrounding the joint.



However, repetitive stress on the tendon is the most common cause of tendonitis. A tendon can become injured by repeating the same movements frequently, such as running, overhead throwing, swinging, and jumping, or due to the stress of repeatedly lifting heavy loads. Tendonitis develops gradually over weeks or months before mild, moderate, or severe pain occurs. Additional factors that increase the risk of tendonitis include a lack of flexibility or weak muscles. Shoes that do not fit properly, the use of improper equipment, or inappropriate movements due to poor posture also increase a person's susceptibility to tendonitis.

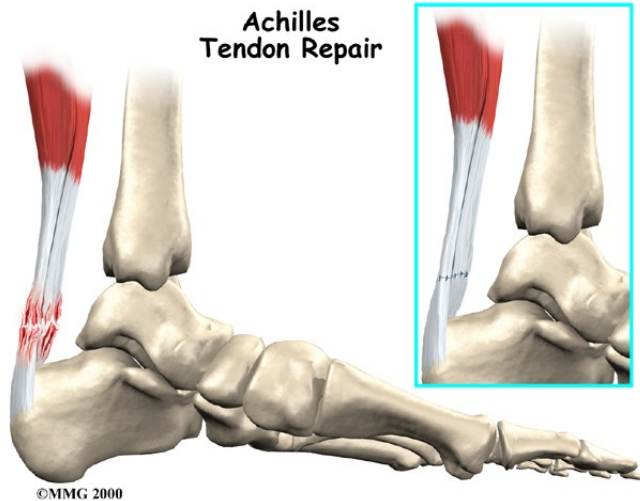
The aging process can also lead to tendon damage. As individuals age, connective tissues within the tendon can break down or degenerate. More specifically, age-related tendon problems usually involve the degeneration of collagen. As the tissue damage progresses, pain and inflammation may alter joint mobility. Health care professionals refer to this type of issue as tendinosis.

Some researchers believe that decreased blood flow to the tendons can cause the tissue damage that leads to tendinosis. Reduced blood flow prevents sufficient amounts of oxygen and nutrients from reaching the tendons. This causes collagen fibers to become weak and lose their rope-like structure. Damage due to degeneration is particularly common in the rotator cuff, the Achilles tendon, and tendons in the elbow.

However, different factors may simultaneously cause tendonitis or tendinosis. For instance, a woman in her forties who takes up running may develop joint inflammation due to the age-related degeneration of collagen in the joints in combination with the mechanical stress of running.

Symptoms

What does tendonitis feel like?



Tendonitis causes pain, swelling, inflammation, and tenderness. These are also the primary symptoms of tendonosis. In some cases, the swelling occurs due to thickening of the tendon tissue. Swelling may also develop due to thickening of the tendon sheath.

Tendon problems typically cause pain after periods of rest, such as when waking in the morning. The pain usually goes away within minutes or even seconds.

Over time, pain or swelling in the tendon may cause the joint to become stiff and difficult to move. Some types of tendon problems can also cause crepitus—a grating sensation when the joint is moved. In rare instances, the weakened tendon may rupture or tear as a result of a sudden force. This type of injury may require surgical repair.

Diagnosis

How do health care professionals identify tendonitis?

When you visit Peak Physical Therapy, our Physical Therapists will review your medical history. This includes asking many questions about your activities, your job, and when your symptoms typically occur. Your Physical Therapist will also physically examine the sore area. This part of the exam may cause pain, but it is important for us to know exactly where it hurts.

Once your diagnostic examination is complete, the Physical Therapists at Peak Physical Therapy will discuss treatment options that will help accelerate your recovery, so you can quickly return to your active lifestyle. Some patients may be referred to a physician for further diagnosis and pain management.

Treatment

What can be done for the problem?

Tendon problems can be difficult to treat effectively. They can last for many months to several years, even with treatment. Although the amount of time needed for recovery varies, you should expect your treatment to take about six to nine months. The exact treatment your Physical Therapist at Peak Physical Therapy recommends will depend on which tendon is affected. Even if treatment is effective, your pain may still

come back.

If there are signs of true inflammation, your Physical Therapist will probably suggest the use of nonsteroidal anti-inflammatory drugs (NSAIDs), such as aspirin or ibuprofen, to help control your symptoms. NSAIDs are usually taken for a short period of time to treat pain and inflammation. Your Physical Therapist may also suggest ice or heat treatments.

You will also need to rest and give your body time to heal. If playing tennis, for example, led to your tendon injury, you may need to stop playing tennis until the damaged tissue completely heals. You should only take part in activities that don't strain the injured tendon.

When you begin your Peak Physical Therapy rehabilitation program, our Physical Therapist will teach you stretches and exercises that promote healing and help restore the strength of your tendon. We can also assess your work area and athletic equipment to recommend changes that will reduce the strain on your tendon. Depending on your type of injury, we may also ask you to try special equipment such as arch supports, heel lifts, and splints.

Most people with chronic tendon problems can find ways to relieve the pain and take part in their normal activities, even if the problem doesn't completely go away. In a few cases, patients may not be able to find effective ways to manage the pain even after six months of Physical Therapy. For these few patients, surgery may be necessary to experience complete relief from chronic tendonitis.

Peak Physical Therapy provides services for Physical Therapy in Newburgh and Orange County New York.

Rehabilitation

Physical Therapy at Peak Physical Therapy will help immensely with any tendon problem you have, whether acute or chronic. Beginning treatment with us as early as you can once you develop the problem is the best way to guarantee that the problem resolves and that it does not become chronic.

On your first visit to Peak Physical Therapy your Physical Therapist will ask you questions about where precisely the pain is, when the pain began, what you were doing when the pain started, and what movements aggravate or ease the pain. If you are involved in sport, your training history including any increases in frequency or intensity of activity or change in equipment will also be important for us to inquire about. If you have not seen your doctor, and your problem has not been identified, then the history alone will often lead your Physical Therapist to your tendon being the source of your pain.

Next your Physical Therapist will do a physical examination of the area around the tendon as well as your entire associated limb and other joints near the area. Your Physical Therapist will assess your postural alignment, flexibility and joint laxity with regards to the closest joint and may want to look at how you stand or sit. If the tendon is in your lower extremity, they will also observe your foot position and watch you walk, and possibly squat, run, or jump. If you are involved in sport, they may also ask you to bring in some of your equipment to the next appointment, such as your running shoes or tennis racket, so it can be examined for potential faults or factors that may be contributing to the development of your pain.

Next your Physical Therapist will check the strength and lengths of the muscles directly attaching to your painful tendon as well as any other related muscles. If any muscles are weak or tight, they can contribute to the stress on the related tendon. Often joints that may seem unrelated to the problem to you will need to be assessed by your Physical Therapist as weaknesses or imbalances in and around other areas frequently contribute to the pain that arises in a tendon of the associated arm or leg. For instance, the grip strength of

your hand may be tested even if it is your elbow that is causing your pain, or the strength around your hip may be assessed if your Achilles tendon is the issue.

Initially the treatment at Peak Physical Therapy will focus on decreasing any inflammation and pain around your tendon. Your Physical Therapist may use electrical modalities to do this such as ultrasound or interferential current. Heat and/or ice can also be very useful at any stage of tendon healing to decrease pain and also inflammation if there is any. Your Physical Therapist can advise you on whether heat or ice or both is the best treatment in your particular case. Your Physical Therapist may also use massage for the muscles around the tendon or even directly over the tendon to ease your discomfort and again assist with decreasing any inflammation if it is present.

A crucial component to the healing of any tendon injury is relative rest. As most tendon injuries result due to repetitive activities over time that cause too much stress on the tendon and then lead to pain, your Physical Therapist will strongly advise you to avoid any activities that cause you discomfort. This may mean, for instance, if it is a tendon in your elbow that is affected, that you have to use your other arm as often as possible to give the painful tendon a period of relative rest. This may also mean resting for a short period from any sport you do, or at least decreasing the amount you play over a period of time. Your Physical Therapist will specifically guide you regarding the needed rest for your individual injury. This rest may seem quite difficult to achieve, however it is well known that generally without relative rest for an injured tendon, there is little chance for it to heal and the problem can easily become chronic, or can lead to a more severe injury, such as a tear in the tendon. A period of rest where the tendon is not being aggravated also greatly improves the ability of any medication you may be taking along with the Physical Therapy treatment you are receiving to assist the healing of the injury. This rest period allows a short time frame where the tendon is not being aggravated while at the same time, it is also receiving the necessary treatments to expedite healing of the tendon. After your period of rest your Physical Therapist will advise you when it is safe to slowly start back at your activity.

There are many braces on the market that are designed to assist with the rehabilitation of tendonitis injuries. There is basically a brace for all potential areas of tendonitis in the body including areas such as the Achilles, elbow and wrist. Your Physical Therapist can advise you regarding whether a brace would be useful in your case, and can also advise you on where to purchase them. Quite often your Physical Therapist will trial some strapping or taping prior to you investing in a brace for the affected area. Taping the area is obviously cheaper than a brace, and gives you and your Physical Therapist a good idea as to whether a brace would help with your pain. Tape, although often helpful, can not often be used for long periods or repetitive treatments because the skin gets irritated, and in addition it may be difficult for you to tape the area independently when you are not at Peak Physical Therapy. For this reason, a brace is often recommended.

In certain tendon problems, such as Achilles tendonitis, other types of orthotics may be suggested. The pain associated with Achilles tendonitis often responds well to a heel insert that lifts the heel of the affected side, and shortens the relative length of the tendon. This in essence decreases the stretch on the tendon and can often be enough to allow some relative rest for the injured area.

In the case of any lower extremity tendon issue, shoe orthotics may also be suggested by your Physical Therapist. Poor alignment of the lower extremity will put undue stress on the tendons of the lower extremity. Correcting the position of your foot, if it is a contributing factor to this misalignment, will decrease this stress and will also assist the healing process of the tendon.

During the next part of treatment your Physical Therapist will prescribe stretching and strengthening exercises for your affected area. Your Physical Therapist may do some stretching for you in the clinic, but they will also teach you how to stretch the affected area as well as any related muscles as part of your home

program. Strengthening the affected tendon and associated muscles will also be a part of your home program. Initially strengthening will be simple exercises and may or may not include using any weights. As soon as appropriate, however, your Physical Therapist will prescribe eccentric exercises which are crucial to making a full recovery from a tendon injury.

Eccentric contractions occur as the muscle lengthens and the tendon is put under stretch. Landing from a jump is an example of an eccentric contraction for the knee or Achilles tendon. These types of contractions encourage the tendon to adapt to the more aggressive force that will eventually be needed to return to regular physical activity.

Adding weights to these exercises as well as doing the exercises in a speeded fashion will also encourage the tendon to adapt to the more aggressive forces that it will need to endure repetitive activities of daily living or sporting activities. All exercises should be completed with minimal or no pain and advancing the exercises should be done at the discretion of your Physical Therapist as not to flare up the healing tendon.

Maintaining proper posture and alignment of your body during regular everyday activities can also greatly affect how quickly your tendon heals. For upper extremity issues, good sitting posture is vital in order to decrease the stress on the arms, neck and back.

Shoulders should remain upright and out of the slouched position as this puts stress on the neck, upper back, and shoulders, and in turn affects how well you can use your arm. If you are frequently using a computer, the position of your hand on the keyboard or mouse over a prolonged period can also add stress to your tendons and accentuate the problem. Your Physical Therapist will advise you regarding your posturing as well as make suggestions for ergonomic tools that may help you decrease the stress on your tissues and encourage more rapid healing. If you are a manual worker the amount of lifting and gripping involved in your day will be assessed. Excessive gripping or lifting especially without having good grip (ie: using too large or poorly gripped gloves) will add to the strain on your injured body part, so changes to these activities in your everyday life will be suggested.

For lower extremity issues, the alignment of your hips over top of your feet can add to or decrease the stress that is put through your injured area. Your Physical Therapist will advise you on proper alignment of your hips, knees, ankles and feet, and will encourage you to maintain and use this posture throughout your day even during simple activities such as walking or climbing stairs. These simple changes can make a massive difference to the cumulative stress that is placed on your painful tendon.

As soon as it is appropriate your Physical Therapist will integrate you back into the activities that you were having difficulty doing, whether that be typing on the computer, or playing high-level sport. A period of controlled and supervised slow reintegration is crucial to avoid further pain or a flare up of the healing area.

Most people with acute or chronic tendon problems, with the help of Physical Therapy at Peak Physical Therapy, are relieved of their pain and can eventually take part in their normal activities. In a few cases, however, a high level of pain lingers on even after the appropriate rest and a significant amount of therapy. For these patients, a more aggressive form of treatment will need to be considered. In these cases, your Physical Therapist will refer you back to your doctor. A relatively new form of treatment may be available to you called platelet rich plasma injections (PRP.) Platelet-rich plasma refers to a sample of serum (blood) plasma that comes from the patient themselves, and is treated to extract as much as four times more than the normal amount of platelets. Platelets are the smallest cells in the blood and are essential for blood clotting and injury healing. This serum is then injected back into the problem area to encourage new tissue healing. PRP treatment enhances the body's natural ability to heal itself and can shorten recovery time from acute and chronic soft tissue injuries.

If no other conservative treatment is successful, surgery may be necessary to debride the degenerative tendon and encourage new healing. Surgery can be very successful in treating the problem of chronic tendon pain but ongoing rehabilitation after surgery will be necessary to ensure complete success. If surgery is necessary for your tendon problem, your Physical Therapist at Peak Physical Therapy can guide you through the appropriate post surgical rehabilitation necessary that is specific to your injury and your individual requirements in order to return you as quickly as possible back to your everyday and sporting activities.

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