

## **TRADITIONAL TREATMENT OF TENDINOPATHY**

The goals of tendinopathy treatment are to decrease pain and improve function. In many cases simple measures such as relative rest, ice and a brief course of over-the-counter medication can successfully alleviate the condition. For this reason, conservative, nonoperative management remains the mainstay of treatment for chronic tendinopathy.

That said, it is still true that up to 45% of patients with a chronically injured tendon will go on to surgical intervention. Most healthcare providers feel that at least six months of diligent nonoperative conservative measures are indicated prior to consideration of surgery.

There are many options, but unfortunately, few have been well studied and are based primarily on anecdotal experience. Indeed, there are very few scientific studies that support the use of even the most common conservative measures.

What follows is a brief outline of the most commonly recommended conservative therapies and what you can expect from that modality.

## COMPLETE REST

Tendons are typically injured from excess use. Therefore, rest is paramount to resolution of symptoms. That said, complete rest achieved by immobilization is rarely desirable. Some tendon loading is necessary for the collagen and soft tissue that makes up the tendon to repair and remodel.

## “RELATIVE REST”

Allows for maintenance of activities with reduced intensity and mechanical load and is often times preferable to complete immobilization. Ideally, individuals with tendinopathy should avoid activities that elicit pain and abstain from activities that caused the original injury. Creative cross training exercises combined with activity modification can often times provide the “relative rest” needed for tendons to heal.

## ICE

Ice is often used to treat tendinopathy. Ice, or “cryotherapy,” produces its effects by decreasing blood flow to the treated area. The resultant decreased blood flow causes a decrease in metabolic activity which ultimately leads to less inflammation and less swelling. Ice has been shown to be helpful in the acute situation

but is less successful once the tendon injury becomes more chronic.

## EXERCISE AND STRETCHING

Exercise and stretching are two of the most effective treatments for tendinopathy. In particular, eccentric exercises, exercises that cause a lengthening of the involved muscle/tendon unit while under tension, have been shown to be extremely effective in treating numerous types of tendinopathies. Eccentric exercises produces a controlled application of stress and strain to an injured tendon. Eccentric exercise ultimately alters the structural and mechanical properties of the tendon leading to increased collagen synthesis and ultimately tendon remodeling and healing. Eccentric exercises are particularly helpful in Achilles tendinopathy as well as patellar tendinopathy. These exercises are easily learned after just one or two sessions of physical therapy.

Stretching is controversial. Although stretching transiently decreases pain, there is little data to suggest that stretching will either prevent or heal an injured tendon. Stretching may, however, be helpful as a means for correcting muscle imbalances.

## ANTI-INFLAMMATORY MEDICATIONS

Anti-inflammatory medications such as Ibuprofen and Naproxen are often times used in treating tendinopathy. These medications act by decreasing inflammation and may have a role in the acute phases of tendon injury. A brief course of these medicines may be desirable. However, long-term use of anti-inflammatory medication is not curative and is not without risks. Potential side effects of an anti-inflammatory medicine include aggravation of preexisting kidney problems, gastrointestinal upset, ulcer formation, and bleeding.

## BRACES AND ORTHOTICS

Braces, orthotics and shoe inserts are often used to treat chronic cases of tendon injury. These devices act to off-load injured tendons by shifting weight to less involved areas. Many individuals who develop a tendinopathy have an underlying mechanical problem. Correcting that problem is often times helpful. Depending on the particular tendon injury, orthotics and/or braces are generally considered prior to more invasive treatments.

## CORTICOSTEROID INJECTIONS

Steroid injections are a common treatment of tendinopathy. Steroid injections generally result in a transient decrease in pain in the area of the injection. Steroids injected into the tendon sheath are particularly helpful. This modality is often times used in treating tennis elbow, trigger fingers, as well as tendonitis of the shoulder.

Several scientific studies have shown that steroid injections can result in short-term pain relief. There is little data, however, to suggest that tendon injections promote tendon healing.

Steroid injections are not without risk. Repeated injections soften tendons and have been shown to increase the risk for tendon rupture and failure. For this reason, steroid injections are generally avoided in the Achilles tendon and the patella tendon.

## NITROGLYCERIN PATCHES

Topical nitroglycerin patches are often used to treat the early phases of tendinopathy. These patches stimulate the formation of nitric-oxide which is a potent chemical that leads to blood vessel dilation and improved blood flow in the area of treatment. In theory, increases in the nitric-oxide concentration in the area of tendon injury should lead to both increased blood flow as well as an enhanced healing response. Thus-

far, however, scientific studies have been conflicting. Further, headaches and other side effects are common with this form of therapy.