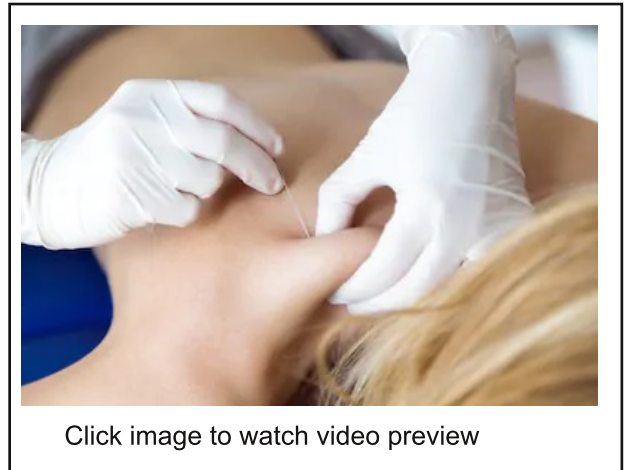


Does trigger point therapy doom patients to further problems: deactivate or eliminate?

Introduction

According to the scientific literature the goal of treating (myofascial) trigger points is to deactivate them. This is merely changing them from a state where they spontaneously cause pain to where they do so when palpated. This helps relieve symptoms, but they are still there, still causing considerable detriment, and are just one aggravation away from becoming spontaneously painful again.

Clinical trails measure success as relieving pain, but is deactivation leaving patients with their underlying condition still there causing ongoing detriment and subject to probable relapse a worthwhile clinical goal, or even being honest with patients? In this article we will briefly discuss how this occurs, why deactivated trigger points are still detrimental, then finish by discussing some options for complete elimination.



Trigger point basics

What is a trigger point

Trigger points are described as being palpable lumps within taut bands of muscle that have characteristic pain referral patterns. They are a key issue in most musculoskeletal pain syndromes (1–4). They are thought to start from microscopic damage to muscles caused by injury or overuse, especially if blood flow is reduced due to chronic tightness. The science behind them can get quite involved, but in summary:

- part of the muscle goes into spasm forming a palpable lump.
- the spasm is locked on by a positive neurological feedback loop.
- because the spasmed part of the muscle is shortened the remainder of the muscle becomes tight
- with tightness restricting blood flow and the continued contraction of the spasmed section of muscle there is a build up of neurotransmitters and metabolic wastes, and a depletion of oxygen and nutrients.

Active vs Latent

Trigger points are called active if they spontaneously refer pain, or latent if they only produce pain when pressed upon. They are of course the same entity, free to revert from one state to another. Aggravation can change a latent trigger point to being active, while rest or treatment may revert it back to being latent.

Prevalence

Overuse and chronic tightness of muscles are common, and trigger points can exist in their latent state not noticed. Because of this trigger points are highly prevalent in asymptomatic people (5).

Latent trigger points are still a problem

Apart from being just one step from becoming symptomatic, having part in continuous spasm with reduce blood will of course be detrimental for the muscles, and the hypertonicity and reduced functionality will adversely effect posture and biomechanics. Even without referring pain, the consequences of latent trigger points have been summed up as follows. (5)

- restrict ranges of motion
- cause muscle weakness
- cause muscle fatigue
- alter muscle activations, and
- induce muscle cramps
- affect posture and joint function, creating further issues.

On top of that, scientists are now finding that latent trigger points still produce sub-threshold levels of pain that over time sensitises the nervous system. This is a major cause of issues such as fibromyalgia and migraines (6).

The goal of treatment according to the scientific literature

To quote a review of trigger point therapies: (7)

Most physical therapy treatments of MPS (myofascial pain syndromes) are targeted at deactivation of MtrPs (myofascial trigger points).

There have been huge numbers of trials into the efficacy of trigger point treatments. All bar three we could find had stated goals such as deactivation or symptom relief. Success of therapy was determined by such measurement as pain levels, the amount of pressure upon a muscle needed to produce pain, ranges of motion, and various questionnaires relating to pain and disability. These are very worthwhile goals, but only three checked whether the trigger points were still present.

The three exceptions

We were able to find three trials that investigated the presence of trigger points after therapy.

Trial one (8)

52 active trigger points were treated with three weekly applications of dry needling. Symptoms were of course reduced. However, after treatment 11 were still active, 26 had deactivated, and only 15 (29%) were eliminated.

Trial two: (9).

Patients received 12 weekly therapy sessions, with each using multiple trigger point therapies. This is way in excess of what happens in most clinical practices, both in the number of sessions and what was done at each session. Patients did report symptomatic relief, but upon examination approximately 2/3 of the trigger points remained.

Trial three (10)

Patients were given three sessions of manual therapy plus a home exercise program. After treatment 32% of trigger points were eliminated

Elimination instead

The bulk of scientific trials do not even consider remaining trigger points, so what would it take to actually eliminate the problem rather than (temporarily) deactivating them. As the clinical researchers haven't done this we need to use the basic science and clinical tools we have. We present the following thoughts that may be helpful.

Clinical focus and goals

We can be happy that symptoms improve, but we need to clearly shift the goal to eliminate rather than deactivate. The researchers conducting trials don't examine for trigger points post treatment, but clinicians certainly can. This would provide a more realistic view of patient's improvement, and develop clinical experience

Causative and aggravating factors

Clinicians need to do the detective work to help reduce or eliminate any causative or aggravating factor.

Effective treatments

There have been a large number of trials evaluating and comparing various trigger point therapies. As mentioned they usually only consider symptom related affects. The results obtained are fairly similar, with no therapy showing consistently or remarkably superior results.

The pathophysiology of trigger points

To help determine an effective treatment we need to look at a trigger point's pathophysiology.

1. There is spasm of the section of muscle, perpetuated by a positive neurological feedback loop
2. There is a reduction in blood flow with the associated build up of neurotransmitters and metabolites, and the depletion of oxygen and nutrients.
3. The whole muscle becomes hypertonic.

Goals of treatment

Where journals have speculated how different therapies work they are usually said to address one or more of these issues. Scientific research has found that vibrations in the range of 30-50 Hz address all three (11).

- It disrupts neurological feedback loops.
- It increases blood flow.
- It relaxes muscles.

The number of therapy sessions

As previously discussed, we have trials showing that:

- three sessions of dry needles eliminated 25% of trigger points,
- 12 sessions of multiple therapies eliminated approximately 1/3 of trigger points, and
- three sessions of manual therapy combined with home exercising eliminated 32% of trigger points.

The logical assumption from this is that it is possible to eliminate trigger points, but it would take far in excess of 12 sessions. This is the big hurdle, as it starts to be come very unaffordable, and patients tend to lose motivation once their symptoms go.

Our professional quality massagers for home use were developed to overcome this. Unlike needles, lasers or professional manual massage, with the appropriate equipment and advice patients can use this at home.

DrGraeme's clinical experience

Dealing with chronic musculoskeletal conditions can be frustrating. Hypertonic muscles will resist attempts to restore normal biomechanics, and patients will always need more soft tissue therapy than we can provide. We wanted to have patients access vibration massage at home like our professional machines provide, but all the home use massagers we could find ended up in our wheelie bin, and we built our own. We had patient's whose paraspinal musculature was so chronically tight it was impossible to restore any articular movement, but with daily home use of our massagers the muscles relaxed enough to do so. We found that it takes a long time, but with regular home therapy to supplement our care muscles do gradually improve.

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