

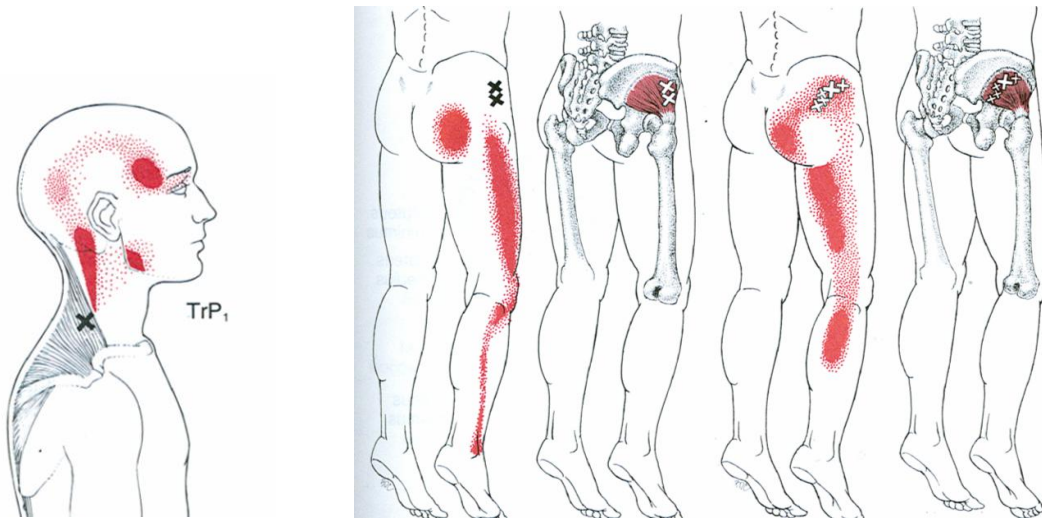


Trigger Point Dry Needling

Trigger Point Dry Needling (TDN) involves the insertion of acupuncture-type needles into muscles in order to relieve pain and restricted range of motion.

What is a Trigger Point?

A myofascial trigger point (TrP) is a tender “knot” in the muscle tissue. Most of us have these tender areas in various places in our bodies. You might feel a tight band of tissue for example in the upper trapezius muscle in your upper shoulder. In the middle of that tight band, you might feel a small hard nodule. That’s a trigger point. The nodule will be painful when you press on it. The trigger point may cause *referred pain*. That upper trapezius TrP may cause pain in your head. (See the picture below.) Often, the trigger point that causes symptoms might be quite distant from the painful area. For instance, the gluteus minimus muscle in the hip can cause pain all the way down the leg. (See below.) This may be mistaken for “sciatic” pain.



What causes this?

Usually it happens when there is some kind of stress on the muscle. This may be from a sudden overload in a traumatic injury like a fall, a car accident or lifting something improperly. Or, it may happen over a long period of time for example from chronic postural stresses such as sitting at a computer. Most of us have movement patterns which are not as efficient as they could be. We tend to overuse certain muscles, and underuse others.

Also, TrPs can be caused or perpetuated by a problem with the nerves that supply the muscle. This often happens near the spine where the nerves exit from the spinal column. There may be a degenerated or herniated disc, or some arthritis in the joints of the spine. If the spinal nerves become compressed or irritated, the muscles that the nerves supply

become more irritable and likely to develop TrPs. Also, the muscles at the spine are likely to tighten and develop TrPs, which will compress the nerve further. This leads to a “vicious cycle” of pain and dysfunction. For this reason, we usually treat the spine, even for extremity pain. If you have pain in your shoulder, elbow or hand there is probably also a problem in your neck. If you have hip, knee or foot pain you will usually benefit from treatment of your low back.

There is ongoing research about what’s actually happening physiologically at a trigger point. We know that there is a continued release of certain neurotransmitters at the neuromuscular junction. This causes a self-sustaining contraction of part of the muscle. It holds on, and doesn’t usually let go until it is treated. Also, there is a low level of *spontaneous electrical activity* at the trigger point site.

Because of the muscle tension, there may be some pressure and irritation on the nerve fibers and blood vessels in the area. This causes pain and tenderness in the area, and the decreased circulation causes an “energy crisis” at the trigger point.

Is this common?

Yes, nearly everyone has trigger points in their bodies. Most of the time TrPs are *latent*, meaning that they are not currently causing symptoms. When a TrP is *active*, it is currently causing pain or other symptoms. Latent TrPs may be from an old injury that “got better.” Most of us have areas that have been painful in the past, are usually okay, but occasionally “flare up” and become painful. This is usually due to latent TrPs becoming active. Or there may be a low level of discomfort that we “get used to”. Latent trigger points can change your body’s mechanical function, and lead to problems in other areas.

What do we do about it?

We treat myofascial trigger points as part of a complete therapy program. It is important to treat or deactivate the trigger points that are causing your symptoms or dysfunctions. But it is most important to figure out what’s going on to cause or to perpetuate the problem, and reduce or eliminate those factors also.

There are several methods that are used to treat trigger points. **Manual pressure** on the point usually helps. The therapist will put pressure on the point for 10-30 seconds. At first the point will be quite tender. After several seconds, the tenderness will diminish and you may feel the area “let go”. We usually combine the manual pressure with other techniques such as deep breathing and stretching. We use the *Functional Mobilization™* approach, which combines Proprioceptive Neuromuscular Facilitation (PNF) techniques with manual soft tissue and joint mobilization.

Stretching or lengthening the muscle is important in order to relieve the condition and to prevent reoccurrence. You will probably learn some stretching techniques during your treatment which you can carry on at home. Other types of exercises and activities include

Aston® **Loosening** activities and **strengthening** exercises. A very important part of your program may be **stability training**. Trigger points sometimes develop in order to protect a weak area of your body. Stabilizing the affected area may help decrease the discomfort.

The most important thing you can do for long term effect is to **change any inefficient movement patterns**. Trigger points may be caused or perpetuated by the way you sit, the way you sleep, the way you lift, or the way you run. Your therapists will work with you on finding ways to do your activities without causing pain.

Trigger Point Dry Needling (TDN) involves inserting a small needle into the trigger point. This has been shown to be a very effective method for alleviating trigger points.

Physicians have used *trigger point injections* (TPI) for years to treat TrPs. TPI involves using a hypodermic needle to inject a local anesthetic into the point. With TDN, there is no substance or medication injected. It has been found in research studies that people improve when needles are inserted in trigger points, no matter what substance is injected, or even if nothing is injected. Therefore, it is the effect of the needle that helps, not the medication injected.

The needles we use for TDN are the same type used for acupuncture. They are very small in diameter. They don't have a lumen or tube in them like the hypodermic needles that you get a "shot" with do. They also don't have a cutting edge like a hypodermic needle. The TDN needles are a lot less uncomfortable than what you might think of when you think of needles. We will usually show you the needles and how they work prior to any treatment.

What happens during a TDN session?

You will be in a comfortable position lying either on you back, stomach or side. The therapist will insert the needle into your skin using a "tapping" method. You may feel nothing at all when the needle goes in, or you may feel a slight stinging sensation. The therapist will then insert the needle into the muscle where the TrP is. When the needle contacts the TrP it should cause a *twitch response*. The twitch response is a small contraction of the muscle. After the twitch, the muscle "lets go". You may receive needling to several different areas during the session.

After the needling, we will usually stretch the muscles and apply heat. We may do other manual therapy procedures before or after the needling. You might be instructed or review some exercises to do at home to help continue the effect of the needling.

How does it feel?

When the needle is first inserted, you may not feel anything at all, or you might feel a slight pricking sensation. When the needle contacts the TrP, there should be a "twitch" or muscle contraction. When the twitch response happens, you will probably feel it. It

may just be a mild twitch, or it may feel like a “cramping” of the muscle. Sometimes it feels like a deep ache, or perhaps a burning sensation.

You might experience referred pain in a distant area of your body. It’s a *good* thing if you do experience referred symptoms, especially if it’s a “familiar” pain for you. This means that we’ve needled an active trigger point which is causing some of your symptoms.

You may find that the needling is less uncomfortable than some of the usual manual soft tissue techniques. Any discomfort is usually fairly short. If the procedure is ever too uncomfortable and you wish to stop, inform the therapist and we will stop.

It’s normal to feel some soreness for a day or two after needling. The soreness is usually similar to the type of muscle soreness that you might get after exercise. It’s usually helpful to apply some heat to the area later in the day (heating pad or hot bath), in addition to doing the stretches and other exercise. It may also be helpful to drink a lot of water.

How does it work?

As we mentioned, in a trigger point there is a *spontaneous electrical activity (SEA)* present. The needle causes an electrical effect which causes the twitch response. After the needling and the twitch response, the SEA is no longer present. The muscle lets go of its self-perpetuating contraction. With the decrease in muscle contraction, there is an increase in blood flow to the area. There is also an increase in substances which help build normal tissue in the area.

Research has shown that after needling and the twitch response the chemical environment as well as the electrical activity in the muscle returns toward normal.

Is this like acupuncture?

Dry needling is **not** acupuncture. Acupuncture is based on restoring flow of energy (“*chi*”) along meridians in the body. In TDN, we have no intention of affecting these energy meridians. TDN is based on modern Western scientific principles and our knowledge of anatomy and physiology. We needle muscles which harbor trigger points.

Is needling safe?

Dry needling is a reasonably safe procedure, though there are some potential risks involved. We will use every precaution to minimize these risks.

The most serious complication which could occur is a puncture of the lung (pneumothorax). If this happened, it may only require a chest x-ray and no further treatment. Symptoms of shortness of breath may last for several days or weeks. A more severe lung puncture may require hospitalization and re-inflation of the lung. This is a rare complication and in skilled hands should not be a concern.

Other risks include excessive bleeding (causing a bruise). Bruising is a common occurrence and should not be a concern unless you are taking a blood thinner. Though the needles are sterile, there is always some risk of infection.

The needles used for TDN are very small and do not have a cutting edge, therefore the likelihood of any significant tissue trauma is small. With our extensive knowledge of anatomy, we will avoid major nerves and blood vessels.

In 2005, the Colorado Department of Regulatory Agencies determined that TDN was within the scope of Physical Therapy practice, provided the therapist has had the necessary training. At this time, ten other states have approved PTs to perform this procedure. TDN is practiced by physical therapists in many countries, including Canada, Chile, Ireland, the Netherlands, South Africa, Spain and the United Kingdom.

Some Myofascial Trigger Point and Needling References:

1. Simons DG, Travell JG, Simons LS; Travell & Simons' Myofascial Pain and Dysfunction: The Trigger Point Manual; 2nd ed. 1998; Williams & Wilkins, Baltimore.
2. Gerwin RD, Dommerholt J, Shah JP; An Expansion of Simons' Integrated Hypothesis of Trigger Point Formation; Current Pain and Headache Reports 2004, 8:468-475.
3. Dommerholt J, Mayoral del Moral O, Grobli C; Trigger Point Dry Needling; J Man Manip Ther 2006 14:4, E70-E87 (Available online at www.JMMTOnline.com)
4. Hong C-Z, Kuan TS, Chen JT, Chen SM; Referred pain elicited by palpation and by needling of myofascial trigger points: A comparison. Arch Phys Med Rehabil 1997; 78:957-960.
5. Hong C-Z. Lidocaine injection versus dry needling to myofascial trigger points: The importance of the local twitch response. Am J Phys Med Rehabil 1994;73:256-263.
6. Jaeger B, Skootsky SA. Double-blind, controlled study of different myofascial trigger point techniques. Pain 1987; 4(Suppl):S292.
7. Cummings TM, White AR. Needling therapies in the management of myofascial trigger point pain: A systematic review. Arch Phys Med Rehabil 2001; 82:986-992.
8. Gunn CC. The Gunn Approach to the Treatment of Chronic Pain: Intramuscular Stimulation for Myofascial Pain of Radiculopathic Origin. 2nd ed. 1996. Churchill Livingstone, New York.