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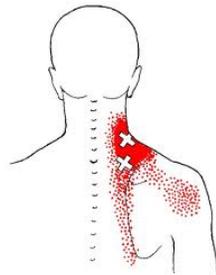
Trigger Point Dry Needling

What is a trigger point?

A trigger point, or *myofascial trigger point*, is a hyperirritable spot, usually within a taut band of muscle, or within the muscle's *fascia*. This spot will be painful to touch, and can give rise to referred pain (Travell & Simons 1992). In simpler terms, a trigger point (TP) is a 'knot' in the muscle.



These TP's can be found in many parts of the body, and are present for a variety of reasons. The TP may be 'active' -



producing symptoms at the time; or 'latent' - not symptomatic, but with the potential to become so.

Pain is a very complex symptom. It can arise from most tissues of the body, (with cartilage and, paradoxically, much of the central nervous system being exceptions). Pain can be due to local chemical factors at the site of symptoms, and also influenced by nervous connections in other parts of the body. It can be present even when there is no detectable injury or inflammation. The way that pain is 'mapped' and perceived in the brain has a lot to do with the extent of pain, and how long it will last. It is frequently associated with the presence of TP's, and chronic TP's can be a significant factor relating to recurrent or chronic pain.

What Causes TP's to Develop?

There are many possible reasons why TP's develop. Causes include:

- (a) Muscle tension. This can be due to poor posture, overloading of joints, traumatic injury, and in response to pain. A vicious circle is common, where tension leads to pain, which causes further tension.
- (b) Muscle weakness. Weak muscles can develop TP's, possibly due to working for longer, and in some ways harder, trying to generate their normal amount of force.
- (c) Neuropathic pain. This is a complex and general description for many types of persistent, non-acute pain. It encompasses many of the overuse and chronic pain syndromes.
- (d) 'Muscle memory'. Muscles can become programmed to develop TP's. This stems from past pain and tension states. The slightest stress or discomfort can trigger a prolonged cycle of tension and symptoms related to TP's.
- (e) Instability. This is where joint movements are not well controlled, placing stress on surrounding tissues. There will be associated weakness in certain muscles, and over-activity in others.
- (f) Nerve injury. Nerves heal slowly when injured, and can be associated with wide-ranging and variable symptoms including TP development.
- (g) Joint degeneration. This can create TP's in a number of ways:
 - (i) Chemical effects from inflammation.
 - (ii) Muscles working harder to move stiff joints.
 - (iii) Secondary instability, placing stress

on surrounding muscles and fascia.

How are TP's treated?

Over the years, various methods have been used to treat or deactivate TP's. Travell & Simons are well known for their texts on the subject, dating back to the 1940's. Treatments have included deep massage, 'spray and stretch', ice therapy, point pressure releases, local anesthetic injection, and more recently, trigger point dry needling (TPDN). Dry needling is so called because the needle is inserted 'dry'. Nothing is injected into the tissues. It also comes out dry, as there will be minimal to no bleeding.

TPDN is a sterile and safe technique. Fine acupuncture needles are inserted into the muscle in the region of the TP. The needle may be left in place for several minutes, or moved immediately to locate the most responsive part of the TP.



The aim of TPDN is to desensitize the overactive or sensitive areas, and restore normal movement and function. Over the past 10 years, this has proven to be an extremely effective technique. The benefits of the treatment are achieved by:

1. Releasing tight muscles
2. Promoting healing, by decreasing tension and stress on tissues.
3. Reducing nerve impulses both at the region of the TP and in the central nervous system.

How does this work?

There are a few possible mechanisms:

1. Creation of a local stretch at the point of tension. Just like digging your fingers into a 'knot', the pressure produced by the needle can help the entire muscle to relax.
2. Alteration of chemical pain processes at the local muscle level.
3. Release of endorphins (the body's natural opioids) in pain centres of the central nervous system.
4. Nerve related stimulation of areas in the brain which inhibit pain pathways. This is a complex neurophysiological process, and is considered an important mechanism by which TP techniques work.

What will you feel with TPDN?

The acupuncture needle used is extremely thin (approx. 0.2 to 0.3mm). It is possible to feel very little during TPDN. However it is likely that you will feel a deep ache



or local cramping sensation in the muscle. The pain associated with TPDN is usually less than what is felt with deep tissue massage. In fact, the fear of the needle is often more painful than the needle itself.

When the TP is located by the needle, you will feel a *local twitch response*. This is a good thing. The twitch is a small rapid muscle contraction. It is the TP reacting to the needle. What will follow is a relaxation effect, and deactivation of the TP.

It is common to feel soreness after TPDN. The muscle may feel bruised, or feel like it has been overworked. This may last for several minutes, or sometimes up to one to two days.

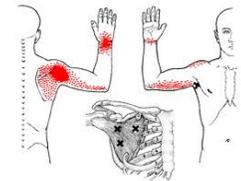
What areas are treated?

TPDN is most effective when used to target muscles and *fascia* (connective tissue within and around muscle). While virtually any muscle in the body can be treated, the most common ones are:

1. The upper neck muscles. TPDN in this region is very effective for treating headaches, muscle tension, and neck stiffness.



2. Shoulders & upper back. The *upper trapezius* and *levator scapulae* are the most common muscles in the body in which to feel pain and tension. Other muscles around the shoulder which are known to respond well are the *rhomboids*, *rotator cuff*, *latissimus dorsi*, and *pectoralis major*.



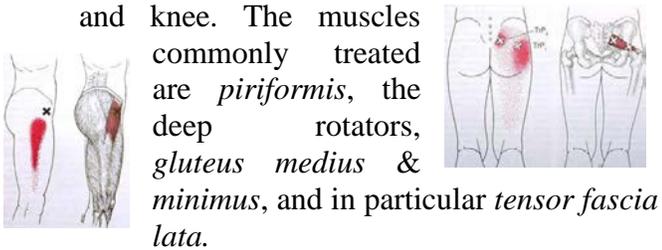
3. Elbow. Problems like tennis and golfers elbow are almost always associated with TP's in the forearm muscles.
4. Jaw. Tension in the muscles of the temporo-

mandibular joint (TMJ) is very common. This can be related to teeth grinding, dental problems, neck pain, general stress and tension, and disease of the TMJ. The *masseter* is the most common muscle affected.

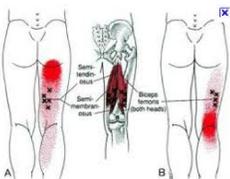


5. Low back. The lumbar *erector spinae*, *multifidus*, and *quadratus lumborum* are some of the more common muscles treated by TPDN.

6. Hip muscles. This is the second most common region to develop TP's, next to the shoulders / upper back. Various muscles around the hip are often over-worked, while others become weak. The hip is also a common source of referred pain to the thigh and knee. The muscles commonly treated are *piriformis*, the deep rotators, *gluteus medius* & *minimus*, and in particular *tensor fascia lata*.



7. Groin. The adductors are one of the most problematic muscle groups in sports involving running, pivoting and kicking. There will invariably be tension and TP's, usually in areas high up in the thigh.



8. Hamstrings. Areas of tension commonly develop both in the upper and lower hamstrings.

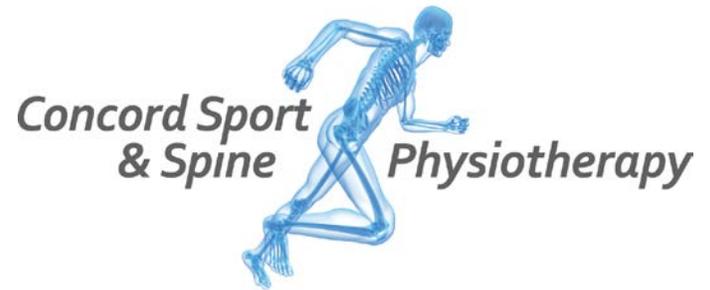
9. Quadriceps. The outer quad (*vastus lateralis*) generally needs treatment more often than the other quadriceps muscles.

10. Calf. Numerous muscles in the calf region become tense, particularly in runners, cyclists, and players of most team sports.



11. Shin. With chronic shin pain there will be tension through the *tibialis anterior*, *tibialis posterior*, and the *soleus*.

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