

## What Is Dry Needling?

by Dr. Yun-tao Ma

Dry needling technique is a modern Western medical modality that is not related to Traditional Chinese acupuncture in any way. **Dry needling has its own theoretical concepts, terminology, needling technique and clinical application.**

Dry Needling was first developed in 1940's by Janet Travell, MD, former medical adviser to White House (JFK's physician). Thus, dry needling a.k.a biomedical acupuncture is based on modern understanding of human anatomy and patho-physiology and on modern scientific research, drawing heavily on leading-edge neurological research using modern imaging techniques such as Functional MRIs of the brain.

Different terminology for dry needling technique have been created; for example trigger point needling, dry needling technique, intra muscular stimulation (IMS) and biomedical acupuncture are all in use.

**It is important to remember that physical therapists who are increasingly using dry needling - particularly for pain management and trauma rehabilitation :**

- do not claim to practice acupuncture,
- do not use acupuncture TCM theories, meridian acupoints and terminology,
- do not use acupuncture diagnosis like tongue and pulse,
- do not use acupuncture needling techniques.

Practice dry needling by physical therapists is a worldwide trend; dry needling presently is used in the USA (11 states), UK, Australia, New Zealand, Canada, Germany, France, Brasilia and many other countries.

**Please, note:** Traditional Chinese Acupuncture (TCM-style acupuncture) is based on ancient Chinese concepts of meridian systems, such as Qi or energy channels, using tongue and pulse assessment, and uses a variety of needle manipulation techniques. **TCM Acupuncture does not share any medical ground with Dry Needling Techniques.** It is pointless to compare hours of training for TCM acupuncturists and medically trained physical therapists. Definitely physical therapists will have more oranges and TCM acupuncturists will have more apples.

### Systemic Integrative Dry Needling

- SIDN represent effective techniques for resolving soft tissue dysfunction: inflammation, contracture, tissue adhesion, microcirculation and edema, and biomechanical balance of musculoskeletal system
- Our approach is both systemic and analytical. We emphasize both local anatomy and systemic functional effects. We treat both local injuries and assure physiological and mechanical balance of the whole system – human body
- Systemic Integrative Dry Needling techniques allow practitioner to predict the prognosis of the treatments such as how many treatments the patients will need and how long the symptom relief can be achieved.

Dr. Ma's 40-year background in clinical and Western (biomedical, no meridians, no classic acupoints) Dry Needling acupuncture and neuroscience research has enabled him to address specifically neuro-immunological and neuro-muscular mechanisms of Systemic Integrated Dry Needling and created SIDN.

### SIDN incorporated:

Biomedical acupuncture -Integrative Systemic Dry needling

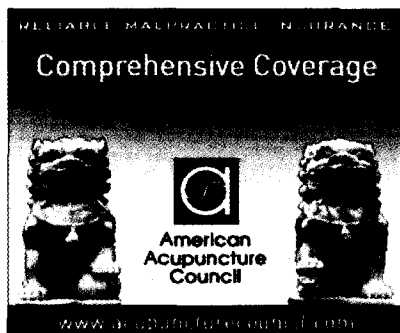
- 1) Myofascial trigger point techniques by Travell and Simon and Baldrey,
- 2) Intramuscular stimulation by C. Chan Gunn,

In addition to rehabilitation after trauma/injuries or surgeries, SIDN can be used for prevention of physical injuries such as muscular avulsion, fracture stress and bone spur growth, etc. Therefore, our system can be also used in Sports Medicine to enhance the peak performance of the athletes and in Age Management to slow down the aging process.

## Dry Needling: A Novel Technique

By Steven Collins, LAc

The following technique is a method for relieving muscle spasms that are otherwise intractable and don't respond to conventional needling or *tuina*. It's based on the concept of muscle fiber fatigue.



Although variations of this technique have appeared in print elsewhere,<sup>1</sup> this is, to the author's knowledge, the most distilled and efficient presentation.

It is said: "Where there is stagnation, there is pain." Although stagnation is not the only cause of pain, it's the one with which we are concerned about in this context. In cases of *qi* or *xue* stasis, a common presentation is muscle spasm. Frequently, these spasms are seen on the back in the large muscle groups such as the deltoids or paraspinal. These spasms obviously are excess in nature, as they cause pain and discomfort when pressure is applied. Often, acute spasm responds relatively poorly to conventional needling and occasionally well with good massage/*tuina* techniques. Dry

needling the spasm directly will produce resolution of the spasm and affect a free flow of *qi* and *xue* to the site. This technique particularly is suited to acupuncture because of the structure of our needles. Being solid and rounded, they "tap" the muscle, rather than slice through it as conventional needles would. The technique is safe, and the response is nearly immediate. The author cautions that although it can be described in detail, it should preferably be seen first-hand to appreciate the nuances of the technique.

Physiologically, and as a result of *qi/xue* stagnation, a muscle will spasm due in part to contracture of the actin-myosin cross-bridges locking up. Although this can theoretically occur in any skeletal muscle, it occurs most commonly in the large muscles of the back and the calves. Regardless of the cause, the result is the same: a local knot of muscle fibers that have contracted and refuse to release. By continually stimulating these fibers, it's possible to affect a release. Essentially, the needle causes the nerves at the knot to keep firing until the knot becomes so fatigued it can no longer sustain itself.

To perform the technique, select a 32-gauge needle, one inch in length. Find the spasm and insert the needle perpendicularly through the subcutaneous tissue until you contact the spasm. You will feel a definite density change. Do not insert the needle into the muscle. Rather, "bounce" the needle on the muscle using wrist action. This is done anywhere from one to three times a second. When the spasm releases, you will feel the release as a "softening." It's unmistakable and often is felt by the patient as well. Immediately withdraw the needle, and gently massage the area to facilitate *qi* and *xue* flow. This might be repeated as necessary along the muscle if there are numerous spasms, or in other muscle groups.

Although you can perform this technique with the patient sitting, it's much easier to perform if the patient is lying down. The technique can be performed on the upper shoulder in the region of *jian jing* (GB 21), and safely on the sternocleidomastoid with due care. The technique can be performed either before or after *tuina*. However, in the author's opinion, releasing spasms before a *tuina* session can facilitate the bodywork greatly. In addition, since this technique immediately resolves the discomfort associated with the spasm, the patient will be much more accepting of further treatment once you solve his or her pressing complaint.

### Reference

1. Seem M. *A New American Acupuncture*. Boulder, CO: Blue Poppy Press, 1993.

# Dry needling

From Wikipedia, the free encyclopedia

**Dry needling** is the use of a solid needle for therapy of muscle pain, sometimes also known as **intramuscular stimulation**.<sup>[1]</sup> Dry needling contrasts with the use of a hollow hypodermic needle to inject substances such as saline solution to the same point. Such use of a solid needle has been found to be as effective as injection of substances in such cases as relief of pain in muscles and connective tissue. Analgesia produced by needling a pain spot has been called the *needle effect*.<sup>[2]</sup> Acupuncture and dry needling techniques may be similar, but their rationale and use in treatment are quite different.<sup>[3]</sup>

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## Technique

In the treatment of trigger points for persons with myofascial pain syndrome, dry needling is an invasive procedure in which a needle, often an acupuncture needle, is inserted into the skin and muscle directly at a myofascial trigger point. A myofascial trigger point consists of multiple contraction knots, which are related to the production and maintenance of the pain cycle. Deep dry needling for treating trigger points was first introduced by Czech physician Karel Lewit in 1979.<sup>[4]</sup> Lewit had noticed that the success of injections into trigger points in relieving pain was apparently unconnected to the analgesic used.<sup>[2]</sup> Proper dry needling of a myofascial trigger point will elicit a local twitch response (LTR), which is an involuntary spinal cord reflex in which the muscle fibers in the taut band of muscle contract. The LTR indicates the proper placement of the needle in a trigger point. Dry needling that elicits LTRs improves treatment outcomes,<sup>[5]</sup> and may work by activating endogenous opioids.<sup>[4]</sup> Inserting the needle can itself cause considerable pain.<sup>[4]</sup> No study to date has reported the reliability of trigger point diagnosis and physical diagnosis cannot be recommended as a reliable test for the diagnosis of trigger points.<sup>[6][7]</sup> Chan Gunn introduced a type of dry needling called intramuscular stimulation in the 1980s that moved away from using trigger points.<sup>[1]</sup> Baldry developed a version called superficial dry needling in 2005, in which the needle is inserted about 5-10mm into the tissue above the trigger point.<sup>[1]</sup>

## Efficacy

A systematic review concluded that dry needling for the treatment of myofascial pain syndrome in the lower back appeared to be a useful addition to standard therapies, but that clear recommendations could not be made because the published studies are small and of low quality.<sup>[5]</sup> A 2007 meta-analysis examining dry needling of myofascial trigger points concluded that the effect of needling was not significantly different to that of placebo controls, though the trend in the results could be compatible with a treatment effect. One study (Lorenzo et al. 2004) did show a short-term reduction in shoulder pain in stroke patients who received needling with standard rehabilitation compared to those who received standard care alone,

but the study was open-label and measurement timings differed, limiting the use of the study. Again the small sample size and poor quality of studies was highlighted.<sup>[8]</sup>

## Practice

Dry needling is practiced by physical therapists in many countries, including South Africa, the Netherlands, Spain, Switzerland, Canada, Chile, Ireland, the United Kingdom and New Zealand. In the United States, physical therapists in several states including Virginia, Maryland, Ohio, Colorado,<sup>[9]</sup> Georgia, New Mexico, and Kentucky perform the technique. Physical therapists are prohibited from penetrating the skin or specifically from practising dry needling in Hawaii, Tennessee, New York, North Carolina, and Florida, though many states have no regulations on dry needling.<sup>[10]</sup> Acupuncturists have argued that dry needling by physical therapists is infringing on their practice, but physical therapists argue that they are not practising acupuncture when dry needling.<sup>[10]</sup> Whether dry needling is considered to be acupuncture depends on the definition of acupuncture, and opinions vary on whether trigger points correspond to acupuncture points or meridians.<sup>[11]</sup>

### **The Concepts (Dry needling & Acupuncture)**

***A dry needling therapist with a sound background knowledge in anatomy and neurophysiology is very effective in treating musculoskeletal pain.***

There are similarities but also significant differences between the traditional Chinese system of acupuncture and dry needling. Acupuncture follows rules and beliefs which have been laid down in ancient times.

#### **Channels and meridians**

In traditional acupuncture the body is divided by a series of meridians or channels into a organised network. This complex system of channels and vessels is believed to act as a distribution system that carries Chi (energy), blood and the body fluids around the body. The origins of acupuncture are impossible to define because they lie in periods before recorded history. But these channels were described as early as 200 BC in the classic ancient work on acupuncture, the Huang Di Nei Jing.

#### **Chi the energy**

The channels (meridians) were compared to the great rivers in china, extending to all parts of the country, keeping it alive by providing the essential water and nutrients. According to traditional acupuncture concepts Chi is the dynamic vital energy present in all living things which flows through the channels regulating the body's functions. It is believed that these channels connect the interior of the body with the exterior.

The basic principle of acupuncture is that by stimulating points on the surface of the body, an effect occurs that is transmitted through the meridians and ultimately into the interior of the body.

It is suggested that acupuncture can treat a vast range of illnesses as well as reduce pain. In contrast dry needling has been specifically developed for pain relief only.

#### **Dry needling ignores the ancient rules**

Modern dry needling principles largely ignores the ancient rules described above. Much of the original Traditional Chinese Medicine is based on pre-scientific ideas. Whereas dry needling is based on modern neurophysiology and anatomy.

#### **An aura of mysticism**

There is an aura of mysticism behind the acupuncture theory and its practice. This can appeal to both practitioners and patients. Dry needling however is purely for pain relief and is based on recent understanding in pain science, there is therefore less mystique surrounding dry needling.

#### **Why is dry needling concept different ?**

To understand the dry needling concept one has to look at the mechanisms involved in pain.

- Musculoskeletal pain is often associated with an area of exquisite tenderness (hyperalgesia) at a trigger point site.
- This site is tender due to sensitised nerve endings.
- The trigger point site is often accompanied by muscle shortening.
- A shortened muscle, can in itself become painful, not work properly, pull on the tendonous insertion and cause enthesopathy / tendinosis. For example lateral epicondylitis (tennis elbow).
- A muscle with trigger points is much weaker due to a pain inhibition. This causes muscle imbalance and secondary biomechanical problems.
- Trigger points can refer pain by themselves, but also irritate nerves and cause further pain in a remote area.
- These trigger points can be found in muscle, fascia, ligaments, tendons and the periosteum.

#### **Prior to the treatment**

A thorough medical assessment is carried out to rule out sinister pathology. A diagnosis / hypothesis is

established in regards to the type of pain mechanism involved and related musculoskeletal dysfunctions..

There are mainly 2 types of pain:

1. Neuropathic pain – from a damaged or dysfunctional nerve

*This type of pain is difficult to treat but can respond to dry needling.*

2. Nociceptive pain – Which is most common – osteoarthritis, head aches, sprains and strains, myofascial pain.

## **These types of pain respond very well to dry needling**

*The concept of modern dry needling is based on a trigger point (hyperalgesia) and muscle imbalance model.*

A dry needling therapist can “feel” with the needle and utilise it as a diagnostic instrument. This is often extremely helpful as tight muscles, contractures and trigger points are invisible to X-rays, CT scans or MRI. Contractures in deep muscles can be felt with the needle, via feed back on the quality of the tissues that it is penetrating. Contracted muscle fibres provide resistance to the needle and may cause a “grasp”. This often reproduces the patient’s symptoms or a deep ache, which the Chinese describes as “deChi”.

The neuro-musculoskeletal assessment determines the needling sites. The dry needling therapist seeks out tender (hyperalgesic) and tight muscle bands in affected segments for needling.

Following the needling, physical signs such as: shortening, vasoconstriction, and tenderness can disappear in seconds or minutes. More chronic conditions may take several sessions to treat due to a sensitised peripheral and central nervous system.

Following the treatment:

- The muscle tension is reset
- The trigger point is desensitised by the body’s own neurotransmitting chemicals (opioids, enkephalins, serotonin, Beta endorphins etc).

Advantages of dry needling:

- The main advantage of dry needling is that a health practitioner can assimilate the concept to everyday practice.
- One can become an effective dry needling clinician very quickly
- There is no mysticism
- It is quick to perform
- In competent hands it is a safe treatment

*Dry needling is based on the current understanding of neurophysiology and functional anatomy. The concept is easy to understand and apply in clinical practice.*