

HOT TOPIC

Evidence and Expert Opinions: Dry Needling *versus* Acupuncture (I)

—The American Alliance for Professional Acupuncture
Safety (AAPAS) White Paper 2016

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ABSTRACT In the last twenty years, in the United States and other Western countries, dry needling (DN) became a hot and debatable topic, not only in academic but also in legal fields. This White Paper is to provide the authoritative information of DN *versus* acupuncture to academic scholars, healthcare professional administrators, lawmakers, and the general public through providing the authoritative evidence and experts' opinions regarding critical issues of DN *versus* acupuncture, and then reach consensus. DN is the use of dry needles alone, either solid filiform acupuncture needles or hollow-core hypodermic needles, to insert into the body for the treatment of muscle pain and related myofascial pain syndrome. DN is sometimes also known as intramuscular stimulation, trigger points (TrP) acupuncture, TrP DN, myofascial TrP DN, or biomedical acupuncture. In

Western countries, DN is a form of simplified acupuncture using biomedical language in treating myofascial pain, a contemporary development of a portion of Ashi point acupuncture from Chinese acupuncture. It seeks to redefine acupuncture by reframing its theoretical principles in a Western manner. DN-like needling with filiform needles have been widely used in Chinese acupuncture practice over the past 2,000 years, and with hypodermic needles has been used in China in acupuncture practice for at least 72 years. In Eastern countries, such as China, since late of 1800s or earlier, DN is a common name of acupuncture among acupuncturists and the general public, which has a broader scope of indications, not limited to treating the myofascial pain.

KEYWORDS dry needling, acupuncture, biomedical acupuncture, authoritative evidence, experts' opinions, consensus

The American Alliance for Professional Acupuncture Safety (AAPAS), a non-profit organization, is a multi-state union of professional associations, organizations, and acupuncture schools. The purpose of this organization is to help protecting the long lasting reputation of acupuncture as a safe and effective practice of medicine. AAPAS members are very concerned about the recent expansion of "dry needling" (DN), the use of acupuncture needles by physical therapists (PTs) and others who are lack of training or the legal licensure to practice acupuncture. The aim of AAPAS's White Paper is to provide the authoritative evidence and experts' opinions regarding critical issues of DN *versus* acupuncture to academic scholars, healthcare professionals and administrators, lawmakers, and the general public.

The following entails Part 1 of the White Paper:

Essential Questions; Part 2: Professional Questions and Part 3: Legal Issues will be published online as an addendum.

What Is Dry Needling?

Evidence

American Physical Therapy Association (2013) wrote: "DN is a skilled intervention that uses a thin filiform needle to penetrate the skin and stimulate

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underlying myofascial trigger points (TrP), muscular, and connective tissues for the management of neuro-musculoskeletal pain and movement impairments. DN is a technique used to treat dysfunctions in skeletal muscle, fascia, and connective tissue, and, diminish persistent peripheral nociceptive input, and reduce or restore impairments of body structure and function leading to improved activity and participation."⁽¹⁾

Ma,⁽²⁾ a known licensed acupuncturist and DN expert from The World Federation of Acupuncture and Moxibustion Societies said: "DN 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 magnetic resonance imaging of the brain." There is confusion however created by him. He argues that DN has its own theoretical concepts, terminology, needling technique and clinical application and that: (1) DN is not practicing acupuncture, (2) DN has no relationship with acupuncture, and (3) it was developed by PT themselves.

Dommerholt,⁽³⁾ a known physical therapist wrote: "DN is an invasive procedure in which a solid filament needle is inserted into the skin and muscle directly at a myofascial TrP. A myofascial TrP consists of multiple contraction knots, which are related to the production and maintenance of the pain cycle. DN also falls within the scope of acupuncture practice. In contrast to most schools of acupuncture, DN is strictly based on Western medicine principles and research."

The Council of Colleges of Acupuncture and Oriental Medicine (CCAOM) states: "'DN' has resulted in redefining acupuncture and re-framing acupuncture techniques in Western biomedical language. Advancement and integration of medical technique across professions is a recognized progression. However, the aspirations of one profession should not be used to redefine another established profession. In addition, proponents of 'DN' by non-acupuncture professionals are attempting to expand TrP DN to any systemic treatment using acupuncture needles and whole body treatment that includes DN by using Western anatomical nomenclature to describe these techniques. It is the position of the CCAOM that these treatment techniques are the de facto practice of acupuncture, not

just the adoption of a technique of treatment."⁽⁴⁾

The National Institutes of Health states: acupuncture is "a family of procedures involving the stimulation of points on the body using a variety of techniques."⁽⁵⁾

The United States (US) Center for Medicare and Medicaid Service (CMS.gov) states: "Acupuncture, in the strictest sense, refers to insertion of dry needles, at specially chosen sites for the treatment or prevention of symptoms and conditions."⁽⁶⁾

The World Health Organization (WHO) states in the Standard International Acupuncture Nomenclature that TrP needling (i.e. DN) is a subset of acupuncture.⁽⁷⁾

Expert Opinions

Zhou, et al⁽⁸⁾ reviewed DN history and compared the theories and techniques of DN and acupuncture, and concluded that DN is a kind of Western acupuncture for treating myofascial pain. DN as a subcategory of acupuncture uses the same needles, similar stimulating points, the same or similar needling techniques, and involves the same biologic mechanisms.

Peng, et al^(9,10) compared four aspects of DN with acupuncture: the points of the needle insertion, needles, needling techniques, and therapeutic indications. They concluded that DN can be called TrP acupuncture. With some unique characteristics, DN can be recognized as a contemporary development of traditional acupuncture, and belongs to the category of the Ashi point (literally, "Ah-yes; this is the needling point", tender point) acupuncture, one of major acupuncture schools in traditional acupuncture. Traditional acupuncture encompasses an abundance of methods and techniques in acupuncture practices and has been widely used and studied for the management of a variety of disorders. The locations of TrPs, their distribution patterns and clinical indications are very similar to those of the traditional acupuncture points; the selection of the needles, depth of needle insertion, and manipulation of the needles in DN are all same as those of traditional acupuncture. However, DN focuses on treating myofascial disorders, and only involves a small fraction of techniques of traditional acupuncture. Consequently, DN is an integral part of the traditional acupuncture.

Zhu, et al⁽¹¹⁾ reviewed four features of needling techniques and explored the similarities and differences between DN and acupuncture. The four features are: (1) needles used; (2) target points; (3) action mechanisms; and (4) therapeutic effects. A PubMed search for articles on DN and acupuncture for the years spanning from 1941 to 2015 was used to retrieve qualified papers for the analysis. They concluded that DN and acupuncture overlap significantly in the aforementioned four features, and both can be used to treat musculoskeletal disease effectively. However, because of a lack of adequate training and appropriate regulation, the safety of DN practice by has been questioned. Similarly, the authors concluded that DN is one type of acupuncture when solid filiform needles are used.

Jin, et al⁽¹²⁾ stated that "any modalities, as long as they apply needles to puncture certain locations at the body surface, belong to acupuncture, in spite of how and where the locations of stimulation are determined by either Western neuro-anatomy or CM meridians……the mechanism of DN and acupuncture are one in the same……which achieves the efficacy via neural reflex arcs."

Other Opinions

Based on the description of Dr. Travell, et al⁽¹³⁾ who first described DN systemically, DN is used in contrary to the "wet needling", which is also known as medication injection at local tender point. When using intramuscular analgesics or anesthetics to treat a variety of pain, for many conditions, the types of drugs in the injection were later found not important.^(8,13) Additional studies revealed that as long as the injection needle pierces the muscular and the related fascia tissue, there is analgesic effect.^(8,13) The needles used in the early publications to perform DN were hollow-core hypodermic needles, as injection of saline or local anesthetic was simultaneously mentioned and compared.⁽⁶⁾ There were only a few publications in DN before 2000.^(11,14) In the last 15 to 20 years, in the US and other Western countries, DN became a hot and debatable topic,^(1,8,10-11,14-18) not only in academic but also in legal fields. Some therapists from different professions use solid filiform acupuncture needles, piercing the muscle fascia tissue into myofascial TrP, to release muscle tension and other pathological conditions, for the treatment of myofascial pain and related diseases. Some of them recognize DN as

acupuncture,^(8-11,16-20) while others, especially some DN teachers, physical therapy practitioners and organizations, claim no relation between DN and acupuncture.^(1,2,15,21) Additionally, in Eastern countries, DN is a synonym of acupuncture, referring using solid filiform needles to treat diseases.^(11,17)

AAPAS Comment

DN is the use of dry needles alone, either solid filiform acupuncture needles or hollow-core hypodermic needles, to insert into the body for the treatment of muscle pain and related myofascial pain syndrome. DN is sometimes also known as intramuscular stimulation, TrP acupuncture, TrP DN, myofascial TrP DN, or biomedical acupuncture.

In Western countries, Janet Travell, a medical doctor, has been considered as the Mother of DN therapy, because she was the first person who systematically summarized the myofascial TrPs theory and used hypodermic needles (not focus on injecting in medications) to needle into TrPs (i.e. DN) to treat myofascial pain. DN has been gradually become popular since 1992, especially after 1999. PTs and other related professionals have been gradually become interested in practicing DN in the past 20 years.

Definitions from related authorities and analyses from independent scholars all indicate that, in Western countries, DN is an acupuncture form using biomedical language in treating myofascial pain. It is a contemporary development of a portion of Ashi point acupuncture from traditional acupuncture. In Eastern countries, such as China, since late of 1800s or earlier, DN is a common name of acupuncture among acupuncturists and the general public, which has a broader scope of indications, not limited to treating the myofascial pain.

In sum, from every aspect of medicine, DN is a synonym to acupuncture, or more specifically, DN is a subtype of acupuncture.

Who First Used Dry Needling in the West?

Evidence

Baldry in 2005 published the "History of the British Medical Acupuncture Society", indicated that in 1821 and 1828, Dr. James M. Churchill published the book "A Treatise on Acupuncture", using the information gathered

from Japan and China. John Elliotson, a professor of Medicine at University College Hospital of London, also wrote a paper on acupuncture in 1827. Neither of them employed the complex procedures, techniques, meridian and other theories of Chinese acupuncture as they were trying to avoid the rejection of acupuncture by the medical doctors of the time. Instead, they treated musculoskeletal pain by the far simpler expedient of inserting needles at sites of maximum tenderness—a procedure that was clearly the forerunner of the present day treatment known as DN.⁽²²⁾

In the West, the earliest use of the term DN probably was by Paulett, who reported that both 'DN' (using injection needle) and injecting saline could relieve low back pain in 1947.⁽¹⁴⁾

Gunn, et al⁽²³⁾ in 1976 proposed that "As a first step toward acceptance of acupuncture by the medical profession, it is suggested that a new system of acupuncture locus nomenclature be introduced." And he started using the term DN to replace acupuncture in his publications in 1980.⁽²⁴⁾ This probably is the formal beginning of DN popularity in the West.

Travell⁽¹³⁾ was the first influential person who systematically summarized the needling techniques with the term DN when referring to the procedure of hypodermic needles and acupuncture. The origin of DN has been attributed to her because of her popular book,⁽¹³⁾ in which she uses the term DN to differentiate between two needling techniques (with or without medications) when performing TrP therapy. She and her colleagues explored the pathology of myofascial pain, and its effective treatments which might include DN as early as in 1952.⁽²⁵⁾ The "Trigger Point Manual" has thus been considered as the "bible" of TrP therapies (including DN) and Travell has been respected as the founder of DN.^(2,8,14,15)

Expert Opinion

Legge⁽¹⁴⁾ highly praised Brav and Sigmond's work in 1941 because they found that pain could be relieved by simple hypodermic needling without injection of any substance. One group in the study who received needling without any substances had results almost similar to the group with Novocain injections. This outcome was described as a "startling" result. Although the term DN was not used, the author Legge considered this was the first time the DN

technique was used in a Western context.

Fan, et al⁽¹⁸⁾ pointed out that the first person in the US who used filiform needle (acupuncture needle) under the term of DN to treat patient is Mark Seem, the founder of Tri-State College of Acupuncture in New York. Seem claims that he expanded classical Chinese acupuncture approach via integrating the work of Janet Travell in acupuncture needling for myofascial pain. Seem stated that he shared with Travell the classical acupuncture technique in treating a chronic, complex whiplash syndrome to release such TrPs. Seem also authored the book "A New American Acupuncture" covering this topic of DN which was published in 1993. He taught this acupuncture method (DN) internationally for over 25 years before his completely retired.⁽²⁶⁾

Hoyt⁽²⁷⁾ wrote "Dry Needling, ·····, seeks to redefine acupuncture by reframing its theoretical principles in a Western manner. This changing of acupuncture's context is justified by a search for a biomedical principle by which acupuncture affects its therapeutic properties. Attempting to provide new insight into a time honored healing model·····".

Other Opinions

Simons, et al⁽¹³⁾ analyzed the reports from TrP manual of three needling techniques (needling with filiform needles, with hypodermic needles without injection or with small injection of anesthetic drugs), and concluded that DN could also be called acupuncture and appraised that acupuncturists perform DN "very well".

AAPAS Comments

Through the Western history of DN as described by various scholars, the early practice of DN can be traced to an article in 1941 and not until late 1990s, DN was performed with hypodermic needles limited to TrP needling (or the intramuscular stimulation).

Brav, et al⁽²⁷⁾ discussed DN-like technique under the context of acupuncture. TrP or motor point is part of tender point, which was used widely by acupuncturists in both Western and Eastern countries with a very long history. TrP acupuncture, also known DN, has no essential difference from the typical acupuncture practiced by physicians in western countries since 1821. The first person who

demonstrated acupuncture with filiform needle under the term DN was Mark Seem, a licensed acupuncturist and acupuncture educator.

Travell has been regarded by physical therapists as the founder of DN, because she detailed the locations and indications of 255 TrPs in 144 muscles, and she was President Kennedy's personal doctor. She largely cited the work by Hong, an acupuncturist⁽²⁶⁾ and medical doctor who used the term DN in his own publications. Travell admitted openly that DN is also called acupuncture.⁽¹²⁾ In fact, while discussing the usage of DN, Travell herself preferred to use hypodermic needle puncture plus small dose of lidocaine injection,⁽¹³⁾ which actually is the same style as Chinese small-dose acupoint drug injection, another style of acupuncture practice.⁽²⁹⁻³¹⁾

Our conclusion is that the current DN in Western countries is a style of simplified traditional acupuncture, or a contemporary acupuncture approach in treating myofascial pain using biomedical language. It reflects the effort of practicing acupuncture without following the traditional acupoint, meridian, and other Chinese medicine (CM) theory by some healthcare professionals and researchers since 1821, especially 1976, nevertheless, DN still falls in the broad category of acupuncture. There is clear evidence supporting that no matter who is the practitioner and what theory is based, DN is an inherited part of traditional acupuncture.

Has Dry Needling Been Used in China?

Evidence

The US Center for Medicare and Medicaid Service (CMS.gov) says: "Acupuncture, in the strictest sense, refers to insertion of dry needles, at specially chosen sites for the treatment or prevention of symptoms and conditions."⁽⁶⁾

Yellow Emperor's Inner Classic (Huangdi Neijing)⁽³¹⁾ precisely described nine kinds of dry needles for different style of needling therapies. The nine needles was the collective term for the needling instruments used since ancient times including chan zhen (arrow-headed needle), yuan zhen (round needle), chi zhen (blunt needle), feng zhen (lance needle), pi zhen (stiletto needle), yuanli zhen (round sharp needle), hao zhen (filiform needle), chang zhen (long needle) and da zhen (big needle). Currently the most commonly used needle type in acupuncture

practice is hao zhen, a thin short form of filiform needles. Well documented literature in China shows that various types of acupuncture needles, including those similar to the needles used in current DN practice in the West, were continuously used in China for at least 2000 years.

According to the definition of DN,⁽¹³⁾ it includes applying different needles for the needling therapy except for those focus on injecting medications. Actually DN needles are commonly utilized acupuncture needles. The DN technique preferred and recommended by Travell is using hypodermic needle to puncture the muscle knot, in the center of TrP, to induce local twitching responses and then inject a small amount of medication, such as lidocaine. Such a technique actually is called acupoint injection or aqua-puncture therapy which were independently developed and widely used in China since early 1950s.^(29,30)

TrP is a kind of tender point in muscles, consists of multiple contraction knots, which are related to the production and maintenance of the pain cycle^(2,3,7-13) belongs to one part of Ashi points. Ashi point acupuncture is popular among traditional acupuncturists in China.^(7-11,18,27,33,34)

Yellow Emperor's Inner Classic⁽³¹⁾ first documented tender point needling strategy, called "the pain point (tender point) is the site for acupuncture". The term of Ashi point was formally named by Dr. SUN Si-miao (581–682 CE), a famous physician in Tang dynasty.⁽³⁵⁾

Expert Opinion

DN is a synonym term to acupuncture. In China, since late of 1800s or earlier, DN is a common name among acupuncturists and general public. The so called DN in China has a much broader scope of indications, not just limited to treating myofascial pain (by DN in Western).^(11,17)

Jin, et al⁽¹²⁾ pointed out that, in both ancient and current, both in China and in Western countries, some acupuncturists have applied the simplified style of acupuncture (same or similar to DN in Western), which does not focus on learning the classic acupoints, meridians and other CM theory, although the major school of acupuncture has been the traditional

acupuncture based on CM theory.

Peng, et al^(9,10) compared four aspects of DN (in Western) with traditional Chinese acupuncture: the points of the needle insertion, needles, needling techniques, and therapeutic indications. They concluded that DN (in Western) can be called TrP acupuncture. With some unique characteristics, DN (in Western) can be recognized as a contemporary development of Chinese acupuncture, and belongs to the category of the Ashi point acupuncture. Traditional acupuncture encompasses an abundance of methods and techniques in acupuncture practices and has been widely used and studied for the management of a variety of disorders. The locations of TrPs, their distribution patterns and clinical indications are very similar to those of the traditional acupuncture points; the selection of the needles, depth of needle insertion, and manipulation of the needles in DN (in Western) are all same as those of traditional acupuncture. However, DN focuses on treating myofascial disorders, and only involves a small fraction of techniques of traditional acupuncture. Consequently, DN is an integral part of the traditional acupuncture.

Zhou, et al,⁽⁸⁾ and Zhu, et al⁽¹¹⁾ reached similar conclusions.

Other Opinions

There are different schools of acupuncture practices in China. Although the large majority of acupuncturists followed the CM theory, there are other schools of acupuncturists who practice needle treatment based on non-traditional theories, such as neurological system, myofascial structures, anatomy, and different ethnic acupuncture. All these needling therapies, including using filiform needles for stimulating points and hollow-core needles for point injections, are considered and administrated as acupuncture practice in general. There is never an issue or challenges by any professionals in China.^(12,17,33,34)

AAPAS Comment

The needles currently used in DN in the US and other Western countries are the same as those used in China in acupuncture practice which include both filiform needles and hollow-core hypodermic needles. Filiform needles have been used in acupuncture practice over the past 2,000 years, and hypodermic needles for DN as Travell described has been used

in China in acupuncture practice for at least 72 years. Needling therapies may be performed by using either filiform or hollow-core needles, but they all belong to the general umbrella of acupuncture. The style of DN in the US and other Western Countries is part of Ashi acupuncture from China, just in different name, and has been practiced in China for over 2,000 years.

Conflict of Interests

None.

Author Contributions

All authors participated in the planning, writing and proofread, and contributed equally and served as co-first authors.

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(The White Paper (II) and (III) will be continued in the following two issues of this journal)