

HOT TOPIC

Evidence and Expert Opinions: Dry Needling versus Acupuncture (II)

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

FAN Arthur Yin^{1,2}, XU Jun^{1,3}, and LI Yong-ming^{1,3}

ABSTRACT In the United States and other Western countries, dry needling has been a topic in academic and legal fields. This White Paper is to provide the authoritative information of dry needling versus acupuncture to academic scholars, healthcare professionals, administrators, policymakers, and the general public by providing the authoritative evidence and expertise regarding critical issues of dry needling and reaching a consensus. We conclude that Dr. Travell, Dr. Gunn, Dr. Baldry and others who have promoted dry needling by simply rebranding (1) acupuncture as dry needling and (2) acupuncture points as trigger points (dry needling points). Dry needling simply using English biomedical terms (especially using "fascia" hypothesis) in replace of their equivalent Chinese medical terms. Dry needling is an over-simplified version of acupuncture derived from traditional Chinese acupuncture except for emphasis on biomedical language when treating neuromuscular-skeletal pain (dry needling promoters redefined it as "myofascial pain"). Trigger points belong to the category of Ashi acupuncture points in traditional Chinese acupuncture, and they are not a new discovery. By applying acupuncture points, dry needling is actually trigger point acupuncture, an invasive therapy (a surgical procedure) instead of manual therapy. Dr. Travell admitted to the general public that dry needling is acupuncture, and acupuncture professionals practice dry needling as acupuncture therapy and there are several criteria in acupuncture profession to locate trigger points as acupuncture points. Among acupuncture schools, dry needling practitioners emphasize acupuncture's local responses while other acupuncturists pay attention to the responses of both local, distal, and whole body responses. For patients' safety, dry needling practitioners should meet standards required for licensed acupuncturists and physicians.

KEYWORDS dry needling, acupuncture, trigger points, acupuncture points, invasive therapy, evidence, expertise, consensus

Does Dry Needling Use Acupuncture Points?

Evidence

Dry needling (DN) is based on using dry needles (i.e. filiform, hypodermic hollow-core needles, or other injection needles) to pierce and stimulate trigger points (TrPs).^(8,13,14,36)

Dr. Travell and her colleagues⁽¹³⁾ systematically summarized 255 TrPs in 144 muscles in her popular book, titled *Myofascial Pain and Dysfunction: Trigger Point Manual*, thus, popularizing TrPs and DN. TrPs, the reactive (painful) points that are not completely fixed in muscle bellies,^(8,13,14) are described as "hyperirritable spots in the fascia surrounding skeletal muscle". They are associated with palpable nodules in taut bands of muscle fibers. The spot is painful on compression and can give rise to characteristic referred pain, referred tenderness, motor dysfunction, and autonomic phenomena. Dr. Travell admitted to

the general public that DN is acupuncture when she stated in a newspaper that "the medical way of saying it is 'acupuncture.' In our language that means sticking a needle into somebody."⁽³⁷⁾ and in her book, "many practitioners of acupuncture use several TrP criteria to locate pain acupuncture points and, in fact, are successfully performing dry needling of TrPs that they speak of as acupuncture therapy".⁽¹³⁾

Dommerholt,⁽³⁾ a known physical therapist, wrote:

©The Chinese Journal of Integrated Traditional and Western Medicine Press and Springer-Verlag Berlin Heidelberg 2017

1. The American Alliance for Professional Acupuncture Safety, Greenwich, Connecticut (06878), USA; 2. American Traditional Chinese Medicine Association, Vienna, Virginia (22182), USA; 3. American Acupuncture Association of Greater New York, New York (10016), USA

Correspondence to: Dr. FAN Arthur Yin, Tel: 1-703-499-4428, E-mail: ArthurFan@ChineseMedicineDoctor.US

DOI: 10.1007/s11655-017-2800-6

"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."

A clinical study by Anderson and colleagues⁽³⁸⁾ shows that TrPs, typical locations of tender points in many patients, were not just soft, but the softest spots in the muscle—the opposite of what most people would expect. "A heterogeneous distribution of pressure pain sensitivity and muscle hardness was found," which indicates TrPs are not necessarily the "tightest" painful spots within muscles.

The *Yellow Emperor's Inner Classic* (Huang Di Nei Jing, which was compiled 2000 years ago)⁽³²⁾ first documented the reactive (painful) acupuncture point needling strategy and stated that "the painful point is the site for acupuncture (Yi Tong Wei Shu)."

The term of Ashi point (AKA tender point) was formally coined by Dr. SUN Si-miao (581–682 CE), a famous Chinese physician in the Tang dynasty, for these reactive (painful) acupuncture points.⁽³⁵⁾ He stated that, "In terms of the method of Ashi, in speaking of a person who has a condition of pain, when squeezing [that area], if there is a painful spot inside the patient says, "Ah yes!" Thus, they are called Ashi points."

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." Gunn and his colleagues started to use the term motor points (TrPs' synonym) as a substitute for the term acupoints in their publication.⁽²⁴⁾

Expertise

Melzack and colleagues⁽³⁹⁾ published the first evidence-based study comparing TrPs with classic acupoints in Chinese medicine (CM), which was based on reviewing a set of 56 TrPs, and then they compared these to CM classic acupoints that are primarily used to treat regional pain conditions. They found that all 56 TrPs were within 3 cm of an acupoint,

and that 71% had the same pain indications as those acupoints studied. This close correlation suggests that TrPs and (classic) acupoints for pain, though ... labeled differently, represent the same phenomenon and can be explained in terms of the same underlying neural mechanisms. The discovery of anatomically defined CM acupoints was profound as it provided a physiologic foundation for how acupuncture might work.

Birch⁽⁴⁰⁾ challenged Melzack's validity of conclusion and investigated the two categories of acupoints through a broader range of literature. In his review, correlated CM acupoints were defined to exhibit pressure pain, and are used primarily for pain problems. His results showed an 18% rather than 71% correspondence of TrPs and CM classic acupoints for the treatment of pain. He further pointed out that TrPs and (classic meridian) acupoints do not fall into same concept category, and believes that a probable correspondence of TrPs to a different class of acupoints, is the Ashi points.

Dorsher and Fleckenstein^(41,42) applied different criteria than Melzack for anatomic correspondence and they defined that two points are correlated anatomically if they are within a 2-cm radius of each other and entered the same muscle. They investigated 255 common TrPs and compared them with CM classic acupoints. They found that 238 (93.3%) TrPs anatomically corresponded with classical acupoints. Furthermore, if the TrPs which are located internally and thus not fit for needling are eliminated, the corresponding rate will be even higher. They stated that "the marked correspondences of the pain indications (up to 97%) and somatovisceral indications (up to 93%) of anatomically corresponding common TrP- classical acupoints pairs provide a second, clinical line of evidence that TrPs and acupoints likely describe the same physiologic phenomena." Moreover, the myofascial referred-pain patterns of 76% of TrPs accurately followed relevant meridian distributions. In a further study, Dorsher⁽⁴³⁾ reviewed four acupuncture texts (three are different from Birch's selection) to examine the validity of Birch's findings. He suggested that TrPs could conceptually be compared to classic acupoints for pain disorders, and that the clinical correspondence was over 95%.

Zhou, et al⁽⁸⁾ stated that acupuncture...the

commonly used procedure for musculoskeletal pain involves Ashi points with the treatment protocols similar to those of DN.

Peng, et al^(9,10) compared TrPs and acupoints, and concluded that TrPs used in DN (in Western) is acupoints, within one category of traditional acupuncture points: the Ashi points (literally, "Ah-yes; this is the needling point" or tender point), widely used by majority acupuncturists.

Zhu and Most⁽¹¹⁾ systematically reviewed DN history, many scholars' works on its origin, the comparisons of TrPs and acupoints, and they concluded that TrPs are exactly acupoints. They stated, "TrPs in DN and acupoints in acupuncture are derived from painful spots or tender/tight nodules. Muscle pain can be relieved effectively when the target points are needled. The same phenomenon is given different names."

Fan, et al^(18,36,44) commented that Ashi originally means the reactive pain points, or tender points, while TrPs are only tender points found in muscle bellies; therefore, TrPs completely fall within the Ashi points category. TrPs needling has been widely and internationally used in the daily practices of acupuncturists. Based on extensive literature review and clinical experience, Jin, et al⁽¹²⁾ and Hong, et al⁽⁴⁵⁾ reached the same conclusion.

Liu, et al⁽⁴⁶⁾ stated that TrPs are significantly correlated to CM acupoints, including primary channel acupoints, extra acupoints, and Ashi points. TrPs may be considered as a rediscovery of the nature of acupoints, at least for treating pain conditions. Considering the correlation between TrPs and acupoints and the rarely-studied research area involving Ashi points, it may be reasonable to apply the findings of TrPs as a valuable foundation for future investigation into Ashi points. Ashi points might be central or attachment TrPs, and the most significant characteristic of Ashi points may be pain recognition rather than pressure pain.

Other Facts

The National Commission for the Certification of Acupuncture and Oriental Medicine, the certifying board for licensed acupuncturists, completed an analysis in 2003 that documented the prevalence

of DN techniques in the practices of licensed acupuncturists. Of acupuncturists responding, 82% used needling of TrPs in patients that presented with pain. Of patients receiving acupuncture treatment, an estimated 56% present with TrPs pain.⁽⁴⁾

AAPAS Comments

In traditional Chinese acupuncture using classical CM languages and contemporary biomedical languages, there are at least three categories of acupoints,^(33,34) namely Ashi points, classical meridian acupoints and extra-meridian acupoints. Ashi points commonly include local or distal reactive pain points or called tender points, as well as local foci, local atrophy area, local skin change area, etc. Stimulating such Ashi points is a common strategy in acupuncture for the treatment of (but not limited to) pain due to neuromusculoskeletal and connective tissue disorders, and local and sometimes distal illnesses and disorders. The localization of Ashi is largely dependent on the palpitation and searching by the practitioners; sometime its central point location has some variations in different patients with the same condition or even in same patients in different stages of the condition. Classical CM acupoints include 361 points on 14 major meridians, which can be used to treat both local and distal external and internal illnesses and conditions, including pain. The extra-meridian acupoints include at least 1,655 acupoints, which are not located on 14 major meridians, for the treatments of local issues including pain or even distal illness.⁽⁴⁷⁾ Both classical meridian acupoints and extra-meridian acupoints are given specific point-names and originally derived from the Ashi points, their locations are relatively clearer, and basically fixed.^(33,34) Therefore, classical meridian acupoints and extra meridian acupoints largely overlap with Ashi points when treating the neuromuscular-skeletal pain (DN promoters redefined it as "myofascial pain"). An acupoint is not a spot but an area,⁽⁴⁸⁾ in a real clinical practice, each needling zone ("acuzone") actually represents an area with one or more central points (a zone can be reached by needle horizontally, generally can be a 2–4 cm radius). Thus it is highly likely that acupoints *per se* overlap. TrPs largely overlap with both the classic and extra-meridian acupoints category (except for very few TrPs that are located internally, which are only fitting for manual therapy and not for needling) when treating pain. However, from the definition of TrPs, that they are part of tender points in

muscle bellies (in which their locations are not totally fixed, regardless of whether they have or do not have hard or tight nodules), the tender points are considered part of Ashi points. It can therefore be concluded that TrPs completely fall within Ashi points category.

Definitions from related authors and analyses from independent scholars indicate that, in Western countries, DN does use acupuncture points. TrPs look like a rediscovery of the nature of acupoints, considering that DN has arisen much later than acupuncture (which has had many different schools over time) and DN promoters themselves are either acupuncture professionals or researchers (such as Gunn C, Baldry P, Hong CZ, Ma Y, et al), also, the medical doctors who largely cite acupuncturists' work (such as Travell J, and Simmons D, especially Travell whom is an acupuncture clinical researcher and had involved in planning acupuncture conferences),⁽³⁷⁾ except that they use the term DN to replace acupuncture to support the TrPs hypothesis,^(23,24,18,36,44) help to reveal the reasons and factors for the start of DN.^(18,36,44) From all of this, we conclude that DN has resulted from simply rebranding (1) acupuncture as dry needling and (2) acupuncture points as trigger points by simply using English biomedical terms (in "fascia" hypothesis) in place of their equivalent CM terms.

In addition, Dr. Travell admitted to the general public that DN is acupuncture when she stated in a newspaper that "the medical way of saying it is 'acupuncture'. In our language that means sticking a needle into somebody",⁽³⁷⁾ and acupuncture professionals practice DN as acupuncture therapy and there are several criteria in the acupuncture profession to locate TrPs as acupoints.⁽¹³⁾ Her words are very clear: TrPs are acupoints.

What Is New About Dry Needling Points (Trigger Points)?

Evidence

Travell and her colleagues⁽¹³⁾ summarized the TrPs' characteristics in their popular book *Myofascial Pain and Dysfunction: Trigger Point Manual* as: (1) Pain related to a discrete, irritable point in skeletal muscle or fascia, not caused by acute local trauma, inflammation, degeneration, neoplasm or infection; (2) The painful point can be felt as a nodule or band in the muscle, and a twitch response can be elicited on stimulation of the trigger point; (3) Palpation of the

trigger point reproduces the patient's complaint of pain, and the pain radiates in a distribution typical of the specific muscle harboring the trigger point; (4) The pain cannot be explained by findings on neurological examination. The spot is painful on compression and can give rise to characteristic referred pain, referred tenderness, motor dysfunction, and autonomic phenomena. Dommerholt⁽³⁾ wrote: "a myofascial TrP consists of multiple contraction knots, which are related to the production and maintenance of the pain cycle."

Chen, et al⁽⁴⁹⁾ used magnetic resonance elastography (MRE, a modification of existing magnetic resonance imaging equipment to image stress produced by adjacent tissues with different degrees of tension) to image the taut band of a TrP in an upper trapezius muscle and tried to find the cause of myofascial pain symptoms. Their MRE image of the taut band shows the V-shaped signature of the increased tension (50% greater) compared with surrounding tissues. The study suggests that MRE can quantitate asymmetries in muscle tone that could previously only be identified subjectively by examination. In another study with 65 patients⁽⁵⁰⁾ with myofascial pain with taut bands, the findings suggest that while clinicians may overestimate, and current MRE techniques may underestimate, the presence of taut bands, these bands do exist, can be assessed quantitatively, and do represent localized areas of increased muscle stiffness.

Shah and colleagues⁽⁵¹⁾ reported a biochemistry study which compared the tissue at active TrPs, latent TrPs and absent TrPs spots in the trapezius muscle and in normal gastrocnemius muscle, measuring pH, bradykinin, substance P, calcitonin gene-related peptide, tumor necrosis factor alpha, interleukin (IL) 1beta, IL-6, IL-8, serotonin, and norepinephrine, using immunocapillary electrophoresis and capillary electrochromatography, as well as pressure algometry. The results showed that subjects with active TrPs in the trapezius muscle have a biochemical milieu of selected inflammatory mediators, neuropeptides, cytokines, and catecholamines different from subjects with latent or absent TrPs in their trapezius. These concentrations also differ quantitatively from a remote, uninvolved site in the gastrocnemius muscle. The milieu of the gastrocnemius in subjects with active TrPs in the trapezius differs from subjects without active TrPs.

Expertise

Clinical study by Anderson and colleagues⁽³⁸⁾ shows that TrPs, typical locations of tender points, in many patients, were not just soft, but the softest spots in the muscle—the opposite of what most people would expect. "A heterogeneous distribution of pressure pain sensitivity and muscle hardness was found," which indicates TrPs are not necessarily the "tightest" painful spots within muscles.

Baldry⁽²²⁾ indicated that in the West, in 1821 and 1828, Dr. James M. Churchill published the book *A Treatise on Acupuncture*, using the information gathered from Japan and China. Dr. John Elliottson wrote a paper on acupuncture in 1827. "Neither of them employed the complex procedures, techniques, meridian and other theories of traditional Chinese acupuncture as they were trying to avoid the rejection of acupuncture by the medical doctors of the time". Instead, they employed the simplest strategy in acupuncture for the treatment of disease or other conditions—especially neuromusculoskeletal and connective tissue disorders, including musculoskeletal pain—by needling reactive (painful) acupoints (now commonly known as TrPs). This simplest strategy in acupuncture is now commonly known as dry needling.

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." Gunn and his colleagues started to use the term motor points (TrPs' synonym) as a substitute for the term acupoints in their publication.⁽²⁴⁾

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 and whether 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." "De-meridian (where the meridian theory is not required for acupuncture and other related modalities) is not equivalent to de-acupuncture (modalities derived from but different from acupuncture)···DN has de-meridian attributes but it uses acupuncture needles and techniques; therefore it does not have de-acupuncture attributes. In other words, as long as DN applies filiform needles

to stimulate TrPs, it is in the scope of acupuncture··· to protect the public safety of patients seeking acupuncture, we refute the de-acupuncture claim by DN educators."

Other Facts

The Council of Colleges of Acupuncture and Oriental Medicine (CCAOM)⁽⁴⁾ 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···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."

AAPAS Comments

It is clear that Dr. Travell, Dr. Gunn, Dr. Baldry and others promoted TrPs (DN Points) and DN through re-translating and rebranding acupoints, acupuncture techniques, in one form of biomedical language in "fascia" hypothesis (by removing terminology of traditional Chinese acupuncture) while acupuncture has many different classical and modern schools, including using traditional Chinese acupuncture languages and various biomedical languages. DN is an over-simplified version (or say, simplest version) of acupuncture derived from traditional Chinese acupuncture except for emphasizing biomedical language when treating neuromuscular-skeletal pain (DN promoters redefined it as "myofascial pain"). TrPs belong to the category of Ashi points in traditional Chinese acupuncture, and they are not a new discovery. Among acupuncture schools, DN practitioners emphasize acupuncture's local response while other acupuncturists pay attention to the responses of the local and distal locations, incorporating the whole body.

The "difference" in DN points, or TrPs, is that the studies of TrPs try to focus more on local anatomy (especially hypothesis on "fascia") while former studies of acupuncture extensively focus on the activities of the central nervous system and hormones changes. Travell, et al systematically summarized the 255 myofascial TrPs on 144 muscles, their manual therapies, and needling techniques (under the term

DN, actually TrP acupuncture). It triggers scholars to pay more attentions to the research of local anatomy, biophysics, biochemistry, and imaging of acupoints. Actually there has been more research on the different schools of acupuncture, comparisons among such needling therapies, the relationship among them and the evolution processes of acupuncture globally. It also encourages schools (colleges) of the acupuncture profession to pay more attention to contemporary developments of acupuncture (in different names, terminologies). Acupuncture using biomedical languages is more readily to be accepted by the main medical stream and the general public with Western education background.

However, it is also clear that the four characteristics of TrP mentioned by Dr. Travell are not a consensus of all DN scholars and professionals. The taut band, nodule, or local twitch response are probably not a necessary criteria of a TrP, except TrP is a tender point.^(33,38)

Is Dry Needling a Manual Therapy?

Evidence

The Federation of State Boards of Physical Therapy (FSBPT)⁽⁵²⁾ stated that DN is also known as intramuscular manual therapy. Beginning in 2009, the American Physical Therapy Association had recommended the use of the term "intramuscular manual therapy" (IMT) to describe the use of acupuncture needles by physical therapists, however, since late 2011, the organization advocates using dry needling as the term of choice.

A commercial DN educator, Kinetacore,⁽⁵³⁾ explains that "IMT...the easiest way to think of this treatment is to relate it to a massage. The knots in your muscles that massage therapy often targets are similar areas of treatment for IMT (DN). Often times these knots live at a deep level that fingers and hands just can not get to. Those knots are the goal of IMT. The needles used are very fine, thin, and flexible needles that are quickly tapped into the muscle and causes those knots to decrease, the muscle to loosen, and healing to begin which ultimately decreases pain and increases proper function."

Dommerholt⁽³⁾ wrote: "DN is an invasive procedure in which a solid filament needle is inserted into the skin and muscle directly at a myofascial TrP".

Sportscare Physical Therapy⁽⁵⁴⁾ states that "IMT is an invasive procedure in which a solid filament needle is inserted into the skin and muscle directly at a myofascial trigger point. A myofascial TrP consists of multiple contraction knots, which are related to the production and maintenance of the pain cycle."

Expertise

A medical dictionary⁽⁵⁵⁾ defines "manual therapy" as "(a) collection of techniques in which hand movements are skillfully applied to mobilize joints and soft tissues." (Medical Dictionary, © 2009 Farlex and Partners)

Ferguson,⁽⁵⁵⁾ Attorney General of Washington State, states that "DN is not 'manual therapy' as we understand the term".

The National Center for Acupuncture Safety and Integrity (NCASI)⁽⁵⁶⁾ states that "physical therapists contend that their right to practice DN arises by virtue of their right to practice manual therapy. The term manual therapy simply means a remedial treatment consisting of manipulating a part or the whole of the body by hand. It certainly does not include the practice of surgery (severing or penetrating tissues) in any form. Dry needling is acupuncture, not manual therapy".

In regulations of veterinary medicine, acupuncture procedure is often classified as a type of surgical procedures.⁽⁵⁷⁾ "Surgery" is defined by the American Medical Association (AMA), in part, as "the diagnostic or therapeutic treatment of conditions or disease processes by any instruments causing localized alteration or transposition of live human tissue which include lasers, ultrasound, ionizing radiation, scalpels, probes, and needles."⁽⁵⁸⁾ The insertion of acupuncture needles falls well within what is medically considered to be "surgery" by the AMA.

The American Academy of Physical Medicine and Rehabilitation (AAPM&R) states that "DN is taught in American acupuncture schools as a form of treatment for individuals using acupuncture needles. DN is an invasive procedure. Needle length can range up to 4 inches in order to reach the affected muscles. The patient can develop painful bruises after the procedure and adverse sequelae may include hematoma, pneumothorax, nerve injury, vascular

injury and infection".⁽⁵⁹⁾

AMA policy on DN states that "DN is indistinguishable from acupuncture", physical therapists and other non-physicians practicing DN should—at a minimum—have standards that are similar to the ones for training, certification and continuing education that exist for acupuncture. It emphasizes that "Lax regulation and nonexistent standards surround this (DN) invasive practice. For patients' safety, practitioners should meet standards required for licensed acupuncturists and physicians".⁽⁶⁰⁾

Other Facts

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. It is an integral part of the traditional acupuncture.

Zhu and Most⁽¹¹⁾ reviewed four features of needling techniques and explored the similarities and differences between DN and acupuncture. The authors concluded that DN is one type of acupuncture when solid filiform needles are used.

AAPAS Comments

DN is a subset of acupuncture, also called TrP acupuncture. As the term indicates, it involves the procedure of piecing skin and other tissues of the body with different sized needles and is an invasive therapy instead of a manual therapy.

For patients' safety, practitioners should meet the standards required for licensed acupuncturists and physicians, as American Medical Association, et al have indicated.

Conflict of Interest

None.

Author Contributions

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

Acknowledgements

This White Paper reflects the official view of AAPAS. The authors would like to thank Drs. JIN Guan-yuan, Jerome Jiang, YANG Guan-hu, WANG Shao-bai and WANG Xiao-ping for the valuable discussions and assistance during the drafting process.

REFERENCES

36. Fan AY, Xu J, Li YM. Evidence and expert opinions: drying needling versus acupuncture (I)—The American Alliance for Professional Acupuncture Safety (AAPAS) White Paper 2016. *Chin J Integr Med* 2017;23:3-9.
37. Nichols HW. Ancient pain-killing method works, while US scientists don't know why. *Albany Democrat-Herald* (Albany), March 21, 1947. Available at <http://www.newspapers.com>. Accessed October 3, 2016.
38. Andersen H, Ge HY, Arendt-Nielsen L, Danneskiold-Samsøe B, Graven-Nielsen T. Increased trapezius pain sensitivity is not associated with increased tissue hardness. *J Pain* 2010;11:491-499.
39. Melzack R, Stillwell DM, Fox EJ. Trigger points and acupuncture points for pain: correlations and implications. *Pain* 1977;3:3-23.
40. Birch S. Trigger point–acupuncture point correlations revisited. *J Altern Complem Med* 2004;9:91-103.
41. Dorsher PT, Fleckenstein J. Trigger points and classical acupuncture points: Part 1. Qualitative and quantitative anatomic correspondences. *Ger J Acupunct Relat Tech* 2008;51:15-24.
42. Dorsher PT, Fleckenstein J. Trigger points and classical acupuncture points: Part 2. Clinical correspondences in treating pain and somatovisceral disorders. *Ger J Acupunct Relat Tech* 2008;51:6-11.
43. Dorsher PT. Can classical acupuncture points and trigger points be compared in the treatment of pain disorders? Birch's analysis revisited. *J Altern Complement Med* 2008;14:353-359.
44. Fan AY, Yang G, Zheng L. Response to Dommerholt and Stanborough re: "Evidence that dry needling is the intent to bypass regulation to practice acupuncture in the United States". *J Altern Complem Med* 2017. DOI: 10.1089/acm.2016.0394.
45. Hong CZ. Myofascial trigger points: pathophysiology and correlation with acupuncture points. *Acupunct Med* 2000;18:41-47.
46. Liu L, Skinner MA, McDonough SM, Baxter GD. Traditional

- Chinese medicine acupuncture and myofascial trigger needling: the same stimulation points? *Complement Ther Med* 2016;26:28-32.
47. Hao JK, ed. Atlas of Extra-meridian acupuncture points. Revised Ed. Beijing: People's Military Medicine Press; 2011.
 48. Molsberger AF, Manickavasagan J, Abholz HH, Maixner WB, Endres HG. Acupuncture points are large fields: the fuzziness of acupuncture point localization by doctors in practice. *Eur J Pain* 2012;16:1264-1270.
 49. Chen Q, Bensamoun S, Basford JR, Thompson JM, An KN. Identification and quantification of myofascial taut bands with magnetic resonance elastography. *Arch Phys Med Rehabil* 2007;88:1658-1661.
 50. Chen Q, Wang HJ, Gay RE, Thompson JM, Manduca A, An KN, et al. Quantification of myofascial taut bands. *Arch Phys Med Rehabil* 2016;97:67-73.
 51. Shah JP, Danoff JV, Desai MJ, Parikh S, Nakamura LY, Phillips TM, et al. Biochemicals associated with pain and inflammation are elevated in sites near to and remote from active myofascial trigger points. *Arch Phys Med Rehabil* 2008;89:16-23.
 52. Federation of State Boards of Physical Therapy. FSBPT dry needling resource paper (Intramuscular Manual Therapy). 4th ed. Available at: http://www.fsbpt.org/download/dryneedlingresourcepaper_4thedition.pdf Accessed Dec 10, 2016.
 53. Kinetacare. Intramuscular manual therapy (AKA Trigger Point Needling). Available at: <http://www.kinetacare.com/physical-therapy/Intramuscular-Manual-Therapy-AKA-Trigger-Point-Needling/page27.html> Accessed Dec 10, 2016.
 54. Sportscare Physical Therapy. What is intramuscular manual therapy? Available at: <http://www.sportscarephysicaltherapy.com/intramuscular-manual-therapy/> Accessed Dec 10, 2016.
 55. Attorney General of Washington, Ferguson RW. Scope of practice of physical therapy: the practice of dry needling does not fall within the scope of practice of a licensed physical therapist. Available at: <https://static1.squarespace.com/static/5771d62c59cc685163c0ac79/t/57a970f0ff7c5037a8bc85ea/1470722293467/Washington+Attorney+General%E2%80%99s+Opinion.pdf> Accessed Dec 10, 2016.
 56. National Center for Acupuncture Safety and Integrity. Thirteen facts you need to know about dry needling. Available at: <https://www.acupuncturesafety.org/>. Accessed Dec 10, 2016.
 57. International Veterinary Acupuncture Society. What is veterinary acupuncture? Available at: <https://www.ivas.org/about-ivas/what-is-veterinary-acupuncture/>. Accessed Dec 19, 2016.
 58. California medical association. AMA Policy states H-475.983 definition of surgery. In: 2012 AMA Interim Meeting Highlights (as of 11/13/12). Available at: <http://www.cmanet.org/files/assets/news/2012/11/ama-highlights-111312.pdf>. Accessed Dec 19, 2016.
 59. The American Academy of Physical Medicine and Rehabilitation. AAPM&R position on dry needling. Available at: <https://www.aapmr.org/docs/default-source/protected-advocacy/Position-Statements/aapmr-position-on-dry-needling.pdf?sfvrsn=2>. Accessed Dec 19, 2016.
 60. American Medical Association. Physicians take on timely public health issues. *AMA Wire*. Jun 15, 2016. Available at <http://www.ama-assn.org/ama/ama-wire/post/physicians-timely-public-health-issues>. Accessed Dec 19, 2016.

(Received December 20, 2016)
 Edited by YU Ming-zhu

(The references 1–35 are available in *Chin J Integr Med* 2017;23:3-9. The White Paper (III) will be continued in next issue of this journal)