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Trigger Points and Classical Acupuncture Points

Part 3: Relationships of Myofascial Referred Pain Patterns to Acupuncture Meridians

Triggerpunkte und klassische Akupunkturpunkte

Teil 3: Das Verhältnis der myofaszialen „Referred-Pain"-Muster zu den Akupunkturmeridianen

Abstract

Background: In the first part of this study, myofascial trigger point regions were demonstrated to have strong (93.3 %) anatomic correspondences with classical acupuncture points. The second portion of this study examined the clinical correspondences of trigger point regions and classical acupuncture points in the treatment of both pain and somatovisceral disorders, and found they had ~ 97 % correlation for treating pain conditions and over 93 % correlation in treating somatovisceral conditions.

Objective: To examine the relationships of myofascial trigger point regions' referred-pain patterns to the meridian distributions of their anatomically corresponding classical acupuncture points.

Methods: The 238 anatomically corresponding trigger point region – classical acupuncture point pairs in part one of this study were analyzed to compare the distributions of their myofascial referred-pain patterns and acupuncture meridians in order to determine if their distributions correlated.

Results: Seventeen of the 238 anatomically corresponding trigger point regions had no described myofascial referred-pain. In the remaining 221 trigger point region-classical acupuncture point pairs, 180 (81.5 %) demonstrated complete or near-complete correlation, and another 9.5 % of point pairs partially showed correlations regarding the distributions of their myofascial referred-pain patterns and associated acupuncture meridians. Only 9 % of point pairs showed little or no consistency of their referred-pain patterns and acupuncture meridians.

Conclusions: The strong (up to 91 %) consistency of the distributions of trigger point regions' referred pain patterns to acupuncture meridians provides a fourth line of evidence that trigger points most likely represent the same physiological phenomenon as acupuncture points in the treatment of pain disorders.

Zusammenfassung

Hintergrund: Der erste Teil dieser Arbeit stellte eine 93%ige anatomische Übereinstimmung zwischen Regionen myofaszialer Triggerpunkte (mTrP) und klassischen Akupunkturpunkten (AP) vor. Der zweite Teil zeigte klinische Übereinstimmungen zwischen beiden Systemen in Bezug auf die Behandlung von Schmerzen (bis zu 97 %) und somatoviszeralen Störungen (bis zu 93 %).

Zielsetzung: Den Zusammenhang zwischen den charakteristischen Schmerzausstrahlungen (referred-pain patterns) von myofaszialen Triggerpunkten (mTrP) mit dem Meridianverlauf anatomisch korrespondierender Akupunkturpunkte (AP) zu untersuchen.

Methoden: 238 anatomisch korrespondierende TrP/AP-Paare, gezeigt in Teil 1 dieser Studie, wurden auf die Übereinstimmung der Schmerzausstrahlung der mTrP mit dem Meridianverlauf der korrespondierenden AP untersucht.

Ergebnisse: Siebzehn von 238 anatomisch korrespondierender TrP/AP-Paaren konnten, da für sie kein referred-pain pattern beschrieben ist, nicht in die Analyse mit aufgenommen werden. Von den verbleibenden 221 Punktpaaren zeigten 180 (81,5 %) eine vollständige oder beinahe vollständige Übereinstimmung, weitere 21 (9,5 %) der Punktpaare wiesen partielle Übereinstimmungen des Verlaufs der Schmerzausstrahlung und des Meridianverlaufes auf. Neun Prozent der Punktepaare zwischen referred pain patterns und Akupunkturmeridianen zeigten eine geringe oder keine Übereinstimmung.

Schlussfolgerungen: Die starke Übereinstimmung von bis zu 91 % der Schmerzausstrahlungen myofaszialer Triggerpunkte mit den Meridianverläufen anatomisch korrespondierender Akupunkturpunkte könnte darauf hinweisen, dass mTrP und AP in der Behandlung von Schmerzsyndromen gleiche physiologische Phänomene repräsentieren.

Keywords

Acupuncture points, meridians, myofascial pain, myofascial referred pain, trigger point therapy

Schlüsselwörter

Akupunkturpunkte, Meridiane, Myofaszialer Schmerz, Myofasziale Schmerzausstrahlung, Triggerpunkt-Therapie

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Introduction

The earliest descriptions of acupuncture meridians are contained in the *Nei Jing (Inner Classic)*, which was compiled in the second century BC [1]. This work contains descriptions of the 12 Principal acupuncture meridians and the organs with which they are associated. Two of the 8 extraordinary meridians, the Governing and Conception Vessel meridians, are usually included within the 12 Principal Meridians, not only because of their clinical importance but also because both possess their own proper acupuncture points[2]. The descriptions of the acupuncture meridians and their points are postulated to have derived not only from anatomy learned through dissections of executed criminals before 200 BC but also from extensive clinical observation of spatially separate points that demonstrated similar therapeutic properties and from the phenomenon of the spread of needle sensation during stimulation [2].
Acupuncturists over the millennia have mechanically stimulated acupuncture points by needle manipulation to induce the sensation *(qi)* along the acupuncture points' meridians. Achieving the spread of needle sensation may portend a more favorable clinical response to the acupuncture treatment [2]. This mechanical stimulation (irritation) of acupuncture points to induce the spread of the *qi* sensation along the meridians is mechanistically comparable to the injection of saline (chemical irritation) into muscle trigger points to induce distant referred pain, which was the method used in myofascial pain research to map the muscular trigger points' referred-pain patterns [3]. Many of these myofascial referred-pain patterns were described in the late 1930s by Lewis and Kellgren, and subsequently more formal clinical descriptions of muscle pain syndromes evolved through the work of many researchers including Cyriax, Edeiken and Wolforth, Gorrell, Gutstein-Good, Hunter, Kelly, Reichart, and Travell and colleagues [3]. This work ultimately led to publication of *Myofascial Pain and Dysfunction: The Trigger Point Manual* by Travell and Simons with the head, neck, upper extremity, and trunk data released in 1983 and the pelvis and lower extremity data released in 1992 [3, 4].
Melzack et al [5] first studied the anatomic and clinical pain correspondences of trigger points and acupuncture points, but that study did not attempt to look for similarities in the referred-pain patterns of trigger points and the meridians of their anatomically corresponding acupuncture points, stating: "trigger points are firmly anchored in the anatomy of the neural and muscular systems, while acupuncture points are associated with an ancient conceptual but anatomically non-existent system of meridians which carry Yin (spirits) and Yang (blood)."
This third, final part of our study explores the physiologic relationships of myofascial trigger point regions' referred-pain patterns to the meridian distributions of their anatomically corresponding classical acupuncture points. If the degree of correlations of these distributions were as strong as the anatomical and clinical correspondences between the trigger point region – classical acupuncture point pairs (~ 93 % [6] and ~ 97 % in pain disorders and ~ 93 % in somatovisceral disorders [7], respectively) this would provide a distinct line of physiologic evidence that trigger point regions and classical acupuncture points represent the same phenomenon in the treatment of pain disorders.

Methods

In the first part of this study, it was established that 238 of 255 trigger point regions with their common trigger points have anatomically corresponding classical acupuncture points [6]. Anatomic correspondence was defined as being present when a classical acupuncture point entered the muscle or muscle region of its trigger point. Adobe Photoshop software (Adobe Software, Palo Alto California) was used to modify graphic images from Primal virtual human anatomic renderings [8] to demonstrate trigger point anatomic regions, the 255 "common" trigger points existing within these regions, and their associated myofascial referred pain patterns. Additional graphic layers were added to these images to demonstrate the 14 Principal acupuncture meridians and the 361 classical acupuncture points situated on those meridians. This allowed direct visual comparison of the locations of the trigger point regions, common trigger points, and their myofascial referred pain patterns to classical acupuncture points and their associated Principal meridians. Chen's Cross-sectional Anatomy Atlas of Acupuncture Points [9] and anatomic references [10–12] were used to confirm that each classical acupuncture point entered the muscle of its corresponding trigger point region. These point correspondences were also validated at an independent academic center by the second author (JF).
These 238 anatomically corresponding trigger point regions were examined to determine if their myofascial referred-pain patterns correlated to the meridian distributions of their corresponding classical acupuncture points.
Primal virtual human anatomic renderings [8] of the body's muscular layers were modified by the lead author of the present study using Adobe Photoshop software (Adobe Software, Palo Alto California) to simultaneously demonstrate trigger point regions with their common trigger points, myofascial referred pain patterns, classical acupuncture points, and acupuncture meridians to allow visualization of the relationships, if any, between the distributions of trigger point regions' referred pain patterns and those of the acupuncture meridians of their anatomically corresponding classical acupuncture points. This was performed for all anatomically corresponding trigger point regions that have a described myofascial referred pain pattern in the *Trigger Point Manual* [3, 4].
The correlations between the meridians and referred-pain patterns were rated (by visual estimation) as follows: an excellent rating indicated a trigger point region's local and distal referred-pain pattern followed its corresponding acupuncture point's meridian very closely; good, the trigger point region's local and most (over half) of its distal referred-pain followed its corresponding acupunc-

TABLE 1 Trigger Point Regions and Classical Acupoints With Fair Correspondence of Their Myofascial Referred-Pain and Acupuncture Meridian Distributions

Trigger Point Muscle Region	Acupoint
sternocleidomastoid, clavicular head	TE-16
temporalis, mid-portion, anterior	GB-3
infraspinatus, upper portion, lateral	SI-11
infraspinatus, upper portion, central	SI-11
adductor pollicis	LI-4
pectoralis major, intermediate sternal section, upper	ST-14
pectoralis major, intermediate sternal section, middle	ST-15
pectoralis major, intermediate sternal section, lower	ST-16
pectoralis major, lateral free margin, superior	SP-18
pectoralis minor, upper	LU-1
pectoralis minor, lower	ST-15
sternalis	CV-18
serratus anterior	SP-21
quadratus lumborum, superficial, upper	BL-51
quadratus lumborum, superficial, lower	BL-52
peroneus tertius, upper	GB-38
peroneus tertius, lower	GB-39
medial gastrocnemius, lower	LR-7
lateral gastrocnemius, lower	BL-56
flexor digitorum brevis, lateral	KI-1
flexor digitorum brevis, medial	KI-1

TABLE 2 Trigger Point Regions and Classical Acupoints With Poor or No Correspondence of Their Myofascial Referred-Pain and Acupuncture Meridian Distributions

Trigger Point Muscle Region	Acupoint
sternocleidomastoid, clavicular head, mid-portion	LI-17
sternocleidomastoid, clavicular head, upper portion	SI-16
temporalis, anterior portion	TE-23
orbicularis oculi	TE-23
splenius cervicis, upper portion	BL-10
obliquus capitis inferior	BL-10
latissimus dorsi	SP-21
coracobrachialis	LU-1
biceps brachii, medial head	HE-2
extensor carpi radialis brevis	LI-8
extensor digitorum longus, long finger	LI-10
flexor pollicis longus	PC-5
pronator teres	HE-3
subclavius	KI-27
external oblique, anterior portion, upper	GB-24
rectus abdominis, upper	KI-21
rectus abdominis, lower	KI-11
McBurney's point	KI-14
vastus lateralis, superior	ST-31
extensor hallucis longus	GB-37

ture point's meridian; fair, a trigger point region's local referred-pain pattern followed its corresponding acupuncture point's meridian, but most (over half) of the distal referred-pain differed; poor, a trigger point region's local and distal referred-pain differed almost entirely from its corresponding acupuncture point's meridian distribution; or none, a trigger point region's referred-pain pattern had no similarity to its corresponding acupuncture point's meridian distribution. Each of these referred-pain to meridian correspondence ratings were independently confirmed at another academic institution by the second author (JF), who was provided the full graphic data set.

Results

The first part of this study [6] demonstrated that there are 238 anatomically corresponding trigger point regions, but seventeen of those point regions have no myofascial referred pain patterns described [3]. Those include the "belch button", "cardiac arrythmia", and fifteen "causes diarrhea" trigger point regions. This left 221 trigger point region – classical acupuncture point pairs to compare the myofascial referred-pain patterns of the trigger point regions to the meridian distributions of their anatomically corresponding classical acupuncture points.

Of these 221 anatomically corresponding trigger point region – classical acupuncture point pairs, 180 (81.5 %) showed complete or near-complete correspondence (grade excellent or good) of their myofascial referred-pain patterns and the associated acupuncture meridians, a 5.5 % increase compared with the prior study [13]. Another 21 point pairs (9.5 %) showed at least some local or distal correspondence (grade fair) of the referred-pain patterns and associated meridians. These point pairs are listed in Table 1. The remaining 20 point pairs (9 %) showed little or no correspondence (grade poor or none) of referred-pain patterns and associated acupuncture meridians. These point pairs are listed in Table 2.

The voluminous graphic data demonstrating the relationships of the distributions of each trigger point region's referred-pain to that of its anatomically corresponding

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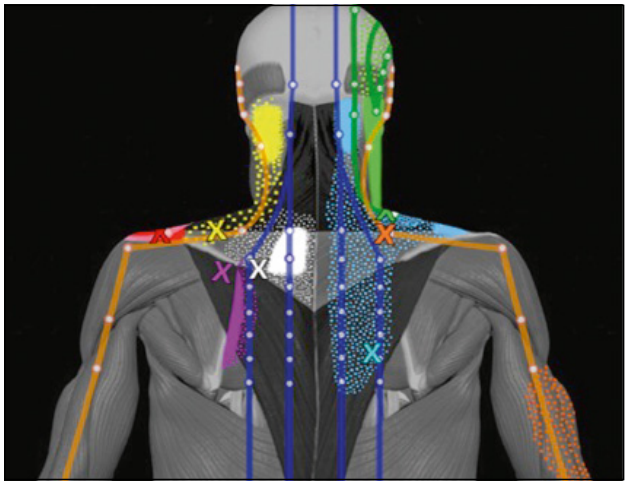

Figure 1: Relationship between Common Trigger Point Regions and Their Myofascial Referred Pain Patterns to Acupuncture Points and Meridians for all Three Regions of the Trapezius Muscle (2 TrPs in its upper, 3 TrPs in its middle, and 2 TrPs in its lower region) (common TrPs shown as X's with referred pain color coded to TrP color, the Bladder meridian is shown as blue, the Large Intestine meridian as pink, Gallbladder meridian as green, and Triple Energizer meridian as orange, adapted from Primal, with permission)

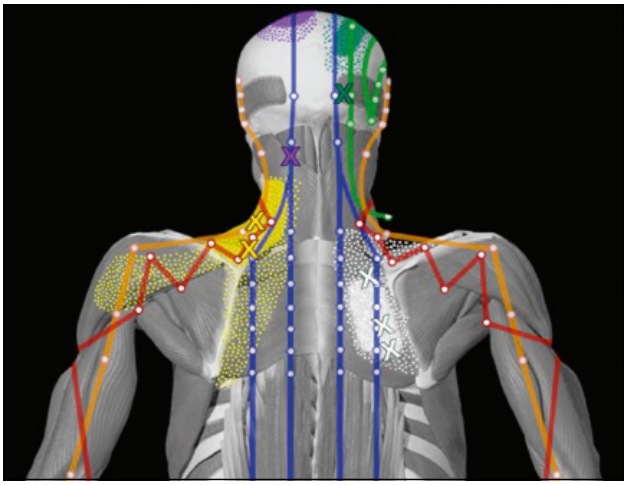

Figure 2: Posterior Neck and Upper Back With Trapezius and Latissimus Dorsi Removed Showing (from superior to inferior) Occipitalis, Splenius Capitis, Levator Scapulae (2), Rhomboid Minor, and Rhomboid Major (2) Common Trigger Point Regions with Their Referred Pain Patterns along with Acupuncture Points and Meridians (common TrPs shown as X's with referred pain color coded to TrP color, Bladder meridian is shown as blue, Gallbladder meridian as green, Small Intestine meridian as red, and Triple Energizer meridian as orange, and adapted from Primal, with permission)

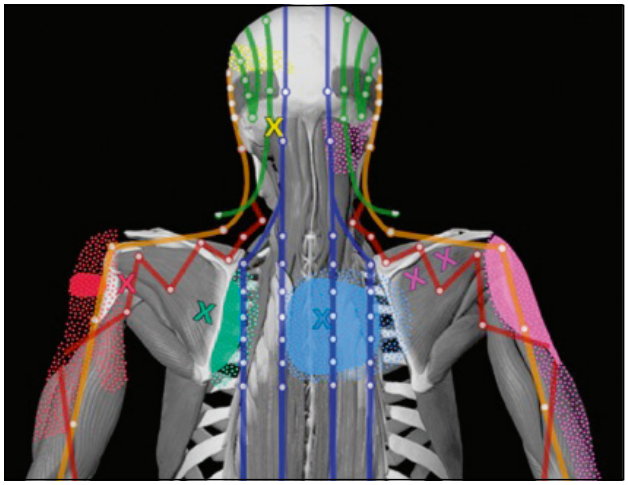

Figure 3: Posterior Neck and Upper Back With Deltoids, Splenius Capitis, and Rhomboids Removed Showing (from superior to inferior) Semispinalis Cervicis, Infraspinatus (3), Teres Minor, and Multifidi Common Trigger Point Regions with Their Referred Pain Patterns along with Acupuncture Points and Meridians (common TrPs shown as X's with referred pain color coded to TrP color, Bladder meridian is shown as blue, Gallbladder meridian as green Small Intestine meridian as red, and Triple Energizer meridian as orange, adapted from Primal, with permission)

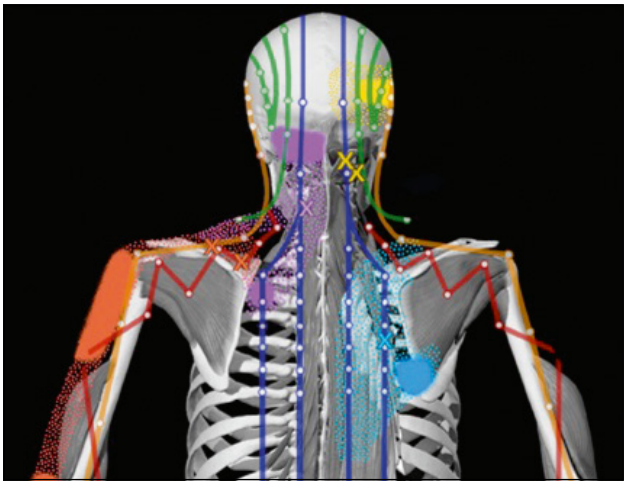

Figure 4: Posterior Neck and Upper Back With Teres Major, Teres Minor, and Semispinalis Cervicis Removed Showing Supraspinatus, Suboccipital, Cervical Multifidi, and Iliocostalis Common Trigger Point Regions with Their Referred Pain Patterns along with Acupuncture Points and Meridians (common TrPs shown as X's with referred pain color coded to TrP color, Bladder meridian is shown as blue, Gallbladder meridian as green, Small Intestine meridian as red, and Triple Energizer meridian as orange, adapted from Primal, with permission)

classical acupuncture point's meridian distribution cannot completely be presented in this article. Figures 1-6 demonstrate representative examples of the qualitative analysis results using the same anatomic diagrams used in the first part of this study [6] illustrating the relationships of muscle regions to classical acupuncture points and meridians. The relationships of acupuncture meridians to the myofascial referred-pain patterns for muscle regions in four progressively deeper muscle layers of the posterior neck and upper back are demonstrated in Figures 1–4. Figures 5 and 6 show the relationship of acupuncture meridians to the myofascial referred-pain patterns for muscle regions in the anterior torso/arms and the anterior lower extremities, respectively. Thus, in a manner similar to the data presentation in part one of this study, these six figures demonstrate the depth and breadth of the anatomic relationships of muscles regions, their common trigger points, and their myofascial referred-pain patterns to acupuncture

meridians and the classical acupuncture points described to exist on them. These figures present nearly 20 % of the common trigger point regions. These representative images document that no matter what body region or depth of the muscles is examined, the distributions of the referred-pain patterns of those muscles' trigger point regions almost always mirror the meridian distributions of their anatomically corresponding classical acupuncture points.

Discussion

The first part of this paper [6] demonstrated the marked anatomic correspondence (93.3 %) of trigger point regions and classical acupuncture points, and the second part [7] demonstrated their marked clinical correspondence in treating pain (~97 %) and somatovisceral (93.3 %) disorders. This paper presents the first systematic study of the relationships between the distributions of referred-pain patterns of trigger point regions and the meridian distributions of their anatomically corresponding classical acupuncture points. Substantial correspondence of these referred-pain and meridian distributions would provide a fourth line of evidence (physiologic) that trigger point regions may represent the same phenomenon as classical acupuncture points. Hong [14] recognized that some trigger points may have referred-pain patterns similar to those of nearby acupuncture points' meridian distributions but did not formally analyze their relationships.

In the present study, 81.5 % of anatomically corresponding trigger point region – classical acupuncture point pairs showed complete or near complete (grade excellent or good) agreements of the distributions of their myofascial referred-pain patterns and associated acupuncture meridians. This degree of correspondence was 5.5 % higher than found in the original study [13]. The present study's higher degree of referred-pain to meridian distribution correspondences was present even though it accommodated the modern conceptualization of trigger points as occurring throughout muscles or muscle regions and compared those muscle regions to over 50 % fewer acupuncture points than the original study [13]. Another 9.5 % of point pairs showed at least a partial overlap of their myofascial referred-pain and acupuncture meridian distributions.

This 91 % physiological correspondence between trigger point regions and classical acupuncture points provides another independent line of evidence supporting their similarities. This strong correlation of the referred-pain and meridian distributions of anatomically corresponding trigger point regions and classical acupuncture points furthers their strong anatomic (~93.3 %) and clinical (pain ~97 % and somatovisceral ~93.3 %) correspondences to strongly suggest that trigger point regions and classical acupuncture points likely represent the same phenomenon discovered using different methodology in different millennia by different cultures.

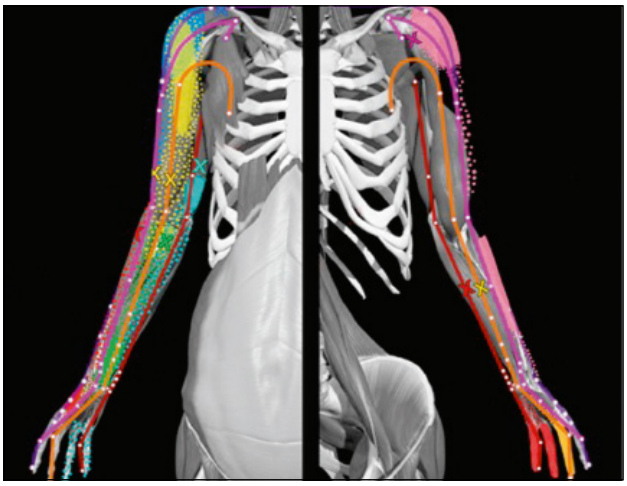

Figure 5: Anterior Chest and Arms Showing (from superior to inferior) Anterior Deltoid, Coracobrachialis, Medial Aspect of Medial Head of Triceps, Biceps (2), Brachioradialis, Pronator Teres, and Flexor Digitorum Superficialis (2) Common Trigger Point Regions with Their Referred Pain Patterns along with Acupuncture Points and Meridians (common TrPs shown as X's with referred pain color coded to TrP color, the Heart meridian is shown as red the Large Intestine meridian as purple, the Lung meridian as pink, and the Pericardium meridian as orange, adapted from Primal, with permission)

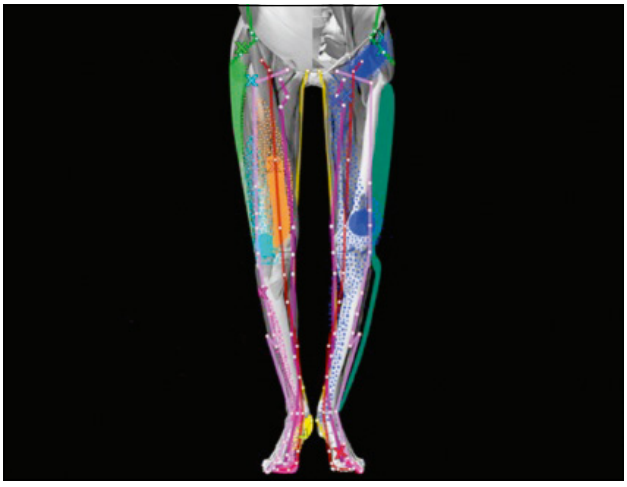

Figure 6: Anterior Thighs and Legs Showing (from superior to inferior) Gluteus Minimus (2), Tensor Fascia Latae, Rectus Femoris, Adductor Brevis, Adductor Longus, Vastus Medialis, Tibialis Anterior, Abductor Hallucis, and First Dorsal Interosseus Common Trigger Point Regions with Their Referred Pain Patterns along with Acupuncture Points and Meridians (common TrPs shown as X's with referred pain color coded to TrP color, the Gallbladder meridian is shown as green, the Kidney meridian as yellow, the Liver meridian as dark pink, the Stomach meridian as light pink, and the Spleen meridian as red, adapted from Primal, with permission)

Both the myofascial pain and acupuncture traditions share common principles in the treatment of pain disorders. These include the presence of tenderness in involved trigger point regions or acupuncture points, and that stimulation of these points can produce remote effects (referred-pain or somatovisceral effects). Irritation of myofascial structures via hypertonic saline injection in the myofascial tradition or needle manipulation in the acupuncture tradi-

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Summary

- 221/238 common trigger point regions anatomically corresponding to classical acupuncture points have described myofascial referred pain patterns.
- 81.5 % of anatomically corresponding trigger point region – classical acupuncture point pairs demonstrated complete or near-complete correspondence of the distributions of their myofascial referred-pain patterns and associated acupuncture meridians, and 9.5 % of point pairs showed partial correspondence.
- Only 9 % of point pairs showed little or no correspondence of their referred-pain patterns and acupuncture meridians.

The strong consistency of the distributions of myofascial referred-pain patterns and acupuncture meridians provides a fourth line of evidence suggesting trigger point regions and classical acupuncture points likely represent the same physiological phenomenon in treating pain disorders.

tion produced the referred-pain and meridian mappings, respectively.

Future publication of point-by-point description of each trigger point region – classical acupuncture point correspondence is planned. Although validation of all anatomical, clinical, and physiological (referred-pain to meridian) data was performed at another academic institution by the second author (JF), this study can be considered to be self-validating. It is implausible that trigger point regions and classical acupuncture points would by chance strongly (≥ 90 %) correlate in 4 distinct ways – anatomically, physiologically (referred-pain patterns and meridians), clinically in pain treatment, and clinically in treating somatovisceral disorders – unless they represented the same phenomenon

The *Trigger Point Manual* [3] indicates that trigger points can be deactivated by dry-needling as well as by injecting the points with a local anaesthetic (with or without corticosteroids). Indeed, the Janet G. Travell MD Seminar Series [15] currently teaches dry-needling techniques for treating myofascial pain using acupuncture needles! These needles are much smaller in diameter and have relatively rounded needle tips, unlike the sharply bevelled cutting needles used for trigger point injections. In clinical practice, acupuncture needles produce less discomfort, cause less trauma to the tissues they pass through, and thus inherently are safer to use (much less likely to cause iatrogenic injury to vasculature or nerve structures). Clinical trials have confirmed the efficacy of acupuncture in treating neck pain and low back pain [16–20] in randomized controlled clinical trials, which further demonstrates the clinical similarity of the myofascial and acupuncture traditions in treating musculoskeletal pain disorders.

Authors

All primary research by PD. JF, physician, with over ten years' acupuncture experience confirmed the accuracy of each classical acupoint and meridian placement in the graphics, helped drafting the manuscript.

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Conflict of Interest

None

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References

1. Huang Di Nei Jing (Yellow Emperor's Inner Classic), 100–200 BC.
2. O'Connor J, Bensky D, editors. Acupuncture: a comprehensive text. Shanghai College of Traditional Medicine. Chicago: Eastland Press; 1981.
3. Travell JG, Simons DG. Myofascial pain and dysfunction: the trigger point manual. Vol 1. Baltimore: Williams and Wilkins; 1983.
4. Travell JG, Simons DG. Myofascial pain and dysfunction: the trigger point manual. Vol 2. Baltimore: Williams and Wilkins; 1992.
5. Melzack R, Stillwell DM, Fox EJ. Trigger points and acupuncture points for pain: correlations and implications. Pain. 1977;3:3–23.
6. Dorsher PT, Fleckenstein J. Trigger points and classical acupuncture points: part 1: qualitative and quantitative anatomic correspondences. *Dt Zschr f Akup. 2008;51,3:15–24*
7. Dorsher PT, Fleckenstein J. Trigger points and classical acupuncture points: part 2: clinical correspondences in treating pain and somatovisceral disorders. *Dt Ztschr f Akup. 2008;51,4:6–11.*
8. Hillman SK. Interactive functional anatomy [DVD-ROM]. London, Primal Pictures, Inc; 2002.
9. Chen E. Cross-sectional anatomy of acupoints. Edinburgh: Churchill Livingstone; 1995.
10. Clemente CD. Anatomy: a regional atlas of the human body. 2nd ed. Baltimore: Urban & Schwarzenberg; 1981.
11. Netter FH. Atlas of human anatomy. Ciba-Geigy, 1989.
12. Dorsher PT, Cummings M. Anatomy for acupuncture [DVD-ROM]. London (UK): Primal Pictures, Ltd; 2006.
13. Dorsher PT. Acupuncture points and trigger points: anatomic and clinical correlations. Med Acupunct. 2006;17(3):20–3.
14. Hong C-Z. Myofascial trigger points: pathophysiology and correlation with acupuncture points. Acupunct Med. 2000;18:41–7.
15. Janet G. Travell, MD, Seminar Series. Bethesda: Pain and Rehabilitation Medicine. Available from: http://www.painpoints.com/seminars/index.html.
16. Irnich D, Behrens N, Molzen H, et al. Randomised trial of acupuncture compared with conventional massage and "sham" laser acupuncture for treatment of chronic neck pain. BMJ. 2001;322:1–6.
17. Trinh K, Graham N, et al. Acupuncture for neck disorders. Spine. 32(2):236-43, Jan 15 2007.
18. Furlan AD, van Tulder MW, Cherkin DC, et al. Acupuncture and dry needling for low back pain. Cochrane Database of Systematic Reviews 2005, Issue 1. Art. No.: CD001351.
19. van Tulder MW, Furlan AD, Gagnier JJ. Complementary and alternative therapies for low back pain. Best Pract Res Clin Rheumatol. 19(4):639–54, Aug 2005.
20. Witt CM, Brinkhaus B, Willich SN. Acupuncture: clinical studies on efficacy and effectiveness in patients with chronic pain. Bundesgesundheitsblatt Gesundheitsforschung Gesundheitsschutz. 49(8):736–42, Aug 2006.