TrP/ Dry needling with LTR for Athletes

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Financial Disclosures

Neither I, Masahiro Takakura, nor any family members, have any relevant financial relationships to be discussed, directly or indirectly, referred to or illustrated with or without recognition within the presentation.

Appreciation Disclosures

- Appreciation: Dr Christina Wong for this opportunity
- Appreciation: Mentor, Rick Griffin, MS, ATc, AT-L
- Appreciation: Dr Angela Cavanna
- Appreciation: Dr Stephanie and Randy Aldret

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Appreciation

3

Special Thanks to Dr Christina Wong

"Any other questions before you present? It will be mainly primary care sports med docs who all use ultrasound and work on HS, D1-D3 colleges, professional athletes, and Olympians. So, any information you give about the research or current literature about indications efficacy, why, how to, or contraindications, etc we are all ears. You also don't have to include all that, I was just saying. " 4/27/26

So, started revising this presentation

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Why Local Twitch Response?
Low level evidence

Meta-Analysis > Acupunct Med. 2022 Aug;40(4):299-311. doi: 10.1177/09645284211056346. Epub 2021 Dec 13.

The importance of the local twitch response during needling interventions in spinal pain associated with myofascial trigger points: a systematic review and meta-analysis

César Fernández-de-Las-Peñas [1,2], Gustavo Plaza-Manzano [3,4], Jorge Sanchez-Infante [3], Guido F Gómez-Chiguano [3,5], Joshua A Cleland [2], José L Arias-Buría [1,2], Marcos J Navarro-Santana [3,5]

Affiliations + expand
PMID: 34894759 DOI: 10.1177/09645284211056346

Abstract

Discussion: Low-level evidence suggests an immediate effect of obtaining LTRs during needling interventions on pain intensity, with no significant effects on related disability or pressure pain sensitivity in spinal pain disorders associated with muscle TrPs.

spinal pain disorders associated with TrPs. Outcomes included pain intensity, pain-related disability, and pressure pain thresholds. The risk of bias (RoB) was assessed using the Cochrane risk of bias tool or ROBINS-I tool, methodological quality was assessed with the PEDro score, and quality of evidence was evaluated using the GRADE approach.

Results: Six trials were included. The application of a needling intervention eliciting LTRs was associated with a significant reduction in pain intensity immediately after treatment (mean difference (MD): -2.03 points, 95% confidence interval (CI): -3.77 to -0.29; standardized MD (SMD): -1.35, 95% CI: -2.32 to -0.38, $p = 0.02$) when compared to the same needling intervention without elicitation of LTRs. No effect at short-term follow-up (MD: -0.20 points, 95% CI: -1.46 to 1.06, $p = 0.75$) was observed. No significant differences based on elicitation or non-elicitation of LTRs were found in related disability (SMD: -0.05, 95% CI: -0.41 to 0.30, $p = 0.77$) or pressure pain thresholds (MD: 23.39 kPa, 95% CI: -13.68 to 60.47, $p = 0.22$).

Discussion: Low-level evidence suggests an immediate effect of obtaining LTRs during needling interventions on pain intensity, with no significant effects on related disability or pressure pain sensitivity in spinal pain disorders associated with muscle TrPs.

Registration number: OSF Registry-https://doi.org/10.17605/OSF.IO/5ZXBN.

Keywords: dry needling; local twitch response; meta-analysis; spinal pain; trigger point.

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Frequency of Treatment?
1. 3 days apart is too soon.
2. Not mentioning needle size

Randomized Controlled Trial > J Back Musculoskelet Rehabil. 2019;32(5):717-724. doi: 10.3233/BMR-181286.

The effect of dry needling on the active trigger point of upper trapezius muscle: Eliciting local twitch response on long-term clinical outcomes

Iman Kamali Hakim [1], Ismail Ebrahimi Takamjani [1], Javad Sarrafzadeh [1], Kamran Ezzati [2], Rasool Bagheri [3]

Affiliations + expand
PMID: 30636729 DOI: 10.3233/BMR-181286

Conclusion: DN without eliciting LTR has superiority over the DN along with eliciting LTR while the treatment aimed to receive long-term effects.

damage after eliciting LTR can increase the risk of tissue fibrosis in some cases.

Methods: Twenty-six participants suffering from chronic non-specific neck pain with an active trigger point (TrP) in their upper trapezius muscles were recruited via the convenience sampling method. Participants were randomly assigned in DN with LTR (control group) and without eliciting LTR or "de qi" (experimental group). Then, they received 3 sessions of dry needling, 3 days apart. We evaluated pain, pain pressure threshold, active cervical lateral flexion range of motion, and Neck Disability Index before the intervention and 4 weeks after the treatment.

Results: After the treatment, significant higher changes were seen in the experimental group compared to the control group ($p < 0.05$) regarding pain, pain pressure threshold, and active cervical lateral flexion. However, there was no significant difference between groups according to

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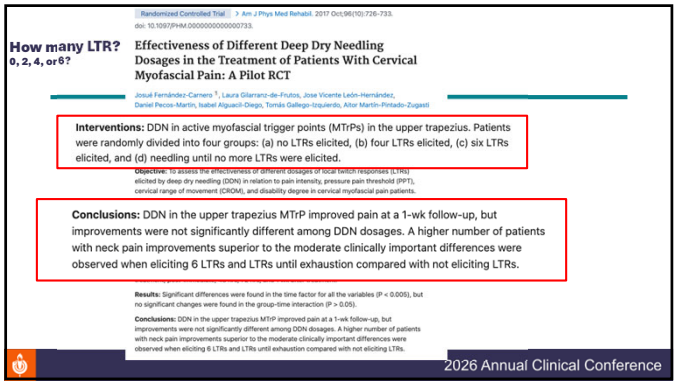
How many LTR?
0, 2, 4, or 6?
Effectiveness of Different Deep Dry Needling Dosages in the Treatment of Patients With Cervical Myofascial Pain: A Pilot RCT
Interventions: DDN in active myofascial trigger points (MTrPs) in the upper trapezius. Patients were randomly divided into four groups: (a) no LTRs elicited, (b) four LTRs elicited, (c) six LTRs elicited, and (d) needling until no more LTRs were elicited.
Conclusions: DDN in the upper trapezius MTrP improved pain at a 1-wk follow-up, but improvements were not significantly different among DDN dosages. A higher number of patients with neck pain improvements superior to the moderate clinically important differences were observed when eliciting 6 LTRs and LTRs until exhaustion compared with not eliciting LTRs.
2026 Annual Clinical Conference

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How many LTR?
Less for athletes with smaller needle
Postneedling Soreness and Tenderness After Different Dosages of Dry Needling of an Active Myofascial Trigger Point in Patients With Neck Pain: A Randomized Controlled Trial
Intervention: All patients received DDN in an active MTrP. They were randomly divided into 4 groups: no local twitch responses (LTRs) elicited (control group), 4 LTRs elicited, 6 LTRs elicited, and DDN until no more LTRs were elicited.
Conclusions: Postneedling soreness is present in most of subjects after DDN of active MTrPs. The groups in which DDN was performed eliciting LTRs exhibited greater post-needling soreness. The number of needle insertions was associated with postneedling soreness but psychological factors did not seem to play a relevant role on its perception.
2026 Annual Clinical Conference

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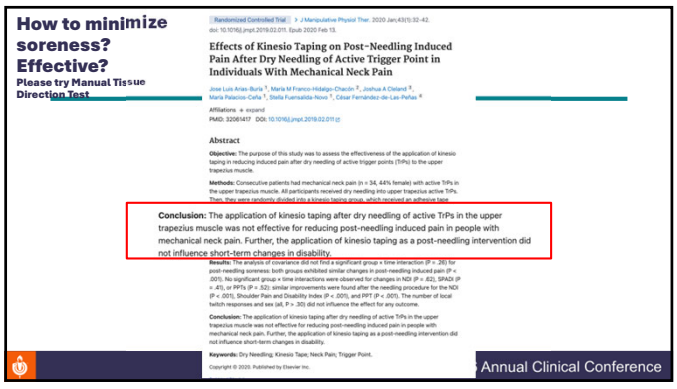
How to minimize soreness? Effective?
Please try Manual Tissue Direction Test
Effects of Kinesio Taping on Post-Needling Induced Pain After Dry Needling of Active Trigger Point in Individuals With Mechanical Neck Pain
Conclusion: The application of kinesio taping after dry needling of active TrPs in the upper trapezius muscle was not effective for reducing post-needling induced pain in people with mechanical neck pain. Further, the application of kinesio taping as a post-needling intervention did not influence short-term changes in disability.
Annual Clinical Conference

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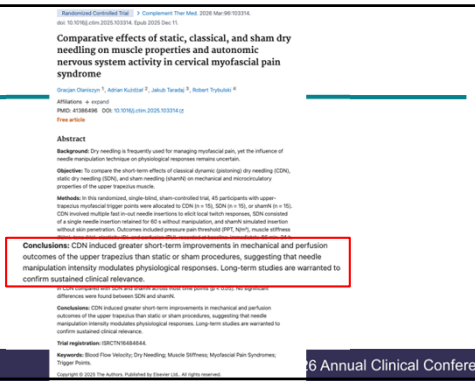
Needle Manipulation

1. Piston (Thrust)
2. Twist



Randomized Controlled Trial. > Complement Ther Med. 2026 Mar:96:103314. doi: 10.1016/j.ctim.2025.103314. Epub 2025 Dec 11.

Comparative effects of static, classical, and sham dry needling on muscle properties and autonomic nervous system activity in cervical myofascial pain syndrome

Gracjan Olenszyn [1], Adrian Kuźdżał [2], Jakub Taradaj [3], Robert Trybulski [4]

Affiliations + expand

PMID: 41384496 DOI: 10.1016/j.ctim.2025.103314

Free article

Abstract

Background: Dry needling is frequently used for managing myofascial pain, yet the influence of needle manipulation technique on physiological responses remains uncertain.

Objective: To compare the short-term effects of classical dynamic (pistoning) dry needling (CDN), static dry needling (SDN), and sham needling (shamN) on mechanical and microcirculatory properties of the upper trapezius muscle.

Methods: In this randomized, single-blind, sham-controlled trial, 45 participants with upper-trapezius myofascial trigger points were allocated to CDN (n = 15), SDN (n = 15), or shamN (n = 15). CDN involved multiple fast in-out needle insertions to elicit local twitch responses, SDN consisted of a single needle insertion retained for 60 s without manipulation, and shamN simulated insertion without skin penetration. Outcomes included pressure pain threshold (PPT, N/m²), muscle stiffness

Conclusions: CDN induced greater short-term improvements in mechanical and perfusion outcomes of the upper trapezius than static or sham procedures, suggesting that needle manipulation intensity modulates physiological responses. Long-term studies are warranted to confirm sustained clinical relevance.

differences were found between SDN and shamN.

Conclusions: CDN induced greater short-term improvements in mechanical and perfusion outcomes of the upper trapezius than static or sham procedures, suggesting that needle manipulation intensity modulates physiological responses. Long-term studies are warranted to confirm sustained clinical relevance.

Trial registration: ISRCTN16484644.

Keywords: Blood Flow Velocity; Dry Needling; Muscle Stiffness; Myofascial Pain Syndromes; Trigger Points.

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Pragmatic view of TrP/ Dry needling with LTR for Athletes:
Learning Objectives

At the end of this session, participants will be able to:

- Identify trigger point LTR
- Needling trigger point with LTR
- Manipulate needling with thrust and twist
- Understand 3-D, multiple needling neuro-myo-fascia dynamic
- Utilize Manual Tissue Direction Test (MTDT)
- Utilize Elastic taping

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What is Local Twitch Response (LTR)?

- Involuntary contraction of muscle
- Can be elicited with needle manipulation

Decreased Spontaneous Electrical Activity and Acetylcholine at Myofascial Trigger Spots after Dry Needling Treatment: A Pilot Study

Qing-Guang Liu [1], Lin Liu [1], Qiang-Min Huang [1,*], Thi-Tham Nguyen [1], Yan-Tao Ma [1], Jia-Min Zhao [1]

Author information Article notes Copyright and License information

PMCID: PMC5448056 PMID: 28592980

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History of LTR

得気（とっき）
刺入した際に、患者または術者が感じる鍼治療独特の感覚のこと。
患者はピリピリと電気が走るような感じや、
重く鈍い痛み、痺れや腫れぼったさを感じることが多い。

術者は鍼を押さえる指先にピリピリとした感じを受け取ったり、
鍼が重く、渋る感じを受け取ることが多い。

金元時代の『標幽賦』では得気が無ければ効果が無いとしている。
得気が患者、術者ともに感じられぬ場合は、
病巣部に気が至っていない（刺鍼部位が的確で無い）か、
刺鍼部に問題が無いと考える。

得気があるかないかは鍼の効果の一つの大きな目安となる。
『霊枢・九鍼十二原』に「刺之用　気至而有効（鍼の作用は鍼下に気が至ってこそ有効である。）」とある。

『素問・宝命全形論』には
「是謂冥冥、莫知其形、見其鳥鳥、見其稷稷、従見其飛、
不知其誰、伏如横弩、起如発机（そこは深くて暗く、形を知ることが出来ない。

また、まるで闇夜の空を飛ぶカラスのようにもみえ、また、きびが生い茂るようにもみえ
、とにかく存在するのはわかるが、それが何なのかはわからない。）」とあり
得気についての描写がある。

http://www.meiji-u.ac.jp/research/files/shinkyuigaku8_1.pdf

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Acupuncture Ashi Needling: History

得気（とっき）
刺入した際に、患者または術者が感じる鍼治療独特の感覚のこと。
患者はピリピリと電気が走るような感じや、
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、とにかく存在するのはわかるが、それが何なのかはわからない。）」とあり
得気についての描写がある。

Arrival of Qi, De Qi

2.2. Characterization of Deqi Felt by the Acupuncturists

Although the most popular view focuses mainly on patients' sensation, *Huangdi Neijing* (Huangdi's canon of medicine), one of the four great classics in TCM, states that deqi should be felt by the acupuncturists who also need to concentrate in order to hold it [12]. The increased resistance of the needle is felt by the acupuncturists (needle grasping) as tense, tight, and full like "a fish biting onto the bait" [13] or arrival of *qi* like "a bird flying" [14] as described in the ancient literature. Needle grasping is considered to be associated with clinical efficacy although little data is available [15].

- https://pmc.ncbi.nlm.nih.gov/articles/PMC3705793/

Evid Based Complement Alternat Med. 2013 Jun 20;2013:319734. doi: 10.1155/2013/319734

Characterization of Deqi Sensation and Acupuncture Effect

Xing-Yue Yang [1], Guang-Xia Shi [1], Qian-Qian Li [1], Zhen-Hua Zhang [1], Qian Xu [1], Cun-Zhi Liu [1,*]

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PMCID: PMC3705793 PMID: 23864884

http://www.meiji-u.ac.jp/research/files/shinkyuigaku8_1.pdf

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Acupuncture Ashi Needling: Now

- Now most researchers agree with the explanation of the phenomenon just as the following. Acupuncture through stimulating certain acupoints may contract intraspindle muscle and then produce myoelectricity. Secondary impulse reaching to central brain produces the patients' needling sensation, and the contraction of local muscle fibers through needle body to needle handle causes the deqi sensation of acupuncturists' hands.

Evid Based Complement Alternat Med. 2013; 2013: 319734.
Published online 2013 Jun 20. doi: 10.1155/2013/319734
PMCID: PMC3705793
PMID: 23864884

Characterization of Deqi Sensation and Acupuncture Effect

Xing-Yue Yang, Guang-Xia Shi, Qian-Qian Li, Zhen-Hua Zhang, Qian Xu, and Cun-Zhi Liu*

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This article has been cited by other articles in PMC.

Abstract

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Acupuncture Ashi Needling: History

- 候気
- Manipulation of skin/ tissue to bring Qi
- Can move skin/ tissue superficial and deep or medial and lateral

候気（こうき）
得気が起こらないとき、起こるように行う手法・刺鍼法である。
催気も同種の方法である。刺鍼の際、気が得られなければ補瀉することが出来ないため、
その前段階として行う方法である。『鍼灸大成』には「刺鍼した経絡に指をのせ、
経絡に沿わせて皮膚を上下左右に摩擦し、気血を往来させて経脈の上下を整えれば、

鍼下には自然に気が至る」とある。『素問・宝命全形編』には、「経気已至、慎守勿失（経気が至ったら、それを失わないように慎重に守れ）」とある。『霊枢・九鍼十二原』には「知机之道者、不可掛以髪（機を知る者は、髪を逆さない。）」とある。

Clinical Conference

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Acupuncture Ashi/ Trigger Point Needling

Wh

The historical source of "Trigger Points": classical *Ashi* points

Shan JIANG [1] ✉, Jing-sheng ZHAO ✉

Show more

https://doi.org/10.1016/S1003-5257(17)30003-X Get rights and content

Abstract

Our research began with a consideration of the etymological origins of the terms *Ashi* and the *Ashi* point. We used both original source texts and textual criticism to trace the original meaning of the phrases, "take the tender spot as the point" and "use the *Ashi* method." Linguistic theory informed our discussion of three similar terms and our analysis of them. We show that *Ashi* points are in theory similar to regular acupuncture points in terms of their definition and function. Furthermore, we can use the concept of "*qi*-pathway (*Qi Jie*)" to expand our understanding of the clinical use of *Ashi* points. Ultimately, the main purpose of our research was to clarify that the classical *Ashi* point and modern, western concept of the trigger point are in fact quite similar. The two concepts have been described in different languages primarily due to cultural differences.

2020 Annual Clinical Conference

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Trigger Point Needling: Mechanism, twitch responses by US

Arch Phys Med Rehabil. 2011 Oct;92(10):1576-1580.e1. doi: 10.1016/j.apmr.2011.05.005. Epub 2011 Aug 12.

Detecting local twitch responses of myofascial trigger points in the lower-back muscles using ultrasonography.

Rha DW[1], Shin JC, Kim YK, Jung JH, Kim YU, Lee SC.

Author information

Abstract

OBJECTIVE: To evaluate the role of ultrasonography for detecting local twitch responses (LTRs) of myofascial trigger points (MTrPs) in deeply located lower-back muscles.

RESULTS: In upper-trapezius muscles, all LTRs were detected by means of both ultrasonographic and visual inspection. In the lower-back muscles, many LTRs were detected only on ultrasonography during the trigger point injection. For deep muscles, ultrasound helped identify LTRs that were not detected by using visual assessment. Pain was alleviated more significantly in the group with LTRs during trigger point injections compared with the group without LTRs.

PARTICIPANTS: Patients (n=41; mean age, 51.8 ± 11.8y) with MTrPs in the upper-trapezius muscles and

CONCLUSIONS: These findings suggest that ultrasonography was useful for detecting LTRs of MTrPs, especially for LTRs in the deep muscles. Ultrasound guidance may improve the therapeutic efficacy of trigger point injection for treating MTrPs in the deep muscles.

MAIN OUTCOME MEASURES: LTR detection rate according to the depth of MTrPs; subjective pain intensity using a visual analog scale before and immediately after the trigger point injection.

Conference

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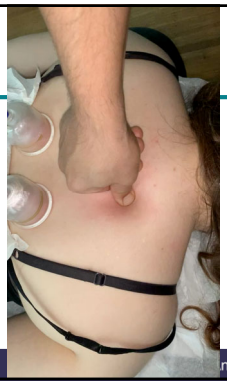
LTR: other ways

- Manual therapy
  - Neuro-Myo-Fascia stretch
- ROM: adhesive capsulitis



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EC ORTHOPAEDICS
Research Article

Clinical Research Report of the Intricate Application of Dry Needling in Eliciting Trigger Points Local Twitch Response (TP-LTR) in the Upper Trapezius (UT) Region

Masahiro Takakura[1], Jessica Norton[2], Sharon Blaney[3] and Nicholas A Kerna[4,5]*

[1]Seattle Nature Cure Clinic, Seattle, WA, United States
[2]Integrative Medicine Group, Seattle, WA, United States
[3]Bastyr University, Kenmore, WA, United States
[4]SMC Medical Research, Thailand

fect to neuro-myofascial dynamics of trigger points (TPs) is achieved by using multiple needles with manipulation. No past studies have investigated LTRs using multiple needles with manipulation. This multiple needling with manipulation technique can create the neuro-myofascial dynamic, inducing LTRs.

Contact: medpublab+drkerna@gmail.com.

Received: January 04, 2021; **Published:** February 28, 2022

DOI: 10.31080/ecor.2022.13.00920

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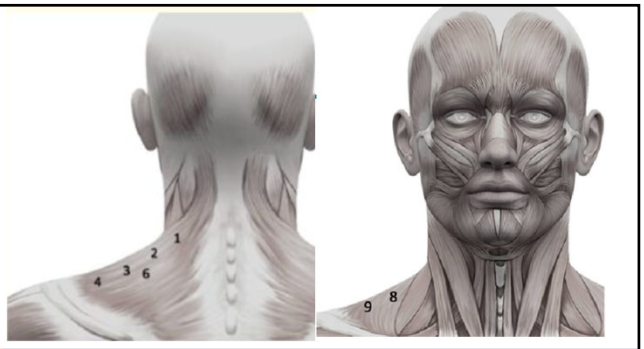

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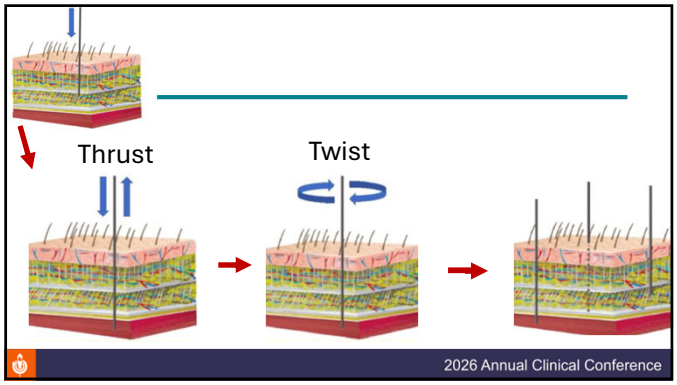

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Results

- The average number of needles used was 3.15 for the right side and 2.73 for the left side.
- The average number of LTRs was 4.43 for the right side and 3.23 for the left side.
- The average thrusts were 18 for the right side and 12.9 for the left side.
- The average number of 90-degree twists was 0.5 for the right side and 0.8 for the left side.
- The average number of 180-degree twists was 18.4 for the right side and 12.05 for the left side.
- The average stress level (on a scale of 0–10, with 10 as the highest) was 6.225.
- Most subjects reported having less than 8 hours of sleep per night, which typically provokes or exacerbates inflammation and, thus, slightly skewing this study's interpretation of results. Sleep deprivation or lack of adequate sleep adversely affects the immune response and inflammation [22,23].
- Needles of 0.12-mm diameter were used for 6 subjects, and 0.16-mm diameter needles were used for 14 subjects.
- One subject experienced no relief from the treatment.
- The average duration of relief was 5.475 days, and the average duration of soreness was 16.2 hours.
- After the treatment, some participants experienced no soreness, and 1 subject experienced soreness for 48 hours (Table 1).
- Three needles were most commonly used bilaterally, and 1 subject had 7 needles inserted on the right side (Table 1).
- The most common location of an LTR was 2 on the right and 3 on the left—followed by 3 on the right and 2 on the left.
- There were several LTRs in the 5th position, also on the right side (Table 2).
- Most of the subjects had a total of 1–4 LTRs, and one subject had 20 LTRs on the right side (Table 3).
- Most subjects had 3 LTRs, while others had 2, 4, and 5 LTRs (Table 4).

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Conclusion

- Specific results of this study depicted a 3-D neuro-myofascial dynamics matrix using multiple needles, multiple thrusts and twists, and multiple LTR locations. These results demonstrated that overall and on average, multiple needling with larger gauge needles (based on participants' tolerances) was more effective in reducing UT tension and associated symptoms (and longer-lasting relief) than the more conventional and utilized one-needle protocol.

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Needle selection

	Patients	Technique
Smaller diameter (44G)	Qi deficiency patient	Difficult to have twitch response
Larger diameter (38G, 36G)	Qi excess patient	Easier to have twitch response

- Smaller diameter for qi deficiency patient/ active athlete = less soreness, difficult to create twitch response
- Larger diameter for qi excess patient/ non active athlete = more soreness, easier to create twitch response

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Needle selection

- Pre activity: Serine Dark Green, J type, No.02, (0.12x30mm). If athletes can take more stimulation, I would use bigger gauge needle. Otherwise I use smallest needle to stimulate.
- Recovery: Either Serine Dark Green (0.12x30) or Red, J type, No.1, (0.16x30 or 0.16x40mm)
- Acupuncture ashi/ trigger points for superficial or middle layer tissue: this depends on how tissues are. I use Serine No.02, No.1, or DBC Spring Ten, DB1, (0.16x30)
- Acupuncture ashi/ trigger point for deeper tissue: I use Hwato Singles (0.25x75mm) or Tai Chi (0.25x125mm)

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Needle selection

- During movement: Serine, Pyonex, orange, 0.3mm
- Over night care: I use Serine, Pyonex, Orange, 0.3mm or yellow or Okibari
- Auricular: I use Serin D-type, No.1 (0.16x15mm)
- Acute swelling or chronic blood stagnation (blood letting techniques)

- 30G injection needle is about 0.31mm
- 27G injection needle is about 0.4mm
- 25G injection needle is about 0.5mm

- Supplier: LhasaOMS https://www.lhasaoms.com/

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Needle Rotation/ Needle thrusting

Clin J Pain. 2014 Mar;30(3):214-23. doi: 10.1097/AJP.0b013e3182934b8d.

Paraspinal stimulation combined with trigger point needling and needle rotation for the treatment of myofascial pain: a randomized sham-controlled clinical trial.

Couto JC[1], de Souza IC, Torres IL, Fregni F, Caumo W.

Author information

Abstract

BACKGROUND: There are different types and parameters of dry needling (DN) that can affect its efficacy in the treatment of pain that have not been assessed properly.

OBJECTIVE: To test the hypothesis that either multiple deep intramuscular stimulation therapy multiple deep intramuscular stimulation therapy (MDIMST) or TrP lidocaine injection (LTrP-I) is more effective than a

CONCLUSIONS: This study highlighted the greater efficacy of MDIMST over the placebo-sham and LTrP-I and indicated that both active treatments are more effective than placebo-sham for MPS associated with limitations in active and routine activities.

3 groups as follows: placebo-sham, LTrP-I, or MDIMST. The treatments were provided twice weekly over 4 weeks using standardized MDIMST and LTrP-I protocols.

RESULTS: There was a significant interaction (time vs. group) for the main outcomes. Compared with the sham-treated group, MDIMST and LTrP-I administration improved pain scores based on a visual analog scale

Conference

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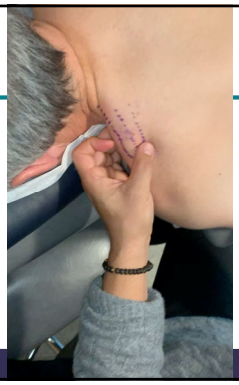

2026 Annual Clinical Conference

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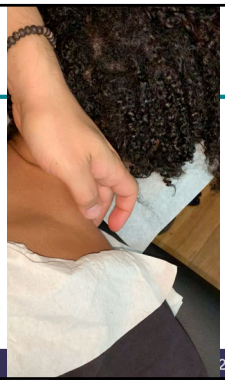

2026 Annual Clinical Conference

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Avoid post soreness

- Compression at the site of needle
- Less LTR
- Smaller needle like 0.12mm
- ESWT (If athletes prefer not to get needle=> Shockwave)
- Elastic or Rigid taping :
  - Apply tape in the direction of ease of Manua Tissue Direction Test
- Use of Japanese patch
- Hydration
- Use of anti-inflammatory

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Ann Rehabil Med. 2017 Aug;41(4):582-588. doi: 10.5535/arm.2017.41.4.582. Epub 2017 Aug 31.

Extracorporeal Shock Wave Therapy Versus Trigger Point Injection in the Treatment of Myofascial Pain Syndrome in the Quadratus Lumborum.

Hong JO[1], Park JS[1], Jeon DG[1], Yoon WH[1], Park JH[1].

Author information

Abstract

OBJECTIVE: To compare the effectiveness of extracorporeal shock wave therapy (ESWT) and trigger point injection (TPI) for the treatment of myofascial pain syndrome in the quadratus lumborum.

METHODS: In a retrospective study at our institute, 30 patients with myofascial pain syndrome in the quadratus lumborum were assigned to ESWT or TPI groups. We assessed ESWT and TPI treatment according to their affects on pain relief and disability improvement. The outcome measures for the pain assessment were a visual analogue scale score and pain pressure

CONCLUSION: Compared to TPI, ESWT showed superior results for pain relief. Thus, we consider ESWT as an effective treatment for myofascial pain syndrome in the quadratus lumborum.

be more effective than TPI for pain relief. There were no statistically significant differences between the groups with respect to disability.

CONCLUSION: Compared to TPI, ESWT showed superior results for pain relief. Thus, we consider ESWT as an effective treatment for myofascial pain syndrome in the quadratus lumborum.

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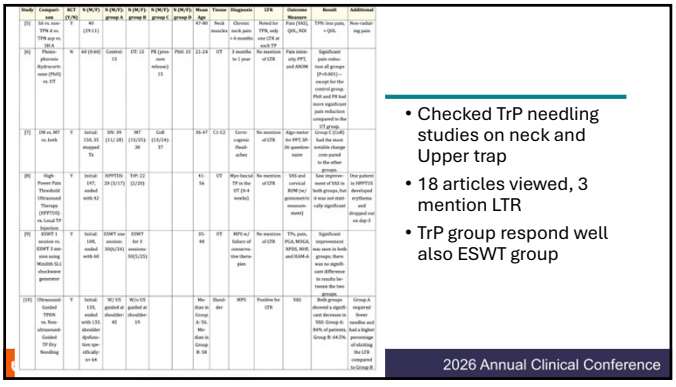

- Checked TrP needling studies on neck and Upper trap
- 18 articles viewed, 3 mention LTR
- TrP group respond well also ESWT group

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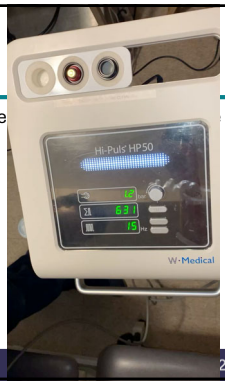
Shockwave
(Radial pressure)

- At the end of this se able to:



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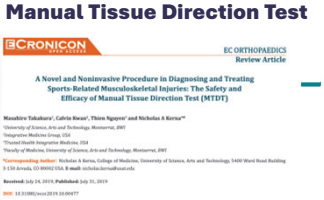
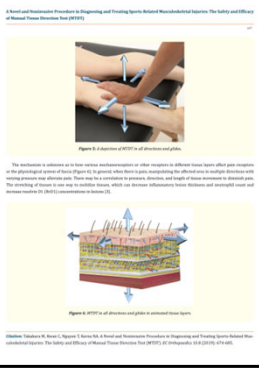
Manual Tissue Direction Test





- Subjective pain scale at static phase
- Subjective pain scale at dynamic phase (active range of motion)
- Objective range of motion (passive, active, and resisted range of motion)
- Combine with Orthopedics test

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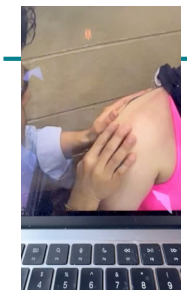
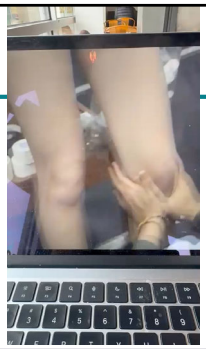
Manual Tissue Direction Test





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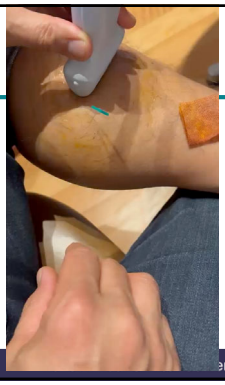
Demonstration

- TrP needling with Ultrasound
- TrP needling with manipulation (Thrust and Twist)
- LTR
- Small amount hydro injection of lidocaine/ D5W
  - If hydro-dissect fascia=> can affect nerve => affect LTR
- Post injection TrP needling manipulation => less LTR
- Manual Tissue Direction Test => assist the direction of tape application
- Application of Elastic taping => minimize post LTR soreness



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Goal for breakout session: 90 min

- Practice 0.12mm needles
- Practice to get LTR with Thrust and Twist
- No needle stick
- Everyone practice Needle with LTR at Gastroc/ Soleus first
- Then Vast Lat, Glut med, UT, deltoid/ bicep, Teres, infraspinatus
- Ultrasound guided: QL, Psoas, ES
- N=1 study: Have 1 LTR on one side and have Multiple LTR on the other side
- N=1 study: Have one side Elastic taping with Manual Tissue Direction Test and the other side not.

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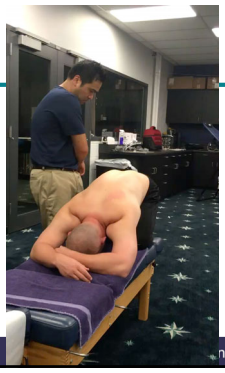
Needling Demonstration on athletes

- Can be supine, prone, sitting, standing, etc
- Can also have movement (ROM)



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Take home message

- Needle selection for athletes: Nerve in fascia: Athletes: smaller for competition, Non-Athletes: practitioner preference
- Multiple needles: 3-D effect to neuro myofascial system
- Needle manipulation (Thrust and Twist): Trigger point in 3-D effect (2D vs 3D)
- Local twitch response: Neuro myofascial internal release (needling or injection therapy)
  - Release: how much? Local twitch response => Athletes: 2-5 LTR, Non-Athletes: LTR up to tolerance (1-10)
- Myofascial balance to avoid post soreness: Manual Tissue Direction Test
- Possible receptors in fascia: Injection therapy, lidocaine or D5W

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Questions and Answer

Contact details

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