

Safety of Dry Needling

Literature Review May 5-6, 2025

Note: these abstracts have been copied directly from the journals in the authors' original words; they have not been summarized/reworded

On behalf of the Oregon Acupuncturists Association (OAA) Research Committee I would like to oppose this measure, specifically the mention of PT use of needles. My opposition is based on safety data. Dry needling is a form of trigger point acupuncture and is safe when performed by licensed acupuncturists who have the requisite hours of clinical and academic training. Dry needling when performed by PTs with limited training has resulted in minor and major injuries. Often these injuries are attributed to and blamed on the acupuncture profession afterwards. This is a serious position in which to put both patients and the acupuncture profession.

DRY NEEDLING HAS BEEN DEMONSTRATED TO BE UNSAFE AND RESULT IN ADVERSE EVENTS WHEN PERFORMED BY INADEQUATELY TRAINED PROFESSIONALS

1. Pneumothorax (Collapsed Lung)

- **Peer-Reviewed Literature** demonstrates safety concerns (pneumothorax) from dry needling performed by professionals who are not properly trained
 - **Trybulski R, Kuźdzał A, Kiljański M, et al. Adverse reactions to dry needling therapy: insights from Polish physiotherapy practice. *J Clin Med.* 2024, 13(23), 7032; <https://doi.org/10.3390/jcm13237032>**
 - *“pneumothorax and shock were each reported by 3% of respondents, nerve palsy by 14%, infection by 2%, and hospitalization by 1%”*
 - **Bontinck JS, Lyphout C, Malfait TLA. Pneumothorax as a complication of dry needling technique. *ERJ Open Res.* 2024 Apr 15;10(2):00156-2024. doi: 10.1183/23120541.00156-2024. eCollection 2024 Mar.**
 - *“Post-dry needling pneumothorax is **not extremely rare**. Patients and referring doctors should be aware of this. Informed consent should mention **pneumothorax as a considerable risk of dry needling procedures in the neck, shoulder or chest region.**”*

- Swarbrigg C, Dalton B, Sheehy M, Glynn S. Dry needling - the life-threatening risk of iatrogenic pneumothorax. *Ir Med J.* 2023 Feb 23;116(2):735. PMID: 37555791
 - *No abstract available*
 - **Case Reports:** Multiple published case studies have documented incidents of pneumothorax following dry needling, especially when needling areas like the upper trapezius or thorax.
 - **Sources:**
 - Peacock J, et al. Pneumothorax after dry needling: a case report. *JMMT.* 2014.
 - Meyer JJ, et al. Pneumothorax after dry needling: two case reports and recommendations for prevention. *PM&R.* 2015.
 - Arora A, Arora Y, Vasireddy S. Unnecessary needling: a case of iatrogenic pneumothorax following dry needling procedure for chronic myofascial pain. *Cureus.* 2024 Dec 20;16(12):e76055. doi: 10.7759/cureus.76055. eCollection 2024 Dec. PMID: 39834995
 - *“This case report highlights a complication of pneumothorax associated with dry needling (DN), a technique used for the treatment of myofascial pain syndrome and musculoskeletal disorders. Despite its growing popularity and efficacy in relieving pain, dry needling can lead to adverse events. We present a case of a 35-year-old female who developed pneumothorax following a dry needling session. During the dry needling session, the patient reported sharp pain underneath the scapula, and pneumothorax was confirmed three days later on a visit to the emergency department. Even though the chances of a pneumothorax are slim when DN is conducted over lung fields, it is essential that patients are informed of potential risks, including chest pain/tightness, fatigue, or shortness of breath during the procedure.”*
 - Cummings M, Ross-Marrs R, Gerwin R. Pneumothorax complication of deep dry needling demonstration. *Acupuncture Med.* December 1, 2014;32(6). doi:10.1136/acupmed-2014-0106
 - Link to article:
<https://journals.sagepub.com/doi/10.1136/acupmed-2014-010659>
-

2. Nerve Injuries & Neuropathy

- **Peer-Reviewed literature** demonstrates nerve injuries are a potential complication of dry needling
 - Trybulski R, Kuźdzał A, Kiljański M, et al. Adverse reactions to dry needling therapy: insights from Polish physiotherapy practice. *J Clin Med.* 2024, 13(23), 7032; <https://doi.org/10.3390/jcm13237032>
 - **Case reports** highlight nerve injuries (including transient or long-term sensory loss, tingling, or motor impairment).
 - Dommerholt J, et al. Dry needling—Peripheral and central considerations. *JMMT.* 2011.
 - Eser F, et al. Peroneal nerve palsy due to dry needling. *Acupunct Med.* 2016.
-

3. Hematomas and Soft Tissue Trauma

- **Data:** Needle insertion into vascularized areas without proper anatomical training can lead to hematomas or muscle trauma.
- **Peer-Reviewed Literature:**
 - Trybulski R, Kuźdzał A, Kiljański M, et al. Adverse reactions to dry needling therapy: insights from Polish physiotherapy practice. *J Clin Med.* 2024, 13(23), 7032; <https://doi.org/10.3390/jcm13237032>
 - Valera-Calero JA, Plaza-Manzano G, Rabanal-Rodríguez G, et al. Current state of dry needling practices: a comprehensive analysis on use, training, and safety. *Medicina (Kaunas).* 2024 Nov 14;60(11):1869. doi: 10.3390/medicina60111869.
 - **“Results:** A total of 422 PTs participated in the study, mostly having 21-60 h of DN training (38.6%), less than 2 years of experience (36%), and not using ultrasound during the interventions (85.5%). Post-needling **soreness and bent needles** were the most common AEs, with most severe events rarely reported. ***Adverse event frequencies varied significantly based on training hours, experience, patient percentage treated with DN,*** and weekly clinical dedication. **Clinicians with more hours of DN training or fewer years of experience reported higher incidences of certain complications.**
 - Conclusions:** DN is a common intervention among PTs, with minor AEs frequently occurring and **major AEs being less common but still significant.”**

- **Jenkins LC, Summers SJ, Nasser A, Verhagen A. Dry needling perceptions and experiences: a survey of Australian physiotherapists. *Musculoskelet Sci Pract.* 2024;69:102895.**
 - *“Reports of minor adverse events were common and included discomfort during the treatment (n = 77, 62%) and bruising (n = 69, 56%).”*
- **Boyce D, Wempe Hm Campbell C, et al. Adverse events associated with therapeutic dry needling. *Int J Sports Phys Ther.* 2020 Feb;15(1):103–113.**
- **Brady S, McEvoy J, Dommerholt J, Doody C. Adverse events following trigger point dry needling: a prospective survey of chartered physiotherapists. *J Man Manip Ther.* 2014;22: 134–140.**
 - *“Common AEs included bruising (7.55%), bleeding (4.65%), pain during treatment (3.01%), and pain after treatment (2.19%).”*
- **Cagnie B, et al. Dry needling for the treatment of myofascial trigger points in neck and shoulder pain: a literature review. *PM&R.* 2013.**
- **Boyce D, et al. Complications of dry needling therapy: a review of the literature. *PM&R.* 2018.**

4. Infections

- **Data:** Improper dry needling can lead to infections.
 - **Peer-Reviewed Source:**
 - **Trybulski R, Kuźdzał A, Kiljański M, et al. Adverse reactions to dry needling therapy: insights from Polish physiotherapy practice. *J Clin Med.* 2024, 13(23), 7032; <https://doi.org/10.3390/jcm13237032>**
-

5. Prolonged Aggravation of Symptoms and Syncope/Loss of Consciousness

- **Peer-Reviewed Literature** demonstrates safety concerns of dry needling due to the prevalence of major adverse events
 - **Jenkins LC, Summers SJ, Nasser A, Verhagen A. Dry needling perceptions and experiences: a survey of Australian physiotherapists. *Musculoskelet Sci Pract.* 2024;69:102895.**
 - *“Some respondents reported experiencing major adverse events including prolonged aggravation of symptoms (n = 10, 8%) and syncope (n = 16, 13%). ... Minor adverse events were experienced by more than half the respondents and between 8 and 13% of the Australian physiotherapists*

surveyed reported experiencing a major adverse event due to dry needling.”

6. Lack of Standardized Training Increases Risk

- **Key Point:** Many adverse outcomes have been linked to dry needling performed after short weekend courses (20–30 hours), versus the 2,500+ hours required of acupuncturists or 300-hour minimums for MDs.
- **Professional Warnings:**
 - The **American Academy of Physical Medicine and Rehabilitation (AAPM&R)** and **Acupuncture societies** have repeatedly emphasized that inadequate training in needling technique and anatomy poses a serious risk to patients.
 - **Fan AY, Xu J, Li Y-M. Evidence and expert opinions: dry needling versus acupuncture (II): the American Alliance for Professional Acupuncture Safety (AAPAS) white paper 2016. *Chin J Integr Med.* 2017 Feb;23(2):83-90. doi: 10.1007/s11655-017-2800-6. Epub 2017 Mar 7.**
 - 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 neuromuscularskeletal 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.**

- **Peer-Reviewed Literature Warnings**

- **Kearns GA, Brismée J-M, Riley SP, et al. Lack of standardization in dry needling dosage and adverse event documentation limits outcome and safety reports: a scoping review of randomized clinical trials. *J Man Manip Ther.* 2023 Apr;31(2):72-83. doi: 10.1080/10669817.2022.2077516. Epub 2022 May 23.**

- **“Results:** Out of 22 identified RCTs, 11 demonstrated significant between-group differences exceeding the MCID, suggesting a clinically meaningful change in pain outcomes. Nine documented whether AE occurred. Only five provided AEs details and four cited a standard means to report AE.

Discussion: There was **inconsistency in reporting DN dosing parameters and AE.** We could not determine if DN dosing affects outcomes, whether DN consistently produces clinically meaningful changes, or establish optimal dosage. Without more detailed reporting, replication of methods in future investigations is severely limited. **A standardized method is lacking to report, classify, and provide context to AE from DN.** Without more detailed AE reporting in clinical trials investigating DN efficacy, a more thorough appraisal of relative risk, severity, and frequency was not possible. Based on these inconsistencies, adopting a standardized checklist for reporting DN dosage and AE may improve internal and external validity and the generalizability of results.”

- **Acupuncture Clean Needle Technique Training Manual Warnings**

- **Council of Colleges of Acupuncture and Herbal Medicine (CCAHM). Clean Needle Technique (CNT) Manual, 7th Edition. 2015. Accessed on May 5, 2025, from https://www.ccahm.org/ccaom/CNT_Manual.asp.**
 - **“Pneumothorax is also a complication of dry needling. This can be seen with the patient who suffers pneumothorax during a demonstration of deep dry needling (DN) to treat the iliocostalis muscle. (45)”**
 - **“The primary areas associated with acupuncture or dry needling-induced pneumothorax are the regions of the thorax including the upper trapezius, thoracic paraspinal, medial scapular, and subclavicular areas.(45)”**
-

7. Regulatory Warnings and Recommendations

- The World Health Organization (WHO) guidelines on acupuncture training recommend minimum training hours ranging from 200–2,500 hours depending on the practitioner's background.
 - The Oregon Medical Board requires 300 additional training hours for MDs/DOs before performing acupuncture.
-

8. Current State of Affairs: Data is Lacking

- **Peer-Reviewed Data Sources** show that more research is needed upon the prevalence of adverse events from PT's with low number of hours in training performing dry needling
 - **Malfait I, Gijbbers S, Smeets A, et al. Safety of dry needling in stroke patients: a scoping review. *Eur J Phys Rehabil Med.* 2024 Apr;60(2):225-232. doi: 10.23736/S1973-9087.24.08224-8. Epub 2024 Mar 19.**
 - **“Introduction:** Spasticity is a common problem in stroke patients. Treatments of spasticity often have side effects or are insufficiently effective. Dry needling (DN) has been proposed as a potential additional option to consider in the multimodal treatment of post-stroke spasticity, although questions about its safety remain. The goal of this study is to assess the safety of DN in stroke patients.
Evidence acquisition: A systematic search in Medline, Embase, The Cochrane Library, Web of Science, CIHNAL and PEDro was conducted in June 2023. Two reviewers independently screened abstracts according to the eligibility criteria.
Evidence synthesis: Twenty-five articles were included in this review.
Only six studies reported adverse events, all of which were considered minor. None of the included studies reported any serious adverse events. In four of the included studies anticoagulants were regarded as contra-indicative for DN. Anticoagulants were not mentioned in the other included studies.
Conclusions: There is a paucity of literature concerning the safety of DN in stroke patients. This review is the first to investigate the safety of DN in stroke patients and based on the results there is insufficient evidence regarding the safety of DN in stroke patients.
Clinical rehabilitation impact: Although DN could be a promising treatment in post-stroke spasticity, **further research is indicated to investigate its mechanism of action and its effect on outcome.**

However, before conducting large clinical trials to assess outcome parameters, the safety of DN in stroke patients must be further investigated.”

- **Boyce D, Wempe Hm Campbell C, et al. Adverse events associated with therapeutic dry needling. *Int J Sports Phys Ther.* 2020 Feb;15(1):103–113.**

- **“Background:** There is a **paucity of literature** about the adverse events associated with Therapeutic Dry Needling (TDN). Much of the literature surrounding adverse events associated with TDN has been extrapolated from the acupuncture literature. Given that acupuncture and TDN are distinctly different in their application and proposed mechanisms, adverse events associated with TDN should be examined specifically.

- **Purpose:** To determine and report the type of adverse events associated with the utilization of TDN.

- **Study Design:** Prospective Questionnaire

- **Methods:** Four hundred and twenty physical therapists participated in this study. Information related to minor and major adverse events that occurred during 20,464 TDN treatment sessions was collected. Each physical therapist respondent was asked to fill out two weekly self-reported electronic surveys over a six-week period. One survey was related to “minor adverse events” (i.e. pain, bleeding, bruising), while the other was related to “major adverse events” (i.e. pneumothorax, excessive bleeding, prolonged aggravation). Following the six-week period, descriptive statistics were used to describe the adverse events (AE) associated with TDN and calculate the frequencies of those events.

- **Results:** A total of 7,531 minor AE's were reported, indicating that 36.7% of the reported TDN treatments resulted in a minor AE. **The top three minor AE's were bleeding (16%), bruising (7.7%), and pain during dry needling (5.9 %).** The average ratio of minor AE's for all respondents across all weeks was 0.53 or approximately one event for every two patients. **Twenty major AE's were reported out of the 20,494 treatments for a rate of <0.1% (1 per 1,024 TDN treatments).** *No associations were noted between the frequency of adverse events and the number of patients treated, practitioner age, level of education, years in practice, level of training or months experience with dry needling.*

- **Conclusion:** Expected minor AE's such as mild bleeding, bruising, and pain during TDN were common and major AE's were rare.

Physical therapists and other medical practitioners need to be aware of the risks of TDN. Based on the findings of this study the overall risk of a major adverse event during TDN is small.