Common Modalities Utilized by Athletic Trainers to Treat Patients

Daryan Whaler, DAT, LAT, ATC

Clinical Athletic Trainer at Inland Orthopaedic Surgery

and Sports Medicine Clinic

Disclosures

- I declare I have no conflicts of interest to disclose in this presentation
- The statements and opinions in this presentation are mine and may not be the same views as my employers, colleagues, clients, etc.

Instrument Assisted Soft Tissue Mobilization

- Graston Technique, Hawkgrips, Smart Tools, The FIT Institute (fascial abrasion technique)
- What does it do?
 - Increased blood flow
 - Collagen synthesis and remodeling
 - Remodeling of scar tissue and adhesions
 - Reduction of pain and inflammation
 - Neuromuscular reeducation

The Research: IASTM

- As of 2021, a consensus on clinical guidelines for an optimal IASTM intervention has not been reached regarding various components of treatment application, such as the type of instrument, stroke technique, treatment variables (eg, time, angle, and cadence), or applied pressure.
- There are researchers that found clinical significance between the administration of IASTM and improvement in patient status specifically AROM, pain reduction and improved function.
- More research is needed to determine if clinical guideline and best practice standards can be created.

Cupping Therapy

- Many companies that provide certifications many athletic trainers are self-taught
- What does it do?
 - Pain Modulation Theory
 - Reflex Zone Theory
 - Pain-gate Theory
 - Blood detoxification Theory

The Research: Cupping Therapy

- There are many accounts clinical significance between administering cupping therapy and improved patient outcomes.
- There is a need for more randomized controlled trials with large populations.
- Most athletic trainers use dry and massaging methods with their treatments.

Dry Needling

- Very regulated and fairly new for athletic trainers
- What does is do?
 - Decrease pain
 - Increase ROM
 - Increase strength and power
 - Decrease/control edema

The Research: Dry Needling

- Many of the studies focused on athletes that are injured or have post-exercise pain – there is no significant effect in healthy athletes.
- Evidence supports that dry needling can decrease pain, decrease edema, and increase ROM and flexibility

Conclusion

- Athletic trainers hold clinical significance and clinical experience in high regard
- With the research currently available, there is low quality evidence for cupping therapy in sport recovery and performance
- IASTM and cupping would benefit from more research to provide evidence for treatment parameters and best practice standards
- The evidence suggests that dry needling has significant positive effects on alleviating pain in athletes who are suffering from injuries or pain.

References

Ploski, M., & Technique, G. (n.d.). *The Science Behind Soft Tissue Mobilization: Exploring the physiological effects of the Graston Technique®*. Graston Technique LLC. https://grastontechnique.com/the-science-behind-soft-tissue-mobilization-exploring-the-physiological-effects-of-the-graston-technique/

Baker, R. T., Nasypany, A., Seegmiller, J. G., & Baker, J. G. (2013). Instrument-assisted soft tissue mobilization treatment for tissue extensibility dysfunction. International Journal of Athletic Therapy and Training, 18(5), 16–21. https://doi.org/10.1123/ijatt.18.5.16

Cheatham, S. W., Baker, R. T., Larkins, L. W., Baker, J. G., & Casanova, M. P. (2021). Clinical practice patterns among health care professionals for instrument-assisted soft tissue mobilization. *Journal of Athletic Training*, 56(10), 1100–1111. https://doi.org/10.4085/1062-6050-047-20

Cheatham, S. W., Martonick, N., Krumpl, L., & Baker, R. T. (2023). The Effects of Light Pressure Instrument-Assisted Soft Tissue Mobilization at Different Rates on Grip Strength and Muscle Stiffness in Healthy Individuals. *Journal of Sport Rehabilitation*, 32(6), 731-736. Retrieved Mar 14, 2025, from https://doi.org/10.1123/jsr.2022-0356

Cheatham, S. W., Baker, R., & Kreiswirth, E. (2019). INSTRUMENT ASSISTED SOFT-TISSUE MOBILIZATION: A COMMENTARY ON CLINICAL PRACTICE GUIDELINES FOR REHABILITATION PROFESSIONALS. International journal of sports physical therapy, 14(4), 670–682.

Alam, M., & Abbas, K. (2021). The role of cupping therapy (CT) in pain tackling, an insight into mechanism therapeutic effects and its relevance in current medical scenario. International Journal of Current Science Research and Review, 04(07). https://doi.org/10.47191/ijcsrr/v4-i7-16

Stephens, S. L., DeJong Lempke, A. F., Hertel, J., & Saliba, S. (2022). Clinical usage, application procedures, and perceived effectiveness of cupping therapy among healthcare professionals in the United States: A cross-sectional survey. Complementary Therapies in Clinical Practice, 48, 101610. https://doi.org/10.1016/j.ctcp.2022.101610

Schaub, A. N., Rochester, J. A., Getschow, K. L., & Nelson, M. C. (2024). The effect of different types of cupping therapy on acute changes in ankle dorsiflexion. *Journal of Bodywork and Movement Therapies*, 40, 1549–1554. https://doi.org/10.1016/j.jbmt.2024.08.012

Harper, B., Dudek, A., Williamson, J., Siyufy, A., & Smith, J. A. (2024). Combining Static and Dynamic Myofascial Dry Cupping Therapy to Improve Local and Regional Symptoms in Individuals with Low Back Pain: A Case Series. International journal of sports physical therapy, 19(2), 227–237. https://doi.org/10.26603/001c.91653

Mohamed, A. A., Zhang, X., & Jan, Y.-K. (2023). Evidence-based and adverse-effects analyses of cupping therapy in musculoskeletal and sports rehabilitation: A systematic and evidence-based review. *Journal of Back and Musculoskeletal Rehabilitation*, 36(1), 3–19. https://doi.org/10.3233/bmr-210242

Furhad S, Sina RE, Bokhari AA. Cupping Therapy. [Updated 2023 Oct 30]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK538253/

IACOB, G. S., MĂZĂREANU, A., & XHARDO, K. Effects of Dry Needling on Hamstring Pain Sensitivity and Flexibility of Professional Athletes. EDUCATION FOR HEALTH AND PERFORMANCE, 213.

Gregory, T. J., Rauchwarter, S. A., & Feldman, M. D. (2022). Clinical commentary: Rehabilitation using acute dry needling for injured athletes returning to sport and improving performance. Arthroscopy, Sports Medicine, and Rehabilitation, 4(1). https://doi.org/10.1016/j.asmr.2021.09.035

Demeco, A., de Sire, A., Salerno, A., Marotta, N., Palermi, S., Frizziero, A., & Costantino, C. (2024). Dry needling in overhead athletes with myofascial shoulder pain: A systematic review. Sports, 12(6), 156. https://doi.org/10.3390/sports12060156

Kużdżał, A., Trybulski, R., Muracki, J., Klich, S., Clemente, F. M., & Kawczyński, A. (2025). Dry needling in sports and Sport Recovery: A systematic review with an evidence gap map. Sports Medicine. https://doi.org/10.1007/s40279-025-02175-9

Sánchez-Infante, J., Navarro-Santana, M. J., Bravo-Sánchez, A., Jiménez-Diaz, F., & Abián-Vicén, J. (2021). Is dry needling applied by physical therapists effective for pain in musculoskeletal conditions? A systematic review and meta-analysis. *Physical Therapy*, 101(3). https://doi.org/10.1093/ptj/pzab070

professional, C. C. medical. (2024, May 1). What is dry needling?. Cleveland Clinic. https://my.clevelandclinic.org/health/treatments/16542-dry-needling