

The Somatic Connection

“The Somatic Connection” highlights and summarizes important contributions to the growing body of literature on the musculoskeletal system’s role in health and disease. This section of *The Journal of the American Osteopathic Association* (JAOA) strives to chronicle the significant increase in published research on manipulative methods and treatments in the United States and the renewed interest in manual medicine internationally, especially in Europe.

To submit scientific reports for possible inclusion in “The Somatic Connection,” readers are encouraged to contact JAOA Associate Editor Michael A. Seffinger, DO (mseffingerdo@osteopathic.org), or JAOA Editorial Advisory Board Member Hollis H. King, DO, PhD (hhking@ucsd.edu).

Myofascial Trigger Point Release Massage Therapy Relieves Tension-Type Headaches

Moraska AF, Stenerson L, Butryn N, Krutsch JP, Schmiede SJ, Mann JD. Myofascial trigger point-focused head and neck massage for recurrent tension-type headache: a randomized, placebo-controlled clinical trial. *Clin J Pain*. 2015;31(2):159-168. doi:10.1097/AJP.0000000000000091.

As a result of the high prevalence of tension-type headache (TTH) and adverse effects from analgesic pharmaceutical treatment, there is interest in non-pharmacologic treatment options. Researchers in the United States have examined one of these options, focusing on the efficacy of using trigger point release (TPR) massage therapy on myofascial trigger points (MTrPs) to decrease headache pain.

This randomized placebo-controlled trial included 56 participants with TTH. Outcomes were measured during the 4 weeks before treatment, 6 weeks of treatment, and 4 weeks after treatment cessation. Participants were divided into a massage (n=17), placebo (n=19), or wait-list (n=20) group. Those in the massage group received a standardized treatment, which included TPRs aimed at the MTrPs in the sternocleidomastoids, suboccipital, and upper trapezius muscles. The massages were administered by massage therapists

who had previous experience in MTrPs identification and had completed training sessions to ensure treatment standardization. Detuned ultrasonography was used in the placebo group. The wait-list group received no treatments but was involved in all outcomes measured. Six participants withdrew from the trial.

Headache diaries, maintained by all participants, showed that compared with baseline, a significant decrease in headache frequency occurred for the massage ($P=.0003$) and placebo ($P=.013$) groups. However, the diaries revealed no significant differences in the groups regarding headache duration, headache intensity, or medication use. Headache Disability Inventory scores showed a significant decrease in the massage group ($P=.0003$). However, both the massage ($P=.0002$) and placebo ($P=.011$) groups showed significant decreases in Headache Impact Test scores. After the treatment portion of the study, 84.7% of the massage, 50% of the placebo, and 0% of the wait-list groups reported improvements ($P<.001$). Pressure-pain thresholds were assessed bilaterally in the muscles massaged and were found to have significant improvements in the massage group ($P<.002$ for all outcomes).

Although the exact cause of TTH is still unknown, this study suggests that MTrPs are a

contributing factor in headache pain and supports the use of TPR massage therapy to treat patients with TTH. (doi:10.7556/jaoa.2016.009)

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Spinal Manipulation Unable to Demonstrate Improved Sensorimotor Function

Goertz CM, Xia T, Long CR, et al. Effects of spinal manipulation on sensorimotor function in low back pain patients—a randomized controlled trial [published online August 8, 2015]. *Manual Ther*. In press. doi:10.1016/j.math.2015.08.001.

Osteopathic manipulative treatment has been shown to improve balance in patients with vertigo.¹ Researchers at the Palmer Institute in Des Moines, Iowa, conducted a randomized clinical trial to assess whether chiropractic spinal manipulation improves balance control as an outcome measure for sensorimotor functioning in patients with low back pain.

Researchers randomly allocated 221 participants between the ages of 21 to 65 years (120 men, 101 women; mean age, 44 years) with low back pain that was either acute (<4 weeks), subacute (4-12 weeks), or chronic (>12 weeks) to 1 (n=73) of 3 groups, which were identified by different spinal manipulation techniques. For 4 visits during a 2-week period, participants received high-velocity, low-amplitude (HVLA) spinal manipulation; low-velocity, variable-amplitude spinal manipulation; or a control protocol involving light effleurage and mechanically-assisted sham therapy. Before and after the first visit and at 2 weeks, 2 sensorimotor function tests were conducted: (1) postural sway

test, which assessed balance control of the participant during his or her natural stance, and (2) sudden load test, which assessed response time of erector spinae musculature to the dropping of a 1.6 kg load that disturbed the participant's balance.

Fit analysis of covariance models demonstrated that there was no difference between HVLA and sham control (hard surface sway: adjusted mean, 0.09; 95% CI, -0.06, 0.23; soft surface sway: adjusted mean, 0.35; 95% CI, -0.03, 0.73). There were no between-group differences on balance control for any of the interventions.

The authors conclude that there were no significant changes in sensorimotor functions after chiropractic spinal manipulation in patients with mild to moderate LBP. However, because it had been previously noted that postural sway may not be affected after short-term treatment,² the authors concluded that a longer treatment period is necessary. Additionally, further research regarding the efficacy of osteopathic manipulative treatment in managing sensorimotor dysfunctions in patients with somatic dysfunction and low back pain should be conducted. (doi:10.7556/jaoa.2016.010)

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