

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).

Cardiorespiratory Benefit of Aerobic Exercise for Patients With Asthma

Carson KV, Chandratilleke MG, Picot J, Brinn MP, Esterman AJ, Smith BJ. Physical training for asthma. *Cochrane Database Syst Rev*. 2013;(9):CD001116. doi:10.1002/14651858.CD001116.pub4

Researchers conducted a systematic review and meta-analysis to explore the effects of physical training on the cardiorespiratory function of patients with asthma. Randomized controlled trials that included patients aged 8 years or older who had asthma and undertook physical training were considered. Physical training intervention had to include full-body aerobic exercise lasting at least 20 minutes, performed twice per week for at least 4 weeks. Twenty-one studies met these criteria. The researchers’ primary outcome measure was asthmatic symptoms, and secondary outcome measures included physiologic measurements and quality of life.

Nine studies examined the effect of physical training on the symptoms of patients with asthma. Five of the 9 studies reported no difference between the symptoms of the patients in the intervention and control groups after the interven-

tion. Three of the 9 studies reported that physical training decreased the frequency of asthmatic symptoms, and 1 study reported that it lessened the severity of the symptoms.

Studies that measured forced expiratory volume, forced vital capacity, or peak expiratory flow rate found that physical training had no significant effect on these measures. Although not statistically significant, studies found that physical training improved ventilation at maximal exercise, led to an increase in maximal heart rate, improved maximal ventilatory ventilation, and led to an increase in 6-minute walking distance. Additionally, 4 studies reported statistically significant improvements in the self-reported quality of life of patients in the intervention groups.

This review provides evidence that aerobic exercise does not worsen the severity or frequency of asthma or cardiorespiratory functions and may improve the quality of life of patients with asthma. It would be of interest in future studies if participants were treated for related somatic dysfunction with osteopathic manipulative treatment before undergoing aerobic conditioning to explore whether outcomes would be different for

forced expiratory volume, forced vital capacity, or peak expiratory flow rate. These factors depend on airway and costal cage resistance, which osteopathic manipulative treatment could address by balancing autonomic tone to dilate the bronchial airways and improve compliance of the costal cage. (doi:10.7556/jaoa.2017.059)

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Cost-Effective Management of Low Back and Joint Pain by Specialty

Wilson FA, Licciardone JC, Kearns CM, Akuoko M. Analysis of provider specialties in the treatment of patients with clinically diagnosed back and joint problems. *J Eval Clin Pract.* 2015;21(5):952–957. doi:10.1111/jep.12411

Back and joint pain are common ailments that are managed by various health care professionals. Researchers at the University of Nebraska Medical Center in association with The Osteopathic Research Center at the University of North Texas Health Science Center compared the cost-effectiveness of improving patient outcomes across specialties with average total costs of treatments from health care professionals. The researchers used data from the Medical Expenditure Panel Survey, which is a nationally represented survey that collects data on respondents' health status and health care use and expenditures conducted by the Agency for Healthcare Research and Quality. To assess health benefit, self-reported measures of physical health and mental health were analyzed to derive EuroQol-5D (EQ-5D) index scores, which measure the health-related quality of life domains of mobility, self-care, usual activities, pain/discomfort, and anxiety/depression.

A total of 16,546 Medical Expenditure Panel Survey respondents from 2002 to 2012 who had at

least 1 office-based health care professional visit for a diagnosed low back or joint problem were included in the study. All respondents included were aged 18 years or older. Respondents who received treatment for back or joint pain from more than 1 health care professional were excluded. The study compared physicians in the following specialties: osteopathic medicine, internal medicine, orthopedics, rheumatology, neurology, family/general practice, and nonphysician health care professionals: chiropractors, physical therapists, acupuncturists, and massage therapists. The age-adjusted results, based on incremental cost-effectiveness ratios using the EQ-5D index scores, showed that osteopathic medicine, family medicine, and internal medicine were the most cost-effective. Chiropractors, physiotherapists, acupuncturists, and physicians in the specialties of orthopedics, neurology, and rheumatology were not cost-effective.

In summary, for patient-reported overall health based on combined physical and mental components, the specialties of family medicine, osteopathic medicine, and internal medicine were the most cost-effective in treating low back and joint pain. (doi:10.7556/jaoa.2017.060)

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Benefit of OMT in Patients Who Underwent Heart Surgery

Racca V, Bordoni B, Castiglioni P, Modica M, Ferratini M. Osteopathic manipulative treatment improves heart surgery outcomes: a randomized controlled trial. *Ann Thorac Surg.* 2017;pii:S0003-4975(16)31438-2. doi:10.1016/j.athoracsur.2016.09.110 [Epub ahead of print]

Researchers from the Cardiology Rehabilitation Center at the Santa Maria Nascente Institute in Milan, Italy, evaluated the effects of osteopathic manipulative therapy (OMTh; manipulative care