Osteopathic Manipulative Treatment for Allostatic Load Lowering

Victor Nuño, DO; Allison Siu, OMS II; Stacey Pierce-Talsma, DO

From the Touro University
College of Osteopathic
Medicine-CA in Vallejo.

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Address correspondence to
Victor Nuño, 1310 Club Dr,
Mare Island, Vallejo,
CA 94592-1187.

Email: victor.nuno@tu.edu

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Emotional and physical stress can have both protective and damaging effects on the human body.¹ These stressors activate the sympathetic nervous system and hypothalamic-pituitary-adrenal axis, releasing catecholamines and glucocorticoids, mediating the function of multiple organ systems. This physiologic, allostatic response is essential for survival on a short-term scale. However, chronic stimulation and overproduction of stress hormones can produce pathophysiologic states.^{1,2}

The osteopathic manipulative treatment (OMT) for allostatic load lowering (ALL) study and recent safety literature suggests that OMT may be a safe and effective method of modulating physiologic markers of allostatic load.^{3,4} Osteopathic manipulative treatment has been shown to increase secretory immunoglobulin A⁵ and β -endorphin levels,⁶ while decreasing inflammatory and neuropathic mediators such as 5-hydroxytryptophan,⁶ 5-hydroxyindoleacetic acid,⁶ anandamide,⁶ and tumor necrosis factor α ,⁷ and improve respiratory rate⁸ and heart rate variability.⁹

The autonomics, biomechanics, circulation, and screening examination (ABCs) of osteopathic medicine provide a framework for incorporating OMT by addressing autonomic innervation, biomechanics, and circulation to diagnose and treat somatic dysfunction and facilitate homeostasis.¹⁰ Additionally, a screening examination encourages global considerations of the patient beyond the obvious chief complaint or the specific region of somatic dysfunction.¹⁰

The OMT techniques used to treat somatic dysfunction can have overlap related to the ABCs. For this demonstration 2 examples will be covered: lumbar high velocity low amplitude and upper thoracic facilitated positional release (video).

Viewed through the lens of the ABCs, high velocity, low amplitude of a facilitated L1 or L2

segment can improve autonomic tone by addressing the sympathetic chain ganglia, biomechanical restrictions by increasing range of motion, and circulation by releasing the crural attachments to increase diaphragmatic excursion.

The second technique, upper thoracic facilitated positional release, can also be used to treat multiple ABCs, such as improving autonomic tone by addressing sympathetic chain ganglia, biomechanical restrictions by removing restriction of motion in the thorax, and circulation by alleviating fascial restrictions associated with the thoracic inlet.

Techniques that focus on optimizing the ABCs, may be effective in diagnosing and treating somatic dysfunction associated with increased allostatic load. Using OMT as a treatment modality to lower allostatic load may help to facilitate homeostasis and decrease the accelerated risk of disease in the majority of patients who experience stress in their daily lives.⁴⁻⁹ (doi:10.7556/jaoa.2019.118)

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References

- McEwen BS. Allostasis and allostatic load: implications for neuropsychopharmacology. *Neuropsychopharmacology*. 2000;22(2):108-124.
- Juster RP, McEwen BS, Lupien SJ. Allostatic load biomarkers of chronic stress and impact on health and cognition. *Neurosci Biobehav Rev*. 2010;35(1):2-16. doi:10.1016/j.neubiorev.2009.10.002
- Seffinger MA. The safety of osteopathic manipulative treatment (OMT). *J Am Osteopath Assoc*. 2018;118(3):137-138. doi:10.7556/jaoa.2018.031
- Nuño V, Siu A, Deol N, Juster RP. Osteopathic manipulative treatment for allostatic load lowering. *J Am Osteopath Assoc*. 2019;119(10):646-654. doi:10.7556/jaoa.2019.112
- Saggio G, Docimo S, Pilc J, Norton J, Gilliar W. Impact of osteopathic manipulative treatment on secretory immunoglobulin A levels in a stressed population. *J Am Osteopath Assoc*. 2011;111(3):143-147.

6. Degenhardt BF, Darmani NA, Johnson JC, et al. Role of osteopathic manipulative treatment in altering pain biomarkers: a pilot study. *J Am Osteopath Assoc.* 2007;107(9):387-400.
7. Licciardone JC, Kearns CM, Hodge LM, Minotti DE. Osteopathic manual treatment in patients with diabetes mellitus and comorbid chronic low back pain: subgroup results from the OSTEOPATHIC Trial. *J Am Osteopath Assoc.* 2013;113(6):468-478.
8. Bhilpawar PP, Auroa R. Effects of osteopathic manipulative treatment in patients with chronic obstructive pulmonary disease. *Indian J Physiother Occup Ther.* 20137(1):196-201.
9. Henley CE, Ivins D, Mills M, Wen FK, Benjamin BA. Osteopathic manipulative treatment and its relationship to autonomic nervous system activity as demonstrated by heart rate variability: a repeated measures study. *Osteopath Med Prim Care.* 2008;2:7. doi:10.1186/1750-4732-2-7.
10. Nuño V, Peña NJ, Hughes TNF, Cuny LAM, Pierce-Talsma SL. Teaching osteopathic principles and practice: easy as ABCs. *AAOJ.* 2018;28(2):34-38.

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