



The Journal of the American Osteopathic Association

Answers to the March 2016 JAOA CME Quiz

Discussion answers to JAOA continuing medical education quizzes appear only when authors have included discussions with the quiz questions and answers they must provide to meet the requirement for submission to and publication in the JAOA.

Osteopathic Manipulative Treatment for Older Patients: A National Survey of Osteopathic Physicians

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- (c) Most survey respondents indicated that they did not use osteopathic manipulative treatment to manage osteoporosis.
- (a) According to survey results, high-velocity, low-amplitude was used by 99.3% of survey respondents among patients younger than 65 years, was used by 60% of respondents in patients aged 65 to 79 years, and was used by 32% of respondents in patients aged 80 years or older.

Recovery From Chronic Low Back Pain After Osteopathic Manipulative Treatment: A Randomized Controlled Trial

John C. Licciardone, DO, MS, MBA;
Robert J. Gatchel, PhD, ABPP;
and Subhash Aryal, PhD

- (a) Low back pain intensity was the only significant predictor of recovery from chronic low back pain in the primary analysis ($P < .001$) other than receiving osteopathic manipulative treatment. The likelihood of meeting the composite recovery criteria of 10 mm or less on the visual analog scale for low back pain intensity and 2 or less on the Roland-Morris Disability Questionnaire decreased

significantly with each 1-mm increment on the baseline visual analog scale (OR, 0.96; 95% CI, 0.94-0.98). In the sensitivity analysis, baseline back-specific functioning was also a significant predictor of recovery ($P = .01$). Therein, the likelihood of recovery decreased significantly with each 1-point increment on the baseline Roland-Morris Disability Questionnaire (OR, 0.90; 95% CI, 0.82-0.98).

Targeting Patient Subgroups With Chronic Low Back Pain for Osteopathic Manipulative Treatment: Responder Analyses From a Randomized Controlled Trial

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- (d) The largest effect sizes with osteopathic manipulative treatment were observed in patients by using the highest-to-lowest strategy for targeting patients for treatment based on their baseline levels of pain intensity and back-specific dysfunction. The largest RRs for substantial improvement with osteopathic manipulative treatment were observed in patients with a score of 50 mm or greater on the 100-mm visual analog scale for pain intensity and in patients with Roland-Morris Disability Questionnaire scores of 17 or greater at baseline. Correspondingly, the lowest numbers-needed-to-treat were observed in patients with

35 mm or greater on the 100-mm visual analog scale for pain intensity and in patients with Roland-Morris Disability Questionnaire scores of 16 or greater at baseline.

The Glymphatic-Lymphatic Continuum: Opportunities for Osteopathic Manipulative Medicine

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- (a) Magnetic resonance imaging suggests that increased respiration is a major regulator of cerebrospinal fluid flow.
- (c) The Virchow-Robin space is anatomically described as a space that surrounds penetrating arteries, venules, and capillaries from the subarachnoid space into the brain parenchyma.
- (c) Alzheimer disease is characterized by the presence of extracellular amyloid- β protein assemblies, which aggregate throughout cortical and subcortical brain structures.
- (b) Thoracic outlet release is most commonly used to improve lymphatic drainage. The drainage of the entire lymphatic system, including drainage from the cranium, occurs at the level of the thoracic outlet where the right lymphatic duct and the thoracic duct drain into the right and left subclavian veins.

Concussions and Osteopathic Manipulative Treatment: An Adolescent Case Presentation

Iris Castillo, DO; Kimberly Wolf, DO; and Alexander Rakowsky, MD

9. (d) A 16-year-old boy presents to the emergency department after a head injury while playing football for his high school team. He had a head-to-head collision with another player, and they were both wearing helmets. The patient lost consciousness for approximately 5 minutes. When he recovered, he could not remember what had happened to him or where he was, but he could recall his name and his parents' names. In the emergency department about 1 hour after the collision, he was back to baseline. He was alert and oriented without any focal neurologic signs.

Because the patient did not have any focal neurologic signs and was back to his baseline, head imaging is not recommended, as the likelihood of the presence of an intracranial pathologic cause is low. The risk of exposure to radiation outweighs the benefit of obtaining the head imaging. Without acute neurologic findings, magnetic resonance imaging is also not indicated. Seizure prophylaxis is not recommended for patients with concussions. Specific and detailed concussion precautions are imperative, including reasons to return to the emergency department. Additionally, patients and their families should be given instructions for close follow-up with their primary care physician so they can provide the appropriate postconcussion care.

10. (c) A 12-year-old girl who received a diagnosis of concussion she sustained from a soccer collision presents to a primary care clinic with her mother. They wonder when she will be able to return to her usual activities because she has an important tournament in 1 month. Her injury occurred about 2 weeks ago when she headed the soccer ball incorrectly. She has been undergoing a stepwise return to play and school. She continues to have headaches and photophobia while she is in gym class. Headaches usually began when she starts jogging and resolve after she rests. She is still unable to tolerate a full day of school.

This patient has postconcussion syndrome, because she still has symptoms with activity. If she were to sustain another head injury, she would be at increased risk for second impact syndrome. A secondary injury could cause increased cerebral swelling and dysregulation. Complications can lead to tonsillar herniation and brainstem compression. Continue to monitor patients such as this one closely and prohibit them from returning to full play if symptoms continue. Follow-up with a concussion specialist is recommended for anyone with severe or prolonged symptoms.

11. (b) Compression of the fourth ventricle can improve the movement of fluid within the intracranial space and therefore will decrease the edema in the brain. This gentle technique can help improve headaches.

Resolution of New Daily Persistent Headache After Osteopathic Manipulative Treatment

Joshua Alexander, DO, MPH

12. (d) New daily persistent headache is characterized by unilateral pressure headache that waxes and wanes and is associated with photophobia and phonophobia; it does not remit, and the patient can recall the exact date of onset.

Editor's note:

Question 1 from the February 2016 issue of *The Journal of the American Osteopathic Association* did not appear in the study and therefore has been removed from the electronic versions of the February continuing medical education quiz and answers.

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