THE JOURNAL of the AMERICAN OSTEOPATHIC ASSOCIATION

The purpose of this quiz is to provide a convenient means for osteopathic physicians to assess their understanding of the scientific content in the June 2013 issue of *The Journal of the American Osteopathic Association* (*JAOA*).

To apply for 2 Category 1-B continuing medical education (CME) credits, AOA members may take this quiz online at http://www.osteopathic.org/quiz, where this and other *JAOA* quizzes can be accessed. Quizzes that are completed online will be graded and credited to members' CME activity reports.

Alternatively, osteopathic physicians can complete the quiz below and mail it to the following address by December 31, 2014:

American Osteopathic Association
Division of CME
142 E Ontario St
Chicago, IL 60611-2864
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If you mail or fax this form to the Division of CME, the AOA will record the fact that you have submitted this form for Category 1-B CME credit. Osteopathic physicians who are not members of the AOA and who forward hard copies of completed *JAOA* quizzes to the Division of CME will be charged a fee of $25 per quiz for staff time to grade the quiz, record the credits, and provide a letter to the osteopathic physician as documentation.

For each of the questions below, place a checkmark in the box provided next to your answer so that you can easily verify your answers against the correct answers, which will be published in the July 2013 issue of the *JAOA*.

Osteopathic Evaluation of Somatic Dysfunction and Craniosacral Strain Pattern Among Preterm and Term Newborns

Gianfranco Pizzolorusso, DO [Italy]; Francesco Cerritelli, DO [Italy], MS, MPH; Marianna D'Orazio, DO [Italy]; Vincenzo Cozzolino, DO [Italy], MD; Patrizia Turi, DO [Italy]; Cinzia Renzetti, DO [Italy], MD; Gina Barlafante, DO [Italy], MD; and Carmine D'Incecco, MD

1. Which of the following spinal segments demonstrated the highest numbers of somatic dysfunction:

☐ (a) cervical
☐ (b) upper thoracic
☐ (c) middle thoracic
☐ (d) lower thoracic
☐ (e) lumbar

Osteopathic Manual Treatment in Patients With Diabetes Mellitus and Comorbid Chronic Low Back Pain: Subgroup Results From the OSTEOPATHIC Trial

by John C. Licciardone, DO, MS, MBA; Cathleen M. Kearns, BA; Lisa M. Hodge, PhD; and Dennis E. Minotti, DO

2. Which of the following pairs of interventions was assessed for treatment outcomes in this study:

☐ (a) osteopathic manual treatment and diathermy
☐ (b) osteopathic manual treatment and ultrasound therapy
☐ (c) osteopathic manual treatment and cognitive behavioral therapy
☐ (d) osteopathic manual treatment and dietary counseling
☐ (e) osteopathic manual treatment and exercise prescription

3. Which of the following responses best describes the effect of osteopathic manual treatment (OMT) in this study of patients with diabetes mellitus and comorbid chronic low back pain:

☐ (a) OMT significantly reduced low back pain severity, and the results were clinically relevant
☐ (b) OMT significantly reduced low back pain severity, but the results were not clinically relevant
☐ (c) OMT did not significantly reduce low back pain severity, and the results were not clinically relevant
☐ (d) OMT did not significantly reduce low back pain severity, but the results were clinically relevant

4. Which of the following descriptors best defines the effect size for the reduction in the tumor necrosis factor-α serum concentration over 12 weeks when osteopathic manual treatment was provided:

☐ (a) trivial
☐ (b) small
☐ (c) medium
☐ (d) large

An International Health Elective in Haiti: A Case for Osteopathic Medicine

by Sidney Coupet, DO, MPH, MSc; Joel D. Howell, MD, PhD; and Barbara Ross-Lee, DO

5. Which of the following traits of osteopathic physicians make them potential key players in the delivery of quality health care in Haiti:

☐ (a) They are more likely to provide acupuncture.
☐ (b) They are more likely to prescribe antiretroviral treatment for patients with primary human immunodeficiency virus infection.
☐ (c) They are able to provide osteopathic manipulative treatment.
☐ (d) They are able to work in warmer climates.

A Challenging Case of Hypercalcemia

by Patricia M. Luceri, DO, and Louis C. Haenel IV, DO

6. All of the following are markers of increased osteoblastic activity and bone formation except:
- ☐ (a) osteocalcin
- ☐ (b) urinary hydroxyproline
- ☐ (c) alkaline phosphatase
- ☐ (d) increased uptake of bone-scanning agents

7. Granulomatous diseases such as sarcoidosis and tuberculosis can cause hypercalcemia by which mechanism?
- ☐ (a) production of parathyroid hormone–related protein
- ☐ (b) production of intact parathyroid hormone
- ☐ (c) stimulation of osteoclastic activity
- ☐ (d) production of 1-α hydroxylase

Answers to May 2013 *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*.

The Effect of Osteopathic Manipulative Treatment on Postoperative Medical and Functional Recovery of Coronary Artery Bypass Graft Patients

by J. Michael Wieting, DO; Christopher Beal, DO; Gary L. Roth, DO; Sherman Gorbis, DO; Lori Dillard, DO; Dennis Gilliland, PhD; and Jacob Rowan, DO

1. **(b)** Continued stretch of the paraspinal muscles was employed at vertebral level L2.

Use of the SMART Balance Master to Quantify the Effects of Osteopathic Manipulative Treatment in Patients With Dizziness

by Marcel Fraix, DO; Ashlynn Gordon, OMS IV; Victoria Graham, PT, DPT, OCS, NCS; Eric Hurwitz, DC, PhD; and Michael A. Seffinger, DO

2. **(e)** Cervical spine mechanoreceptors and muscle spindles transmit afferent input to both vestibular and cervical proprioceptive systems. Therefore, conditions that affect the cervical spine may potentially cause or contribute to vertigo. The mechanoreceptors of the joint capsules associated with the cervical facet joints are considered important in proprioception. Cutaneous mechanoreceptors and Golgi tendon organs may play a role, but there is no evidence suggesting this.
3. **(d)** The spinovestibular tract connects the muscle spindles of muscles intrinsic to the cervical spine with the vestibular nuclei and plays an important role in maintaining balance. This may explain why whiplash and injury of cervical spine soft-tissue structures can cause vertigo and impaired postural stability and sensorimotor control. These mechanisms are also thought to account for the altered balance seen in patients with chronic neck pain and atrophy of the suboccipital muscles. Other muscle groups may play a role, but the evidence supports a role for those that are intrinsic to the cervical spine.
4. **(e)** Analysis of Dizziness Handicap Inventory data demonstrated statistically significant changes after osteopathic manipulative treatment (OMT) in the total scores, as well as the physical, functional, and emotional subscales (all $P<.001$). The changes in the composite scores after OMT were also significant, both immediately and 1 week after OMT (both $P<.001$).

Osteopathic Approach to Gastrointestinal Disease: Somatic Clues to Diagnosis and Clinical Challenges Associated With *Helicobacter pylori* Antibiotic Resistance

by Alicia Smilowicz, DO

5. **(d)** The palpatory diagnosis for patients with gastrointestinal disease usually includes an occipitoatlantal joint sideslipped to the left, an occipitomastoid suture restriction on the right side, and the C2 vertebra extended in a sidebent orientation and rotated to the right.
6. **(b)** The proposed mechanisms of headache related to gastrointestinal disease include a vagus nerve model, a convergence-projection model, and a *Helicobacter pylori* biochemical model, but not an *Escherichia coli* biochemical model.

Metastatic Brain Tumors: Current Therapeutic Options and Historical Perspective

by Mark Rivkin, DO, and Richard B. Kanoff, DO, MSc

7. **(d)** A multidisciplinary approach is the best treatment option for a patient with a newly diagnosed metastatic brain lesion.
8. **(a)** Small-cell lung cancer is considered to be the most radiosensitive source for cerebral metastatic lesions.