

The purpose of this quiz is to provide a convenient means for osteopathic physicians to assess their understanding of the scientific content in the July 2012 issue of *JAOA—The Journal of the American Osteopathic Association*.

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

**American Osteopathic Association
Division of CME
142 E Ontario St
Chicago, IL 60611-2864
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AOA No. _____
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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.

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 August 2012 issue of the *JAOA*.

Somatic Dysfunction and Its Association With Chronic Low Back Pain, Back-Specific Functioning, and General Health: Results From the OSTEOPATHIC Trial by John C. Licciardone, DO, MS, MBA, and Cathleen M. Kearns, BA

1. Which of the following best differentiates key osteopathic lesions, such as those recorded on the Outpatient Osteopathic SOAP Note Form in this study, from other levels of somatic dysfunction in patients with chronic low back pain:

- (a) key osteopathic lesions represent background levels of somatic dysfunction
- (b) key osteopathic lesions are rarely diagnosed in the sacrum/pelvis region
- (c) key osteopathic lesions maintain a dysfunctional pattern that includes other secondary dysfunctions
- (d) key osteopathic lesions are often obviously associated with restriction of motion or tissue texture abnormality

2. Severe somatic dysfunction was most often simultaneously present in which of the following pairs of anatomic regions among patients with chronic low back pain:

- (a) thoracic 10-12 and lumbar
- (b) lumbar and sacrum/pelvis
- (c) sacrum/pelvis and pelvis/innominate
- (d) lumbar and pelvis/innominate

3. Low back pain severity and back-specific disability were most strongly associated with severe somatic dysfunction in which of the following anatomic regions among patients with chronic low back pain:

- (a) thoracic 10-12
- (b) lumbar
- (c) sacrum/pelvis
- (d) pelvis/innominate

Cervical Spine Bending: A Factor Confounding Whole Trunk and Lumbar Forward Bending Range of Motion by William J. Brooks, DO; Michael M. Patterson, PhD; Ethan Wagner, DO; and Patrick Hardigan, PhD

4. The outcome of the study on the effects of cervical spine position on whole trunk forward bending strongly suggests which of the following:

- (a) There is no effect of cervical spine bending on whole trunk forward bending.
- (b) There is little effect of knee bending on whole trunk forward bending.
- (c) There is no need to control either knee bending or cervical spine bending when measuring whole trunk forward bending.
- (d) There is an effect of cervical spine bending on whole trunk forward bending.
- (e) There is a need to control cervical spine bending but not knee bending when measuring whole trunk forward bending.

5. Studies on lumbar motion have revealed notable variation, and thus confounding effects, of which of the following:

- (a) warm-up
- (b) sex
- (c) age
- (d) time of day
- (e) all of the above

6. Which of the following statements is incorrect:

- (a) Manipulative medicine has been recognized as an effective treatment for low back pain.
- (b) Loss of lumbar range of motion is recognized as the primary cause of nonorganic low back pain.
- (c) Dual inclinometer technique is the American Medical Association-sanctioned method for measuring lumbar range of motion.
- (d) Fingertip-to-floor measurement is a construct valid method for within-system analysis of whole trunk forward bending.
- (e) Studies of lumbar forward bending always control for bending at the knees.

(continued)

Use of and Attitudes Toward Complementary and Alternative Medicine Among Osteopathic Medical Students by Mehulkumar K. Kanadiya, MBBS, MPH; Guy Klein, DO; and Jay H. Shubrook, Jr, DO

7. Osteopathic students showed the highest degree of agreement for which of the following statements:

- (a) "Health and disease are a reflection of balance between positive life-enhancing forces and negative destructive forces."
- (b) "Most complementary therapies stimulate the body's natural therapeutic powers."
- (c) "Osteopathic manipulative therapy is a valuable method for resolving a wide variety of musculoskeletal problems (beyond back pain)."
- (d) "It is not desirable for a physician to take therapeutic advantage of the placebo effect."

8. When considering complementary and alternative therapies, which of the following questions should patients ask their health care providers?

- (a) What benefits can be expected from this therapy?
- (b) What are the risks associated with this therapy?
- (c) Do the known benefits outweigh the risks?
- (d) What side effects can be expected?
- (e) Will the therapy interfere with conventional treatment?
- (f) all of the above

A New Triadic Paradigm for Osteopathic Research in Real-World Settings by John C. Licciardone, DO, MS, MBA, and Cathleen M. Kearns, BA

9. The patient-centered research fellowship curriculum is provided by which of the following methods:

- (a) continuous online instruction
- (b) bimonthly extended weekend seminars
- (c) master of public health degree program
- (d) continuing medical education programs

10. Which of the following will be the focus of the CONCORD-PBRN (Consortium for Collaborative Osteopathic Research Development—Practice-Based Research Network) card study in 2012:

- (a) management of hypertension
- (b) measurement of diabetes control and complications
- (c) screening for colorectal cancer
- (d) osteopathic palpatory findings and manual treatment techniques

11. Which of the following is *not* a major subject area covered in the patient-centered research fellowship curriculum:

- (a) geriatrics
- (b) epidemiology
- (c) human subjects research
- (d) critical analysis of the biomedical literature

Osteopathic Manipulative Treatment to Resolve Head and Neck Pain After Tooth Extraction by Patricia M. Meyer, DO, MS, and Sharon M. Gustowski, DO, MPH

12. Dental extractions have been linked to which of the following diagnoses of headache:

- (a) temporal mandibular joint dysfunction
- (b) trigeminal neuralgia
- (c) cluster headache
- (d) cranial somatic dysfunction
- (e) all of the above

13. Which of the following cranial nerves is affected by somatic dysfunction of the sphenoid bone in patients after dental extraction:

- (a) cranial nerve II—optic
- (b) cranial nerve V—trigeminal
- (c) cranial nerve IX—glossopharyngeal
- (d) cranial nerve XII—hypoglossal
- (e) cranial nerve X—vagus ♦

Answers to June 2012 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*.

Patient-Centered Management of Atrial Fibrillation: Applying Evidence-Based Care to the Individual Patient by Eric D. Good, DO, and Felix J. Rogers, DO

1. (e) Decision-making for stroke prevention in a patient with atrial fibrillation starts with a determination of his or her risk of stroke. The most commonly used scoring system is the CHADS₂. The 68-year-old woman with a blood sugar level of 145 mg/dL has a CHADS₂ score of 1 (for diabetes) and doesn't need anticoagulation therapy. The other patients have higher CHADS₂ scores because of prior congestive heart failure, hypertension, age greater than 75 years, or diabetes mellitus, each of which awards 1 point. Prior stroke or transient ischemic attack adds 2 points.

2. (d) A decision on heart rhythm control in a patient with atrial fibrillation is harder than it might seem at first glance. Treatments to maintain sinus rhythm neither increase likelihood of survival, make patients so healthy they avoid hospitalization, nor allow them to stop anticoagulation therapy. The primary reason is to improve quality of life. Asymptomatic status has no relationship to the need for anticoagulation therapy, and decision making should be based on the stroke risk using the CHADS₂ or CHA₂DS₂-VASc score. Amiodarone has a formidable side effect profile and has a large number of drug-drug interactions.

Osteopathic Manipulative Treatment in Pregnant Women by John M. Lavelle, DO

3. (a) Cardiac output can increase 30% to 50% during pregnancy. This stress can cause cardiac decompensation in women with underlying heart disease during the latter half of pregnancy. Osteopathic manipulative treatment to the cervical spine, C1-C3, may help control the symptoms of overstimulation of the vagus on the heart in pregnant women. Anatomically, the vagus nerve travels through the jugular foramen and into the neck within the carotid sheath, in close proximity to the upper cervical vertebrae. Thus, it can be affected through the somatovisceral reflex. Application of osteopathic manipulative treatment to somatic dysfunction in the upper cervical spine, especially atlas to C3, can help control increased vagal tone on the heart.

Empathy in Osteopathic Medical Students: A Cross-Sectional Analysis by Marilyn Kimmelman, EdD; Jackie Giacobbe, MSEd; Justin Faden, DO; Geetha Kumar, MD, FAPA; Charlyene C. Pinckney, MS; and Robert Steer, EdD

4. (e) A higher level of empathy in physicians has been correlated with increased patient engagement in care, patient compliance with therapy, more accurate physician diagnoses, and better patient outcomes.

5. (c) Some researchers have reported that there is a decline in empathy among allopathic medical students as they progress through their medical school education, but especially between the second and third year, when most students begin their clinical education.

6. (e) Several strategies have been suggested to increase medical students' empathy, including communication skills training, mentoring lectures, meditation training, and using literature and the arts.

Survey of Billing and Coding for Counterstrain Tender Points by Karen T. Snider, MS, DO, and Jane C. Johnson, MA

7. (e) The Centers for Medicare & Medicaid Services 1995 Coding Guide divides the body into distinct physical examination areas for the determination of evaluation and management service codes. The Centers for Medicare & Medicaid Services recognize 10 body areas.

8. (a) The Centers for Medicare & Medicaid Services 1997 Coding Guide limits the use of body areas to the physical examination of the musculoskeletal system.

Coexistence of Cushing Syndrome From Functional Adrenal Adenoma and Addison Disease From Immune-Mediated Adrenalitis by Randall Colucci, DO; Rafael E. Jimenez, MD; William Farrar, MD; Ramiro Malgor, MD; Leonard Kohn, MD; and Frank L. Schwartz, MD

9. (c) If adrenal-dependent Cushing syndrome is suspected, one of the first tests a physician should strongly consider ordering is 24-hour urinary free cortisol. This test is useful in the initial evaluation of Cushing syndrome but not for adrenal insufficiency. A 24-hour sample is necessary to help with fluctuating urinary levels of this hormone and is not affected by cortisol binding globulin, as serum levels would be. The most common cause of Cushing syndrome is pituitary adenoma.

10. (d) Addison disease is a form of adrenal insufficiency that can occur either by itself or with other autoimmune polyendocrine syndromes. In most patients with primary Addison disease, one very common finding is autoantibodies against 21-hydroxylase. This enzyme has the highest prevalence of autoantibodies measured in patients with immune-mediated adrenalitis and Addison disease. ♦

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