



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 January 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 July 31, 2014:

American Osteopathic Association
Division of CME
142 E Ontario St
Chicago, IL 60611-2864
Fax: (312) 202-8202

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 February 2013 issue of the JAOA.

Management of Falls and Balance Disorders in the Elderly

by Donald R. Noll, DO

1. A randomized clinical trial by Wells et al provided limited clinical evidence that OMT can improve gait function in older adults with Parkinson disease. Which of the following general manipulative techniques were used in the study protocol:
 - (a) several lymphatic pump techniques
 - (b) lymphatic pump and techniques to improve range of motion
 - (c) manipulative techniques to improve joint range of motion from the cervical spine to the ankle
 - (d) manipulative techniques limited to the whole vertebral spine
 - (e) manipulative techniques limited to the cervical spine

Residents as Teachers: Residents' Perceptions Before and After Receiving Instruction in Clinical Teaching

by Julie K. Wachtel, DO, MPH; Marna Rayl Greenberg, DO, MPH; Amy B. Smith, PhD; Kevin R. Weaver, DO; and Bryan G. Kane, MD

2. Which of the following statements on resident teaching is not accurate?
 - (a) Resident teaching courses have been shown to improve teaching confidence and are linked to improved student evaluations of residents as teachers.
 - (b) Resident teaching skills may decline if not reinforced periodically throughout residency.
 - (c) The majority of residents express interest in participating in programs that provide them with skills to be better teachers.
 - (d) The majority of residents reported that they have many training opportunities in teaching skills during residency.

Biotensegrity: A Unifying Theory of Biological Architecture With Applications to Osteopathic Practice, Education, and Research—A Review and Analysis

by Randel L. Swanson II, DO, PhD

3. According to the tensegrity theory, the human body functions mechanically by interconnecting a continuous series of tension elements with a discontinuous series of tension-resistant struts. Which of the following statements is correct:
 - (a) Bones, tendons, and ligaments function to generate a continuous interconnecting series of tension, while muscle functions as a discontinuous series of tension-resistant struts.
 - (b) Bones function as a discontinuous series of tension-resistant struts, while muscle, tendons, ligaments, and fascia function to generate a continuous interconnecting series of tension.
 - (c) Bones function to generate a continuous interconnecting series of tension, while muscle, tendons, and ligaments function as a discontinuous series of tension-resistant struts.
 - (d) The function of bones, muscles, tendons, and ligaments are not involved in the tensegrity theory of the human body.
4. Which of the following descriptions best defines tensegrity:
 - (a) an osteopathic principle described by Andrew Taylor Still, MD, DO, that has been applied to the architectural design of space stations
 - (b) an invalid theory that has absolutely no scientific basis at any level
 - (c) an architectural principle described by R. Buckminster Fuller that has been applied to biological systems
 - (d) a biological principle that functions only at the cellular level

Answers to the December 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.

Heated Lidocaine-Tetracaine Patch for Management of Shoulder Impingement Syndrome

by Richard G. Radnovich, DO

5. When a patient first receives a diagnosis of shoulder impingement syndrome, the optimal initial management of the disease may involve any of the following except:
- (a) restoring joint stability and movement patterns
 - (b) restoring shoulder strength
 - (c) eliminating pain
 - (d) aggressive resistance training for the rotator cuff muscles
6. Which of the following affects the amount of medication present in underlying tissues when applying local transdermal medications:
- (a) method used to deliver the medication
 - (b) type of tissue being penetrated
 - (c) application time
 - (d) heat
 - (e) all of the above
7. Which of the following anatomical sites is not involved in the pathophysiologic process of shoulder impingement syndrome?
- (a) acromium
 - (b) bursa
 - (c) long head of the biceps tendon
 - (d) clavicle

Establishing the Content Validity of Palpatory Examination for the Assessment of the Lumbar Spine Using Ultrasonography: A Pilot Study

by K. Aaron Shaw, OMS IV; John J. Dougherty, DO; Kevin D. Treffer, DO; and Alan G. Glaros, PhD

1. (c) Content validity is best defined as a result that exceeds the best known reference standard.
2. (c) Ultrasonography was shown to be a valid measuring tool for somatic dysfunction of the lumbar spine because palpatory documentation of transverse process depths directly correlated with the ultrasonographic measurements.

Depression, Somatization, and Somatic Dysfunction in Patients With Nonspecific Chronic Low Back Pain: Results From the OSTEOPATHIC Trial

by John C. Licciardone, DO, MS, MBA; Robert J. Gatchel, PhD; Cathleen M. Kearns, BA; and Dennis E. Minotti, DO

3. (a) Self-reported depression was most strongly correlated with somatization among patients at baseline. The Spearman rank correlation coefficients presented in *Table 2* demonstrated that the greatest observed correlation with self-reported depression involved somatization, as measured with the Modified Somatic Perception Questionnaire ($\rho=0.32$; $P<.001$). General health was inversely related to self-reported depression.
4. (b) Modified Zung Depression Index score was statistically significantly associated with the number of key osteopathic lesions among patients at baseline, as demonstrated in *Figure 2* ($P=.002$).
5. (b) The Modified Somatic Perception Questionnaire score best explained the overall variance in Roland-Morris Disability Questionnaire score for back-specific functioning among patients at baseline. *Figure 4* demonstrated that the greatest R^2 was observed for the plot involving the Roland-Morris Disability Questionnaire score ($R^2=0.31$).

Pharmacology of Kratom: An Emerging Botanical Agent With Stimulant, Analgesic and Opioid-Like Effects

by Walter C. Prozialeck, PhD, Jateen K. Jivan, BS, and Shridhar V. Andurkar, PhD

6. (a) The primary active pharmaceutical constituents of kratom are analogs of mitragynine.
7. (c) Kratom products are most commonly taken by intravenous injection.
8. (b) The analgesic effects of kratom primarily involve activation of μ -type opioid receptors.
9. (e) Reported adverse effects of kratom include central nervous system stimulation and tremor, sedation, constipation, and physical dependence with chronic use.

International Health Electives: Strengthening Graduate Medical Education

by Sidney Coupet, DO, MPH

10. (d) The benefits of an International Health Elective (IHE) for physicians-in-training are cultural humility, increased exposure to global burden of diseases, and exposure to public health crisis.
11. (b) Capacity building is the most important practice when participating in an IHE.
12. (d) The most important steps before participating in an IHE are obtaining immunizations, learning about the culture of the host nation, and reviewing all ethical issues.

Manipulation of the Coccyx With Anesthesia for the Management of Coccydynia

by Scott S. Emerson, DO, and Arthur J. Speece III, DO

13. (c) In Postacchini and Massobrio's study, 68% of participants had a coccyx that curved in a forward direction.
14. (b) Women tend to have a more posteriorly displaced coccyx.
15. (e) Prolonged sitting, moving to a standing position, defecation, and sexual intercourse can exacerbate pain in the coccyx.
16. (e) Ice packs, cushions, acupuncture, gabapentin, and nonsteroidal anti-inflammatory drugs are treatment options for patients with coccydynia.