



# 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 August 2014 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 <https://www.osteopathic.org/docmeonline>, 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 February 29, 2016:

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 September 2014 issue of the JAOA.

## Effects of Somatic Dysfunction on Leg Length and Weight Bearing

Yasmin Qureshi, MHS (Ost), MPT, DPT;  
Andrew Kusienki, DO; Julianne L. Bemski, OMS III; John R. Luksch, DO;  
and Lacy G. Knowles, DO

1. According to previously published literature, which of the following statements is true regarding a functional shorter leg:
- (a) It is caused by a shortened tibia.
  - (b) It can lead to an anterior innominate rotation on the shorter leg.
  - (c) It can lead to an inferior innominate shear.
  - (d) It typically requires a heel lift as an intervention.

2. What is the current and most reliable method of assessing structural leg length discrepancies?
- (a) tape measurement from ASIS to medial malleolus
  - (b) standing anteroposterior computed radiography
  - (c) supine to long leg sitting test
  - (d) palpatory measurement from iliac crest to heel
3. In this study, which of the following somatic dysfunctions was statistically significantly associated with creating an ipsilateral shorter leg:
- (a) superior shear
  - (b) inferior shear
  - (c) inflare
  - (d) anteriorly rotated innominate bone

4. In this study, which of the following area(s) exhibited somatic dysfunctions that followed the common compensatory pattern:
- (a) pelvis
  - (b) sacrum and lumbar spine
  - (c) pelvis and lumbar spine
  - (d) sacrum and pelvis

## Burnout Among Osteopathic Otolaryngology Residents: Identification During Formative Training Years

Morgan G. Yost, DO; Jane C. Johnson, MA; Michael M. Johns III, MD; and Kelly D. Burchett, DO

5. Which of the following is not a component of burnout included in the Maslach Burnout Inventory-Human Services Survey:
- (a) emotional exhaustion
  - (b) depersonalization
  - (c) impostorism
  - (d) low personal accomplishment
6. Which of the following components of burnout was found to have a significantly lower rate in osteopathic otolaryngology residents compared with previously published data for allopathic otolaryngology residents:
- (a) emotional exhaustion
  - (b) depersonalization
  - (c) low personal accomplishment
  - (d) impostorism
7. Which of the following has been linked to high rates of physician burnout:
- (a) decreased disability insurance claims
  - (b) high rates of satisfied patients who follow treatment plans
  - (c) low rates of absenteeism
  - (d) reporting performance of a major medical error

### Nonmedical Use of Stimulants Among Medical Students

Jason Adam Wasserman, PhD; Jennifer E. Fitzgerald, MA, DO; Merlin A. Sunny, MA, DO; Maria Cole, PhD; Richard R. Suminski, MPH, PhD; and John J. Dougherty, DO

8. Nonmedical use of stimulants by osteopathic medical students differed from other studied undergraduate populations in the rate of which of the following:
- (a) acquired prescriptions where not entirely medically indicated
  - (b) nondiagnosed users of stimulants
  - (c) nonmedical use of stimulants
  - (d) nonmedical use of stimulants used to study
9. A negative factor associated with nonmedical use of stimulants is identified in osteopathic medical students who reported which of the following:
- (a) alcohol use
  - (b) religious attendance
  - (c) social fraternity or sorority membership
  - (d) tobacco use

10. Osteopathic medical students in which of the following groups perceived that nonmedical use of stimulants was an accepted practice:

- (a) nondiagnosed nonusers
- (b) diagnosed users
- (c) nondiagnosed users
- (d) undergraduate users
- (e) all the above

### Multitasking Behaviors of Osteopathic Medical Students

Ankit V. Shah, OMS III; Dustin J. Mullens, OMS III; Lindsey J. Van Duyn, OMS III; and Ronald P. Januchowski, DO

11. Studies have defined multitasking as which of the following:
- (a) the ability of a person to simultaneously perform 2 or more functions
  - (b) quickly exchanging focus back and forth between 2 or more tasks through "context switching"
  - (c) maintenance of order with multiple tasks
  - (d) both a and b

12. What was the most influential factor causing students to multitask during lecture?

- (a) lecturer
- (b) interest
- (c) examination schedule
- (d) lecture load

### Use of Osteopathic Manipulative Treatment to Manage Recurrent Bouts of Singultus

Benjamin Seidel, DO, and Gina Benaquista Desipio, DO

13. In this article, intractable hiccups was defined as lasting...

- (a) >24 hours
- (b) >72 hours
- (c) >1 month
- (d) >1 week

14. What is the drug of choice in empiric therapy of idiopathic singultus?

- (a) baclofen
- (b) chlorpromazine
- (c) valproic acid
- (d) metoclopramide

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## Answers to July 2014 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.

### Association Between Cervical and Thoracic Somatic Dysfunction Among Second-Year Osteopathic Medical Students

Joseph P. Brindise, DO; Kenneth E. Nelson, DO; and Robert E. Kappler, DO

- (a) The sympathetic nervous system has been suggested to link cervical somatic dysfunction and thoracic somatic dysfunction.
- (e) The nuchal ligament is composed of the trapezius, rhomboideus minor, serratus posterior superior, and splenius capitis aponeuroses.

### Mountaineering-Induced Bilateral Plantar Paresthesia

Kyle K. Henderson, PhD; Justine Parker, DO; and Kurt P. Heinking, DO

- (b) A 43-year-old hiker complains of numbness of the distal aspect of his toes after completing a 6-hour trail. He states that he recently purchased new hiking boots and feels that they may be too stiff. On physical examination, a flat arch and navicular somatic dysfunction are diagnosed. On applying a Tinel test over the tarsal tunnel, he develops paresthesias into his toes. The rest of the neurologic examination of his legs is normal. The patient's condition is best diagnosed as tarsal tunnel syndrome. The dropped arch will cause overpronation of the foot, stressing the medial ankle soft tissues, which can compress the posterior tibial nerve, leading to paresthesias in its distribution. A positive Tinel sign at the ankle has been shown to be indicative of tarsal tunnel syndrome, and posterior tibial nerve compression, but not the other listed conditions.

- (c) A 29-year-old marathon runner develops arch pain of her right foot about two-thirds of the way through her race. She stops to see you in the medical tent. On physical examination, she exhibits high arched feet and scores positive on the ankle drawer test. She denies pain or numbness into the toes. Her metatarsal squeeze test result is negative for pain. On standing her right arch drops down more than the left. There is no pain to vibration or percussion of the other bones of her foot. Having a high arch and stiff forefoot with an unstable ankle may lead her to have an increased incidence of ankle sprains and fractures of the fifth metatarsal. The patient's high arches will cause stiffness of the forefoot and will not tolerate shock well. The unstable ankle stresses the lateral ankle soft tissues. Overstressing these lateral structures can lead to stress fractures of the fifth metatarsal or recurrent ankle sprains.

### Management of Ionizing Radiation Injuries and Illnesses, Part 3: Radiobiology and Health Effects of Ionizing Radiation

Doran M. Christensen, DO; Gordon K. Livingston, PhD; Stephen L. Sugarman, MS; Steven J. Parillo, DO; and Erik S. Glassman, EMT-P, MS

- (b) The primary mechanism of x-ray damage to DNA is hydroxyl radicals.
- (d) The asymmetric exchange of DNA after DNA double strand breaks is the mechanism of dicentric chromosome formation.

### Primary Care Evaluation and Treatment of Men With Lower Urinary Tract Symptoms

Nathan Hale, DO; Kellen Choi, DO; and Joshua Lohri, DO

- (d) A prostate nodule, an elevated serum prostate-specific antigen, and a gross hematuria should all prompt referral to a urologist in patients with lower urinary tract symptoms.

- (b) Cystoscopy is not part of the initial evaluation of men with lower urinary tract symptoms.
- (c) Mirabegron activates  $\beta_3$ -adrenergic receptors.

### Perception-Based Effects of Clinical Exposure to Osteopathic Manipulative Treatment on First- and Second-Year Osteopathic Medical Students

Kathleen M. Vazzana, OMS IV; Sheldon C. Yao, DO; Min-Kyung Jung, PhD; and Michael J. Terzella, DO

- (c) As the number of clinical shadowing exposures increased, there was an increase in positive responses to the statement, "I plan to use OMT in my future clinical practice."

### Osteopathic Musculoskeletal Examination and Subarachnoid Anesthetic Administration in a Patient With Severe Scoliosis

James J. Lamberg, DO; Sanjib D. Adhikary, MBBS; and Andrew T. McFadden, DO

- (b) Spines of patients with scoliosis typically follow Fryette type I mechanics, in which sidebending will rotate the spine toward the side of convexity when the spine is in the neutral position. To access the subarachnoid space for a lumbar puncture or neuraxial anesthetic injection, physicians need to angle the needle toward the side of convexity.
- (a) In patients with scoliosis, the spinous process will deviate toward the concave side. There will also be a narrower vertebral canal and thinner pedicles on the concave side than on the convex side. Therefore, the interlaminar spaces will be larger on the convex side and thus the physician should aim the needle slightly toward that side when attempting to access the subarachnoid space.
- (c) In moderate to severe scoliosis, the ideal needle angle will be slightly lateral to a perpendicular path from the transverse processes. This angle will be slightly toward the side of convexity, with the needle aimed where interlaminar spaces are larger.