



# 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 2015 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 July 31, 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 February 2015 issue of the JAOA.

## Identification of Musculoskeletal Disorders in Medically Underserved Regions of South America and Vietnam

Robin J. Jacobs, PhD, MSW, MS; Belinda A. Collias, DO; Arif M. Rana, PhD, EdS, MS; Elaine M. Wallace, DO; Michael N. Kane, PhD, MSW, ACSW; and David R. Boesler, DO

1. Which of the following musculoskeletal conditions was found to be most prevalent among Vietnamese participants:

- (a) knee pain
- (b) upper back pain
- (c) wrist/hand pain
- (d) shoulder pain

2. On the basis of the authors' findings, osteopathic manipulative treatment health interventions in Vietnam and South America should be heavily targeted to which of the following patient groups:

- (a) young children
- (b) women and elderly persons
- (c) male adolescents
- (d) physicians

## The Emerging Use of Platelet-Rich Plasma in Musculoskeletal Medicine

Jamil Bashir, MD; Alberto J. Panero, DO; and Andrew L. Sherman, MD

3. A 54-year-old man with medial left knee pain and abnormal sensations radiating distally along the medial aspect of the left foot and leg is referred for electromyography and nerve conduction studies (NCSs). He underwent a left total knee arthroplasty 2 months previously. Which of the following nerves is important to screen during the NCSs:

- (a) saphenous
- (b) sural
- (c) superficial peroneal
- (d) accessory deep peroneal

4. A 32-year-old man with a recent severe spinal cord injury continues to have fevers of unknown origin. You suspect heterotopic ossification as the cause of the persistent fevers. Which of the following diagnostic imaging modalities will confirm your suspected diagnosis most quickly:

- (a) radiography
- (b) bone scan
- (c) ultrasonography
- (d) computed tomography

## Use of a Novel Assay to Measure Pre- to Posttraining Palpatory Skills of First-Year Osteopathic Medical Students

Meredith S. Loh, OMS IV; Norman Gevitz, PhD; Wolfgang G. Gilliar, DO; Lauren M. Iacono, OMS IV; Min-Kyung Jung, PhD; Bhuma Krishnamachari, PhD; and Kurt Amsler, PhD

5. From the beginning to the end of their first term, first-year osteopathic medical students' ability to correctly identify the location of a dime in a stack of paper...

- (a) improved.
- (b) remained the same.
- (c) was unable to be determined.
- (d) worsened.

6. From the beginning to the end of their first term, the range of palpatory skills exhibited by first-year osteopathic medical students...

- (a) narrowed.
- (b) increased.
- (c) did not change markedly.
- (d) was unable to be determined.

## Resolution of Hypothyroidism After Correction of Somatovisceral Reflex Dysfunction by Refusion of the Cervical Spine

Murray R. Berkowitz, DO, MA, MS, MPH

7. The superior cervical paraspinal ganglia are located in the fascia of which of the following spinal levels:

- (a) C2
- (b) C4
- (c) C6
- (d) C7

8. The parasympathetic innervation of the thyroid comes from which of the following locations:

- (a) C2, C6, and C7 spinal nerves
- (b) main vagus nerve
- (c) T1-T4 spinal nerves
- (d) L1-L4 spinal nerves

## Answers to the December 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.

### Effect of Triage-Based Use of the Ottawa Foot and Ankle Rules on the Number of Orders for Radiographic Imaging

John V. Ashurst, DO; Thomas Nappe, DO; Stephanie Digiambattista, MD; Avinash Kambhampati, DO; Sarfraz Alam, MD; Michelle Ortiz, RN; Paul Delpais, RN; Bernadette Glenn Porter, BS; Anita Kurt, RN, PhD; Bryan G. Kane, MD; and Marna Rayl Greenberg, DO, MPH

- (d) Length of stay is not a factor in US physicians' negative feelings toward clinical decision rules.
- (c) Of the nearly 2 million emergency department visits each year for ankle injuries, 15% of acute ankle injuries result in clinically significant fractures.

### Diagnosis and Management of Plantar Fasciitis

John V. Thompson, DO; Sundeep S. Saini, OMS IV; Christopher W. Reb, DO; and Joseph N. Daniel, DO

- (b) Active adolescents are not at risk for plantar fasciitis. Risk factors for plantar fasciitis include long-distance running, military duty, female sex, obesity, sedentary lifestyle, middle age, and cavus or planus foot deformity.
- (c) A 24-year-old man on active military duty presents to his primary care physician with deep, dull heel pain in his right foot. A thorough history reveals that the pain started a few days before presentation after strenuous marching drills and prolonged running. The patient notes that he has difficulty walking on hard surfaces because of the pain. Physical examination reveals mild swelling of his right heel. Heel squeeze test is positive. The diagnosis is calcaneal tuberosity stress fracture. These fractures often occur in athletes and military personnel who experience substantial increases in athletic activity after long periods of rest. As with this patient, patients typically present with deep, dull heel pain worsened by walking on

hard surfaces. Physicians should be aware that a positive squeeze test suggests calcaneal stress fracture, not plantar fasciitis.

- (d) The correct counterstrain position to treat a patient with plantar fasciitis is passive flexion of the knee, plantar flexion of the ankle, and flexion of the toes.
- (d) Risks associated with corticosteroid injection for the management of plantar fasciitis include infection, plantar fascia rupture, and fat pad atrophy.

### Laser Doppler Flowmetry in Manual Medicine Research

Rafael Zegarra-Parodi, DO (England), MEd; Eric J. Snider, DO; Peter Yong Soo Park, OMS III; and Brian F. Degenhardt, DO

- (b) Laser Doppler flowmetry is a noninvasive tool that can be used to evaluate skin sympathetic nerve activity.
- (e) Laser Doppler flowmetry used in combination with a reactivity test shows an expected and reproducible decrease or increase in skin blood flow. Adding such a test in manual medicine research when evaluating the influence of a manual technique on skin blood flow has the following advantages: evaluates the skin microvascular reactivity, acts as a positive control, compares the effects of a manual technique with those following a described test, and compares the magnitude of the effects of a manual technique with those following a described test.
- (c) When applied to the skin surface, the laser beam of a laser Doppler flowmetry probe penetrates the tissues 1.0 to 1.5 mm.
- (a) When a laser Doppler flowmetry signal is expressed in a frequency domain, the highest range of frequencies is usually associated with heart activity.

### Use of Real-Time Physiologic Parameter Assessment to Augment Osteopathic Manipulative Treatment Training for First-Year Osteopathic Medical Students

Deborah M. Heath, DO; Inder Raj S. Makin, MD, PhD; Chandhana Pedapati, BS; and Jonathon Kirsch, DO

- (c) In the physiology demonstration laboratories incorporated into the first-year osteopathic principles and practice curriculum at A.T. Still University—School of Osteopathic Medicine in Arizona (Mesa), students measure pre- to post-osteopathic manipulative treatment physiologic changes on each other.

### Right Hemicolectomy in a Severely Anemic Jehovah's Witness Patient With an Extremely Low Preoperative Hemoglobin Level and the Decision to Operate

Joshua M. Yeykal, DO; Julie M. Stausmire, MSN, ACNS-BC; Mohammed Y. Ahmed, MD; and Ajith Pai, MD

- (c) A hospital's residents and attending surgeon are caring for a critically ill patient with active gastrointestinal bleeding who is refusing blood transfusion therapy because of his Jehovah's Witness faith. The health care team has no previous experience treating Jehovah's Witness patients. When they consult the institutional policy and procedure manual, no guidelines for resources or directives are available. The health care providers should attempt to locate, appraise, and assimilate evidence from scientific studies and culturally relevant resources related to Jehovah's Witnesses (eg, Jehovah's Witness Liaison Committee), severe anemia, and bloodless therapies.
- (b) The courts have repeatedly ruled that conscious, competent adult patients who are actively able to participate in medical decision making have the right to accept or refuse medical treatment. The Patient Self-Determination Act of 1990 requires institutional health care providers to ask patients if they have an advanced directive and to record patient preferences for end-of-life care in the medical record. For patients of the Jehovah's Witness faith, physicians should be aware that no-blood cards are informal documents that vary from congregation to congregation. No form is universally recognized, and it is not publically available upon request from the legal organization for Jehovah's Witnesses.