



## 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 October 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 April 30, 2017:

American Osteopathic Association  
Division of CME Policy & Accreditation  
142 E Ontario St  
Chicago, IL 60611-2864  
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AOA No. \_\_\_\_\_

Full name \_\_\_\_\_

If you mail or fax this form to the Division of CME Policy & Accreditation, 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 Policy & Accreditation 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 November 2015 issue of the JAOA.

### Accuracy and Adequacy of Computed Tomography–Guided Lung Biopsies: Experience From a Community Hospital

Barbara D. Florentine, MD;  
Richard J. Helton, DO;  
Michael M. Mitchell, DO;  
Kara E. Schmidt, DO; and  
David B. Kozlov, MD

1. The pathologist must make certain that sufficient tissue from computed tomography (CT)–guided percutaneous biopsies is available for potential molecular analysis in primary lung adenocarcinoma because:
- (a) The pathologist commonly uses the results of the molecular analysis to arrive at a diagnosis.
  - (b) Most patients are at an advanced stage of their disease, and the biopsy specimen is commonly the only tissue available for such tests.

- (c) The likelihood of requiring a repeated biopsy solely to procure enough tissue for requested molecular tests is increased.
2. Intraprocedural CT cytologic evaluation of a lung sample increases the likelihood of:
- (a) false-negative results due to sampling error
  - (b) adequacy of the sample and appropriate triage
  - (c) insufficient tissue for molecular studies
3. A team approach using a standard protocol optimizes the chance of a successful CT-guided lung biopsy specimen because:
- (a) A team approach assists oncologists in their treatment decisions.
  - (b) A team approach increases the likelihood of a false-negative result.
  - (c) A successful outcome of the procedure relies heavily on the interaction and expertise of those involved in the process.

### Quantification of Motion Palpation

Hervé Kasparian, DO (France);  
Ghislaine Signoret, DO (France);  
and Jérôme Kasparian, PhD

4. What was the magnitude of anteroposterior cranial expansion in the participants in this study?
- (a) 1 to 5  $\mu\text{m}$
  - (b) 10 to 50  $\mu\text{m}$
  - (c) 50 to 100  $\mu\text{m}$
  - (d) 100 to 500  $\mu\text{m}$

### Non-Vitamin K Antagonist Oral Anticoagulants: The Clinician's New Challenge

Brian K. Yorkgitis, PA-C, DO;  
Jeanette Zhang, MD; and  
Joseph F. Rappold, MD

5. Dabigatran is primarily excreted through which of the following systems:
- (a) hepatic
  - (b) renal
  - (c) hepatic and renal
  - (d) plasma esterase
6. For minor procedures with no clinically significant bleeding expected, how long before the procedure should non-vitamin K antagonist oral anticoagulants be discontinued?
- (a) 18 to 24 hours
  - (b) 24 hours
  - (c) 48 hours
  - (d) 72 hours
7. Which of the following combinations of drug and mechanism of action is incorrect:
- (a) edoxaban, direct thrombin inhibitor
  - (b) dabigatran, direct thrombin inhibitor
  - (c) apixaban, factor Xa inhibitor
  - (d) rivaroxaban, factor Xa inhibitor

8. Which of the following agents requires a period of at least 5 days of parenteral anticoagulation before initiating management of venous thromboembolism?

- (a) rivaroxaban  
 (b) apixaban  
 (c) warfarin  
 (d) dabigatran

#### **Peroneus Longus Rupture at Its Origin Managed With Platelet Rich Plasma**

Britney Else, DO;  
 T. Jeffery Emel, MD;  
 Thomas Kern, MD;  
 Lamont E. Cavanagh, MD;  
 and Thomas W. Allen, DO, MPH

9. Tears of the peroneal muscle-tendon complex rarely occur at which of the following locations?

- (a) the cuboid bone  
 (b) the lateral calcaneus  
 (c) the muscle-tendon junction  
 (d) the lateral malleolus

## Answers to the September 2015 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.

#### **Food Insecurity and Its Association With Central Obesity and Other Markers of Metabolic Syndrome Among Persons Aged 12 to 18 Years in the United States**

David H. Holben, PhD, RDN, LD, and  
 Christopher A. Taylor, PhD, RDN, LD

- (d) Food insecurity can have serious effects on health and nutrition outcomes such as physical impairment related to insufficient food, psychological issues caused by lack of access to food, and sociofamilial disturbances.
- (a) Having a waist circumference greater than the 90th age- and sex-specific percentile is an indicator of metabolic syndrome that is positively related to household food insecurity.

#### **Cystic Fibrosis: A Novel Pharmacologic Approach to Cystic Fibrosis Transmembrane Regulator Modulation Therapy**

Deborah Virant-Young, PharmD;  
 Justin Thomas, DO; Sarah Woiderski,  
 DO; Michelle Powers, OMS III;  
 Joseph Carlier, OMS III; James McCarty,  
 OMS III; Tyler Kupchick, OMS III;  
 and Anthony Larder, OMS III

- (a) Premature degradation is the most common known genetic defect of cystic fibrosis transmembrane regulator.
- (b) Gentamicin induces read-through of stop codons that can assist in restoring function of cystic fibrosis transmembrane regulator protein.

- (d) Ataluren, lumacaftor, and ivacaftor are most beneficial for treating patients with type I, type II, and type III mutations, respectively.

#### **Effect of Table Trainer-to-Student Ratios on Outcome in Student Assessments of Cervical Muscle Energy Techniques**

Karen T. Snider, DO;  
 Dennis J. Dowling, DO;  
 Michael A. Seffinger, DO;  
 Millicent K. Channell, DO;  
 Sheldon C. Yao, DO;  
 Sharon M. Gustowski, DO, MPH;  
 Jane C. Johnson, MA; and  
 Martin J. Pryor, DO, MPH

- (a) Cervical muscle energy osteopathic manipulative treatment techniques were taught to first-year osteopathic medical students using different table trainer-to-student ratios—1:4, 1:8, or 1:16. The ratio had no effect on students' written assessment scores obtained immediately after the workshop.
- (b) When students demonstrate cervical muscle energy techniques on each other in pairs during a practical assessment, students who demonstrated the techniques second consistently scored significantly higher in those assessments than those who demonstrated the techniques first.

*(continued on the next page)*

### Female Adolescent With Quadricuspid Aortic Valve

Cam Long Choji, DO; Nemalan Selvaraj, DO; and John Prather, MD, PhD

8. (d) In patients with quadricuspid aortic valve, the most common indication for surgical valve replacement is progressive development of aortic valve regurgitation with left ventricular dysfunction and symptoms. The most common functional abnormality associated with quadricuspid aortic valve is the progressive development of regurgitation. Anatomically, the ideal configuration is a tricuspid aortic valve. With the presence of an additional cusp, the coaptation becomes suboptimal and predominately leads to regurgitation and subsequent heart failure symptoms.

### Immature Teratoma Associated With Anti-N-Methyl-D-Aspartate Receptor Encephalitis

Yuliya Malayev, DO, MPH; Jared Alberts, MD; Mary Ann Verardi, MD; Anissa R. Mattison, DO; and Sherwin Imlay, MD

9. (d) The next best step in diagnostic investigation is lumbar puncture and toxicology profile. The importance of ruling out organic causes of encephalopathy is emphasized when comprehensive history and physical examination rule out structural or mental illness.
10. (e) The next best steps in management are history, physical examination, lumbar puncture, and toxicology profile. Although a possibility exists that this is a recurrence of her anti-N-methyl-D-aspartate receptor

encephalopathy, this investigation must follow the same stepwise manner. Common causes such as organic brain lesions or suggestive behavior need to be evaluated. If the history and physical examination do not reveal any possible causes of her symptoms, and the lumbar puncture and toxicology profile are negative, then assessment for anti-N-methyl-D-aspartate receptor encephalitis needs to be performed with pelvic imaging, antibody titers, and possible empiric treatment with first-line therapy or possible chemotherapy with cyclophosphamide and rituximab.

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