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*The mission of The AAO Journal is to facilitate a forum, with a sense of belonging, ensuring the opportunity for the present osteopathic community and its supporters to honor the past accomplishments, promote the osteopathic tenets, and advance osteopathic research and its influence within the medical field.*

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# AAOJ Submission Checklist

## Manuscript Submission

- ☐ Email submission to [editoraaoj@gmail.com](mailto:editoraaoj@gmail.com) or mail on a flash drive or CD to the AAOJ managing editor, American Academy of Osteopathy, 3500 DePauw Blvd, Suite 1100, Indianapolis, IN 46268-1136
- ☐ Manuscript formatted in Microsoft Word for Windows (.doc, .docx), text document format (.txt), or rich text format (.rtf)

## Manuscript Components

- ☐ Cover letter addressed to the AAOJ's editor-in-chief with any special requests (e.g., rapid review) noted and justified
- ☐ Title page, including the authors' full names, financial and other affiliations, and disclosure of financial support related to the original research or other scholarly endeavor described in the manuscript
- ☐ "Abstract" (see "Abstract" section in ["AAOJ Instructions for Contributors"](#) for additional information)
- ☐ "Methods" section
  - The name of the public registry in which the trial is listed, if applicable
  - Ethical standards, therapeutic agents or devices, and statistical methods defined
- ☐ Four multiple-choice questions for the continuing medical education quiz and brief discussions of the correct answers
- ☐ Editorial conventions adhered to
  - Terms related to osteopathic medicine used in accordance with the [Glossary of Osteopathic Terminology](#)
  - Units of measure given with all laboratory values
  - On first mention, all abbreviations other than measurements placed in parentheses after the full names of the terms, as in "American Academy of Osteopathy (AAO)"
- ☐ Numbered references, tables, and figures cited sequentially in the text
  - Journal articles and other material cited in the "References" section follow the guidelines described in the most current edition of the [AMA Manual of Style: A Guide for Authors and Editors](#)
  - References include direct, open-access URLs to posted, full-text versions of the documents, preferably to digital object identifiers (DOIs) or to the original sources
  - Photocopies provided for referenced documents not accessible through URLs
- ☐ "Acknowledgments" section with a concise, comprehensive list of the contributions made by individuals who do not merit

authorship credit, as well as permission from each individual to be named

- ☐ For manuscripts based on survey data, a copy of the original validated survey and cover letter

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## Publication in the JAOA

Please include permission to forward the manuscript to *The Journal of the American Osteopathic Association* if the AAOJ's editor-in-chief determines that the manuscript would likely benefit osteopathic medicine more if the JAOA agreed to publish it.

Questions? Contact [editoraaoj@gmail.com](mailto:editoraaoj@gmail.com).

# Continuing Medical Education

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Quiz answers will be published in the next issue of *The AAOJ*.

Because of an editorial oversight, the September 2021 CME quizzes are included in this issue, and both September and December 2021 answers will be listed in March, 2022. Quiz answers to the March 2021 quizzes are in this issue.

Submit CME quizzes online at

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## AAOJ Call for Submissions

Time is precious and article writing is often triaged for busy physicians. In an effort to help guide the journal and stimulate interest in academic and scholarly activity, we are providing some broad topics that can be “reserved” for you. These are by no means the only topics for the journal, but it helps to eliminate the writer's block that so many of us may face.

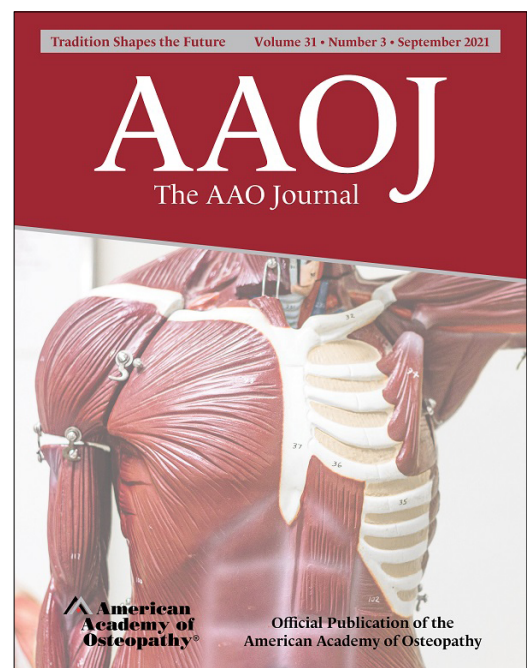
Below are topics available to reserve if you would like to support your portfolio with academic writing:

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- Osteopathic approaches for the cardiac patient
- The body triune: osteopathic treatment of mind and spirit for today's patient
- Beyond Spencer technique: OMT for shoulder overuse
- Using OMT to treat patients with long-term side effects of radiation for cancer treatment

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# March 2021 Continuing Medical Education Answers

**Scholar 12: Beta Trial of an Osteopathic Research Cultural Development Computer Application** by Marija J. Rowane, OMS III; Daniel E. Hellmann, PharmD, OMS III; Rachel A. Branning, OMS III; Heather M. Cola, OMS III; Jude M. Fahoum, OMS II; Brittany M. Snyder, PharmD, BCPS, OMS III; Amber M. Healy, DO; Xiaojun Qi-Lytle, MD, PhD; Michael P. Rowane, DO, MS, FAAO, FAAFP; Mark A. Terrell, EdD; Robert W. Hostoffer, Jr., DO, LhD, MSMEd, MBA, FACOP, FAAP, FCCP, FACO

1. The Scholar 12 app/course has twelve units. Which of the following titles describe the first unit?  
**Answer: B.** “Laddered Mentorship” is the title of Scholar 12 Unit 1. Unit 1 is “The Fun of Scholarship” (a). Unit 3, “The Query,” teaches hypothesis development. Options (d) and (e) are written in the IRB application (Unit 4), grant (Unit 5), manuscript development (Unit 10).
2. True/False: The Query in the Scholar 12 app/course refers to the hunt for feasible IRB applications.  
**Answer: False.** The Query inquires, “What will be our hypothesis be to start our scholarly work?”
3. The fear of starting a research project by a student or resident is all of the following except:  
**Answer: E.** Scholar 12 is focused on research development. Competency with fundamental computer applications is expected prior to start and not covered in this coursework.
4. A proposed strategic roadmap to recover our profession by means of increased research would require all of the following except:  
**Answer: E.** While charts, graphs, and tables may be among research data and publications, the “strategic roadmap” to reach those numbers and printed visualizations of research requires implementation of all the other answer options.

**FAAO Thesis: An Osteopathic Approach to Patients with Degenerative and Herniated Discs** by Robert Kessler, DO, FAAO, C-SPOMM, C-ABOFP; Carol Haase, DO; Dayton Dean, OMS III

1. Which of the following movement patterns increases the risk of disc disease the most?  
**Answer: A.** Hyper flexion with rotation
2. A patient presents to your office with back pain. You find increased lumbar lordosis. A treatment regimen decreasing this lordosis would accomplish which of the following?  
**Answer: B.** Increases diffusion of nutrients
3. A patient presents to your office with a degenerated and herniated L4-5 disc. There is spinal and foraminal stenosis secondary to facet hypertrophy and the herniated disc material. Decreasing lumbar lordosis in this patient would be expected to:  
**Answer: D.** Reduce connective tissue growth factor at the ligamentum flavum

**Integrating Osteopathic Evaluation and Treatment in a Case of Opioid-Induced Hyperalgesia** by Nicolette O. Rosendahl, DO

1. A patient experiencing an increased pain from a stimulus that normally provokes pain resulting in a suprathreshold stimulation. Which of the following terms best describes this physiologic process?  
**Answer: A.** Hyperalgesia
2. What daily milligram morphine equivalent (MME) dose the CDC recommends if opioids are prescribed at the lowest affective dose before justification is needed to titrate to a higher dose?  
**Answer: B.** 90.
3. Which of the following types of nerve fibers are a part of the small fiber system referred to as the primary afferent nociceptors (PANs) which are found in in all areas of the body except the brain, liver and lung parenchyma?  
**Answer: C.** Fibers. Delta and fibers are the two types that make up PANs.
4. A 2017 study in JAMA noted the incidence of prescription opioid medication prescriptions given at discharge after traumatic injury for moderate to severe trauma patients was in what percentage range?  
**Answer: C.** 51-75%. The study noted 54.3%

**Crochet the Pain Away: A Case Study of Osteopathic Manipulation for Cervical Rib Induced Thoracic Outlet Syndrome** by Joshua A. Herring, DO, Capt, MC; Gabriela N. Soto; Sabrina Silver, DO, CAQSM

1. Dysfunction in which of the following has not been associated with thoracic outlet syndrome?  
**Answer: D.** Pectoralis Major. All of the others were noted to be associated with thoracic outlet syndrome. The pectoralis minor is also associated with this condition but not the pectoralis major.
2. In this article, we describe the correction of thoracic outlet syndrome symptoms by treating which of the following?  
**Answer: B.** Depressed left cervical rib. All other dysfunctions were treated prior to treatment of the cervical rib. Patient did not note improvement of symptoms until after treatment of the cervical rib.
3. What type of osteopathic manipulative technique was utilized to treat the somatic dysfunction causing thoracic outlet syndrome in our patient?  
**Answer: A.** Direct myofascial release. Direct myofascial release with respiratory assistance was utilized for treatment of the cervical rib in this case.
4. Which of the following groups of muscles tends to attach to cervical ribs?  
**Answer: E.** Scalene minimus. Scalene minimus, or the accessory scalene, is an accessory muscle that has been found to be attached to cervical ribs.

# September 2021 Continuing Medical Education

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## CME Certification of Home Study

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**Name of article:** “Single Osteopathic Manipulative Treatment Session Eliminates Percutaneous Coronary Intervention-Induced Upper Thoracic Pain in Elderly Male”

**Author:** Patricia Hoffman, DO; Dimitry Belogorodsky, DO; and Lauren Noto-Bell, DO

**Publication:** *The AAO Journal*, Vol. 31, No. 3, September 2021, pages 5-8

1. What were the mechanisms of action that allowed for facilitation between the stent placement and the cardiac viscera in this case report to occur?
  - a. Physiologic reflex
  - b. Interneurons
  - c. A maintained and heightened excitatory response
  - d. All of the above
2. Which of the following characteristics is thought to be true about somato-somatic reflexes?
  - a. Posturally related
  - b. Poorly localized
  - c. Span multiple levels
  - d. Constant stimulation
3. Of the following, after which duration of post-CABG or -PCI bed rest increases the risk of developing back pain?
  - a. 1 hour
  - b. 2 hours
  - c. 3 hours
  - d. 4 hours
4. Which one of the following is the standard of care for untreated three-vessel or left main coronary artery disease?
  - a. Percutaneous Coronary Intervention (PCI)
  - b. Thrombolytic therapy
  - c. Coronary Artery Bypass Grafting (CABG)
  - d. Heart valve surgery

**Name of article:** “Osteopathic Manipulative Treatment in Patients with Anxiety and Depression: A Pilot Study”

**Author:** Eneida Miranda, DO; Jennifer Giza, DO; Eleonora Feketeova, MD; Cristian Castro-Nunez, DO; Ulrick Vieux, DO, MS; and Minh-Duc Huynh, DO

**Publication:** *The AAO Journal*, Vol. 31, No. 3, September 2021, pages 9-16

1. How does touch play a role in one's physiological and psychological development?
  - a. By linking sensation to perception and feelings
  - b. As a primary sense it allows for translation of peripheral stimuli into subjective experience and behavioral responses
  - c. Touch plays no role in one's physiological and psychological development
  - d. Both a and b are correct
2. Why should caution be taken when considering touch in psychiatric patients?
  - a. Caution is not necessary with psychiatric patients
  - b. To avoid crossing boundaries
  - c. To enhance communication
3. In what settings has touch has been shown to be appropriate when dealing with psychiatric patients?
  - a. In any setting
  - b. In emergency settings only
  - c. In cases of a suicidal crisis, psychotic breakdown, withdrawal, and violent situations
4. How might OMT influence behavioral conditions?
  - a. Through the correlation between the nervous system, behavior, and OMT's effect on neural transmission
  - b. OMT has no influence over behavioral conditions
  - c. Through restoration of homeostasis
  - d. Both a and c are correct

# December 2021 Continuing Medical Education

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**Name of article:** "CORRECTION: Conductive Hearing Loss: A Case Report"

**Author:** Caroline A. Lloyd, DO; Brianne L. Wehner, DO; and Regina K. Fleming, DO

**Publication:** *The AAO Journal*, Vol. 31, No. 4, December 2021, pages 11-16

1. Conductive hearing loss can be caused by which of the following?
  - a. Middle Ear Effusion
  - b. Problem with the cochlea
  - c. Problem with the vestibulocochlear nerve
2. For school-age children, ASHA guidelines recommend a maximum screening level of how many dB?
  - a. 10 dB
  - b. 20 dB
  - c. 25 dB
  - d. 30 dB
3. Type D pattern tympanogram indicates which of the following?
  - a. Otosclerosis
  - b. Eustachian tube dysfunction
  - c. Middle ear effusion
  - d. Space occupying lesion
4. Type C pattern tympanogram indicates which of the following?
  - a. Otosclerosis
  - b. Eustachian tube dysfunction
  - c. Middle ear effusion
  - d. Space occupying lesion

**Name of article:** "A Network Meta-Analysis of Randomized Controlled Trials Directed at Treating Lateral Epicondylalgia"

**Author:** James William Price, DO, MPH

**Publication:** *The AAO Journal*, Vol. 31, No. 4, December 2021, pages 17-23

1. Lateral epicondylitis is best described as which of the following.
  - a. Chronic inflammation of the extensor carpi radialis brevis origin.
  - b. Fibroblastic hypoplasia followed by vascular hyperplasia of the common extensor tendon.
  - c. A non-inflammatory, degenerative and avascular condition of the common extensor tendon.
  - d. The accumulation of internal macro-tears within the extensor carpi radialis brevis origin, leading to an intrac-table inflammatory cascade.
2. The results of this model suggest that there is sufficient evidence to support the use of which of the following treatments.
  - a. Kinesiotape
  - b. Physical therapy
  - c. Therapeutic ultrasound
  - d. Platelet rich plasma injection
3. The results of the mixed treatment comparison suggest that this technique is the most effective for reducing lateral epicondylitis related pain.
  - a. Nonsteroidal anti-inflammatory drugs
  - b. Articulation technique
  - c. Muscle energy technique
  - d. Local corticosteroid injection
4. Based on the results of this study, the therapeutic goal of lateral epicondylitis should be to do which of the following.
  - a. To decrease inflammation
  - b. To splint the area and limit mobility
  - c. To increase extensor carpi radialis brevis tone
  - d. To increase arterial, venous and lymphatic flow

# December 2021 Continuing Medical Education

**Name of article:** “Decreasing Headache Pain Secondary to a Subarachnoid Hemorrhage with the Use of Osteopathic Manipulative Medicine”

**Author:** Precious L. Barnes DO, MS; Hillary Haas, DO; Bryan Beck, DO

**Publication:** The AAO Journal, Vol. 31, No. 4, December 2021, pages 34-38

1. True or False. Controlling headaches caused by subarachnoid hemorrhage can be difficult.
  - a. True
  - b. False
2. The best way to treat headache pain caused by a subarachnoid hemorrhage is:
  - a. Opioids
  - b. Non opioids such as Tylenol
  - c. Osteopathic manipulative treatment only
  - d. There are no set standardized treatment protocols established at this time
3. The sudden headache onset of headache caused by increased intracranial pressure can be accompanied by which of the following symptoms?
  - a. Nausea and vomiting
  - b. Photophobia
  - c. Loss of consciousness
  - d. All of the above
4. True or False. The efficacy of the use of OMM and OMM in the cranial field have not been shown to be suited to treating migraine and non-migraine headaches.
  - a. True
  - b. False

**Name of article:** “Traditional Osteopathy and the General Osteopathic Treatment: A Historical Concept and a Modern Application”

**Author:** Pascal J. Grolaux, DO (B-UK), MOst (CH); Tim J. Sparrow, DO (UK); and François Lalonde, PhD (C) DO

**Publication:** *The AAO Journal*, Vol. 31, No. 4, December 2021, pages 39-46

1. GOT encompasses a series of gentle passive rhythmic long lever based appendicular, pelvic, spinal mobilization procedures defined by basic principles. What are those principles?
  - a. Routine, adjustment, and rhythm
  - b. Routine, rotation, and adjustment
  - c. Routine, rotation, and rhythm
  - d. Routine, adjustment, rotation, and rhythm
2. GOT can be used with patients as:
  - a. Assessment
  - b. Treatment
  - c. Re-assessment
  - d. Integration of treatment
  - e. All of the above
  - f. None of the above
3. GOT is considered vague and imprecise.
  - a. True
  - b. False
4. Which osteopath was a pioneer in setting the basics of GOT in an academic setting?
  - a. AT Still
  - b. JM Littlejohn
  - c. P McConnell
  - d. J Wernham
  - e. M Waldman

# December 2021 Continuing Medical Education

**Name of article:** “An Osteopathic Approach to Complex Regional Pain Syndrome (CRPS)”

**Author:** Navneet Deol, MS, DO; Victor Nuño, DO; Molly Schuman, MS, OMS IV; Cristian Contreras, MS, OMS II

**Publication:** *The AAO Journal*, Vol. 31, No. 4, December 2021, pages 47-54

1. Which of the following is NOT one of the Five Models of Osteopathic Medicine?
  - a. Behavioral
  - b. Biomedical
  - c. Neurological
  - d. Integumentary
  - e. Respiratory-Circulatory
2. True or False. Estrogen has no effect on pain threshold.
  - a. True
  - b. False
3. Complex Regional Pain Syndrome is found with greater incidence in \_\_\_\_\_ (fill in the blank).
  - a. Children
  - b. Males
  - c. Females
  - d. Elderly
  - e. Infants
4. Complex Regional Pain Syndrome is diagnosed primarily through:
  - a. X-ray
  - b. Patient history and clinical examination
  - c. Blood tests
  - d. Ultrasound
  - e. Magnetic resonance imaging

**Name of article:** “Effects of Compression of the 4th Ventricle (CV4) Treatment on Medical Student Anxiety”

**Author:** Edward Goering DO; Maranda Herner DO; Meagan Smith DO; Mary Galka OMS IV; Samuel Kammerzell DO; Kaitlin Best DO; Pamela Anderson DO; and Michelle Steinauer PhD

**Publication:** *The AAO Journal*, Vol. 31, No. 4, December 2021, pages 55-60

1. Following treatment with compression of the 4th ventricle (CV4) technique, which of the following outcomes were statistically significant in this study?
  - a. Reduction in blood pressure
  - b. Reduction in heart rate
  - c. Reduction in HAM-A score
  - d. Reduction in respiratory rate
2. Compression of the 4th ventricle (CV4) is a manual medicine technique that is thought to increase parasympathetic activity and decrease overall sympathetic tone. What system is theorized to be activated resulting in down regulation of the sympathetic arm of the autonomic nervous system?
  - a. Endocrine system
  - b. Circadian control system
  - c. Integumentary system
  - d. Endocannabinoid system
3. What are some of the reported effects of the CV4 technique found in the literature?
  - a. Elevated heart rate
  - b. Elevated blood pressure
  - c. Decreased sleep latency
  - d. Decreased gastric emptying
4. Which of the following is an accurate component of CV4 treatment as described in this article?
  - a. The operator's thenar eminences contact the lateral angles of the occiput just medial to the occipitomastoid suture.
  - b. The operator encourages the flexion phase of the cranial rhythmic impulse by gently compressing the lateral angles of the occiput and discourages the extension phase.
  - c. The operator's finger pads sink into the suboccipital muscle belly, and the operator applies gentle traction.
  - d. The operator's index fingers are on the greater wing of the sphenoid and 5th fingers on the lateral angle of the occiput.