

# American Academy of Osteopathy®

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- Subscription rate for institutions: \$250 per year.

ISSN 2375-5717 (online)

# AAOJ

The AAO Journal

Official Publication of the American Academy of Osteopathy®

TRADITION SHAPES THE FUTURE • VOLUME 32 • NUMBER 1 • MARCH 2022

*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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# Continuing Medical Education

## Continuing Medical Education Quizzes

The purpose of the continuing medical education quizzes are to provide a convenient means of self-assessing your comprehension of the scientific content in each article.

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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:

- Osteopathic approaches to treating patients with pelvic dysfunctions
- 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

If you are interested in any of these topics, send an email to [communications@academyofosteopathy.org](mailto:communications@academyofosteopathy.org) and reserve your topic today. Manuscripts should be emailed to [editoraaoj@gmail.com](mailto:editoraaoj@gmail.com) within three months of reserving a topic. See the *AAOJ*'s [Instructions for Contributors](#) for more information on submitting manuscripts.

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# December 2021 Continuing Medical Education Answers

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

Authors: 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?

**Answer:** A. Middle Ear Effusion. There are two main types of hearing loss; conductive and sensorineural. Conductive hearing loss is caused by decreased sound transmission from the external ear to the middle ear, including cerumen impaction, MEE, and trauma. Sensorineural hearing loss results from a problem with the cochlea or vestibulocochlear nerve.

2. For school-age children, ASHA guidelines recommend a maximum screening level of how many dB?

**Answer:** B. 20 DB. For school-age children it is important to identify minimal hearing impairments and ASHA guidelines recommend a maximum screening level of 20 dB to catch any impairment early.

3. Type D pattern tympanogram indicates which of the following?

**Answer:** Otosclerosis. There are four basic patterns associated with this diagnostic. "Type A" pattern tympanograms indicate normal middle-ear pressures. Within the type A pattern, there are two subtypes; type As and type Ad. Type As shows a peak with decreased amplitude and type Ad shows an uncharacteristically high pressure peak.<sup>11</sup> Type B pattern is flat indicating no maximal point of compliance and is often found in association with middle ear effusion and space occupying lesions. Type C pattern is indicative of negative pressure in the middle ear and is commonly found in conjunction with eustachian tube dysfunction. Lastly, Type D pattern is often seen with otosclerosis or with normal hypermobile tympanic membranes.<sup>11</sup>

4. Type C pattern tympanogram indicates which of the following?

**Answer:** B. Eustachian tube dysfunction. There are four basic patterns associated with this diagnostic. "Type A" pattern tympanograms indicate normal middle-ear pressures. Within the type A pattern, there are two subtypes; type As and type Ad. Type As shows a peak with decreased amplitude and type Ad shows an uncharacteristically high pressure peak.<sup>11</sup> Type B pattern is flat indicating no maximal point of compliance and is often found in association with middle ear effusion and space occupying lesions. Type C pattern is indicative of negative pressure in the middle ear and is commonly found in conjunction with eustachian tube dysfunction. Lastly, Type D pattern is often seen with otosclerosis or with normal hypermobile tympanic membranes.<sup>11</sup>

## **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 17-33

1. Lateral epicondylitis is best described as which of the following.

**Answer:** C. A non-inflammatory, degenerative and avascular condition of the common extensor tendon. The accumulation of internal microtears leads to a cellular response characterized by a noninflammatory, degenerative and avascular process termed angiofibroblastic tendinosis.

2. The accumulation of internal microtears leads to a cellular response characterized by a noninflammatory, degenerative and avascular process termed angiofibroblastic tendinosis.

**Answer:** B. Articulation technique. Articulatory technique decreases activity within alpha motor neurons thus decreasing resting muscle tone, soft tissue stiffness, contracture and pain. This modality also treats co-morbid radial head dysfunction and relieve extensor carpi radialis brevis tendon impingement on the lateral edge of the capitellum.

3. The results of this model suggest that there is sufficient evidence to support the use of which of the following treatments.

**Answer:** A. Kinesiotape. Kinesiology taping is believed to lift the skin and increase the subdermal interstitial space, thus increasing blood flow and lymphatic circulation akin to myofascial release.

4. Based on the results of this study, the therapeutic goal of lateral epicondylitis should be to do which of the following.

**Answer:** D. To increase arterial, venous and lymphatic flow. The model suggests that the most effective modalities for improving lateral epicondylalgia decrease muscle tone and improve circulation. The evidence supports the theory that the underlying pathology of lateral epicondylitis is related to ischemic zones within the common extensor tendon.

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

Authors: 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.

**Answer:** True.

2. The best way to treat headache pain caused by a subarachnoid hemorrhage is...

**Answer:** D. There are no set standardized treatment protocols established at this time.

3. The sudden onset of headache caused by increased intracranial pressure can be accompanied by which of the following symptoms?

**Answer:** 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.

**Answer:** False. The efficacy of OMM and OMM in the cranial field HAVE been shown to be suited for treating migraine and non-migraine headaches.

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

Authors: Pascal J. Grolaux, DO (B-UK), MOst (CH); Timothy J. Sparrow, DO, BSc(Hons) Osteopathic Medicine (UK); and François Lalonde, PhD (CA), DO (CA)

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 mobilisation procedures defined by basic principles, what are those principles?

# December 2021 Continuing Medical Education Answers

**Answer:** C. Routine, rotation, and rhythm. Indeed, the GOT encompasses a series of gentle passive rhythmic long lever based appendicular, pelvic, spinal mobilisation procedures defined by three basic principles: routine, rotation and rhythm.

2. GOT can be used with patient as:

**Answer:** E. All of above. John Wernham explained that the Body Adjustment is an essential integrative method of treatment which represents the Osteopathic General Treatment's concept of Littlejohn, commonly named the General Osteopathic Treatment (GOT) by European osteopaths. In 1922, Mary L. LeClere, MD, DO, partisan of the general treatment, described it as containing diagnosis, relaxation, and specific correction all in one and the same maneuvers. The GOT is used in an assessment and diagnosis routine that may help the physician to identify and adjust somatic dysfunction.

3. True or False: GOT is considered vague and imprecise.

**Answer:** False. Mervyn Waldman, DO, a former Wernham' student, reminds us that the term 'general' never means vague or imprecise, indeed, efficient tissue and body analysis as well as any subsequent treatment demands accuracy and specificity of focus.

4. Which osteopath was a pioneer in setting the basics of GOT in an academic setting?

**Answer:** D. J Wernham. Based on Littlejohn's teaching, John Wernham developed the GOT. He was considered to be the father of the Body Adjustment (BA). The BA is an essential integrative method of treatment which represents the Osteopathic General Treatment's concept of Littlejohn, commonly named the General Osteopathic Treatment. The GOT approach developed in Europe through John Wernham publishing, college, clinic and initial co-founding of the Institute of Applied Technique circa 1956.

## **Name of article: "An Osteopathic approach to Complex Regional Pain Syndrome (CRPS)"**

Authors: 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?

**Answer:** D. Integumentary

2. Complex Regional Pain Syndrome is found with greater incidence in \_\_\_\_\_(fill in the blank).

**Answer:** C. Females

3. Complex Regional Pain Syndrome is diagnosed primarily through:

**Answer:** B. Patient history and clinical examination

4. True or False: Estrogen has no effect on pain threshold.

**Answer:** False.

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

Authors: 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?

**Answer:** B statistically significant average reduction in heart rate, but not in blood pressure or HAM-A scores, was found after CV4 treatment compared to sham treatment. While a significant difference was found between CV4 and sham treatments for post-treatment heart rate reductions, the reduction was minimal, with changes of 3 bpm in CV4 group and 1 bpm in sham. This invites the question of clinical significance since a healthy adult heart rate ranges from 60 to 100 bpm. There was no statistically significant reduction in blood pressure. The CV4 group HAM-A scores did decrease more than the sham group's, however the difference was not statistically significant.

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?

**Answer:** D. Endocannabinoid system. It has been theorized the endocannabinoid system, a widespread neuromodulatory system, is activated as well, causing downregulation of the sympathetic arm of the autonomic nervous system.

3. What are some of the reported effects of the CV4 technique found in the literature?

**Answer:** C. Decreased sleep latency. Due to a proposed reset of the autonomic nervous system. Answer choices A, B, and D are opposite of the respective reported effects of the CV4 technique. To the treatment position's close proximity to the Vagus nerve, CV4 technique stimulates a parasympathetic response resulting in increased GI motility, decreased blood pressure, and decreased heart rate. The findings in this study inspire further research in this area with respect to physiologic outcomes of CV4 treatment.

4. Which of the following is an accurate component of CV4 treatment as described in this article?

**Answer:** A. The operator's thenar eminences contact the lateral angles of the occiput just medial to the occipitomastoid suture. In the CV4 technique, the operator's thenar eminences contact the lateral angles of the occiput just medial to the occipitomastoid suture, and the operator encourages the extension phase of the cranial rhythmic impulse by gently compressing the lateral angles of the occiput and discourages the flexion phase. Compression is continued for a few minutes until a softening is felt in the suboccipital area, thoracic diaphragmatic breaths become more even, and there is an "idling of the motor" known as the still point.



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**Name of article:** "Student Perception of an OMM Virtual Practical Examination: In the Setting of Social Distancing"

**Author:** Gabriel N. Berenbeim, OMS IV; Isaac A. Metzler, OMS IV; Drew D. Lewis, DO, FAAO; Chunfa Jie, PhD

**Publication:** *The AAO Journal*, Vol. 32, No. 1, March 2022, pages 13-17

1. What is a major shortcoming of the virtual practical examination?
  - a. Lack of ability to assess a student's diagnosis for correctness.
  - b. Lack of ability to assess psychomotor skills.
  - c. Lack of ability to assess communication skills.
  - d. Lack of ability to assess teaching skills.
2. Which statement is not true regarding individualized feedback?
  - a. Feedback is important for the students perceived self-growth in physician related skills, to promote positive and desirable development, and for learning more about the student's true level of knowledge and skills.
  - b. Unique to practical examinations (virtual practical examinations or standard in-person practical examinations), compared to written examinations, is the individualized feedback that can consist of positive feedback and constructive criticism related to the nuances of executing osteopathic manipulative treatment.
  - c. The results demonstrate that individualized feedback was uncompromised during the virtual practical examinations.
  - d. The results demonstrate that individualized feedback was significantly compromised during the virtual practical examinations.
3. Which statement is true regarding the results of the survey question, "I put significantly more time and effort into preparing for the virtual practical than I did preparing for the in-person practical"?
  - a. Otosclerosis
  - b. Eustachian tube dysfunction
  - c. Middle ear effusion
  - d. Space occupying lesion
4. The props that were used in this virtual practical examination included:
  - a. A long sleeve shirt and a pair of pants.
  - b. A pair of pants and a paper sacrum.
  - c. A plastic skeleton and a paper sacrum.
  - d. A long sleeve shirt and a plastic skeleton.

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**Author:** Gabriel Berenbeim, OMS IV; Megan Ellis, OMS IV; Kaitlyn Finneran, OMS IV; Isaac Metzler, OMS IV; Drew Lewis, DO, FAAO; Jie Chunfa, PhD

**Publication:** *The AAO Journal*, Vol. 32, No. 1, March 2022, pages 18-31

1. Which of the following is a correct description of predoctoral OMM Fellowship programs?
  - a. Programs are two years long and involve teaching other medical specialties OMM.
  - b. Programs are an additional year of medical training that frequently involves direct patient care and educating medical students on the utilization of OMM.
  - c. Programs are an additional year of medical training that focuses on research pertaining to OMM.
  - d. Programs are an additional year of medical training for all medical students enrolled in osteopathic medical colleges.
2. Which of the following aspects of the DMU predoctoral OMM Fellowship did the majority of graduates perceive little to no improvement in their skills?
  - a. Teaching skills
  - b. Medical skills
  - c. Leadership skills
  - d. Research skills
3. What percentage of osteopathic physicians report NOT using OMT on their patients in the study by Healy compared to the graduates of the DMU predoctoral fellowship?
  - a. Osteopathic physicians who do NOT provide OMT 5%; DMU pOMMF graduates who do NOT provide OMT 15%
  - b. Osteopathic physicians who do NOT provide OMT 57%; DMU pOMMF graduates who do NOT provide OMT 16%
  - c. Osteopathic physicians who do NOT provide OMT 57%; DMU pOMMF graduates who do NOT provide OMT 77%
  - d. Osteopathic physicians who do NOT provide OMT 75%; DMU pOMMF graduates who do NOT provide OMT 5%
4. What were the top 4 leadership roles DMU predoctoral OMM Fellowship graduates held?
  - a. Chief Resident, Clinical Preceptor, Department Chair, Medical Director
  - b. Chief Resident, Clinical Preceptor, Guest Lecturer, Chief Resident, Dean
  - c. Department Chair, Medical Director, Licensing Boards Member, Leadership in National Organization
  - d. Guest Lecturer, Dean, Licensing Boards Member, Leadership in National Organization

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**Author:** Megan M. Ellis, OMM Fellow, OMS IV; Drew D. Lewis DO, FAAO

**Publication:** *The AAO Journal*, Vol. 32, No. 1, March 2022, pages 32-33

1. A patient reports pain and difficulty with their forearm/elbow motion after screwing in a lightbulb. You find asymmetry of motion with ease of motion in supination and restriction of motion in pronation. No pain with flexion or extension. What is the *most likely* dysfunction causing these findings?
  - a. Anterior Radial Head Somatic Dysfunction
  - b. Humeroulnar Somatic Dysfunction
  - c. Medial Olecranon Tenderpoint
  - d. Partially-dislocated (pulled elbow) Radial Head
  - e. Posterior Radial Head Somatic Dysfunction
2. Patient presents with an acute injury of the arm after trying to catch themselves during a fall forward on their outstretched hand. You find asymmetry of motion with ease of motion in pronation and restriction of motion in supination. No pain with flexion or extension. What is the MOST LIKELY dysfunction causing these findings?
  - a. Anterior Radial Head Somatic Dysfunction
  - b. Humeroulnar Somatic Dysfunction
  - c. Medial Olecranon Tenderpoint
  - d. Partially-dislocated (pulled elbow) Radial Head
  - e. Posterior Radial Head Somatic Dysfunction
3. Why are radial head somatic dysfunctions quite significant dysfunctions for the upper limb?
  - a. Resultant fascial strain can create a tourniquet effect causing congestion of fluids
  - b. They particularly limit the flexion and extension mechanics of the elbow
  - c. They create particular varus and valgus strain across the stabilizing structures of the elbow
  - d. The afferent signals to the spinal cord create significant dysfunctions in the thoracolumbar spine region.
4. Choose the best answer. Effective treatment of radial head somatic dysfunction can help:
  - a. Increase congestion, remove pain in UE, balance autonomics
  - b. Balance autonomics, restrict radial head mechanics, reduce pain
  - c. Reduce pain, balance neural influence, and create relative tissue hypoxia,
  - d. Reduce pain, balance neural influence, and increase circulation to the forearm

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**Name of article:** "Supine Counterstrain Technique for Posterior Rib Tenderpoints"

**Authors:** Jose S. Figueroa, DO, FAOCPRM, FAAPMR; Megan M. Ellis, OMS IV

**Publication:** *The AAO Journal*, Vol. 32, No. 1, March 2022, pages 34-36

1. Which of the following is a true statement regarding the importance of treating rib somatic dysfunctions with osteopathic medicine?
  - a. Alleviating rib somatic dysfunctions only improves the ribs ability to fully expand and exhale.
  - b. Posterior rib tenderpoints should not be treated since they are compensating for an underlying disease process.
  - c. Rib somatic dysfunctions have an effect on the respiratory mechanism as well as arterial, venous, and lymphatic circulation.
  - d. Patients with obstructive lung disease should never be treated for rib somatic dysfunctions.
2. With the patient supine, how does the physician assess for a posterior rib tenderpoint?
  - a. Ask the patient to sit up, requesting assistance from the nursing staff if needed
  - b. After obtaining consent to touch the patient, the physician slides their hands beneath the patient assessing for tissue texture changes.
  - c. After obtaining consent to touch the patient, the physician has the patient move into the lateral recumbent position.
  - d. After obtaining consent to touch the patient, the physician passively horizontally adducts the patient's ipsilateral arm across their chest and assesses for tissue texture changes.
3. What is the correct treatment position for treating a supine posterior rib tenderpoint?
  - a. The physician brings the adducted arm into approximately 90 degrees of abduction with lateral traction followed by horizontal extension.
  - b. The patient move into a prone position as the physician brings the adducted arm into approximately 90 degrees of abduction with lateral compression and horizontal flexion.
  - c. The patient should remain in the supine position as the physician brings the adducted arm into approximately 90 degrees of abduction with lateral compression followed by horizontal flexion.
  - d. The patient should remain in the supine position as the physician brings the adducted arm into approximately 90 degrees of abduction with lateral traction followed by horizontal flexion.
4. If a posterior rib tenderpoint does not resolve, which of the following could be contributing to the somatic dysfunction?
  - a. Ribs that have slipped anteriorly and require a different treatment modality.
  - b. Muscle strains of the serratus posterior superior, intercostal muscles, and/or iliocostalis thoracis.
  - c. Strain of the iliolumbar ligament.
  - d. Rectus femoris hypertonicity.



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### **Name of article:** “Patellofemoral Pain Syndrome: A Review of the Literature with Osteopathic Emphasis”

**Author:** Gabriel Berenbeim, OMS IV; Megan Ellis, OMS IV; Kaitlyn Finneran, OMS IV; Isaac Metzler, OMS IV; Drew Lewis, DO, FAAO; Jie Chunfa, PhD

**Publication:** *The AAO Journal*, Vol. 32, No. 1, March 2022, pages 44-48

1. A 35-year-old male presents to the clinic with pain around his knee. The pain has been present for several months and is aggravated when he gets up from a chair or going up stairs. After the physical exam, a diagnosis of PFPS is made. Which of the following would be an indication for imaging?
  - a. The patient's age
  - b. History of trauma
  - c. Recent increase in exercise
  - d. Counterstrain point on the medial meniscus
2. True or False: Patellofemoral Pain Syndrome is seen more in male patients.
  - a. True
  - b. False
3. Which of the following areas would be most beneficial to treating a patient with PFPS of the right knee?
  - a. T3-6 N SLRR
  - b. C6-7 F RRSR
  - c. Left acetabular joint flexed, adducted, externally rotated
  - d. Right internally rotated tibia
4. Which of the following would be the most appropriate screening test for a patient with suspected PFPS?
  - a. Hip Drop Test
  - b. Spurling Test
  - c. “Squat” Test
  - d. Patrick Test