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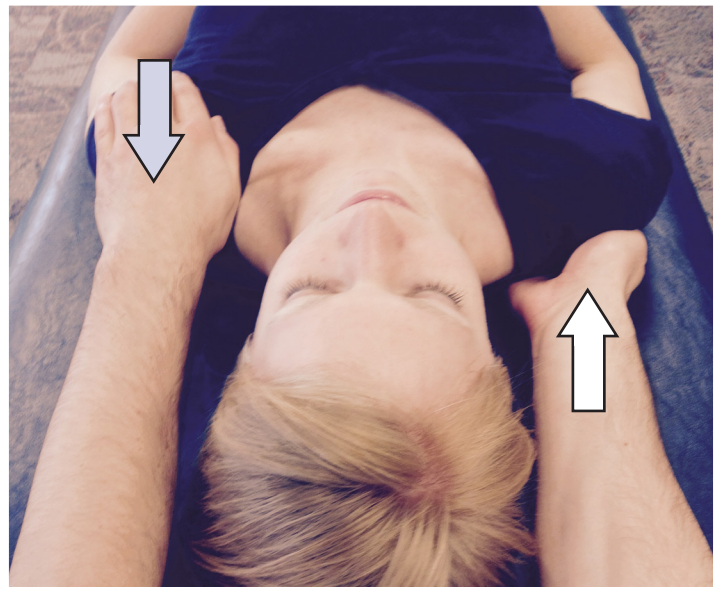
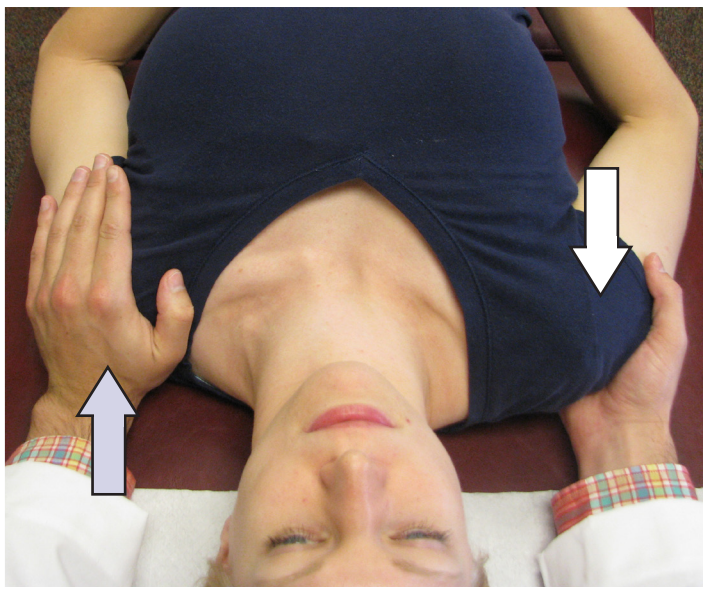
FORUM FOR OSTEOPATHIC THOUGHT

# JOURNAL

Official Publication of the American Academy of Osteopathy

TRADITION SHAPES THE FUTURE

VOLUME 26 • NUMBER 4 • DECEMBER 2016



*In the article that begins on page 7, the authors describe how to use muscle energy technique of the shoulder girdle to correct somatic dysfunction of the thoracic inlet.*

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THE AAO FORUM FOR OSTEOPATHIC THOUGHT

# JOURNAL

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TRADITION SHAPES THE FUTURE • VOLUME 26 • NUMBER 4 • DECEMBER 2016

*The mission of the American Academy of Osteopathy is to teach, advocate, and research the science, art, and philosophy of osteopathic medicine, emphasizing the integration of osteopathic principles, practices, and manipulative treatment in patient care.*

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## 2016–2017

Dec. 20	Committee on Fellowship in the AAO's teleconference—8:30 p.m. Eastern	March 22	AAO Board of Trustees' meeting—8 a.m. to noon Mountain time—The Broadmoor, Colorado Springs, Colorado
Dec. 23-26	AAO office closed in observance of Christmas Day	March 22	Pre-Convocation— <a href="#">Overview of the Lymphatic System</a> —Frank H. Willard, PhD, course faculty—1 to 5 p.m.—The Broadmoor, Colorado Springs, Colorado
Jan. 2	AAO office closed in observance of New Year's Day	March 22	AAO Board of Governors' meeting—1 to 5 p.m. Mountain time—The Broadmoor, Colorado Springs, Colorado
Jan. 4	AAO Osteopathic Medical Economics Committee's teleconference—7 p.m. Eastern	March 22	AAO Investment Committee's meeting immediately following Board of Governors' meeting—The Broadmoor, Colorado Springs, Colorado
Jan. 11	Committee on Fellowship in the AAO's teleconference—8:30 p.m. Eastern	March 22-26	AAO Convocation— <a href="#">The Balance Point: Bringing the Science and Art of Osteopathic Medicine Together</a> —Natalie Ann Nevins, DO, program chair—The Broadmoor, Colorado Springs, Colorado
Jan. 20-22	<a href="#">Osteopathic Management of Chronic Fatigue Syndrome, Fibromyalgia and Multiple Sclerosis</a> —Bruno J. Chikly, MD, DO (France), course director—Midwestern University/Arizona College of Osteopathic Medicine in Glendale	March 23	AAO's annual business meeting and luncheon—11:45 a.m. to 2:15 p.m. Mountain time—The Broadmoor, Colorado Springs, Colorado
Feb. 3-4	AAO Education Committee's meeting—AAO office in Indianapolis	March 26	Post-Convocation— <a href="#">Program Directors Workshop</a> —Eric Hunter Sharp, DO, course director—The Broadmoor, Colorado Springs, Colorado
Feb. 27	AAO committees' annual reports due	April 16-22	National Osteopathic Medicine Week
March 18-21	Pre-Convocation— <a href="#">The Strategic Crossroads of the Body</a> —Jean-Pierre Barral, DO (France), featured speaker—The Broadmoor, Colorado Springs, Colorado	May 19-21	<a href="#">Still-Littlejohn Techniques: Contemporary Applications for Osteopathy</a> —Richard J. Geshel, DO, course director—Midwestern University/Arizona College of Osteopathic Medicine in Glendale
March 19-21	Pre-Convocation— <a href="#">Brain 1: Palpating and Treating the Brain, Brain Nuclei, White Matter and Spinal Cord</a> —Bruno J. Chikly, MD, DO (France), course director—The Broadmoor, Colorado Springs, Colorado	June 2-5	<a href="#">Introduction to Osteopathic Manipulative Medicine</a> —Lisa Ann DeStefano, DO, course director—Michigan State University College of Osteopathic Medicine in East Lansing
March 19-21	Pre-Convocation— <a href="#">Fascial Distortion Model: Axial Spine</a> —Todd A. Capistrant, DO, MHA, course director—The Broadmoor, Colorado Springs, Colorado		
March 21	AAO Committee on Fellowship's meeting and interviews—8 a.m. to 5 p.m. Mountain time—The Broadmoor, Colorado Springs, Colorado		
March 21	AAO Education Committee's meeting—6 to 8 p.m. Mountain time—The Broadmoor, Colorado Springs, Colorado		



# View From the Pyramids: Being Civil in an Uncivil Time

AAOJ Editor-in-Chief Brian E. Kaufman, DO, FACOI, FACP

EDITORIAL

The elections of 2016 are behind us. We all experienced a lot of negativism and polarization this election season. The conversations I saw on social media showed the worst in people, and I lost respect for many friends on both sides of the issues. I also witnessed courage and saw thoughtful and respectful disagreements end with both understanding and newfound respect. I found myself wishing our politicians handled their disagreements with as much decorum.

Over the years, I have struggled to bring this ethos to my own engagements—to disagree while not being disagreeable. One mentor who helped me with this was the late Michael Amazzalorro, MD, at Winthrop University Hospital. We called him Dr. A.

Dr. A was both a masterful physician and a kind and thoughtful person. He had an encyclopedic knowledge of medicine and was a veritable walking Harrison's. He seemed to know everything in medicine and the few things he didn't remember he kept in a small notebook in his front top jacket pocket. The notebook was titled "Things I cannot remember." I once had the opportunity to look at this notebook, and it was incredibly small with very few pages.

When Dr. A ran morning report, no matter whether you were just starting your day, or towards the end of an overnight shift, we all showed off. The room would be alive with intellectual curiosity, and we all tried to out-gun one another to earn Dr. A's praise and

respect. He always made me feel that I was practicing the highest medicine in the greatest hospital. We always left the room a little smarter, wiser and I believe more compassionate.

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“ **Politicians and diapers must be changed often, and for the same reason.**

—Unknown

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I was privileged to watch Dr. A in the office and during hospital rounds. He seemed to have all the time in the world, and I was reminded of what it must have been like when doctors saw 2 patients an hour and took Wednesdays off for golf. His patients loved him for it, and they had excellent outcomes.

Lastly, when issues arose, instead of antagonism or belittling, I saw Dr. A meet opposition and adversity respectfully and always conduct himself with the utmost composure. It was those qualities that made Dr. A one of the teachers/mentors/friends/colleagues that I will always hold in the highest esteem.

I wish that our politicians could learn from Dr. A's example, but politicians deal in power and doctors deal in compassion. Still, the two are not mutually exclusive. The wisest statesmen are the ones who wield power with compassion and who can dissent without being churlish.

Rest in peace, Dr. A. May we all follow your example.

## Reference

1. Gundersen E. Mos Def is most thoughtful as he focuses on myriad projects. *USA Today*. [http://usatoday30.usatoday.com/life/music/news/2009-06-07-mos-def\\_N.htm](http://usatoday30.usatoday.com/life/music/news/2009-06-07-mos-def_N.htm). Published June 7, 2009. Updated June 8, 2009. Accessed December 5, 2016. ■

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“ **I'm not shy about heated debate or passionate discourse, but when people get crazy or rude, that's a buzz kill. There's got to be a better code of conduct, some basic etiquette.**

—Mos Def<sup>1</sup>

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- specialists to develop osteopathic responses to articles published in nonosteopathic literature. For example, how would the osteopathic approach contribute to studies published in other scientific journals or featured in news articles?

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# Utilizing Muscle Energy Technique of the Shoulder Girdle to Correct Somatic Dysfunction of the Thoracic Inlet

Jose Figueroa, DO, FAOCPMR, and Garth Kellogg Summers, OMS V

CLINICAL PRACTICE

## Abstract

Previous literature has described numerous osteopathic treatments to address a somatic dysfunction of the thoracic inlet. However, the literature has not yet described osteopathic treatments using both shoulder girdles to correct a somatic dysfunction of the thoracic inlet.

This article establishes how to use both shoulder girdles to effectively address the thoracic inlet utilizing a muscle energy technique. Further, this article emphasizes treatment principles that are easily comprehensible for beginner clinicians, including readily appreciable restriction barriers and visual cues, aiding in treating patients with dysfunctions of the thoracic inlet.

In addition, this article demonstrates the clinical value, with little or no contraindications in most patient populations, in utilizing muscle energy of the shoulder girdles to treat patients with dysfunctions of the thoracic inlet.

## Introduction

The thoracic inlet consists of the bilateral first ribs, the first thoracic vertebra, the manubrium, and the fascia overlaying these structures called Sibson's fascia.<sup>1</sup> Sibson's fascia spans the transverse process of the seventh cervical vertebra, the internal border of the first rib, the innermost lining of the scalene muscles, and the cupola covering the lung.<sup>2</sup> Functionally, the Sibson's fascia may act as the cervicothoracic diaphragm.<sup>2</sup> Correcting a somatic dysfunction of the thoracic inlet increases this aperture's anteroposterior diameter and helps to restore chest wall freedom of motion, improving the body's respiratory-circulatory function.<sup>2</sup>

The thoracic inlet, also known as the cervicothoracic junction, is one of the 4 major transitional areas of the body that create alternating compensatory curves observed when the patient is supine.<sup>1,3</sup> According to J. Gordon Zink, DO, FAAO, the 3 additional transitional areas of the axial skeleton are the occipitoatlantal junction, the thoracolumbar junction, and the lumbosacral junction.<sup>3</sup> These 4 transitional areas have the greatest inherent ability for motion, and therefore, they have the greatest liability towards injury.<sup>1</sup> Consequently, Zink's common compensatory approach with osteopathic manipulative treatment (OMT) places significant focus

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on treating the body's transitional regions, including the thoracic inlet.<sup>3</sup> TePoorten describes the common compensatory pattern as "a series of myofascial torsions that are compatible with physiologic function until the prime organ system, the musculoskeletal system, is stressed."<sup>1</sup>

Zink summated the effects of a somatic dysfunction of the thoracic inlet as, "twisting of the cylinder [formed by the thoracoabdominal-pelvic cavity] impairs the piston-like movement of the diaphragm.... The end result is less efficient external respiration; concomitantly, venous blood and lymph return is retarded."<sup>4</sup> Subsequently, addressing a dysfunction within the thoracic inlet is highly efficacious for disease processes that result from venous and lymphatic stasis. Patients with conditions such as headaches, otitis media, sinusitis, pharyngitis, laryngitis, and upper extremity edema and paresthesia would benefit from a treatment that addresses their thoracic inlet.

Treating patients with dysfunctions of the thoracic inlet has been thoroughly described. Previous treatments mainly addressed the articulations of the first ribs, the first thoracic vertebra, and the

*(continued on page 8)*

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clavicle.<sup>5,6,7,8</sup> Additionally, techniques such as high-velocity, low-amplitude (HLVA), Still, and functional positional release (FPR) of the thoracic inlet may elicit an involuntary guarding response as a result of painful positioning, thereby decreasing the efficacy of the treatment. Therefore, it seems appropriate that a new gentle technique, which minimizes guarding by positioning the patient's head and neck in line with the axial skeleton and their arms relaxed at the sides of the body, would be developed to correct dysfunctions of the thoracic inlet by addressing a broad myofascial restriction.

This article details a muscle energy (ME) technique utilizing the entire shoulder girdle to correct dysfunctions of the thoracic inlet. This technique is a derivation of a concept developed by Michael Foggia, DO, while he was an osteopathic medical student at what is now the Des Moines University College of Osteopathic Medicine in Iowa.

## Methods

This section reviews the necessary steps for utilizing ME technique of the shoulder girdle to correct somatic dysfunction of the thoracic inlet.

In brief, the clinician must first diagnosis a somatic dysfunction of the thoracic inlet. Next, the clinician visually identifies the superior and anterior shoulder girdles. The clinician then utilizes a direct ME technique of the shoulder girdles to address both the superior

and anterior shoulder girdles. Lastly, the clinician re-evaluates the position of the shoulder girdles as well as the thoracic inlet to determine if an appropriate correction was made.

## Positioning the patient

The patient should be supine with fingers interlocked and resting on their abdomen. See *Figure 1*.

## Diagnosing somatic dysfunction of the thoracic inlet

The clinician diagnoses somatic dysfunction of the thoracic inlet by noting the shape and relative motion of the supraclavicular and infraclavicular areas. These findings are then used to infer the side-bent and rotated positions of the first rib and the first thoracic vertebra.

To diagnose the side-bent component of the thoracic inlet somatic dysfunction, the clinician palpates the flat surface of the first rib by placing their fingers on top of the first rib and pressing caudad. The flat surface of the first rib is located anterior to the upper trapezius muscle and posterior to the clavicle. See *Figure 2*.

The thoracic inlet is side-bent opposite to the side of the superior, or cephalad, first rib. Visually, the shoulder girdle will commonly appear more superior on the side of the cephalad first rib. According to Zink's common compensatory pattern, the first rib is

(continued on page 9)

## CONTINUING MEDICAL EDUCATION QUIZ

The purpose of the December 2016 quiz—found on page 12—is to provide a convenient means of self-assessing your comprehension of the scientific content in the article “Utilizing Muscle Energy Technique of the Shoulder Girdle to Correct Somatic Dysfunction of the Thoracic Inlet” by Jose Figueroa, DO, FAOCPMR, and Garth Kellogg Summers, OMS V.

Be sure to answer each question in the quiz. The correct answers will be published in the next issue of the *AAOJ*.

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You must score a 75% or higher on the quiz to receive CME credit.

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used in *The AAO Journal*, see the

## Glossary of Osteopathic

## Terminology

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on Osteopathic Principles.



**Figure 1.** The patient's position for diagnosing and treating dysfunctions of the thoracic inlet. Note the hand position.



**Figure 2.** Diagnosing a side-bent somatic dysfunction of the thoracic inlet.



**Figure 3.** Diagnosing a rotated somatic dysfunction of the thoracic inlet.



**Figure 4.** Diagnosing the superior shoulder girdle. The white arrow indicates the superiorly elevated shoulder girdle.



*(continued from page 8)*

side-bent right,<sup>3</sup> indicating the left first rib is more cephalad. The authors have found the ipsilateral left shoulder girdle will routinely appear more superior.

To diagnose the rotational component of the thoracic inlet somatic dysfunction, the clinician palpates the anterior aspect of the first rib anteriorly by placing their fingers in the infraclavicular–parasternal space and pressing into the chest wall from the anterior to posterior direction. See *Figure 3*.

The thoracic inlet is rotated opposite to the side of anterior convexity, or “fullness,” of the infraclavicular–parasternal space. Visually, the shoulder girdle commonly appears more anterior on the side of convexity. See *Figure 3*.

According to Zink’s common compensatory pattern, the first rib is rotated right,<sup>3</sup> indicating the left infraclavicular–parasternal space is anteriorly convex. The authors have found the ipsilateral left shoulder girdle will routinely appear more anterior.

#### **Diagnosing somatic dysfunction of the shoulder girdles**

The clinician diagnoses the shoulder girdles by visually noting their position while the patient is supine.

To diagnose the superior shoulder girdle, the clinician stands at the head of the table looking down over the patient’s shoulders and observing which shoulder girdle appears more cephalad. See *Figure 4*. Typically, the thoracic inlet is side-bent opposite to the superior shoulder girdle.

*(continued on page 10)*

*(continued from page 9)*

To diagnose the anterior shoulder girdle, the physician sits at the head of the table looking toward the patient's feet and observing which shoulder girdle appears more elevated off the table. See Figure 5. Typically, the thoracic inlet is rotated opposite to the anterior shoulder girdle.

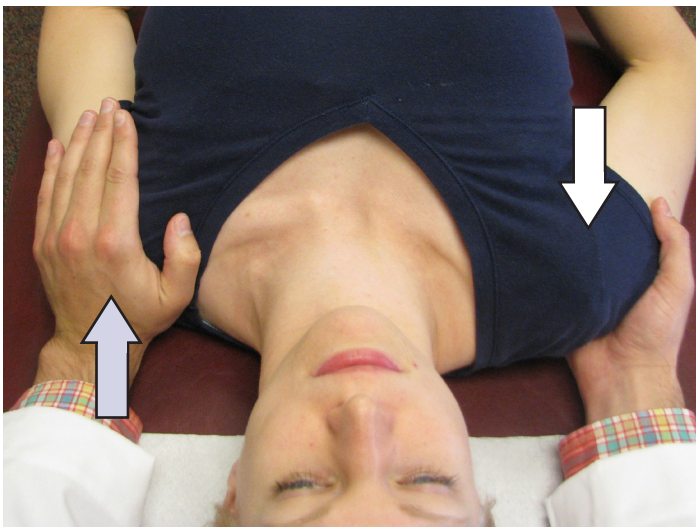
### **Correcting the superior shoulder girdle**

To correct the superior shoulder girdle, the clinician inferiorly depresses the superior shoulder girdle until a restriction barrier is palpated. Similarly, the clinician superiorly elevates the inferior shoulder girdle until a restriction barrier is palpated. For example, if the patient's thoracic inlet is diagnosed as being side-bent right

**Figure 5.** Diagnosing the anterior shoulder girdle. The white arrow indicates the anterior shoulder girdle.



**Figure 6.** Correcting the superior shoulder girdle. The arrows indicate the physician's directional force during the isometric ME of the superior shoulder girdle. The blue arrow indicates a caudal force. The white arrow indicates a cephalic force.



and the left shoulder girdle appears more superior, the left shoulder girdle is depressed inferiorly towards the feet, while the right shoulder girdle is elevated superiorly. See Figure 6.

The patient is then asked to gently and isometrically resist the positions introduced to both shoulder girdles for 3 to 6 seconds. The clinician waits 2 to 3 seconds for the tissues to relax before engaging the new barrier at each shoulder girdle. This process is repeated a total of 3 times to engage the fourth restriction barrier, utilizing the ME technique sequence originally described by Mitchell.<sup>9</sup>

### **Correcting the anterior shoulder girdle**

To correct the anterior shoulder girdle, the clinician applies pressure posteriorly on the anterior shoulder girdle until a restriction barrier is palpated. Similarly, the clinician applies pressure anteriorly on the posterior shoulder girdle until a restriction barrier is palpated. For example, if the patient's thoracic inlet is diagnosed as being rotated right and the left shoulder girdle appears more anterior, the left shoulder girdle is pushed posteriorly towards the table while the right shoulder girdle is brought anteriorly. See Figure 7.

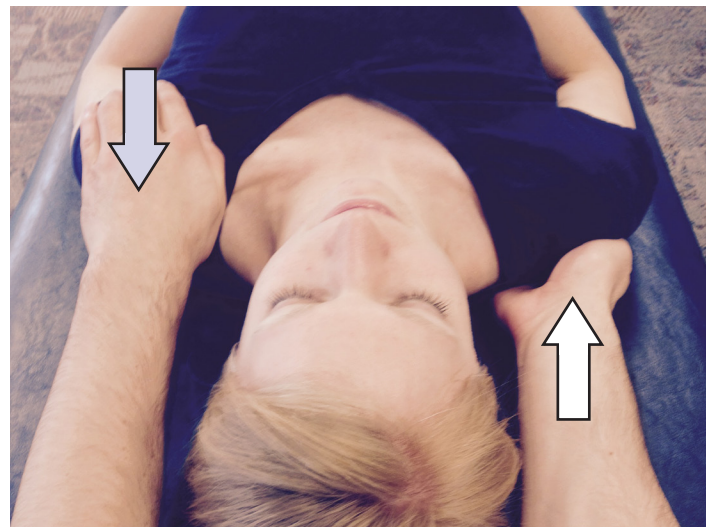
The patient is then asked to gently and isometrically resist the positions introduced to both shoulder girdles with the same ME technique sequence as previously described in the treatment for the side-bent component section.

### **Re-evaluating the patient**

After using OMT to correct both the superior and anterior components of the shoulder girdles, the clinician re-evaluates the position

*(continued on page 11)*

**Figure 7.** Correcting the anterior shoulder girdle. The arrows indicate the physician's directional force during the isometric ME of the anterior shoulder girdle. The blue arrow indicates a posterior force. The white arrow indicates an anterior force.



(continued from page 10)

of the shoulder girdles and thoracic inlet to determine the therapeutic effect.

## Discussion

According to osteopathic theory, correcting a somatic dysfunction of the thoracic inlet is essential to support adequate venous and lymphatic circulation throughout the body. Conditions ranging from headaches to upper extremity paresthesia benefit when a somatic dysfunction of the thoracic inlet is corrected. Though no literature has described addressing a dysfunction of the thoracic inlet utilizing ME of the shoulder girdle, the authors have observed significant resolution of thoracic inlet somatic dysfunctions using this technique.

Owing to its gentle nature, the authors propose this ME technique can be performed on almost any patient that is able to follow directions. Few contraindications for this technique exist. Primary contraindications are acute fracture or gross instability of the shoulder girdle, such as acute glenohumeral dislocation, acromioclavicular separation, or clavicular fracture. Additionally, side effects of this technique are minimal and comparable to other osteopathic treatments such as mild transient posttreatment soreness. The authors encourage open patient communication to ensure the patients are not experiencing discomfort when utilizing this technique.

Furthermore, the authors have found this technique effective when the correction of the thoracic inlet somatic dysfunction remained refractory to other treatment modalities. The authors speculate this effect is due to the technique's ability to address a broad myofascial restriction. In comparison, traditional approaches are apt at addressing the articular components of the first vertebral segment and first ribs. For example, traditional thrust techniques address the ligamentous capsules of the first vertebra and first rib while counterstrain techniques address strained muscles between the first vertebra and first rib.<sup>10,11</sup> However, if the key dysfunction is a broad myofascial restriction or if techniques that focus on addressing the articular component of the first vertebra and first rib have proven ineffective in correcting the somatic dysfunction, utilizing ME of the shoulder girdle would be advantageous. This technique lengthens muscles involved in maintaining the myofascial restriction, thereby addressing its specific causative mechanism and the resultant somatic dysfunction of the thoracic inlet.

In cases where the shoulder girdle's asymmetry does not correspond with the first rib's diagnosis, as exemplified when the inlet is rotated and side-bent right but the shoulder girdle is anterior and superior on the right, the authors found the thoracic inlet somatic dysfunction may still be corrected by applying ME to the shoulder girdle asymmetry. This occurrence has been found true whether the

shoulder girdle's asymmetry either partially parallels or is opposite to the first rib's diagnosis.

A possible adverse reaction to this treatment is low back pain on the contralateral side of the superior shoulder girdle. An infrequent and small number of patients treated with this technique develop brief, transient low back pain while resisting the inferior shoulder girdle's motion during ME. When this occurs, the authors commonly diagnose a strain-counterstrain tender point<sup>12</sup> in the ipsilateral latissimus dorsi muscle and treat it with Jones' strain-counterstrain technique, resolving the pain.<sup>11</sup> Less frequently, the low back pain is thought to be due to a muscle spasm. In these cases, the authors have found that stretching the ipsilateral latissimus dorsi muscle using the ME technique with abduction of the shoulder leads to a resolution of the spasm.<sup>9</sup>

## Conclusion

The authors propose this technique be implemented in the education of osteopathic medical students. As a technique-based approach, ME of the shoulder girdle readily fits into most first- and second-year OMT curricula by offering a gentle alternative treatment for correcting thoracic inlet dysfunction.

Further, the principles behind this ME technique are easily comprehensible for beginner clinicians, and palpation of the barriers are readily appreciable. The authors advise this treatment is easy to utilize and appropriate for most all physicians practicing OMT.

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1. One of the advantages to using the technique illustrated in the article is:
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  - d. Brings balance to the boney ring
2. According to the article, venous and lymphatic congestion in the tissues can cause:
  - a. Cerebral edema
  - b. Thyrotoxicosis
  - c. Trans-aminitis
  - d. Upper extremity paresthesia
3. The technique described in the article should be performed by licensed osteopathic physicians only.
  - a. True
  - b. False
4. According to the article, an infrequent number of patients developed what complication?
  - a. Contralateral upper back pain
  - b. Ipsilateral latissimus dorsi conerstrain point
  - c. Contralateral latissimus dorsi counterstrain point
  - d. Transient migraine

Below are the answers to *The AAO Journal's* September 2016 quiz on the article titled "The Incidence of Somatic Dysfunction in Patients With Sudden Onset Atraumatic Neck Pain: A Retrospective Case Note Study" by Karen Teten Snider, DO, FAAO; Amrien Ghouse, OMS VI; Sheri Shiyi He, BS; and Vanessa K. Pazdernik, MS.

1. **d.** Patient demographics, medications prescribed, and the type of OMT used were collected from medical records.
2. **a.** Myofascial release was the most commonly documented technique used.
3. **c.** 60% of patients had vertebral somatic dysfunction with C3-C5 and T2-T5.
4. **d.** Of the 1092 patients seeking NMM/OMM specialty care for sudden onset atraumatic neck pain, 74% were women.

# A Review of Hypertension and Its Management by Osteopathic Manipulative Therapy

Arnold D. Miller

FROM THE ARCHIVES

The disease of hypertension has plagued man for many years. Even with the advance in medical science in the last half century the understanding of primary hypertension has advanced little. The management of the hypertensive patient is still purely symptomatic and there is little evidence that present methods of treatment actually prolong life or alter the course of the disease. However, attempts may be made to alleviate symptoms and prevent some of the commonly encountered complications of the disease.

It is at this point that the osteopathic physician can contribute greatly to symptomatic control and comfort of his patient by employing specific and effective manipulation. It has been shown and described many times in the literature that properly executed manipulative therapy is very effective in the control of primary hypertension while leaving the patient with almost none of the side effects of the commonly used drugs.

In this paper we will first describe the disease and its clinical pattern and then review in some detail the osteopathic management which has been effectively employed.

## Background

Hypertension is characterized by a persistent increase in blood pressure and can represent an increase in systolic or diastolic or both phases of blood pressure. There are several different types of hypertension, the most common being “essential hypertension” comprising 90% of all known cases. Other types are usually secondary to some other diseases and are therefore classified as secondary hypertension. This paper will be concerned only with primary or “essential hypertension” unless designated otherwise.

The exact point at which blood pressure can be considered as elevated for any one individual is difficult to define. The human body has great ability to adapt to stressful situations. Some individuals may normally have systolic blood pressure of 150-160 m.m. of Hg. However, the commonly accepted upper limits of normal blood pressure are usually set at 140/90. Any blood pressure above this should be suspected to be hypertensive.

In spite of the very intensive research which has been and is presently being conducted in vascular diseases and hypertension, the

*Editor's note: This article originally appeared 50 years ago in the American Academy of Osteopathy's 1966 Yearbook. It has not been edited to conform to the current guidelines of The AAO Journal.*

This paper won the grand prize (an all-expense trip to the AOA Convention in New Orleans, November 1966) in the Scientific Writing Award program. The awards were provided by a grant from Marion Laboratories, Inc., Kansas City, Mo. The five first prize papers, one from each of the colleges, were reviewed by a committee made up of the chairmen of the college judging committees. From these papers, Mr. Miller's paper was chosen.

etiology of this disease remains obscure. Yet many predisposing factors have been suggested with varying amount of supportive evidence.

The most important predisposing factor appears to be a strong familial tendency. It also appears twice as frequently in women as in men. In the majority of cases, some time prior to evidence of the disease a hyper-sensitive vasomotor system is noticed. The significance of this is not yet known or understood. The incidence of hypertension in diabetes mellitus is slightly higher than in non-diabetics. Again no causal connection has been elucidated. Other predisposing factors which have been suggested are height and weight (overweight individuals are more prone to hypertension), certain specific personality patterns, onset of pregnancy and menopause, geographic factors and race. Most of these are not well documented and should not influence the physician in making a diagnosis of primary hypertension. The disease is diagnosed most often in the 3rd and 4th decade with the average age being 32 years.

Clinically, the disease follows one of two distinct courses. In most cases, it develops slowly and extends over a period of 20 to 30 years with symptoms becoming evident only in the terminal 5 years. This is called the benign course.

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The other type and by far the less common is called malignant. Here the onset is rapid and the disease is terminated by death within months or up to 2 years. Life expectancy does not exceed 2 years after onset of this type. Fortunately, only about 1% of hypertensives develop the malignant form.

During the uncomplicated phase of benign essential hypertension many patients may experience few or no symptoms. Others may complain of fatigue, nervousness, dizziness, weakness, insomnia, palpitations, or headaches.

These symptoms are usually intermittent and of minor severity. Restlessness, emotional changes, and flushing may also be experienced.

Complications usually affect the heart, brain, eye, and kidney. These changes take place near the end of the disease. Death usually results from one or more of these complications. Heart problems are left ventricular hypertrophy, myocardial infarction, or myocardial damage due to atheromata of coronary arteries. Left ventricular failure may follow cardiac enlargement as well as right ventricular failure. Congestive heart failure is responsible for 25% of the deaths in essential hypertension and is a contributing factor in 25% more.

Definite retinal changes can be observed upon fundoscopic examination which can often be correlated with the severity of hypertensive diseases. Changes observed in the retinal vasculature usually reflect vasculature changes throughout the body, including the kidney.

Approximately one-half of the affected patients eventually reveal clinical evidence of some renal involvement. This may be in the form of polyuria, nocturia, proteinuria or loss of concentrating power. Often these patients eventually die in uremia.

Other vascular manifestations of the disease, presumably due to associated sclerotic changes of the vessels are increased incidence of aortic aneurism, hemorrhages throughout the body involving such organs as kidney, brain, lung, gastrointestinal tract, subcutaneous tissues and nose bleeds.

The malignant form of the disease may follow the same pattern except that the course will be greatly accelerated and much more severe. The renal lesions progress rapidly leaving a severely damaged, if at all functional, kidney. Headache may progress to great severity and may be associated with convulsions or even coma. Death will result within 2 years due to heart or brain damage or in uremia due to renal failure.

The management of each case will vary with the individual as is the case of most diseases. In the early uncomplicated cases the management should begin with an explanation of the disease and reassurance that the patient's life pattern will not have to be drastically altered in most cases. Obesity, overindulgence and extreme exercise or activity should be avoided but usually no drastic change is necessary.

The very nervous, anxious person should be reassured and any misconceptions cleared up. This patient may need tranquilizing to the same degree and in the same manner as any nonhypertensive patient. General soft tissue manipulation of the lumbar, thoracic, and cervical areas will be relaxing and affords the physician an excellent opportunity to give the patient psychological and emotional reassurance. No further treatment is needed at this point.

In later stages when symptoms do appear, specific therapy may be instituted to alleviate symptoms. Osteopathic manipulative therapy is indicated and specifics of this will be discussed later. There is little evidence to show that symptomatic treatment actually prolongs life; however, it may be helpful in preventing other complications.

Complications may arise and they should be treated the same as they would in normotensive patients. Complications encountered might be atherosclerotic changes, small myocardial infarctions, or cerebral thrombosis. The patient should be thoroughly examined and his hypertensive status reevaluated to ascertain whether or not the patient is entering the accelerated malignant form of the disease or if the complications are unrelated to his pre-existing condition.

### **Treating malignant hypertension**

Treatment of the malignant form of hypertension has been wide and varied. Many dietary regimens, medical and surgical treatment have come and gone. Sodium restricted diets, surgical sympathectomy and a wide variety of drugs used in combination with a specific regimen of osteopathic manipulative therapy have been found to be useful.

Specific inquiry has been made into the effect of osteopathic manipulative therapy in the management of this disease. The remainder of this paper will be devoted to the elaboration of these findings.

Blackman as early as 1912, wrote about the recognition and treatment of high blood pressure.<sup>2</sup> Downing<sup>3</sup> followed in 1914 describing his observations and Fiske<sup>4</sup> in 1925 related specific adjustments which were effective for him. Thus, the concept of manipulative

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control of hypertension is not new but has been described frequently by many clinicians since Blackman.

Results of a controlled experiment involving 435 subjects have been published by Norris.<sup>5</sup> In his study, both systolic and diastolic blood pressure tended to be normalized after manipulation. Blood pressures below normal range were raised slightly toward the normal range and blood pressures above normal were lowered toward the normal range after manipulation. The greatest effect appeared in the subjects with systolic and diastolic blood pressures above 125/80. After specific manipulation was applied, followed by a 2 hour rest period, there was lowering of more than 5 mm. systolic and 4 mm. diastolic in over half of these subjects, while blood pressures in those not receiving manipulation were lowered in only 10-25% of the cases after a 2 hour rest period. The manipulation was directed to the entire spinal cord and the subjects involved in the experiment were all "normal" individuals without symptoms of hypertension or related diseases. Other studies have shown that more dramatic results are obtained in patients with extremely high blood pressures.

The exact mechanism whereby this lowering of blood pressure is effected by spinal manipulation is not understood. It can not be classified as a stimulating effect or an inhibiting effect but rather a

"normalizing" effect, as pointed out by Norris. The vascular effect could possibly be produced by substances released into the blood stream by the stressed tissues or by neural transmission of impulses. The reflexes associated with spinal areas and visceral pain have been reported by Lewis and Kilgren<sup>6</sup> while those areas of the spinal complex associated with autonomic control have been described by Kuntz.<sup>7</sup> Regardless of the mechanism involved, the data presented does illustrate a definite effect which, when applied clinically, often brings about even more definitive results.

Many physicians have written describing clinical observations of the effectiveness of specific techniques found to be useful in bringing about the lowering of blood pressure in hypertensive patients. Many case histories have been cited giving specific examples of the various phases of hypertension with its treatment and prognosis.

W. W. Blackman in 1912, after giving an accurate appraisal and description of the disease, advocated a greater usage of the sphygmomanometer for earlier and more specific diagnosis of the disease. He then described the peculiar usefulness of an osteopathic approach to hypertension by adequate control of "diet, working, playing, sleeping and thinking." These have all been shown to influence the prognosis of hypertension. Blackman also indicated that

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specific treatment to facilitate vasomotor elimination and relaxation are important.<sup>8</sup>

Following Blackman in 1914, J. T. Downing<sup>9</sup> reported on a study of two-hundred cases which he had undertaken. Satisfactory results were obtained by specific stimulation of the second and third dorsal to lower high blood pressure, but more successful and permanent results were obtained by osteopathic corrections of specific lesions wherever they occurred, whether muscular, ligamentous or bony. He contended that every case of hypertension had its own idiosyncracies and had to be treated individually. In 1935 Anderson and Erdman made some interesting observations in their study, namely that: 1. High blood pressure may be the result of excessive irritability of only one or more spinal cord segments; 2. It is not injurious to reduce high blood pressure if at the same time there is a stronger

heart action; 3. There was a close correlation between the patient's sense of well being and objective clinical findings; and 4. While forceful, stimulating treatment may be indicated in hypotension, the most effective treatment of hypertension was vasodilation and gentle pressure or manipulation that caused spinal lesions to disappear without forcible contraction.<sup>10</sup>

Eggleston investigated the effect of osteopathic manipulation on temperature, pulse, respiration and blood pressure. He found that corrective treatment created a greater average reaction than soft tissue alone with fewer instances in which there was no reaction. He stated that the response to treatment supports the fact that osteopathic manipulative treatment normalizes body function and is shown by the immediate trend to abnormal findings to turn toward normal in approximately seventy percent of the two-hundred cases studied.<sup>11</sup>

The work being conducted at Kirksville, Missouri by Karr and Denslow relating to viscerosomatic reflexes gives indication that facilitation of neural elements in the spinal cord are influenced by, as well as exert influence upon surrounding tissues and vascularization.<sup>12</sup>

This approach to hypertension is reinforced by clinical investigators as Pottenger, who writes<sup>13</sup> "Blood vessels are controlled by one chief center in the medulla and by subsidiary centers in the spinal cord. Vasoconstrictor effects are produced when motor nerves are stimulated .... On the other hand vasodilator effects are produced through the same sensory nerves when the intact nerve is centrally stimulated." Another investigator, L. Burns,<sup>14</sup> writes, "Slight malrotation of vertebrae and ribs, or other forms of peripheral rotation may be a source of streams of abnormal sensory impulses which may affect the chief vasomotor centers, or may affect the subsidiary center in the cord or medulla."

The clinical evidence is even more revealing as there has been much written describing the empirical findings. Even though biochemical and physiological experimentation has not unveiled the true mechanism involved in manipulative management of hypertension, the results which have been evidenced have not been disputed. Further, the lack of understanding of biochemical and physiological mechanisms should not be a hindrance or inhibiting factor because little is known about the mechanism of many of the currently used pharmacological agents.

Harold A. Blood<sup>15</sup> related that many patients with only mild hypertension with presenting complaints of headache, nervousness, fatigue or unrelated symptoms are often unaware of their existing

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hypertension. The blood pressure of these individuals may fall in the range of 150-180 systolic and 90-105 diastolic. Other findings on examination were normal. Many times these patients have been managed with manipulation alone and application of good general hygiene rules and within a month have been brought well within the normal accepted range of 120-140 over 80-90. This level has been maintained in the early labile hypertensive patient for many months with infrequent checks.

Blood recognized as “more of a challenge” the patient with moderate hypertension. This patient presents with a blood pressure of over 200 systolic and 120-149 diastolic. The larger doses of currently used drugs needed to control such an individual usually subjects the patient to gross side effects such as depression, ulcer activation, light headedness, angina, uremia, etc. This patient, too, responds well to manipulation and has a greater sense of well-being than the heavily medicated patient. These patients usually require a more defined regimen of management including regular sessions of manipulative therapy which are often supplemented with supportive measures such as sedation and thiazide medication with proper dietary regulations. The frequency and duration of treatment depends upon the severity of the individual case as well as the response to therapy.

Blood further states that in very severe hypertensives it is often necessary to treat with rauwolfia, apresoline and thiazides as well as manipulative treatment. Needless to say, these people are more advanced in the disease and control of the symptoms is often difficult and erratic.

Thomas L. Northup has reported on a group of 100 cases with elevated blood pressure which responded maximally to manipulative therapy.<sup>26</sup> The cases averaged 199 systolic and 123 diastolic before treatment. The average reduction in blood pressure after therapy was 33 mm.Hg in systolic and 9 mm. Hg diastolic. In several instances the pressure dropped 70 mm. of Hg systolic and 20 mm. Hg diastolic following a single treatment. He indicated that the higher pressures respond most spectacularly to the initial treatment. Obviously, different cases of equal blood pressure may exhibit marked differences in response to therapy due to individual idiosyncrasies. However, this report does suggest that manipulative therapy has definite outstanding value in some cases of hypertension.

Five major methods of treatment for hypertensive vascular disease were outlined by Richard P. DeNise<sup>17</sup> as follows: 1. Osteopathic manipulation; 2. Drugs; 3. Diet; 4. Roentgen irradiation; and 5. Surgical intervention. He also recognized the emotional and psychological state of the patient as a major influence upon the

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variability encountered in the hypertensive patient. This important factor should be considered in evaluating and selecting the most effective regimen of therapy for each patient.

After evaluating each mode of therapy Dr. DeNise concludes; “Review of present day management of hypertensive vascular disease reveals that as yet the fundamental answer to the treatment of this condition has not been found. Clinical results indicate that we, as osteopathic physicians, have one of the more effective forms of therapy at our command. Manipulative therapy should be instituted in all cases of hypertension and other forms of therapy instituted as indicated.” His basis for this statement lies in the fact that response to manipulative therapy is good and the side effects are minimal. He also indicated that the action of osteopathic manipulative therapy in lowering the blood pressure probably operates through the cortex (in other words is to some extent psychological) as well as through the autonomic nervous system.

It is obvious that no one technique or series of techniques will be the most effective for all patients and all physicians. Each physician will need to evaluate each individual patient and decide upon the most effective treatment. However, some specific techniques have been suggested as being repeatedly effective and certain areas of stimulation can be suggested for certain disease patterns. The

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most consistently recurring maneuver reported in the literature for controlling and effectively lowering high blood pressure is to begin treatment by very gentle relaxation of soft tissue around the spinal cord. Important emphasis should be placed upon gentleness in executing any technique used to lower blood pressure. Short distance-high velocity techniques should be completely avoided while managing the hypertensive. Inappropriate stimulation could actually raise the blood pressure even higher in the apprehensive patient. Northrup states that, "it is desirable to make all lesion corrections with as little stimulation as possible and only after the pressure has been reduced to a safe level by some method which has proved effective for the specific patient." He also points out that slow moving, easy manipulation for specific lesions has given him the best results. If kidney involvement is suspected he suggests relaxation of the lower thoracic area. For strictly primary hypertension, where the pressure seems to be higher in the sitting position than in the reclining position, Northrup indicates that the most common lesions are restriction of motion at the occipitomastoid cranial sutures, fixation of the upper cervical spinal area or a combination of both of these lesions. He further states that the most effective means of controlling the diastolic pressure in these patients is to establish mobility at the occipitomastoid sutures. He describes a specific technique for rocking the temporal bone and causing rotation around the axis of its petrous portion. Upper cervical mobility can be detected by pressure on the transverse processes of the upper cervical vertebrae.

Barstow poses a list of possible lesion areas which he feels could influence blood pressure. This includes all the transitional junction areas in vertebral column as well as the midcervical and T3 through T7. Any lesion which inhibits the respiratory effort could conceivably influence blood pressure. He describes several techniques which are effective in correcting lesions in these areas.<sup>18</sup>

Consistent with these findings, H.A. Blood<sup>19</sup> also reports the cervico-occipital, cervico-thoracic and lumbo-thoracic junctions along with the middle thoracic areas as being associated with the most important reflex and control centers of the vasomotor system. He states that frequently merely relaxation of the tissue will produce dilation of the blood vessels which becomes obvious by the increase in warmth and moisture of the skin. At this point continued manipulative treatment is contradicted.

Correction of spinal lesions should employ such techniques as traction, gentle rotation, inhibition, and normal active spinal motion to secure maximum hypotensive effect. When considering treatment for the very old or debilitated, or a patient with organic disease such as malignant hypertension, Blood<sup>20</sup> suggests only gentle stretching of the lumbar and thoracic paraspinal musculature and cervical traction. Localized pressure over the transverse processes of a vertebral lesion assisted by respiration will effectively establish motion in that area. He has also found to be useful the technique of temporal rocking as well as deep suboccipital pressure and con-

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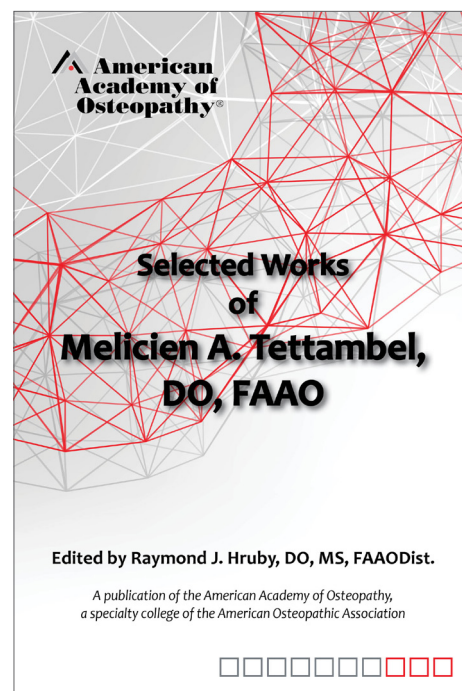
## ***Selected Works of Melicien A. Tettambel***

Melicien A. Tettambel, DO, FAAO, a leader in osteopathic obstetrics and gynecology, passed away on September 11, 2013, at far too young an age. She has, however, left a grand legacy for the osteopathic profession, and in particular, for the American Academy of Osteopathy (AAO). This selection of her published writings, carefully curated by Raymond J. Hruby, DO, MS, FAAODist., represents some of her best work.

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tinuous longitudinal traction for periods of 2 to 3 minutes. These techniques described by Blood are used for immediate effect on moderate to severe cases of hypertension. Early hypertension is best managed by giving less regard to the immediate effect and concentrating on early correction of joint lesions. Blood contended that the desired level of improvement is obtained most quickly by reestablishing joint motion. This again, should be accomplished by gentle movements facilitated by the patient's respiratory movements.

The duration of the hypotensive effect is extremely variable and this consideration must be dealt with individually with each patient. The progression and state of the disease largely determines the frequency and necessity of treatments. Northup<sup>21</sup> states that treatments should be given frequently enough to maintain a safe and optimum blood pressure, gradually increasing the length of time between treatments to one a month. Blood<sup>22</sup> further states that in very early and labile hypertensives, treatments may be separated by one to six months at which time contributory lesions may be removed. Moderate hypertensives, when doing well, may be treated every two to four weeks. More severe hypertensive patients will be seen at least weekly.

### Summary

Concerning specific techniques which appear to be most effective in management of hypertension as described by these several investigators and clinicians, the following can be stated.

For management of the early mild hypertensive patient, gentle relaxation of spinal musculature followed by gentle correction of specific spinal lesions. Mid-thoracic and cervical lesions are important. Temporal rocking, deep suboccipital pressure and cervical traction is very effective.

The same techniques are used for the moderate and severe hypertensive with emphasis is on gentle muscular relaxation. Excess stimulation produced by correcting old and multiple lesions could conceivably be harmful to the patient. Manipulation of these patients is usually augmented by supportive medication as sedation, thiazides, and hypotensive agents.

Low thoracic and thoracolumbar techniques may be of value in cases of renal involvement. In all these cases the frequency and duration of treatment is dependent upon the response of the patient manifested by objective and subjective symptoms.

Thus, osteopathic manipulative therapy has been shown to be effective in the control of hypertension and should be considered as an essential part of the total management of the hypertensive patient.

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# 2017 Convocation

## The Balance Point: Bringing the Science and Art of Osteopathic Medicine Together

Natalie Ann Nevins, DO, program chair



### Pre-Convocation Courses

March 18-21, 2017

Pre-Convocation course:

#### **The Strategic Crossroads of the Body**

Course director: Kenneth J. Lossing, DO  
Featured speaker: Jean-Pierre Barral, DO (UK)  
32 credits of NMM-specific  
AOA Category 1-A CME anticipated

March 19-21, 2017

Pre-Convocation course:

**Brain 1: Palpating and Treating the Brain,  
Brain Nuclei, White Matter and Spinal Cord**  
Course director: Bruno J. Chikly, MD, DO (France)  
24 credits of NMM specific  
AOA Category 1-A CME anticipated

March 19-21, 2017

Pre-Convocation course:

#### **Fascial Distortion Model: Axial Spine**

Course director: Todd A. Capistrant, DO, MHA  
24 credits of NMM specific  
AOA Category 1-A CME anticipated

March 22, 2017

Pre-Convocation course:

**Overview of the Lymphatic System**  
Course director: Frank Willard, PhD  
4 credits of NMM specific  
AOA Category 1-A CME anticipated

Learn more and register at [www.academyofosteopathy.org/Convocation](http://www.academyofosteopathy.org/Convocation)

# OSTEOPATHIC MANAGEMENT OF CHRONIC FATIGUE SYNDROME, FIBROMYALGIA AND MULTIPLE SCLEROSIS

Jan. 20-22, 2017 • **Midwestern University/Arizona College of Osteopathic Medicine in Glendale**

A growing number of people are diagnosed with chronic fatigue syndrome, fibromyalgia and other chronic pain conditions. These patients need effective, noninvasive treatments that don't aggravate their conditions. This course will provide participants the tools to recognize these conditions and their symptoms and to treat those patients.

The principal treatment will be a blend of Dr. Chikly's lymph and brain techniques. The lymph techniques will include superficial and deeper lymph, mapping and rerouting techniques and some specific viscera work using a lympho-fascia release approach to viscera. The brain techniques will include brainstem, pons, mesencephalon, etc. Specific sacrum intra- or inter-osseous techniques also will be presented.

By the end of the course, participants will be able to identify several chronic pain conditions; describe the comorbidity, known causes, and differential diagnoses of these conditions; explain the importance of the lymphatic system in addressing these conditions; identify megalymphatics in the thorax; and perform lymphatic techniques to release the liver, spleen and small intestines.

### Continuing Medical Education

24 credits of NMM-specific AOA Category 1-A CME anticipated.

### Course Times

Friday through Sunday from 8 a.m. to 6 p.m.

### Meal Information

Breakfast and lunch will be provided each day. Contact AAO Event Planner Gennie Watts with special dietary needs at (317) 879-1881, ext. 220, or [GWatts@academyofosteopathy.org](mailto:GWatts@academyofosteopathy.org).

### Course Location

**Midwestern University/Arizona College of Osteopathic Medicine**  
Agave Hall, OMT Lab 101  
19555 N. 59th Ave., Glendale, AZ 85308

### Travel Arrangements

Contact Tina Callahan of Globally Yours Travel at (800) 274-5975 or [globallyyourstravel@cox.net](mailto:globallyyourstravel@cox.net).

### Course Director

**Bruno J. Chikly, MD, DO (France)**, is a graduate of the medical school at St. Antoine Hospital in Paris, where his internship in general medicine included training in endocrinology, surgery, neurology and psychiatry. Dr. Chikly also has the French equivalent of a master's degree in psychology. He received an honorary DO degree from the European School of Osteopathy in Maidstone, Kent, in the United Kingdom and a PhD in osteopathy from the Royal University Libre of Brussels in Belgium.



Dr. Chikly is an international renowned educator, lecturer and writer. He is the author of the book *Silent Waves: The Theory and Practice of Lymph Drainage Therapy*, as well as the creator of a DVD titled *Dissection of the Brain and Spinal Cord*, and he is working on a book about osteopathic manipulation and the brain. He lives in Scottsdale, Arizona, with his wife and partner, Alaya.

Registration Fees	Nov. 20, 2016 through Jan. 14, 2017	On or after Jan. 15, 2017
Academy member in practice*	\$1,020	\$1,220
Resident or intern member	\$820	\$1,020
Student member	\$620	\$820
Nonmember practicing DO or other health care professional	\$1,220	\$1,420
Nonmember resident or intern	\$1,020	\$1,220
Nonmember student	\$820	\$1,020

\* The AAO's associate members, international affiliates and supporter members are entitled to register at the same fees as full members.

## Registration Form

### Osteopathic Management of Chronic Pain

Jan. 20-22, 2017

Name: \_\_\_\_\_ AOA No.: \_\_\_\_\_

Nickname for badge: \_\_\_\_\_

Street address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

- I am a practicing health care professional.
- I am a resident or intern.
- I am an osteopathic or allopathic medical student.

The AAO accepts check, Visa, MasterCard and Discover payments in U.S. dollars. The AAO does not accept American Express.

Credit card No.: \_\_\_\_\_

Cardholder's name: \_\_\_\_\_

Expiration date: \_\_\_\_\_ 3-digit CVV No.: \_\_\_\_\_

Billing address (if different): \_\_\_\_\_

I hereby authorize the American Academy of Osteopathy to charge the above credit card for the amount of the course registration.

Signature: \_\_\_\_\_

View the [AAO's cancellation and refund policy](#).

View the [AAO's photo release statement](#).



Register online at [www.academyofosteopathy.org](http://www.academyofosteopathy.org), or submit this registration form and your payment by email to [GWatts@academyofosteopathy.org](mailto:GWatts@academyofosteopathy.org); by mail to the American Academy of Osteopathy, 3500 DePauw Blvd., Suite 1100, Indianapolis, IN 46268-1136; or by fax at (317) 879-0563.



# PRE-CONVOCATION— THE STRATEGIC CROSSROADS OF THE BODY

March 18-21, 2017 • The Broadmoor in Colorado Springs, Colorado

## Course Description

Peritoneal and fascial fibers intertwine at certain well-defined intersections in the body. These crossroads help configure and protect the adjoining of limbs, where arteries, nerves, muscles and tendons naturally change direction.

At the viscera, intertwining fibers are mainly found where two organs meet, where any sort of excretory pathway connects to an organ, and as structures pass through or attach to the diaphragm.

While peritoneal and fascia fibers are naturally thicker at these locations, they can become fibrotic following surgery, infection or trauma. In such instances, neurovascular and visceral systems are at risk of compression.

This seminar provides an inventory of the most superficial and accessible of these intersections, and the neurovascular bundles that go through these strategic locations. Specific tensions can be released with precise techniques.

## Course Times and Meal Information

Saturday through Tuesday from 9 a.m. to 6:30 p.m.  
Breakfast and lunch are on your own. Coffee and tea will be provided.

## Continuing Medical Education

32 credits of NMM-specific AOA Category 1-A CME anticipated.

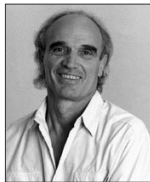
## Course Location

**The Broadmoor**, 1 Lake Avenue, Colorado Springs, CO 80906  
Make your reservations [online](#), or call (800) 634-7711.  
Mention the AAO's Convocation to get the best rate.

## Travel Arrangements

Contact Tina Callahan of Globally Yours Travel at (800) 274-5975 or [globallyyourstravel@cox.net](mailto:globallyyourstravel@cox.net).

## Featured Speaker



**Jean-Pierre Barral, DO (UK)**, earned his diploma in osteopathic medicine in 1974 from the European School of Osteopathy in Maidstone, England.

Barral developed the modality of visceral manipulation based on his innovative theory that each internal organ rotates on a physiological axis. In collaboration with Alain Croibier, DO (France), Barral has also developed the modalities of neural manipulation and global joint treatment based on their on-going clinical research. He is the curriculum developer for the Barral Institute, and he has maintained a private practice in Grenoble, France, since 1999.

## Course Director

**Kenneth J. Lossing, DO**, has studied visceral manipulation with Jean-Pierre Barral, DO (UK), for 30 years. An internationally recognized lecturer, Dr. Lossing contributed to the second and third editions of the American Osteopathic Association's *Foundations of Osteopathic Medicine* textbook. He also served as the AAO's 2014-15 president.



Registration Fees	On or before Jan. 15, 2017		After Jan. 15, 2017	
	With Convo	Without Convo	With Convo	Without Convo
<i>Save 10% when you register for the AAO's 2017 Convocation.</i>				
Academy member in practice*	\$1,494	\$1,660	\$1,584	\$1,760
Resident or intern member	\$1,314	\$1,460	\$1,404	\$1,560
Nonmember practicing DO or other health care professional	\$1,674	\$1,860	\$1,764	\$1,960
Nonmember resident or intern	\$1,404	\$1,560	\$1,584	\$1,760

\* The AAO's associate members, international affiliates and supporter members are entitled to register at the same fees as full members.

## Registration Form

### Pre-Convocation Course— The Strategic Crossroads of the Body March 18-21, 2017

Name: \_\_\_\_\_ AOA No.: \_\_\_\_\_

Nickname for badge: \_\_\_\_\_

Street address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

I am a practicing health care professional.

I am a resident or intern.

I will attend the AAO's 2017 Convocation.

The AAO accepts check, Visa, MasterCard and Discover payments in U.S. dollars. The AAO does not accept American Express.

Credit card No.: \_\_\_\_\_

Cardholder's name: \_\_\_\_\_

Expiration date: \_\_\_\_\_ 3-digit CVV No.: \_\_\_\_\_

Billing address (if different): \_\_\_\_\_

I hereby authorize the American Academy of Osteopathy to charge the above credit card for the amount of the course registration.

Signature: \_\_\_\_\_

View the [AAO's cancellation and refund policy](#).

View the [AAO's photo release statement](#).



Register online at [www.academyofosteopathy.org](http://www.academyofosteopathy.org), or submit this registration form and your payment by email to [GWatts@academyofosteopathy.org](mailto:GWatts@academyofosteopathy.org); by mail to the American Academy of Osteopathy, 3500 DePauw Blvd., Suite 1100, Indianapolis, IN 46268-1136; or by fax at (317) 879-0563.





# PRE-CONVOCATION— BRAIN 1: PALPATING AND TREATING THE BRAIN, BRAIN NUCLEI, WHITE MATTER AND SPINAL CORD

March 19-21, 2017 • The Broadmoor in Colorado Springs, Colorado

## Course Description

This advanced class explores different paradigms by working extensively with the brain parenchyma, its gray matter and its white substance. This Level 5 course trains health care professionals to address the physiology and specific structures of the brain and spinal cord. These structures are often unaddressed key or other primary somatic dysfunctions.

Participants will learn techniques for the whole ventricular fluid system and the brain parenchyma. They also will discuss the major components (nuclei) of the brain and learn different techniques to help release them, including corpus callosum, fornix, thalamus, putamen, globus pallidus, caudate nucleus, amygdaloid bodies, hippocampus, mamillary bodies, red nucleus, substantia nigra, pituitary, hypothalamus, cerebellum and associated nuclei.

## Prerequisite

Registrants are required to have previously completed a 40-credit introductory course in osteopathic cranial manual manipulation approved by The Osteopathic Cranial Academy.

## Course Times and Meal Information

Sunday through Tuesday from 8 a.m. to 5:30 p.m. Breakfast and lunch are on your own. Coffee and tea will be provided.

## Continuing Medical Education

24 credits of NMM-specific AOA Category 1-A CME are anticipated.

## Course Location

The Broadmoor, 1 Lake Avenue, Colorado Springs, CO 80906  
Make your reservations [online](#), or call (800) 634-7711.  
Mention the AAO's Convocation to get the best rate.

## Program Chair

**Bruno J. Chikly, MD, DO (France)**, is a graduate of the medical school at St. Antoine Hospital in Paris. Dr. Chikly also has the French equivalent of a master's degree in psychology. He received an honorary DO degree from the European School of Osteopathy in Maidstone, Kent, in the United Kingdom, and a PhD in osteopathy from the Royal University Libre of Brussels in Belgium. He is the author of the book *Silent Waves: The Theory and Practice of Lymph Drainage Therapy*, as well as the creator of a DVD titled *Dissection of the Brain and Spinal Cord*.



## Travel Arrangements

Contact Tina Callahan of Globally Yours Travel at (800) 274-5975 or [globallyyourstravel@cox.net](mailto:globallyyourstravel@cox.net).

Registration Fees	On or before Jan. 15, 2017		After Jan. 15, 2017	
	With Convo	Without Convo	With Convo	Without Convo
<i>Save 10% when you register for the AAO's 2017 Convocation.</i>				
Academy member in practice*	\$828	\$920	\$918	\$1,020
Resident or intern member	\$648	\$720	\$738	\$820
Nonmember practicing DO or other health care professional	\$1,008	\$1,120	\$1,098	\$1,220
Nonmember resident or intern	\$828	\$920	\$918	\$1,020

\* The AAO's associate members, international affiliates and supporter members are entitled to register at the same fees as full members.

## Registration Form

### Pre-Convocation Course—Brain 1

March 19-21, 2017

I have completed the prerequisite.

Name: \_\_\_\_\_ AOA No.: \_\_\_\_\_

Nickname for badge: \_\_\_\_\_

Street address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

I am a practicing health care professional.

I am a resident or intern.

I will attend the AAO's 2017 Convocation.

The AAO accepts check, Visa, MasterCard and Discover payments in U.S. dollars. The AAO does not accept American Express.

Credit card No.: \_\_\_\_\_

Cardholder's name: \_\_\_\_\_

Expiration date: \_\_\_\_\_ 3-digit CWV No.: \_\_\_\_\_

Billing address (if different): \_\_\_\_\_

I hereby authorize the American Academy of Osteopathy to charge the above credit card for the amount of the course registration.

Signature: \_\_\_\_\_

View the [AAO's cancellation and refund policy](#).

View the [AAO's photo release statement](#).



Register online at [www.academyofosteopathy.org](http://www.academyofosteopathy.org), or submit this registration form and your payment by email to [GWatts@academyofosteopathy.org](mailto:GWatts@academyofosteopathy.org); by mail to the American Academy of Osteopathy, 3500 DePauw Blvd., Suite 1100, Indianapolis, IN 46268-1136; or by fax at (317) 879-0563.



# PRE-CONVOCATION— FASCIAL DISTORTION MODEL: AXIAL SPINE

March 19-21, 2017 • The Broadmoor in Colorado Springs, Colorado

## Course Description

FDM is a model of thinking that provides a framework to view the function of the body and the expression of pain. Fascia can be viewed as the “wrapper” of our bones, muscles, and organs. It is an integral part of the body’s nerve network.

FDM treatments restore the fascia’s function by focusing on correcting distortions in the fascial system and thereby eliminating pain. The FDM provides clinicians another model in which to view the body and another tool in the battle against musculoskeletal pain. FDM expands the capability of traditional osteopathic modalities by specifically addressing the fascia and the distortions which are identified.

Addressing fascial distortions can provide dramatic results by addressing the biotensegrity of the body. The FDM is driven by a patient’s body language, verbal description, and the provider’s underlying understanding of the fascial distortions and their impact on the whole system.

In this course, participants will learn how to apply FDM modalities to the ankle, shoulder and knee.

## Course Times and Meal Information

Sunday through Tuesday from 8 a.m. to 5:30 p.m.  
Breakfast and lunch are on your own. Coffee and tea will be provided.

## Continuing Medical Education

24 credits of NMM-specific AOA Category 1-A CME are anticipated.

## Course Location

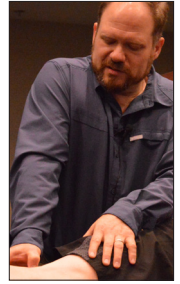
**The Broadmoor**, 1 Lake Avenue, Colorado Springs, CO 80906  
Make your reservations [online](#), or call (800) 634-7711.  
Mention the AAO’s Convocation to get the best rate.

## Travel Arrangements

Contact Tina Callahan of Globally Yours Travel at (800) 274-5975 or [globallyyourstravel@cox.net](mailto:globallyyourstravel@cox.net).

## Course Director

**Todd A. Capistrant, DO, MHA**, earned both his doctor of osteopathic medicine degree and his master in health administration degree in 1997 from the Des Moines (Iowa) University College of Osteopathic Medicine. He is one of only three physicians in the United States who are currently certified to teach seminars on the FDM, and he is the 2015-16 president of the American Fascial Distortion Model Association.



Dr. Capistrant specializes in OMM, and he is certified by the American Board of Family Medicine. He is a member of the growing OMM department at the Tanana Valley Clinic in Fairbanks, Alaska, and he serves as a regional dean for the Pacific Northwest University of Health Sciences, College of Osteopathic Medicine in Yakima, Washington.

## Registration Fees

Save 10% when you register for the AAO’s 2017 Convocation.	On or before Jan. 15, 2017		After Jan. 15, 2017	
	With Convo	Without Convo	With Convo	Without Convo
Academy member in practice*	\$828	\$920	\$918	\$1,020
Resident or intern member	\$648	\$720	\$738	\$820
Student member	\$378	\$420	\$468	\$520
Nonmember practicing DO or other health care professional	\$1,008	\$1,120	\$1,098	\$1,220
Nonmember resident or intern	\$828	\$920	\$918	\$1,020
Nonmember student	\$558	\$620	\$568	\$720

\* The AAO’s associate members, international affiliates and supporter members are entitled to register at the same fees as full members.

## Registration Form

### Pre-Convocation Course— Fascial Distortion Model: Axial Spine March 19-21, 2017

Name: \_\_\_\_\_ AOA No.: \_\_\_\_\_

Nickname for badge: \_\_\_\_\_

Street address: \_\_\_\_\_  
\_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

View the [AAO’s cancellation and refund policy](#).

- I am a practicing health care professional.
- I am a resident or intern.
- I am an osteopathic or allopathic medical student.
- I will attend the AAO’s 2017 Convocation.

The AAO accepts check, Visa, MasterCard and Discover payments in U.S. dollars. The AAO does not accept American Express.

Credit card No.: \_\_\_\_\_

Cardholder’s name: \_\_\_\_\_

Expiration date: \_\_\_\_\_ 3-digit CVV No.: \_\_\_\_\_

Billing address (if different): \_\_\_\_\_  
\_\_\_\_\_

I hereby authorize the American Academy of Osteopathy to charge the above credit card for the amount of the course registration.

Signature: \_\_\_\_\_

View the [AAO’s photo release statement](#).



Register online at [www.academyofosteopathy.org](http://www.academyofosteopathy.org), or submit this registration form and your payment by email to [GWatts@academyofosteopathy.org](mailto:GWatts@academyofosteopathy.org); by mail to the American Academy of Osteopathy, 3500 DePauw Blvd., Suite 1100, Indianapolis, IN 46268-1136; or by fax at (317) 879-0563.



# AAOJ Submission Checklist

## Manuscript Submission

- Submission emailed to [editoraaoj@gmail.com](mailto:editoraaoj@gmail.com) or mailed 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 (eg, 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

## Graphic Elements

- Graphics formatted as specified in the "Graphic Elements" section of ["AAOJ Instructions for Contributors"](#)
- Graphics as separate graphic files (eg, jpg, tiff, pdf), not included with text
- Each graphic element cited in numerical order (eg, *Table 1*, *Table 2* and *Figure 1*, *Figure 2*) with corresponding numerical captions provided in the manuscript
- For reprinted or adapted tables, figures, and illustrations, a full bibliographic citation given, providing appropriate attribution

## Required Legal Documentation

- For reprinted or adapted tables, figures, and illustrations, copyright holders' permission to reprint in the AAOJ's online and print versions, accompanied by photocopies of the original published graphic designs
- For photographs in which patients are featured, signed and dated patient model release forms
- For named sources of unpublished data and individuals listed in the "Acknowledgments" section, written permission to publish their names in the AAOJ
- For authors serving in the US military, the armed forces' written approval of the manuscript, as well as military or other institutional disclaimers

## Financial Disclosure and Conflict of Interest

Authors are required to disclose all financial and nonfinancial relationships related to the submission's subject matter. All disclosures should be included in the manuscript's title page. See the "Title Page" section of ["AAOJ Instructions to Contributors"](#) for examples of relationships and affiliations that must be disclosed. Those authors who have no financial or other relationships to disclose must indicate that on the manuscript's title page (eg, "Dr Jones has no conflict of interest or financial disclosure relevant to the topic of the submitted manuscript").

## 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).

# Component Societies and Affiliated Organizations Calendar of Upcoming Events

**Jan. 20-22, 2017**

American Fascial Distortion Model Association  
**Introduction to the Fascial Distortion Model, Module 1**  
Course director: Todd A. Capistrant, DO, MHA  
Northbay Vaca Valley Wellness Center  
Vacaville, California  
20 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.afdma.com](http://www.afdma.com).

**Jan. 20-24, 2017**

Michigan State University College of Osteopathic Medicine  
**Craniosacral Techniques, Part I**  
Course director: Barbara J. Briner, DO  
East Lansing, Michigan  
35 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.com.msu.edu](http://www.com.msu.edu).

**Jan. 21-22, 2017**

Rocky Mountain American Academy of Osteopathy  
**A.T. Still's Approach to the Foot and Ankle**  
Course director: Rue Tikker, DPM,  
and Charles A. Beck, DO, FFAO  
Rocky Vista University College of Osteopathic Medicine  
Parker, Colorado  
12 credits of AOA Category 1-A CME anticipated  
Learn more and register  
at [rockymountainao.wixsite.com/rockymtnaao/cme-events](http://rockymountainao.wixsite.com/rockymtnaao/cme-events).

**Feb. 17-19, 2017**

American Fascial Distortion Model Association  
**Introduction to the Fascial Distortion Model, Module 1**  
Course director: Todd A. Capistrant, DO, MHA  
Mayo Clinic Hospital  
Phoenix  
20 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.afdma.com](http://www.afdma.com).

**March 4-5, 2017**

Michigan State University College of Osteopathic Medicine  
**Manual Medicine Related to Sports  
and Occupational Injuries to the Extremities**  
Course director: Jake Rowan, DO, and Matt Zatzkin, DO  
East Lansing, Michigan  
15 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.com.msu.edu](http://www.com.msu.edu).

**March 29, 2017**

The American Osteopathic Association  
of Prolotherapy Regenerative Medicine  
**2017 Spring Training Seminar**  
**Beginners: The Basics You Must Know Before You Get Started**  
Course director: David Nebbeling, DO  
Rancho Bernardo Inn in San Diego  
8 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.prolotherapycollege.org](http://www.prolotherapycollege.org).

**March 30–April 2, 2017**

The American Osteopathic Association of Prolotherapy  
Regenerative Medicine  
**2017 Spring Training Seminar**  
Rancho Bernardo Inn  
San Diego  
27 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.prolotherapycollege.org](http://www.prolotherapycollege.org).

**April 21-23, 2017**

American Fascial Distortion Model Association  
**Introduction to the Fascial Distortion Model, Module 1**  
Course director: Todd A. Capistrant, DO, MHA  
Cleveland Clinic Children's Hospital for Rehabilitation  
Vacaville, California  
20 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.afdma.com](http://www.afdma.com).

**April 21-25, 2017**

Michigan State University College of Osteopathic Medicine  
**Craniosacral Techniques, Part I**  
Course director: Carl W. Steele, DO, PT  
Course faculty: Edward Isaacs, MD, and Mark Bookhout, PT  
East Lansing, Michigan  
34 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.com.msu.edu](http://www.com.msu.edu).

**June 18-25, 2017**

American Fascial Distortion Model Association  
**FDM at Sea**  
Course director: Todd A. Capistrant, DO, MHA  
8 days, 7 nights aboard Royal Caribbean's *Liberty of the Seas*  
Ports of call: Galveston, Texas; Cozumel, Mexico; George  
Town, Grand Cayman; Falmouth, Jamaica  
15 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.afdma.com](http://www.afdma.com).

**Sept. 8-10, 2017**

Michigan State University College of Osteopathic Medicine  
**Indirect, Functional Approach to Manual Medicine**  
Course directors: Harriet H. Shaw, DO,  
and Marcy Schlinger, DO  
East Lansing, Michigan  
22.5 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.com.msu.edu](http://www.com.msu.edu).

**Sept. 22-26, 2017**

Michigan State University College of Osteopathic Medicine  
**Craniosacral Techniques, Part II**  
Course director: Barbara J. Briner, DO  
East Lansing, Michigan  
35 credits of AOA Category 1-A CME anticipated  
Learn more and register at [www.com.msu.edu](http://www.com.msu.edu).

Visit [www.academyofosteopathy.org](http://www.academyofosteopathy.org) for additional listings.