Various Methods of Palpating the Cranial Rhythm Impulse  
Pgs 9-20
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Opinions expressed in The AAO Journal are those of authors or speakers and do not necessarily reflect viewpoints of the editors or official policy of the American Academy of Osteopathy® or the institutions with which the authors are affiliated, unless specified.
Contributors

Krishnahari S. Pribadi, MD, ABPN Diplomate, presents us with various methods of CRI palpation of body parts, their diagnostic values and interpretation of the findings. This article represents some of their ongoing research into palpation of the cranial rhythmic impulse, including investigations into some areas that some readers will recognize as being controversial at times.

Daniel J. Kary, DO, FAAO and Allison B. Kolkhorst, OMS IV, present a case entitled, A Patient with Recent Onset of Dysarthria and Ataxia. This article describes a patient with rather striking neurological signs and symptoms which responded remarkably well to the application of osteopathic manipulative treatment.

Thomas Quinn, DO; Mark Best, MD, MBA, MPH Lisa D. Ball, OMS-II; Veronica J. Ruston, OMS-I and Thomas J. Fotopoulos, DO have written Attitudes and Confidence

Levels of Fourth-Year Osteopathic Medical Students towards Osteopathic Manipulative Medicine. These authors have gathered interesting information on this topic by way of student surveys. They provide ideas and recommendations as to how the osteopathic profession can work to ensure the continued and increased use of OMM by our graduating students as they enter clinical practice.

Regular Features

From the Archives:

With this issue we present the final excerpt from a book by George M. McCole, DO, entitled An Analysis of the Osteopathic Lesion. This issue’s excerpt is from Chapter XLIX, “Facet Separation (continued)”, in which the author continues his discussion of “joint popping” and its role (or non-role) in the alleviation of somatic dysfunction. In this section, he presents patient comments about joint “popping”, and discusses when and how to use the “popping” technique.

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View From the Pyramids

New Treatment Guidelines for Low Back Pain: Big Change or Big Noise?

Raymond J. Hruby

Recently, we have learned that the American Osteopathic Association’s (AOA) recommendations for the use of osteopathic manipulative treatment (OMT) is now included in the database of the National Guideline Clearinghouse. You can see this information on their website at http://www.guideline.gov/content.aspx?id=15271&search=low+back+pain. There you can read a summary and description of the guidelines, and there is a link that will allow you to download the entire meta-analysis of the evidence upon which these guidelines are based. This marks the first time that guidelines specifically addressing the use of OMT for a condition are included in this database.

As mentioned, an extensive meta-analysis was done, leading to the formation of the guidelines and recommendations. The executive summary of the documentation reads as follows: “The American Osteopathic Association recommends that osteopathic physicians use osteopathic manipulative treatment (OMT) in the care of patients with low back pain. Evidence from systematic reviews and meta-analyses of randomized clinical trials (Evidence Level 1a) supports this recommendation.” In case you are unaware, Level 1a is the highest level of evidence that can be used to support the use of any kind of intervention in medical treatment.

Along with other information presented in these guidelines, there is also an algorithm for use in classifying, evaluating and treating low back pain with OMT. The algorithm is adapted from information given in Chapter 4, “The manipulative prescription,” In: Somatic Dysfunction in Osteopathic Family Medicine. Nelson, KE, Glonek, T, eds., Baltimore, MD: Lippincott, Williams & Wilkins; 2007;27-32.

What are the implications of this? The evidence is strong that OMT is effective as a treatment for mechanical low back pain. The AOA has created guidelines for the use of OMT in the treatment of mechanical low back pain. The guidelines are now in a nationally recognized database. Is this only a guideline, or does this mean that this now becomes the standard of practice? What are the implications, clinical, moral, ethical, medicolegal, and otherwise, for the DO who does not follow this guideline? Experts will be watching this, like all guidelines, very carefully. The documentation states: “The AOA believes patients with low back pain should be treated with OMT given the high level of evidence that supports its efficacy. Changes in care when this guideline is implemented will be determined by physician and patient surveys, billing and coding practice patterns amongst osteopathic physicians, data gathered from osteopathic physicians via the AOA’s Clinical Assessment Program, and other registry data gathering tools currently being developed by researchers.” Time will tell. This is ground-breaking news and should be of critical interest to all DOs.
Admitting International Osteopathic Physicians and Osteopaths to Osteopathic Graduate Medical Education Programs

Murray R. Berkowitz
Associate Editor

“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.”

I intend to devote this issue’s editorial to consideration of admitting both international osteopathic physicians and non-physician osteopaths into United States Osteopathic Graduate Medical Education (OGME) programs. As many of you are aware, there have been recent concerns with respect to the terms “osteopathic medicine” and “osteopathy”. These will be dealt with by our respected colleagues serving our profession as members of the Education Council on Osteopathic Principles (ECOP) of the American Association of Colleges of Osteopathic Medicine (AACOM). Without getting into the concerns about these terms, related to these terms come the terms regarding the practitioners of osteopathic medicine and osteopathy, that is, “osteopathic physician” and “osteopath”. For the purposes of this editorial, let us agree on my use of “osteopathic physician” as being “a person with full unlimited practice rights”1 and my use of “osteopath” as being a non-physician. Just to be clear, while I describe myself as both an osteopathic physician and an osteopath (I even have a shingle to this effect on the wall of my treatment room) who uses osteopathic medicine and osteopathy interchangeably to describe my professional practice, for this editorial I am an osteopathic physician.

I think we can agree that the Academy’s role and leadership in representing the AOA in our international efforts to expand Osteopathy has resulted in some extremely fine work. We have been well represented at meetings of the World Osteopathic Health Organization (WOHO), International Federation of Manual Medicine (FIMM), and Osteopathic International Alliance (OIA), to name only several. We have met international colleagues who are both osteopathic physicians and osteopaths. These international colleagues do not enjoy the same opportunities for advanced osteopathic education and training that we U.S. DOs have. That many of our colleagues do not take advantage of these opportunities to train in osteopathic institutions following award of their DO degree is a subject for discussion at another time; however, their choices and/or decisions result in unfilled openings in our OGME programs nationwide. In an effort to fulfill our Academy’s mission, I believe we should advocate that these OGME vacancies should be filled by our international colleagues.

There are problems with the idea of filling OGME residency vacancies with international graduates. These problems are both philosophical and practical. I believe that filling OGME vacancies with international osteopathic physicians is more plausible; however, both the philosophical and practical problems remain. First, how do we assess the international graduates’ knowledge and competencies? In the allopathic community, there exists the Educational Commission for Foreign Medical Graduates (ECFMG) that performs this important function. A major part of this process is the applicant successfully passing Step 1, Step 2 CK (Clinical Knowledge – that is, the written), and Step 2 CS (Clinical Skills – similar to the COMPEX Level II-PE) of the United States Medical Licensing Examination (USMLE). In this manner, there is a method to be able to compare U.S. and Canadian M.D. graduates with the IMGs – International Medical Graduates – including the “off shore” schools in the Caribbean. This is required of allopathic and IMG applicants to allopathic (ACGME) programs. Please note that many of the ACGME programs do, in fact, accept COMLEX for admission of D.O.s to ACGME programs – I went to one at Johns Hopkins and have never taken any part of the USMLE! There is no osteopathic equivalent. We would need to have an Educational Commission for Osteopathic Graduates (ECFOP), at least in function. At one level, this would “simply” require that the international osteopathic graduate (IOMG) successfully complete the COMLEX Level I, Level II-CE, and Level II-PE. At another level, this would necessitate the infrastructure to perform the logistical and administrative functions required.

While the U.S. is experiencing and will see a worsening physician shortage, I also know there are great short-
ages of physicians in many nations overseas, especially in the developing nations, and I have a philosophical problem with potentially diverting physician workforce from those areas of great need to come here. Also, as we have seen with the allopathic IMGs, there would be the potential that international osteopathic physicians would come here to attend OGME and then wish to stay in the U.S., when their very increased education and training is so needed to increase osteopathic and general medical care in their native lands. I am philosophically opposed to them remaining when the overseas need is great, and I am also philosophically opposed to “forcing” people to do things (that is, leave). Alas, I do not have any proposed solution to these seemingly diametrically opposed positions.

The issue of admitting non-physician osteopaths to OGME presents the additional problems associated with admitting any non-physician (e.g., nurse practitioner, PA, etc.) to a physician training program. While I feel that a non-physician will not pass the several parts of COMLEX needed to qualify for certification by an ECFOG, I do not feel that allowing them to sit for the required exams is an appropriate precedent.

I do hope for the day when there will be only international schools of osteopathic medicine and all international osteopaths are osteopathic physicians – as intended by our Founder, Andrew Taylor Still, MD, DO – and I feel that until then, we have a duty to help further advance our noble osteopathic heritage by providing increased osteopathic education and training opportunities – both here and abroad.

On an unrelated topic, in my introductory editorial one year ago, I strongly encouraged that you “actively contribute to this process of life-long learning by submitting original research, case reports or case series, commentary, or letters to the editors for publication”. I was gratified to see us publish a Letter to the Editor by our colleague, Dick MacDonald, DO in the June 2010 issue of the AAO Journal. I hope this is the beginning of a beautiful trend of exchanging ideas so we can continue to make advances in both the art and science of osteopathic medicine.

Finally, I noticed that the AOA considered the issue of admitting MDs to AOA OGME at the recent House of Delegates (HOD) meeting in Chicago in July. The HOD voted to continue to study this issue. It is interesting to note that this followed the publication in the March 2010 issue that contained the editorial, “Admitting Allopathic Physicians to Osteopathic Graduate Medical Education Programs: the Case for Competency-Based NMM/OMM Training in OGME”. I hope that this represents an example of our Journal having a much desired impact beyond our Academy on our osteopathic profession.

References
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Various methods of CRI palpation of body parts, their diagnostic values and interpretation of the findings

Krishnahari S. Pribadi

“Successful palpation of this cranial rhythmic impulse requires a tactile sense trained and developed beyond the usual requirements. Its diagnostic possibilities have never been fully explored, although an electronic device is being developed to do such recording. It is known that the rate is accelerated in fevers and decelerated in psychiatric conditions somewhat in proportion to their severity, varying as the clinical picture varies. In this respect, the cranial rhythmic impulse foretells psychic changes rather accurately and so may well be of considerable prognostic and diagnostic value.” – Magoun

“We will eventually be able to identify specific cybernetic-holographic engrams responsible for specific physiological functions and specific diseases. This will allow our therapeutic interventions to be more specific, precise and effective. We should eventually be able to identify specific entry points within the body as part of specific cybernetic-holographic engrams which can give us direct access to the CSS.” – Pribadi.

Summary

The Cranial Rhythm Impulse (CRI) reflects the homeostatic status of a person. Abnormal CRI usually indicates there are problems within the homeostatic mechanisms of a person. There are agents and forces that can influence the CRI characteristics. The use of palpation, with “feeling, thinking, seeing and knowing fingers” is the cornerstone of the cranial diagnostic method as developed by Sutherland. Monitoring the CRI while applying the cranial manipulative procedures is an important aspect of the palpation of the CRI. This article discusses many other methods of palpation of the CRI developed by various practitioners of Cranial Osteopathy. Segmental Restriction Localization Palpatory Method can locate a restriction area that inhibits the course of CRI natural flow caudally. Arcing Palpatory Method developed by Upledger is used to locate restriction lesions and “energy cysts” in the body. Bio-energy Palpatory Method introduced by Becker is a palpation method to sense the bioenergy fields within body areas being diagnosed and treated. Craniosacral Acupuncture Palpatory Method© introduced by the author is used to locate abnormal acupuncture points. Craniosacral Diagnostic Digital Method© developed by the author is designed to determine the meridian profile, thereby assisting medical diagnosis. Craniosacral Nutritional Assessment Method© is a method to determine nutritional requirements by palpating the nutritional points for CRI. Craniosacral Allergy Screening Test© developed by the author can screen foods, substances, drugs for allergy or intolerance. Craniosacral Therapeutic Sensitivity and Dose Determination© is a method to determine individual therapeutic sensitivity to therapeutic agents and their doses. Lastly, Craniosacral Tele-Diagnostic Method© suggested by the author can be used to diagnose as well as treat patients from great distances.

Key words: acupuncture profile, Arcing Palpatory Method, Bio-energy Palpatory Method, Breath of Life, cranial rhythmic impulse, Cranial Osteopathy, craniodermal points, Craniosacral Acupuncture Palpatory Method©, Craniosacral Allergy Screening Test©, Craniosacral Diagnostic Digital Method©, craniosacral mechanism, Craniosacral Nutritional Assessment Method©, Craniosacral Tele-Diagnostic Method©, Craniosacral Therapeutic Sensitivity and Dose Determination©, energy cysts, highest known element, Leaky Gut Syndrome, liquid light, meridian profile, Riddler’s Nutritional Reflexes, Segmental Restriction Localization Palpatory Method, Surface Scanning Laser Displacement Meter, Upledger-Pribadi’s sign.
Craniosacral Palpatory Method

The use of palpation, with “feeling, thinking, seeing and knowing fingers” is the cornerstone of the cranial diagnostic method as developed by Sutherland. This basic cranial diagnostic method relies on the palpation of the craniosacral structures and position, cranial motion and the involuntary active motion of the craniosacral mechanism. Cranial lesions (and sacral lesions) are determined by palpating the positions of specific cranial and sacral bones associated with the craniosacral mechanism. Establishing specific cranial (strain pattern) lesions is required to determine the correct manipulative actions required to correct the lesions, thereby normalizing the craniosacral mechanism to establish the mechanical homeostatic balance as part of the treatment process. Monitoring the CRI while applying the cranial manipulative procedures is an important value of the palpation of the CRI. It is well known that the quality of CRI changes as a manipulative procedure is being done; starting with an abnormal CRI (such as no detection, weak, irregular, asymmetrical, slow, rapid, abnormal waves, etc.), deceleration, a stand-still, acceleration and finally more or less normal CRI. In doing so, the physician can adjust his technique in order to deliver the best approach to create changes within the craniosacral mechanism without introducing undue force that may even exaggerate lesions or pathology. Thus, the most important value of palpation of the CRI is the monitoring aspect of treatment. The dictum is that when one can sense the return of the CRI at the parts being treated following a still-point, one can be assured that treatment is successful.

The CRI reflects the homeostatic status of a person. “Homeostatis is a condition maintained within a narrow range by coordinated physiological processes, be they mechanical, fluid, chemical, electrical or magnetic.” Thus, one may be able get some ideas about the homeostatic status of an individual by palpating the CRI and analyzing the characteristics (vitality, amplitude, frequency, symmetry, form of wave, irregularity, demarcation of motion) of the CRI at the cranium or any parts of the body. When the CRI is completely absent, an individual can be either dead or sick or undergoing a still-point. However, different qualities of the CRI at different parts of the body can exist simultaneously because of local reasons, restrictions of the CRI waves, neurological conditions, etc. A dead man will not have CRI on all parts of the body. As a matter of fact, the CRI may still exist even though one has been declared to be brain dead for a few minutes. The absence of CRI is not synonymous with death. However a dead body ceases to generate the CRI in all parts of the body. An absence of the CRI at the cranium usually indicates the presence of severe spheno-basilar compression. When the lesion is corrected, the CRI will resume at various strengths, frequencies and shapes. Abnormal CRI usually indicates there are problems within the homeostatic mechanisms of a person. It can be stated positively that abnormal CRI detected in any parts of the body indicates usually means that person is not well, even though he has no symptoms or signs whatsoever. A physician can determine whether one is sick or not by simply palpatign the CRI at the head or any parts of the body. Determining sickness and wellness can be simply done by palpating the CRI of a person. A malingerer can be easily spotted by the presence of normal CRI! Still-point is a condition in which the CRI ceases to be generated temporarily during therapeutic process induced by treatment procedures which affect the craniosacral system such as cranial manipulation, somato-emotional release, acupuncture, intensive psychotherapy, relaxation methods, aromatherapy, meditation and spiritual transcendental experience. At times, still-point occurs spontaneously when one engages in contemplation or spiritual forces influence the bio-energy field of a person, willingly or unwillingly. Possessive state is not recognized in medicine. However, the author has observed that the CRI is undetectable when possessive state or hypnotic state is taking place and usually resumes when the person is liberated from this state. Thus, the CRI is not merely the reflection of the craniosacral mechanism, but is a phenomenon that involves the whole organism and its interactions with the environment and even cosmos! The interpretation of the quality of the CRI requires the recognition of the context in which a person is experiencing and thorough understanding of all internal and external factors which may exert influences upon the generation of the CRI.

Segmental Restriction Localization Palpatory Method

This method is done by comparing the findings of the CRI palpation applied to body regions and segments such as the head, cervical, chest, abdomen, pelvic, upper arms, lower arms, hands, thighs, lower legs, feet, anterior and posterior and left and right. A demarcation of differential CRI characteristics (such as amplitude and frequency) indicates a disease process affecting the nervous system integrity that occurs at or slightly above, lateral to or antero-posterior to the line of demarcation. This restriction area inhibits or suppresses the course of CRI natural flow and thereby causes differential CRI qualities.

Craniosacral Acupuncture Palpatory Method

In a paper published in 1998, the author proposed the interconnection between the primary respiratory mechanism and the acupuncture meridian system based on the CRI palpatory findings in living human subjects that the cranial rhythmic impulse could be detected at acupuncture points. The author also introduced a term called the Upledger-Pribadi’s sign to describe a clinical phenomenon...
in which the cranial rhythmic impulse is absent in pathological acupuncture points. Thus, determining the quality of and the absence of pulsation at specific acupuncture points could assist in assessing the health status of the individual, particularly concerning the status of the meridians and the corresponding internal organs. By palpating pulsations at major acupuncture points, we can then readily establish the specific abnormal acupuncture profiles of the patients corresponding to the specific disease patterns.7 Using the Surface Scanning Laser Displacement Meter, the author has proven objectively the presence of sinusoidal wave pulsation at the tip of the right mastoid bone (with a maximum deflection of 0.8 mm), the frequency of which is well within the range of cranial rhythmic impulse. Furthermore, this work has demonstrated objectively the presence of pulsations (with a maximum deflection of 0.07 mm and frequency range from 4 to 11 cpm) at several acupuncture points, the characteristics of which appear to be identified with the characteristics of the cranial rhythmic impulse.8 (See graphic 1 on next page).

The Craniosacral Acupuncture Palpatory Method© consists of first sensing the bioenergy force emanating from an acupuncture point by placing the volar surface of the palpating finger 0.5 – 1 cm above the acupuncture point. An immediate prickling sensation (as if being penetrated by a fine needle) will be felt as the bioenergy force jumps the gap between the acupuncture point and the palpating finger and bombards the surface with charged particles, the intensity of which varies according to the phases of the CRI. Once the location of an acupuncture point is identified, the contact part of examining finger is gently placed on the acupuncture point to perceive the CRI pulsation at the point. Of course if one recognizes the anatomical position of a specific acupuncture point, the examiner

| Chart 1 |
| Localization of segmental restriction |
| (record the CRI palpatory findings: + presence, - absence) |

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**Arcing Palpatory Method**

Upledger introduced the arcing palpatory method to identify restriction lesions and “energy cysts” in the body. Injury and restrictive areas set up interference waves which superimpose upon the normal inherent body motion. Instead of internal and external rotation, interference waves create concentric global waves emanating from the center of a restriction lesion caused by disease or injury. By placing both hands in turn symmetrically to palpate the concentric waves, the examiner can pinpoint the center of restriction by imagining the intersection point of the radii of the arcs (see picture 1)

**Bio-energy Palpatory Method**

Becker developed a palpatory method to sense bioenergy fields within body physiological functioning of the areas being examined and treated. The examiner places his hands upon or under a patient and establishes a fulcrum point by the elbow or arm upon the examination table or crossed knees, or some portion of the patient. Compression is applied directly downward at this fulcrum point while the hand contact remains to be firm but gentle. Three phases of motion will be sensed by the examining hands successively up to several minutes duration: 1. pattern of bioenergy forces working their way towards the point of balance, 2. a functioning still-point, and 3. a more normal pattern of motion. By sensing these bioenergy fields and “memory reactions” one can assess the severity, acuity, chronicity, the age of the lesions, trauma and stress factors and the potency for healing.
just simply places the contact surface of the examining finger upon the acupuncture point. There are three levels of pressure: 1. gentle: to sense the bioenergy component, 2. medium (5-9 grams): to detect abnormal chemical problems, 3. deep (10-20 grams): to identify abnormal structural problems, which can be applied successively at each acupuncture point being examined. Suspected abnormal acupuncture points can be selected or major important acupuncture points can be screened for systemic problems. An abnormal acupuncture point is indicated by the presence of a positive Upledger-Pribadi’s sign (that is the absence of CRI pulsation at the point). To determine whether an abnormal point (a deficiency state) requires charging, touch the Yang point at the center of the dorsal surface of the patient’s right hand with a free finger of the examiner’s hand. If the point immediately pulsates, then it requires charging. If it remains pulseless then, it most likely requires discharging. In this case, touch the Yin point at the center point of the dorsal area of the patient’s left hand with a free finger of the examiner’s hand, the point (an excessive state) will start pulsating. This palpatory method can be used to develop the acupuncture profile of the patient, thereby assisting in establishing medical diagnosis as well as specific treatment procedures (including acupuncture).

Craniosacral Diagnostic Digital Method©

By serially and simultaneously palpating body organ areas and the MUE-49’s (at the dorsal face of the tips of fingers) for CRI with the fingers of the author’s both hands, respectively (one at the organ and the other at the MUE 49) the author was able to establish the presence of a new meridian system, called by the author as the synergic meridian system. The author called this palpatory method, the servo-cybernetic palpatory method. The patient and the physician form a servo-cybernetic circle. One hand picks up the output of the craniosacral system (MUE-49) and the other hand delivers the feedback data to the input part of the cybernetic system (a corresponding organ). When a specific MUE-49 and the corresponding organ are palpated simultaneously, the CRI at the corresponding organ and the specific MUE-49 ceases temporarily. Whereas, if the specific MUE-49 does not have a corresponding relationship with that particular organ, then both the organ and MUE-49 continue to generate CRI palpable by the fingers placed on them. A functional technique as opposed to a structural technique using the servo-cybernetic principle has been introduced by Hoover. By this technique, the physician introduced elements in the circle to initiate changes in the homeo-

**Graphic 1**

Cranial rhythmic pulsations at several acupuncture points as detected by the Surface Scanning Laser Displacement Meter.⁸
The author’s servo-cybernetic palpatory method does not introduce any forces or element. The palpating fingers of both hands simply sense the CRI at both ends of the circuit. Frymann has described also the use of two hands to diagnose the potential improvement of a spinal lesion causing a paralyzed limb.

“It is possible to estimate the potential for improvement furthermore, by simultaneously placing one hand on the spinal segment which supplies the principle innervation to that limb area presently being studied by the other hand. Pause a few minutes and concentrate upon the activity transmitted to the two hands”.

“If ‘communication’ is established between the two hands, which in reality means communication between a spinal segment and its peripheral distribution then it may be assumed that there is still a potential avenue for the vital fluid tide within.”

By palpatory tracing the CRI generated by the channels of this new meridian system, the author is able to map out the specific channels and interconnections with organs and other meridians. All channels beginning at the dorsal hands and feet intersect at the navel (Co-8 or the Qizhong, the point that warms the Yang). Whereas all channels beginning at the ventral surfaces of hands and feet intersect at the G4, or the Mingmen point (the Kidney Yin Source Point). From these points the channels enter specific organs and connect with other organ meridians internally (see picture 2).

Based on these findings, the author developed a diagnostic CRI palpation method to determine the acupuncture meridian profile called the “Craniosacral Diagnostic Digital Method” which can be used to screen the health status of body organs and general health. The author also introduces the term: “craniodermal points” to indicate points on the skin surface that generate the CRI and have specific connections with internal organs, structures and processes. Acupuncture points are craniodermal points. However, there are many other craniodermal points which have not been considered to be acupuncture points which qualify the requirements to be called craniodermal points.

Picture 2.

Dorsal Synergic Meridian System
Ventral Synergic Meridian System
Copyright© 2009, by Krishnahari S. Pribadi
point and some craniodermal points located at the interphalanx spaces. Basically, the “Craniosacral Diagnostic Digital Method©”, is done by serially touching all MUE-49s with the volar surface of the examiner’s thumb while placing the lateral surface of the examiner’s index finger at the volar surface of the patient’s last digits and palpating other craniodermal points located on the dorsal and volar sides of both hands to determine the absence or presence of the Upledger-Pribadi’s sign at the points. Positive Upledger-Pribadi’s signs indicate abnormal craniodermal points, organ meridians and specific corresponding organs. There are six yin organs (heart, spleen, liver, kidney, lungs, triple burner-endocrine), and six yang organs (stomach, bladder, circulation, great intestine, gall bladder and small intestine). The yin organs are represented by the craniodermal points on the left hand. The yang organs are represented by the craniodermal points on the right hand. The craniodermal points located at the last dorsal intermetacarpal spaces of the left and right hands have been identified to be associated with specific physiological systems. The method uses three levels of palpation technique to detect the CRI at the craniodermal points. The first level utilizes no pressure at all; other than touching the points lightly to detect the CRI. This level reflects the bioenergetic status of the meridians and corresponding organs. The next level requires slight pressure not more then five grams. This level is used to diagnose the chemical status of the organs. To establish medical condition, the second level pressure should be sufficient. The third level uses more pressure than 5 gram (approximately 10-20 gram). This level determines the physical structural condition of an organ. A positive Upledger -Pribadi’s sign is shown when the CRI is not detected when the craniodermal point is palpated using each specific pressure level. The physician can use the following charts to record the findings by writing + or – at the respective boxes.

The author has identified several craniodermal points at the palmar surface of the hand. They usually reflect specific pathological processes, circulatory and metabolic processes and hormones as well as physiological body chemicals. The major specific pathological processes can be classified as follow: aging, infection, neoplasma, hormonal imbalance, toxin, allergy, reduced cellular oxygenization, and abnormal metabolism, each of them is represented by a specific craniodermal point. Picture 4 on page 16 shows these major specific pathology craniodermal points. There are also craniodermal points associated with specific disease entities called by the author as the “Specific Disease Craniodermal Points” (see picture 5 on page 16). Each point is associated with a specific disease entity. Positive Upledger-Pribadi’s signs elicited by the three levels of palpatory pressure indicate abnormalities at the bioenergetic, chemical or structural level, respectively or the combination of them.

Because of the interconnection between the primary respiratory mechanism and the acupuncture meridian system, abnormal craniosacral mechanism can cause abnormal qualities of CRI at acupuncture points. Sphenobasilar compression can cause undetectable CRI at acupuncture points. Other cranial lesions may cause weak acupuncture pulsations. Therefore, it is imperative to correct abnormal craniosacral strain patterns first before proceeding with the procedures of the Craniosacral Diagnostic Digital Method©. Likewise, any structural restrictions that inhibit the flow of the CRI waves to the hands can distort the findings and need to be corrected as well. Spinal nerve entrapment or polyneuropathy of the brachial plexus and its tributaries may also yield distorted findings. On the other hand, by simply palpating the MUE-49’s, and specific craniodermal points, the physician can determine the presence or absence pathologies at the craniosacral mechanism, medulla spinalis, brachial plexus and its tributaries, occipito-atlantal joint, and cervical spine, etc. When a complete absence of CRI pulsation occurs at all MUE-49’s despite normal craniosacral mechanism and the unrestricted flow of CRI waves to hands, most of the time, we can assume that there are chemical or bacterial toxins in the body that suppress the CRI pulsations at all MUE-49’s. In that case, the author uses a detoxifying herbal formula or a herbal remedy.
### Chart 3: ACUPUNCTURE MERIDIAN PROFILE:

|--------------------------------------------------------|----------|---------------------|----------------|---------------|----------------|

### Chart 4: PHYSIOLOGICAL SYSTEM & ORGAN PROFILE:

| PL | MC3-4/5L MC3-3/4L MC3-2/3L MC3-1/2L (L. Hegu) MC3-1/2R (R. Hegu) MC3-2/3R MC3-3/4R MC3-4/5R | Endocrine Cardiovascular Musculo-skeletal Body Defense Against Infection Dermatology Blood & Bone Marrow Teeth Mucosal Membranes |
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such as Andrographis paniculata or Yellow dock (Rumex crispus) or his own herbal detoxifying formula as a filter by placing a bottle of herbal tincture or capsuled powders or even a homeopathic preparation of them on the body of the patient. For an unexplainable reason, the CRI pulsations at MUE-49’s will resume with the exceptions of those that have abnormal non-toxic conditions of the corresponding meridians and organs. This proves that there is a bioenergetic mechanism taking place and operating within the craniosacral and acupuncture meridian system and is also the basis of the Craniosacral Diagnostic Digital Method©. Confirmation of the findings using this method of examination can be done by further medical physical examination, laboratory studies and other diagnostic tests as deemed necessary.

Craniosacral Nutritional Assessment Method©

The concept that there are specific points on the skin surface that reflect specific nutritional conditions and requirements of the body has been developed by Riddler. He called these nutritional points: “Riddler’s Nutritional Reflexes” which can be assessed by kinesiologic muscle testing technique. This muscle testing technique allows identification of specific nutritional deficiencies and excesses.¹¹ The author modified this technique by replacing the muscle testing with palpation of the CRI of the these nutritional reflexes. When the CRI is absence (a positive Upledger-Pribadi’s sign), it can be assumed that abnormal nutritional conditions exist. To determine nutritional deficiencies simply touch the liver area of the patient with the examiner’s other hand simultaneously: the CRI will remain to be undetectable. Nutritional excesses are determined by the same method. In this case, the CRI at the specific nutritional reflexes will start producing a brief rapid CRI pulsation. The following picture 6 shows these nutritional reflexes.

Some nutritional points are added by the author (vitmin B12, intrinsinc factor points). Specific dose requirements of nutritional substances (vitamins, supplements, minerals) can be done by monitoring the specific nutritional point while the examiner verbally states (loudly or in the heart) several dose-increments gradually upward or downward of the required nutrition (either in unit or mg such as 250 mg, 500 mg and 1000 mg Calcium per day for Calcium nutritional point) until a sudden rapid pulsation of the CRI at the nutritional point is detected. The dose of the nutrition is established at the exact dose that induces a rapid pulsation of the CRI. This sounds magical but it does work very well. It appears to work based on the servo-cybernetic mechanism established between the patient and the examiner. The input being provided in the form of verbal communication of the examiner regarding the dose is transmitted to the patient’s brain and the corresponding organ or body functioning, which is processed by the Body Intelligence while the output is the CRI at the nutritional point. Further research needs to be done in this controversial area.

Craniosacral Allergy Screening Test©

The CRI has been called a significant detector as it reflects the body homesostatic regulatory state. It tells that there is something going on in the body. The author discovered that when the body rejects a specific substance because of

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Explanation of abbreviations: LIP (lipid metabolism), AGING/DEG (degeneration), INF (Infection), NEO (neoplastic process), TOX (toxic accumulation), ALL (allergic diathesis), OXY (tissue oxygenization state), CH (carbohydrate metabolism), PROT (protein metabolism). Positive Upledger-Pribadi’s sign indicates specific abnormal condition of the specific pathological process corresponding with the point. Copyright© 2009. by Krishnahari S. Pribadi.
allergy or intolerance and this substance is placed on the body skin or touched by the patient, the CRI at the allergy craniodermal point (L-10 or Yuji) will suddenly cease temporarily. This point can be found at the midpoint on the thenar surface of the 1st metacarpus, at the “border” separating the light colored skin of the palm from the darker colored skin of the back of the hand.12 Foods, natural substances, herbs or chemical drugs generate bio-energetic fields which interact with the body bio-energy fields when placed upon the body surface. When a dis-synchrony state occurs between the two bioenergy fields, the CRI temporarily ceases to be detected. Based on this finding, the author developed a method to detect allergy or intolerance to substances called the Craniosacral Allergy Screening Test©. This non-invasive method consists of placing substances (foods or chemicals, drugs or natural products) serially either in the original form or homeopathic dilution on the body of the patient, and at the same time monitoring the CRI at the Yiju point. A sudden cessation of the CRI indicates the presence of allergy or intolerance to the substance. The author has developed a kit consisting of more than 100 homeopathic dilution of substances to be used for this test. This screening method can be substantiated objectively by the allergic skin prickling test or serology test (RAST) for suspected allergens. This screening method is useful in designing nutritional diet for allergic conditions, Leaky Gut Syndrome, food intolerance, Autism Spectrum Disorders, familiar with the specific foods or allergens (by visually viewing and touching the substances), it seems engrams of these specific substances are registered in the memory component of the craniosacral system. By simply visualizing these specific substances, the physician accesses these engrams in his CSS memory. This procedure may replace the procedure of having the patient contact the specific agents successively when these substances are not available. The patient can also be asked to imagine and visualize specific agents being tested. Again, this sounds rather unscientific, but the author has found this to be accurate. Further research in this area needs to be done.

Diagnosis of Leaky Gut Syndrome

Leaky Gut Syndrome (LGS) is a condition in which the permeability of the intestinal mucosa increases resulting in the entrance of toxins, haptenes, allergens, big molecules such as casein, gluten, undigested materials, toxins to the circulatory system and body organs as well as the brain. This syndrome is associated with autism, ADHD, ADD, allergies, auto-immune diseases such as lupus, vitiligo, idiopathic thrombocytopenia, Crohn’s disease, Syogren’s disease, scleroderma, multiple sclerosis, rheumatoid arthritis diabetes, alopecia , even asthma, etc. Viral, bacterial or yeast (candida) infection can trigger LGS. Some agents

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**Picture 5.**
Several Craniodermal Specific Disease Points at the palmar surface. Each point is associated with a specific disease entity. Positive Upledger-Pribadi’s sign indicates the presence of the disease entity if supported by other objective diagnostic medical tests. Copyright© 2009, by Krishnahari S. Pribadi.
Picture 6.
RIDDLER’S NUTRITIONAL REFLEXES

Copyright © 1983, by Touch For Health Foundation
such antibiotics, NSAID’s, corticosteroids, cytotoxic agents, even antihistamines, chemical food additives may induce LGS.

A laboratorium testing procedure called the lactulose/manitol test by giving lactulose (not absorbed by the intestine) and mannitol (absorbed by the intestine) to the subject followed by measurement of the sugars in the urine can determine the presence of LGS. Lactulose/manitol excretion ratio below 0.03 is considered normal. A bimanual CRI palpatory method by simultaneously placing one hand on the liver and the other hand on the stomach, small intestines (the area in the middle between the navel and the xyphoid process) and left colon areas successively can detect the presence or absence of LGS. If the bimanual palpation detects CRI pulsations at both ends, then, LGS is not present. If LGS exists, the CRI pulsations at both ends will be weak or not felt at all.

Craniosacral Therapeutic Sensitivity and Dose Determination

We are entering another controversial issue which requires further research to validate the author’s findings. The body has its own innate intelligence and can determine therapeutic sensitivity and doses of therapeutic agents such as chemical drugs, herbal remedies, homeopathic remedies, vitamins and supplements. By the application of the thinking fingers to detect the CRI at a specific craniodermal point or a disease area, we can detect the sensitivity and appropriate dose of a therapeutic agent. To determine sensitivity of a therapeutic agent, first palpate the specific craniodermal point appropriate to the therapeutic agent (infection point for antibiotic, allergy point for anti-allergy, neo-plastic point for anti-neoplastic, seizure point for antiepileptic, schizophrenic point for antipsychotic medication, etc.) or a specific MUE-49 or a physiological or organ craniodermal point at the dorsal or ventral surface of the hand associated with the disease location or a body disease area or a specific diseases entity. When diseased, these points or areas usually do not have palpable CRI pulsations. Then, have the patient touch or place the specific therapeutic agent being tested on the patient’s body. The sudden reappearance of the CRI at the respective point indicates sensitivity to the agent. To determine the correct dose, first, place the specific therapeutic agent being tested (such as a chemical drug, a herbal formula, a homeopathic preparation or a supplement) within the visual field of the examiner (but not touching the patient’s body) such as on a bed or table. Then palpate the appropriate craniodermal point or the diseased area for CRI. Look at the therapeutic agent and start verbally (loudly or silently) stating gradual dose increments intelligently upward or downward (in unit or mg specific to the therapeutic agent according to the usual pharmacological or herbal or homeopathic or nutritional dose standard and the frequency of administering per day) while palpating the specific cranio-dermal point or the diseased area appropriate to the specific therapeutic agent being tested. The dose that initiates rapid pulsation of the CRI is the correct dose for the patient. For example to determine the dose of a thyroid agent (such as T3 or kelp) to support the hypo-functioning thyroid, place a bottle or a tablet or a capsule of the agent in the visual field while palpating the thyroid area or the TB channel (representing endocrine), then start verbally stating the increment doses, and stop at the dose that generates immediate rapid pulsation of the CRI.

Craniosacral Tele-Diagnostic Method©

This is a controversial and revolutionary application of the cranial concept. Let’s examine the following statement by Sutherland:

“Do you know anything about sheet lightning? You see its manifestation all through the cloud, but it does not touch the cloud. I want you to see the invisible “liquid light,” or the Breath of Life as sheer lightning and a transmutation, the sheet lightning all through the nerves, not touching the “copper tube.” The transmutation is what Dr. Still pointed to in the early days as “nerve force.” He was trying to put across this understanding using the example of the electrical force, or the electrical “juice,” that runs along the wire. That signal that runs along has to have a tract to run on. It is a push-button mechanism, an attunement within the human body. Tuned to what? To that highest known element, “the Breath of Life”, not the breath of air. Quoting another text: “in the creation of man, the Breath of Life was breathed into the nasals of a form of clay, and man became a living soul.”

It does suggest that the cranial rhythmic force is divine in nature and is capable of penetrating solid substances and traveling at a great distance just like light waves.

Now, if a doctor tunes himself as a receiver into the cranial mechanism and all the cranial rhythmic waves emanating from the body, organs and acupuncture points (or craniodermal points) of a person/ his patient known already to him personally or his representations (such as his picture, voice, signature or even his name), this intelligent “liquid light” of that person traveling at a great distance can enter the doctor’s body and change temporarily his craniosacral mechanism, meridian profile, specific acupuncture pulsations, his nutritional points, etc. Then, by simply applying all the various methods of cranial palpation as described above on the doctor’s body himself, then the doctor can diagnose the cranial lesions, meridian profile, nutritional profile, pathological profile, allergy profile and even determine the medical diagnoses of that particular patient and his medical and therapeutic needs at a great distance! The author has applied this method to many of
his patients to diagnose and monitor their medical conditions from a great distance with the accuracy near 100%. Further research in this field is required to substantiate and prove the validity of this method. If this method is proven to be scientifically valid, then it may become another diagnostic armament of Tele-Medicine and be practiced by doctors who use the cranial concept in their practices. This method can also be used to treat patients at great distances. The doctor can prescribe pharmaceutical drugs (based on physical complaints, medical history, physical medical diagnoses supported by this diagnostic method), herbal remedies, homeopathic remedies and all treatment methods and agents that can influence the cranio-sacral system. As the “Breath of Life” of a patient can influence the doctor during the tele-diagnostic process, so also the “Breath of Life” of the doctor can potentially influence his patient at a great distance to correct cranial lesions, perform cranial manipulation and even apply bioenergy treatment and modify the meridian profile and correct abnormal acupuncture points. It sounds magical. But let’s contemplate on this following statement by Sutherland:

“Osteopathy is a science with possibilities as great as the magnitude of the heavens. It is a science dealing with the natural forces of the body. We work as osteopaths with the traditional principle in mind that the tendency in the patient’s body is always towards the normal. Here is much to discover in the science of osteopathy by working with the forces within that manifest the healing processes. These forces within the patient are greater than any blind force that can safely be brought to bear from without.”

There are many uses of the palpation of the CRI and the potential appears to be unlimited. The readers are free to try the above methods to further substantiate the author’s findings and even compare the results with objective diagnostic measurements and to support and even select further appropriate clinical diagnostic examinations, laboratory examinations and medical tests as deemed necessary. Many of the ideas and concepts and findings here appear to be mind boggling and conventionally unscientific, but they are based on studies of real cases using the palpation of the CRI in normal and abnormal conditions. It is suggested that the use of an objective CRI detector instrument such as the Surface Scanning Laser Displacement Meter can objectively determine if the specific palpatory methods, their values and their interpretation as described in this article are indeed valid and correct.

References
13. Ibid. Back cover.

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Jalan Boreno Raya 8
Depok Timur 16418
West Java, Indonesia
E-mail: ypsiexdir@yahoo.com
Course Outline:
Thursday, Oct 7: This is required for those physicians who have not taken a prior course in prolotherapy. It will include an introduction to prolotherapy, wound healing, degenerative postural cascade, coding and billing.

Friday and Saturday, Oct 8-9: Participants will be divided into two groups, beginners and advanced. These two groups will alternate between lectures and anatomy and injection technique while the other group will be in the anatomy lab performing injections under supervision and reviewing prossections.

Presenting:
Mark S. Cantieri, DO, FAAO, Program Chair
George J. Pasquarello, DO, FAAO

Prerequisites
Functional Anatomy; (1) Level I course or equivalent

CME
The program anticipates being approved for 20 hours of AOA Category 1-A CME credit pending approval by the AOA CCME.

Program Time Table
Thursday, October 7 ............................. 5:00 pm - 10:00 pm
Friday, October 8 ............................... 8:00 am - 5:30 pm
Saturday, October 9 ........................... 8:00 am - 5:30 pm

Thursday includes a 30 minute break; Friday & Saturday include (2) 15 minute breaks and a (1) hour lunch)

Who May Attend Policy
The primary educational objective for AAO is to provide programs aimed to improve understanding of philosophy and diagnostic/manipulative skills for AAO members, DOs who are not AAO members, individuals who are licensed for the unlimited scope and practice of medicine, and for those in programs leading to such license.

Registration Form
Prolotherapy Weekend, October 7-9, 2010

Name: ____________________________________________
Nickname for Badge: ______________________________
Street Address: ____________________________________
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Office Phone: _______________ Fax: ________________
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By releasing your Fax/Email you have given the AAO permission to send marketing information regarding courses via fax or email.

AOA#: __________ College/Yr Grad: ________________
☐ I require a vegetarian meal

(AAO makes every attempt to provide snacks/meals that will meet participant's needs, but, we cannot guarantee to satisfy all requests.)

Registration Rates
$1,200 (if book has been previously purchased)
$1,510 to include course syllabus:
AAO accepts Check, Visa, Mastercard, or Discover

Make checks payable to “American Academy of Osteopathy”

Credit Card # ______________________________
Cardholder’s Name __________________________
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I hereby authorize the American Academy of Osteopathy® to charge the above credit card for the full course registration amount.

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* A rental car is recommended since the campus is located about 15-20 minutes from most hotels and restaurants.

Cancellation and Refund Policy.
The American Academy of Osteopathy® reserves the right to cancel an educational program if insufficient physicians pre-register. Sufficient registrations must be received 30 days prior to the opening of the course. If you are considering registering for a course less than 30 days prior to the opening, contact the Academy office before making travel plans. In the event of course cancellation by the Academy due to lack of registration, all registration money will be refunded. Cancellation from participants received in writing up to 30 days prior to the course opening are subject to withholding of a 20-percent administrative fee or they may transfer 80-percent of their tuition to another educational program to be held within the next 12 months. Cancellations received in writing under 30 days prior to the course opening can transfer 80-percent of their course registration fee to another course to be held within the next 12 months. Any registrant who fails to appear for an AAO program can transfer up to 50-percent of their registration fee to another AAO educational program to be held within the next 12 months if a written and signed explanation is received at the AAO office within 10 days of the scheduled course. All other cancellations will receive no refund or transfer of registration fees.

Volume 20, Issue 3, September 2010

The AAO Journal
## AAO Calendar of Events

Mark your calendar for these Academy meetings and educational courses

### October 2010

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<td>Optimizing Outcomes: A Roadmap to Financial Success in Today’s Changing Reimbursement Environment in San Francisco, CA</td>
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Attitudes and Confidence Levels of Fourth-Year Osteopathic Medical Students towards Osteopathic Manipulative Medicine

Tom Quinn, Mark Best, Thomas J. Fotopoulos, Lisa D. Ball and Veronica J. Ruston

Abstract
As a follow-up to the study of the inaugural class of Lake Erie College of Osteopathic Medicine at Bradenton (LECOM-Bradenton) performed at the end of their second year of medical school, this new study addresses the student’s confidence and attitude towards the use of Osteopathic Manipulative Medicine (OMM) at the end of their fourth year. The first study was published in the December 2007 issue of JAAO. In this new study the LECOM-Bradenton inaugural class completed an anonymous survey just days before receiving their DO degrees. The survey examined their confidence level in performing OMM and their intention to use OMM in their clinical practice. Almost half (45%) of the students were undecided if they would or would not use OMM. The students’ experiences during their third and fourth year clinical rotations did not seem to impact the ambivalence which paralleled the findings of the prior study.

Introduction
Osteopathic medicine remains the fastest growing healthcare segment in the United States. As of December 2008, there are 28 colleges of osteopathic medicine, with more proposed for the near future, compared to just 23 osteopathic colleges operating at the end of 2006. Notable questions have emerged regarding sacrifice of quality for quantity, and if osteopathic students will become “complete” osteopathic physicians.

LECOM-Bradenton graduated its first class in June 2008. With its exclusive Problem-Based-Learning (PBL) pathway LECOM-Bradenton represents a unique osteopathic educational experience pioneered by the inaugural class of 2008. The students received a thorough introduction to osteopathic principles and practice during their first two years at the college. However, since this was the first class of a new osteopathic medical school, the students had no upperclassmen to guide them in their selection of their third and fourth-year clinical rotations. Many of the clinical rotations were new and there was no history regarding their use of osteopathic manipulation. This study was designed to determine how their clinical years of medical school influenced their confidence levels and desire to use osteopathic manipulative therapy in their future practices.

Method
At the end of their final year at LECOM-Bradenton, a survey was conducted of the inaugural class. This survey assessed these students’ attitudes toward, and the intentions of using OMM in their clinical practices, and their level of confidence in treating patients using OMM techniques. Separate questions that were similar to those in the initial survey just two years prior were asked of the students’ confidence levels, in High-Velocity-Low-Amplitude (HVLA) and non-HVLA techniques. One-hundred-thirty-five students (100%) responded to the survey. The students were instructed not to put their name or any other identifying marks on the survey to assure that we would receive honest answers and be less likely to result in a socially desirability response bias.

Each student was asked to give only the primary reason for their answer but some gave more than one reason. Since the study was anonymous there was no way of identifying the student to find which answer was their primary reason, so both reasons were included. Therefore some charts show more answers than students.

Survey results
The first part of the survey to the osteopathic medical students asked how much exposure to OMM they had during their clinical rotations. Only one student felt they had too much exposure to OMM. Fifty-one students (38%) felt that they had just the right amount of exposure. Eighty-three students (61%) felt that they had too little exposure. (see chart 1)
Of the eighty-three students (61%) who felt they had too little exposure to OMM during their clinical rotations, fifty-eight had difficulty finding OMM practitioners. Twenty-eight students answered that OMM practitioners take students, but do not emphasize or teach OMM. One student’s reason was that OMM practitioners do not take students. (see chart 2)

Chart 2: Reasons for the 83 students with “too little” exposure to OMM during clinical rotations. Each student was asked to list the primary reason but some students listed more than one reason.

HVLA
The students were asked to rate their level of confidence doing HVLA OMM as a graduating Osteopathic Medical Student. Twenty-nine (22%) had high confidence, sixty-four (47%) had moderate confidence, and forty-two (31%) had low confidence. (see chart 3)

Chart 3: Graduating osteopathic medical students level of confidence in doing HVLA OMM.

Of the sixty-four students (47%) who had a moderate level of confidence in doing HVLA OMM: Forty-seven students did not practice OMM in their clinical rotations very often, seven students continue to be concerned that they may harm their patient, five felt they did not have the manual dexterity to be really good at HVLA, and four students felt that OMM is not a high priority. One student did not offer a reason. (see chart 4)

Chart 4: Reasons for the 64 students with “moderate” confidence in doing HVLA OMM. One student did not offer a reason.

Of the forty-two students (31%) who had a low level of confidence in doing HVLA OMM, thirty-two students said it was because they did not practice OMM in their clinical rotations very often. This means that the majority of students attributed their low confidence with HVLA OMM to their lack of practice. It is emphasized to students that the best way to get good at OMM is to practice. These survey results can be helpful for future students to take responsibility to seek out opportunities to practice OMM in the third and fourth years. Eleven of the students with low confidence felt they did not have the manual dexterity to be really good at HVLA. Eight students felt that OMM is not a high priority and seven students continue to be concerned that they may harm their patient. (see chart 5)
Non-HVLA

The students were asked to rate their level of confidence in doing non-HVLA OMM as graduating Osteopathic Medical Students. Sixty-one (45%) had high confidence, sixty-eight (50%) had moderate confidence, and only six (5%) had low confidence. (see chart 6)

Once again, of the sixty-eight students (50%) who had a moderate level of confidence in doing non-HVLA OMM, forty-nine answered that they did not practice OMM in their clinical rotations very often. Fourteen students felt that OMM is not a high priority. Seven students had moderate confidence because there are so many techniques that they are confused and three students cited a lack of manual dexterity. (see chart 7)

Of the six students (5%) who had a low level of confidence in doing non-HVLA OMM, five of the students did not practice OMM in their clinical rotations very often. Three students felt that OMM is not a high priority. Only one student answered that there are so many techniques that they are confused and one student cited a lack of manual dexterity. (see chart 8)

Intention to use OMM in clinical practice

Of the one-hundred-thirty-five graduating osteopathic medical students surveyed, forty students (30%) plan on doing OMM in their practice, sixty-one students (45%) might do OMM, and thirty-four (25%) do not intend to do OMM in their medical practice. (see chart 9)
Of the sixty-one students (45%) that might do OMM in their medical practice, twenty-four of them intend to go into a specialty that traditionally does not use OMM, pathology, radiology, etc. Twenty-two students said they lack the confidence or need more practice in doing OMM before they would use it in their medical practice. Eight students lacked the role models and mentors. Seven students answered that OMM takes too much time and they can make more money without OMM. Four think OMM is good but does not save lives. (see chart 10)

Of the thirty-four students (25%) that do not intend to do OMM in their medical practice, twenty-eight said the reason was that they intend to go into a specialty that does not use OMM. This left only six graduating osteopathic medical students that do not intend to use any OMM in their medical practice even where it would be indicated. Four of these students said that they lacked OMM role models or mentors. Two students do not think OMM has been scientifically proven. Only one student answered that OMM takes too much time and they can make more money without OMM. Unlike the survey results obtained from this same class two years before, zero students answered that they were not doing OMM because they wanted to be an MD and wanted their patients to think they are an MD. (see chart 11)

Analysis of the findings

The majority of the graduating osteopathic students had a low or moderate level of confidence in performing both non-HVLA and especially HVLA OMM. While most students freely admitted that they hadn’t practiced OMM during their rotations, additional reasons for the reduced levels of confidence included a fear of harming their patient, feeling that his or her manual dexterity is subpar for HVLA, and that OMM simply isn’t a high priority for them. It is stressed to students in the first two years that OMM skills must be practiced, but the amount of time allocated to this will vary according to the student depending upon his or her background. The students had access to the OMM lab every day of the week with available office hours for questions or practice with an instructor at least three days per week. An additional part of the concern may be the lack of situations where a student can practice on their rotations.

An overwhelming number of students felt they had too little exposure to OMM during their clinical rotations. Over half the students revealed a lack of exposure during clinicals, during which time no formal OMM classes are attended, and included this as the main reason for their low or moderate confidence levels. Students had the opportunity to do clinical rotations with physicians that use OMM in their practice. However, they reported difficulty in locating OMM practitioners during these years, as well as a lack of emphasis on OMM techniques by OMM practitioners if they were able to arrange a rotation with one.

A primary concern from the previous survey was the number of students that did not plan on using OMM in their practice. The students in this survey were also split between “yes”, “no”, and “maybe” in their intention to use OMM.
The American Academy of Osteopathy hosted Dr. Greenman’s final appearance at an Exercise Prescription course in January 2010. With the permission of course instructors, Brad Sandler, DO and Philip Greenman, DO, FAAO, the course was recorded and now is available in a 3-day, 10-disc DVD series which includes both lectures and OMT hands-on lab sessions. Don’t miss this opportunity to own this historic DVD series. Complete the order form today!!

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in their practice. For the most part, students not aiming to utilize OMM are planning on entering specialties that typically do not use OMM techniques. Once again, those indicating a possible use of OMM mostly stated that they lacked the confidence and needed more practice. However, other reasons among these students are a lack of OMM role models and mentors, which reflects some of the lower confidence levels in their OMM abilities. Also included is the feeling that OMM requires too much time for the amount of money the additional skills would generate, and that OMM doesn’t save lives.

Conclusion

One of the striking features of osteopathic medicine that separates it from its allopathic counterpart is its use of OMM as medical treatment. OMM, however, requires much patience and practice to acquire both confidence and skill. With the prominent explosion of the osteopathic profession in the medical sector, OMM is becoming a more common and accepted treatment and serves as a bridge between traditional and alternative medicine. To continue this trend, OMM needs to be learned and implemented by the osteopathic physicians who are just entering the scene.

With the current boom of osteopathic colleges in the nation there is a shortage of quality OMM rotation sites, as well as post-graduate programs that include quality incorporation of osteopathic principles. As a result of these surveys, LECOM-Bradenton now maintains a list of osteopathic physicians who use and teach OMM and this list is freely available to the students as they schedule their clinical rotations. Any DO who incorporates OMM into their clinical practice and wish to mentor third and fourth year osteopathic medical students should contact the author of this article.

The effect of their chosen post-graduate programs—whether or not they experience quality incorporation of osteopathic principles from DO role-models—seems to be the remaining factor determining if the students will be motivated into becoming “complete” osteopathic physicians, and continuing the vision of the founding father of osteopathy.

The present clinical rotations do seem to have a significant influence upon the confidence, motivation, and intention of third and fourth year medical students to use OMM in practice. Embodying the founding vision of medicine, OMM is integral to an osteopathic student becoming a “complete” osteopathic physician.

References


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CME QUIZ

The purpose of the quiz found below is to provide a convenient means of self-assessment for your reading of the scientific content in “Attitudes and Confidence Levels of Fourth-Year Osteopathic Medical Students towards Osteopathic Manipulative Medicine” by Tom Quinn, DO; Mark Best, MD, MBA, MPH; Veronica J. Rustin, OMS-II; Lisa D. Ball, OMS-II and Thomas J. Fotopoulos, DO.

Answer each question listed. The correct answers will be published in the December 2010 issue of the AAOJ.

To apply for Category 2-B CME credit, transfer your answers to the AAOJ CME quiz application form answer sheet below. The AAO will record the fact that you submitted the form for Category 2-B CME credit and will forward your test results to the AOA Division of CME for documentation. You must have a 70% accuracy in order to receive CME credits.
CME Certification of Home Study Form

This is to certify that I,
__________________________________________

Please print name

READ the following articles for AOA CME credits.

Name of Article: Attitudes and Confidence Levels of Fourth-Year Osteopathic Medical Students towards Osteopathic Manipulative Medicine

Author(s): Thomas A. Quinn, DO; Mark Best, MD, MPH, MBA; Lisa D. Ball, OMS-II; Veronica J. Ruston, OMS-I and Thomas J. Fotopoulos, DO.

Publication: AAOJ, Volume 20, No. 3, Sept 2010, pp. 23-28

Complete the quiz below by circling the correct answer. Mail your completed answer sheet to the AAO. The AAO will forward your completed test results to the AOA. You must have a 70-percent accuracy in order to receive CME credits.

1. In a recent survey, approximately what percentage of osteopathic students expressed ambivalence as to whether they would use OMT in practice?
   a) 5%
   b) 0%
   c) 50%
   d) 75%
   e) 100%

2. One of the major challenges facing the osteopathic profession is:
   a) Building more osteopathic hospitals
   b) Creating an independent liability insurance company
   c) Having larger practices
   d) Creating enough quality clinical training programs for DO graduates
   e) Using electronic medical records

3. A major reason students did not feel confident in the OMT skills is:
   a) They don’t understand what OMT is
   b) Lack of practice time outside of OMM classes
   c) Too many techniques to learn
   d) Lack of good OMT technique manuals
   e) Difficult exams

Mail this page with your quiz answers to:
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June 2010 AAOJ CME quiz answers:

1. B
2. C
3. True
4. False

Answer sheet to September 2010 AAOJ CME quiz will appear in the December 2010 issue.
Patient identification: JP, a 61 year-old female.

Chief complaint: Slurred speech, difficulty walking, dizziness, neck, back, and leg pain.

History of present illness: She was hospitalized after two weeks of symptoms. Routine labs, carotid doppler study, echocardiogram, and MRI were negative. Discharge diagnosis was: “slurred speech, difficulty with coordination and gait instability, most likely medication induced due to propoxyphene.” Propoxyphene was discontinued, but symptoms persisted. She was referred for osteopathic medical evaluation four weeks post symptom onset. She reported several falls, but denied syncope, visual field deficits, head injury or loss of consciousness.

Allergies: Amoxicillin, lithium, skin sensitivity to metals.

Medications: Trifluoperazine 20 mg, trihexyphenidyl 5 mg, lisinopril 10 mg, sitaglptin 100 mg, glyburide/metformin 5/500 mg, aspirin 325 mg, ibuprofen 800 mg, gabapentin 100 mg, omeprazole 20 mg.

Medical history: Paranoid schizophrenia, Type II diabetes, hypertension, hyperlipidemia, GERD, chronic back and leg pain.

Surgical history: Appendectomy, hysterectomy, cataracts removed.

Social history: Smoker, lives alone, does not drive, depends upon disability benefits.

Review of systems: Head: Chronic left temporal cephalalgia; Eyes: Diabetic retinopathy; Cardiopulmonary: Hypertension, hyperlipidemia; Endocrine: Type II diabetes; GI: GERD; GU: G2, P2, hysterectomy; Musculoskeletal: Chronic leg, low back, and neck pain; Neurologic: Recent onset dysarthria and ataxia; Psychiatric: Paranoid schizophrenia.

Physical examination: Alert, oriented, no apparent distress, height 64 inches, weight 128 pounds, blood pressure 138/83; Eyes: Extra-ocular movements normal, no nystagmus, icterus, or papilledema; ENT: Oral mucosa pink and moist, uvula mid-line; Neck: Supple, no lymphadenopathy, thyroid not palpable; Dermatologic: Negative; Abdomen: Soft, no tenderness, rebound, organomegaly, or ascites; GU: No costovertebral angle tenderness. Neurologic: Slurred speech with word-formation difficulty, tongue protrusion midline.

Cardiopulmonary: Lungs clear, heart regular and no murmurs.

Neuromuscular exam: She rose easily from sitting to standing, gait was ataxic. Left shoulder was protracted with limited arm flexion and coracoid process tenderness. Spheno-basilar synphy-sis was compressed and C3 side bent right. Hyoid was oblique and depressed on the left. Inhalation rib dysfunction of right first and second rib with serratus anterior tenderness in axilla. Exhalation rib dysfunction was present on ribs two to six on left and seven to twelve on right. Left iliac crest was elevated, with tenderness along medial aspect of crest, at anterior superior spine and along the proximal third of ilio-inguinal ligament. The left pubic ramus was inferior, and L1 - L5 side-bent left. Both knees had genu valgus tendency with right patella tracking medially. Deep tendon reflexes and strength were normal in upper and lower extremities.

Diagnosis
1. Somatic dysfunction: Head, neck, thorax, ribcage, upper extremity, lumbar, sacrum, pelvis, and lower extremity.
2. Dysarthria, likely associated with hypoglossal nerve dysfunction.
3. Ataxia.
4. Chronic low back, neck, and knee pain.
5. Paranoid schizophrenia
6. Hypertension, hyperlipidemia, type II diabetes mellitus

Course of treatment
Initial visit – Osteopathic manipulative treatment to head, using balanced membranous tension, with balanced ligamentous technique to neck and knee, and combined method (myofascial release and functional method) to upper extremity, ribcage, lumbar, sacrum and pelvis. Following treatment, speech was clear without word-formation difficulty and gait, respiratory excursions and left arm flexion improved. Mood was brighter.

Follow-up one week later – Speech was normal, and balance and gait more stable. She reported: “more bounce in her step.” The remaining right-sided neck discomfort was treated with functional method. Her case manager was present and stated that gait and speech had returned to “normal.” An as needed follow-up was recommended.

Discussion
This case demonstrates the importance of recognizing and treating cranial nerve dysfunction caused by cervical fascial strain, which is common. Osteopathic manipulative treatment
to head, neck, ribcage, thorax, lumbar, pelvis and sacral regions released tension of pretracheal and prevertebral fascial upon the hyoid and carotid sheath. This, in turn, reduced fascial drag on the descending hypoglossal nerve, which allowed her speech to return to normal.

Dysarthric speech has been reported in patients with carotid aneurysms. The aneurysm puts tension on the hypoglossal nerve as it descends along the lateral surface of the carotid sheath, causing slurred speech. The carotid sheath is a condensation of fascial layers around the carotids, internal jugular vein, and vagus nerve, composed primarily of the prevertebral and middle cervical fascia. These fascia play an important role in the function of the neurovascular bundle. Release of fascial drag can improve cranial venous drainage. These layers, as well as the thick, fibrous pharyngobasilar fascia, originate from the basilar apophysis. The pharyngobasilar fascia runs inferiorly in a tube formation, along the medial edge of the carotid sheath, and (as prevertebral fascia) merges with the anterior longitudinal ligament at T2 to T3. Through these as well as myofascial connections of the sternothyroid, sternohyoid and longus colli muscles, somatic dysfunction within the thoracic region can lead to dysfunction in the head or cervical region, and vice-versa.

The pharyngobasilar fascia also attaches in a continuous line from the tubercle of the basiocciput, across the petrous temporal bone to the medial pterygoid plate of the sphenoid. Dysfunction of the basiocciput, temporal, or medial pterygoid plate results in tension changes of this thick, inelastic membrane, providing yet another pathway for dysfunction of the carotid sheath.

The hyoid is highly mobile and centrally suspended between muscle, fascia, and the stylohyoid ligaments. The middle layer of cervical fascia is firmly attached to the body and greater horns of the hyoid, and becomes continuous with the endo-thoracic fascia. This layer forms the external carotid sheath. Dysfunction of the myofascial elements that attach to the hyoid or upper ribcage may cause strain on the carotid sheath and it’s contents. Sympathetic afferents follow the carotid arteries into the cranium.

Due to the close proximity of hypoglossal nerve to glossopharyngeal and vagus within the retropharyngeal and retrostyloid space of the neck, isolated lesions are rare. Eagle (1937) described a syndrome caused by an elongated styloid process, which affects these nerves as they traverse or follow the carotid sheath. Eagle syndrome may present with speech difficulties, clumsiness, and ipsilateral cervicofacial pain and central nervous system pathology.

Cranial nerve XII (hypoglossal) passes through the dura as two separate bundles toward the hypoglossal canal. Cranial nerve IX (glossopharyngeal) travels through the jugular foramen separated from X (vagus) and XI (accessory) by separate dural sheaths. Altered tension of the dural sheath wrapping around the glossopharyngeal nerve, and on the hypoglossal nerve bundles may lead to symptoms of dysarthria and dysphonia.

Cranial nerve dysfunction may warrant peripheral evaluation. Fascial drag can interfere with normal functioning.

This patient’s dysarthria improved promptly with osteopathic manipulative treatment. Though chronic mental illness impaired her ability to communicate her symptoms, listening with one’s hands provided clues to solve the problem. We just had to dig a little deeper. Dig on!

References
3. Ibid. p 344.
9. Hitch, op. cit. p 28
13. Ibid. p 37.
15. Paoletti op. cit. p 60.
17. Brazis op. cit. p 343.
22. Spalteholz, op. cit. p 728.
CHAPTER L

FACET SEPARATION
(Continued)

PSYCHOLOGY OF THE POP

In Chapter XLVIII is set forth our opinion as to the significance of the facet separation in spinal adjustment. In Chapter XLIX, the opinions of other physicians were discussed. In those two chapters the ideas of the patient, i.e., the psychology of facet separation, were not considered.

Almost at the beginning of any discussion of facet separation, the question of its psychology occurs. In the preceding chapters the discussion was confined to technical values.

In this chapter we shall consider what the patient thinks and what he says to his neighbor about it. After we have studied facet separation and the scientific phases of its use and of its abuse, the opinion of the patient is certainly worth considering.

The first duty of a physician is to give the patient the treatment which is correct for his condition. On the other hand, it is the physician’s duty to understand what offends and what pleases the patient who retains him.

In the majority of cases, osteopathic treatment or adjustment must be given without hurting the patient. There are, however, exceptions when a patient is willing to have a vertebra adjusted even if there is some pain experienced. The adjustment which causes pain is, however, the exception, certainly not the rule. We often hear the following things said:

“Doctor, I don’t like to have my bones ‘popped’. I had that treatment once, and it hurt me so I am afraid of it.”

“Doctor, don’t ‘pop’ my neck. I just can’t stand it.

“Doctor, I don’t believe ‘popping’ does me any good. I had a lesion once in my neck which a physician tried to relieve by ‘popping’ but could not, and I only got relief after I had treatment without the ‘pop’.”

You will practically never have any objection to popping except of the neck.

On the other hand we hear such remarks as these:

“When I was in Blankville, I had a treatment but did not like it because it was nothing but rubbing and kneading. When I give my time and money for treatment, I want a good deep spinal adjustment that will do some good.”

“Doctor, I have a lame back. While I was away, I had a treatment, but it did me little good. I wish you would give me a good hard adjustment. Make them ‘pop’, Doctor. “

“Don’t pay any attention to me if I make a little fuss about this. You go right ahead and give me a good deep treatment. It always does me a lot of good to have my neck ‘popped’”.

“I have taken treatment at times for many years. I used to find physicians who spent a lot of time rubbing and working the muscles all over the body and the arms and legs, sometimes even the fingers and toes. I don’t find that any more. Osteopathic physicians, now-a-days, seem to want to find what is wrong and give treatment for that.”

I am going to make this statement; If no patient had ever had a joint “popped” I doubt whether the practice of osteopathy would be in existence today. I say this, first, because I thoroughly believe that many of our finest results could never have been achieved without it and, second, because the “pop” has been our great psychological asset.

Untold thousands of times something like this has been said, “I went to an, osteopathic physician and he fixed my back. Why, it popped so it could be heard all over the room. It was wonderful”!

The reasons patients object to facet separation are that:

1. it is given when they are not expecting it;
2. real attention is not given to getting the patient thoroughly relaxed;
3. it is given so forcibly that it hurts or leaves the patient lame.

If the physician will give thorough attention to developing his technic so that he can give deep, forcible, yet gentle correction, if he will pay strict attention to getting- his patient relaxed, and above all if he will not surprise the patient, he will have little trouble with his patient’s objections.

When a patient is treated for the first time, he should be told that his spine or that a certain vertebral joint needs a quick, deep adjustment that the deep muscles are contractured and the ligaments stiffened; that these structures need to be loosened and made flexible so that the nerve and blood circulation will be free. If the patient is made to understand this and the adjustment is given gently but effectively, the psychological effect will be helpful.

Immediately having adjusted the joint of a patient whom you think may be a little nervous, it is well to quiet his fears immediately and implant the idea that our treatment does not hurt him. That makes it hard for him to say to any one or even to think to himself that you adjusted his neck and hurt him.

It is necessary for the student to study every joint in every patient coming to him. He must decide what that patient, what
that spine, and what that joint needs, and give as far as possible the treatment indicated. Suppose a rigid upper-dorsal or cervi-
cal is found in which the joints need deep adjustment of the kind which is accompanied by the pop. First explain to the patient that the joint is rigid and needs deep adjustment. Say, “You don’t object to hearing a joint ‘pop,’ do you?” Tell him that if he thoroughly relaxes and does not hold his breath, the adjustment will not hurt. The patient nearly always says he wants what is needed. If he still seems nervous about it, tell him that if it hurts or bothers him too much, some other method will be used.

If the patient still objects, then certain questions must be de-
cided; the severity of the lesion, the psychological comfort of the patient, and can I do my duty by this patient by treating him the way he desires? Usually some method can be selected by which the joint can be adjusted and to which the patient will not object.

The psychology of the incidental pop is practically settled if the physician understands how to make the adjustment, when to make it, and if he makes a plain statement to the patient as to what treatment is necessary.

It is usually necessary to give adjustment accompanied by the incidental pop, but at times it is not necessary. At times it is not advisable even when the joint needs it but if the physician maintains a thorough understanding with the patient so that he relaxes, and if the physician knows how to give the adjustment, his mistakes will be few.

Knowledge of what is needed, confidence in himself, and an understanding with the patient at once engenders confidence in the patient. Patients have confidence in a doctor who displays quiet confidence in himself. Patients want to be guided by a firm hand and will.

To adjust the spine the patient must be relaxed. The physician must carefully palpate the tissues, know just how much force to use in making the adjustment, use that much force and stop. “Find it. Fix it. And leave it alone.”—A. T. Still.

One should not be critical of a patient who objects to a pop. If he has had an exceedingly painful and careless adjustment at the hands of a man untrained in osteopathy, he would be foolish not to resent it.

**Osteopathy Develops Through Technique**

Mathematics is an absolute science in theory. In its application to individual problems it is no stronger than the technique of the person applying it. The same is true of osteopathy. The practical reality of any science is in its technique.

Every physician’s technique is the result of his own individual development. The only true contribution to the subject, therefore, is along the lines of the conception of the lesion and the principles of technique. There can be no complete or exhaustive presentation of methods.

E. E. Tucker says that in applying osteopathic principles to individual cases the physician must consider the feelings of the patient. In the case of the fearful patient, that technique is best which makes the most successful compromise between pleasing the patient and promptly correcting the lesion.

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**Component Society Calendar of Upcoming Events**

**September 24-26, 2010**
HVLA OMT Course - mobilization with impulse treatment
Northwest Academy of Osteopathy
Portland, OR
Hours: 26 Category 1A
Contact: 503/299-6776 for more information

**October 15, 2010**
Neuroendocrineimmune II: Chronic Pain
SCTF
UNECOM, Biddeford, ME
Course Director: Hugh Ettlinger, DO, FAAO
Contact: SCTF
Joy Cunningham
509/469-1520
cunningham4715@yahoo.com
Website: www.sctf.com

**December 3-5, 2010**
29th Annual Winter Update
Indiana Osteopathic Association
Marriott Hotel
Indianapolis, IN
Contact: IOA
Michael Claphan, Executive Director
317/926-3009
www.inosteo.org

**January 14-16, 2010**
Phase V - The Embryological Development of the Face
Arizona Academy of Osteopathy
Hours: 22 Category 1A
Contact: Marnee Jealous Long
813/765-5005

**January 15-17, 2011**
The Face: An Intermediate Course
SCTF
TUCOM/NV
Course Director: Douglas Vick, DO
Contact: SCTF
Joy Cunningham
509/469-1520
jcunningham4715@yahoo.com
Website: www.sctf.com
OMT Without an OMT Table

October 24, 2010 in San Francisco, CA

Course Description: Many physicians work in an outpatient setting with high tables or carts on which to examine and treat the patient. This presents a challenge: how can the patient be effectively treated with OMT? This course is designed to offer solutions for treating patients in an outpatient setting without an OMT table. The course is designed for primary care, urgent care and emergency medicine physicians who want to treat their patients with OMT but have been frustrated by the office equipment. Participants will treat on chairs and inadequate height tables. OMT utilizing high velocity/low amplitude facilitated positional release, Still, muscle energy, and myofascial release techniques will be included. Common patient complaints will be addressed.

Learning Objectives:
1. To perform quick and efficient OMT for common outpatient complaints.
2. To demonstrate ability to treat utilizing inappropriate height tables and carts.
3. To demonstrate ability to treat utilizing chairs.

Prerequisites: The participant should have a basic understanding of functional anatomy.

CME: The program anticipates being approved for 8 hours of AOA Category 1-A CME credit pending approval by the AOA CCME.

Program Time Table:
Sunday, October 24, 2010...............8:00 am - 5:00 pm
(lunch on your own)

Please Note: The AOA Convention will run from October 24-28, 2010 at the Moscone Center in San Francisco, CA.

Hotel Information: Please visit http://www.omedconference.org/resources/pdfs/HotelInformationSheet.pdf to view your lodging options.

Travel Arrangements:
Globally Yours Travel
Tina Callahan - (800) 274-5975

Registration Form
OMT Without an OMT Table
October 24, 2010

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The American Academy of Osteopathy® (AAO) Journal is a peer-reviewed publication for disseminating information on the science and art of osteopathic manipulative medicine. It is directed toward osteopathic physicians, students, interns and residents, and particularly toward those physicians with a special interest in osteopathic manipulative treatment.

The AAO Journal welcomes contributions in the following categories:

**Original Contributions:** Clinical or applied research, or basic science research related to clinical practice.

**Case Reports:** Unusual clinical presentations, newly recognized situations or rarely reported features.

**Clinical Practice:** Articles about practical applications for general practitioners or specialists.

**Special Communications:** Items related to the art of practice, such as poems, essays and stories.

**Letters to the Editor**

Comments on articles published in The AAO Journal or new information on clinical topics. Letters must be signed by the author(s). No letters will be published anonymously, or under pseudonyms or pen names.

**Book Reviews**

Reviews of publications related to osteopathic manipulative medicine and to manipulative medicine in general.

**Note**

Contributions are accepted from members of the AOA, faculty members in osteopathic medical colleges, osteopathic residents and interns and students of osteopathic colleges. Contributions by others are accepted on an individual basis.

**Submission**

Submit all papers (in word format) to:

American Academy of Osteopathy
3500 DePauw Blvd, Suite 1080
Indianapolis, IN 46268
Email: editoraaoj@gmail.com

**Editorial Review**

Papers submitted to The AAO Journal may be submitted for review by the Editorial Board. Notification of acceptance or rejection usually is given within three months after receipt of the paper; publication follows as soon as possible thereafter, depending upon the backlog of papers. Some papers may be rejected because of duplication of subject matter or the need to establish priorities on the use of limited space.

**Requirements for manuscript submission**

**Manuscript**

1. Type all text, references and tabular material using upper and lower case, double-spaced with one-inch margins. Number all pages consecutively.
2. Submit original plus two copies. Retain one copy for your files.
3. Check that all references, tables and figures are cited in the text and in numerical order.
4. Include a cover letter that gives the author’s full name and address, telephone number, institution from which work initiated and academic title or position.
5. Manuscripts must be published with the correct name(s) of the author(s). No manuscripts will be published anonymously, or under pseudonyms or pen names.
6. For human or animal experimental investigations, include proof that the project was approved by an appropriate institutional review board, or when no such board is in place, that the manner in which informed consent was obtained from human subjects.
7. Describe the basic study design; define all statistical methods used; list measurement instruments, methods, and tools used for independent and dependent variables.
8. In the “Materials and Methods” section, identify all interventions that are used which do not comply with approved or standard usage.

**CD-ROM or DVD**

We encourage and welcome a CDROM, or DVD containing the material submitted in hard copy form. Though we prefer receiving materials saved in rich text format on a CD-ROM or via Email, materials submitted in paper format are acceptable.

**Abstract**

Provide a 150-word abstract that summarizes the main points of the paper and its conclusions.

**Illustrations**

1. Be sure that illustrations submitted are clearly labeled.
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3. Include a caption for each figure.

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For journals, include the names of all authors, complete title of the article, name of the journal, volume number, date and inclusive page numbers. For books, include the name(s) of the editor(s), name and location of publisher and year of publication. Give page numbers for exact quotations.

**Editorial Processing**

All accepted articles are subject to copy editing. Authors are responsible for all statements, including changes made by the manuscript editor. No material may be reprinted from The AAO Journal without the written permission of the editor and the author(s).
Optimizing Outcomes: A Roadmap to Financial Success in Today’s Changing Reimbursement Environment

October 23, 2010 in San Francisco, CA

Program Chair: Douglas J. Jorgensen, DO, CPC
Dr. Jorgensen is a board certified, osteopathic physician in central Maine practicing pain management and osteopathic manipulative medicine, certified in NMM/OMM and re-certified in FP/OMT. In addition to his practice, he is a certified professional coder through the American Academy of Professional Coders in Salt Lake City, Utah. As a consultant and speaker, he lectures nationally on billing and coding issues as well as authoring numerous peer reviewed articles, two books and several academic chapters in varying topics from osteopathic medicine, pain management and medical economics. A graduate of Bowdoin College in Brunswick, Maine, the University of Health Sciences College of Osteopathic Medicine in Kansas City, Missouri and the Maine-Dartmouth Family Practice Residency in Augusta, Maine, he is currently president of the Payor-Payee Relations Committee for the Maine Osteopathic Association. He is the immediate past president of the Maine Osteopathic Association and is on clinical faculty at Dartmouth Medical School and the University of New England. Dr. Jorgensen is a lifetime member of the AAO and serves on the Academy’s Board of Governors.

Program Time Table:
Saturday, October 23, 2010.............8:00 am - 5:30 pm
(lunch on your own)

Course Location:
Marriott San Francisco
55 4th Street
San Francisco, CA

Please Note: The AOA Convention will run from October 24-28, 2010 at the Moscone Center in San Francisco, CA. Visit www.omedconference.org/ for registration and lodging options.

Registration Form
Optimizing Outcomes: A Roadmap to Financial Success in Today’s Changing Reimbursement Environment
October 23, 2010

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