

# *The* OSTEOPATHYST

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## A.T. Still: Soul to Soul



SPECIAL INTERVIEW WITH JOHN O'BRIEN



# *The* **OSTEOPATHYST**

Canadian Journal of Osteopathy

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# Editorial

By: Adam Doris

The following two articles have been adapted for the *The Osteopathyst*. The first article was originally written by Fred N. Steen, D. O., for the *Journal of Osteopathy* in 1908. Later in the same year, Louisa Burns, M. S., D. O., and H.W. Glascock, D. O., wrote responses to Steen's article. These articles bring new perspective to the osteopathic thought process.



## Do we increase the blood supply?

**This article is a summary of the original article "Do We Increase the Blood Supply?" written by Fred N. Steen, D. O., Oakland, Calif. It has been summarized for the purposes of *The Osteopathyst: Canadian Journal of Osteopathy*.**

The commonly accepted idea around chronic ailments is that there is a decrease in the amount of blood to an area of the body, and to the spinal segments that provide innervation to the area. Steen investigates the morbid tissues and found that there is an increase to the connective tissues and mucous membranes. This increase indicates that there is ample blood supply to the affected areas; therefore, increasing the blood supply would mean greater damage.

How hyperemia is caused: It is dependent on the dilation of the arterioles, which in turn will decrease the peripheral resistance, allowing for an increase of velocity of blood. Physiologists have noted that there is the vaso-motor centre in the medulla as well as other centres in the second dorsal and second lumbar segments that control the fibers to arterioles. It is widely acknowledged that the bony dysfunction of the vertebra will affect the vaso-motion.

Writer's theory: Clark stated that the function of the joint is movement. The majority of cases have shown restriction in the adjacent vertebrae. In essence, the muscles atrophy and become more fibrotic from disuse. Muscles are fundamental in the movement of blood to the cord and aid in the venous drainage from the cord through the connection between the spinal plexus and venous plexus. The movement of the joint is imperative to ensure normality in the joint and allow for drainage to occur.

Explanation: The diminished supply of nutrient material will result in lowering the muscle tone of the arterioles. This will cause hyperemia of the tissue, and augments nutrient value to more than what is needed to facilitate tissue growth. When there is change to the connective tissues and mucous membrane, secretions will grow and change accordingly. If the bony lesion is fixed, it will restore the function of the joint and, therefore, the blood supply to the area.

Steen, Fred N. "Do We Increase Blood Supply?" *Journal of Osteopathy* 15.7 (1908): 410-12. Web. 2 May 2015.

## Do We Increase the Blood Supply?

**The following article is a response to the previous article. These responses were originally written for the *Journal of Osteopathy* in 1908, and have been re-interpreted for the purposes of *The Osteopathyst: Canadian Journal of Osteopathy*.**

Louisa Burns, M. S., D. O. – After reviewing the literature, it can be noted that hyperemia can be contributed to by the lack of vasoconstriction on the arterioles – this can be from malposition or restriction in motion of a joint. The inaccuracy noted is that the dilation of arterioles will decrease peripheral resistance. The dilation of arterioles in one area of the vascular system would result in lower blood pressure in the whole system unless there is a compensatory pattern that has caused constriction in another part of the vascular system. The future of osteopathy depends on the ability of osteopaths to have independent and scientific resources. The article was carefully prepared with this in mind.

H.W. Glascock, D. O. – Dr. Steen has iterated that the osteopath will increase blood supply. This is indeed true, but Glascock, D. O., differs on how the mechanism works. When there is a somatic dysfunction, there is congestion. Dr. Steen states that wherever the lesion is there will be congestion in the corresponding organ; however, when we correct the somatic dysfunction we will increase blood supply but not congestion. Therefore, we do not initiate blood supply but regulate the vaso-motion to the area to allow for proper drainage. It also should be noted that as soon as the congestion is relieved, the affected tissue does not heal instantly. The artery (that has freedom through structure) will be able to produce more white blood cells and nutrition to aid in the recovery of the tissue. So with osteopathic treatment, we improve the quality of blood to tissue.

Steen, Fred N. "Do We Increase Blood Supply?" *Journal of Osteopathy* 15.10 (1908): 613-14. Web. 2 May 2015.

# Intestinal Contractions

By: Adam Doris

**This article has been adapted from the original article 'Intestinal Contractions' written by Louisa Burns in 1908 for the *Journal of Osteopathy*.**

**Paresis Caused by Strong Salines** — Engstrom offered more reports with the same conclusion that use of salines can lead to a weakening of the gut walls. Blume shares the case of a woman who had a cyst removed from her right ovary. During the operation it was found that 10 inches of the ileum was contracted. Below the contraction the bowel was collapsed. She died the day after surgery.

**Several Cases Described** — A Neurotic woman didn't have any bowel movements for four weeks unless mediated with a colon tube. During the operation, it was found that there were two contractions in the ileum and in the sigmoid flexure. The original article cites many instances of constipation and how each case had considerable contracture.

**Neoplasm** — One case was diagnosed as neoplasm, which was based on a history of pain attacks, and a mass above the right umbilicus. Manipulation of the pylorus and duodenum showed contraction until its thickness was less than a half-inch. There was a case of renal calculus that caused reflexive spasm to the intestines and acute constipation. After the renal calculus passed, the reflex contracture in the intestine disappeared as well.

**Deduction** — Observations have suggested that the induced lesioning (for experimentation purposes) was more intense with enterospasm than would have been the case with increased peristalsis. It was also observed that the enterospasm is quickly mitigated with deep pressure to the spinal nerve roots.

Burns, Louisa. "Intestinal Contractions." *Journal of Osteopathy* 15.12 (1908): 753-55. Web. 2 May 2015.

When there was a sudden movement to a vertebral segment, the corresponding viscera would have increased function. In terms of peristalsis, the change in the motion from moving a vertebra would be very persistent and didn't relax in the same way as normal peristaltic contractions.

**Conditions Observed** — It was noted that many different ways to fix constipation were tried when under stimulation for increased peristalsis. This means that if the vertebra is out of position the abnormal stimulus to the vertebra can only be solved by correcting the somatic dysfunction in the spine. Louisa Burns also noted from surgical cases that the patient would undergo surgery with no discovery of an occlusion, but the constipation would be relieved after the surgery.

**Evidence from Post-Mortems** — There was evidence of post-mortems where the patient had died from intestinal occlusion; however, nothing was found in the intestines. Burns emphasizes that the way to treat constipation is to relieve the tension on the intestines. When an autopsy is performed on the patient, the muscles will have already lost their tone, preventing further contraction.

Burns, Louisa. "Concerning Constipation." *Journal of Osteopathy* 15.7 (1908): 412-14. Web. 2 May 2015.



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## Concerning Constipation

By: Adam Doris

**This article was originally written for the *Journal of Osteopathy* in 1908 by Louisa Burns. This is a summary and interpretation of the original for *The Osteopathyst: Canadian Journal of Osteopathy*.**

**A New Explanation Based on Experiment** — Louisa Burns wrote that constipation is one the most common complaints of patients and that if it isn't directly noted, there is a good chance that it is part of the underlying problem. In the animals that were used for the experiments, there was a vertebrae moved out of place to see what congestion would occur in the area.

# Quadrant Diagnosis

By: Samuel Jarman



It is my aim to share some thoughts on diagnostic efficiency in the hopes that the CICO community may benefit from the work I am exploring at the moment. In searching for an efficient way to find Osteopathic lesions, it may be suggested that segmenting the body into related sections along the lines of muscular, neurologic, and vascular tissues would be useful. Before going any farther, I will make it clear that the method being described is likely not unique. (I am positive that Dr. Still outlined various methods of segmentation from which I am borrowing. Moreover, the contact I have had with Robert Johnston, Principal of the CAO, most certainly influenced my approach to this topic).

The Quadrants to which I refer are the following: the right side of the head with the right arm and down the right side of the sternum to the xyphoid, as well as the right side of the vertebral column down to T12; the left side of the head with the left arm and down the left side of the sternum to the xyphoid, as well as the left side of the vertebral column down to T12; the right side of the abdomen and pelvis with the right leg and the midline being represented by the right side of the linea alba, as well as the right side of the vertebral column from L1 down to the tip of the coccyx; and the left side of the abdomen and pelvis with the left leg with the midline being represented by the left side of the linea alba, as well as the left side of the vertebral column from

L1 down to the tip of the coccyx. Anyone reading this is presumed to understand the general shared vasculature and neurology represented by these Quadrants.

With respect to utilizing the Quadrants, there will be no scripting of specific methods here. Only the principles will be emphasized, as that is the only way to approach Osteopathy properly. The idea is to use the limb that belongs to each Quadrant to perform a gross movement, thereby determining the Quadrant with the least expected normal movement (a.k.a., the one that moves the least). This first diagnostic movement is the Global diagnostic, which will cause the most trouble when the Operator is drawn to the Quadrant. From there the Local diagnostic will be performed globally on the Quadrant; the least amount of movement will be applied to determine the structure in the Quadrant with the least movement. This will become the Focal diagnostic point. The movement characteristics of the Focal diagnostic point will be assessed and the primary plane and axes of dysfunction will be isolated and treated with the appropriate Barrier method (indirect, direct, balanced, or any combination of the three). Once treatment has been applied effectively the Global assessment will be performed again to search for diffusion in all Quadrants owing to the treatment of the Focal diagnostic point. The process may be performed ad nauseam, and provides the possibility to find lesions that have diffused effects on other regions.

No model is perfect. At the time of writing this, the author is in the very early stages of investigating this model. So far, I have found this method to drastically reduce the amount of treatment applications used on any one patient. This is because the diagnostic process is deep enough to apply specific treatments that have pervasive effects. Ultimately, the strength of this diagnostic model is that it diagnoses accurately and specifically within a Quadrant, allowing for very

localized treatment. Having not worked with this model for a long period of time, I have not yet worked long enough to identify the weaknesses of this model. The chief weakness of this model is that the initial use of the limb of each Quadrant may not be applicable in some cases where the limb cannot be used to assess the Quadrant (which will mean another diagnostic method will be more applicable).

The principles that underpin this model are Global, Local, and Focal, as well as the hierarchy of motion loss in the manner of Primary, Secondary, and Tertiary lesioning. The Global, Local, Focal diagnostic allows for more pointed treatment, as the superfluous treatment often used as a diagnostic tool is not needed when the point of Primary restriction is found and targeted. In summary, I suggest that other members of the CICO community test out the format I have put forward so that their results can be archived. Also, should any other member of the CICO community have a diagnostic method that helps with efficiency, it would be great to share that information to allow others to experiment with the method.



# Musculoskeletal Applications in Cranial Mechanics: Part Three

By Lee Jarvis



In the cervical spine, and ascending to the cranium, there exists a unique grouping of muscular fibers that we call the longus capitis, longus colli, and the rectus capitis anterior. These muscular fibers strongly link the cranium with the cervical spine and create an anterior flexion of the neck and head as well as spinal support for the occipital bone.

The fibers of the longus colli originate from T3 up to C3 with portions of the muscle originating from the transverse processes (and their anterior tubercles), as well as the anterior bodies of the vertebrae. These fibers then insert into the anterior tubercles of C5-6, anterior surfaces of bodies of vertebrae C2-4, and the anterior arch of the Atlas. Nervous innervation is received from the C2-6 nerve fibers called the ventral rami, and blood supply is delivered by the ascending pharyngeal, ascending cervical, and vertebral arteries.

The longus capitis fibers are superior and anterior to those of the colli. These muscular fibers originate on the anterior tubercles of transverse processes of the C3-6 vertebrae and insert into the basilar part of the occiput (inferior surface). The capitis takes its innervation from C1-4 and its arterial supply from the ascending pharyngeal.

The rectus capitis anterior is a flat parallelogram shaped muscle that runs in the same orientation and is posterior to the longus colli and capitis fibers. It attaches from the lateral mass and transverse process (medial side) of the atlas to the anterior-inferior portion of the occipital bone.

This grouping of neck and head muscles will act to flex the head and neck in bilateral contraction, as well as create same-sided sidebending and rotation on unilateral contraction. The position of these muscles are deep enough in the body that they would normally not be palpable without surgery, trauma, or very uncomfortable abduction of the trachea. This depth in the body indicates both the need for protection and that these fibers are highly sensitive if disturbed (the same principle can be applied to any deep trunk organ or the central nervous system).

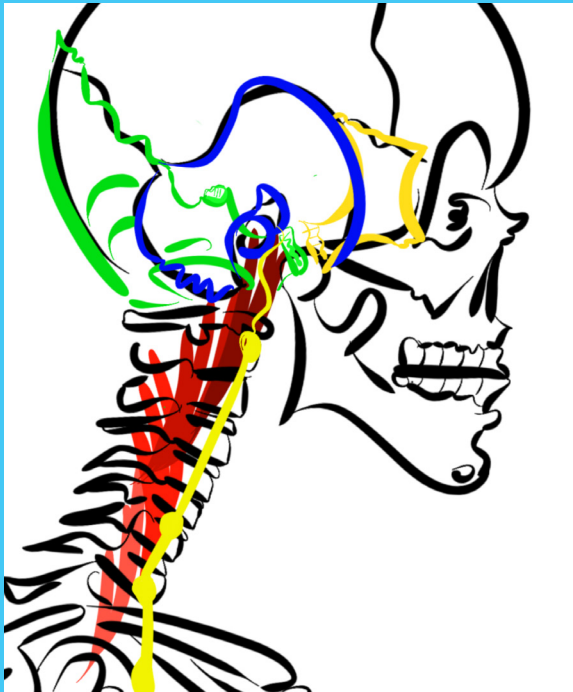
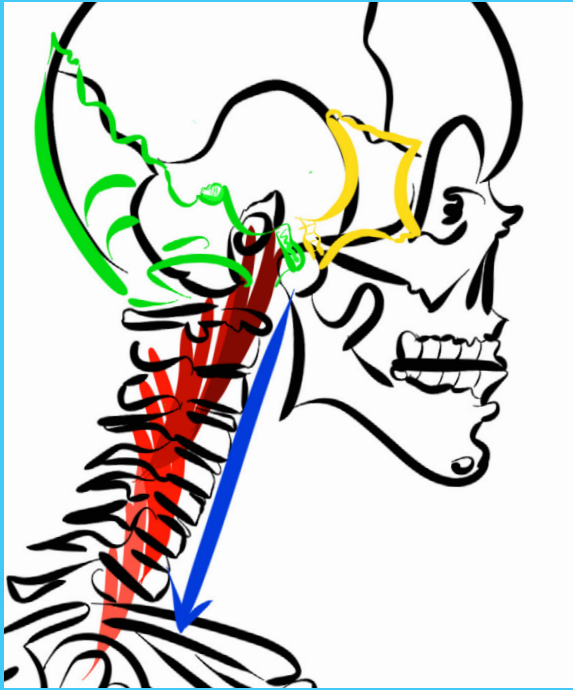
The function of this musculature indicates the need to counteract a tendency towards extension in the cervical spine and occipitoatlantal [OA] in a very specific manner as it runs vertically with fibers intricately separated (much like the deep intrinsic muscles of the posterior spinal column). The cervical spine and OA do have a tendency towards extension because they hold the large cranium, which free-floats in the air with no superior attachments. It will also extend to compensate for the flexing thorax. This intricacy, which is facilitated by the presence of the cervical chain ganglia, trachea/thyroid, and the proximity of the foramen lacerum, would not be a factor if it were not specifically needed.

The cervical chain ganglia sit right on the fibers of the longus colli and capitis muscles with the inferior cervical ganglia at C7, the middle at C5, and the superior at C2. These ganglia represent the continuation of the thoracic chain ganglia and supply sympathetic innervation to the heart, mainly by the middle and inferior ganglia, neck (such as the thyroid, skin, and musculature), cranium, and face. The fact that these cervical ganglia are placed on the muscular bellies of the colli and capitis is not by fault. To determine why a structure is organized as it is, we should look to the function of the involved components. In the case of the colli and capitis muscles, the cervical ganglia are so placed on it for stimulation of sympathetic efferents.

Sympathetic stimulation tends to favour rapid and wide body stimulus, which can be easily observed in the effectiveness of the adrenal glands systemic stimulus to release epinephrine. In the same rapid and widespread fashion the body tends to favour direct mechanical stimulus to the sympathetic fibers. This direct stimulation can be observed in the thoracic chain ganglia while placed inferior to the rib heads, which become activated during the increased respiration that accompanies sympathetic stimulation (a positive feedback loop). Like in the thoracic spine, in the cervical spine the flexing/contraction of the capitis and colli muscles expands the size of the muscle, exerting outward pressure on the chain ganglia and creating mild mechanical irritation of the nerve fibers.

This position of the head and neck in fight or flight situations is the best protective position, as keeping the chin tucked in moderate flexion helps to prevent strikes to the eyes and throat. As well, with moderate head and neck flexion the nuchal ligament is stretched/on tension, and this helps to resist forces impacting the head in the sagittal plane, such as strikes from above-downward, strikes from behind, and (when running rapidly away) forceful head bobbing.

After innervating the neck, the superior cervical ganglia sends fibers along with the internal carotid through the foramen lacerum to supply the vessels and ganglia of the cranium. The foramen lacerum is an opening in the cranium at the point of articulation between the temporal, sphenoid, and occipital



bones. The internal carotid arteries supply a majority of arterial blood to the cranium as compared to the vertebral arteries, which are clearly smaller in diameter than the internal carotid arteries.

Arterial flow and pressure in the body is important everywhere; however, in the cranium it is very highly regulated and maintained at particular levels. As stated in previous articles, the cranium is a closed and highly pressured system, which cannot take significant raises or drops without seriously affecting or injuring the central nervous system. The regulation of the cranial pressure involves not only arterial and venous flow, but also cerebrospinal fluid [CSF]. The internal carotid is what

supplies major areas of the cerebrum and deeper structures of the brain, including the ependymal cells that actually produce CSF in the ventricles. Arterial flow in any region of the body will be influenced by sympathetic and parasympathetic stimulus, and the cranium is no exception.

At the time of writing this article the full influence of the effect of the sympathetic and parasympathetic nervous systems on the cerebral vessels is not understood. There are many internal regulatory mechanisms (such as oxygen, hydrogen, and nitric oxide, for example), but it is at least known that the sympathetic fibers follow and permeate the vessels and the effects of stimulus can be shown in certain situations. It could be argued that the proper production and conduction of the components of these mechanisms are also regulated by the sympathetics and parasympathetics, as they manage digestion and respiration in the trunk as well as regulate the heart. On a mechanical level, the simple passage of oxygen and carbon dioxide into and out of the body can be significantly influenced by the neck as flexion, extension, sidebending, or rotation can create turbulence of air and back pressure (as seen in severe snoring and sleep apnea).

Because the cranium is innervated by the sympathetics derived from the cervical chain ganglia, and because those ganglia are influenced by the neck via the longus colli and capitis muscles, we can say that the lesioned neck can create and maintain further Osteopathic lesions in the cranium.

It's very easy to feel the effects of these muscles on the sphenobasilar symphysis/foramen lacerum area by firmly fixing one's jaw and face, and then attempting neck and head flexion. This is most easily done seated at a table with elbows in flexion and the jaw cupped in the palms, fingers encircling the face. If done correctly, a downward shift of the occipital base (planar motion/shearing) is encouraged, and eventually a pressure will be felt on the skin of the target area. It is not recommended by the author to hold this for very long, as it can become uncomfortable.

The direct mechanical effects on the cranium that are created by the longus colli, capitis, and rectus capitis anterior can easily be observed as the reverse of the pull on the occipital bone generated by the posterior neck musculature (covered in article 1). These muscles will also affect/move the sphenobasilar symphysis and the facial skeleton, but only under the influence and/or opposition of the mandible, masticatory muscles, facial articulations, and hyoid muscles. This latter assertion will be covered in the next article.

Cipolla, Marilyn J. *The Cerebral Circulation*. CA: San Rafael, 2009. N. pag. Web. 6 May 2015.  
G. Tortora, B. Derrickson (2011). *Principles of Anatomy and Physiology*. Wiley.

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Cristina Gioja and Francisco Toscano Jimenez  
Founders of LISCO — 4th May, 2015

## Series of Monographic Lectures © Vol.1:

### The Body Adjustment in Theory & Practice

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## The Body Adjustment as a Process of Mechano-Physiological Integration: Mechanics and Interface Between Structure and Function

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By Francisco Toscano Jimenez, DO, BSc Hons. Ost., MEd, MRO, MROE

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### INTRODUCTION:

The observation of biological processes in nature demonstrates that biology is always striving for an optimal equilibrium. When applying this natural law to the body we observe that these innate tendencies towards the normal physiological conditions of life is a basic characteristic of a biological organism.

The physiological life of the body is closely associated to the laws and processes of chemistry and physics. It is therefore that all processes of the body co-operate under biological conditions in order to preserve normal functioning. This dynamic equilibrium of the various biological parameters of the body is of prime importance in order to understand health and illness.

Sir William Colin McKenzie's observation in 1919 about the correlation between health and ill-health addresses the role of postural mechanics as an important evaluation. His research indicated that health, apart from the infectious and contagious conditions, was 'a correlation of all the bodily systems to the

erect posture' and ill-health the 'failure of one or more systems to correlate to it'. From a naturopathic perspective, one can argue that the infectious and contagious conditions may also stand in correlation between the body's function and its immune defence. The sanitary and hygienic standards discussed by McKenzie were by no means what we are used to today. Nevertheless, one has to appreciate McKenzie's research, as it is an observation of an orthopaedic surgeon at the beginning of the 20th century. This appears to be a very osteopathic consideration by highly honoured members of the medical profession. This, however, reassures and confirms the role and perspective of the biomechanical aspect as an important factor in the aetiologies of disease.

Andrew Taylor Still's concept of relating to the body always considered different components to be in harmonious relationship with their environment. Still's view compares very closely to the concepts of homeostasis. It is W.B. Cannon's concept of Homeostasis, and the idea of Claude Bernard's stability of the internal environment, that we observe a coordinated multisys-



tem activity with one and the same purpose - **PHYSIOLOGICAL EQUILIBRIUM.**

Our therapeutic aim is to recreate stable enough physical and chemical environments within the body in order to provide the basis for an efficient physiological, adaptable, healthy human organism. Osteopathy is a form of applied therapeutics that improves the capacity and adaptability on the mechano-physiological plane. This concept of osteopathic therapeutics is the axis around which the teachings of John Martin Littlejohn revolve.

*"The science and systems of therapeutics we call Osteopathy constitutes in the application of physical treatment for conversion into a physiological process within the body."* –J.M. Littlejohn

We can extrapolate that the concept of physiological physics is the method for the application of Osteopathic principles in practice. There is an important correlation between body mechanics in health and disease, but we must stress that it is not about an abnormal positioning of a vertebrae requiring a correction. Osteopathy was viewed as more than a mere manipulative technique and was described as a Biological Science. The human body represents a constant correlation of structure and function in the continuum of health.

## A NOTE ON THE GENERAL TREATMENT

When introducing the concept of the general treatment, we ought to define or redefine what is understood about the term in practice today.

**There is a common trend in practice to correlate 'general' with unspecific and 'local' with specific treatment!**

Such an evaluation may divert the actual meaning and efficiency of the general treatment in the overall value of therapeutics. In the general treatment, the word 'general' does not stand for 'vague' or 'unspecific'. The word general in this context meant, and still means, analysing the presenting condition and the patient as a whole. All treatment ought to be specific to the demand of the organic unity of the body and the requirements of the particular patient.

It is difficult to approach the body as a whole if analytically reductionist methods of treatment are applied as the different parts in treatment are taken out of context. In natural therapeutics there is an emphasis on the process of reintegration of the separate parts, systems or functions in relation to each other. 'To bring it all in' was J. Wernham's phrase to emphasise the fundamental therapeutic principle, which can be applied to natural, inherent interrelationships of the body.

## ADJUSTMENT

The term Body Adjustment (BA) came into existence to avoid misuse of what general treatment was really about. In order to preserve the value of this concept, Wernham introduced the nomenclature Body Adjustment. The term 'adjustment' refers in this context to body coordination and therefore denotes the adjustment of the different parts of the body in relation to the postural elements of the body as a whole.

## BODY ADJUSTMENT: A PROCESS OF MECHANO-PHYSIOLOGICAL INTEGRATION

This paper aims to introduce and expand the ideas and rationale behind a form of treatment expounded by the early osteopathic pioneers and advocated by the late J. Wernham. From an osteopathic perspective, healthy and vital conditions depend on postural integrity. In this context it is valuable to introduce the works of J. E. Goldthwait, who also correlated body mechanics to health and disease and established osteopathic clinical observation. It was J.M. Littlejohn who described the relationships between physiology and the physical body very early on; he did so by establishing the phenomena of physiological physics or, in other words, the mechano-physiological relationship of the body, therefore connecting the tangible and intangible, the visible and invisible.

The applied osteopathic technique is undoubtedly dealing with the physical medium of structures via bones and soft tissues acting as levers on the body. This particular characteristic suggests that Osteopathy is mechanistic and deals with the visible body in the most practical terms, but emphasizes that mechanical forces and biological reactions lie beyond those palpable and visible manifestations of the body. For that reason, the application of osteopathic therapeutics under the concept of the mechano-physiological relationship will allow the treatment to be go beyond the limitations of the ordinary physical treatment. Moreover, this relationship will encourage us to widen our scope of what Osteopathy can do.

An important criterion in Osteopathy is found in the principle of **adjustment**, as the concept of correction connotes a unique appreciation to the malposition with lesser consideration of the underlying alteration on the physiological plane. The body functions in an interplay of forces in response to changing circumstances, all acting continuously in order to maintain equilibrium and homeostasis. This provides an interplay of gravitational, external-environmental and internal-environmental forces in continuous interaction.

In the practical application, the treatment is directed conjointly to all body tissues and their reaction to the forces exposed. Focussing the therapeutic aim on the underlying field of physiology will allow readjustment of the abnormal to the normal. If the physiological aspect of therapeutics is not addressed it will create a predominately local treatment without correlation to the whole and therefore remain local without general or permanent effects.

Nature has an enormous compensatory reserve, but there is always a limit to the amount of punishment the body can withstand. Once the compensatory abilities have run out of capacities, the body is in a gradual process of mechano-physiological breakdown. The osteopathic treatment ought to take into account that all natural processes are slow. Therefore, the response to treatment will always depend on the severity and chronic nature of the functional breakdown so that the basic aim of the osteopathic technique will be to employ and activate the native resources of the body.

The Body Adjustment is directed primarily to coordinate the inherent activities of the separate parts of the body by using a treatment sequence and form that is described very early on in osteopathic practice. The treatment describes itself as being articulatory in character and uses the long lever in order to act on all tissues conjointly. The use of the long lever requires a careful technical application with no force: an exact coordination between the lever and the fulcrum, the tensions and angles. The practitioner requires a very specific act of coordinative maneuvers to address with a specific purpose the various components in treatment.

## THE BODY ADJUSTMENT (BA)

The Body Adjustment is an essential integrative method of treatment as practiced by Littlejohn and many of his contemporaries. The BA is an analysis and treatment of the organization of the body in relation to the centre of gravity line over a base support. In other words, it is a postural analysis to correlate the individual's body mechanics in health or in ill-health. The evaluation of the body mechanics and the mechanical forces to the body are a fundamental osteopathic criterion. In this treatment form, there is a reference to mechanics as the interface between structure and function in the therapy applied to the patient. The BA evaluates the pelvic base as the primary support mechanism and foundation for the whole superimposed vertebral column, so that the mechano-physiological relations of the pelvis and vertebral column assume an important role in treatment. They appear to act as a mirror image of all the underlying and correlating vital functions of the body. The therapeutic intention is opposed to the direct attack of the afflicted area of the body, but is always directed to the integration of the spine to the body, and vice versa. The treatment commences at the furthestmost point away from the region of distress.

Littlejohn considered Pain to be symptomatic of disorder, and therefore thought it would be of little value to extinguish the body's appeal for help, without attempting to get 'Way behind it', as he used to say. **Causa Causans** is the term; it refers to the journey of discovering the underlying causes of the presenting symptoms.

The BA is a procedure that is applied in a sequence based on classical principles. It is performed in a certain order to ensure that all parts are considered. To apply the principles of adjustment, there are 10 valuable points that should be followed. They constitute a style that provides a more integrative and rational treatment.

**The technical application considers all these 10 principles:**

- Routine
- Rhythm
- Rotation
- Mobility
- Motility
- Articular Integrity
- Coordination
- Correlation

- Mechanical Law
- Stabilization

## 1. ROUTINE

The method of the BA is deliberately routine to ensure that nothing is missed in diagnosis and to establish the lost rhythm so often disturbed in the physiology of the patient. As by its definition, 'routine' describes a regular course of procedure, unvarying in action. This approach to go around the body will prevent the practitioner from overlooking anything in the examination of the body. The effects of the routine initially encourage general relaxation and establish a non-invasive, non-threatening and non-verbal communication in order to gain patient compliance and confidence. The routine allows the practitioner to use it as a yardstick in order to compare, assess and evaluate the tissues examined before and after the treatment. The application of the passive articulatory technique prepares and activates the body's tissues from the circulatory side directly and indirectly via the physical effects and the neurologically associated centres. It restores basic body alignment and stimulates neurophysiological effects of the passive articulatory movement, an overriding component of the impulses transmitted by the slower conducting C-Fibers. This way, the facilitated nociceptive firing will be temporarily relieved and the altered reflex activity reintegrated.

## 2. RHYTHM

All life down to the most basic cell manifests rhythmic forces in cyclical interplays. The definition of rhythm describes a harmonious correlation of parts in regular succession and reoccurring sequences of events. Rhythm is to be found in the normal functional periodicity of the organs and tissues of the body. It is produced by the contraction of the smooth muscles and under autonomic control. All rhythmic activities in the body are involuntary and each viscus does present their particular rhythm. An important part in the application of the BA is to use the passive articulatory movements to assess and evaluate the patient's rhythm or lack of it. The physical manifestations of lack of rhythm might be observed in the various symmetries of tensions and contractions of muscles. The evaluation of interplay between agonists, synergists and antagonists may provide clues about smooth rhythmical control mechanisms between upper or lower motor neurons.

The concept of rhythm is fundamental, especially when evaluating the relationships between Central Nervous System (CNS) and the Sympathetic Nervous System (SNS), the first with its modulating and trophic function and the latter with its function through the vasomotor system. The SNS provides a link between CNS and visceral life and therefore promotes a vital function of the body. On closer examination of the visceral life, especially of the gastrointestinal tract, it can be noted that the physiology of the enteric nervous system is reliant (for its optimal function) on the rhythmical interplay between the Auerbach's myenteric plexi and Meissner's submucosal plexi. From this correlation it can be deduced that, if there is a change in the capacity of any of these functions, arrhythmic conditions will set in and compromise optimal function.



Rhythm is omnipresent and a basic principle in the physiology of the body; the concept of rhythm is essential in establishing ordered, harmonious and coordinative functions. Elaborating on the digestive tract, we observe how the various function of ingestion, mastication, digestion, assimilation and elimination is rhythmically correlated with the corresponding enzymatic or hormone secretions of the exocrine and endocrine systems. The optimal function of the body systems will depend on the free rhythmic interplay of structures and functions. The therapeutic aim with respect to the concept of rhythm is to avoid a treatment lacking rhythmic interplay, as that will further irritate the condition. The intension, therefore, is to restore order and harmony by coordinating movement at both structural and functional levels. Ultimately, the application of the BA provides a rhythm that is natural to the body to correct the disturbances without imposition.

As J.M. Littlejohn articulated, the regulation of nerve vibration works in conjunction with the molecular, mechanical and vital processes, and facilitates the conversion of vital energy to movement, rhythm and mobility. These are the fundamental physiological principles that underlie therapeutic action.

### 3. ROTATION

The Body Adjustment routine is articulatory in nature and mimics the body's natural function as an articulated vital mechanism. By definition, a rotation is a movement around an axis. The assessment of body movements or any movement in nature will exhibit a nonlinear behaviour. This observation of circular types of movements will therefore be a characteristic in the articulatory movement of the applied technique. The leverages applied aim to include all planes and physiological movements to engage all tissues of the body conjointly.

### 4. MOBILITY & 5. MOTILITY

Life itself manifests with motion. From the greater (more visible) to the smaller (more subtle) exchange of substances, there is always an inherent activity and fluctuation. The freedom of movement is an essential expression of body physiology from a cellular level, up to the more physical movements. It can be differentiated between voluntary and involuntary types of movement and between **mobility** and **motility**. Motility refers to movement on a more cellular level, such as chemical, osmotic pressure differentials in the movement of ions and enzymes or peristalsis and ciliary activity (the intrinsic, involuntary controlled movements, as seen in the digestive and respiratory systems). It is therefore that the restoration of motility will precede a coordinated and correlative function of systems in the body.

### 6. ARTICULAR INTEGRITY

Articular Integrity is understood as the smooth interplay of movements of all body tissues from the articulations in the musculoskeletal field to the articulations of serous or the parietal membranes (and other connective tissues). They all ought to have a degree of freedom and ability to move independently from each other. The key to restoring articular integrity is through mobility and motility. Treatment must establish

mobility of all conjoint structures via the relationship between all the correlated tissues: bone, cartilage, ligaments, tendons, blood vessels, nerves and connective tissues. Thus, a correlation between the hard tissue with hard tissue, hard tissues with the soft tissues, and soft tissues with the soft tissues is established.

### 7. COORDINATION

As noted before, the Body Adjustment is directed primarily to assist the coordination of the inherent activities of the separate parts of the body from a structural and functional sense. It is in the form of the BA that the very basic parameters of physiology, as seen in harmony and coordination, are applied. With regard to physiology, certain actions or reactions must follow a coordinated sequence. When observing the circulation of blood there is an important relevance in its coordination and the distribution between the deep and superficial and the central and peripheral areas of the body. The tissues in demand rely on the coordinated nervous activity to regulate and shift the distribution of blood from one area to another. The analysis of posture and movement demonstrate a complex and coordinated orchestra of stimulatory or inhibitory impulses that promote optimal dynamics. In general, all physiological processes that maintain homeostasis are reliant on the coordinated function of the Autonomic Nervous system on one side and the Central Nervous System on the other side.

### 8. CORRELATION

Once coordinated actions are established, the basis for correlation of systems are set. In natural therapeutics the aim is to re-establish interdependencies and interrelationships on a more functional level. Correlation appears to be slightly more subtle than coordination as it refers to the balance between molecular and cellular activities. An example is the action of breathing in terms of inspiratory or expiratory function, which would refer to coordination. Conversely, respiration in terms of the gas exchanges would describe correlation with respect to interaction between the systems.

### 9. STABILISATION

At this point the emphasis is on the ability and capacity of the patient to maintain equilibrium and to resist internal or external forces that try to break down stable and balanced conditions. The concept of coordination and correlation of the body and systems will lead to stable conditions in the body. The desired stabilisation of the patient will lead to an overall improved quality of life and provide all necessary factors to create a more physiologically resistant body.

## 10. MECHANICAL LAW

Mechanical laws and mechanical theory play an important underlying role in the altered physiology of the body and is often a key component in most aetiologies that can be seen in practice. The basis of postural integrity is structural integrity, and this applies to the entire body system. This correlation is in a reciprocal relationship with the overall maintenance of nervous balance in the body. As long as the gravitational forces acting on the body are able to be accommodated efficiently, postural integrity will be maintained no matter the position the body is in. While the balance of internal forces of the body is dependent upon the relationship to gravity and the environment, they all must be in a state of dynamic equilibrium within the body for health to be assured. Given these considerations, the physiological integrity of the body and its parts are based on the relationship between the Centre of Gravity (CG) as the centre of structure and function. A centre of balance is generated between internal forces, gravity and environmental factors. All these harmonious relationships result in the provision of the nutritive and trophic conditions of the tissues, so that the tissue's health and the relationship to our environment are dependent on structural integrity and rhythmic activity. All these established relations will ensure that the blood and nerve force come into action as the two great regulative factors in postural integrity. The equilibrium of these two physiological parameters subjects the body and its systems to perpetual compensatory modifications. In the inefficiently adjusted body there will be a tendency of uncoordinated adaptation between structure and function with the result of setting the foundation of what we call **osteopathic lesions**. In the balanced and integrated body, there will be a unique relationship between this 'Centre of Balance' from a physiological point of view and the 'Centre of Gravity' from a mechanical point of view.

*"Osteopathy carries us back to nature, to the body, to the body processes, to the body vitalities and the physiological causes, physiological conditions and physiological functions, and all these, not upon mysticisms; we have based and still base our theory of Osteopathy."* –J.M. Littlejohn

## CONCLUSION:

A fundamental observation by Hans Selye in the early research of the general adaptive body response (during the first half of the twentieth century) was the body's capacity to adapt to the environment as one of the most important physiologic reactions in life. The physiological adaptability provided the capacity of adjustment to the external stimuli and was considered the chief feature of live matter and vital capacity. The original osteopathic approach by the early pioneers was based on the use of the physical resources to overcome physiological breakdown and the pathology of disease. Osteopathy was used as a system of medicine (the word 'medicine' not referring primarily to pharmaceutical interventions, but to indicate the science and art of treating diseases or injuries and the laws that regulated their practice).

It is evident as seen in these physiological processes that in order to understand the body's function in health and disease,

one has to aim for a more holistic and integrative approach. With respect to clinical dynamics, the mechanistic biomedical philosophy as practised in our allopathic medical model seems to approach health and the body with a reductionist and analytical method. The trend to view the living organism as a composite of parts rather than an individual organism in a constant reciprocal relationship with its environment has invaded our osteopathic thinking and reduced the scope of osteopathic therapeutics. When observing research in the medical field we note a very linear and analytical approach by which methods that control factors and variables are of primary importance to research. This research paradigm unfortunately **does not** encompass the scope for the biological diversity of natural organisms. It seems that when creating divisions of the body we fail to perceive the body as a living organism with holistic responses.

Finally, it is essential to aim for a paradigm that respects the principles of osteopathy and that trains its focus on the laws of interdependence. The acknowledgment of the osteopathic principles values these interrelationships of the human organism as fundamental law, and it is only with the application of the osteopathic principles that our therapeutics can treat and view the body as an integrated whole rather than a disassociation of components.

*"The whole is greater than the sum of its parts"* –Aristotle





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# Still: Through the Eyes of Ernest E. Tucker

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By: Jason Haxton, M.A., D.O. (h.c.)

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**The Ernest Tucker writings have brought me the greatest insight and connection to our Founder Dr. A.T. Still. This is a recurring feature of Ernest Tucker's writings.**

## INTRODUCTION:

Ernest Tucker was a student of osteopathy; he graduated and became a faculty member at the Founding school in Kirksville. It was during the 17 year mentoring/friendship with Dr. A.T. Still that Tucker wrote down a series of conversations about a variety of topics. Here are highlights of Tucker's observations and honest conversations with Dr. A.T. Still from the unpublished manuscripts.

## A.T. STILL SOUL TO SOUL:

All of his life Dr. Still spent on the frontier. Frontiers are not glamorous or romantic, except in fiction. In fact, they are grim.

"Don't you like to look at a beautiful sunset, Dr. Still?" I asked him. His house was so beautifully situated to observe them.

A coldness seemed to come over his manner. His head went a shade lower and his voice became a shade huskier: "Well, no, Elder, I don't. Sunset was the time when you had to see that the critters were all cared for, and had to see that everything was locked up tight against varmints – it was a time of anxiety." "Varmints meaning Indian as well as animal varmints. "It was an uneasy time of day." And with this his head drooping and the folds of his face sagging; his gait - usually springy – became a hobble.

Upon meeting Dr. Still for the first time, I of course tried to measure up to him, but not immediately could I divest myself of all of the arts that I had learned, arts of dress, arts of deportment, arts of rhetoric, arts of special manners for special occasions; arts of this and of that and of the other.

For he seemed to see right through or right past all of those arts, knew them for what they were, and saw you where you lived. That is as near as I can come to describing it, this new kind of greatness – I supposed it was that.

They need arts who lack the reality of human responsiveness. Here was directness, simplicity, humanity given a new diameter, a working diameter, a diameter of operative function. This was not the kind of directness, simplicity, humanity that you can talk about, for to drag it through the knot-hole of description rubs off all of the fur.

This was the kind you responded to, if you had it in you.

There appears to have been in him no room for anything but actual friendship, none whatever that is for the arts of friend-



ship, the introductory manoeuvres, discussions of the weather, or intercourse on what is known as a social basis. The actual spirit of a man was all, the rest nothing: Now there are very few people whom I can allow to get past the intellectual guardians of my own spirit and so reach those intimacies, me where I Live; and so it is, I believe with most.

The reason why seems to have to do with motivations.

But, Dr. Still seemed always to be there, never to find his way through, never to arrive; but to begin there and never to be anywhere else.

From this one may perhaps begin to understand the psychic powers of the man. Kindliness, a distilled essence of kindliness; and sincerity that was as absolute as the law of gravitation- these were the telescopes with which he seemed to look past the camouflage into the natural consciousness of people; and into their bodies as well, it seems.

If it is at all possible to make this quality realizable to the reader, it will form an effective introduction — to the right mental attitude in which to read anecdotes of the Old Doctor.

This it seems to me was the solute from which his thoughts and his acts were precipitates. To understand them it is as necessary to understand this, as to understand fish... it is necessary to understand the sea.

Of course this realization cannot be given in these few words; but as one reads on the realization may perhaps come to him, in which case he will have found a treasure, and perhaps achieved a friend.

**It was personality so selfless and so expanded that it achieved the n'th degree and became impersonal.**

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# SHOES

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By Charlie Beck, D.O., FAAO



I read a very interesting article written by a podiatrist about feet. In the article the author did research on indigenous peoples who do not wear

shoes. He found that 3% of those people had foot problems. Then the same study was done on modern society. He found that 78% of the people had foot problems. I think of the 3% as equal in both populations – these are foot problems that are present from birth: club foot, flat feet, etc. If you subtract the indigenous 3% from the modern society number you have 75% of the population that has foot problems. That is due to the only thing that differs in walking between you and I and an indigenous person – modern SHOES.

Shoes are made around a form called a “last”. The last time that the (shoe) last was significantly re-engineered was over 150 years ago. Thus, we are a bit out of date with our thinking. Make no mistake; shoes are designed for fashion, not function. Fashion sells shoes. It amazes me how much pain and discomfort people will put up with to “look good”.

If you read the book “Born to Run” you will notice that it strongly suggests we did not really have problems with people running with shoes on until the 1970s, when the first running shoe came on the market. Those shoes changed the way the foot strikes the ground and that led to problems. The design of running shoes still have not changed. The problems still persist.

One thing your shoes should not do is be straight along the inner edge. If you look at a baby’s feet, their big toe is a bit to the middle (medial) from their heel when the foot is straight (it looks a bit like an ape foot). They can also move their big toe more like a monkey (they can move it toward the middle). This is normal. When you start wearing shoes, the muscle that allows this motion of the toe (called abduction) gets weak (atrophy). After a time it simply can’t move the toe to the middle anymore - it does not have the strength. This is owing to the end of the shoe (the toe box) pushing the big toe against all of the other ones. Over years the abductor muscle weakens and the adductor muscle (the one that moves the big toe toward the others) gets stronger (it has no opposition). This pulls the end of the big toe toward the others and the joint (the ball of the foot or the metacarpal/phalangeal joint of the great toe) begins to move toward the middle, away from the other toes. We call this a

bunion. Notice the cause of the bunion: SHOES. Shoes that work with your feet (rather than against) will not try to make the inner edge of your foot straight, but will allow it to make the natural curve that nature intended.

Contrary to popular belief, the human foot (when it works correctly) is a self-supporting structure (as in it requires no outside help). Thus, arch supports are not required when the foot mechanically works as it should – they are not a long term solution to foot pain. My first recommendation is to get your feet treated by someone who is skilled at getting the bones, ligaments and muscles to work correctly; then buy shoes that work WITH the foot, rather than against it.

My personal favorite for shoes is a company out of Pennsylvania called **Flexible Footwear**. Their shoes are the most comfortable that I have ever owned.

I am also a fan of barefoot/minimalist shoes. They can work well with the body.

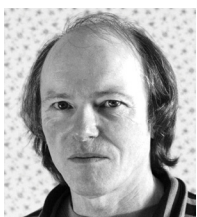
I have developed an osteopathic method for selecting and fitting individuals to their shoes. This method is a very precise way to choose which shoes will work well with your body, why a certain shoe will (or will not) work for you, and which areas will likely become painful from wearing a pair of shoes - and how to correct those shoes.

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## Neurological Aspects of the Lesion: The Pioneering Research of Denslow and Korr

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By John Lewis



‘Let’s face it,’ a vice-chairman of the Carnegie Corporation of New York told J. Stedman Denslow when he applied for a research grant on behalf of the Associated Colleges of Osteopathy and the American Osteopathic Association, ‘probably half the members of the Corporation Board at times seek the services of DOs, but osteopathy is a hot potato and many groups don’t want to get involved.’

That was in the mid-1930s. Osteopathy had become widely accepted in America, but Dr. Still’s principle that disease results from disturbed circulation through nerve irritation remained an unproven hypothesis, and the osteopathic profession did

not possess the funds to conduct the necessary research. The Carnegie Corporation put Denslow in touch with Alan Gregg, Director of Medical Sciences at the Rockefeller Foundation. Rockefeller, too, declined to help, but Gregg offered Denslow some invaluable advice: research the basic biological mechanisms underlying osteopathic theory and methods, obtain objective facts unclouded by empirical observations, and aim to publish in major scientific journals. This would enable contact with established scientists and, by investigating osteopathy’s contribution to medical science generally, avoid the ongoing controversy between MDs and DOs.

Denslow began with an observation familiar to all osteopaths: ‘as you examine the patient the hands tend to stop in certain



areas and your experience tells you something is wrong here.<sup>i</sup> With the keystone of osteopathic practice being the concept of the 'lesion,' he decided to investigate its neurological aspects through the new field of electromyography (EMG).

EMG measured the electrical activity of muscles. In early investigations with the device Dr. Edmund Jacobsen, a psychiatrist at the University of Chicago, had shed new light on the 'resting tone' of skeletal muscles. Though it was known that normal muscle is never totally flaccid, it was thought that the resting tone was caused by small groups of muscle fibres contracting sequentially. Jacobsen, however, found that skeletal muscle at rest showed no contraction and no action potentials. These experiments unearthed another interesting finding: patients with certain psychiatric disorders showed action potentials even at rest, indicating abnormal reflex muscle contraction.

Through clinical experience Denslow suspected that muscles connected neurologically to sites of osteopathic lesions would also exhibit abnormal reflex contraction. To test the hypothesis he selected spinal joints he considered lesioned by their characteristic feel – abnormal position, mobility, tissue tone and tenderness – and compared their electrical activity with other joints that felt normal. The results were unequivocal: lesioned areas showed high degrees of muscle contraction; normal areas showed little or no contraction.

The study was published in the *Journal of Neurophysiology* in 1941.<sup>ii</sup> To avoid prejudice Denslow omitted the controversial word 'osteopathy,' concealed the fact that the experiments were conducted at the biomechanics laboratory of the Kirksville College of Osteopathy and Surgery, and created a special non-profit organization, the Still Memorial Research Trust, as the study's official laboratory of origin.

Further experiments showed that needle electrodes inserted into muscle tissue initiated electrical activity termed 'insertion potentials.' In normal areas these died down after 15 to 30 seconds, but in lesioned areas they continued for long periods and when they did eventually subside, muscle contraction could be instigated again by (amongst other factors) postural stresses, touch in the form of a light scratch, the inspiration or expiration phase of normal breathing, and mechanical pressure to the spinous processes of the offending vertebrae.

Denslow's team designed a 'pressure-meter' to measure precisely how much force applied to spinous processes was required to initiate muscle contraction. They took thirty volunteers and inserted needle electrodes into paraspinal muscles at T4, T6, T8 and T10; applied pressure to the spinous processes of those vertebrae; and recorded action potentials at all eight locations simultaneously. Lesioned areas required less pressure to instigate muscle contraction, while left and right sides usually exhibited different thresholds, indicating that one side could be lesioned while the other was not. These studies yielded other significant findings. At unlesioned vertebrae heavy pressure induced no muscle contraction at that level, but even relatively light pressure there induced contraction at lesioned

areas two vertebrae distant. Conversely, at lesioned vertebrae light pressure induced muscle contraction at that level, but even heavy pressure there did not cause muscle contraction at unlesioned joints two vertebrae distant.

In lesioned areas the motor nerve cells in the anterior horn of the spinal cord appeared to be in a state of subliminal excitation, an enduring hyperirritable condition Denslow termed a 'central excitatory state' or 'facilitation.' He concluded that lesions initiate a local excitation of the nervous system, generating an excitable state bordering on alarm where the minutest stimuli from any source converge to trigger persistent muscle contraction. This work led to the concept that lesioned areas represent 'facilitated segments' of the spinal cord – nearly always related to areas of postural stress or physical trauma – that caused increased tension and shortening of muscles, tendons, ligaments and other supporting structures.

Denslow's team showed that if the facilitation was maintained for a sufficiently long period the muscles remained in a state of constant contraction even in the absence of action potentials. At this point the lesion became firmly established, with characteristic changes in tissue texture around the joint and subjective tenderness or pain to manual pressure. So closely did these changes relate to the degree of lowering of the motor threshold that, with his keen sense of palpation, Denslow was able to predict with remarkable accuracy the reflex threshold of each segment.

Interestingly, his team found abnormal muscle activity at rest in many subjects who were apprehensive, anxious or emotionally upset, most markedly (and often only) in lesioned segments, suggesting that impulses were reaching there from the brain – corroborating Jacobsen's initial findings that muscle action potentials were always present in patients with certain psychiatric disorders. The sensitivity of facilitated segments to mental or emotional stresses has profound implications.

In the pressure-meter experiments Denslow found a direct relationship between the subject's experience of pain and the severity of the lesion, indicating that facilitated segments produced not only motor but also sensory effects. This led to the question of whether they might also have an autonomic component – a key principle of Dr. Still.

This idea was taken up by Dr. Irvin M. Korr. A PhD from Princeton in 1935, Korr had undertaken a year's postdoctoral fellowship researching cellular pathology before joining the physiology faculty at the New York University College of Medicine, where he spent three years investigating aviation medicine, wound ballistics and climatic physiology for the War Department and the Office of Scientific Research and Development. In December 1945 he joined Denslow's team in Kirksville, and spent the next twenty years researching the sympathetic nervous system (SNS).

Korr's initial experiments focused on patterns of sudomotor (sweat gland) activity, measured in terms of electrical skin resistance (ESR) on the trunk (where areas of skin correspond-

ing to each segmental nerve are mapped out in dependable dermatomal regularity). Dry skin offers high resistance to a direct electrical current; moist skin offers lower resistance. Upon testing of hundreds of subjects he found patterns of low skin resistance individual to each, which remained constant over many months. Some areas of low resistance appeared to be dermatomally related to various visceral and musculoskeletal disturbances.

Next Korr investigated another sympathetic function: vasomotor tone, a measure of the constriction of smooth muscle in the walls of blood vessels. Osteopaths had long recognized the existence of regional variations in blood flow, skin color and skin temperature, so Korr set out to study the phenomenon on the dermatomes of the back through three variables: skin temperature, 'red response' of skin to mechanical stimulation, and photoelectric measurement of skin color (indicating the amount of blood present). Most individuals showed topographic patterns of aberrant vasomotor activity, seemingly indicating altered sympathetic nerve stimulation, usually involving all three variables.

Korr concluded that the SNS – sudomotor and vasomotor – hyperactivity began as parts of a reflex response to increased afferent impulses mediated by osteopathic lesions/facilitated segments, leading him to describe the spinal cord as 'the organizer of disease processes,' acting as a 'neurological lens' to focus and magnify the effect of afferent stimuli.

Since virtually every tissue in the body has SNS innervation, the question was whether this abnormal sympathetic activity would have any detrimental long term effects. 'If you regard the sweat gland as you would a visceral organ or a blood vessel constricted in a visceral organ or in the brain or other body part, you can sense the possibilities with respect to clinical impact,' Korr wrote. 'The point is that here we have a common feature of sympathetic hyperactivity, and the specific clinical impact depends on the target of this abnormal activity.' Each cell, each tissue, each organ would respond in characteristic manner to what was essentially a state of alarm. 'We cannot say that this 24-hours-a-day state of alarm results in illness on a definite one-to-one basis,' he added. 'We can only say that these disturbed segments are relatively vulnerable, that the probability is higher. Whether or not it becomes clinically significant depends on the person we are dealing with and all the circumstances of his life, past, present and future.'<sup>iii</sup>

A literature search revealed that previous researchers had also found apparent correlation between increased sudomotor and vasomotor activity, and painful myofascial and visceral conditions, but without trying to ascertain which structures were involved or their functional significance. To address this issue Korr studied 130 patients with known musculoskeletal disturbances, myofascial stresses and pain syndromes. ESR, x-ray, EMG and palpation revealed a frequent increase SNS activity in areas of referred pain and in dermatomes segmentally related to the presenting complaint. It also revealed that healthy subjects often showed patterns of abnormal sudomotor and vasomotor activity, reflecting potential areas of future problems.

In the short term, heightened sympathetic activity appeared to represent a part of the body's normal response to a variety of stressors to maintain its integrity and homeostasis, but if it persisted for longer than necessary it began to steer function towards pathophysiology. Since SNS stimulation constricts most blood vessels, Korr believed that sustained facilitation would generate varying degrees of ischemia, in turn disturbing the balance between nutrients and metabolic wastes. He concluded that osteopathic lesions disturb the ability of cells to carry out their normal functions and cause many of the detrimental effects seen in patients.

In the medical literature Korr identified countless studies to support the idea that SNS hyperactivity is a feature common to most, if not all, diseases – though he noted that the sympathetic component of the altered function (circulatory, metabolic or visceral) was consistently reported almost as a peculiarity of each rather than part of a general theme.<sup>iv</sup> Harmful effects mediated by the SNS had been documented in:

- Neurogenic pulmonary edema. Vascular congestion, atelectasis, intra-alveolar hemorrhage and protein-rich edema fluid in the lungs following such insults as head trauma, stroke and localized pulmonary infarction can be induced experimentally by stimulation of the stellate ganglia.
- Peptic ulcer and pancreatitis.
- High blood pressure. Some forms of arterial hypertension result from sympathetic stimulation of the renal arteries.
- Heart attack. Hyperactivity of sympathetic nerves is responsible for some of the complications related to ventricular fibrillation and other arrhythmias following myocardial infarction.
- Congestive heart failure. Sympathetic nerve hyperactivity constricts the renal arteries and tricks the kidney into registering low blood pressure. Retention of sodium and water raises systemic blood pressure, which is evident before the symptoms of heart failure manifest.
- Post traumatic pain syndromes. After even minor trauma, sympathetic hyperactivity can give rise to severe and unrelenting pain disproportionate to the severity of the injury. Reflex sympathetic dystrophy is one name given to this phenomenon.
- Arthritis. Both osteo- and rheumatoid arthritis have a component related to sympathetic hyperactivity, presumably relating to the long term stimulation of afferent fibers.
- Various obstetric and gynecological complaints related to uterine contractility, some forms of colitis, peripheral vascular disease, dermatitis, and many other conditions.

Denslow and Korr's work shows how osteopathic lesions facilitate not only the motor and sensory but also the sympathetic nerves, and thereby interfere with the body's ability to adjust circulation, metabolism, and visceral activity to constantly changing musculoskeletal and environmental demands. Korr adds a cautionary note: the longer lesions remain uncorrected, the harder it becomes to calm the facilitation and the more enduring and relatively fixed become the associated physiological changes. Early treatment works best.



‘The lessons that were learned during the early years are just as valid today as they were then,’ Denslow wrote in 1982. ‘The evaluation of the somatic system has been shown, scientifically, to add a significant dimension to both diagnosis and treatment in the care of patients.’ And, he points out, the premise holds true for all medical conditions. Further, Korr’s work serves to corroborate Dr. Still’s fundamental principle of ‘the rule of the artery and vein’ – that alterations in blood flow from osteopathic lesions mark the beginnings of physiological discord – must be the foundation of our practice.

If our schools and governing bodies have the courage to adhere to Still’s teachings the public will continue to seek the services of the ‘hot potato’ – and not only for musculoskeletal conditions, but for every health problem under the sun.

- i The Physiological Basis of Osteopathic Medicine. 1970. The Postgraduate Institute of Osteopathic Medicine and Surgery, New York, p73.
- ii “Reflex Activity in the Spinal Extensors.” J. S. Denslow and G. H. Clough. 1941. Journal of Neurophysiology 4:430-7.
- iii The Physiological Basis of Osteopathic Medicine, p81-2.
- iv Korr Papers, Vol. 1, p77.

## J Martin Littlejohn: An Enigma of Osteopathy

By John C O’Brien, M.A., D.O.  
Published by Anshan, 2015



J. Martin Littlejohn was a person who stood literally and figuratively shoulder to shoulder with the founder of osteopathy, A.T. Still. A proud presbyterian Scot who made his career and reputation in the USA, only to have it questioned in Kirksville, Missouri and Chicago, and

discredited after returning to pursue his osteopathic practice in London, Littlejohn was indeed a controversial character. Undoubtedly a pioneer in establishing osteopathic medicine both in the USA and in the UK, he was also deemed a fraud by a House of Lords Select Committee (1935), using contentious qualifications to promote his academic and scientific credibility.

No one has been able to write a comprehensive study of Littlejohn until now. John O’Brien has spent years researching the man. Using the objective eye of a professional historian, he has visited the institutions of Littlejohn’s life and career, contacts in Northern Ireland, Chicago, Illinois and Kirksville, Missouri, and the National Osteopathic Archive in London, as well as holding interviews with Littlejohn’s family in the UK. He was granted access to previously unseen historic material as well as personal family mementos and photographs.

John O’Brien gives a thorough description of the life and work of J. Martin Littlejohn, with a broad analysis of how and why he took the major decisions to affect his career, for good or bad. In addition, he discusses the consequences of those decisions, which had a major influence on the development of osteopathy in the 20th century.



# General Remarks on Spinal Segmentation vs. Vertebral Segmentation

By Robert Johnston with Samuel Jarman



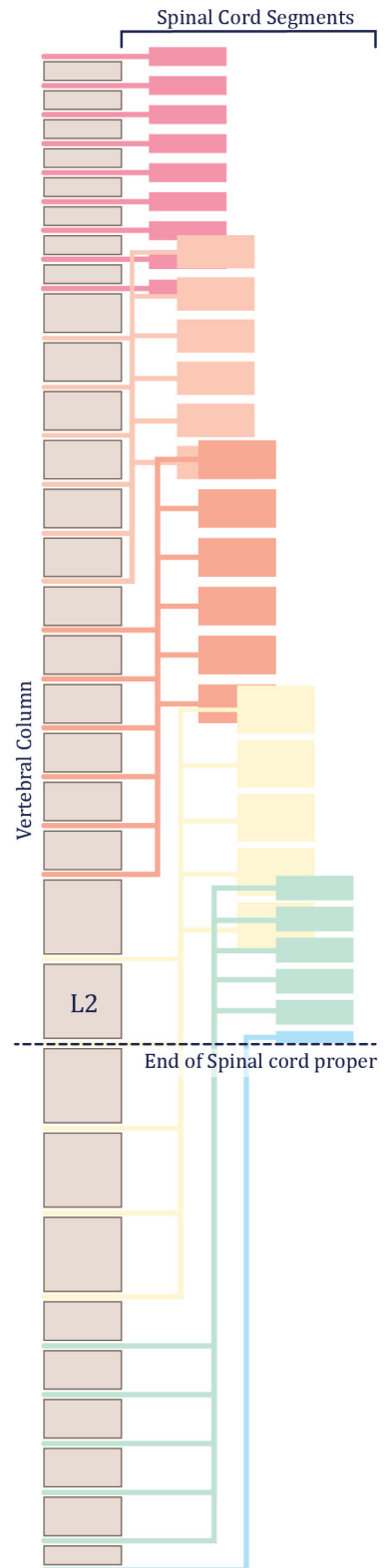
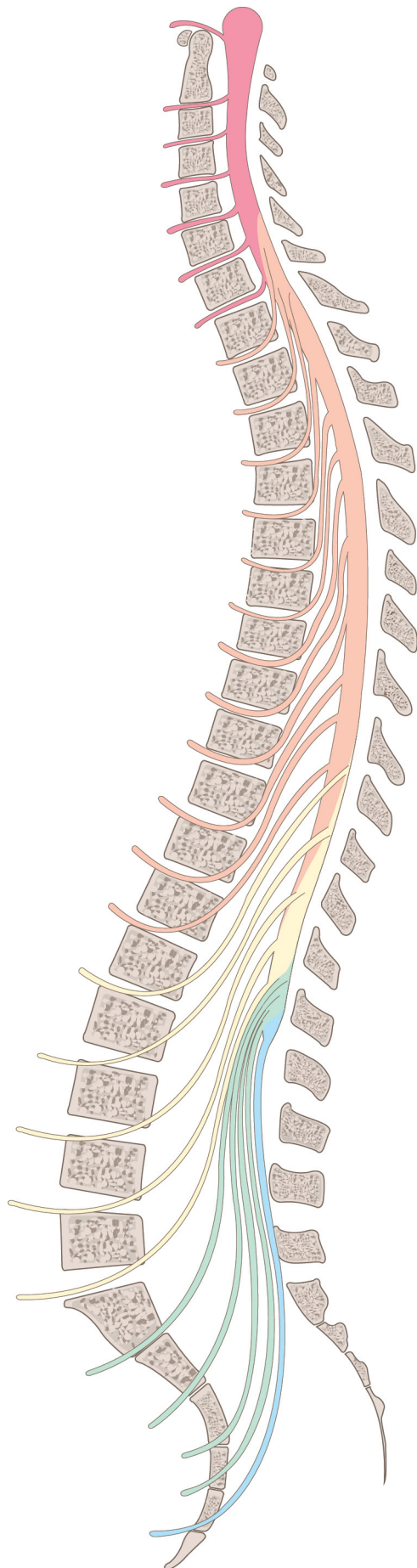
Throughout its development, the length of the spinal cord does not increase to match the length of the vertebral column. Very generally speaking, the spinal cord proper ends at the level of the vertebral body of L2. This means that the segments referred to as lumbar or sacral in the spinal cord exist in the lower thoracic/dorsal vertebral region as well as in the upper lumbar vertebral region. The only region in an adult where spinal cord segments are level with vertebral column segments is approximately from C1-C5, after which the spinal cord segments migrate progressively further above the correspondingly named vertebral column segments. These segments lead to nerves that form in the spinal cord and descend to their exit points through the intervertebral foramina. At the bottom of the spinal cord we find the cauda equina ("horse's tail"), which is a collection of nerve fibres extending downwards to exit through the intervertebral foramina in a sequential fashion. This is an important region for all Operators to be familiar with, as the neurological problem related to a named nerve root (let us say the femoral nerve at L2-L4) exits the vertebral column at its named site (L2-L4). Operators must remember that while the nerve root exits at its corresponding designation, it originates

far above the exit site; for example, in the case of the femoral nerve it would be somewhere in relation to the vertebral bodies of D11 and D12. This is pivotal information concerning treatment, as the "Littlejohn Charts" point to what are termed "Osteopathic Centres" based on vertebral exit sites of specific nerves. It is an oversight to proceed to the simple exit point of the nerves (normally the sympathetic nerves in response to specific organic and visceral functions) and apply treatment when the spinal segmentation is above the exit point of the nerve. This is why it is more appropriate to view any mention of Osteopathic Centres in any literature as clinical observation of one individual or one group. It is also pertinent to learn and understand the differences and relationships between spinal cord segmentation and vertebral column segmentation, the full path of nerves, and the association among spinal cord locations of autonomic functions with respect to the nerves and their target tissues (visceral or not). The Operator is furthermore advised to find the anatomical restrictions and interact with those as opposed to taking for granted that manipulation of an intervertebral joint or foramina will produce a specific result.

\* The following page displays a schematic of this discussion so that the location of nerve origins and their paths can be more accurately understood from a visual perspective









# Lessons From Across the Pond: John O'Brien Lecture Review

by Samuel Jarman



On May 16, 2015, the CICO presented a lecture from Mr. John O'Brien. Mr. O'Brien worked clinically as an Osteopathic Manual Practitioner in England for 40 years prior to entering his Masters work as a Historian. Mr. O'Brien currently runs the National Osteopathic Archive (the NOA) in the United Kingdom and is actively collecting historical material regarding the Osteopathic profession to be conserved for future generations. Mr. O'Brien's lecture provided historical framework and comparison between how the Osteopathic profession progressed in America as well as its progression from America to the United Kingdom.

As always the purpose of writing about any CICO event is to highlight the principles brought forth to the CICO community. Mr. O'Brien made a clear case that when examining history in any fashion it is important to have the broadest possible context so that the historical information is more clearly understood. The dominant culture at play in the area

where history is being examined matters. The dominant historical ideas influencing the history being examined matter. A thorough examination of history is very Osteopathic in this sense as it uses as much information as is available to attempt to understand the fullest historical picture as possible. When examining historical information it is also imperative to look at the information as it presents, not as the examiner wants it to be. When there is no evidence of something, the historical examiner is not to definitively make conclusions to fill in the lack of evidence; they are to clearly state that there is a lack of evidence. Again, not filling in holes in information is very Osteopathic as you only treat what you find (not what someone else tells you is there that you find no evidence of). Proper historical examination operates on the basis of only the objective proof available.

With respect to Osteopathy and how the profession has progressed in America and the United Kingdom, Mr. O'Brien made it

clear that the economic and governmental regulatory forces have shaped the profession. The individuals populating the profession in both countries responded to the economic and governmental regulatory forces to lead to the distinct flavors of Osteopathy in both America and the United Kingdom.

What lessons may be learned from Mr. O'Brien's lecture? Know clearly the social, economic, governmental, and intellectual forces at play in the development of Osteopathy so that you may understand where the profession currently stands. Also, do not fill in a lack of evidence with ideas that are not borne out in the evidence. In parting it will be stated that all members of the Osteopathic profession are honorary citizens of Missouri, which is the "show me state", so Osteopathic professionals must "prove it or lose it" in all things they do and say. The profession has no room for conjecture.

## John O'Brien Interview

by Adam Doris

### 1. What has been the most interesting part of the history you located in the United Kingdom?

It was in 2006, when I retrained as a historian. It was working with people with really good brains. I'm afraid that not all of the osteopathic brains are as good academically as they might be. The people I worked with expected quite a bit from me, and I was able to rise to that occasion of their expectations. This changed my life completely, and I would say you do need something other than passion from emotion, but also a passion that comes from the head. It renewed my feeling for osteopathic treatment.

In the oral interviews, one of the men I interviewed was about 88 years of age, and was the son of one of the first osteopaths. He had gone to post-graduate schooling after being a general practitioner in Halifax, Yorkshire, and he also ran an osteopathic practice. When I was interviewing him I saw three rows of wonderful osteopathic books and in the end I think he got a bit annoyed with me doing that. He asked 'why are you looking at my books?' I was taking into account the wonderful library he had, and he then offered the books for the archive. Now they are a part of the King's College library in London. So I think it was the good will of all the people that I interviewed; almost all of them were fantastic and really enjoyed it. They had a really good spiritual energy about them.

### 2. What inspired you to write the book *J. Martin Littlejohn: Pioneer in Osteopathic Functional Medicine*?

I think it was that nobody has else had done it. Two or three had tried but were bogged down by it and failed. Having gone down to Chicago and Kirksville to get an idea of what he was about, I was held by my historical academic background that kept me on the right track. Then as I was preparing it, my very good friend Robin Kirk told me that he was dying of a brain tumour and it was about two or three months before he passed. I was always fond of Robin, and thought of him and the mortality in all of us; somebody has got to finish the book and it was Robin's spirit that told me to finish the book. That was the driving force. Without his influence I don't think I would have finished it because there are still so many people that evoke him name and yet know nothing about him. They are saying what they think and not what he was actually saying. The last thing he ever said that was really worthwhile was in 1913, and that was in collaboration with his brother James Buchan Littlejohn, who I think was a better thinker about osteopathy and medicine than his older brother.

### 3. With all the research you've done in the archives, how would you describe Still and Littlejohn as men?

I think that you have to acknowledge that a lot of Still is shrouded in propaganda and building him up into something he wasn't. They wanted him to be a colossus figure for alternative therapy. But I think he was shrewd, a very good clinical

person who understood how people were and how they looked. He wasn't interested in medical things like disease but he was very interested in using his ability to describe complicated syndromes in ways that people could understand. He had been working as a basic psychologist for two decades before he took on bonesetting, so people have to look at him more as a psychologist with a physical treatment, with a diagnosis that seemed mechanical but was very much steeped in the emotional aspects.

Littlejohn was a very bright student at school and university. At the age of 26, he academically declined very quickly. A bright star that suddenly fades. And I think that he has never lived that down. He glimmered within people that were academics, with due respect for osteopaths, and I think it was his brother James Buchan who was brighter and probably influenced osteopathy much more.

### 4. What direction do you see osteopathy going in the future?

I think at the moment, unless it is able to take on the psychological components that Still had, I think it has limited success. You can't do it purely in the mechanical field. You cannot substantiate it strictly physically, but this goes for all manual forms of medicine.



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# Lessons From Across the Pond: The Importance of Anatomy

By Samuel Jarman



On the weekend of January 17th and 18th, the members of the CICO community had another visit from Jamie Archer. Mr. Archer was brave enough to leave the relatively mild winter in England to join us in the comparatively cold Hamilton winter. As with Mr. Archer's previous visit, the weekend was heavy on principles and anatomy as the driving factor behind any technical application.

This time around, the majority of the technical applications were in the region of the neck and the head. Mr. Archer provided in-depth descriptions of anterior cervical anatomy with special attention paid to the suprahyoid and infrahyoid musculature. Mr. Archer displayed technical applications in the anterior cervical region that Dr. Still wrote about to show how the anatomy drives the actual hands-on work. Some attention was also

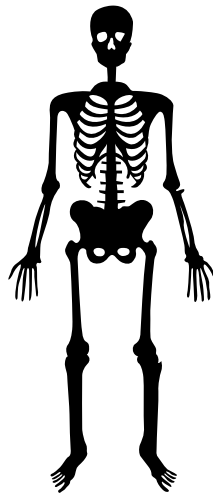
given to methods Dr. Still described with respect to the cranium. As Mr. Archer pointed out through his demonstrations, Dr. Still's description of the work he did on the cranium tended to focus on the sinuses and the eye.

Instead of simply describing the demonstrations provided, it is more relevant to describe how Mr. Archer used anatomical descriptions to display principles. A good example is the linkage between the hollow nature of the facial sinuses and tapotement to assess whether they are full of fluid or not, as well as to GENTLY use tapotement to loosen any mucous which may be tenaciously attached to the bony walls of the sinuses. Another example is using the hyoid bone as a handle to adjust the anterior cervical chain because of the large amount of anatomy that unites at the hyoid. The principle highlighted

in both examples is simple: the anatomy will dictate how to interact with it intelligently in any given situation, as long as the Operator knows the anatomy deeply enough to be aware of its normal characteristics.

It will be said that both of Mr. Archer's visits to Hamilton and the CICO provided wonderful historical context with regard to the principles and technical applications used by Dr. Still. The very positive point to be made is that Mr. Archer was not saying "this is how it is done;" he made it clear that the anatomy present and the Operator's understanding of it tells them how to do it with that specific anatomy. Many thanks go out to Mr. Archer for sharing his understandings of Dr. Still's work through the lens of principles, which is just the way the Old Doctor wants it done.





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