

# Proceedings

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## Forward Head Posture (FHP) in Women and its Relationship to Temporomandibular Joint Dysfunction (TMD) and Obstructive Sleep Apnea (OSA)

Charles L. Blum, D.C.

**Introduction:** Forward head posture (FHP) is a pandemic condition affecting a large aspect of the population. One particular cause of FHP has been found to be associated with temporomandibular joint dysfunction (TMD) and its related myofascial dynamics affecting oral cavity airway space.

**Discussion:** There can be significant implications between obstructive sleep apnea (OSA) or airway dysfunction and forward head posture. Patterns of influence affecting TMD and FHP can be ascending from the feet, lower extremities, pelvis, spine or neck or descending from the stomatognathic or craniofacial systems, or even related in either direction by way of visual or vestibular righting mechanisms.<sup>1</sup> Illustrating this relationship Sakaguchi et al evaluated 45-asymptomatic and concluded that: “(1) Body posture was more stable when subjects bit down in centric occlusion, (2) Changes in body posture affected occlusal force distribution, and (3) Altering body posture by changing leg length shifted the occlusal force distribution to the same side that had a heel lift.”<sup>2</sup>

When airway space is compromised secondary to TMD the head will translate into a forward position to open up the airway space and often leads to an increased thoracic kyphosis. This relationship has been found between thoracic, lordotic, and pelvic inclination and craniofacial morphology in adults.<sup>3</sup> One study noted a significant forward inclination of the cervical column in the patients with an apnea index greater than 35-episodes/hour. As the apnea severity progresses, patients tend to assume a certain forward compensatory head posture in an attempt to maintain adequate airway patency.<sup>4</sup>

Obstructive airway dysfunction is not a minor inconvenience. On the contrary sleep deprivation and medical disorders of sleep are common in today's society and have significant public health implications associated with automobile accidents and work productivity. OSA is the most common respiratory disorder of sleep and leads to a variety of adverse physiologic and long-term health outcomes including all-cause mortality, diabetes, and cardiovascular disease.<sup>5</sup> However since TMD has been found to affect women greater than men, OSA may be more prevalent in the female population. The literature suggests TMD are “1.5-2 times more prevalent in women than men, and that 80% of patients treated for TMD are women,”<sup>6</sup> who report TMD symptoms and headaches more often than men.<sup>7</sup>

While with some patients OSA may be subclinical with leading to cardiovascular abnormalities, diabetes, fatigue and all cause mortality, it may be possible to diagnose this condition when subclinical by assessing a patient's cervical spine position and TMJ function. Aside from FHP, dental presentations such as class-two (retro-gnathic mandible), reduced sagittal/transverse maxillary arch, bruxism/clenching, and/or increased masseter/temporalis muscle tension may all cause or be caused from an airway dysfunction. This relationship has also been found with older women with vertebral fractures, since research suggests hyperkyphosis predicts an increased risk for death, independent of underlying spinal osteoporosis and the extent and severity of vertebral fractures.<sup>8</sup>

**Conclusion:** A subset of patients with FHP/TMD/OSA that affects their quality of life may necessitate dental and chiropractic diagnosis and co-treatment.

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## A Retrospective Health Outcomes Study of 109 Pediatric Patients Undergoing Subluxation Based Chiropractic Care

Matthew McCoy, DC, MPH, Pamela Stone, BS, DC, CACCP, Erin Rosen, & Janice Hughes DC

**Objective:** To report on a retrospective analysis of health outcomes of pediatric subjects undergoing subluxation based chiropractic care in a private chiropractic clinic.

**Methods:** This is a retrospective study of pediatric patients undergoing subluxation based chiropractic care over a five year period. All subjects underwent subluxation based chiropractic care in a private chiropractic clinic. Key data points included: basic demographic information of the subjects and their guardians, birth complications, fetal presentations, methods of delivery, vaccination history, care duration, chief complaints, health outcomes, primary subluxations, techniques utilized, complications and/or adverse effects resulting from care.

**Results:** Data were available for review on 109 pediatric subjects who underwent care over a 5 year period. Subjects ranged in age from 2 months to 19 years. 52% of the patients were female and 48% were male. Subjects presented with a variety of health issues including: behavioral problems, visceral disorders, pain, structural and biomechanical issues.

In 21 subjects there were no reported birth complications. There were two home births. Three subjects had a breech presentation at birth and there were 21 reports of other birth complications or assisted delivery protocol. These complications or assisted delivery procedures included c-section, the use of forceps, vacuum extraction, induced labor, and one fractured collarbone. 47 subjects were exposed to diagnostic ultrasound during gestation and 36 subjects had been vaccinated.

The majority of the guardians presenting the subjects for care were female with only three male guardians doing so. The average age of the guardians was 37 with a range of 25-50 years of age being reported. The majority of the guardians attended some college or completed a 3-4 year undergraduate degree program. There were 7 guardians who reported higher levels of education.

Sixty-two of the subjects were still under chiropractic care at the time of this writing with 47 not presently under care. The adjustments administered were specific to the subjects' needs and included full spine, diversified care directed at reduction of vertebral subluxation. Cranial adjusting was also performed. Chief complaints originally reported either resolved completely or there was a decrease in the symptomatology. There were no reports of complications or adverse effects from the chiropractic care administered.

**Conclusions:** This population of pediatric subjects undergoing subluxation centered chiropractic care in a private clinic experienced improved health outcomes with no reports of complications or adverse effects from the care. Further research is encouraged on the safety, efficacy and health outcomes of pediatric subjects undergoing chiropractic care to reduce or correct vertebral subluxation.

**Keywords:** *chiropractic, pediatrics, vertebral subluxation, pregnancy, breech, health outcomes,*

## Modified Tests for Heart Rate Variability: A Preliminary Study

John Hart, DC, MHSc

**Introduction:** Heart rate variability (HRV) is an assessment of autonomic health and adaptation.<sup>1-2</sup> Consequently, HRV can be considered as an assessment of the neurological interference of the vertebral subluxation (NICVS) in the tradition of R.W. Stephenson, where subluxation is said to affect adaptability.<sup>3</sup> The variability of heart rate would seem to reflect adaptability of the nervous system, or what the present author refers to as *neuro-adaptability*. Kent notes that HRV is a useful method for analyzing NICVS.<sup>4</sup> In addition, Zhang et al have observed that HRV improved following chiropractic care.<sup>5</sup>

Regular HRV (rHRV) is performed with sophisticated and expensive technology over a period of 5 or more minutes.<sup>5</sup> The author theorizes that lower-tech, less-expensive approaches to assessing HRV, that is, modified forms of HRV assessment may be suitable for chiropractic practice as an assessment of NICVS. In this study, two such methods are compared to rHRV.

**Methods:** Thus far, 13 student volunteers have been recruited for this preliminary study. One of the two methods of modified HRV (mHRV) consists of noting the pulse rate every 5 seconds using a continuous finger pulse oximeter for a period of 1 minute, beginning at the zero second mark (13 observations). A coefficient of variation (CV) is subsequently calculated (standard deviation / mean). Consistent with the SDNN (standard deviation of normal-to-normal beat) variable in rHRV, larger CV values are considered to reflect greater neuro-adaptability than smaller CV values.

The second modified HRV method consists of pulse rate manually determined and is referred to as manual modified HRV (mmHRV). This method determines the radial pulse rate every 15 seconds, for 15 seconds, over a 1 minute period (4 observations). A CV is also calculated for this modified form.

The CV values for mHRV and mmHRV were compared to rHRV, in particular, its SDNN value. The rHRV technology consisted of the Biopac Active ECG instrument. Because of the non-normal distribution and presence of outliers, the Spearman correlation was performed, using Stata IC 12.0 (StatCorp, College Station, TX)

**Results:** Correlations with rHRV are as follows. mHRV:  $r = 0.206$ ,  $p = 0.5$ ; mmHRV:  $r = -0.022$ ,  $p = 0.9$ .

**Discussion:** Neither of the modified forms showed statistically significant relationships with rHRV ( $p > 0.05$ ). While the modified methods may make philosophical sense (e.g., consistent with Stephenson's idea that VS adversely affects adaptability), it still would be good to have outcomes research supporting the proposed methods.

**Conclusions:** In this preliminary study, no association was observed between rHRV and the two modified HRV methods. Consequently, the validity of the two modified methods remains unknown. Further research (e.g., with outcomes) is needed to determine if the modified methods are evidence-based.

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## The Prevalence of Vertebral Subluxation in Children Ten Years of Age and Younger

Bill Decken, DC, LCP, Matt Santos, Jennifer Santos

**Introduction:** The purpose of this study was to examine the prevalence and level of vertebral subluxation in children ten years of age and younger.

**Background:** Chiropractic care for children has been questioned in the past by some in the chiropractic community. Leach<sup>1</sup> and Gutmann<sup>2</sup> make reference to subluxation in children being correlated to infectious processes, and other authors<sup>6,7,8</sup> reported associations with nocturnal enuresis, hyperactivity, chronic otitis media, asthma and other diagnosable conditions in children who receive chiropractic care. Harvard's Abraham Towbin<sup>3,4</sup> uncovered a relationship between birthing procedures and: a) brainstem and spinal cord injury in newborns and b) sudden infant death syndrome. This has caused some in the chiropractic community to suspect that vertebral subluxation (VS) in newborns and small children may be a common occurrence. Lee and Li<sup>5</sup> have expressed concern that too many children in Massachusetts are seeking chiropractic care.

**Methods:** A vertebral subluxation is the condition of a vertebra that has lost its proper juxtaposition with the one above or the one below, or both; to an extent less than a luxation; which impinges nerves and interferes with the transmission of mental impulses<sup>9</sup>, and was determined to be present by using Sherman College pattern analysis. Various methods of interpretation may be used for this determination, e.g., established pattern and three-consecutive visit methods<sup>10</sup>, preponderance of findings in pattern on the 4<sup>th</sup> visit in the file compared to the 5<sup>th</sup> visit. A random sample of approximately 30 children patient files will be selected from Health Center databases from the last five years (2005-2010). The earliest approximately four or five visits in the file were used. Some files represent established patients who have even earlier visits in archives; these earliest visits were not accessed. In such a case, as previously mentioned, the earliest approximate four or five visits ("PRE findings") were used. Data collected was entered into a spreadsheet:

- a. Fossa readings
- b. Leg checks

Other information such as palpation findings was also included in some.

Patients, or in this case, parent or guardians of children patients in the college Health Center signed a consent form that allows for their data to be used in teaching or research. Such consent was considered sufficient for this study.

**Discussion and Conclusion:** Will be provided upon conclusion of the study

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## Cervicocranial and craniocervical syndromes: A case report

Harvey Getzoff, DC, Charles L. Blum, DC

**Introduction:** While there is a paucity of information regarding chiropractic treatment of cervicocranial/craniocervical syndromes (CC/CCS)<sup>1</sup> or related pain, it does appear these are not unusual clinical presentations in chiropractic practices. Since many patients with chronic CC/CCS chose medication<sup>2</sup> which have secondary adverse affects, finding alternative low risk treatment is a considered option. A relationship between stomatognathic implications of cervical spine posture and airway dysfunction<sup>3,4</sup> has been found so it is not uncommon for secondary symptoms associated with CC/CCS to include sinus, headache, jaw pain, and other related conditions. Some patients with CC/CCS may need dental/chiropractic co-treatment.<sup>5</sup>

A 48 year old female was first seen at this office for CC/CCS and related disorders. A comprehensive history revealed the neck pain in the suboccipital area predominantly on the left along with pain in the left upper trapezius region (especially when at the computer). She also presented with left ear and jaw pain, frontal headaches, debilitating sinus and allergy symptoms, and a chronic history of digestive problems. She was taking medications including hormone replacement therapy, various allergy medications along with daily use of non-steroidal anti-inflammatory drugs.

**Methods and Intervention:** Sacro occipital technique (SOT) examination<sup>5</sup> revealed various pertinent findings. Postural balance instability was noted in all directions with eyes closed. In the seated position cervical ranges of motion was found limited.<sup>5</sup> In the prone position a line two area three occipital fiber was found active with a T5 involvement<sup>5</sup> and in the supine position there was a right leg deficiency, left sided reduced hip internal rotation, and a positive arm fossa test relating to sacroiliac joint hypermobility syndrome (category two).<sup>5</sup> Cranial evaluation revealed marked restriction at the right maxillary zygomatic suture.

Treatment in the following sequence focused on reducing the occipital fiber vertebral reflex and adjusting the T5, improving hip internal rotation, using pelvic blocks to balance the category two, adjusting the cervical spine with cervical stairstep techniques, balancing the craniofacial region, and home ergonomic guidance.

**Results:** The patient was seen initially 2 times per week and ultimately for 19 office visits at two times per month between September 2008 through February 2009. Of significance there was better postural stability when standing with eyes closed. SOT reflexes relating to the occipital region, cervical and hip ranges of motion, reduction of category two indicators, She was pain free and no longer taking any NSAIDs which had been causing her increasing digestive disturbances.

**Discussion:** A category two syndrome can affect whole body kinematic function.<sup>4,5</sup> The ability of the weight-bearing structural system of the body to fully communicate through the nervous system (visual/vestibular righting mechanisms) so that maximum weight-bearing function can occur is essential to healthy spine, neck and head coupling. Due to airway related issues obstructive apnea can be related to poor dental mechanics can contribute to forward head posture and CC/CCS.<sup>3</sup>

**Conclusion:** The patient's improved function monitored at each adjustment along with diminished pain offered successful outcomes assessment tools for both the patient and doctor.

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## The Use of the P-300 Wave as an Outcome Assessment Related to Vertebral Subluxation

Matthew McCoy, DC, MPH, Charles Vaden , Jay Holder, DC

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The P300 (P3) wave is a reproducible, event related potential (ERP) elicited by infrequent, task-relevant stimuli. It is an endogenous potential as it's occurrence links to a person's reaction to a stimulus. The P300 reflects processes involved in stimulus evaluation or categorization. It is recorded by electroencephalography and surfaces as a positive deflection in voltage with a latency of roughly 300 to 600 ms. The P 300 signal is measured most strongly by electrodes covering the parietal lobe. The presence, magnitude, topography and timing of the P 300 wave are often used as a measure of cognitive function related to the process of decision making and may represent the transfer of information to consciousness.

The P300 evoked response potential (ERP) brain wave has been shown to be present in subjects with a variety of psychological and substance-use disorders. Given the relationship between vertebral subluxation and the Brain Reward Cascade the use of the P-300 wave is being investigated as a potential outcome measure for subluxation centered chiropractic care.

This presentation will review the literature on the P 300 Wave and discuss its potential application as an outcome assessment in vertebral subluxation based care. A proposal for a clinical study utilizing the P-300 Wave as an outcome assessment in a population of substance addicted individuals undergoing subluxation centered chiropractic care will be presented.

**Keywords:** *P300, P3, ERP, chiropractic, vertebral subluxation, alcoholism, addiction, substance abuse, psychological disorders, attention deficit disorder, addiction treatment programs*

## SOT Chiropractic Care of a Six-Year Old Boy Diagnosed with Asperger's Syndrome and Related Conditions

Martin G. Rosen, DC, Charles L. Blum, DC

**Introduction:** Asperger's syndrome is considered a high-functioning autism<sup>1</sup> and since its exact cause is unknown some research supports the likelihood of a genetic basis. It differs from other autism spectrum disorders by its relative preservation of linguistic and cognitive development. Although not required for diagnosis, physical clumsiness and atypical use of language are frequently reported.<sup>2</sup> There is no single treatment, and the effectiveness of particular interventions is supported by only limited data. Intervention is aimed at improving symptoms and function. The mainstay of management is behavioral therapy, focusing on specific deficits to address poor communication skills, obsessive or repetitive routines, and physical clumsiness. A 2003 review of epidemiological studies of children found prevalence rates ranging from 0.03 to 4.84 per 1,000, with the ratio of autism to Asperger's syndrome ranging from 1.5:1 to 16:1.<sup>3</sup> The field of chiropractic may play a part in the treatment of autism spectrum disorders<sup>4</sup> and sacro occipital technique (SOT) and cranial techniques have been found to be of promise for improving symptoms and function.<sup>5</sup>

**Case History:** A six year old male patient was brought to my office on October 2000 for evaluation and treatment for several medically diagnosed conditions that had not responded to standard medical care. The patient had seen another chiropractor for 6 months who then referred the patient for SOT and cranial chiropractic care at this office.

His initial complaints included: Asperger's Syndrome that resulted in uncontrollable "rocking, jumping and flapping" of his hands, asthma triggered by exertion, seasonal allergies and colds or bronchial congestion, and severe allergies to mold, dust, animal dander and seasonal triggers. Standard medications for the Asperger's "made his asthma and allergy symptoms worse." Therefore at the time of his initial office visit he was only taking asthma medication (Intal and Albuteral) and a multivitamin. His Asperger's symptoms started at age 3 and he had asthma and allergy symptoms since early childhood.

**Methods - Treatment/Intervention:** A standard chiropractic, orthopedic and neurological exam was performed on the patient as well as a specific SOT (Sacro Occipital Technique) spinal and cranial evaluation. Cranial and spinal subluxations patterns were detected and a treatment program was implemented to address these patterns using SOT protocols and procedures.

Initially treated as a category two (sacroiliac joint hypermobility) with active occipital fibers line two T3 and T7. His occiput was determined to be in left lateral flexion, he had right temporomandibular joint dysfunction (TMD) and cervical subluxations at C2 and C1. The category two stabilized in 3 weeks corresponding with improvement of his Asperger's symptoms. Initially cranial adjustments focused on the occiput, spinal adjustments to the upper cervical spine (C1 – C2), pelvis (Category II protocols) and thoracic regions (T3 and T7). Viscerosomatic reflexes relating to T3 and T7 were balanced utilizing chiropractic manipulative reflex technique (CMRT).

By the second month the patient was treated as a category one (sacroiliac joint fixation, pelvic torsion, and altered sacral nutation) and the cranial imbalance began to resolve. His office visits were reduced from every 3-5 days to every 7-10 days until May 2001 and following that time was shifted to be seen every two weeks.

### Results:

The patient and family reported that the Asperger's Syndrome symptoms "settled down within the first week of care." While first seen in October 2000 by January 2001 his Asperger's symptoms had been stabilizing and was off medications for asthma and allergies. Initially he was seen at the office in October 2000 every 3 to 5 days. From November 2000 to May 2001 he was seen at the office every 7-10 days. Following the May 2001 he was reduced to 2 times per month and was put on a wellness treatment schedule which for him was 1-2 times per month.

During that first year he was seen for 2 exacerbations through summer 2001. In the first three years of care there were some minor exacerbations however he would be seen for chiropractic care at this office and treatment would resolve his symptoms never needing medication. His Asperger's symptoms continued to improve and only occurred infrequently when under extreme stress.

While his asthma and allergies responded positively within the first few weeks of care in August 2001 he had an asthma flare-up. Allergy testing revealed an allergy to mold so he was given a homeopathic allergen to help treat the condition and he responded well to this intervention. Presently the patient is 15 years old and has not needed any medication, nor has his Asperger's symptoms returned during the past 7 years. At the present time this patient is being seen on a wellness/maintenance chiropractic care program. There has not been any significant flare-up of his Asperger's, asthma, or allergies since the summer of 2001.

**Discussion:** It is of interest that there appears to be a temporal relationship between SOT spinal and cranial therapy and the patient's Asperger's symptoms and ability to function. When there were flare-ups of behavior and treatment was rendered the patient's symptoms would subside. While it is possible the patient had a variation of Asperger's no prior treatment or medication affected his



symptoms and in fact tended to exacerbate his other conditions. Also it is not common for Asperger's syndrome to "just go away," as it appears to have happened with this patient. Therefore there may be a subset of children diagnosed with Asperger's syndrome that have a mechanical or neurological component that will respond to specific types of chiropractic interventions.

**Conclusion:** Further research is needed into the relationship between SOT spinal and cranial care for Asperger's and other autistic spectrum disorders. With the risk benefit ratios associated with the reduced risk of chiropractic care with increased risk of the typical medications used for this condition, a trial of chiropractic care for children or adults with this condition may yield important information. It is difficult to extrapolate extensively from a single case study but the findings of this case should encourage further research into SOT spinal and cranial treatment of Asperger's or autism spectrum disorders.

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## Cervical Specific Protocol and Results for 300 Meniere's Patients Over Three Years

Michael T. Burcon, B.Ph., D.C.

**INTRODUCTION:** Meniere's disease is a structural problem, i.e., a lesion caused by an atlas subluxation that is irritating the origin of CNVIII, causing idiopathic endolymphatic hydrops and partially blocking the auditory tube.<sup>1</sup> Objective demonstrates the effectiveness of cervical specific management with 300 consecutive patients medically diagnosed with unilateral Meniere's disease.

**METHODS:** Case histories were taken, followed by spinal examinations. Because evidence of upper cervical subluxation was discovered, three cervical x-rays were taken; Lateral, A-P Open Mouth and Nasium. Relative leg length tests were performed utilizing the modified Prill leg check system and thermography pattern work was done using the TyTron C-3000 to determine which cervical vertebrae to adjust, and when to adjust it.<sup>2,3</sup> X-Rays were analyzed using the Blair technique. The four atlas listings under this system are anterior and superior on the right or the left, and posterior and inferior on the right or the left.<sup>4</sup>

**DISCUSSION:** Two hundred seventy out of 300 patients had inferior and posterior listings with laterality on the opposite side of their involved ear. After one or two specific cervical adjustments, 282 patients presented with balanced legs and an absence or dramatic reduction of symptoms, especially vertigo and nausea. After six weeks, on a scale of 0 to 10, with 0 representing the absence of the symptom and 10 being the worst imaginable, vertigo was lowered from an average of 7.5 to 3.0. After one year it was lowered to 2.0, after two years down to 1.4 and after three years 0.9.

**CONCLUSIONS:** An average of fifteen years prior to the onset of symptoms, all three hundred cases suffered cervical traumas; most from automobile accidents, resulting in whiplash injuries. It is unlikely coincidental that 270 out 300 consecutive Meniere's patients would present with a posterior and inferior atlas listing with laterality on the opposite side of the involved ear.<sup>5-11</sup>

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## Retracing: A case study of how early life dis-ease becomes complex adult health issues

Brigette Bowler, DC and Kathryn Conlen, BA, MT, CST

**Objective:** To demonstrate use of hands-on interdisciplinary approach through a case study of a woman suffering with trigeminal neuralgia, scoliosis, and left foot pain that shows both structural correction as well as a cost effective approach.

**Methods:** The authors' respective practices are guided by the agreed upon importance of an interdisciplinary approach based on the correct sequencing of care. This is founded on the belief that B.J. Palmer's model of Hole-in-One Chiropractic analysis and adjustment of the Occipito-Atlanto-Axial Complex (OAA) to remove interference of mental impulse is foremost to any other corrective care in order to have a long lasting impact on health and reduction of dis-ease. This is followed by observance of retracing and pattern work which is used to guide educational chiropractic visits (non-adjustment visits) to include three distinct exercises to re-educate the structure to its new balance and teachings on vitalism in a model of care termed "*Structural Hygiene for Developing Human™*" developed by Brigette Bowler, DC. It is important to recognize the impact of early life dis-ease, in the adult care model. For instance, the long term affect that removal of adenoids and tonsils, has into the adult structure. Therefore, in certain cases where complex health issues are involved, patients are assessed for further care using hands-on removal of interference in the cranium, vertebra and sacrum with Craniosacral Therapy. This is further based on principles and techniques held by the Upledger Institute, founded by John Upledger, D.O., O.M.M. in 1987. In certain circumstances, e.g., scoliosis, the application of Raindrop Technique™ is applied to clear the spine of inflammation and contortion from virus- like particles.

**Results:** The patient early life dis-ease patterns including removal of the adenoids and tonsils, 2 significant sacral injuries and scoliosis developed into complex adult diagnosis including trigeminal neuralgia, left foot pain, lumbar scoliosis, right trigger thumb surgery, Barrett's esophagus, spastic colon, chronic dehydration of the colon, leg length difference requiring orthotics, food allergies, allergy shots, chemical sensitive's, kidney stones, gall bladder removal, acute sinusitis of the frontal and ethmoid sinuses. The course of care reduced scoliosis, cleared trigeminal neuralgia and left foot numbness and pain, and increased the patient's overall reported state of health.

**Conclusions:** Strict adherence to retracing and pattern work held the number of chiropractic adjustments to 6 over approximately 4 years. The use of HIO to clear the OAA joint supports the need for the use of interdisciplinary care combining 60 to 90 minute craniosacral therapy sessions performed by a massage therapist with the OAA subluxation corrected increases the patient's ability to return to a more full health potential. This sequence of care balanced the cranial bones, including temporals, mandible and zygomas and reduced membranous and sutural restrictions that were left by the surgical removal of adenoids and tonsils. The changes are demonstrated by pre and post x-rays taken three years apart. This case study also demonstrates a cost effective approach healthcare model. Human potential may flourish and self correct when therapies are focused toward the body's Innate's Intelligence, which works constructively for the betterment of your body, constantly, every second of your life .

Webb JN, Gillespie WJ. Virus-like particles in paraspinal muscle in scoliosis. *Br Med J* 1976 Oct 16;2 (6041): 912-3

**Keywords:** scoliosis, trigeminal neuralgia, interdisciplinary approach, chiropractic, craniosacral therapy, raindrop therapy

## Resolution of Trigeminal Neuralgia Following Subluxation Based Chiropractic Care: A Case Study & Review of the Literature

Michael Acanfora, DC and Eric L. Zielinski, BA

*\*\*Currently unpublished\*\**

**Objective:** Since the first century A.D., trigeminal neuralgia (TN) has been regarded as one of the most painful and enigmatic diseases known to man. It has been generally accepted that patients will never be completely free from the condition regardless of the therapy. This case study highlights how chiropractic care has overcome this stigma in a patient who has been relieved of this disease now for over eight years.

**Clinical Features:** Forty year old female presented with right sided TN of six months duration. History included only one major finding of a root canal adjacent to affected area three months prior to onset of painful paroxysms. Patient rated pain 10++ out of 10 on the visual analog scale. Prescriptions included fifteen analgesics including morphine, oxycontin, and percocet. Chiropractic examination revealed upper cervical subluxations. A-P and lateral cervical x-ray analysis determined right C1 laterality and loss of cervical curve.

**Intervention and Outcomes:** Thompson analysis, diversified adjusting technique, and supine rotary breaks to C1 and C2 were utilized. After first adjustment, the pain resolved and patient discontinued use of medications. After eight years of maintenance care, she has not experienced any relapse.

**Conclusions:** This case demonstrates a situation in which chiropractic care has helped a patient successfully manage the debilitating paroxysms of trigeminal neuralgia. We see the great need in a multi-disciplinary and integrative approach to treating trigeminal neuralgia. This paper is intended to empower the chiropractic and medical professional alike to consider TN an approachable disease – perhaps treatable and manageable without the use of pharmacological and surgical interventions. Further study is needed to substantiate and confirm findings.

**Key Words:** *Chiropractic; subluxation diversified technique; [atypical] trigeminal neuralgia; neuropathic pain; antiepileptic drugs; microvascular compression surgery; suicide.*

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## **Winning the Debate on Vertebral Subluxation**

Keynote Speaker, Christopher Kent, DC

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An overview of contemporary scientific literature supporting chiropractic will be presented. Logical fallacies commonly employed by skeptics and other detractors will be discussed, and examples cited. Popular models of vertebral subluxation will be explained in the context of clinical practice. The lecture will include role of epistemology in vitalistic practices.

## How to Re-Ground Chiropractic In Its Principles

Michael B. Schmidt

There is much clinical evidence, research, and legislation centered around the physical benefits of chiropractic care. This concentration on physical conditions has necessarily influenced—and been influenced by—debates over the scope of chiropractic practice. Unfortunately, these debates now threaten the profession's principles, which are to remove vertebral subluxations from the spinal column and allow innate intelligence to maintain coordination.<sup>1,2</sup> However, the World Health Organization defines "health" to include "mental and social well-being."<sup>3</sup> Therefore, there is an opportunity for the chiropractic profession to re-ground itself in its principles by broadening its scope—not of what chiropractors do, but rather where and why they do it.

One example of broadening chiropractic's application is currently underway in response to a 2007 Anxiety Disorders of America Association Report. The report concludes that college and university students are increasingly suffering from anxiety, and many institutions do not have adequate resources to meet their students' needs.<sup>4</sup> Therefore, the author of this abstract has initiated a pilot study that will specifically measure chiropractic's effect on anxiety and overall quality of life in college students at a chiropractic university.<sup>5,6</sup> The intent of the study is to invite other colleges and universities to participate in studies to further explore the possible benefits of introducing chiropractic care as a standard service for college students. The ultimate goal is to create the College Chiropractor position: a Student Affairs professional that delivers chiropractic care and educates the campus community about health and well-being from the inside, out.

There are many other arenas that could greatly benefit from the inclusion of chiropractic based on its principles. If the identity of the profession is to remain grounded in the vertebral subluxation, then the outcomes of concern must include all possible benefits that come from its removal.

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## 2 1/2 Year Old Female with a Thirty-five Degree Scoliosis and Two Hemivertebra: A case report.

Martin G. Rosen, DC

**Introduction:** Adolescent idiopathic scoliosis (AIS) remains the most common deforming orthopedic condition in children and both adults and children are commonly seeking complementary and alternative therapy.<sup>1</sup> “No two cases of congenital scoliosis are the same, and each pattern requires careful assessment to determine the risk that a serious curve will occur and need treatment.”<sup>2</sup> The risk of undergoing surgery for scoliosis initially estimated to be 5% is according to the latest evidence, the rate of complications is far beyond that rate.<sup>3</sup>

At 6-months-old her pediatrician noted a curvature in her spine and between December 1998 – 2000 radiographs, MRIs, and Moire studies were performed with surgery scheduled April 2001. On March 9, 2001, the patient presented at my office with her mother for examination with the object of seeking less invasive alternatives.

**Methods/Intervention:** A 2½-year-old female with scoliosis and two hemivertebra was evaluated and treated with sacro occipital technique (SOT) procedures. Sacroiliac joint imbalance with thoracic and lumbar lordosis, positive Adams Test along with cranial and TMJ bilateral imbalance. The patient was put on a six-week intensive care program beginning March 14, 2001 stabilize her Category II complex (sacroiliac joint hypermobility) with its effect on the whole body kinematic chain and correct the cranial bone and meningeal imbalance. Her initial visit frequency was 2-visits per week for the first 6-weeks. The surgery was still scheduled for April 2001.

**Results:** Six weeks after her initial chiropractic adjustment the patient was re-examined by the orthopedic surgeon prior to performing his surgical intervention and fusion. His evaluation and follow up Moire study on April 26, 2001 revealed a significant reduction in the scoliosis. Surgery was postponed and the orthopedic surgeon put the patient on a program of follow up Moire studies every six months through November 2002 to monitor the scoliosis.

**Discussion:** Objective findings and continued orthopedic evaluations using the Moire system of scoliosis tracking continued to show marked improvement in the patient’s scoliosis and is on a maintenance level. continuing to see the orthopedic surgeon every 6-months. At this point in time the patient’s scoliosis, kyphosis and lordosis have been drastically reduced, all her functional levels are completely normal and is no longer a candidate for invasive surgical fusion. Even with the additional complication of two congenital hemivertebra this patient’s scoliosis was drastically reduced through consistent chiropractic care using the SOT adjusting protocols and procedures. Chiropractic care for pediatric patients with scoliosis has been discussed in the literature.<sup>4</sup> While there have not been many studies investigating SOT treatment of scoliosis one study discussed care of a adult patient with scoliosis who was successfully treated with a combination of SOT chiropractic care and Pilates exercise therapy.<sup>5</sup>

**Conclusion:** Since conservative chiropractic care in this case offered less risk to the patient, was more cost effective, and offered significant benefit it would appear that further study into the efficacy of chiropractic care in the treatment of childhood scoliosis would be prudent, especially before surgical intervention is considered.

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## Detecting Outliers in Mastoid Fossa Readings: A Case Report

John Hart, DC, MHSc

**Introduction:** This presentation seeks to offer a method of identifying outliers in numerical data and is adapted from a previously published case report by the author.<sup>1</sup> The previous report used standard deviation (SD) for analysis whereas the present case study uses Inter-quartile range (IQR)<sup>2</sup> analysis as an alternative. IQR may be more ideal since it is resistant to non-normal distributions and outliers. Numerical analysis in chiropractic practice would seem to help make clinical decisions more objective and therefore more scientific.

**Methods:** Ten mastoid fossa temperature differential readings (MFTD) obtained from a chiropractic patient were used in the study. The patient gave consent and the Sherman College IRB approved of the study. MFTD readings warmer on the left side were given a negative sign to differentiate from readings warmer on the opposite side (Table 1). An IQR analysis to detect outliers was performed on the readings in Excel (Microsoft Corp., Redmond, WA). Additional calculations for IQR analysis consisted of:

$$\text{Quartile 3-Quartile 1} = \text{IQR}$$

$$\text{Lower fence} = \text{Q1} - (1.5 * \text{IQR})$$

$$\text{Upper fence} = \text{Q3} + (1.5 * \text{IQR})$$

The lower and upper fences represent the lower and upper limits respectively. Values outside the fences are considered as outliers. Among the 10 readings, the last two followed the chiropractic adjustment on 9-15-09 (Table 1).

**Results:** The lower and upper fences were -0.57 and 0.08 respectively (Table 1). All readings prior to the adjustment on 9-15-09 fell within these fences. The post-adjustment MFTD on 9-16-09 fell outside the IQR fences while the next reading, on 10-1-09 (-0.26) fell back within the fences (Table 1).

**Discussion:** The post-adjustment MFTD reading of 0.23 on 9-16-09 is an outlier relative to the readings that are considered as an abnormal (unhealthy, subluxated) baseline. Consequently, the 0.23 MFTD reading is considered to be significantly different (statistically speaking) from the abnormal baseline. The next reading, on 10-1-09 (-0.26) is considered to represent a subluxated state since it fell back within the baseline that was considered abnormal. In other words, it appears that the adjustment on 9-15-09 was followed by only temporary improvement according to outlier analysis. Analysis for outliers would seem to help improve objectivity in interpretation of numerically-based chiropractic findings such as MFTD readings. *Statistical* significance is one thing but outcomes research is required to determine whether this analysis has *clinical* significance.

**Conclusion:** This report shows how Inter-quartile analysis can be used to identify outliers in a numerically-based chiropractic assessment such as MFTD readings. Such analysis would seem to add objectivity in practice, and therefore could make chiropractic analysis more scientific. Outcomes research is required to determine whether this approach has clinical significance.

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**Table 1.** Mastoid fossa readings. Negative sign given to readings warmer on the left to differentiate from readings warmer on the opposite side. The patient received a chiropractic adjustment on 9-15-09. The reading on the following visit (9-16-09) in bold is an outlier while the next (on 10-1-09) reading fell back within the fences. Q1 = -0.33; Q3 = 0.08; IQR = 0.16; LF = -0.57; UF = 0.08

Date	MFTD
8/11/2009	-0.16
8/13/2009	-0.32
8/14/2009	-0.44
8/18/2009	0.00
8/20/2009	-0.19
9/3/2009	-0.18
9/14/2009	-0.56
9/15/2009	-0.33
9/16/2009	<b>0.23</b>
10/1/2009	-0.26

## Congruence of wellness in chiropractic philosophy

Christopher Passalacqua, DC

**BACKGROUND:** Wellness is a term that is utilized heavily in the chiropractic profession today. Everywhere you look there are chiropractic wellness clinics and programs throughout the profession. But is wellness congruent with chiropractic philosophy? If it is, then why was it not utilized in the chiropractic profession until the 1980's? In 2002 Paul Zane Pilzer introduced the world to the business of wellness in his bestselling book, *The Wellness Revolution*, according to Pilzer *Wellness* is a \$1trillion dollar business waiting to be added to an already \$1.5 trillion dollar "healthcare" business. Which he readily admits is an inaccuracy, "*Healthcare* is a misnomer, as one-seventh of the economy is really devoted to the *sickness* business-defined in the dictionary as "ill health, illness, a disordered, weakened, or unsound condition, or a specific disease." Is the profession cashing in on that financial prognostication?

**METHODS:** There are all sorts of sources for exploration into what the culture considers *wellness*, one only needs to watch the evening news or peruse the *New York Times* best seller list for the latest diet craze. Commercials with salesman encourage us to buy the best in-home fitness machine, while advertisements for the local yoga studio are opening up right around the corner. One can't be healthy without the essential vitamin that GNC is promoting this week. There is enough in the current literature both within the chiropractic profession and especially from without. The Green Books that were utilized for chiropractic philosophical/historical perspectives are *Palmer's Law of Life* and *The Subluxation Specific- The Adjustment Specific*, also The Green Books on CD-Rom.

**CONCLUSION:** Wellness concerns itself with educational decisions utilized by the Educated Mind in making conscious decisions of the interaction of the body to the environment. The medical community has termed this *orthobiosis*, meaning- "Sound and correct living including all of the factors that may affect longevity and well-being." It is actually based on centuries of direct observation as to which behaviors tend to improve living. We fear that many Chiropractors may have hitched their *wellness-wagons* to age old allopathic philosophies without really knowing their origins; thinking that we have invented or at very least originally championed these same "outside-in" proposals.

Most within the chiropractic profession feel that wellness is amendable to chiropractic, however, the term "wellness" is not mutually exclusive to chiropractic and our profession claims to have cultural authority over wellness. We feel it's quite the opposite. Ease, and this is our important distinction, is about Innate Intelligence making intellectual adaptations on what is best for the body. Wellness is the outcome.

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## A Prospective, Longitudinal Health Outcomes Study of Pregnant Women and Children Undergoing Subluxation Based Chiropractic Care

Matthew McCoy, DC, MPH, Pamela Stone, DC, CACCP, Christie Kwon MS, DC, Maggie Ashworth BS, DC, Brandi Ancrum, MPH

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**Objective:** To describe the development, implementation and initial data analysis for a practice based, prospective, longitudinal health outcomes study of pregnant women and pediatric patients undergoing subluxation centered chiropractic care.

**Background:** Chiropractic and spinal manipulation is being increasingly utilized in the care of pregnant women and the pediatric population. While there have been some initial efforts to address the safety, efficacy and health outcomes related to such care, much work remains to be done. Increasingly third party payors and regulatory agencies are scrutinizing the depth and strength of evidence relative to the chiropractic care of pregnant women, infants and children. Indeed some practice guidelines and third party payors state that the evidence for benefit is equivocal and even state in some cases that it is experimental and investigational. As health care continues to undergo changes based on accountability, outcomes and cost effectiveness the issue of chiropractic care of the pregnant female and pediatric population will continue to be a contentious one. The need exists for prospective, longitudinal outcomes studies of chiropractic care in these populations and this study is a step in that direction.

**Methods:** This is a practice based, longitudinal, health outcomes study assessing the safety and efficacy of chiropractic in the pregnant and pediatric populations. The setting is a private chiropractic clinic in Kennesaw Georgia that focuses on the care of women and children. All existing and new pregnant females and pediatric patients who become patients of the clinic during the one year time period for this study will be asked to participate. It is estimated that approximately 100-150 subjects will be enrolled. Subjects will already be about to or already be undergoing chiropractic care so will be excluded only if they are not eligible to undergo chiropractic care or do not wish to participate. A co-investigator on this study will be providing the chiropractic care. This study will utilize data collected thorough a data repository created and maintained for the purposes of this study. Data from all existing and new pregnant and pediatric patients who become patients of the clinic during the one year time period for this study will be asked to participate. The data will be analyzed for changes in anthropometric, physiological and self reported quality of life during the study period. The remainder of this section will explore the details of the population, the sample, research design, data analysis, limitations and strengths of the study.

**Results:** A number of obstacles were encountered in the process of implementing this research study that included: training of staff and investigators, implementing the informed consent process, tracking subjects, scheduling follow-up evaluations and data management.

Thus far, 9 pediatric patients and 25 pregnant subjects have been enrolled in the study. Pediatric patients included three female patients and 6 male patients aged 6 months to 9 years old. Pediatric complaints included: ear infection; plagiocephaly and torticollis; reduced left neck rotation; three cases of motor vehicle accidents; sinus and asthma complaints; two cases of low back pain; and two cases of wellness care. Pregnancy patients ranged from 23 to 39 years of age and included: four complaints of sacroiliac pain; three complaints of mid back pain; ten complaints of low back pain; one complaint of a fetus being in the transverse presentation; two complaints of breech presentation; one complaint of frank breech presentation; one complaint of migraine; one complaint of knee pain; two complaints of hip pain; one complaint of asthma; one complaint of coccyx pain; one complaint of asthma; one complaint of shoulder pain; one complaint of sciatica; two complaints of neck pain; one case of a motor vehicle accident; and three cases of wellness or maintenance care.

**Conclusions:** Previous studies have shown chiropractic to be safe and effective in addressing various complaints of pediatric and pregnant patients. Further research in the quality of life of patients undergoing subluxation based healthcare is necessary and the need exists to train chiropractors in practice based research in order to carry this out. This study will provide valuable data on the obstacles associated with the implementation of a practice based research study as well as preliminary data on the health outcomes in these important populations.

**Key words:** *Pediatrics, Pregnancy, Chiropractic, Health Outcomes, Vertebral Subluxation*

## Political Action and the Subluxation Centered Chiropractor – Steps to Engagement

Veronica Gutierrez, DC

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**Objective:** To describe the steps to be taken for the subluxation centered chiropractor to become engaged in the political process within and outside of the profession.

**Background:** The chiropractic profession is currently controlled by an allopathically oriented cartel that exercises its power through involvement on state regulatory boards and on the State and Federal political process. If a subluxation centered approach is to survive over the coming years this faction of the profession will need to engage in the political and regulatory process.

**Discussion:** Subluxation centered chiropractors can engage in the political and regulatory process in a variety of ways. Gaining appointment to their state regulatory board, getting involved in their local, state politics by working with and visiting their representatives to educate them on chiropractic and health policy issues, making campaign contributions, holding political fundraisers, visiting their representatives in Washington DC, getting to know their representatives' health policy staff in Washington DC, providing counsel to them on policy issues and getting appointed to Federal health advisory boards.

**Conclusion:** Subluxation centered chiropractors have abdicated their roles and responsibilities in the political process. The strategy, steps and resources necessary to engage in the political and regulatory process are described with the hopes that this faction of the profession will take active steps to engage in the process.

**Key Words:** *chiropractic, political action, vertebral subluxation, regulatory boards*

## Chiropractic care of a two year-old diagnosed with reflux and a hiatal hernia: A case report

Martin G. Rosen, DC, Charles L. Blum, DC

**Introduction:** Approximately 4 million babies born in the U.S. each year, up to 35% with reflux in the first few months of life, which may resolve by their first birthday yet some will never outgrow the condition. Beyond infancy, up to one fourth of children and adolescents have recurrent abdominal pain, whereas only 5% report heartburn or epigastric pain.<sup>1</sup> Surgical treatment (fundoplication) has mortality rates up to 4.7% with 6% having postoperative complications.<sup>2</sup> Therefore the onset of gastroesophageal reflux (GER) and hiatal hernia (HH) symptoms are on the rise in the pediatric population. The use of prescription medication including: Prevacid, Prilosec and Nexium in treating these conditions are generally not only ineffective but do not address the cause or complications of these issues.

“Gastroesophageal reflux, usually with associated hiatal hernia, is recognized as a cause of disabling esophageal and respiratory complications in all age groups; but, until recently, it has been thought to be an unusual problem in infants and children. Respiratory complications, now appreciated with increased frequency in the adult population, may also occur in the pediatric age group.”<sup>3</sup> In a study by Gorenstein et. al., “among 718 children with GER, 45 children (6%) with associated HH were retrospectively studied. They were divided into those with neurologically normal development (NN, n = 35) and those with neurologic disorders (ND, n = 10). Presence of HH in children with GER is associated with prolonged exposure of the esophagus to acid and a high failure rate of nonoperative treatment. However, medical treatment should be tried in NN children despite the significant failure rate.”<sup>4</sup>

**Case History:** On August 31, 2009 her parents brought a one-year old female infant to my office for evaluation. Her initial symptoms and diagnosis as reported to me by her mother, was as follows: esophageal reflux, hiatal hernia, she did not sleep more that 1.5 hours at a time, would not (or could not) eat solid food, she did not crawl as an infant, she could not lay down flat (prone or supine), threw up constantly, and had “slow gastric emptying with no obstruction”, was continually irritable, often screamed and cried and was inconsolable.

Her previous treatment included: dietary changes (dairy and soy formulas tried, Alimentum and Neonate formulas also did not work), Prilosec, Preacid and Nexium eased her discomfort at night but did not help her eat. She was also put on Reglan for 2 days but had a negative reaction! An endoscopy was performed and rectal polyps were removed. When she entered my office she was taking 20 mg of Nexium per day plus ½ a teaspoon of Miralox once per day. None of her symptoms had responded favorably to the above treatments.

**Methods/Intervention:** Using Sacro Occipital Technique (SOT) spinal, cranial and chiropractic manipulative reflex technique (CMRT) adjusting protocols with this patient all of her initial symptoms resolved. Initially, the patient was seen twice per week for 6 weeks at which time an evaluation was done to determine the level of chiropractic care necessary to correct and stabilize her subluxation complex. Due to improvement in both her symptomatic and chiropractic findings her adjustment frequency was reduced to one time per week.

SOT chiropractic adjustments in the initial intensive care period (6 weeks) included correction of: a right occipital compression, an anterior sacrum on the right, viscerosomatic correction of T4 rotation and right lateral atlas subluxations. Using SOT pediatric evaluation and adjusting protocols the following visits addressed removing her presenting subluxation pattern and uncovering and correcting her purportedly primary pattern (the initial subluxation that caused the compensatory neurophysiological stresses). These adjustments included some of the aforementioned corrections plus underlying subluxation patterns at: C2, C4, T3 and the left ilium. Supportive CMRT procedures for the gall bladder, lungs, iliocecal area, diaphragm and hyoid bone were utilized when necessary.<sup>5</sup> Cranial corrections were also made based on indicators to the sphenobasilar dural meningeal interrelationship (occiput and sphenoid).<sup>6</sup>

**Results:** After the first 3-4 visits the patient’s symptoms began to subside, she did not cry in pain as often, her reflux and vomiting reduced dramatically, she no longer needed to take the prescribed medications and she was able to sleep through the night and did not wake up crying in pain. Continued care over the next 2 months mitigated her symptoms dramatically and she suffered only one exacerbation of her vomiting in 3 months.

After 9 visits, 4 weeks of care, Bella started crawling for the first time in her life. While she did begin to walk at 10.5 months her gait was unsteady and her hands were held stiff at her side, even after 2 months of walking. About a week after she began to crawl her gait became smoother and she began to use her hands in the proper cross pattern motion. Her mother also reported that her disposition became much calmer and her emotional outbursts were dramatically reduced. After 3 months of care the patient was able to eat solid food and was to swallow it without throwing up or choking. Bella remained under care for approximately one year with no recurrence of her symptoms at which time her mother decided to discontinue care and “see how she does without it.”

**Discussion:** This case report is attempting to illustrate how conservative chiropractic care might be effective in the treatment of children with symptoms associated with digestive issues such as GER, HH, and dysphagia. These common pediatric conditions affect

the child and the entire family due to the incessant nature of the condition and the complicating factors that arise from their symptomatology. A recent survey study has found that chiropractic care, and particularly SOT chiropractic care, has been helpful in treatment of pediatric nonmusculoskeletal conditions such as GER or HH.<sup>7</sup>

Conservative care for pediatric GER generally includes feeding modifications such as “a protein-hydrolysate formula thickened with one tablespoon of dry rice cereal per ounce, at restricted volumes. Positioning changes included avoidance of seated and supine positions. Elimination of all tobacco smoke exposure was advised.”<sup>8</sup> GER is not just a pediatric condition but has been found if untreated to lead to a lifelong disease. Therefore GER may require aggressive therapy early in life to reduce the risk of long-term sequelae.<sup>2</sup>

While SOT’s CMRT has methods of treating GER<sup>9,10</sup> and HH<sup>11</sup> other chiropractic methods may also offer options for pediatric patients with this condition.<sup>12-4</sup> In a study (n=10) on adult patients with GERD referred by a gastroenterologist for chiropractic co-treatment endoscopy examinations performed after 8 sessions of CMRT chiropractic treatment for gastric syndrome found significant global reduction of GERD symptoms.<sup>9</sup>

As with all case studies it is not appropriate to generalize finding of one patient to the whole population at large. This is because case studies do not have controls and comparative studies to rule out confounding conditions such as effects relating to placebos, ideomotor, or regression to a mean. Yet with the difficulty in studying the pediatric population and the lack of clear knowledge with the effect of medications on this group, low risk, and low cost, conservative options are worthy of consideration.

While it is possible that the child might have just outgrown her condition without care, the parents were not satisfied with her progress and the distress this had on both their child and home life. The temporal nature of the care rendered coinciding with the child’s ability to eat, sleep and not take medication was remarkable from the standpoints of the doctor and parents. Since the child’s condition was stable and on some degree worsening, this change most reasonably seemed related to the care rendered since there were no other variables.

**Conclusions:** The findings from this study suggest that a subset of pediatric patients with GER and HH may benefit from SOT, CMRT, and cranial care. With parents who do not want to follow a “wait and see” approach for their children’s care a short period of trial therapy which may function as a diagnostic test and a viable option to GER and HH that may be reasonable for gastroesophageal related pain that is unremitting in a young child. Further studies could involve comparative studies with controls or children treated with alternative allopathic care.

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## Resolution of Glossopharyngeal Neuralgia with Spastic Dysphonia Following Chiropractic Care to Reduce Cervical Spine Vertebral Subluxations: A Case Study

Michael T. Burcon, B.Ph., D.C.

**Objective:** This case study reports the improvement in quality of life experienced by a patient undergoing cervical specific care as an alternative to medication for the management of Glossopharyngeal neuralgia.

**Clinical Features:** An 82 year old female presented with right sided Glossopharyngeal neuralgia of ten years duration. Pain was helped by medication and exacerbated by talking, swallowing, coughing, quick head movements and air conditioning. Secondary complaints include unsteady gait, dizziness, spastic dysphonia, chronic cervicgia, tremor, ankle edema, hiatal hernia, high blood pressure, sleep apnea, ulcerative colitis, reflux, migraine, hoarseness, hypothyroidism, mitral valve prolapse, arthritis and possible TIA. Daily prescriptions include Gabapentin 5700 mg (3600 mg maximum prescribed by manufacturer, less for geriatric patients), Lipitor 20 mg, Hydrochlorothiazide 25 mg, Inderal 60 mg, Aleve, 220 mg, aspirin 81 mg, Omeprazole 20 mg, Diazepam 15 mg, Advil 800 mg, Hydrocodone 20 mg, Benadryl/Lidocaine 40 ml and multiple herbal and vitamin supplements. Surgeries include hip replacement, tonsillectomy, hysterectomy and bilateral stapedectomies, seven months apart at ages 30 and 31. She is widowed with six children. She does not drink or smoke and has significant family history of cancers.

Patient has case history of falling on her head in a snow skiing trauma at age sixteen followed by possible whiplash injuries when falling on ice that same year and a vehicular accident in 1984. Posture analysis observed severe right head tilt. Pain scale 10 out of 10. Patient had constant stabbing pain with tremor in right temple, face, tongue and throat. She could only manage to whisper two to three words at a time. Leg length equality tests demonstrated right leg 1" short relative to the left with 1" bilateral cervical syndrome. Positive modified Prill test for atlas (C1) and axis (C2). Thermography displayed excessive heat in lower cervicals with line break at C5. Cervical x-ray series supported evidence of vertebral subluxation at atlas, axis, C4, C5 and C6. Upper cervical listings of atlas posterior and inferior on left, axis entire segment right with posterior aspect of C1/C2 ankylosed with arthritis.

**Intervention and Outcomes:** Immediately after specific adjustments to C5, C2 and C1, pain diminished from 10 to 1. Tremor and head tilt were eliminated. Eye clarity and facial color returned to normal. She could talk normally. Two days later pain was 0. Under supervision by her neurologist, she started reducing her Gabapentin. At six weeks patient presented with straight thermograph, balanced legs and pain free without medication.

**Conclusion:** This case demonstrates the effectiveness of cervical specific care as an alternative to medication for the control of pain associated with Glossopharyngeal neuralgia.

**Key Words:** *Glossopharyngeal neuralgia, upper cervical subluxation complex, specific chiropractic adjustments, whiplash, Gabapentin (Neurontin).*

**Introduction:** Amongst the lower 6 cranial nerves, the glossopharyngeal nerve is the smallest in terms of nerve diameter, importance and clinical significance. When compared with the facial, vestibulocochlear, vagus, accessory and hypoglossal nerves, the glossopharyngeal nerve appears to dwarf in comparison. Otolaryngologists and other clinicians are consciously aware of the presence of the facial, vagus, accessory and hypoglossal. These are commonly encountered in neck surgery. Inadvertent surgical injury to these nerves result in clinically obvious problems like facial palsy, vocal cord palsy, shoulder dysfunction from denervation of the trapezius muscle, and speech problems arising from tongue deviation. The vestibulocochlear nerve subserves the important sense of hearing and balance. The science of audiology has evolved specifically to test and probe the functions of this nerve.

However the glossopharyngeal nerve remains the neglected cranial nerve. This is because the nerve is small and lies deep within the neck, and surgeons often do not encounter the nerve even with deep dissections of the neck. The nerve is not commonly identified or visualised even when performing a major neck operation, for example a radical neck dissection. A more important reason is because the glossopharyngeal nerve supplies important structures in the head and neck region only in the company of another cranial nerve. It does not supply an important structure in isolation and has no monopoly in the innervation of any critical organ. Mother Nature had not entrusted the glossopharyngeal nerve an important vital function in the same way that she had given roles of importance to the other cranial nerves. Never less, Glossopharyngeal neuralgia can be life-threatening

Glossopharyngeal neuralgia can be extremely disabling. Some patients, in whom swallowing is a trigger factor, can suffer from weight loss and under-nutrition from fear of swallowing. The depression from debilitating pain may become so severe that there have been cases of neuralgic patients who have attempted suicide.



Even worse, the effects associated with glossopharyngeal neuralgia can be life threatening. In 1921, Harris reported that glossopharyngeal neuralgia can be associated with cardiac dysrhythmia and instability. This relationship is a well accepted one, having been documented by many authors, subsequently.

Intense irritability and hyper-stimulation of the glossopharyngeal nerve feedback onto the vasomotor center in the brainstem, giving rise to a heightened vagal response. This results in cardiac dysrhythmia, bradycardia, hypotension, and even asystole and subsequent syncope. This effect is similar to that seen in carotid sinus massage for the treatment of supraventricular tachycardias. Massaging the carotid sinus causes a hyper-stimulation of the glossopharyngeal afferent pathway, resulting in an exaggerated parasympathetic vagal efferent response. In the case of glossopharyngeal neuralgia, the hyper-stimulation is induced by either an intrinsic irritability of the nerve or compression of the nerve by blood vessels or styloid process.<sup>1</sup>

Diagnosis is clinical. Treatment is the same as that for trigeminal neuralgia. If oral drugs are ineffective, topical cocaine applied to the pharynx may provide temporary relief, and surgery to decompress the nerve from a pulsating artery may be necessary. If pain is restricted to the pharynx, surgery can be restricted to the extracranial part of the nerve; if the pain is widespread, surgery must include the intracranial part of the nerve.<sup>2</sup>

**Methods:** The technique utilized is based on the work of BJ Palmer DC, as developed at his Research Clinic at Palmer Chiropractic College in Davenport, IA, from the early 1930s until his death in 1961.<sup>3</sup> Techniques also include the vertebral subluxation pattern work of his clinic director, Lyle Sherman DC, for whom Sherman College of Straight Chiropractic, Spartanburg, SC is named.<sup>4</sup> A detailed case history was taken on the first visit, followed by a spinal examination. A report of findings was given, recommending a minimum set of three cervical x-rays because evidence of an upper cervical subluxation was discovered. X-rays and analysis of the upper cervical vertebrae based on the work of William G Blair DC was used to determine chiropractic listings of subluxation.

Lateral cervical, A-P open mouth and Nasium x-rays were taken. Dr. Blair began to develop his distinctive method for the analysis and correction of subluxations of the cervical spine soon after graduating from the Palmer School of Chiropractic. Trained in the classical upper cervical specific "Hole In One" (HIO) method, he soon became concerned with the potential effects of osseous asymmetry or malformation on the accuracy of the traditional spinographic analysis in producing a valid adjustive listing. His observations of skeletal specimens also led him to conclude that the prevailing view of misalignment of atlas in relation to the occiput was inaccurate.<sup>5</sup>

Detailed leg checks were performed on each visit, utilizing the work of J Clay Thompson DC and Clarence Prill DC.<sup>6</sup> Dr Thompson, with the help of Romer Derifield DC, popularized the cervical syndrome check for the upper cervical subluxation complex in the 1940's. Since then, no one has come up with a reason relative leg length would change when a patient gently turns their head from side to side, while either prone or supine, thus not under the effects of gravity, except upper cervical subluxation.<sup>7</sup> What causes one leg to appear shorter than the other and to change relative length when the head is turned, taking into consideration that the patient is lying down, not under the effects of gravity? One subluxation complex hypothesis proposes that the mechanism of fixation involves impingement of the atlanto-occipital intra-articular fat pad causing reflexive guarding contraction of the suboccipital muscles. Stimulation of the spindles in these muscles are thought to be involved in the initiation of tonic neck reflexes that alter global extensor muscle tone to achieve proper body balance in response to head movement.<sup>8</sup>

A conservative approach in determining evidence of subluxation was used. That is, when in doubt no adjustment was given. The leg checks were the main criterion used to decide when to adjust or not. To determine whether the major subluxation was at the level of atlas or axis, Prill modified leg length tests were utilized. With patient prone, patient was instructed to gently and steadily raise their feet toward the ceiling, while the doctor resisted such movement with his hands. The peripheral nerves were being tested, those that innervate the postural muscles holding one upright in gravity, so it was imperative that the patient only lift their legs slightly and maintain this pressure for at least two seconds. This test was for atlas, the top cervical vertebra. Instructing patients to rotate their feet while the doctor provided resistance and checking relative leg length was used to test axis. Some clinicians prefer to have the toes rotate outward. I had the patient pull their feet together. This corresponds to the rotation of the head on the neck, 50% of which occurs at the level of C2.

Although many chiropractors that utilize the Blair technique do not adjust the lower cervicals, I did in this study. Dr Blair died before getting below C4 in his analysis and adjusting technique protocol. I agree with Blair that until the upper cervical spine is cleared of subluxation, adjusting the lower cervicals will not hold. But in my experience, when there is a significant "kink" in the lower cervicals caused by a whiplash injury, a specific lower cervical adjustment will help the upper cervical adjustments hold significantly longer. This is why I developed Prill type tests for the lower cervicals; C5, C6 and C7.<sup>9</sup>

Thermographs of the cervical spine were utilized using a Tytron C-300 instrument. These were used to develop a pattern of subluxation in order to determine when to adjust. A graph reading that is static and persistent over time is considered to be the patient's pattern.<sup>10</sup> When it was determined that the patient was in a pattern of subluxation, some combination of Blair toggle recoil adjustments, Pierce Results adjustments or instrument adjustments utilizing the Activator or Integrator were performed.

A Thuli chiropractic table, using the cervical drop piece was utilized. For side posture adjustments the headpiece was set to drop straight down, and with prone adjustments, it was set to drop down and forward. The patient was then rested for fifteen minutes and rechecked, to make sure that the pattern had been broken.

**Case Report:** In her sixteenth winter, patient sustained two falls involving significant head impacts, one snow skiing, followed by another ice-skating. Fifteen years later, she woke up deaf in one ear. Seven months later, she woke up deaf in the other ear. Hearing in both ears was successfully corrected by stapedectomy surgery. Minor vehicular whiplash injury in 1984.

Report findings:

04/22/2005 Complained to ENT of foreign body sensation in her throat.

10/21/2009 Upper GI showed previous Barrett's esophagus.

05/29/2010 Awoke with intense throbbing pain on the right side of her neck. She reported throat problems since 2001. Diagnosed with cysts on her vocal cords 3 or 4 years ago. Cervical x-rays showed marked degenerative spondylosis of the spine.

06/02/2010 Cervical CT examination showed possible unilateral Warthin's tumor.

06/15/2010 Chronic right neck pain, spastic dysphonia involving right true vocal cord and tingling in right arm and her 4<sup>th</sup> and 5<sup>th</sup> fingers.

12/21/2010 Transient ischemic attack producing jumbled speech.

05/11/2011 Significant difficulty speaking, cervicgia and painful swallowing.

05/18/2011 Physical therapy did not help cervicgia. Must be neurological in nature.

05/19/2011 ER MD: Evaluated multiple times by multiple specialties, none of which has found a cause of right-sided throat pain. Had multiple procedures in multiple States. May be from a pinched nerve in her neck. Recommended MRI, but not able to have one.

05/20/2011 Hurt dreadfully in anterior aspect of right sternocleidomastoid muscle when asked to extend her neck. She could not say anything.

05/27/2011 Serendipitously, patient took double dose of Neurontin. Although it made her sleepy and gave her a bit of unsteady gait, she felt a lot better, so dosage was increased.

It was decided at a family meeting in Colorado that they would try upper cervical chiropractic and if it did not help, they would take her to Mayo Clinic. At age 82, taking double the maximum dose of Neurontin, she became too dizzy to live alone in North Dakota. Patient got under cervical specific chiropractic care in Grand Rapids, MI on June 8, 2011, brought in by her daughter.

Past history of migraines. She had been coughing since 2003. She gave up talking two years prior because whispering two or three words would send electrical shock pains through her right throat, tongue, cheek and temple. She was sleeping most of the day. Most of her time awake was spent trying to swallow one cup of water per day. She was having a bad day, pain scale 10 out of 10.

Patient had severe right head tilt. Thermography was recorded demonstrating pattern of significant left break in lower cervicals. Right leg presented one inch short relative to left, with one-inch bilateral cervical syndrome. Positive modified Prill tests for atlas (C1), axis (C2) and C5. X-ray analysis listed atlas posterior and inferior on left, axis total segment right and C5 posterior and inferior with spinous left. These three segments were adjusted and patient rested for fifteen minutes.

Patient got up and started talking normally with a pain level of one. Two days later pain was entirely gone and she began eliminating Neurontin regimen under the supervision of her neurologist. She was seen twelve times over six weeks, at which time she was free of pain and medication and holding her adjustment.

**Discussion:** This was my first case of Glossopharyngeal neuralgia. I have been treating and tracking the results of cervical specific chiropractic with three hundred Meniere's disease (MD) patients for a minimum of three years up to eleven years. I used the same protocol in this case.<sup>11</sup> All 300 consecutive MD cases had suffered a whiplash type of cervical trauma an average of fifteen years prior to the onset of symptoms. Ninety percent have atlas listings posterior and inferior on the opposite side of the involved ear.

**Conclusion:** When a medical doctor suspects a pinched nerve in the neck, a referral to a cervical specific chiropractor should be made.

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LANGUAGE & COMMUNICATING  
The “BIG IDEA” Of CHIROPRACTIC

*A Contemporary Amplification of the 33 Principles of Chiropractic*

A TWENTY-FIRST CENTURY  
TREATISE:  
CHIROPRACTIC PHILOSOPHY & PRINCIPLES  
*of the*  
FUNCTIONAL UNIVERSE, LIFE AND HEALTH  
(EXCLUDING LOVE AND MIRACLES)

CHIROPRACTIC PHILOSOPHY  
– A SLEEPING GIANT, WAITING TO BE AWAKENED

**FORWARD:**

There is a major contribution of chiropractic into the healthcare field that is little understood or appreciated to a substantial degree. That contribution is the “Philosophical dissection of life,” particular to the “assimilation and metabolism of intelligence” into and throughout all of existence and in particular in the functioning of the human body. In exquisite detail “Chiropractic Philosophy” begins with “*a priori assumption*” that the universe is intelligent and evolves that concept into how that creative, universal intelligence enters into the human body, providing its function and maintenance, throughout existence. The crux and protocol of that order of that philosophical dissection of existence and life, is documented in the historic 33 Principles of Chiropractic.

The 33 PRINCIPLES OF CHIROPRACTIC came from the logic and pen of RW Stephenson DC, published in 1927 in his Chiropractic Text Book. The principles were a concise order of collected volumes of writings and thoughts of Drs BJ and DD Palmer prior to 1927.

**PRESENTATION:**

This is a *contemporary & amplified* look at the historic and founding principles of chiropractic, using new vernacular in attempt to make them more approachable and accessible to a modern audience. This is a study into how words and conceptual ideas have evolved and changed in meaning over the years. This study will use the instrument of the 33 Principles of Chiropractic to illustrate our thoughts. In doing so this will be an attempt at clarification of the original deductive intent of the 33 principles. Our aim is to open the subject to a broader audience, beyond chiropractors; revealing the magnitude of the original concept and the fluidity of the deductive reasoning.

Along with updating terminology we will be looking for invisible holes or linkages between thoughts that may be stumbling blocks to contemporary thinking or reasoning, without losing the integrity or validity of the original intention. The beauty of the original 33 principles is that they flow, deductively and wonderfully, from the huge premise of an intelligent universe, the whole way down into intellectual and physical human functioning; the last principle being about the physiological details of intellectual assimilation and communication into the vertebrate body, relative to physical function and health.

**Reading Notes & Changes:**

1. The Big Idea - The profundity of the chiropractic examination and explanation of human health is that it does not start with physical symptoms or human function as a beginning but rather it starts with the larger, full orb ed consideration of physical existence in general and the principles that govern that existence throughout time and space, relative to human health.
2. A Priori Assumption - In order to better illustrate that point, perhaps a fresh introduction to the Principles, with a modern appreciation of “a prior assumption” acknowledging the creative impetus of intelligence with a component of vibratory energy. This may be the first step in contemporary clarification and new understanding.
3. Universal Intelligence/God - Universal Intelligence and Universal Force does not constitute or infer a deity or God in this text. Universal Intelligence and Universal Forces refer to the sterile, dispassionate, intellectual workings of the universe. Stephenson seemed to draw a clearer line on this matter than did BJ. In several of his writings, BJ inferred a spiritual aspect to these conceptions of universal and innate intelligence. (Reference Principle No. 11.) THE CHARACTER OF UNIVERSAL FORCES.

*The forces of Universal are manifested by physical laws; are unswerving and unadapted, and have no solicitude for the structures in which they work.*

4. Life/Being - Perhaps the concept of universal LIFE may be too much of an ambiguous and unrealized concept, especially inanimate, inorganic "life," as alluded to in the original 1927 Principles. This could represent a stumbling stone right off the bat. In this new amplification of the chiropractic principles, we have replaced the term "Life" with "**being**" referring to "**physical existence**". (Being = Physical Existence)

The reason we use the term "Being" in our representation of the 33 Principles is because of how it relates later on in the Principles from "being," referring to elemental to inorganic existence, then expanding that concept to organic "Human Being." We view this as a literary illustration of philosophical evolution and connection between the two.

#### **DYNAMIC OF CHANGE:**

Change the word "Life" to "Being" in principles 1-15 Change all of the words "Living things" to "human being." in the rest of the principles.

New Principle #34 between 17 - 18

Principles 1-15 speak of a general existence, setting the stage for reasoning exclusive to "human existence & being" Perhaps we begin as "Beings" before we are "Human Beings" I realize at this point that the term "human" being is too exclusive to all organic matter but it is specific to this limited chiropractic discussion at this point.

Jack K. VanDervort DC,

DPhCS

18 May 2010

5. Time - (Principle #6) This principle is amplified to draw additional emphasis to "process" and "momentum" as relative components in time.
6. Force- (Principle #10) The most mercurial of the metaphysical chiropractic principles. In trying to comprehend the fullness of the concept, there seems to be an element of movement within it. We know its function is to unite intelligence with matter but how, what is the process? This is where we came up with the conceptual description of the *process of force* as being "THE QUICKENING OF INTENTION." This may describe the fuller function of Force as the movement of the intention of intelligence into unification with matter where it is ultimately manifested.
7. Function of Matter- (Principle 13) Amplified to capture a fuller concept of how matter expresses force, via "assimilation" of intelligence.
8. Universal Existence & Being- (Principle #14) Exchanges generalized terminology of life to existence and being. Also amplification relating motion with vibration.
9. Evidence of Life- (Principle #18) Expanded to include five chiropractic signs of life: ASSIMILATION, EXCRETION, ADAPTABILITY, GROWTH & REPRODUCTION.
10. Organic Matter - (Principle #19) Amplified to add clarity to distinction of "Organic" matter by making case for difference between assimilation of intelligence (unification) and metabolism (processing ) of intelligence which is a more sophisticated process limited to organic matter. Thus making it exclusive
11. Interjection - Clarification between commonly accepted concepts of God and chiropractic concept of universal intelligence as relative to creation, life and health. The main distinction drawn is aspect of love and any type or affinity towards spiritual compassion.
12. Innate Intelligence - (Principle #20) An attempt at drawing attention to "human being" cleaved from general life in "living things.". This is not to be considered as an exclusionary concept or in exception to life in general but only to bring attention to human being as the intention of general chiropractic practice.
13. Additional Principle, #34  
No. 34. THE CHIROPRACTIC MEANING OF LIFE & HUMAN BEING The expression of intelligence through organic matter is the Chiropractic meaning of life and human being. This new principle is interjected between original principles 17 & 18. It was created after altering original Principle No. 2. THE CHIROPRACTIC MEANING OF LIFE to THE CHIROPRACTIC MEANING OF EXISTENCE & BEING. This exchange was made in attempt to help delineate and clarify the origin and beginning of the original 33 Principles as starting with the deductive reasoning for basic elemental existence as a prelude to organic life and human being.
14. The Law of Supply and Demand- (Principle #33) Amplification using current anatomical understanding to relate the assimilation and metabolism of intelligence into the vertebrate body for the functions of life and health.

15. Flow of Amplified Principles:
  - Principles 1-15 Deal with universal "EXISTENCE & BEING"( as a precursor to life and human being)
  - Principles 16-19 Transitional from “general inorganic existence & being” to “specific organic life & human being”
  - Principles 20-33 Deal with "LIFE & HUMAN BEING" (as evolved from universal “existence & being.”)
16. All Amplification Marked by Brackets [AMPLIFICATION& COMENTARY]

A PRIORI ASSUMPTION:

“The universe is intelligent & vibrant.”

No. 1. THE MAJOR PREMISE.

A Universal Intelligence is in all matter and continually gives to it all its properties and actions, thus maintaining it in EXISTENCE.

No. 2. THE CHIROPRACTIC MEANING OF ~~LIFE~~ [EXISTENCE & BEING.]

The “EXPRESSION” of this intelligence through matter is the Chiropractic meaning of ~~life~~ [existence & being.]

No. 3. THE UNION OF INTELLIGENCE AND MATTER.

~~Life~~[Existence & Being] is necessarily the union of intelligence and matter.

No. 4. THE TRIUNE OF ~~LIFE~~ [EXISTENCE & BEING.]

~~Life~~ [The state of Existence and Being] is a triunity having three necessary united factors, namely, Intelligence, Force and Matter.

No. 5. THE PERFECTION OF THE TRIUNE.

In order to have 100% ~~Life~~ [Existence & Being,] there must be 100% Intelligence, 100% Force, 100% Matter.

No. 6. THE PRINCIPLE OF TIME, [PROCESS & MOMENTUM.]

[Movement and activity is necessarily process.] There is no process that does not require time. [Time relates to process as momentum.]

No. 7. THE AMOUNT OF INTELLIGENCE IN MATTER.

The amount of intelligence for any given amount of matter is 100%, and is always proportional to its requirements.

No. 8. THE FUNCTION OF INTELLIGENCE.

The function of intelligence is to “**create**” force

No. 9. THE AMOUNT OF FORCE CREATED BY INTELLIGENCE.

The amount of force created by intelligence is always 100%.

No. 10. THE FUNCTION OF FORCE.

The function of force is to **unite** intelligence and matter

[The process of force is “THE QUICKENING OF INTENTION;” the movement of the intention of intelligence into unification with matter, where it is ultimately manifested.]

No. 11. THE CHARACTER OF UNIVERSAL FORCES.

The forces of Universal are manifested by physical laws; are unswerving and unadapted, and have no solicitude for the structures in which they work.

[(Universal Forces are not supernatural or compassionate)]

No. 12. INTERFERENCE WITH TRANSMISSION OF UNIVERSAL FORCES.

There can be interference with transmission of universal forces.

No. 13. THE FUNCTION OF MATTER.

The function of matter is to [provide physical structure that facilitates the assimilation of intelligence, ultimately] express[ing] force.

No. 14. UNIVERSAL [EXISTENCE & BEING.]

Force is manifested by motion in matter; all matter has motion, therefore there is universal ~~life~~-[existence & being] in all matter.

*[Force (The quickening of Intention) is manifested by vibration in matter. All matter has a vibratory aspect about it, at the atomic and subatomic levels, therefore all matter has Universal Existence & Being.]*

No. 15. NO MOTION WITHOUT THE EFFORT OF FORCE.

Matter can have no motion without the application of force by intelligence. [Force (The Quickening of Intellectual Intention) stirs matter into motion.]

No. 16. INTELLIGENCE IN BOTH ORGANIC AND INORGANIC MATTER.

Universal Intelligence gives force to both organic (Living Matter) and inorganic (Inert Matter.)

No. 17. CAUSE AND EFFECT.

Every effect has a cause and every cause has effects.

No. 34. THE CHIROPRACTIC MEANING OF LIFE & HUMAN BEING.

The expression of intelligence through organic matter is the Chiropractic meaning of life and human being.]

No. 18. EVIDENCE OF LIFE.

The signs of life, [including: ASSIMILATION, EXCRETION, ADAPTABILITY, GROWTH & REPRODUCTION] are evidence of the intelligence of life [and human being.]

No. 19. ORGANIC MATTER.

The material of the body of a ["human being"] and other living things is organized matter, [distinct from inorganic matter, in that it has the unique structures of matter to not only "assimilate" intelligence but to "metabolize" intelligence, resulting in the signs of life.]

❖ Interjection: There is a commonly held concept and consideration of spirituality, inherent to organic matter, human organic matter in particular, That conception of spirituality has effect on the existence, health and well-being of organic matter in general. Given that acknowledgement, this chiropractic work does not address those considerations of spirituality or its ramifications on organic matter or human existence. This work is limited to the intellectual and physical inter-relationships of physical existence and life

No. 20. INNATE INTELLIGENCE.

A ["human being"] as well as other living things has an inborn intelligence within its body called Innate Intelligence.

No. 21 THE MISSION OF INNATE INTELLIGENCE.

The mission of Innate Intelligence is to maintain the material of the body of ["human beings," animal and other living organisms] in active organization.

No. 22. THE AMOUNT OF INNATE INTELLIGENCE.

There is 100% of innate intelligence in every ["human being," animal and living organism,] the requisite amount, proportional to its organization.

No. 23. THE FUNCTION OF INNATE INTELLIGENCE.

The function of Innate Intelligence is to ADAPT universal forces and matter for use in the body, so that all parts of the body will have CO-ORDINATED action for mutual benefit.

No. 24. THE LIMITS OF ADAPTATION.

Innate Intelligence adapts forces and matter for the body as long as it can do so without breaking a universal law, or Innate Intelligence is limited by the limitations of matter. [(Completely Natural Function)]

No. 25. THE CHARACTER OF INNATE FORCES.

The forces of Innate Intelligence never injure or destroy the structures in which they work.

No. 26. COMPARISON OF UNIVERSAL AND INNATE FORCES.

In order to carry on the universal cycle of life, Universal forces are destructive, and Innate forces constructive, as regards structural matter.

No. 27. THE NORMALITY OF INNATE INTELLIGENCE

Innate Intelligence is always normal and its function is always normal.

No. 28. THE CONDUCTORS OF INNATE FORCES.

The forces of Innate Intelligence operate through or over the nervous system in [“Human Beings” &] animal bodies.

No. 29. INTERFERENCE WITH TRANSMISSION OF INNATE FORCES.

There can be interference with the transmission [& expression] of Innate forces.

No. 30. THE CAUSES OF DIS-EASE.

Interference with the transmission [and expression] of Innate forces causes Incoordination, [inadequate adaptation] or disease.

No. 31. SUBLUXATIONS.

Interference with transmission in the body is always directly or indirectly due to subluxations in the spinal column.

[A SUBLUXATION is the condition of a vertebra that has lost its proper juxtaposition with the one above or the one below or both; to an extent less than a luxation; which impinges nerves and interferes with the transmission [and expression] of mental impulses.]

No. 32. THE PRINCIPLE OF COORDINATION [& EASE.]

Coordination is the principle of harmonious action of all the parts of an organism, in fulfilling their offices and purposes [with relative ease.]

No. 33. THE LAW OF DEMAND AND SUPPLY.

*(A PROTOCOL OF ASSIMILATION & METABOLISM OF INTELLIGENCE INTO THE BODY.)*

The law of Demand and Supply is existent in the body in its ideal state; wherein [the assimilation of intelligence begins to take place in the structures of matter in] the BRAIN... INNATE supplies [the intelligence...] BRAIN CELLS [facilitate the physiological process of intellectual metabolism] and NERVE CELLS [facilitate the delivery the neurological communication of the intelligence.]



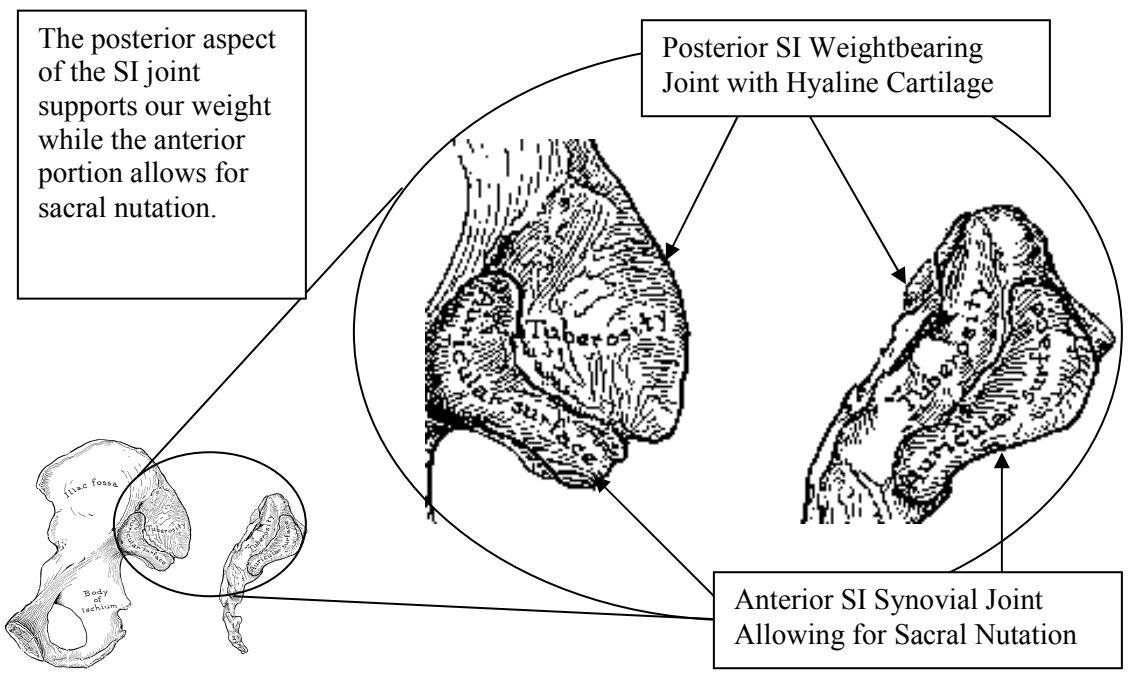
# Sacroiliac Joint Hypermobility Syndrome: A Chiropractic Perspective Survey

Charles L. Blum, DC

**Introduction:** Sacro occipital technique (SOT) has long discussed that the anterior and posterior aspects of the sacroiliac (SI) joint are completely different in both their anatomy and function. The posterior aspect has hyaline cartilage and is a weight bearing joint

which should not have much, if any, motion. On the other hand the anterior aspect has a synovial bed, which allows for the joint nutation and whose motion purportedly aids in cerebrospinal fluid (CSF) mixing in a cranialward direction.

One aspect of the SI joint when mobile would be dysfunctional (e.g., SOT's category two) and one aspect of the SI joint when too "stable" would be dysfunctional (e.g., SOT's category one). A small sampling survey was taken of SOT



practitioners (N=53) and some practitioners not familiar with SOT (N=11). The goal was to see if preconception of a possible syndrome might influence a doctor's method of treatment.

Questions were asked of internet chiropractic groups related to just SOT<sup>1,2</sup> and others not technique based.<sup>3-5</sup> Those who stated they used SOT as a technique in their office were separated from those who did not use SOT. While there were problems with the questions, which will be discussed, the goal was to get a brief overview that might generate discussion, but not to reach any conclusions at this time.

From this preliminary survey [Table 1], it was found that chiropractors, like most manual therapy healthcare practitioners, more commonly treat the SI joint as being fixated. Since philosophers have said, "We create the universe we live in by what we pay attention to," it is interesting to determine what is taking place in clinical practice. Are practitioners looking for a syndrome and then find what they are looking for? Is it possible that technique jargon creates a degree of confusion so that practitioners outside the technique's guidelines are actually treating similar syndromes under different perceived names?<sup>6</sup>

## Discussion:

To explore some of these questions, it might be helpful to investigate SOT's perspective on SI joint dynamics and treatment. Examining this joint's dynamics from a different point of view would be the first step in differentiating between a hypermobile SI (category two) and a fixated one (category one). A question might be, "Is the dysfunction associated with the posterior weight bearing aspect or the anterior portion associated with normal nutation?" (Figure #1)

The second step is differentiating between a fixated SI joint secondary to a anterior joint dysrelationship, such as a pelvic torsion,<sup>7</sup> or a fixated SI joint secondary to a posterior hypermobile joint causing neuromuscularly induced a "splinting." The mechanism of this splinting could be due to increased nociception and local muscle hyperfacilitation leading to increased myofascial tension.<sup>8</sup> This increased tension will simulate an actual osseously fixated joint but is fixated muscularly as a guarding and protective mechanism.

**Figure #1: This illustrates the difference in anatomical structure of the anterior and posterior aspects of the sacroiliac joint.**

SOT is an indicator based system, which uses the patient's report of pain and tension at specific locations to guide treatment. If the "indicators" worsen the treatment would need to be modified and if they improve then the doctor knows they are going down the right

path. The indicators help guide the doctor to realize the patient's progress independent of the patient's subjective assessment. When the indicators and symptoms are not congruent then that suggests the need for more extensive diagnostic protocols.<sup>9</sup>

A concept that DeJarnette, the developer of SOT, determined was that there can be aspects of both an anterior and posterior dysfunction in a SI joint. However, if there is even a small aspect of posterior hypermobility, then that would usually be the focus of treatment prior to addressing any anterior SI joint fixation with the purpose of ultimately increasing anterior SI joint motion. In essence, DeJarnette determined that body stability associated with weightbearing stresses generally supersede the need to maintain normal sacral nutation.

SOT treatment of the SI joints involves eliminating myofascial influences that might be affecting pelvic torsion or rotation as well as any possible confounder associated with a leg length discrepancy. With treating SI joint fixation or hypermobility, there is a specific manner of determining leg length inequality, which will guide treatment. Generally with SOT, the treatment uses pelvic blocks, but that is mostly due to doctor preference, perceived effectiveness, and its inherent low force. As long as the doctor can balance the indicators associated with anterior or posterior SI joint dysfunction, then DeJarnette didn't really care what method of treatment was rendered.

Most category indicators are related to areas of increased muscle tension, increased pain in specific regions associated with each individual category, and related altered body function. One way of evaluating whether appropriate treatment is being rendered is to notice the lessening of pain or tension at those specific points as well as balanced function of the indicators. Both posterior SI joint hypermobility (category two) and anterior SI joint fixation (category one) will have their own sites pain and tension which resolve with appropriate care.

Specific palpatory pain indicators:

Generally there are some ways to differentially diagnose joint fixation versus hypermobility. With posterior joint hypermobility, you will tend to find increased sensitivity anywhere along the inguinal ligament (located bilaterally between the ASIS and the pubic bone) along with either medial knee (sartorius insertion) or lateral knee (tensor fascia lata insertion) pain on either or both legs. With an anterior joint fixation, there are commonly places of pain at the region where the piriformis and gluteus medius cross as well as at the lumbodorsal fascia just lateral to the L4/5 region. Category one pelvic torsion tends to cause whole body axial torsion while category two SI joint dysfunction will have aspects of whole body torsion as well as lateralized dysfunctions. Category two SI joint instability tends to be unilateral and the body's kinematic chain, in its inability to translate gravity, will accommodate by having multiple lateral postural unlevelings, from the pelvis to the head.

Category two presentations can have radiating pain along the anterior lateral thigh and multiple related joint dysfunctions at the knees, shoulders, and TMJ. Category one tends to cause symmetrical joint accommodations and is more commonly associated with generalized neurological dysfunction, lowered pain and body function thresholds, and somatovisceral/viscerosomatic (mimicry) involvement.

*1<sup>st</sup> rib – scalenus muscle tension:*

The 1<sup>st</sup> rib is different than all other of the other 11 ribs in that its joint is based in hyaline cartilage while the other ribs are synovial type joints. While the other 11 ribs move with respiration, the 1<sup>st</sup> rib is supportive and does not. Since the body is a holographic kinematic chain, dysfunction in the SI joint will be represented throughout the body. One place offering information is the 1<sup>st</sup> rib costovertebral junction. Increased motion in the 1<sup>st</sup> rib will tend to lead to increased scalenus muscle tension as the muscle attempts to maintain support and splint in the affected area. DeJarnette found that a category one tends to affect the 1<sup>st</sup> rib/scalenus bilaterally and a category two affects the 1<sup>st</sup> rib/scalenus unilaterally. SOT postulates that the scalene/first rib<sup>10</sup> area relates to category 2 due to visual and vestibular righting reflexes,<sup>11,12</sup> an attempt of the body to maintain an upright posture when challenged by the asymmetrical joint loading of one SI joint in the category 2 patient.

Treating SI Joint Hypermobility (Category Two)

Category two SI joint hypermobility is treated predominately in a supine position<sup>8,13</sup> with pelvic blocks placed according to pelvic torsion presentation. Pelvic torsion can be determined by multiple methods, but evaluation is not performed until all related myofascial influences affecting the pelvis have been released. Most commonly the main compensatory factors affecting pelvic torsion is imbalance are the iliopsoas/quadratus lumborum muscles, piriformis/gluteus medius muscles, and upper cervical vertebra. SOT uses various methods to diagnose this restriction relating to palpation of the tissues and evaluating muscle function (such as the “over the head arm check”, which evaluates the ability of the rib cage to lift from the pelvis). SOT treatment first addresses the myofascial issues. Once there is balanced flexibility, strength, and function of the specific muscles, then the doctor can proceed to the direct treatment of the SI joint.

Category two leg lengths are determined by having the patient abduct their legs (15 inches apart) against resistance. After a few seconds of doctor resistance, the patient relaxes while the doctor maintains traction on the legs while determining if one medial malleoli is superior or inferior to the other. If the pelvis is imbalanced, then pelvic blocks will be used to reduce pelvic torsion and compress the posterior hypermobile SI joint.

Traditionally, the main test of a category two is the arm fossa test. This tests for a patient's ability to respond by holding their arm in a consistent position as the doctor contacts the inguinal ligament. While the test has had some degree of acceptance as a SI joint evaluative test,<sup>14</sup> it does take time to learn and perfect in order to get consistent results. For that reason, this presentation will mostly focus on tests that are easy to monitor and test indicators such as palpation for pain and increased tension. If the patient is determined to have a category two presentation and the blocks are placed properly, then inguinal ligament sensitivity or medial/lateral knee pain (if present) will begin to subside within 30-60 seconds of block placement. Within 1-2 minutes the anterior scalenus muscle tension tends to become more symmetrical and less sensitive.

Sometimes it will take a couple visits but the standing sway pattern will begin to balance and anterior/lateral thigh pain will begin to subside. When the patient's indicators are not resolving, then there are a few possibilities such concomitant SI sprain with sacral segment posterior translation, piriformis muscle syndrome secondary to anterior sacral translation, L4/L5 discopathy secondary to iliolumbar ligament dysfunction, or descending TMJ dysfunctional righting mechanisms.<sup>15-18</sup>

**Conclusion:** There are varying levels of category two syndromes associated with significant joint and articular capsule spraining and others less serious related to posterior joint increased proprioception irritation and decreased nociception thresholds. Generally the less severe condition will respond relatively quickly, but the patient will need to be cautioned to resist the temptation to do too much joint motion or joint loading. Healing the joint is usually around 4- 6 weeks but with less traumatized joints it can heal more quickly. With chronically sprained joints, it can take a longer time. Treatment of a chronically sprained SI joint will usually require the patient to perform rehabilitative exercises such as prone straight leg raises, swimming, walking, and other types of activities that can stimulate posterior joint circulation to increase ligamentous strength and healing.

If there is an entity such as a hypermobile SI joint, it would behoove chiropractic and manual therapy healthcare providers to be cognizant of this syndrome and see if appropriate tools can be developed to further help differentiate between a hypermobile or a fixated SI joint. Since patients have varying levels of threshold regarding ligament strength, myofascial support, and pain, it is not unlikely that more than one type of treatment might prove efficacious for their care. However, it seems reasonable that greater accuracy and precision in diagnosis and treatment would likely lead to less iatrogenesis and greater patient response to treatment.<sup>19</sup>

The survey was an extremely small sample particularly of the chiropractors not practicing SOT. Many practitioners, SOT included, complained that it was difficult to place all their presenting patients into just those three categories and noted that patients came to their office for extremity problems, head and neck pain, and other conditions not fitting into their understanding the three categories offered. Even so, from a casual overview of research related discussions, it appears that the majority of chiropractors, who do not practice SOT, see more patients with fixated SI joints than chiropractors who do practice SOT. More investigation into this phenomena could offer greater understanding into whether: (1) a greater proportion of patients who seek SOT chiropractors have hypermobile SI joints, (2) SOT chiropractors are looking at patients with an assumption that the patient will likely have a hypermobile SI joint, or (3) is it possible that SI joint hypermobility syndromes are an overlooked syndrome in chiropractic?

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Table 1: Survey of Chiropractors – Condition Estimation of Patient Presentation

<b>Chiropractors Practicing Sacro Occipital Technique</b>				
<b>Country</b>	<b>Years in Practice</b>	<b>% Category I</b>	<b>% Category II</b>	<b>% Category III</b>
Australia	30	3	95	2
Australia	25	6	24	70
Australia	22	1	95	4
Australia	14	67.7	23	9.3
Australia	14	2	68	30
Australia	13	1	80	19
Australia	9	10	75	15
Australia	7	5	75	20
Australia	5	1	90	10
Brasil	1	55	37	8
Germany	7	1	79	20
Germany	2	1	69	30
Germany	2	40	24	36
Great Britain	13	1	47	52
Great Britain	12	5	75	20
Great Britain	12	40	50	10
Hong Kong	40	35	50	15
Scotland	18	11	28	61
USA	45	10	86	4
USA	45	1	89	10
USA	32	30	47	23
USA	32	10	80	10
USA	30	20	75	5
USA	30	70	20	10
USA	28	1	34	65
USA	27	1.5	94	4.5
USA	25	0.5	97	2.5
USA	24	30	65	5
USA	23	5	45	50
USA	23	1.5	93.5	5
USA	21	15	82	3
USA	20	0.5	95	4.5
USA	20	0.5	98	1.5
USA	19	5	85	5
USA	19	5	55	45
USA	19	0.5	97	2.5
USA	18	1	80	19
USA	16	1	95	4
USA	15	5	80	15
USA	15	2	95	3
USA	12	60	20	20
USA	9	55	30	15
USA	8	10	80	10
USA	8	3	96	5
USA	7	5	85	10
USA	7	3	93.75	3.25
USA	7	5	80	15

USA	7	30	60	10
USA	5	12	85	3
USA	5	2	98	0
USA	5	1	94	5
USA	5	2	75	23
USA	1	5	90	5
USA	1	3	96	1
USA	1	1	95	4
<b>Averages</b>	<b>16.3</b>	<b>13.1</b>	<b>74.5</b>	<b>16.4</b>
<b>Chiropractors NOT Practicing Sacro Occipital Technique</b>				
<b>Country</b>	<b>Years in Practice</b>	<b>% Category I</b>	<b>% Category II</b>	<b>% Category III</b>
Canada	16	65	10	25
Canada	12	19	6	75
Canada	2	40	30	20
Mauritius	5	5	5	90
USA	30	10	10	80
USA	30	25	50	25
USA	23	60	2	48
USA	20	50	15	35
USA	16	50	15	35
USA	15	75	10	15
USA	4	75	15	10
<b>Averages</b>	<b>15.7</b>	<b>43.1</b>	<b>16.6</b>	<b>40.3</b>

## **The Economic, Academic and Political State of the Chiropractic Profession and its Implications for the Subluxation Centered Community**

Matthew McCoy DC, MPH

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**Objective:** To describe the current state of the chiropractic profession in terms of economics, academics and politics and the impact this has on the present and future of subluxation centered practice.

**Background:** A review of data from governmental agencies, peer reviewed literature and chiropractic trade journals reveals a rapidly changing profession. Chiropractic educational institutions are experiencing a 40% decline in enrollment, market share for chiropractic services is decreasing along with a decrease in income for practicing chiropractors, and chiropractors are leaving the profession. Further, the profession is approaching a time when the average chiropractor will have been in practice for less than ten years and increasingly, the decision to become a chiropractor is based on making a career choice as opposed to a personal life changing experience as a chiropractic patient.

**Discussion:** In the midst of these dramatic changes, the controlling faction of the profession has embraced the role of the chiropractor as a primary care physician as a solution to the economic malaise being experienced by the profession. This has resulted in several disturbing events including: the hijacking of the profession's only educational accrediting agency in an effort to push the primary care agenda, the marginalization of subluxation centered chiropractic practice, the adoption of broader scopes of practice and the introduction of prescription pharmaceuticals into the practice of chiropractic.

**Conclusion:** These events do not bode well for the future of subluxation centered practice and this faction of the profession is encouraged to engage in several activities in an effort to ensure that a viable number of subluxation centered chiropractors graduate from chiropractic institutions and are able to obtain licenses to practice in such a fashion.

## Subjective Measurement of Vertebral Subluxation?

J. Richard Burns D.C., D.Ph.C.S.

**Introduction:** Over the last four to five decades the chiropractic profession has detoured away from objective measurements of subluxation and is focusing much more on the treatment of symptoms. This change in the profession is primarily the result of chiropractors participating in the third party pay arena and the advent of S.O.A.P. notes. Even though many patients came to the B.J. Palmer Research Clinic with symptoms the clinic heavily utilized objective testing such as the Neurocalograph (heating-sensing instrument) and the x-ray. These criteria determined when, where and in what direction to adjust the patient. Presently, many chiropractors rely more on effects (symptoms) than on objective measurements of subluxation. This paper will discuss the original concepts of vertebral subluxation and the objective measurements of the components of vertebral subluxation. The importance of having objective measurements versus subjective measurements of subluxation will also be discussed.

**Methods:** The author reviewed the original definition of subluxation and also did a review of citations on mental impulse in “The Green Books” on CD compiled and edited by Rob Sinnott D.C. Copyright 1997-98. The author also has attended numerous seminars, conventions and symposia in the last thirty seven years and discussed practice styles with numerous colleagues. In addition the author has served as an expert witness in the chiropractic profession since 1977 and has reviewed hundreds of files.

**Results:** The definition of subluxation submitted in Stephenson’s textbook was **A subluxation is the condition of a vertebra that has lost its proper juxtaposition with the one above or the one below, or both; to an extent less than a luxation; which impinges nerves and interferes with the transmission of mental impulses.**<sup>1</sup>

After reviewing this definition the author could find no part of the definition that had a subjective component. There are many other objective measurements that the chiropractor may use to monitor the physiology of the patient. By having 100% of the mental impulses going to all parts of the body there will obviously be an effect on all systems of the body. Traditionally, temperature has been the gold standard for objective testing in the chiropractic profession, and if our profession is to remain separate and distinct, we must continue to use this objective measurement to know when to adjust and when not to adjust.

**Conclusion:** Chiropractors must return to educating patients about correcting cause as opposed to the treating effects. With the objective technology available today to the chiropractor, there is no reason to use subjective testing on patients. In the majority of cases by the time a patient experiences symptoms, the underlying cause (a.k.a.—subluxation), has been there for a period of time. If the chiropractic profession is going to survive in this evidence-based culture, objective testing must be used.

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**Abstract**

During the course of several years of discussion at the International Research and Philosophy Symposium, it seemed the logical course to determine if the theory of bridge-building between Chiropractic philosophy and science had a common goal of shared expertise.

Using the philosophic premise of the mental impulse, could the gap between this premise and science be reached across in a mutually effective way? The mental impulse is created and transmitted in order to cause adaptation in the cells and tissues of the body.<sup>1</sup> Having that premise, would science have a greater appreciation for quantifying this as a research objective?

The Russian space program has been using levels of adaptation, irrespective of the presence of symptomatology to determine who has the least potentiality for symptoms and pathology to develop in the future.<sup>2</sup> The German space program has the same criteria it uses for the same purpose.<sup>3</sup> It is not a leap of faith to assume that such scientific discovery that has delivered successfully for such agencies and governmental bodies, could be used to measure the adaptive status in a Chiropractic setting in the same manner to appease both our philosophers and our scientists in Chiropractic.

Harvard University is researching CAM (“complementary and alternative medicine”) professions using heart rate variability (HRV), in conjunction with galvanic skin response.<sup>4</sup> Combining the same HRV line of thought as used by the Russians and Germans mentioned above in conjunction with Functional Magnetic Resonance Imaging (fMRI), Harvard has been feverishly publishing a series of papers in leading journals in the field of neuroimaging on their CAM findings with acupuncture.<sup>5,6</sup>

Pursuing a way for the Chiropractic profession to advance in technological research, while providing for what field practitioners would deem as “meaningful,” has been a largely unrealized goal in Chiropractic. Considering the fourth component of the vertebral subluxation has been long described by researchers as an untestable element, considering new investigational possibilities would be a great advancement for the profession. The results may very well be met with a new interest in research from the Chiropractic population and provide often absent financing from the field. This presentation will describe the process and the current status of this collaborative concept, as well as what future collaboration may hold.

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## **Abridgement and Reorganization of the Chiropractic Textbook by Ralph W. Stephenson, D.C., Ph. C., Centered on Chiropractic's Philosophical Foundations**

Shaun M. Gallagher, B.S., Shawn Hoga, D.C., David Koch, D.C., L.C.P., D.Ph.C.S., Demetrios Peroulas, B.S., Will Soriano, B.S., D.C., Jonathan Via, B.S., D.C., Will Vodgs, D.C., J. Kate Wetterlin, B.S, D.C.

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**Introduction:** The chiropractic profession has long held that the unique philosophy behind its application is what defines it as a profession and makes it separate and distinct from medicine. Currently and historically, there exists within the profession a disagreement about where chiropractors should centralize their focus and what should or should not be included in chiropractic's scope of practice. This philosophical quandary indicates one possible cause of the lack of cohesiveness within the profession. Differing opinions on the validity and interpretation of chiropractic philosophy or lack of knowledge on the topic are all ways that philosophic issues tend to segment the profession at large. Et all

**Objective:** This project was undertaken to create better understanding of the philosophy of chiropractic, to support greater cohesion in the profession, and to highlight the philosophic content of The Chiropractic Textbook by Ralph W. Stephenson<sup>1</sup> by abridging and rearranging the book's contents.

**Methods:** As a class project for Life University's College of Chiropractic philosophy elective (CPAP 58152), the class worked on abridging and rearranging the Chiropractic Textbook by Ralph W. Stephenson. The class was the third in a series of three philosophy electives open to junior and senior chiropractic students. The class met two hours per week for one quarter and it used class time to work on the project. Furthermore, after the quarter ended and the class was complete, conference calls and email correspondence were used to continue discussion and work on the project.

**Discussion:** Research and technique refinement in chiropractic are currently pursued by chiropractors in an effort to advance the science and art of chiropractic. The need for continued academic rigor in chiropractic philosophy, as highlighted by McAulay<sup>3</sup>, was noted by the class. The class hoped to further refine the philosophy of chiropractic with this project. One way this was accomplished was by grouping the related philosophic content of Stephenson<sup>1</sup> together. We rearranged related content into chapters by topic verses having topics be divided between freshman, sophomore, junior and senior sections. Our other main method, for highlighting the philosophic ideas contained within Stephenson<sup>1</sup>, was to remove content not pertaining directly to the philosophy of chiropractic. Such content included technique sections, outdated physiology and science, and other topics that would not serve to enhance philosophic understanding and ease of reading.

**Conclusion:** The ultimate goals of this abridgement, and rearrangement of Stephenson<sup>1</sup> are: increased readership, clearer understanding of Stephenson's philosophic syllogism, the re-initiation of active philosophic critique and evolution of chiropractic's vitalistic "conscious naturalism" paradigm, and to make the book less intimidating and more approachable. Our hope was to allow for chiropractic students, current chiropractors, and future chiropractors to have an easier time of gleaning the philosophic concepts contained in Stephenson's original work; so that they could apply these philosophic concepts more deeply in their own lives, practices, and other avenues to further the chiropractic profession and better serve humanity through chiropractic.

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## An Analysis of Chiropractic Philosophy Courses in United States Chiropractic College Curriculums

Bill Decken, DC, LCP, Beth Risser, DC, DPhCS

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**Introduction:** The World Federation of Chiropractic (WFC) prepared consensus statements in 2000 pertaining to the role of Chiropractic Philosophy in Chiropractic education (1). It is the purpose of this paper is to perform a quantitative and qualitative analysis of the Chiropractic Philosophy curriculum in the United States Chiropractic Colleges to observe how this has been expressed a decade later.

**Discussion:** The WFC document states that a shared approach to health and healing, based upon a shared philosophy of chiropractic, is important for the identity and future of the chiropractic profession. The past two years have seen a move by some in chiropractic to branch even further into the practice of medicine (2) which raises concern in others in the profession. Surely, if Chiropractic philosophy is guiding the profession, as is the role of philosophy, there should not be this division.

Chiropractic is a unique discipline existing as part of a broader entity, the health care system. Those attending and contributing to the WFC 2000 Convention and Consensus Statements thus feel a discussion of philosophy as a discipline, the philosophy of health care, and specifically the philosophy of chiropractic, should be important components in every chiropractic curriculum.

Lastly, it was stated that Chiropractic philosophy should be taught and developed in a manner that is intellectually defensible in the discipline of philosophy. We shall see which Chiropractic philosophy texts are being used to accomplish this and if there have been new texts introduced to meet this challenge.

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## The purpose of this study is to compile the current literature search regarding chiropractic care and reaction time

Alexandria Jenkins

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A literature search and narrative review was carried out with the intent of determining the current level of knowledge regarding athletes and their athletic performance. Only 6 of the 44 retrieved articles obtained what was specifically investigated. There are three types of reaction time experiments: simple, recognition, and choice. Reaction time is the amount of time between the stimulus and its reaction. Its components include age, gender, stimulus, personality type, along with a host more. In previous studies, the results showed that reaction times of the group receiving cervical toggle adjustments improved by 15% as compared to the control group that just rested<sup>1</sup>. The cervical toggle adjustments allow for the Innate Intelligence of the patient to achieve its part of the adjustment<sup>4</sup>. A full spine adjustment comprises non specific cervical, thoracic, and low back adjusting techniques<sup>4</sup>. The anticipated results of future studies will show a significant increase in reaction time after receiving a full spine adjustment. Although the role of chiropractors in sports and the theories of chiropractic treatment on sports performance are being reviewed and discussed; this experiment should benefit athletes to improve their performance on the field and or court and for the elderly in continuing their everyday activities.

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## The Stance of the Chiropractic Profession on Current Events

Alexandra Gerdel

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**Introduction:** The year 2011 has heralded an outbreak of political action and discussion around the future of the chiropractic profession, changes in chiropractic education,<sup>1-4</sup> and the possibility of expanded scope of practice to include the rights of chiropractors to prescribe medicine.<sup>5</sup> In the midst of the discussion, there has been much speculation about where the majority opinion within the chiropractic profession truly lies. This survey and paper attempts to present a more accurate picture of the majority opinion in the chiropractic profession.

**Methods:** An online survey was developed using Survey Monkey. The survey was distributed using a Facebook link and through email. It consisted of 19 questions that asked participants to agree or disagree with statements pertaining to the issues of prescription rights, the Doctor of Chiropractic Medicine (DCM) degree, the definition of chiropractic and the vertebral subluxation.

**Results:** 1,588 surveys were started, and 1,502 were completed. Responses were obtained from graduates and current students from every chiropractic college in North America, and many more around the world. 81% of the participants surveyed disagreed that chiropractors should have the ability to prescribe drugs, 90.6% agreed chiropractic is a profession that heals without the use of drugs or surgery, and 74% disagreed with the accreditation of DCM degree programs.

**Discussion:** The results of this study demonstrate that the profession is being led and controlled by a minority population and opinion. These results are compared with other similar studies that have shown the opinion divide within the chiropractic profession to be closer to 50/50. The difference in the results of this study could be due to the size of the population surveyed, as well as the methods used to deliver the survey, as well as the methods used by the other studies to gather their data.

**Conclusion:** The results of this study show the majority of the chiropractic profession does not agree with the political direction chiropractic is headed. To confirm these results a study of a larger magnitude could be conducted.

**Keywords:** *chiropractic, prescription rights, Doctor of Chiropractic Medicine, drugless profession*

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## Chiropractic Care and Athletic Performance in High School Swimmers

Gregory A. Stetzel, DC, John Hart, DC

In collaboration with the Better World Foundation, Inc. and Sherman College of Chiropractic

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**Introduction:** Previous research in chiropractic revealed a significant increase in athletic performance over a twelve week program of chiropractic care, showing a 16.7% improvement in general athletic ability in the test group.<sup>1</sup> The present study focused on the performance of high school swimming athletes in timed events, comparing the level of improvement in performance between a control group of athletes who pursued their normal training regimen without chiropractic spinal care and a test group who performed their normal training regimen with the addition of weekly chiropractic adjustments for the correction of vertebral subluxation (see explanation in next paragraph). The expected outcome was an improvement in the timed performance of the test group above that of the control group over the course of the normal swimming competition season.

The central tenet of chiropractic care is the existence of vertebral subluxation, misalignment of the spinal vertebrae resulting in altered nerve system function and subsequently, detrimental effects on the health of the individual. While the physiological and physical effects of vertebral subluxation have been demonstrated by the research community on many levels, including demonstration of spinal misalignment on x-ray and altered nerve function through surface EMG and thermographic analysis<sup>2, 3, 4</sup> the functional impact of nerve system interference on specific performance (e.g., athletic performance) has been more difficult to demonstrate and measure.

This study tested the theory that improved nerve system function, secondary to the correction or improvement in spinal vertebral alignment through chiropractic adjustment of the vertebral subluxation, will result in improved body performance in the specific, quantifiable, physical activity of competitive swimming. As swimming is a timed individual event and records are kept throughout the swimming season with official timing measurements maintained at competitive events, the sport appropriately lends itself to this type of study.

**Methods:** The program began immediately prior to the start of the swimming season and compared the times for individual events between two groups of athletes. The control group maintained their normal, usual training regimen and received no chiropractic care for the course of the study. The study group (patients) received weekly chiropractic care while maintaining the usual training regimen with the rest of the team. Lap times and event times were regularly recorded and maintained by the swimming team staff for both groups. Event times are electronically recorded to a resolution of 0.01 seconds. At the completion of the study, athletic performance, based on individual lap and event times, was compared between the control and study groups to determine what effect chiropractic care had on swimming performance.

All participants were evaluated for performance at the beginning of the study with time data collected at the end of each of the first two weeks of training. At the start of the third week of training, the study group began to receive chiropractic adjustments, when appropriate for correction of vertebral subluxation, on a weekly basis. The control and study groups trained together and performed the same training activities required for normal participation in the sport. The control group received no chiropractic care during the course of the study. All study participants (test group) were evaluated at the beginning of the study. All participants received a posture evaluation with the Posture Pro System and also received a thermographic skin temperature analysis with the MyoVison Scanner. On a weekly basis, study group participants were evaluated by visual posture analysis, leg length analysis, soft tissue and bony palpation along the spine and received chiropractic adjustment when deemed appropriate by the examiner.

A case history was taken from all participants to rule out injury or significant health problems. X-ray was not included in this study as it was conducted on-site at the high school and not in office. Techniques used were as follows: toggle, diversified, Pierce, CBP and Gonstead procedures and analysis with the goal of vertebral subluxation correction and restoration of spinal balance. Full spine chiropractic care of asymptomatic athletes was provided.

At the conclusion of the study, data was analyzed and a comparative analysis was made between the control and study groups, within and between groups, to determine changes in timed performance over the course of the study. Data analysis consisted of determining whether any differences in times existed between swim times before and after chiropractic care. Only data for athletes who remained injury free throughout the course of the study was included in the results.

Parental consent was obtained for participants and controls under the age of 18 years. Approval for the study was received from the Institutional Review Board at Sherman College of Chiropractic (Spartanburg, SC). Participation in either the control or study group was determined by participant preference and parental consent. Since all subjects in this study were minors, parental consent was necessary. Consent was given for greater numbers of patients than controls. All participants passed the high school sports physical examination and were cleared for participation in competitive athletics. There were no fees paid to any study participant for any services rendered in connection with this study nor was any monetary compensation made to participants.

Data were analyzed in Minitab 16 (State College, PA). The paired t-test statistic was used, comparing initial (pre) and follow-up (post) times in both groups. The level of statistical significance (“alpha”) was calculated to be 0.0083 for the patient group (six swim events) and 0.0167 for the control group (three swim events). P-values  $\leq$  to these alphas were considered statistically significant (indicating a statistical difference between initial and follow-up times). The number of participants ranged from 6 to 17 in the patient group and 3 to 7 in the control group. Given these small sample sizes, this study is considered as preliminary.

**Results:** A comparison between groups for events that had more than two swimmers in both groups did not reveal any statistically significant differences. However, since sample sizes are small, this finding must be interpreted with caution.

Swim times for all six events were decreased in the patient group’s follow-up times, and in four of these six, the reduced post times were statistically significant (Table 1). In the control group, follow-up times were all reduced but did not quite reach statistical significance (Table 1).

**Discussion:** Post (follow-up) swim times in all events were reduced following chiropractic care, and in four of these the reduced times were statistically significant. Limitations to the study include: a) the sample was not random thereby limiting generalize-ability of these findings; b) sample sizes were relatively small, indicated by the low power values ( $< 80\%$ ), though, as previously mentioned, low accompanying p-values make the low power values less of a concern; and c) inconclusive results comparing baseline values between groups due to low sample size.

**Conclusion:** Although the control group sample size is too small to make a valid comparison, indications in this preliminary study are that swim times were significantly improved (statistically speaking) in the patient group’s follow-up events. Future study should allow for a greater sample size and randomization of participants into the control or patient group.

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Table 1. Descriptive and inferential statistics for swim times in group that received chiropractic care. N = number of swimmers. SD = standard deviation (amount of variability). Difference = average difference between pre and post times. 95% CI for difference = the range of expected times in 95% of other samples. P-value = probability that pre and post times are the same. Statistically significant p-values are indicated in bold. Power = chance for detecting a difference (80% is desirable but if p-values are statistically significant, lower power is less of a concern).

Event	Group	N	Average	SD	Difference	95% CI for difference	p-value	Power
100 m	Patient	17	30.31	3.74				
50 m free pre	Patient	17	28.73	2.86	-1.58	0.80, 2.37	<b>0.001</b>	71.5%
50 m free post	Patient	17	28.73	2.86	-1.58	0.80, 2.37	<b>0.001</b>	71.5%
100 m free pre	Patient	16	67.46	5.95				
100 m free post	Patient	16	63.65	6.14	-3.81	2.95, 4.67	<b>0.000</b>	64.0%
200 m free pre	Patient	7	142.66	12.90				
200 m free post	Patient	7	137.34	10.19	-5.32	0.72, 9.91	0.030	7.4%
500 m free pre	Patient	6	412.82	36.93				
500 m free post	Patient	6	403.89	33.81	-8.93	-2.74, 20.60	0.106	5.4%
100 m back pre	Patient	7	82.21	8.17				



100 m back post	Patient	7	77.91	8.61	-4.30	3.14, 5.47	<b>0.000</b>	42.4%
100 m breast pre	Patient	6	78.63	9.33				
100 m breast post	Patient	6	75.32	8.86	-3.31	1.74, 4.89	<b>0.003</b>	26.5%
50 m free pre	Control	7	35.13	7.55				
50 m free post	Control	7	31.82	5.74	-3.30	0.36, 6.25	0.034	10.9%
100 m free pre	Control	7	79.35	20.75				
100 m free post	Control	7	71.28	14.18	-8.08	0.22, 15.94	0.046	5.8%
100 m back pre	Control	3	89.37	16.92				
100 m back post	Control	3	83.54	17.05	-5.83	-1.21, 12.86	0.070	6.7%

## The safety of subluxation-based pediatric chiropractic: results from a practice-based research network

Joel Alcantara, DC, Jeanne Ohm, DC and Derek Kunz, BS

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**Introduction:** Of the practitioner-based alternative therapies, chiropractic is the most popular for children. Concerns regarding the safety and effectiveness of this popular and highly utilized alternative approach to children's health have been raised by chiropractic's detractors. In the interest of evidence-based practice, the International Chiropractic Pediatric Association created the largest and most successful practice-based research network to address the safety and effectiveness of the chiropractic care of children. Towards this effort, a prospective cohort study examining the incidence and prevalence of the chiropractic care of children was performed.

**Methods:** This study was approved by the Institutional Review Board of Life University (Atlanta, GA, USA). In addition to sociodemographic information (i.e., age and gender, level of education), the study further characterized the nature and context of the clinical encounter (i.e., SMT rendered, # of visits, etc. ) and the prevalence and incidence of adverse events (AEs) reported.

**Results:** Two-hundred sixty-four chiropractors reported on 512 children. A convenience sample 264 chiropractors (female=159; male =105; average age=34.95 years) participated in this study. The majority practiced in the United States with overall practice experience averaging 8.22 years. Over 50% received training in a pediatric chiropractic post-graduate program. The primary SMT technique were Diversified Technique (N=117) followed by Activator Methods (N=35), Gonstead Technique (N=24), Thompson Technique (N=20) and Sacro-Occipital Technique (N=20). Of the 679 subjects registered by chiropractors, 512 (i.e., response rate =75%) completed the study to provide data on AEs. Risk estimates for the occurrence of a first AE was calculated such that if 1 million children are monitored under chiropractic care for one year, 880 children would experience an AE, 141 would experience a second AE and 28 children would experience a third AE.

A convenience sample of 449 parents (368 females; 53 males; 28 unknown; average age=33.73) participated in the study. The parents were highly educated with 82% receiving some college education or higher. A convenience sample of 449 children (228 males; 221 females; average age=4.46 years) were reported. The motivating factors for chiropractic care was for wellness care (37%) followed by care of NMS complaints (21%). The vast majority (60%) of patient complaints were <6 months duration followed by 24% at >2 years duration and 16% at 12 months duration. Medical care was received by only 35% prior to chiropractic presentation.

A total of 20 AEs (prevalence =4.45%) were reported in 17 patients. The AEs minor and self-limiting (i.e., soreness and/or stiffness). Risk estimates determined that if One million children are monitored for AEs; 978 children would experience a first AE while 172 would experience a second AE.

**Conclusion:** This study provides supporting evidence that AEs associated with pediatric chiropractic SMT are rare. We encourage further research in this field.