

## Network Spinal Analysis Care - Literature Review

*The following is a list of peer-reviewed publications involving Network Spinal Analysis Care. Further information regarding Network Spinal Analysis Research currently in process or programs where information on Network Spinal Analysis Research has been presented is available at [www.associationfornetworkcare.com](http://www.associationfornetworkcare.com).*

### **On a standing wave Central Pattern Generator and the coherence problem**

Jonckheere E, Lohsoonthorn P, Musuvathy S, Mahajan V, Stefanovic M.

Biomedical Signal Processing and Control 5 (2010) 336–347. doi:10.1016/j.bspc.2010.04.002

An electrophysiological phenomenon running up and down the spine, elicited by light pressure contact at very precise points and thereafter taking the external appearance of an undulatory motion of the spine, is analyzed from its standing wave, coherence, and synchronization-at-a-distance properties. This standing spinal wave can be elicited in both normal and quadriplegic subjects, which demonstrates that the neuronal circuitry is embedded in the spine. The latter, along with the inherent rhythmicity of the motion, its wave properties, and the absence of external sensory input once the phenomenon is elicited reveal a Central Pattern Generator (CPG). The major investigative tool is surface electromyographic (sEMG) wavelet signal analysis at various points along the paraspinal muscles. Statistical correlation among the various points is used to establish the standing wave phenomenon on a specific subband of the Daubechies wavelet decomposition of the sEMG signals. More precisely, ~10 Hz coherent bursts reveal synchronization between sensory-motor loops at a distance larger, and a frequency slower, than those already reported. As a potential therapeutic application, it is shown that partial recovery from spinal cord injury can be assessed by the correlation between the sEMG signals on both sides of the injury.

### **Reorganizational Healing: A Paradigm for the Advancement of Wellness, Behavior Change, Holistic Practice, and Healing**

Epstein DM, Senzon SA, Lemberger D. Journal of Alternative and Complimentary Medicine. May 2009;15(5):461-64. PMID: 19450165

Reorganizational Healing, (ROH), is an emerging wellness, growth and behavioral change paradigm. Through its three central elements (the Four Seasons of Wellbeing, the Triad of Change, and the Five Energetic Intelligences) Reorganizational Healing takes an approach to help create a map for individuals to self-assess and draw on strengths to create sustainable change. Reorganizational Healing gives individuals concrete tools to explore and use the meanings of their symptoms, problems, and life-stressors as catalysts to taking new and sustained action to create a more fulfilling and resilient life.

### **Editorial: Reorganizational Healing: A Health Change Model Whose Time Has Come**

Blanks RH. Journal of Alternative and Complimentary Medicine. May 2009;15(5):461-64. PMID: 19450161

*No Abstract Available.*

### **Letter to the Editor: Network Spinal Analysis**

Jonckheere EA. Journal of Alternative and Complimentary Medicine. May 2009;15(5):469-70. PMID: 19450163

*No Abstract Available.*

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### **Improvement in Attention in Patients Undergoing Network Spinal Analysis: A Case Series Using Objective Measures of Attention**

Pauli Y. Journal of Vertebral Subluxation Research, August 23, 2007; 1-9

Objective: Anecdotal preliminary evidence suggests that chiropractic care may be of benefits for individuals suffering from ADHD. This case series presents the improvement in attention experienced by 9 adult patients undergoing Network Spinal Analysis.

Methods: Nine adult patients are presented (4 male, 5 female) with a mean age of 40.4 years (range 22 – 58 years old). All patients were evaluated with the Test of Variable of Attention (TOVA) before receiving Network Spinal Analysis (NSA) care and at 2 months into care. The nine patients received level 1 NSA care for two months, as taught by the Association for Network Care. Neurospinal integrity was evaluated with palpation, as well as surface electromyography. Cognitive process of attention was objectively evaluated using a continuous performance test, the Test of Variables of Attention (TOVA).

Results: We evaluated our patient cohort before and after Network care using sEMG and variables from the continuous performance test (TOVA). Before care, all patients had an abnormal ADHD score with a mean of -3.74 (range: - 8.54 to -1.89). After 2 months of care, all patients had a significant change in ADHD score ( $p=0.08$ ) and 88% completely normalized the ADHD score. 77% and 66% of patients experienced significant change in reaction time and variability score, respectively. All patients experienced a significant reduction in sEMG pattern of activation ( $p=0.08$ ). We discuss possible mechanisms by which spinal care may have enhanced the function of the prefrontal cortex, thereby resulting in improved attentional capacities

Conclusion: In this case series the nine adult patients experienced significant improvement in attention, as measured by objective outcomes, after receiving two months of Network Spinal Analysis. The progress documented in this report suggests that NSA care may positively affect the brain by creating plastic changes in the prefrontal cortex and other cortical and subcortical areas serving as neural substrate for the cognitive process of attention. These findings may be of importance for individuals suffering from attention deficit. Further research into this area is greatly needed.

### **Quality of Life Improvements and Spontaneous Lifestyle Changes in a Patient Undergoing Subluxation-Centered Chiropractic Care: A Case Study**

Pauli Y. Journal of Vertebral Subluxation Research, October 11, 2006; 1-15

Purpose of Study: This case study is to report the improvement in quality of life experienced by a patient undergoing subluxation-centered chiropractic care.

Clinical Features: A 36 year old male presented with primary health concerns of stress, eye pain and left leg pain of 14 years duration radiating to the foot and secondary complaints of gastritis, ulcers, nervousness, depression, lack of concentration and general loss of interest in daily life. The patient also smokes, does not exercise, eats a sub-optimal diet and rated his family and friends support, as well as job satisfaction as sufficient.

Intervention and Outcome: We discuss the various analyses employed to evaluate vertebral subluxations, including paraspinal surface electromyography and thermography. Adjustive care included a combination of Network Spinal Analysis, Torque Release Technique and diversified structural adjustments to correct vertebral subluxations over a six month period. We used visual analog scales, open-ended questions and selected items from the Self-Rated Health and Wellness Instrument to monitor health changes, as well as the positive improvements in quality of life as perceived by the patient himself.

Conclusion: This case study demonstrates that the correction of vertebral subluxations over an 11 month period was associated with significant improvements in the quality of life of the patient.

### **Chiropractic Care of a Battered Woman: A Case Study**

Bedell L. Journal of Vertebral Subluxation Research, July 20, 2006; 1-6

Objective: This case study documents the chiropractic care of battered woman struggling with Intimate Partner

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Violence (IPV). Chiropractic offers battered women a unique service, it is the only profession trained and licensed to detect and correct vertebral subluxations. The relationship between the stresses of abuse and vertebral subluxation, as well as the subsequent changes during chiropractic care, are described.

Clinical Features: A Caucasian, 23-year old female presented with headaches, neck pain, and upper back pain. The initial complaint noted sharp, knife-like pains into the medial scapular borders, worse on the right side. Tingling extended into the right hand, most severe in the 2<sup>nd</sup>, 3<sup>rd</sup>, and 4<sup>th</sup> fingers.

Chiropractic care and outcome: Protocols of both Torque Release and Activator techniques were utilized to evaluate vertebral subluxations. Subjective quality of life issues were evaluated through a Network Spinal Analysis (NSA) Health Status Questionnaire. After commencing chiropractic care, this woman suffered a cervical spine hyper-extension/hyper-flexion type injury from an automobile accident. For the first 30 days after, adjustments were applied twice weekly. Acute exacerbations of symptoms unrelated to the original complaints were displayed and progress became irregular. During the next 60 days, there were various unexplained falls and severe flare-ups of painful symptoms, and she finally admitted to being battered by her husband. Referrals to counselors and programs dealing with domestic violence were provided. Once the physical battering stopped, consistent progress was noted in both clinical symptoms and quality of life issues.

Conclusion: As a battered woman must receive emotional and social support to improve her situation, it is important for chiropractors to recognize the "red flags" of IPV. Chiropractors re-evaluate regularly for changes in vertebral subluxation patterns and can recognize inconsistent responses. They may also be the first caregivers to offer a vitalistic approach; considering a woman's physical, chemical, and emotional quality of life; a perspective that offers significant connection and trust. This article serves as a foundation on the topic of IPV and chiropractic, for use in both communities.

### **Wellness lifestyles II: Modeling the dynamic of wellness, health lifestyle practices, and Network Spinal Analysis.**

Schuster TL, Dobson M, Jauregui M, Blanks RH. *Journal of Alternative and Complimentary Medicine*. April 2004;10(2):357-67.  
PMID: 15165417

OBJECTIVE: Empirical application of a theoretical framework linking use of Network Spinal Analysis (NSA; a holistic, wellness-oriented form of complementary and alternative medicine [CAM]), health lifestyle practices, and self-reported health and wellness. DESIGN: Cross-sectional self-administered survey study. RESPONDENTS: Two thousand five hundred and ninety-six (2596) patients from 156 offices of doctors who were members of the Association for Network Chiropractic (currently titled Association for Network Care); estimated response rate was 69%. MEASURES: Exogenous variables entered into the structural equation model include gender, age, education, income, marital status, ailments, life change, and trauma. A wellness construct consisted of calculated difference scores between two referents, "presently" and "before Network" care, for self-reported items representing wellness domains of physical state, mental-emotional state, stress evaluation, and life enjoyment. Positive reported change in nine items assembled into dietary practices, health practices, and health risk dimensions serve as indicators of the construct of changes in health lifestyle practices. The NSA care construct consisted of duration of care in months, awareness of energy and awareness of breathing since beginning Network care. RESULTS: Of the exogenous variables only gender, age, and education remain in the final parsimonious structural equation model in these data. Reported wellness benefits accrue to individuals along a direct path from both self-reported positive lifestyle change (0.22), and from NSA care (0.43). The path (0.65) from NSA care to positive health lifestyle changes indicates that NSA care also has an indirect effect on wellness through changes in health lifestyle practices.

CONCLUSIONS: The Structural Equation model tested in these analyses lends support to our theoretical framework linking wellness, health lifestyles, and CAM. This study provides further evidence that our measurements of health and wellness are particularly appropriate for investigating wellness-oriented CAM. There is a positive relationship between the experience of NSA care and self-reported improvements in wellness as well as self-reported changes in lifestyle practices. NSA care users tend toward the practice of a positive health lifestyle, which also has a direct effect on reported improvements in wellness. These empirical links are discussed relative to the sociodemographic characteristics of this population and show that use of NSA care is an aspect of a wellness lifestyle.

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### **Wellness lifestyles I: A theoretical framework linking wellness, health lifestyles, and complementary and alternative medicine.**

Schuster TL, Dobson M, Jauregui M, Blanks RH. Journal of Alternative and Complimentary Medicine. April 2004;10(2):349-56.  
PMID: 15165416

Scholarship concerning complementary and alternative medicine (CAM) practices within the United States could benefit from incorporating sociological perspectives into the development of a comprehensive research agenda. We review the literature on health and wellness emphasizing definitions and distinctions, the health lifestyles literature emphasizing issues of both life choices and life chances, and studies of CAM suggesting utilization as an aspect of a wellness lifestyle. This review forms the foundation of a new theoretical framework for CAM research based on the interrelationship of CAM with health promotion, wellness, and health lifestyles. To date, few studies have sought to bring these various elements together into a single, comprehensive model that would enable an assessment of the complexity of individual health and wellness in the context of CAM. We argue that attention to literatures on health measurement and health lifestyles are essential for exploring the effectiveness and continuing use of CAM.

### **The Transition of Network Spinal Analysis Care: Hallmarks of a Client-Centered Wellness Education Multi-Component System of Health Care Delivery**

Epstein D. Journal of Vertebral Subluxation Research, April 5, 2004; 1-7

Network Spinal Analysis TM (NSA) care has been transitioned from a health care system with the objective of correction of two types of vertebral subluxation, to a multi-component system of health care delivery with emphasis on wellness education for participating clients. NSA care is now delivered and communicated in discrete Levels of Care with emphasis on client participation through self-evaluation. Emphasis on wellness education will be introduced into NSA practice through training via a Certificate Program currently under development. This paper considers some hallmarks that delineate a wellness education, patient (client)-centered practice. The concepts presented relative to this wellness model of health care delivery are believed to be applicable to any approach with similar practice objectives. The perspective presented considers that the major aspects of a patient-centered, wellness education health care delivery system is multi-dimensional. Hallmarks include differentiating terms, and establishing a wellness mentality. Substantiation of the discipline must be established through credible published research regarding its efficacy and safety as well as a consistent and valid means of measuring progressive outcomes derived from the care received. The relationship of NSA to other disciplines is discussed.

### **Successful In Vitro Fertilization in a Poor Responder While Under Network Spinal Analysis Care: A Case Report**

Senzon SA. Journal of Vertebral Subluxation Research, September 14, 2003; 1-6

Objective: This case report describes the successful in vitro fertilization (IVF) of a 34 year old female who had one previous aborted IVF attempt prior to Network Spinal Analysis (NSA) care. This case report is being presented to add to other case reports that show positive physiological changes in patients receiving NSA care.

Clinical Features: The IVF was attempted due to her partner's azoospermia. The first IVF attempt was on 3/26/02. The patient had a poor follicular growth after the standard hyper-stimulation process of the ovaries, including pre-treatment with Mircette (birth control pills) and 1mg/0.2ml of Lupron (a gonadotropin releasing hormone agonist), and 3-6 amps of Gonal-F (a recombinant fsh) starting on cycle day 3. Her baseline day 3 estradiol and LH levels were only 21.2pg/me and 5.0 I.U./L respectively. On cycle day 8, estradiol was only 56% and LH was 6.6 I.U./L. The Gonal-F was increased to 6amps. This first attempt was canceled due to the poor follicle growth. Only 3-4 follicles of insufficient size between 10-14mm each were found.

Chiropractic Care and Outcomes: On 4/11/02, the patient commenced regular NSA care. The second IVF attempt began on 6/6/02. The change in IVF protocol was the addition of Repronex (also a gonadotropin a combination of LH and fsh). The total increased dose of Gonal-F and Repronex was 6amps, compared to the first attempt of only 3amps which was then increased to 6amps of Gonal-F only.

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Conclusion: On the second IVF attempt, estradiol was 1001pg/ml on day 8, and 2019pg/ml on day 11, with LH at 9.3. The Oocyte retrieval after the second attempt was 10 eggs, each approximately 18mm. A successful aspiration of eggs was completed on 6/17/02, and a successful pregnancy followed. The patient is still under NSA care, and is now in her second trimester with normal fetal heart sounds. The possible role of NSA care in the vigorous follicular growth and other health benefits is discussed.

### **Insult, Interference and Infertility: An Overview of Chiropractic Research**

Behrendt M. Journal of Vertebral Subluxation Research, May 2, 2003; 1

Objective: Infertility is distinct from sterility, implying potential, and therefore raises questions as to what insult or interference influences this sluggish outcome. Interference in physiological function, as viewed by the application of chiropractic principles, suggests a neurological etiology and is approached through the mechanism of detection of vertebral subluxation and subsequent appropriate and specific adjustments to promote potential and function. Parental health and wellness prior to conception influences reproductive success and sustainability, begging efficient, effective consideration and interpretation of overall state and any distortion. A discussion of diverse articles is presented, describing the response to chiropractic care among subluxated infertile women.

Clinical Features: Fourteen retrospective articles are referenced, their diversity includes: all 15 subjects are female, ages 22-65; prior pregnancy history revealed 11 none, 2 successful unassisted, 1 assisted, 1 history of miscarriage. 9 had previous treatment for infertility, 4 were undergoing infertility treatment when starting chiropractic care. Presenting concerns included: severe low back pain, neck pain, colitis, diabetes, and female dysfunction such as absent or irregular menstrual cycle, blocked fallopian tubes, endometriosis, infertility, perimenopause and the fertility window within a religiousbased lifestyle, and a poor responder undergoing multiple cycles of IVF.

Chiropractic Care and Outcome: Outcomes of chiropractic care include but are not limited to benefits regarding neuromuscular concerns, as both historical and modern research describe associations with possible increased physiological functions, in this instance reproductive function. Chiropractic care and outcome are discussed, based on protocols of a variety of arts, including Applied Kinesiology (A.K.), Diversified, Directional Non-Force Technique (D.N.F.T.), Gonstead, Network Spinal Analysis (N.S.A.), Torque Release Technique (T.R.T.), Sacro Occipital Technique (S.O.T.) and Stucky-Thompson Terminal Point Technique. Care is described over a time frame of 1 to 20 months.

Conclusion: The application of chiropractic care and subsequent successful outcomes on reproductive integrity, regardless of factors including age, history and medical intervention, are described through a diversity of chiropractic arts. Future studies that may evaluate more formally and on a larger scale, the effectiveness, safety and cost benefits of chiropractic care on both well-being and physiological function are suggested, as well as pursuit of appropriate funding.

### **Chaotic Modeling in Network Spinal Analysis: Nonlinear Canonical Correlation with Alternating Conditional Expectation (ACE): A Preliminary Report**

Bohacek S, Jonckheere E. Journal of Vertebral Subluxation Research, December 1998; 2(4): 188-195

Abstract - This paper presents a preliminary non-linear mathematical analysis of surface electromyographic (sEMG) signals from a subject receiving Network Spinal Analysis (NSA). The unfiltered sEMG data was collected over a bandwidth of 10-500 Hz and stored on a PC compatible computer. Electrodes were placed at the level of C1/C2, T6, L5, and S2 and voltage signals were recorded during the periods in which the patient was experiencing the "somatopsychic" wave, characteristic of NSA care. The intent of the preliminary study was to initiate mathematical characterization of the wave phenomenon relative to its "chaotic," and/or nonlinear nature. In the present study the linear and nonlinear Canonical Correlation Analyses (CCA) have been used. The latter, nonlinear CCA, is coupled to specific implementation referred to as Alternating Conditional Expectation (ACE). Preliminary findings obtained by comparing canonical correlation coefficients (CCC's) indicate that the ACE nonlinear functions of the sEMG waveform data lead to a smaller expected prediction error than if linear functions are used. In particular, the preliminary observations of larger nonlinear CCC's compared to linear CCC's indicate that there is some nonlinearity in the data representing the "somatopsychic" waveform. Further analysis of linear and nonlinear predictors indicates that 4th order nonlinear predictors perform 20 % better than linear predictors, and 10th order nonlinear predictors perform 30% better than linear predictors. This suggests that the waveform possesses a nonlinear "attractor" with a dimension between 4 and 10.

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Continued refinement of the ACE algorithm to allow for detection of more nonlinear distortions is expected to further clarify the extent to which the sEMG signal associated with the "somatopsychic" waveform of NSA is differentiated as nonlinear as opposed to random.

### **Reduction of Psoriasis in a Patient under Network Spinal Analysis Care: A Case Report**

Behrendt M. Journal of Vertebral Subluxation Research, December 1998; 2(4): 196-200

This case report describes the progress of a 52 year old male with chronic psoriasis, first diagnosed in April of 1992. After the condition exacerbated over a five year period, he was placed on 12.5 mg/week methotrexate, and oral immunosuppressant medication in October of 1997. After commencing the medication, the condition reduced from 6% body coverage, with flares of 15-20%, to a body coverage of 5%. Following a cessation of the oral medication in February, 1998, the condition recurred at the previous uncontrolled level within one month. The patient was again placed on 12.5 mg/week methotrexate, and subsequently the condition reduced to 5% body coverage. The patient's dose was reduced to 10 mg/week, and later to 7.5 mg/week, with the psoriasis remaining at 5% coverage. On 5/18/98, the patient commenced regular NSA care. He reported a reduction in the psoriasis condition on 6/3/98, and was taken off the oral medication on 6/25/98. The reduction continued, and the patient was advised by his medical physician on 7/01/98 to continue the cessation of oral medication. As of 9/30/98 the psoriasis had decreased to 0.5% to 1.0 % of coverage, and prior plans to initiate ultraviolet-A therapy were canceled. As of 11/98, a five month period since cessation of methotrexate, the patient has remained under regular NSA care, with no recurrence of psoriasis body coverage greater than 1%, the only medication being a topical ointment. This is contrasted to the recurrence after one month, following the patient's first cessation of methotrexate, and prior to NSA care. The possible role of NSA care in the reduction of the patient's psoriasis, and other health benefits is discussed.

### **Changes in Digital Skin Temperature, Surface Electromyography, and Electrodermal Activity in Subjects Receiving Network Spinal Analysis Care**

Miller E, Redmond P. Journal of Vertebral Subluxation Research, June 1998; 2(2): 87-95

A preliminary study was conducted to evaluate changes in digital skin temperature (DST), surface electromyography (sEMG), and electrodermal activity (EDA) in a group of twenty subjects receiving Network Spinal Analysis (NSA) care. Data, simultaneously derived from all three parameters, were considered to be indirect correlates of sympathetic nervous system activity. Subjects, including a group of five controls, were assessed for a period of 17 minutes. The continuous assessment period included a baseline interval of 4.5 minutes, followed by a 12.5 minute period which was divided into five 2.5 minute intervals. Care was administered to the NSA recipient group immediately after the baseline period, whereas controls received no intervention following baseline. Results revealed no significant differences in DST either within or between the two groups. Surface EMG readings were relatively constant over the five intervals following baseline in the NSA group, while controls showed significant ( $p < 0.05$ ) increases in sEMG at the second through fifth intervals relative to the first interval following baseline activity. Electrodermal activity was significantly decreased ( $p < 0.01$ ) in the NSA group in the second through fifth intervals compared to baseline. Moreover, decreases varied between intervals, but exhibited a leveling from the third through fifth interval. Control subjects, alternatively, exhibited an increase in EDA in all intervals following baseline. The extent of increase resulted in EDA activity significantly greater than the NSA group at the third through fifth intervals. It was concluded that the increase in EMG activity in the control groups may have reflected an increasing level of anxiety due to the duration of the recording period. Since the NSA group expressed constancy in sEMG activity during the same period, coupled to significant decreases in EDA, a "sympathetic quieting effect" was postulated to occur in subjects receiving NSA care. This conclusion is consistent with hypothesized neurological pathways linked to responses observed during NSA care, as well as other reports of self-reported improvements in mental/emotional state and stress reduction in patients receiving Network Chiropractic Care.

### **Functional Magnetic Resonance Imaging: About the Cover (cover picture)**

Journal of Vertebral Subluxation Research, 1998; 2(1): Cover

About the Cover: Functional Magnetic resonance Imaging (fMRI), which measures the relative presence of oxy-hemoglobin, has gained attention as a non-invasive medium through which high resolution images of the brain and other tissue may be acquired. This technology may provide a useful assessment of cortical changes following

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chiropractic intervention. Images of the patient depicted on the cover, on the left, reflect cortical activity (lighted areas in the parietal cortex, frontal cortex areas 9, 10; visual association areas 19, 37, and 39) associated with the learning process of a "novel" muscular maneuver of the foot. Images on the right reflect cortical activity following a Network Spinal Analysis (form of chiropractic) adjustment session, taken approximately 20 minutes after the first set of images, involving the same activity. The decrease in "lighted" areas before and after the adjustment session suggests that less cortical "planning" or "activity" is associated with the "novel" foot maneuver. Thus, the ability of fMRI to visualize changes in cortical activity may play a significant role in elucidating the consequences of vertebral subluxation correction on neurological function.

### **An Impairment Rating Analysis Of Asthmatic Children Under Chiropractic Care**

Graham R, Pistolesse R. Journal of Vertebral Subluxation Research, 1997; 1(4): 41-48

A self-reported asthma-related impairment study was conducted on 81 children under chiropractic care. The intent of this study was to quantify self-reported changes in impairment experienced by the pediatric asthmatic subjects, before and after a two month period under chiropractic care. Practitioners, representing a general range of six different approaches to vertebral subluxation correction, administered a specifically designed asthma impairment questionnaire at the appropriate intervals. Subjects were categorized into two groups; 1-10 years and 11-17 years. Parents/guardians completed questionnaires for the younger group, while the older subjects self-reported their perceptions of impairment. Significantly lower impairment rating scores (improvement) were reported for 90.1% of subjects 60 days after chiropractic care when compared to the pre-chiropractic scores ( $p < 0.05$ ) with an effect size of 0.96. As well, there were no significant differences across the age groups based on parent/guardian versus self rated scores. Girls reported higher (less improvement) before and after care compared to boys, although significant decreases in impairment ratings were reported for each gender. This suggested a greater clinical effect for boys which was supported by effect sizes ranging from 1.2 for boys compared to 0.75 for girls. Additionally, 25 of 81 subjects (30.9%) chose to voluntarily decrease their dosage of medication by an average of 66.5% while under chiropractic care. Moreover, information collected from patients revealed that among 24 patients reporting asthma "attacks" in the 30 day period prior to the study, the number of "attacks" decreased significantly by an average of 44.9% ( $p < .05$ ). Based on the data obtained in this study, it was concluded that chiropractic care, for correction of vertebral subluxation, is a safe nonpharmacologic health care approach which may also be associated with significant decreases in asthma related impairment as well as a decreased incidence of asthmatic "attacks." The findings suggest that chiropractic care should be further investigated relative to providing the most efficacious care management regimen for pediatric asthmatics.

[Note: NSA care was one of the chiropractic approaches used in this study supported by the Michigan Chiropractic Council]

### **A Retrospective Assessment of Network Care Using a Survey of Self-Rated Health, Wellness and Quality of Life**

Blanks RH, Schuster TL, Dobson M. Journal of Vertebral Subluxation Research, 1997; 1(4): 15-31

The present study represents a retrospective characterization of Network Care, a health care discipline within the subluxation-based chiropractic model. Data were obtained from 156 Network offices (49% practitioner participation rate) in the United States, Canada, Australia, and Puerto Rico. Sociodemographic characterization of 2818 respondents, representing a 67-71% response rate, revealed a population predominately white, female, well-educated, professional, or white collar workers. A second objective of the study included the development and initial validation of a new health survey instrument. The instrument was specifically designed to assess wellness through patients' self-rating different health domains and overall quality of life at two "time" points: "presently" and retrospectively, recalling their status before initiating care ("before Network"). Statistical evaluation employing Chronbach's alpha and theta coefficients derived from principle components factor analyses, indicated a high level of internal reliability in regard to the survey instrument, as well as stable reliability of the retrospective recall method of self-rated perceptions of change as a function of duration of care. Results indicated that patients reported significant, positive perceived change ( $p < 0.000$ ) in all four domains of health, as well as overall quality of life. Effect sizes for these difference scores were all large ( $>0.9$ ). Wellness was assessed by summing the scores for the four health domains into a combined wellness scale, and comparing this combined scale "presently" and "before Network." The difference, or "wellness coefficient" spanning a range of -1 to +1, with zero representing no change, showed positive, progressive increases over the duration of care intervals ranging from 1-3 months to over three years. The evidence of improved health in the four domains (physical

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state, mental/emotional state, stress evaluation, life enjoyment), overall quality of life from a standardized index, and the "wellness coefficient," suggests that Network Care is associated with significant benefits. These benefits are evident from as early as 1-3 months under care, and appear to show continuing clinical improvements in the duration of care intervals studied, with no indication of a maximum clinical benefit. These findings are being further evaluated through longitudinal studies of current populations under care in combination with investigation of the neurophysiological mechanisms underlying its effects.

### **Network Spinal Analysis: A System of Health Care Delivery Within the Subluxation-Based Chiropractic Model**

Epstein, D. Journal of Vertebral Subluxation Research, August 1996; 1(1): 51-59

The theoretical basis and clinical application of Network Spinal Analysis (NSA) is described. NSA delivers health care within the subluxation-based chiropractic model and seeks to contribute to the distinction of the various techniques and methods within the profession by describing and discussing its major characteristics. In this regard, clinical observations relative to the application of the Network Protocol have been described in relation to the monitoring of patient and practitioner outcomes. Relevant research from a separate Network Care retrospective study, which impacts on its characterization, profiles the patient population as predominantly female. Other data indicates that Network Care is widely and consistently practiced. Additionally, patients report significant, positive changes in health-related quality of life measures linked to certain clinical components of Network Care.