

October 2002

The Vertebral Subluxation Complex

The following quote is drawn from the discussion section of a chapter by Charles A. Lantz, PhD in the book *Foundations of Chiropractic Subluxation*:

“The Vertebral subluxation complex (VSC) allows for every aspect of chiropractic clinical management to be integrated into a conceptual model, a sort of “unified field theory” of chiropractic.... The VSC was designed to bring understanding to an area that was fraught with confusion; it was crafted to be consistent with known rational thought and valid information; it was designed to adapt to a growing body of information and understanding of the function of the human body and how the physical machinations interrelate with what we call human health.”

Use of CAM among physicians in the United Kingdom.

A recent survey has found that **chiropractic is one of the most practiced CAM therapies by UK medical physicians.**

The study does not detail how many of the medical physicians have been trained in chiropractic but it does tell us that only 13% of the respondents had received any training in CAM therapies.

The General Chiropractic Council (GCC), a UK-wide statutory body with regulatory powers has the stated duty of, “promoting the profession of chiropractic so that its contribution to the health of the nation is understood and recognized”. Furthermore, since the 14 June 2001 the title 'chiropractor' has been protected by law and it is now a criminal offence, liable to prosecution, to describe oneself as any sort of chiropractor without being registered with the GCC. Such being the case, one would hope that the GCC plans to approach the General Medical Council (GMC) and together come to some agreement that ensures that the practice of chiropractic is restricted to those who are appropriately qualified.

Below I copy the survey's abstract from PubMed -

Lewith G T, Hyland M, Gray SF. Use of CAM among physicians in the United Kingdom. *Complement Ther Med* 2001; 9:167-72.

OBJECTIVES: To evaluate the use of attitudes to complementary and alternative medicine (CAM) among UK physicians.

DESIGN: Postal questionnaire. **SUBJECTS:** All Members and Fellows of the Royal College of Physicians.

RESULTS: Twelve thousand, one hundred and sixty eight Members and Fellows were surveyed and a response rate of 23% (n = 2,875) was obtained. Responses resulted in a sample size of 2,748: **32% of respondents practiced CAM themselves.**

Acupuncture, aromatherapy and manipulative medicine (osteopathy and chiropractic) are the most practiced CAM therapies by UK medical physicians despite only 13% of them having received and CAM training.

Eighty seven percent of those using CAM themselves had not had any CAM training.

[EDITOR: ADRIAN B. WENBAN, B.SC., B.APP.SC., M.MED.SC.](#)

CONCLUSIONS: Our conclusions must be tempered by the limited response rate, but assuming all non-responders were disinterested in CAM, then at least **one in ten UK specialist physicians are actively involved in CAM treatments, although only 13% of our sample had received any CAM training.**

Is the FDA nothing more than a servant of the pharmaceutical industry?

Dr. Paul Stolley, a former member of the FDA's Scientific Advisory Committee, has spoken out publicly about what he believes is the unhealthy influence of the pharmaceutical industry within the FDA. In mid-September, 2002, the BMJ published a report by a journalist who interviewed Stolley. Stolley claims the FDA has become a servant of the pharmaceutical industry, where dissenting voices are intimidated and ostracised and where scientific debate is repressed. Stolley reportedly stated:

"I think it's a shame how it (the FDA) has fallen down on the job The FDA was in partnership with (the pharmaceutical) industry. It should have been negotiating, not in partnership. Why was it in partnership? Because it's financially supported by industry."

The BMJ went on to reveal that drug companies partly fund the FDA - In total the FDA will receive \$162m from the pharmaceutical industry in 2002.

Moynihan R. Alosetron: a case study in regulatory capture, or a victory for patients' rights? BMJ 2002; 325:592-595

Concepts Germane to an Evidence-Based Application of Chiropractic Theory.

Meeker W. *Topics in Clinical Chiropractic* 2000;7:1.
(The following are main points taken from Meeker's paper).

One way to validate chiropractic theory is to consider the concepts of health, subluxation and adjustment. Subluxation is related to health; health is related to adjustment; and adjustment is related to subluxation. Regarding the nature and direction of these relationships, we say that the greater the level of health of an individual, the fewer subluxations that person has. We also say that more (or better) adjustments lead to less subluxations, and furthermore, that more adjustments yield greater health.

While seemingly simple, **these three concepts and their interlocking relationships provide an umbrella for a chiropractic research agenda**, and pose a significant challenge to the profession. If pursued properly, many controversies and questions in the clinical practice of chiropractic can be answered, given sufficient resources and time. My point in discussing these controversial issues is to raise professional consciousness to get on with the task-not simply to criticize.

Take "health" for example. We may think we know what health is, but how do we measure it? Is it optimum physiologic, mental and social well-being, or is it the lack of disease? As chiropractors, we believe that optimum well-being should be our clinical goal, but how do we know when our patients have arrived at this state? Can we ask them? Maybe. The SF-36 and similar multidimensional measures of health and quality of life address this issue, but many chiropractors distrust their patients' opinions about their own bodies. They consider them too subjective. We should strive for objective measures, but regardless of the method, we can scientifically address the theoretical relationship between health and subluxation, if health can be measured in a valid and reliable way.

In summary, research to understand the relationship between health, subluxation and adjustment requires that each concept be tested against (compared to) the others. The interlocking nature of the theory should be appreciated as a major research challenge. One cannot use a vague concept to test for the validity of another vague concept, so a great deal of work should be directed to developing valid and reliable measurements. Anyone who has ever attempted to do research to refine a measurement

knows that it is painstaking, laborious and often unrewarding. Many small studies must be conducted, and each one must tightly control for error.

Meeker concludes, “If the goal of chiropractic care is to obtain health by reducing subluxation with adjustment, knowing when a subluxation is there (and when it is not) seems fairly important. No one can argue that everyone agrees on how this works at this point, but I do believe that science can settle it eventually. If the profession understands the value of this kind of research, it is more likely to be done”.

ASRF Update Editor’s comments: Scientists like Meeker are finally beginning to ask some of the hard questions that are fundamental to better conceptualizing the chiropractic paradigm and relevant theory. The result will hopefully be that we will soon start to see more epidemiological and outcome studies built around concepts of subluxation, adjustment, health and quality of life.

New Research links MMR Vaccine to Autism

During recent years it has been suggested that vaccination with measles-mumps-rubella (MMR) vaccine may be causally related to the development of autism.

The evidence in support of a causal relationship comes in two forms:

1. The prevalence of autism has been increasing at the same time that infant vaccination coverage has increased,
2. There are many documented cases wherein autistic characteristics were first noted shortly after vaccination.

However despite the apparent increase in prevalence of autism in recent years it is not clear if this is an actual increase or the result of increased recognition and changes in diagnostic criteria. To date the weight of epidemiological evidence does not support a causal association between MMR vaccine and autism.

However, scientists at Utah State University have now found a strong association between the MMR vaccine and an autoimmune reaction thought to play a pivotal role in the development of autism.

The team of researchers, led by Dr Vi jendra Singh analysed blood samples from 125 autistic children and 92 children who did not have the developmental disorder.

The researchers found a “significant increase” in the level of MMR antibodies in the autistic children.

Part of the measles component of the vaccine caused an unusual anti-measles response in 75 (60%) of the autistic children, but no similar response was seen in any of the normal children.

Furthermore, over 90% of the autistic samples which showed an immune response to MMR were also positive for antibodies thought to be involved in autism. These antibodies attack the brain by targeting the basic building blocks of myelin, the insulating sheath that covers nerve fibers.

Dr Singh has previously hypothesized that this autoimmune response may be the root cause of autism. (Clin Immunol Immunopathol. 1998;89:105-8.)

The US scientists, who report their findings in the latest issue of the Journal of Biomedical Science, concluded: “Stemming from this evidence, we suggest that an inappropriate antibody response to MMR, specifically the measles component thereof, might be related to pathogenesis of autism.”

However, before a definitive causal relationship can be claimed, this research has to be replicated by other researchers and data from large well performed epidemiological studies would need to be in support of a causal association.

Below I have copy and pasted the full abstract to the study from PubMed:

Abnormal measles-mumps-rubella antibodies and CNS autoimmunity in children with autism.

Singh VK, Lin SX, Newell E, Nelson C. J Biomed Sci 2002;9:359-64.

Department of Biology and Biotechnology Center, Utah State University, Logan, Utah, USA.

Autoimmunity to the central nervous system (CNS), especially to myelin basic protein (MBP), may play a causal role in autism, a neurodevelopmental disorder. Because many autistic children harbor elevated levels of measles antibodies, we conducted a serological study of measlesmumps-rubella (MMR) and MBP autoantibodies.

Using serum samples of 125 autistic children and 92 control children, antibodies were assayed by ELISA or immunoblotting methods. ELISA analysis showed a significant increase in the level of MMR antibodies in autistic children. Immunoblotting analysis revealed the presence of an unusual MMR antibody in 75 of 125 (60%) autistic sera but not in control sera. This antibody specifically detected a protein of 73-75 kD of MMR. This protein band, as analyzed with monoclonal antibodies, was immunopositive for measles hemagglutinin (HA) protein but not for measles nucleoprotein and rubella or mumps viral proteins. Thus the MMR antibody in autistic sera detected measles HA protein, which is unique to the measles subunit of the vaccine. Furthermore, over 90% of MMR antibody-positive autistic sera were also positive for MBP autoantibodies, suggesting a strong association between MMR and CNS autoimmunity in autism. Stemming from this evidence, we suggest that an inappropriate antibody response to MMR, specifically the measles component thereof, might be related to pathogenesis of autism.

Depressed immune functions following spinal cord injuries.

Nash MS. J Spinal Cord Med 2000; 23:111-20.

Recent evidence suggests that depression of immune function occurs early after serious spinal cord injury (SCI) and that it is maintained at a depressed level thereafter.

Deviations from immune function observed in healthy persons with intact neuraxes include natural killer cell number and cytotoxicity, T cell function and activation, macrophage phagocytosis, levels of interleukins (IL)-2 and -6, the soluble IL-2R receptor, and intracellular adhesion molecules. While a single etiology explaining these abnormalities has not been identified, **decentralization of the autonomic nervous system is the most likely cause.** Otherwise, many persons with SCI, who sustain episodic autonomic overstimulation, are among the most physically deconditioned of all humans, and often select a diet rich in fat and low in protein. All of these are associated with suppressed immune function in persons without SCI.

No evidence suggests that the immune profiles of persons with SCI favor disease and illness resistance. As opportunistic infections of the urinary tract, lungs, and skin represent major causes of morbidity for those aging with SCI, attention to, or intervention on, immune suppressive states, traits, behaviors, diets, and health care interventions may represent means through which host defenses of persons with SCI can be fortified and their illness proclivities reduced.

Physical activity and risk of cancer in middle-aged men. Wannamethee SG,

Shaper AG, Walker M. Br J Cancer 2001; 85:1311-6.

A prospective study was carried out to examine the relationship between physical activity and incidence of cancers in 7588 men aged 40-59 years with full data on physical activity and without cancer at screening.

Physical activity at screening was classified as none/occasional, light, moderate, moderately vigorous or vigorous. Cancer incidence data were obtained from death certificates, the national Cancer Registration Scheme and self-reporting on follow-up questionnaires of doctor- diagnosed cancer. Cancer (excluding skin cancers) developed in 969 men during mean follow-up of 18.8 years.

After adjustment for age, smoking, body mass index, alcohol intake and social class, the risk of total cancers was significantly reduced only in men reporting moderately-vigorous or vigorous activity; no benefit seen at lesser levels. Sporting activity was essential to achieve significant benefit and was associated with a significant dose-response reduction in risk of prostate cancer and upper digestive and stomach cancer. Sporting (vigorous) activity was associated with a significant increase in bladder cancer. No association was seen with colo-rectal cancer.

Physical activity in middle-aged men is associated with reduced risk of total cancers, prostate cancer, upper digestive and stomach cancer. Moderately vigorous or vigorous levels involving sporting activities are required to achieve such benefit.

Polysomnographic study of the autonomic nervous system in victims of sudden infant death syndrome.

Franco P, Szliwowski H, Dramaix M, Kahn A. Clin Auton Res 1998; 8:243-9.

The aim of this study was to determine the influence of sleep stages and night time distribution on autonomic activity.

The polysomnographic recordings of 18 victims of sudden infant death syndrome (SIDS) were studied retrospectively. Similar recordings were taken from 36 control infants. Autoregressive spectral analyses of heart rate (HR), were evaluated as a function of sleep stages. The two main peaks of normalized low frequency (LF) and high frequency (HF) were computed during the night and the sympathovagal balance (LF/HF) was determined.

In both NREM and REM sleep, SIDS infants were characterized by significantly lower normalized HF powers and higher LF/HF ratios. This finding was observed in both short-term and whole-night HR spectral analyses. In addition, SIDS victims were characterized by the presence of a high desynchronized peak of sympathetic tonus in the late hours of the night, a finding not seen in the control subjects.

This report adds further indirect evidence for a possible sleep-related impairment of autonomic controls in some infants who die of SIDS.

Cerebellum Activation Associated with Performance Change but Not Motor Learning

R. D. Seidler et al., Science 2002; 296:2043.

The authors of this study note that the issue of whether the cerebellum contributes to motor skill learning is controversial. This is principally because of the difficulty of separating the effects of motor learning from changes in performance.

The authors performed a functional magnetic resonance imaging investigation during an implicit, motor sequence-learning task that was designed to separate the two processes.

During the sequence-encoding phase, human participants performed a concurrent distractor task that served to suppress the performance changes associated with learning. Upon removal of the distractor, participants showed evidence of having learned.

No cerebellar activation was associated with the learning phase, despite extensive involvement of other cortical and subcortical regions. There was, however, significant cerebellar activation during the expression of learning. The authors concluded that, "the cerebellum does not contribute to learning of the motor skill itself but is engaged primarily in the modification of performance."

Consumers reject direct advertising to patients by drug industry

Mark Hunter, BMJ 2002; 324:1416.

The pharmaceutical industry has accused the UK Consumers' Association of "muddying the waters" over the European Commission's plans to relax controls on the information it can provide directly to patients.

The European parliament is considering a pilot project in which drug companies will be able to set up interactive websites and telephone helplines to provide information on treatments for AIDS and HIV infection, asthma, and diabetes.

But the Consumers' Association opposes the plan and last week published a survey showing that the general public was deeply suspicious of industry advertising of prescription-only medicines directly to patients.

Of the 1818 adults questioned in the survey, only one in four felt that drug companies could be trusted to provide unbiased and comprehensive information about treatments. Over 80% felt that if direct to patient advertising was allowed, companies would spend most money advertising the most profitable drugs. And over half of respondents believed that drug companies would try to convince people they had non-existent illnesses.

The association claims that evidence from the United States and New Zealand has shown that pharmaceutical advertising is likely to contain inadequate information about possible side effects and little educational content and could lead to a dramatic increase in drug costs.

"People need balanced and comparative information to make informed choices about drugs," said a spokesperson for the Consumers' Association. "But they simply do not trust drug companies to tell the whole truth." She added: "This survey sends a clear message to the UK government and the European parliament the moves to relax the laws governing advertising of prescription drugs must be stopped immediately."

Multiple neural mechanisms of fever.

Szekely M, Balasko M, Kulchitsky VA, et al. Auton Neurosci 2000; 85:78-82.

In rats, fevers have three phases (phases 1, 2 and 3) with body temperature peaking at approximately 1, 2, and 5 h postinfection, respectively.

In this study, the effects of bilateral vagotomy on febrile phases 1-3 were assessed in adult Wistar rats.

Surgical vagotomy was performed approximately 30 d before the experiment; this procedure interrupts both afferent and efferent vagal fibers. At a neutral ambient temperature, the rats were given *Escherichia coli* (10 microg/kg) through a jugular catheter, and their colonic temperature was measured by thermocouples for 7 h.

The control rats exhibited the typical triphasic febrile responses. Although vagotomy did not affect phases 1 and 2, it did, result in a 2.5-fold reduction of phase 3.

The authors conclude that vagal efferent fibers are likely to participate in the later febrile response (phase 3) via an unknown mechanism.

ASRF Editor's comments: Matt Kluger, a physiologist at the Lovelace Institute has been researching and advocating the important role of Fever for over 20 years. He believes that using drugs to suppress fever often makes people sicker - and even kills them. (See the below abstract)

The Adaptive Value of Fever.

Kluger MJ, Kozak W, Conn CA, Leon LR, Soszynski D *Infect Dis Clin North Am* 1996; 10:1-20.

There is overwhelming evidence in favor of fever being an adaptive host response to infection that has persisted throughout the animal kingdom for hundreds of millions of years. As such, it is probable that the use of antipyretic/anti-inflammatory/analgesic drugs, when they lead to suppression of fever, results in increased morbidity and mortality during most infections; this morbidity and mortality may not be apparent to most health care workers because fever is only one of dozens of host defense responses. Furthermore, most infections are not life-threatening and subtle changes in morbidity are not easily detected.

Is aspirin "the weakest link" in cardiovascular prophylaxis? The surprising lack of evidence supporting the use of aspirin for cardiovascular disease.

Cleland JG. *Prog Cardiovasc Dis* 2002;44:275-92.

It is currently fashionable to prescribe aspirin, long-term to people with or at high risk of vascular events due to atherosclerosis.

There is remarkably little evidence that long-term aspirin is effective for the prevention of vascular events and managing side effects may be expensive. Reductions in nonfatal vascular events may reflect an ability of aspirin to alter cosmetically the presentation of disease without exerting real benefit. Cardiovascular medicine appears prone to fads and fashions that are poorly substantiated by evidence.

The author concludes that, "the current fashion for prescribing aspirin is reminiscent of the now discredited practice of widespread prescription of class I anti-arrhythmic drugs for ventricular ectopics. We should learn from experience".

ASRF Update Editor's comment - John GF Cleland is Professor of cardiology at the University of Hull, UK. He recently wrote a BMJ editorial for debate (*BMJ*2002;324:103- 105), in which he stated, "Indeed, among large long term trials after myocardial infarction there is no evidence that aspirin saves lives", and, "Low dose aspirin for cardiovascular prophylaxis may account for more than 30% of all major gastrointestinal hemorrhage in patients aged over 6, and may also be associated with an increased risk of renal failure".

Use of chiropractic for menopause symptoms.

Newton KM, Buist DS, Keenan NL, et al. *Obstet Gynecol* 2002;100:18-25.

The objective of this US based telephone survey of 886 women was to determine the extent to which women made use of so called alternative therapies for menopause symptoms. The proportion of women who used at least one of the therapies was 76.1%. Stress management was used by 43.1% of the women, over-the-counter alternative remedies were used by 37.0%, chiropractic was used by 31.6%, massage therapy by 29.5%, dietary soy by 22.9%, acupuncture by 10.4%, naturopathy or homeopathy by 9.4%, and herbalists by 4.6% of the sample.

Among women who used the different approaches, 89-100% found them to be somewhat or very helpful.

Current users of hormone replacement therapy were half as likely to use alternative remedies or providers (odds ratio 0.48, 95% confidence limits 0.29, 0.77) as were never users.

The authors concluded, “The use of alternative therapies for menopause symptoms is common, and women who use them generally find them to be beneficial”.

ASRF Update Editor’s comments: Both the researchers and the respondents in the above survey seem to see chiropractic as just one of a number of alternative therapies good for masking or ameliorating symptoms. We might do well to step back and ask, “Is this how we want chiropractic care to be conceptualized by the public and scientific community?”

Forces and Elongation of the Vertebral Artery during ROM, Examination Procedures and Chiropractic Neck Adjustments.

Herzog W, Symons B, Leonard TR. Proceedings of WFC’s 6th Biennial Congress, Paris, May 2001. pge. 207-8.

One major issue regarding chiropractic neck adjustments is the risk of stroke. Although this risk appears to be small (1 per million), the serious and irreversible nature of vascular accidents makes it a material risk. The primary structures associated with stroke following neck manipulation are the vertebral arteries; however, the forces, elongations, and failure properties of the vertebral artery relative to its neutral in situ length are unknown.

The purpose of this study was to determine accurately the forces and elongations of the vertebral artery during ROM testing, other examination procedures, and neck adjustments. Furthermore the authors wanted to determine the failure force and failure elongation of the vertebral artery relative to its in situ length.

Six vertebral arteries were obtained from 5 unembalmed, post-rigor cadavers. The distal and proximal segments were exposed and instrumented for measurement. Elongations were measured continuously for ROM testing, examination procedures, and 6 commonly used adjustive techniques. Force-elongation properties were then determined up to failure using an Instron materials testing machine.

Neck adjustments caused average peak strains that were systematically lower than those obtained during ROM and examination procedures. Average failure strains of the vertebral arteries were 53% and 62% relative to the in situ length with the head in a neutral position, for the distal and proximal segments of the vertebral artery, respectively. The corresponding failure forces were 8.2 and 8.8N.

The authors conclude that, “The peak elongations of the vertebral artery during neck adjustments were at most 11% of the elongation observed at failure. The peak elongations during adjustments were consistently lower than those observed during ROM testing and examination procedures”, and that this study suggests, “...that the forces and elongations of the vertebral artery during neck adjustments were well within those experienced during normal everyday movements, such as turning the head when driving backwards out of a parking lot. Therefore it appears highly unlikely that the vertebral artery might be damaged mechanically by a single neck adjustment”.

Autonomy, Dominance, and the Patient's Interest

(The following are excerpts from an article written by Meridel Gatterman and published in Dynamic Chiropractic back in 1994. Despite the article being almost 10 years old and its content being specifically directed toward the Canadian situation at that time, the themes seem relevant to events taking place today in other parts of the World, Europe and Australia included.)

Chiropractic today is faced with the most serious threat to its professional autonomy that has existed in its 100 year history. At issue is professional dominance whereby an occupation loses control over its

work activities. In an attempt to gain control of a small minority of marginal unscientific practitioners who practice outside logical and rational standards, some chiropractors in Canada are attempting to seductively and subtly place chiropractic in a position in the health care system under medical domination. The seduction is the designation specialist, the means of control, and practice by referral only.

The current move to place chiropractic practice under medical domination worldwide is being promoted by chiropractors within the chiropractic profession, aided, abetted, and spurred on by some who consider themselves friends of chiropractors. In whose interest do they serve? The patient who seeks chiropractic care? The practitioner who delivers this care, or a group that considers medical approval more important than helping patients? The issue is access to health care delivery through specialization, not technical sophistication or occupational segmentation.

In Canada, hospital training through a fellowship program has created a paramedical model for chiropractic dominated by medicine. A limited group of this fellowship has labelled itself the primary scientific body within chiropractic and attempted to position itself to determine political policy and control of what is taught as chiropractic science. Have they become a self-anointed thought police without the opportunity for open debate provided by existing forums such as the chiropractic educator's annual meeting, the annual Conference on Chiropractic Education and Research, or the International Conference on Spinal Manipulation?

We are told that chiropractors will benefit more patients (and our practices will grow) if we become specialists in spinal manipulation for the treatment of "mechanical" back pain.

Reductionist medicine has defined the role of chiropractic in the health care system as providers of manipulation for the treatment of mechanical back pain. What will happen to traditional patient centered chiropractic care that is compatible with the values and perspectives of the public that seeks help from chiropractors for more than one body part or at most a system (musculoskeletal). "Neuro" must go, don't you know.

The issue is how can chiropractic maintain control of the substance of its own work if it is on a referral basis only? A consulting profession such as chiropractic does solve the practical problems of patients far beyond the treatment of back pain. Will patients be denied the benefit of chiropractic care beyond manipulation of mechanical back pain sent by referral? A small group of reactionaries shouldn't be allowed to denigrate a profession under the guise of improving patient care.

By Meridel I. Gatterman, MA, DC
Toronto, Canada

To read the full article go to: <http://www.chiroweb.com/archives/12/25/20.html>