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CHIROPRACTIC MAINTENANCE CARE

Tertiary preventive care (maintenance care) is commonly recommended by chiropractors. A recent survey of American chiropractors showed that 95.4% of chiropractors believe that maintenance chiropractic care is used to minimize recurrence or exacerbation of pain and symptoms. More than 9 out of 10 chiropractors use spinal manipulation therapy (SMT) as a maintenance treatment for musculoskeletal conditions and general symptoms. The majority of chiropractors agree that adequate research on this topic is lacking. To our knowledge, no one has studied the possible role of SMT as a tertiary prevention procedure in a clinical randomized trial.

The goal of a recently published study (see reference below) was to explore the common assertion that maintenance SMT can help reduce overall pain and disability levels associated with chronic low-back conditions after an initial phase of intensive chiropractic treatments and to determine the efficacy of maintenance chiropractic SMT.

The authors conducted a 10-month study in which 2 groups of chronic LBP patients initially received 12 chiropractic treatments. After the initial phase of treatment, only 1 group received maintenance care during the second phase of the study. It was hypothesized that both groups would reduce their pain and disability scores after the initial phase of treatment but that only patients receiving maintenance care would maintain their initial benefits during the next 9 months.

Thirty patients with chronic non-specific low-back pain were separated into 2 groups. The first group received 12 treatments in an intensive 1-month period but received no treatment in a subsequent 9-month period. For this group, a 4-week period preceding the initial phase of treatment was used as a control period to examine the sole effect of time on pain and disability levels. The second group received 12 treatments in an intensive 1-month period and also received maintenance spinal manipulation every 3 weeks for a 9-month follow-up period. Pain and disability levels were evaluated with a visual analogue scale and a modified Oswestry questionnaire, respectively.

For both groups, the pain and disability levels decreased after the intensive phase of treatments. Both groups maintained their pain scores at levels similar to the post-intensive treatments throughout the follow-up period. **For the disability scores, however, only the group that was given spinal manipulations during the follow-up period maintained their postintensive treatment scores. The disability scores of the other group went back to their pretreatment levels.**

The authors concluded, "This experiment suggests that maintenance spinal manipulations after intensive manipulative care may be beneficial to patients to maintain subjective post-intensive treatment disability levels. Future studies, however, are needed to confirm the finding in a larger group of patients with chronic low-back pain."

Reference: Descarreaux M, Blouin J, Drolet M, Papadimitriou S, Teasdale N. Efficacy of preventive spinal manipulation for chronic low-back pain and related disabilities: a preliminary study. *J Manipulative Physiol Ther.* 2004;27:509-14.

CHIROPRACTIC CARE - IS IT SUBSTITUTION CARE OR ADD-ON CARE IN CORPORATE MEDICAL PLANS?

An analysis of claims data from a managed care health plan was performed to evaluate whether patients use chiropractic care as a substitution for medical care or in addition to medical care.

Rates of neuromusculoskeletal complaints in different diagnostic categories were compared between groups with and without chiropractic coverage.

For the 4 year study period, there were 3,129,752 insured member years in the groups with chiropractic coverage and 5,197,686 insured member years in the groups without chiropractic coverage. The cohort with chiropractic coverage experienced a rate of 162.0 complaints per 1000 member years compared with 171.3 complaints in the cohort without chiropractic coverage.

These results indicate that patients use chiropractic care as a direct substitution for medical care.

Reference: Metz RD, Nelson CF, LaBrot T, Pelletier KR. J Occup Environ Med. 2004; 46:847-55. **AFTER**

THE FRENCH PARADOX COMES THE ITALIAN ENIGMA

Frequent consumers of Italian pizza had less than half the risk of an acute myocardial infarction compared with those eating pizza only occasionally, says a research article in the *European Journal of Clinical Nutrition* (2004;58;1543-6). Even those who ate fewer than four portions a month seemed to gain some protection.

The authors point out that in Italy most pizza is usually consumed in traditional pizzerias and that consumption of "fast food" pizza is unusual. The average energy of a standard pizza in Italy is relatively low (2.09-3.34 MJ (500-800 kcal)), and 100 g of a traditional Italian pizza has about 50g of carbohydrates, 20 g of tomato sauce, 20 g of mozzarella cheese, 4 g of olive oil, and 2 g of yeast.

"Some of the ingredients of pizza have been shown to have a favourable influence on the risk of cardiovascular disease. However, there is no single explanation for the present findings," say the authors.

Reference: Dobson R. After the French paradox comes the Italian enigma BMJ 2004;329:1064

REDUCTION OF CERVICAL DYSTONIA AFTER AN EXTENDED COURSE OF CHIROPRACTIC CARE: A CASE REPORT

A case of reduced cervical dystonia following an extended course of specific chiropractic manipulative therapy (CMT) is reported.

Cervical dystonia (CD) is a focal movement disorder of the head and neck with an uncertain etiology. While the exact cause of this condition is unknown, reports suggesting dysfunction in the vestibular system, defects of sensory-motor integration, and lesions in the brainstem and cervical spinal cord.

There is growing evidence that CD is associated with dysfunction of the extrapyramidal system and even an association between short leg and CD has been described. It remains unclear, however, if these various abnormalities are part of the primary physiopathology of the disease or if they are merely epiphenomena.

Virtually all current treatments of CD are palliative. CD is definitely not a self-limited condition with one study suggesting that spontaneous recovery was seen in only 12% of CD patients. Conservative treatments requiring months or even years are not uncommon.

In this case (1) the patient was a 38-year-old man. He had gross anterior lateral cervical torticollis. He could, with great difficulty, attain a neutral posture and retain it for several seconds. He had obvious involuntary motor activation that would "snap" his head back to the distorted position. He utilized the commonly described hand-to-chin and hand-to-top-of-head *gestes* to interrupt his involuntary muscle activity. He had received several courses of physical therapy and had a course of nerve injections that he believed made him worse.

The authors of the case outlined here, report using a combination of an arthrodiagonal protractor, radiographs, and a computed tomography (CT) scan to obtain the baseline dystonic posture.

The techniques employed, Atlas Coccygeal Technique (ACT) and Applied Biostructural Therapy (ABT), are unique to the chiropractic profession.

These techniques were applied 3 to 5 times per week for the first several months. Initially, there was no observable or objective change in the patient's dystonic posture. The patient did feel subjective improvement. Based on this reported subjective improvement, the treatment regimen was continued. Visible improvement was not seen in the patient's posture until after 3 months of care. The patient and his family, however, reported substantial improvements several hours after the adjustments. These reports started in the first month of care. The patient was seen over a course of 7 months and had a total of 54 manipulative sessions.

The change in the patient's total spinal distortion was from 75° pretreatment to 25° degrees after specific chiropractic manipulative procedures

As with all single case studies, there are numerous limitations. Two obvious explanations for the substantial improvement seen in this patient include spontaneous recovery or a therapeutic response to the chiropractic manipulation described above. As already mentioned, however, spontaneous recovery in CD is unlikely, since it occurs in as little as 12% of the cases studied objectively.

The authors conclude, "Given the lack of adequate care for sufferers of CD, its profound affect on quality of life, and the substantial improvement seen in this case, collaborative research in a more controlled environment seems warranted."

Reference: Reduction of Cervical Dystonia after an extended course of chiropractic manipulation: a case report. J Manipulative Physiol Ther 2004; 27:421-6.

THE INFLUENCE OF SPINE AND TRUNK DEFORMITY ON SCOLIOSIS PATIENTS' HEALTH- RELATED QUALITY OF LIFE

Management recommendations for patients with idiopathic scoliosis during adolescence are based heavily on spine deformity and to some extent trunk deformity magnitude. However, the manner in which these objective measures influence the patients' perception of their condition is unclear. (Note; trunk deformity and spine deformity are two different things, with the former often being more obvious to patients).

The aim of this study was to determine whether either spine or trunk deformity measurements correlate with patients quality of life questionnaire responses.

Forty five pre-operative patients (5M, 40F), average age 15 years, 9 months met the following inclusion criteria -

- age (< or = 20 years),
- Posterior Trunk Symmetry Index (POTSI),
- Suzuki Hump Sum (SHS) determination from surface topography, and
- Quality of Life [Scoliosis Research Society-22 (SRS-22)] patient questionnaire completion.

Average measurement and measurement ranges were largest Cobb 62 degrees (range, 40-137 degrees), POTSI 49 (range, 17-149), SHS 16 (5-32), and SRS-22 subtotal score 3.86 (range, 4.7-2.35).

The individual SRS-22 domain scores were function 4.13, pain 4.01, self image 3.34 and mental health 4.01. (Scale 5 Best-1 Worst).

Spine deformity (Cobb) correlated with the SRS-22 subtotal scores with the function and self image SRS-22 domain scores.

Trunk deformity scores did not correlate with the SRS-22 Score.

The authors concluded, “Spine deformity correlates well with quality of life whereas trunk deformity magnitude does not. This is somewhat surprising as it is the trunk deformity that the patient can see. These findings illustrate the pitfalls of assuming what is important to the patient based on clinical measurements.”

Reference: Asher M, Lai SM, Burton D, Manna B. Spine deformity correlates better than trunk deformity with idiopathic scoliosis patients' quality of life questionnaire responses. *Stud Health Technol Inform* 2002; 91:462- 4.

IS HEALTH CARE'S EVIDENCE-BASE RELEVANT TO THE CARE OF INDIVIDUAL PATIENTS? A recent commentary, published in the *BMJ* (1), posed the following question,

“Evidence based medicine provides independent, validated advice about treatment options, but does it take sufficient account of individual patients' values to provide them with an optimal health outcome?”

The commentary's author, the chair of Australia's Breast Cancer Action Group, contends that clinicians tend to emphasize the rational, scientific, "objective" view of the world. Patients usually do not approach decision making on this basis. Although they make decisions based on evidence, they view this evidence through a filter that is based on their own individual values. These values are derived from their lifetime experiences. Thus the values that patients bring to a clinical situation may be very different from the values of their clinicians.

Lockwood observes that there is a vast literature on evidence-based choice, communicating evidence-based information, and ethical considerations of evidence. This literature seems to assume that, given the evidence in an understandable form, patients will make the same decisions as their clinicians. The author believes, however, that patients often have an entirely different view of the world, based on a different set of values to those espoused by evidence based medicine, and these values influence their decisions.

The author concludes that, 'Evidence based medicine has been a great boon for patients. It has provided independent, validated advice about treatment options. But, like all tools, it has its limitations. As individuals, we are all a mixture of our inclinations to know why things happen; in some cases these lead us to seek explanations through science, and sometimes we also use the deep seated cultural, philosophical, and spiritual parts of our being to understand the world. Evidence, as moderated by clinical expertise and filtered by our basic individual values, will be the basis of excellent health care.'

Reference: Lockwood S. "Evidence of me" in evidence based medicine? *BMJ* 2004; 329:1033-5.

LONG-TERM IMPACT OF PREVENTIVE PROACTIVITY ON QUALITY OF LIFE OF THE OLD

The authors of this study contend that, 'Only in recent years has emphasis shifted from focusing on vulnerability of aging to consideration of proactive adaptations that individuals can undertake well into late life to enhance their quality of life and ameliorate adverse stress effects.'

This research explored the long-term benefits of engaging in proactive health promotion efforts among the elderly. The authors examine how exercise, tobacco use, alcohol consumption, and regular health checkups influence mortality, morbidity, physical functioning, psychological well-being, and finding goals and meaning in life among a sample of elderly community dwelling adults (>75 years of age).

While there have been a number of studies that examined how these health-promoting behaviours relate to mortality, morbidity, and physical functioning, there has been limited research on how health-enhancing behaviours influence psychological well-being and other dimensions of quality of life beyond physical health.

Specifically, this study examined the contributions of exercise, tobacco use, moderate alcohol use, and annual health checkups to multidimensional quality of life indicators of physical health, psychological well-being, and mortality.

Data were obtained from a longitudinal study of adaptation to aging. Annual in-home interviews were conducted with 1,000 older adults over a 9-year period. Whether health promotion behaviours at baseline predicted quality of life outcomes 8 years later was examined, controlling for the baseline outcome, sociodemographic variables, and, as an additional test, baseline health conditions.

RESULTS

* **Exercise** was predictive of fewer instrumental activities of daily living (IADL), limitations and greater longevity, positive effect, and meaning in life 8 years later.

* **Avoiding tobacco** was predictive of longevity.

* Before controlling for health conditions, **exercise** predicted decreased risk of basic activities of daily living limitations and having more goals;

- **Moderate alcohol** use predicted longevity;
- **Annual health checkup** predicted more IADL limitations; and
- Having once **smoked** predicted having more IADL limitations and negative affect.

The authors conclude, "These results lend support to the long-term preventive value of health-promoting proactivity spontaneously engaged in by old persons."

Reference: Kahana E, Lawrence RH, Kahana B, Kercher K, Wisniewski A, Stoller E, Tobin J, Stange K. Long-term impact of preventive proactivity on quality of life of the old. *Psychosomatic Medicine* 2002; 64:382-94. <http://www.psychosomaticmedicine.org/cgi/content/full/64/3/382>

GOODBYE TO THE RETIREMENT HOME - LIVING ON CRUISE SHIPS IS COST EFFECTIVE FOR ELDERLY PEOPLE

Living on a cruise ship, as opposed to living in an assisted living facility, provides a better quality of life and is cost effective for elderly people who need help to live independently, according to a study published in the *Journal of the American Geriatrics Society* (2004; 52: 1-4).

Elderly people often choose assisted living facilities, nursing homes, 24 hours a day home caregivers, or family support. Living on a cruise ship might be a better choice, says Lee Lindquist, instructor of medicine at Northwestern University's Feinberg School of Medicine in Chicago.

People older than 65 who enjoy travel, have good cognitive function, but need some help in daily living are ideal candidates for care on a cruise ship. Such people might do better on a cruise ship, at a similar cost, even for many years. Dr Lindquist told the *BMJ* that she had accompanied her parents on a Caribbean cruise and saw that many passengers were just like her geriatric patients—some used walking frames, canes, or wheelchairs—but they enjoyed a better quality of life than patients in assisted living facilities.

"Many had taken 20 or 30 cruises over the past two years, almost every other week," she said.

Dr Lindquist compared the amenities and costs in assisted living facilities with accommodation on cruise ships, using a Markov analysis. Both cruise ships and assisted living facilities offer single room apartments with a private bathroom, a shower with easy access, some help, cable television, security services, and entertainment. Cruise ships, however, have superior health facilities - one

or more doctors, nurses available 24 hours a day, defibrillators, equipment for dealing with medical emergencies, and the ability to give intravenous fluids and antibiotics.

In the United States, an assisted living facility costs about \$2360 (£1290; €1850) a month or \$28 689 a year. A one month cruise in November in the Caribbean would cost \$2651. Living on board for the entire year would cost \$33 260. The authors calculate that the long term cost for a person to live on a cruise ship from the age of 80 until his or her death would be \$230 497 compared with \$228 075 for an assisted living facility.

Reference: Hopkins Tanne J. Living on cruise ships is cost effective for elderly people. *BMJ* 2004;329:1065.

PATIENT SATISFACTION WITH INTERPERSONAL AND TECHNICAL ASPECTS OF CARE IS STRONGLY AND POSITIVELY ASSOCIATED WITH OVERALL OUTCOME

The objective of this study was to determine what aspects of patient satisfaction are most important in explaining the variance in patients' overall experience and to evaluate the relationship between experience of care and subsequent outcomes.

Data from a population-based survey of 804 randomly selected injured workers in Washington State filing a workers' compensation claim between November 1999 and February 2000 were combined with insurance claims data indicating whether survey respondents were receiving disability compensation payments for being out of work at 6 or 12 months after claim filing.

The authors conducted a two-step analysis. In the first step, they tested a multiple linear regression model to assess the relationship of satisfaction measures to patients' overall treatment experience. In the second step, they used logistic regression to assess the relationship of treatment experience to subsequent outcomes.

The results suggest that, among injured workers who had ongoing follow-up care after their initial treatment (n = 681), **satisfaction with interpersonal and technical aspects of care** was strongly and positively associated with overall treatment experience (p < 0.001). As a group, the satisfaction measures explained 38 percent of the variance in treatment experience after controlling for demographics, satisfaction with medical care prior to injury, job satisfaction, type of injury, and provider type.

Reference: Wickizer TM, Franklin G, Fulton-Kehoe D, Turner JA, Mootz R, Smith-Weller T. Patient satisfaction, treatment experience, and disability outcomes in a population-based cohort of injured workers in Washington State: implications for quality improvement. *Health Serv Res.* 2004;39:727-48.

CERVICAL KYPHOSIS IN A PATIENT WITH ATTENTION-DEFICIT/HYPERACTIVITY DISORDER - A CASE STUDY

A 5-year-old boy was diagnosed with ADHD at age 2 by a medical doctor. He had been treated unsuccessfully with pharmaceuticals during that 3-year period. From his case history, it was noted that there were complications during his delivery process. During a prolonged and stressful labour for both the mother and baby, amniotic fluid had to be aspirated from the child, which ultimately led to a 4-day stay in the neonatal intensive care unit. This could have led to a hypoxic state, which has been implicated as a possible cause of ADHD.

The initial chief complaints were ADHD, tics, and behavioural issues. From age 2 to the time of chiropractic intervention at age 5, the patient's medical treatment consisted of Ritalin, Adderall (Ortho-McNeil Pharmaceuticals, Raritan, NJ), and Haldol (Shire Pharmaceuticals, New Port, Ky). These treatments provided little to no relief of the initial complaints. The parents noted that the facial tics began shortly after the introduction of the Ritalin. During the 3-year period, the medical doctor discontinued the use of Ritalin on a few occasions, although the tics never stopped. The

general practitioner who diagnosed the ADHD used the common ADHD checklist for diagnostic confirmation.

Physical examination findings consisted of a significant right lateral head to thorax shift, anterior weight bearing of the head to thorax, observed limited range of motion in both the cervical and thoracolumbar areas without pain, and palpable muscle spasms paraspinally from T2 up to the base of the occiput, as well as pain and tenderness on palpation of the C1 and occipital region bilaterally.

Radiographic studies showed a reversal of the cervical lordosis, a cervical kyphosis measuring at a 12° angle between posterior body tangents drawn on C2 and C7 (Harrison method of cervical analysis). This can be described as 127% loss of normal cervical lordosis. The Atlas Plane Line angle, measured as the plane of the ring of atlas compared with horizontal, on the lateral cervical was only 8°, whereas a normal value for this angle is 29°. The primary diagnosis was multiple abnormal postural permutations (subluxation), with acquired neck deformity, associated muscle spasms, and neck pain.

The patient received 35 chiropractic treatments during the course of 8 weeks. A change from a 12° C2-7 kyphosis to a 32° C2-7 lordosis was observed after treatment. During chiropractic care, the child's facial tics resolved and his behaviour vastly improved. After 27 chiropractic visits, the child's paediatrician stated that the child no longer exhibited symptoms of ADHD. The changes in structure and function may be related to the correction of cervical kyphosis.

The authors conclude, "This case study shows that spinal correction using the CBP approach may have effects much greater than relief of musculoskeletal conditions. Altered spinal biomechanics associated with abnormal posture clearly relate to significant neurological stress and malfunction. This is particularly evident when considering the effects on the brainstem and the autonomic nervous system. Thus, even in obscure cases with systemic, organic, or chemical dysfunction like ADHD, we suggest optimal spine equals optimal health."

Reference: Bastecki AV, Harrison DE, Haas JW. Cervical kyphosis is a possible link to attention-deficit/hyperactivity disorder. *J Manipulative Physiol Ther.* 2004;27:e14.