

# THE CHIROPRACTIC REPORT

Editor: David Chapman-Smith LL.B. (Hons.)

September 1997 Vol. 11 No. 5



## PROFESSIONAL NOTES

### Cervicogenic Headache - An Important New RCT

Nilsson N, Christensen HW, Hartvigsen J, *The Effect of Spinal Manipulation in the Treatment of Cervicogenic Headache*, J Manipulative Physiol Ther 1997; 20:326-330.

This new randomized controlled trial by chiropractic and medical researchers from the University of Odense, Denmark, presented at the Tokyo World Chiropractic Congress in June and discussed in the July issue of this Report, has now been published in JMPT. It is probably the most important chiropractic trial reported this year because:

- It is well-designed and scientifically strong. The treatment group (n 28) received high-velocity, low-amplitude cervical manipulation twice a week for 3 weeks. The control group (n 25) received low-level laser in the upper cervical region and deep friction massage including trigger points in the lower cervical/upper thoracic region, also twice a week for 3 weeks.
- It reports chiropractic manipulation has significant success in the management of patients with cervicogenic headache - specifically "a significant positive effect in reducing hours with headache, and intensity of headache, and analgesic consumption."

continued on page 5

## THE ROLE OF SUBLUXATION IN CHIROPRACTIC

### A. INTRODUCTION

The concept of subluxation, the spinal lesion that is a central focus of chiropractic theory and practice, is embedded in the history and psyche of the chiropractic profession. It "goes beyond metaphor; it is at the heart of chiropractic", says Dr. Dana Lawrence of the National College of Chiropractic, Chicago, and for many chiropractors is "what gives the profession meaning and identity."<sup>1</sup>

This means that to engage in critical analysis of the role of subluxation is to tread on dangerous if not sacred ground. There is much emotion. However the concept of subluxation needs critical analysis. It has a highly contentious history, many conflicting definitions and, in the words of Dr. Gerard Clum, President, Life Chiropractic College West, San Lorenzo, for chiropractors has been "our greatest strength as well as our most divisive weakness."<sup>1</sup>

And in a world where all providers must increasingly work in partnership with each other and their mutual patients, the terms *chiropractic subluxation* and *medical subluxation* have completely different and contradictory meanings. The former is best treated by chiropractic adjustment or manipulation, the latter generally involves joint instability and is a contraindication to manipulation. The former, essentially a functional or dynamic lesion, is not usually visible on static x-ray, the latter - by definition - always is.

This is all very confusing for anyone making a decision on whether or not to consult a chiropractor. It is also the fundamental reason why many medical doctors express doubts about the validity of chiropractic.

This can be illustrated from a column in the June 1997 issue of the *Connecticut Medical Journal* by a Dr. Chotkowski, a medical columnist who recently visited New York College of Chiropractic and

explained who he was to the Dean. He admitted to bias, explained he thought that "despite surgery, autopsy, and sophisticated imaging .... chiropractic in over 100 years had failed to demonstrate .... spinal vertebral subluxation .... or what is supposedly being adjusted", and asked for an explanation.

The Dean, reasonably enough from his chiropractic point of view, explained that "the vertebral subluxation is not an anatomical lesion, it is a dynamic lesion". He spent time with his guest, took him through the library, and referred him to texts such as Haldeman's *Principles and Practice of Chiropractic*.<sup>2</sup> However, Dr. Chotkowski concluded, and reports to his medical colleagues in the journal, that "there is clearly no satisfactory evidence of such an entity" as chiropractic subluxation and that the basis of chiropractic is a "hoax".

The point of this tale is not who is right and wrong - the point is the complete communication gap when two people use a word which has a totally different meaning for each of them. From the point of view of sheer communication how much better it would have been if this critic, who did make the effort to visit a chiropractic college, was told to forget the concept of subluxation and think in terms of a joint dysfunction that activated nerve receptors in the joint capsules and surrounding tissues, and that could be corrected by skilled introduction of motion into the joint to restore normal ranges of motion.

2. Fresh light on these issues comes from an excellent new monograph from the Foundation of Chiropractic Education and Research (FCER) titled *The Role of Subluxation in Chiropractic*<sup>1</sup> and written by Anthony Rosner PhD, FCER Director of Research. The above quotes from Lawrence and Clum come from introductions to this monograph. It provides a well-researched survey of the

history and development of the chiropractic subluxation and the clinical and scientific evidence in support. It also raises - but walking very carefully does not directly answer - many questions such as:

- a) What is the role of subluxation in chiropractic?
- b) How is the concept best defined? Is there a contemporary definition that is wide enough to be acceptable to the profession, yet specific enough to have useful meaning?
- c) Is chiropractic subluxation, as defined, unique to chiropractic? How exactly is it different from the osteopathic concepts of osteopathic lesion and somatic dysfunction, and the medical concepts of spinal blockage and subluxation?
- d) Does subluxation help to keep the chiropractic profession distinct and separate?
- e) What are the strengths and weaknesses of using the concept to communicate with others - patients, other professionals, the public generally - from their perspectives as well as that of the chiropractor?

In a world where ophthalmologists now use the title eye surgeon and otolaryngologists the title ear nose and throat specialists so people know what they do, and successful attorneys draft agreements in plain language that their clients can actually understand, should chiropractors be using the word subluxation - a complex technical term that also means different things to different people - to explain what they are doing?

This issue of the Report reviews the new FCER monograph then addresses these questions.

## B. THE FCER MONOGRAPH

3. The complete work is available from FCER and ordering information is given in Figure 1. This book:

a) Reviews the medical origins of the concept subluxation (Greek: *sub* and *lux* - "less than a dislocation"). In 1746 Hieronymous described a subluxation as "lessened motion of the joints, by slight change in position of the articulating bones."

In the early 19th century British physicians Edward Harrison and William Griffin wrote of "a local derangement of nerves" in subluxation which led to both musculoskeletal and visceral symptoms,

"nervous symptoms which are as obscure in their origin as they are stubborn in their nature".

- b) Describes the subsequent evolution of the term in chiropractic and in medicine. This is what makes the word subluxation so complex today. In short:
  - i) D.D. Palmer, when he founded the chiropractic profession in the 1890s, adopted the concept as defined by Harrison, who practised manipulation. The chiropractic subluxation has remained a lesion or clinical finding based on restricted joint motion and its neurological consequences. Structural change or misalignment is minor. Subluxation is assessed manually, by palpation, and corrected by introducing motion into the joint - typically by chiropractic adjustment or manipulation.
  - ii) In medicine, subluxation has now become a more gross purely orthopedic lesion. By definition it involves a significant separation of joint surfaces, though still less than a complete dislocation, and is always visible on x-ray. This means the medically trained radiologist is automatically confused and suspicious about the reality of chiropractic subluxation, which is a functional problem usually as invisible on x-ray as other functional problems such as a limp or headache. (This problem was compounded in the US by the medically-driven government Medicare requirement - now gone - that payment for chiropractic services was contingent upon demonstration of subluxation on x-ray).

Additional complexity and confusion as already mentioned, comes from the fact that a medical subluxation is generally a contraindication for manipulation because it involves joint hypomobility and/or instability.

- c) Reviews the scientific evidence documenting:
  - i) The basic components of subluxation (e.g. animal experiments showing physiological changes - such as decreased arterial pressure and nerve blood flow - in response to experimentally induced spinal lesions).
  - ii) Methods of assessment or diagnosis of subluxation (e.g. palpation, functional radiography).
  - iii) Relief of subluxation and associated symptoms under chiropractic management (e.g. musculoskeletal and non-musculoskeletal responses to manipulation).

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- d) Presents a thought-provoking comparison from osteopathy. Michael Patterson PhD, Professor of Osteopathic Principles and Practice, University of Health Sciences, Kansas City, contributes a substantial review of the osteopathic lesion, now known as somatic dysfunction, and the osteopathic research in support. This summarizes evidence more fully presented in the recent text *Foundations for Osteopathic Medicine*<sup>3</sup>, and suggests to the objective

### Figure 1

#### FCER Monograph - How to Order

Price: US \$24.45 plus shipping. (USA \$4.50, Canada \$8.50). VISA and MasterCard accepted.

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reader that the chiropractic subluxation and the osteopathic lesion have much common ground.

### C. CHIROPRACTIC SUBLUXATION - DEFINITIONS

4. Two authoritative contemporary definitions of chiropractic subluxation are given in the FCER monograph.

a) A 1994 Consensus Definition.

**A motion segment in which alignment, movement integrity, and/or physiological function are altered, although contact between the joint surfaces remains intact.**

This is the working definition used in the FCER monograph. It comes from a formal consensus process involving a representative group of chiropractic clinicians, educators and researchers, and was published in the *Journal of Manipulative and Physiological Therapeutics* (JMPT) in 1994.<sup>4</sup> It maintains the link between subluxation and a specific joint (motion segment).

b) ACC Definition

**A complex of functional and/or structural and/or pathological changes that compromise neural integrity and may influence organ systems function and general health. A subluxation is evaluated, diagnosed and managed through the use of chiropractic procedures based on the best available rational and empirical evidence.**

This definition was developed by the Association of Chiropractic Colleges in July 1996, with the support of all North American chiropractic college presidents. It is much wider, and is not limited to joint disorders. Under this definition muscle dysfunction or psychological distress or anything else functional or structural that might compromise "neural integrity" and general health falls within the broad concept of subluxation.

This definition is a reflection of the evolution of chiropractic education and practice. It is an attempt to keep the wider and changing scope of chiropractic linked to the root concept of subluxation.

Is this necessary or wise? Does such an effort - and the very wide and general definition it necessarily produces - strengthen or in fact weaken the concept of subluxation?

### 5. Vertebral Subluxation Complex.

The ACC definition is not a major new step. For the past 20 years chiropractors in North America and Europe have developed the related concept of vertebral subluxation complex (VSC) in order to, as Rosner and the FCER say, "allow a broader field of chiropractic clinical management to be incorporated into the single conceptual model" of subluxation.

Those who originally expanded the subluxation to the VSC wanted to embrace new knowledge and the holistic nature of the human body within subluxation. Gillet in Belgium, Faye in Canada, and Dishman in the US, created a 5-component model of VSC. These components were:

- Neurological response
- Inflammatory response
- Cartilage degeneration
- Connective tissue pathology
- Vascular abnormalities

A recent model of VSC, from Charles Lantz DC PhD, Director of Research, Life West, has restoration of joint motion as its foundation, but in relation to 5 tissue components:

- Myologic tissue - since muscles affect movement
- Connective tissue - since these tissues guide, limit and stabilize movement
- Vascular tissues - influencing nutrition, cleansing and inflammation for all tissues involved in movement.
- Neurological tissues - providing communication in the tissues involved in movement.
- Lymphatic tissue - providing linkage to the immune system.

6. All of this provokes the question - why is it that some chiropractors want to pack all of their knowledge, expertise, clinical services, and view of human health into the single concept of subluxation with the result, as in the new ACC definition, that a term with Greek roots specifically referring to a joint condition now no longer refers to joints?

The answer, as indicated by Lawrence and Clum, is apparently that some in the profession continue to see subluxation as "what gives the profession meaning and identity" and that this concept "is synonymous with chiropractic." It has fundamental importance to keeping chiropractic a distinct and separate profession. Does it?

### D WHAT MAKES A PROFESSION DISTINCT

7. A health profession is not distinct because of a clinical entity it corrects or treats, or the name it gives to that. Everything done by a midwife is done by someone in the medical profession, everything done by a nurse or an optometrist or a psychologist is done by medical practitioners. Yet midwifery, nursing, optometry and psychology are separate and distinct professions.

Distinctness and identity, for these professions and for chiropractic, come from three things in the following order of importance:

- a) The name of the profession - in the present instance chiropractic.
- b) Its education - no other professional has the same training as a chiropractor.
- c) Management and treatment approaches arising from that education - no other professional has the same mixture of philosophy and diagnostic and management skills.

In summary, the heart of chiropractic is 'chiropractic' not 'subluxation'. That title is now established and protected by law around the world. Chiropractic is distinct and separate. The continuing basis of that identity is its education and the sole right of persons with that education to practise chiropractic. Distinctness does not come from:

- a) The chiropractic view of subluxation. Others have very similar concepts. The FCER monograph quotes this definition of the lesion treated by osteopaths, now known as somatic dysfunction.

*"Somatic Dysfunction:* Impaired or altered function of related components of the somatic (body framework) system: skeletal, arthrodiar, and myofascial structures, and related vascular, lymphatic and neural elements. Somatic dysfunction is treatable using osteopathic manipulative treatment. The positional and motion aspects of somatic dysfunction are best described using at least one of three parameters: 1. The position of a body part as determined by palpation and referenced to its adjacent defined structure. 2. The directions in which motion is freer. 3. The directions in which motion is restricted.<sup>4</sup>

Compare that definition from the US Educational Council on Osteopathic Principles with the new ACC definition of chiropractic subluxation and with definitions of the VSC. You may agree

that to people who are not chiropractors or osteopaths these definitions seem to be broad, vague, of unclear meaning, but somewhat the same.

b) Philosophy or science. These also do not guarantee a separate identity. As developed by each profession they become a gift to and the property of all human kind. Others can incorporate them into their approaches to healing. As Rosner explains, the foundations of chiropractic theory already existed in the practice and writings of medical authors from Greek times. As the section in the FCER monograph by Patterson shows, osteopathy as practised by a minority of that profession in the US and by all osteopaths elsewhere in the world has a very similar philosophical basis to chiropractic. Many other healing arts are based on holism and homeostasis. Everything important discovered and used by chiropractors is now being adopted by others. How distinct can your philosophy or science be from the European school of manual medicine when that movement was founded on the teachings of early chiropractors?

In summary, important as subluxation may be, it is not synonymous with chiropractic and there is no compelling reason to try to keep the evolving profession within the confines of that single concept. Indeed, as discussed below, to do so severely limits the potential and credibility of the profession.

## E. SUBLUXATION - ITS BENEFITS AND LIMITATIONS

8. **Benefits.** The principal benefit of the concept of subluxation in chiropractic today, it is suggested, is *internal* and relates to continuing unity, especially at a time when chiropractic students worldwide are attending new schools in their own countries instead of travelling to North America, England and Australia. The concept of subluxation has provided a unifying common core for chiropractic theory, education and practice for 100 years, and has continued validity in this important role because:

a) Whatever the differences of opinion about its exact definition, chiropractic subluxation has always combined two core elements - altered joint ranges of motion and related physiological changes, primarily through the nervous system.

On this traditional and uncomplicated basis, the concept provides a basic foundation for understanding chiropractic and its role in the wider health care system. Spinal joint dysfunction is not merely a mechanical difficulty that can produce pain at the affected joint. It is a disturbance to the body's natural healing powers or homeostasis, because of sustained abnormal reflex effects in the nervous system at spinal and supraspinal levels. Accordingly joint dysfunction, understood as vertebral subluxation, may have wider, more complex and more subtle consequences including:

- Biomechanical compensations and subluxation elsewhere in the spine and pelvis.
- Referred pain throughout the soma and viscera that mimics many other disorders.
- General health effects because of the restricted capacity of the nervous system to perform its full regulatory functions.

b) The term subluxation now has the historical and emotional appeal of an established technical term of art - each profession has these and, though they are difficult for outsiders to understand, internally they add a measure of community and identity.

Thus the concept has undiminished theoretical or philosophical value within the profession if defined traditionally - as for ex-

ample in the 1994 consensus definition given in paragraph 4(a). But what about communications to the outside world?

## 9. Limitations.

a) **External Communications.** In a world where chiropractic, largely because of its now documented successes with patients with back pain and headache, is being thrust into mainstream acceptance but will have to work harder than in the past to remain the leader in the manipulative arts, the word subluxation has two major problems when chiropractors communicate with others.

Firstly it is a complex term of art on which chiropractors themselves cannot establish an agreed meaning. "The term has grown to have myriad meanings", says Lawrence "and few terms have so contentious a history."<sup>1</sup> So contentious that, as Gatterman explains, "greater than 100 terms have been proposed to replace the chiropractic subluxation."<sup>1</sup> Assume you are a government health services researcher trying to understand the concept of subluxation for the first time, and go back and read the two recent definitions given in the FCER monograph (para 4). Which definition should you accept - and what do they mean anyway?

Secondly the medical profession has a completely different and contradictory definition of subluxation. Medically, no one should manipulate a subluxation.

Any professional in the world of communications will confirm that you should avoid inflicting your term of art on others in these circumstances - and choose other meaningful common language.

This may be illustrated by a patient with cervicogenic headache (head pain referred from the cervical spine). At the point that he is told by his chiropractor that the cause is a cervical subluxation there is no difficulty. But when he quietly seeks a second opinion from his family physician, as many patients do, or the chiropractor writes a consultation note to that physician, there is a major difficulty - the physician will explain that, whatever the chiropractor may be thinking, one thing is clear - there is no subluxation. Medically he is correct. How much better it is from everyone's perspective if the patient is told he has - and his physician subsequently refers other patients with - a joint restriction aggravating nerves in the facet joint capsules and referring pain to the upper neck and head. Everyone can understand this and see the role of skilled palpation and chiropractic manipulation in diagnosing and correcting the problem.

Next consider children with chronic recurring otitis media. If it is true, as seems to be the case, that some of these children are greatly helped by chiropractic management, chiropractors will not get far by saying that the cause of the problem is subluxation. However if they talk about joint and muscle restrictions; the precise neurophysiological effects of this; the effect of these on the diameter and inclination of the Eustachian tubes; and the impact of that on drainage and recurring infection, patients and other professions can understand and share in the excitement.

b) **Scope.** Some chiropractors try to fit all evolving chiropractic theory and practice into the one concept of subluxation. That seems to be the goal of creating the vertebral subluxation complex and, in an educational context, the goal of the new ACC definition.

It is suggested that this is unrealistic and actually weakens a concept which, both according to traditional chiropractic thinking and its Greek roots or etymology, should remain linked to joints.

Chiropractic, like every other science, learns and absorbs from many other disciplines and is evolving. Consider the following examples of logical and accepted branches of the contemporary scope of chiropractic practice that cannot be placed within the definition of subluxation unless that term becomes so wide it is essentially meaningless.

i) *Muscle Rehabilitation.* The prescription of exercises to improve muscle balance, strength and flexibility - whether to a chronic low-back pain patient or, as 100 metre world record holder Donovan Bailey announced in July before the world championships, to an elite athlete for quadriceps and hamstring stiffness.

ii) *Industrial Consulting.* Advising a manufacturer or other business on workplace design and other ergonomic factors that place workers at risk of injury.

iii) *Dietary Advice.* For example as part of conservative primary management of patients with osteoporosis.

Chiropractors active in these areas will usually also provide ad-justive care, and in these situations it will make sense to them as chiropractors to have some conceptual link between their core training, chiropractic subluxation and the services provided, but to others this linkage is unnecessary, confusing and unhelpful.

c) *Credibility.* Any profession which is perceived as explaining the variety of human ailments presented to it in terms of one cause and/or one cure will be seen by others as lacking credibility.

Take the example of back pain. We know that patients with chronic low-back pain have a multifactorial biopsychosocial problem. They may need correction of what chiropractors call subluxation. They will often need muscle rehabilitation or conditioning. Work factors - job satisfaction, work tasks and availability of modified work - will be relevant to many. Some may need psychological counselling. To be perceived as reducing this all to the concept of subluxation is frankly alienating and unbelievable to the outside world.

## F. CONCLUSION

10. In summary, the next generation of students and chiropractors, like those before them, should share the same core understanding of subluxation as the founders of the profession. But they should appreciate both the strength and the limitations of the concept in the second century of chiropractic. Specifically the role of subluxation is that:

- It should be used within the profession to help provide a common historical, educational and clinical foundation.
- It should remain a pathophysiological concept specifically linked to joints, and should not be expanded in an effort to incorporate or contain the whole scope of chiropractic.
- For reasons given it should not be the primary concept by which chiropractors explain their various diagnostic findings and management strategies to patients and all others in the health care system.

To illustrate the final point here is an interesting lesson from osteopathy as explained by Patterson in the FCER monograph.

"In about 1960, with growing acceptance of the osteopathic profession in American medical structures, there developed increasing concern over the term *osteopathic lesion*. To the outside world, the phrase meant little. Despite the fact that the term

had a tremendously rich clinical and research history and support, it was not accepted by outside entities. Ira Rumney DO coined the term *somatic dysfunction* to replace the term osteopathic lesion. The new term was more palatable to governmental and insurance agencies who were paying for treatment of the osteopathic lesion. The term became widespread in the profession and was officially adopted as the term for the former osteopathic lesion in the mid 1960s."<sup>1</sup>

Like osteopathy, chiropractic now has an era of growing acceptance within mainstream health care and, to fulfil its potential and reach many patients previously denied chiropractic care, must think much more seriously about effective communication.

The bottom line is that the purpose of language is to facilitate communication, not to frustrate it. It is completely rational and sensible for chiropractors to speak to themselves of subluxation but to others of joint dysfunction and its effects through the nervous system. Every profession does this - attorneys, confronted with auto accident victims seeking professional advice, talk to themselves about the legal principles of tort, contributory negligence and *res ipsa loquitur*, but to clients about who was wrong and what happened.

I hear someone saying that osteopathy in North America lost its identity in the mid 1960s. This is true, but for an unrelated reason - one, however, that provides another lesson for chiropractic. Osteopathy lost its identity because it completely changed its educational basis to mimic allopathic medicine and incorporate the use of drugs and surgery. As long as chiropractic keeps its name, its philosophy, its traditional education and scope of practice and its prime focus on the nervous system, it will be separate and strong - whatever names it gives to the clinical entities chiropractors manage. TCR

## REFERENCES

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- 2 *Principles and Practice of Chiropractic* (1992) 2nd edition, ed Haldeman S, Appleton and Lange, Norwalk, Connecticut.
- 3 Foundation for Osteopathic Medicine (1996), ed Ward RC, Williams & Wilkins, Maryland and Baltimore.
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## Professional Notes: continued from page 1

- Cervicogenic headache, where the cause of the head pain is in the structures of the cervical spine, is a highly prevalent form of headache. The literature, reviewed in this trial, shows that at any one time 16% of the population suffers from headache (i.e. a point prevalence of 16%) and 15-20% of all recurrent headaches are cervicogenic headache as medically defined by the International Headache Society. This means that the point prevalence in the general population is approximately 3%.

Cervicogenic headache was only first formally recognized and classified by medicine in 1988. The relatively narrow IHS definition, which was the one adopted in the Danish trial, is headache with the following findings on physical examination:

- A. Pain localized to neck and occipital region. May project to forehead, orbital region, temples, vertex, or ears.
- B. Pain is precipitated or aggravated by special neck movements or sustained neck posture.

- C. At least one of the following occurs:
1. Resistance to or limitation of passive neck movements.
  2. Changes in neck muscle contour, texture, tone, or response to active and passive stretching and contraction.
  3. Abnormal tenderness of neck muscles.

The North American Cervicogenic Headache Society adopts the wider definition of "referred pain perceived in any region of the head caused by a primary nociceptive source in the musculoskeletal tissues innervated by cervical nerves."

**Patient Satisfaction - Another Strong Study**

Verhoef MJ, Page SA, Waddell SC, *The Chiropractic Outcome Study: Pain, Functional Ability and Satisfaction with Care*, J Manipulative Physiol Ther 1997, 20(4):235-240.

There is a good body of evidence showing high patient satisfaction with chiropractic care. To quote the Manga Report, a government commissioned study by health economists in Canada in 1993 relating specifically to chiropractic management of patients with back pain, "there is good empirical evidence that patients are very satisfied with chiropractic management of low-back pain and considerably less satisfied with physician management. Patient satisfaction is an important health outcome indicator and adds further weight to the clinical and health economic results favouring chiropractic management of low-back pain."

Here is a new patient satisfaction study from Canada which is important evidence because:

- a) The principal researcher is an independent scientist, Marja Verhoef PhD from the Department of Community and Health Sciences, University of Calgary, Alberta.
- b) Patient numbers are good - the study involves 369 patients in 13 chiropractic practices in the Province of Alberta, Canada.
- c) This is the first study which simultaneously measures both

patient satisfaction and clinical improvement - pain relief and improved functional status.

- d) It includes both back and neck pain patients.
- e) The findings are most positive, namely:

"Based on the results of this survey, it seems that patients suffering from back and/or neck complaints experience chiropractic care as an effective means of resolving or ameliorating pain and functional impairments. Moreover, the patients surveyed demonstrated a high degree of satisfaction with the care they received. Numerous other studies have demonstrated that chiropractic is as effective as, if not more effective than, conventional medical management of such complaints ..... With these findings in mind, it seems that steps should be taken to integrate chiropractic services more fully into the current health care delivery system."

Inclusion criteria for the study were that patients had back and/or neck problems and were either first time chiropractic patients or had not consulted a chiropractor for the previous six months. The outcome measures used, with measurement at entry and after six weeks of care, were:

- **Pain** - 100 mm Visual Analogue Scale
- **Functional Abilities** - Revised Oswestry Low Back-Pain Disability Questionnaire and the Neck Disability Index.
- **Patient satisfaction** - the 32 item questionnaire developed by Sawyer and Kassak and used by them in an earlier chiropractic study. This measured satisfaction in terms of general satisfaction, access to the doctor, finance, and conduct of the doctor.

The lowest measure of satisfaction - though still generally positive - related to financial aspects. There is a significant user fee or patient co-payment in Alberta, Canada, where medical services are fully reimbursed by government but chiropractic services are only partly reimbursed. The researchers note that "a number of patients discontinued care although their conditions weren't resolved because they could no longer afford the costs."

**New Books of Interest**

Three excellent new chiropractic texts published by Mosby that will be of particular interest to practising chiropractors are:

- *The Portable Skeletal X-Ray Library*, Deltoff MN and Kogon PL (1998, Mosby 371 pp. US\$67.95). The authors are Canadian chiropractic radiologists. Their goal has been to provide an authoritative quick reference guide (pictures and descriptions) to conditions commonly presented in practice, described in a manner that clinicians can understand. As many expert testimonials on the back cover agree, this goal is achieved beautifully - a complex subject made clear.
- *Mechanically Assisted Manual Techniques: Distraction Procedures*, Bergmann TF and Davis PT (1998, Mosby 270 pp, US\$82.00). Dr. Tom Bergmann, principal editor of the leading text *Chiropractic Technique*, serves up another major text. This, a collaboration with his Northwestern College associate Dr. Tom Davis, has a specialty focus on traction-distraction tables and procedures - the history and contemporary status of ideas, equipment and technique. It is your unbiased expert guide to the various tables and other equipment available, and illustrates best techniques for their use - traction-distraction, thrust, and adjunctive. Impressive.
- *Activator Methods Chiropractic Technique*, Fuhr AW et al (1997, Mosby 460 pp, US\$76.95). This gives the history and current state of Activator Methods. By the founder of this widely used system of techniques, Dr. Arlan Fuhr, and co-authors Dr. John Green, Palmer College, Dr. Christopher Colloca, New York (private practice), and Dr. Tony Keller, Director, Biomedical Engineering Program, University of Vermont.

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Elsewhere	1 year	US\$ 85.00	<input type="checkbox"/>
	2 years	US\$165.00	<input type="checkbox"/>
Quebec: • French	1 year	\$ 80.00	<input type="checkbox"/>
• English	1 year	\$ 80.00	<input type="checkbox"/>
• Fr. & Eng	1 year	\$110.00	<input type="checkbox"/>
Name _____			
Address _____			
City _____		State/Prov _____	
Country _____		Postal Code/Zip _____	
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