The Chiropractic Report

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Professional Notes

The Best Model for the Profession – 7 Criteria and a Solution

As individual chiropractors immerse themselves in their important daily work, in practice, in academia, and research, it is often difficult to see the larger picture. Where did chiropractic stand in the health care world 10 and 25 years ago, where does it stand now, and what are its strengths and weaknesses as it moves towards a larger role in mainstream health care throughout the world?

In the last issue of this Report (July 2005) the main article addressed the identity of the profession recommended by the World Federation of Chiropractic (WFC) after a broad-based two-year consultation – the spinal health care experts in the mainstream health care system – and the reasons for that.

Just as that last issue went to press, another major analysis of the profession's status and identity was published – *Chiropractic as Spine Care: A Model for the Profession* by Nelson, Lawrence, Triano et al. This was in the July issue of Chiropractic and Osteopathy, published

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Non-Musculoskeletal Responses to Chiropractic Care

New Multination Study Confirms Data from Sweden

A. Introduction

MOST PATIENTS FIRST CONsult chiropractors for musculoskeletal pain, the majority for back pain or neck pain or headache, and these core areas of chiropractic practice are now well supported by research evidence.

Until the last decade, however, there has been little research documenting the nature and frequency of non-musculoskeletal benefits following chiropractic treatment. There were a number of case reports and case series – Browning reported 10 cases of improved gynecological/bowel function from his US chiropractic practice,[1] the Australian ophthalmologist Gorman, working with chiropractors, reported on 18 cases where visual field loss was restored following spinal manipulation, [2] and in the Czech Republic Lewit reported relief from chronic recurring tonsillitis in 37 children given manipulation for upper cervical spine dysfunction. [3]

Fitz-Ritson in Canada and Bracher in Brazil respectively reported excellent results from chiropractic management of 112 and 16 patients with vertigo secondary to cervical spine subluxation/dysfunction.[4,5] However until recent years, there have been no broader data on chiropractic patients generally.

2. The first comprehensive multicenter study of non-musculoskeletal benefits following chiropractic care was from Sweden.[6] Published in 1999, and with data from 1504 patients and 87 members of the Swedish Chiropractors' Association, it reported that:

• About 1 in 4 (23%) of adult patients consulting chiropractors for musculoskeletal conditions experienced positive non-musculoskeletal benefits after chiropractic adjustment/manipulation.

• Positive benefits reported were most commonly respiratory disorders (26%), digestive disorders (25%), cardiac/circulatory problems (14%) and visual disturbances (14%).

• There was a positive dose-response gradient. Patients treated in more than one spinal region reported more non-musculoskeletal benefits - of those patients treated in one spinal area 15% had a non-musculoskeletal benefit, in two spinal areas 22%, in three spinal areas 32% and in four spinal areas 35%.

This well-designed study, led by the prominent Danish researcher Charlotte Leboeuf-Yde, DC MPH PhD, provided better documentation of the type of anecdotal results reported daily by chiropractors and their patients. Because of the positive dose-response relationship it suggested that the more frequent non-musculoskeletal improvements were in fact related to the chiropractic care given, rather than chance fluctuations, and through physiological as well as psychological mechanisms. However it did not prove that. Leboeuf-Yde, Axen et al. called for further studies to challenge or confirm their results, to be followed by controlled trials in areas of most promise.

3. That challenge was answered by the World Federation of Chiropractic (WFC). Assisted by its member national associations, and with funding from the US malpractice insurance company NCMIC Insurance, the WFC commissioned Leboeuf-Yde to conduct a similar study with larger patient numbers in seven countries outside Europe – Australia, Canada, Hong Kong – SAR China, Japan, Mexico, South Africa and the USA.

This new multination study, [7] now published in the June 2005 issue of the *Journal of Manipulative and Physiological Therapeutics (JMPT)*, largely reproduces the results of the Swedish study. In particular, across several countries and cultures:

a) Most common positive non-musculoskeletal improvements were for respiratory disorders (27% of patients with such disorders), digestive disorders (26%) and circulatory problems (21%).

b) There was a positive correlation between dose and response. Those receiving more care reported more improvement.

4. This issue of *The Chiropractic Report* reviews these two studies and their significance. It is suggested that, although much remains to be understood and proven in the relationship between spinal disorders, pain, stress and visceral function, there is now sufficient basic science and clinical evidence to make medical and chiropractic co-management important for many patients diagnosed medically as having digestive, respiratory, cardiac and other disorders.

With respect to stable angina pectoris (AP), for example, Christensen, Vach et al., chiropractic and medical researchers from the University of Southern Denmark:

• Note that up to 30% of patients investigated by medical specialists for chest pain have normal coronary anatomy, and that about 75% of these patients continue to have residual chest pain despite best medical care – with large socioeconomic consequences.

• Describe a chiropractic diagnostic protocol under which approximately 1 in 5 (18%) of patients with AP can have cervicothoracic angina (referred pain from the spine, amenable to chiropractic treatment) diagnosed successfully. Diagnostic methods include a systematic history, physical examination and manual palpation as described in their paper.

The University of Southern Denmark has faculties of chiropractic and medicine, graduates from both doing clinical research together, and teaching hospitals where appropriate patients diagnosed medically with AP will now benefit from chiropractic screening and care – to differentially diagnose and manage chest pain that is referred from the cervicothoracic spine, and is only mimicking or aggravating cardiac pain.

B. The Swedish Study[6]

5. **Goal and Methods.** The goal was to perform a national survey of chiropractic patients with musculoskeletal problems to find out more about the nature and frequency of non-musculoskeletal health benefits associated with their chiropractic treatment. During a three week period 87 members of the Swedish Chiropractors' Association (SCA) each surveyed 20 consecutive patients who met the following criteria:

• Age 18 years and over.

• A musculoskeletal symptom was the reason for consulting a chiropractor.

• The patient had been treated by the chiropractor within the past two weeks. In other words the interview was on a follow-up visit.

• Treatment included spinal adjustment/manipulation.

For full details of the patients primary symptoms see Figure 1. Low-back pain (lumbalgia) was the most common primary symptom, experienced by 62% of patients, followed by neck pain/headache (45% – cervicalgia/cephalgia). See Figure 1 also for the number of visits per patient during the three months prior to the survey and the number of spinal regions treated – the upper cervical spine (C0-C3), lower cervical spine (C4-T1/1st rib), thoracic spine (T2-L1) and lumbar spine (L2-S1 SI-joints).

6. Of the 1,504 patients for whom there was complete data, 55% were women and most were in the young adult (25-44 years – 41%) and middle-aged (45-65 years – 38%) age groups. Spinal adjustment/manipulation was the sole treatment on the last visit for approximately half of these patients (44%), and was combined with soft-tissue and other adjunctive therapies for 46%.

Figure 1
Swedish Study – Primary symptoms, number of visits and spinal areas treated

Descriptor	*Number*	*Percent*
Patients' primary symptoms*		
Cervicalgia	496	33
Brachialgia	162	11
Cephalgia	178	12
Dizziness	7	5
Dorsalgia	403	27
Lumbalgia	928	62
Sciatica	248	16
Shoulder problem	78	5
Hip problem	65	4
Extremity	87	6
Other	0	0
Number of visits previous 3 months		
1	372	25
2-3	693	46
4-6	328	22
7+	85	6
Unknown	26	2
Area treated at previous visit*		
C0-C3	598	40
C4-T1/1st rib	619	41
T2-L1/ribs	772	51
L2-S1, SI-joints and/or coccyx	1025	68
Other	79	5
Unknown	48	3

**More than one reply possible per patient. Total number of patients was 1,504.*

Leboeuf-Yde C, Axén I et al., JMPT, 1999.

7. Patients were read the following standard statement and question:

We are conducting a research project and would like to ask you a question. All information is confidential and you will be anonymous. Almost all patients consult us because they have problems with their spine. Sometimes after treatment our patients report positive changes that do not seem to be directly associated with the spine.

(A schematic picture of spine-organ connections was shown to the patient at this point).

As you can see from this picture, our body is governed by the nervous system. An explanation of such positive changes could be that the treatment of the spine affects the nervous system.

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I would like to ask you: Have you experienced any positive changes that do not seem to have anything to do with your back problem? For example anything positive with your: hearing, sight, ability to smell, breathing, circulation, digestion, lower parts, sexual organ, skin, or other?

This standard questionnaire and interview approach, developed during several pilot studies and using an illustration of somatovisceral pathways, had to serve two purposes:

a) Providing enough information for patients to understand the type of health reaction they were support to report on, without additional questions being asked or answered; but

b) Not influencing patients to give biased answers.

Answers from patients who had something to report were entered in a standard questionnaire and patients identified the organ/function in question by marking the relevant box, and then provided their own description of the non-musculoskeletal benefit. If a patient had nothing unusual to report these sections were left blank. (Two types of perceived benefit from chiropractic care were excluded – secondary musculoskeletal improvements such as relief from headache if the patient's primary complaint was back pain or neck pain, and reports of general well-being, relaxation and health – these were excluded as Anormal consequences of improved symptoms of musculoskeletal pain.)

8. **Results**. The findings of major interest were:

a) Almost 1 in 4 patients (23%) reported at least one positive non-musculoskeletal benefit.

b) Amongst these patients there were trends as to the systems/organs where there were most common benefits:

• First in rank were improvements in the respiratory system (26% of the 23% – i.e. 6% of all patients) and the dig estive system (25%).

• Second most common were improvements in circulation/cardiac function (14% – i.e. 3.2% of all patients) and eyes/vision (14%).

The most frequent individual areas of improvement reported by patients were: easier to breathe (21%), improved digestive function (20%), clearer/better/sharper vision (11%), better circulation (7%), changes to heart rhythm/blood pressure (5%) and less ringing in the ears/improved hearing (4%).

c) There was a positive association between the number of patients reporting a non-musculoskeletal benefit and the number of spinal areas treated. Specifically, of those patients treated in one spinal area 15% had a non-musculoskeletal benefit, in two spinal areas 22%, in three spinal areas 32% and in four spinal areas 35%.

9. **Comment.** This study, as Leboeuf-Yde et al. note with care, does not prove that any of the reported benefits were actually the result of chiropractic treatment – even though patients thought they were. Controlled trials are necessary for that. However, particularly for the more commonly reported benefits, several factors suggest a link between treatment and improvement rather than normal variations of function according to natural history. These include:

a) There was a positive association between the number of spinal areas treated and the number of reactions/benefits reported – a positive dose-response gradient.

b) There was a discernible pattern to the types of improvement, and this was a pattern not prompted or biased by the survey protocol. (The statement to patients mentioned what proved to be the two most common benefits – improvements in respiration and digestion- but not in a primary or prominent way.)

c) The patients themselves felt these were benefits after treatment. (This is obviously inconclusive, but should not be dismissed as insignificant – health care professionals and researchers have traditionally been a little arrogant in dismissing the views of patients.)

C. The Multination Study

10. **Goals.** These were:

a) To determine if the findings of the Swedish study could be repeated in a much larger international sample, providing stronger data on the potential relationship between treatment and improvement of symptoms.

b) To see if reports of non-musculoskeletal responses or benefits (Non-MSRs) are influenced by:

• Country of study and culture

• Chiropractors' attitudes and the information they give to patients on Non-MSRs

• Patient characteristics (age, sex, education, work status)

• Treatment profiles (type of treatment provided, area treated, number of areas treated, and number of treatments over time)

11. **Methods.** The study design was similar to that in the Swedish study. Here, however, there were research teams in the seven countries already mentioned (see para 3) and the standard questionnaire for patients was translated into the relevant languages.

Research leaders or officers in each country collated survey information and forwarded it to the lead investigator, Leboeuf-Yde, whose central office was responsible for data entry and analysis. All research officers then participated in interpretation of results and preparation of the final paper. Further points on study design are:

b) The goal was to have 50 chiropractors at each study site or region (Australia and Canada had more than one) collecting information on 10-20 consecutive eligible patients.

c) Entry criteria for patients, as in the Swedish study, were age 18 years or over, and chiropractic treatment given within the past two weeks. Unlike the Swedish study it was not a requirement that a musculoskeletal symptom was a main reason for care. However it was for most patients – see Figure 2. The great majority had primary complaints of back problems (60%), neck problems (51%) or headache (29%) – but some patients also listed non-musculoskeletal problems (8%), dizziness (8%), maintenance/wellness (16%) and subluxation correction (16%) as main reasons for care. More than one "main reason" for care could be given.

d) Non-musculoskeletal complaints were categorized into 11 areas – allergies, asthma, breathing, circulation, digestion, hearing, heart function, ringing in the ears, sinus problem, urination, vision. Patients reported Non-MSRs on a 6 point scale – definitely better, maybe better, no change, maybe worse, definitely worse and no change.

To strengthen the study only "definitely better" was taken as a positive response, only "definitely worse" as a negative response.

e) The survey questionnaire had three sections:

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The Best Model for the Profession – 7 Criteria and a Solution

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by BioMed Central and available free for downloading at www.chiroandosteo.com/content/13/1/9.

This analysis, whatever one thinks about its forthright conclusions – it has already given rise to substantial internet debate – is highly informed, clear and valuable. This should be expected since it comes from a group of prominent figures in the US chiropractic profession whose combined experience allows them to see the larger picture of chiropractic in health care that is so hard for most individuals to see.

The lead authors are Craig Nelson, DC MPH, from Minneapolis (with broad experience of public health, managed care and delivery and reimbursement of chiropractic services in the US), Dana Lawrence, DC (editor of JMPT for over 20 years, and during that time watching international research from all professions in the field of manual care, formerly of National College now of Palmer College), John Triano, DC PhD (with as much experience of overall spine care, research and politics as anyone, not only a prominent researcher and spokesperson for the profession but also in daily chiropractic practice for over 10 years at the Texas Back Institute, Dallas, a leading private spine care center with services ranging from exercise instruction to neurosurgery), and Gert Bronfort, DC PhD (arguably the foremost clinical research expert in chiropractic today, originally from Denmark and now at Northwestern Health Sciences University in Minneapolis).

Nelson, Lawrence, Triano et al. explain that for over 100 years the profession "has failed to define itself in a way that is understandable, credible and scientifically coherent" and that this has prevented it "from establishing its cultural authority over any specific domain of health care." The basic premise of their paper is that "existing institutions within chiropractic have not expressed a model of chiropractic that empowers the granting of cultural authority, sustained economic viability, and scientific integrity. "

Their goal is "to present a model for the chiropractic profession to establish cultural authority and increase market share of the public seeking chiropractic care"

They present the following 7 criteria for a defensible model for the profession:

1. It must be consistent with accepted modes of scientific reasoning and knowledge.

2. It must accommodate future changes in scientific understanding.

3. It must represent a set of clinical competencies within the reach of practicing chiropractors.

4. It must be consistent, credible and communicable to external constituencies on whom the profession relies.

5. It must represent the evidence of practice experience. (i.e. It must be consistent with what most patients experience when they consult a chiropractor.)

6. It must find a substantial presence within the healthcare marketplace. (i.e. It must provide a large and strong patient base.)

7. It must be compatible with the training, licensure, history and heritage of chiropractic.

Two models which do not satisfy these criteria, they say, are "the philosophical model and the primary care model". With respect to philosophy and vitalism, the authors reject classical vitalism but support "modern vitalism". In essence this is *vis medicatrix naturae* or the healing power of nature which "is fundamental to any healing process" and "should serve as a useful and valid guiding clinical principle". With respect to the primary care model major problems are chiropractic's intentional therapeutic limitations (e.g. no use of drugs and surgery) and limitations in chiropractic clinical training.

A model which does satisfy the above criteria, which they then advance, is a spine care model. The following are the main consensus points serving as the foundation for their spine care model for chiropractic:

• Chiropractic as an NMS specialty, with particular emphasis on the spine.

• Chiropractic as a portal of entry (POE) physician/provider.

• Chiropractic as a willing and contributing part of the evidence-based healthcare (EBHC) movement.

• Chiropractic as conservative/minimalist healthcare provider.

• Chiropractic as a fully integrated part of the healthcare system, rather than as an alternative and competing healthcare system.

Nelson, Lawrence, Triano et al. identify the following as the most fundamental question for the profession to answer, relative to whether or not it will gain cultural authority in mainstream health care:

"Does the chiropractic profession continue to position itself in opposition to orthodox medicine, or does it stand as an advocate of the patient's best interests, as a part of mainstream healthcare, along with medicine?"

Chiropractic, they say, has evaded a decision on this so far, and stands with one foot in mainstream and one in CAM. This undermines the profession's legitimacy and is unsustainable, and the profession must decide "in which of these camps to plant both feet." The public state of mind the authors would like for the profession is: "Go to a DC for your spinal health and prevention as you would go to a dentist for your dental health and prevention".

What about extremities/extra-spinal complaints? The authors say they are not in anyway precluding this – just de-emphasizing it because of its relative size. On the subject of use of drugs Nelson, Lawrence, Triano et al. reach a similar decision to the WFC identity consultation. Chiropractors should not seek prescribing rights, because "clinical science has created a strong case for conservative healthcare" and much of the advantage or popularity that chiropractic currently enjoys "is directly attributable to its conservative (non-drug) intervention." However chiropractic should not take the stance that all use of drugs is bad. In fact, say the authors, the chiropractic position on drug

use should be "precisely the same as medicine: all drug use should be appropriate and guided by the scientific literature." This should be the basis for criticism of overuse of drugs.

In what may be a new thought for many people, the authors argue that "a profession is about a specific vocational role that the profession fills" – it is defined by "the work it does and the role it fills, not by its ideas and values". Professions do not exist "to be champions of ideas." Ideas and values are important because they answer the question 'how can we best discharge our role in society', but they are secondary to that role. The authors' punch line here is:

"The irony is that the specific professional/vocational role that chiropractic fills is obvious to the majority of patients and other non-chiropractors – it is chiropractors themselves who seem to be confused by the issue and who then provide confounding answers and contradictory testimony to policy makers."

It can be seen that much of this independent analysis by Nelson, Lawrence, Triano et al. is consistent with the results of the consultation on identity undertaken by the profession through the World Federation of Chiropractic. Both processes favor a core identity or model of spinal health care expertise within the mainstream health care system. However there is an important difference in emphasis. The new paper from Nelson, Lawrence, Triano et al. rejects the philosophical model and the primary care model. The WFC spinal health care expert identity intentionally leaves room for those significant minorities within the profession preferring a more traditional and philosophical approach to practice or a broader primary care approach. All may join hands and practise comfortably under a spinal health care identity – which is simply that, a core and recognisable public identity rather than a statement of philosophy or legally defined scope of practice.

Research Notes

1. **The Netherlands – Prognostic Factors for LBP Patients.** What are the best early indicators for slow recovery in patients with what is known as non-specific or mechanical low-back pain? Various studies suggest various biologic (e.g. radicular pain), psychological (e.g. distress and somatization) and social (e.g. job dissatisfaction) factors, but there is no comprehensive picture of main prognostic factors.

This new study from The Netherlands reviews the literature and produces new data from a Dutch multicenter study of 500 patients referred from medical care for physical therapy treatment. The four major predictors or prognostic factors for level of pain/function/disability at 12 months, in order of importance, are reported as being duration of the current episode of LBP when treatment is commenced, having a paid employment; and levels of pain and functioning at baseline. As the authors note, this points to the inappropriateness of the general

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First graduation of chiropractors at UNEVE in Mexico

The first graduation of chiropractors from Mexico's first school of chiropractic, at the State University of Ecatapec Valley/Universidad Estatal del Valle de Ecatepec (UNEVE) in Mexico City, took place on August 27, 2005. Pictured above are graduates and at left (*left to right*) Juan Sanchez, DC, Dean of Chiropractic, UNEVE, Arlan Fuhr, DC, President, Activator Methods, Joseph Sweere, DC, representing Northwestern Health Sciences University, Minnesota (UNEVE's curriculum is based on that of Northwestern), Mr. David Chapman-Smith, Secretary-General, World Federation of Chiropractic, Ismael Saenz Villa, MD, Rector, UNEVE, and Enrique Benet Canut, DC, President, Mexican College of Chiropractors. Dr. Benet, a 1966 Palmer College graduate, has been the driving force behind the establishment of the chiropractic program at UNEVE.

Figure 2
Multination Study – Main Reasons for Care and Non-musculoskeletal Symptoms of Patients (n = 5,607)

	Percent
Headache	29
Dizziness	8
Neck problem	51
Arm problem	12
Midback problem	30
Low back problem	60
Sciatica	16
Shoulder problem	21
Pelvic/Hip problem	23
Other extremity	12
Nonmusculoskeletal problem	8
Maintenance/wellness	16
Subluxation correction/management	16
Nonmusculoskeletal problems (>1 reply possible)	
Allergies	11
Asthma	5
Breathing	8
Circulation	12
Digestion	19
Hearing	4
Heart function	4
Ringing in the ears	5
Sinus problem	10
Urination	4
Vision	9
Drugs	
–Yes	69
–No	27
–Don't know	4

Leboeuf-Yde, Pederson, Bryner et al., JMPT 2005

• The first completed by chiropractors and recording their attitudes to Non-MSRs, the role of subluxation, and what information was given to patients on Non-MSRs;

• The second, also completed by chiropractors, giving patient demographics, reasons for current chiropractic care, present non-musculoskeletal complaints, time since last visit, number of visits over the last three months, types of care and points of spinal contact at last visit and patients use of medically prescribed drugs;

• The third completed by patients, at the same visit during which the chiropractor completed the questionnaire and before treatment was given. The patient was asked only to provide information on any Non-MSRs "from the time of the last visit to the clinic until the present visit".

f) Analytical and statistical methods used, for all data and cross-tabulations studying potential factors influencing results (e.g. patient demographics, treatment profile, philosophy or attitude of the chiropractor), are reported in detail in the paper.

12. **Results.**

a) **Numbers in Study.** Questionnaires were received from 6,156 patients of 385 chiropractors in the seven countries. Consent information was missing from 549 questionnaires, leaving 5,607 for analysis.

b) **Beliefs of Chiropractors.** 3 in 4 chiropractors believed it was often "more important to correct a subluxation than to relieve a patient's complaint" (75%) and in the past three months had told most patients that "chiropractic adjustments might have non-musculoskeletal effects on their bodies" (74%). These chiropractors, however, did not provide a disproportionate number of patients for the study, and no significant correlation was found between either their beliefs or the information they gave patients and the number of Non-MSRs reported by patients.

c) **Patient Characteristics.** These were typical of other chiropractic practice-based research and similar to the Swedish study. There was a majority of women (60%) with 4 out of 5 (79%) being aged 25-64 years (working adults). The two most common reasons for current care were low-back (60%) and neck (51%) problems.

d) **Management.** During the past three months 6% of patients had had one treatment visit, 50% 2-6 visits, 24% 7-11 visits and 20% 12 or more visits.

The total number of spinal areas treated for each patient was most commonly 3 (26% of patients) followed by 2 or 4 (20% each). These areas, in order of frequency, were occiput to C3, T1 to T6 including ribs, T7 to T12, and L1 to L5.

Treatments included manual adjustments (83% of patients on the last visit), mechanically assisted adjustments (35%) and soft-tissue therapy (52%).

e) **Pattern of Non-musculoskeletal Responses (Non-MSRs).** Detailed results appear in Figure 3. Points of particular interest include:

(i) Most patients reported no Non-MSRs.

(ii) Figure 3 gives figures for those "definitely" better or worse. For those already known to have a non-musculoskeletal complaint from previous history given to and by the treating chiropractor, best rates of definite improvement were for breathing (27% of 460 patients), digestion (26% of 1,058), circulation (21% of 660) and tinnitus (19% of 312). Few patients, never exceeding 2% for any category of complaint, were definitely worse.

For all patients, including those not known to have a non-musculoskeletal complaint, the most common definite improvements were for digestion (10%) and circulation (10%).

(iii) The pattern of reported Non-MSRs was similar across countries – detailed figures are given in the published paper.

(iv) Women (28%) reported at least one Non-MSR more commonly than men (21%), but there were no significant differences relative to other demographic factors, such as age, level of education or work status.

(v) There was a relationship between the number of patients reporting a Non-MSR since the last visit and the overall number of treatment visits during the past three months – 14% of patients who had had one visit only reported a Non-MSR, 22% of those with 2 to 3 visits, 26% of those with 4 to 11 visits and 31% of those with 12 or more visits. There was a trend towards more Non-MSRs in those treated in more spinal areas, and primarily in the upper cervical and thoracic areas, but these trends did not reach statistical significance.

(vi) There was no correlation between the number of reports of Non-MSRs and the two chiropractic-specific variables – "subluxation is important" and "information to patients that Non-MSRs are likely to occur."

f) **Answer to research questions**. As Leboeuf-Yde et al note:

(i) "The findings in the present study were largely similar to those of the previous Swedish study." In both studies patients

Figure 3
Multination Study – Patients reporting definite improvement and definite worsening for each nonmusculoskeletal complaint, (a) in all patients (n = 5607) and (b) in patients who initially reported to have nonmusculoskeletal complaint

	All patients		*Patients with nonmusculoskeletal complaints*	
Nonmusculoskeletal complaint	*Definitely better (%) Number = 5607*	*Definitely worse (%) Number = 5607*	*Definitely better (%) (Number for each complaint)*	*Definitely worse (%) (Number for each complaint)*
Allergies	3	<1	11 (638)	2 (638)
Asthma	2	<1	17 (293)	2 (293)
Breathing	6	<1	27 (460)	1 (460)
Circulation	10	<1	21 (660)	<1 (660)
Digestion	10	<1	26 (1058)	1 (1058)
Hearing	2	<1	13 (245)	2 (245)
Heart function	2	<1	11 (244)	<1 (244)
Ringing in ears	3	<1	19 (312)	<1 (312)
Sinus problems	3	<1	3 (551)	<1 (551)
Urination	6	1	10 (235)	1 (235)
Vision	3	<1	13 (326)	1 (326)

most frequently reported improved digestion and breathing, but overall only a minority of those with non-musculoskeletal symptoms reported improvement. Very few reported definite worsening.

(ii) There was a dose-response in both studies. This was somewhat different however – it was related to the number of spinal areas treated in the Swedish Study, but to the number of treatments given in the Multination Study.

(iii) There was no significant association between responses reported and other variables considered as potentially influencing Non-MSRs – factors relating to the chiropractor, the treatment and the patient.

D. Conclusion

13. The new multination study, has admitted limitations. These are discussed with care by Leboeuf-Yde et al. The study does not prove that the benefits reported resulted from the chiropractic care given – controlled trials with comparison groups and additional objective outcome measures are needed for that. There was potential for sampling bias (unrepresentative chiropractors and/or patients) and expectation bias that could have magnified or diminished results. Non-musculoskeletal benefits that took more than one to two weeks to manifest themselves were lost because of the limited timeframe – responses noted by the patients since the last treatment.

However, these limitations are balanced by a number of strengths. A controlled trial for a specific non-musculoskeletal response is not only time-consuming and very expensive but is also beyond the capability of most researchers at present. Which Non-MSR should be chosen? The practice-based study design better reflects normal clinical practice and has made it possible to gather a large sample population of patients – this strengthens results and greatly assisted through allowing meaningful subgroup analysis.

The study has identified specific disorders for which chiropractic patients from many backgrounds and cultures most commonly report benefit. These are relatively common subgroups of digestive, respiratory and circulatory/cardiac disorders and also tinnitus. These are the priority areas that now warrant collaboration in chiropractic and medical practice and research – as seen in the work of Christensen, Vach et al. in Denmark already discussed. It is these areas that deserve the public funding necessary for major controlled trials. Such trials will not only assess safety and effectiveness, the two issues of greatest importance to patients, but also another underlying issue of fundamental interest to chiropractors – the degree to which subluxation/spinal dysfunction is causing true visceral disorders, or alternatively stress and referred pain that mimic or aggravate visceral symptoms and disorders.

However, until the results of such trials are available, those with open minds and the interests of patients at heart, will acknowledge that many patients diagnosed medically with the above conditions may have a spinal component to their problems – and should therefore be encouraged to receive a chiropractic assessment to screen for spinal dysfunction/subluxation. TCR

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medical approach of 'wait-and-see' before determining whether active and specialist care should be given to these patients.

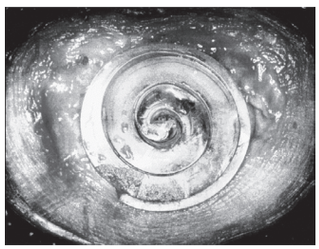
(Bekkering GE, Hendriks HJM, van Tulder MW et al. (2005) *Prognostic Factors for Low Back Pain in Patients Referred for Physiotherapy: Comparing Outcomes and Varying Modeling Techniques*, Spine 30(16):1881-1886).

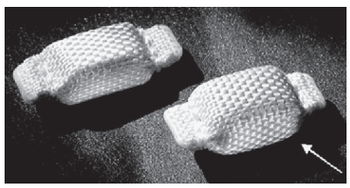
2. **UK –Another Prognostic Factor for LBP Disability – Bothersomeness**. As the health care world has tried to deal with disability from low-back pain, it has moved from objective professional measurements (e.g. precise degrees of motion and anatomical irregularities seen on imaging) to greater reliance upon patient reports of pain and functioning (e.g. Oswestry and Roland-Morris Disability Questionnaires). A new paper from the United Kingdom reports on an interesting further simplification – simply asking the patient about 'bothersomeness' to identify more serious cases of LBP and disability. In this study 1464 consecutive LBP patients from 5 UK general medical practices completed several standard questionnaires at baseline and at six months – on disability from back pain (the Roland-Morris), pain (Chronic Pain Grade and Pain Intensity Scale), psychological status (Hospital Anxiety and Depression Scale) and general health status (Short Form 36 Questionnaire).

However, they were also asked this one question about the bothersomeness of their back pain. "In the last two weeks how bothersome has your back pain been?" The five possible responses were "not at all", "slightly", "moderately", "very much" and "extremely". Patients answering the last two were classified as having "bothersome low-back pain". It was found that the bothersomeness question was as valid (both sensitivity and specificity) as the other questionnaires in predicting those 1 in 3 (31%) of patients who would have highest disability from LBP at six months. Validity was improved, however, by adding one or a few other questions in key areas of disability – having to walk more slowly, avoid heavy jobs, do less daily work, walk shorter distances, or stand for a shorter period on account of LBP.

(Dunn KM, Croft PR (2005) *Classification of Low Back Pain in Primary Care: Using "Bothersomeness" to Identify the Most Severe Cases*, Spine 30(16):1887-1892.)

3. **US – Anyone for Motion Technology, Spine Surgery Implants?** There is a new paradigm shift in spine surgery in the United States with manufacturers and surgeons rushing to market with a wide array of devices promoted as "motion technology", and touted as giving more spinal motion with less wear on adjacent joints than traditional surgical hardware that restricted motion. You can now have the nucleus of your disc replaced with a metal spiral that uncoils after implant – theoretically to give support and pressure to the annulus fibrosis and the spinal segments above and below (see Figure 1 at right). To replace a whole disc you can try a polythene weave implant. This allows fluid to pass into the core as it expands to optimal size – whatever the surgeon might determine that to be (Figure 2 at left). If you find this is a little conservative, how about a full metal joint and disc replacement (Figure 3 below)?





These and other devices are showcased in an August 15 supplement to the journal *Spine* which makes rather scary reading. Andersson, Burkus et al. open the supplement with the warning that all these new implants are expensive and untested, require a "steep learning curve", and have much associated morbidity. Further, "it is unclear which patients will optimally benefit from any given technique." They then observe that surgical success rate can be no better than diagnostic success rates, and there are major limitations to accurate medical diagnosis of the painful motion segment. Finally, "data for care are limited on all sides of this issue".

Anyone for surgery?