The Chiropractic Report

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Professional Notes

Nonmusculoskeletal Conditions

In recent months in the UK, as in other countries from time to time, there has been medical and media debate about the scope of chiropractic care – specifically what legitimate claims doctors of chiropractic can make concerning helping patients with apparently nonmusculoskeletal complaints such as asthma and hypertension, and colic and otitis media in infants and children.

In *The Guardian* newspaper the science writer and journalist Simon Singh has suggested that, in the absence of good research evidence, it is wrong for the chiropractic profession to offer what amount to "bogus treatments." Complaints have been made to the General Chiropractic Council, the regulatory body, against chiropractors making website claims of ability to assist patients with nonmusculoskeletal disorders such as those mentioned.

This raises two main issues. The first is whether health professionals should be permitted to use generally safe but as yet unproven methods – are such treatments

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Management of Patients with Back Pain

The New Medical and Chiropractic Consensus

A. Introduction

UNTIL THE 1990S THERE WAS surprisingly little research or agreement on how best to manage patients with acute and chronic back pain.

The medical and chiropractic professions had fundamentally different approaches to management – in terms of principles and diagnostic and treatment methods. This, regardless of other issues such as history and lack of time and opportunity to learn about each other's scope of education and practice, prevented cooperation in clinical practice.

Since the early 1990s this has changed dramatically. There has been a "revolution" in the management of back pain, to use the description of UK orthopaedic surgeon and back pain specialist, Gordon Waddell.[1] Now there is:

- Greatly increased research - both original research and systematic reviews of it.
- Based upon this research, evidence-informed clinical guidelines from national, medical, chiropractic and interdisciplinary expert panels. Happily, these guidelines are broadly consistent in all countries.
- As a result an agreed approach by physicians (MDs), chiropractors (DCs), physiotherapists (PTs) and others on the principles of management and on best treatment options – and therefore a secure basis for inter-professional collaboration and referral of patients.

In this issue of *The Chiropractic Report* we review the dramatic changes of the past 15 years. First we look at the conflicting medical and chiropractic principles and practice that existed through to the 1990s. Then we look at key changes, the current position, the benefits for all concerned from integration of medical and chiropractic services and finally some examples of integration.

B. Until the 1990s

2. The main principles of medical and chiropractic management of patients with back pain prior to the 1990s are summarized in Table 1. Methods of diagnosis and treatment are summarized in Table 2. Observations are:

(a) MDs saw back pain as a *biomedical* issue. Either there was a structural and/or pathological basis for the pain (e.g. fracture, disc herniation, central stenosis, disease process) or alternatively the pain was of unspecific origin and likely self-limiting. Chronic pain, in the absence of pathology, principally had social and psychological causes, often raised suspicions of malingering, and was outside the scope of first-line medical care.

Accordingly, medical diagnosis

Table 1. **1990: Management of Back Pain**

Medical Practice – Principles

- Back pain is a biomedical problem
- Focus on structural pathology and pain
- Resolves by itself over time, unless major pathology
- Rest, and 'wait and see'
- Chronic back pain is largely psychological

Chiropractic Practice – Principles

- Back pain is a biomechanical problem – mainly joints
- Focus on functional pathology and function
- Resolves on correction of dysfunction/subluxation
- Keeping active and positive is important – motivate patient

Table 2. **1990: Methods of Diagnosis and Treatment**

Medical Diagnosis
- Imaging and laboratory tests – for pathology
- Orthopedic and neurological tests
- Little history or physical exam until specialist referral
- No patient-assessed disability, psychosocial assessment

Medical Treatment
- 2 weeks bed rest while 'wait and see'
- Prescription medications for pain – including analgesics, muscle relaxants, opioids, anti-depressants
- PT modalities – TENS, interferential, ultrasound, etc.
- Injections and surgery – if continuing pain and pathology
- Avoid manipulation

Chiropractic Diagnosis
- Plain film x-ray – red flags and indications for adjustment
- Orthopedic and neurological tests
- Palpation for dysfunction/subluxation – mainly joints
- Pain provocation

Chiropractic Treatment
- Joint adjustment/manipulation/mobilization
- Trigger point and other soft-tissue therapies
- PT modalities – supportive role
- Referral after trial of chiropractic treatment
- Avoid all medications and surgery where possible

focussed on general practice and specialist examinations to discover pathology. These practitioner – based findings were considered more objective, important, valid and reliable than patient questionnaires assessing pain, disability and psychosocial status. If pathology was found that was assumed to be the cause of pain. The first research with well populations, demonstrating that approximately 40% of adults over age 40 have disc herniation but no pain, had only recently been performed.[2]

Standard treatments included two weeks of bed rest, medication and physical therapy modalities for pain relief, and referral for surgery where structural pathology was found and disabling pain persisted. Spinal manipulation was viewed as both dangerous and ineffective.

(b) The chiropractic profession had a markedly different approach. DCs saw both acute and chronic back pain as largely a *biomechanical* problem, arising from joint dysfunction/subluxation that was best addressed by spinal manipulation. Patients should not rest but remain active. Even where imaging and other standard medical examinations identified structural pathology, key diagnostic methods were manual joint palpation and pain provocation unknown to medical practice. DCs tended to be competitive and unduly critical of medical practice, often counselling patients against all use of medication.

(c) This state of affairs was most unhelpful for patients. The two professions they most commonly consulted for help with disabling back pain were in conflict on fundamental matters of principle and practice. There was little basis for cooperation. As Eisenberg et al. of Harvard University reported from a US national survey in 1991[2], almost half of the patients who subsequently consulted DCs and other alternative practitioners for back problems did so in secret and without advising their MDs.

Additionally, both professions had much to learn about optimal care. Major improvements would come with the new research and clinical guidelines of the 1990s – and the adoption of a new and more comprehensive *biopsychosocial* model of back pain by both professions.

C. Reasons for Change

3. The first national, government-sponsored, clinical practice guidelines from multidisciplinary panels of experts were published simultaneously in the US and the UK in May 1994[3,4]. They dealt with acute low-back pain, defined as pain for less than three months. The US Guidelines explained "the four principal reasons" that acute low-back problems were selected as a subject for guideline development, namely:

(a) Back pain was very common – 50% of working age people experienced back problems each year, back symptoms were the most common cause of disability for persons under age 45, and at any given time about 1% of the US population was chronically disabled and another 1% temporarily disabled because of back problems.

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(b) Direct (health care) and indirect (disability payments, lost production) financial costs were very high, and non-monetary costs from inability to perform daily activities were substantial, both for individuals and their families. (A US study of costs associated with common pain conditions in the workforce later published in 2003, reports that indirect/disability costs for back pain [estimated $19.8 billion annually] were higher than such costs for any other condition – higher than headache [$19.6 billion], arthritis [$10.3 billion] and all other pain conditions [11.6 billion] considered in the survey[5]).

(c) Increasing evidence of inappropriate care. Recent research had reported marked regional and local variation in rates of hospitalization, surgery and use of diagnostic tests for patients with low-back problems. Regional surgical rates in the US varied by up to 500%, and could not be explained by health status data.

(d) Much new research. This had led to outspoken criticism of standard medical and surgical practices. In a 1987 Volvo prize-winning paper Waddell, a consultant for both the US and UK Guidelines, had concluded that "modern medicine can successfully treat many serious spinal diseases and persisting nerve compression but has completely failed to cure the vast majority of patients with simple low-back pain."[6]

4. The US Department of Health and Human Services, through its Agency for Health Care Policy and Research (AHCPR), had convened a 23-member multidisciplinary private sector panel to develop the 1994 US Guidelines, a panel including MDs, DCs, PTs, nurses, experts in spine research, a psychologist, an occupational therapist and a consumer representative. Key recommendations included:

(a) **Assessment and Diagnosis.** The primary purpose of the initial history, physical examination and assessment should be to identify the small proportion of patients with red flags (e.g. fracture, tumor, infection) or non-spinal conditions (e.g. vascular, abdominal, urinary or pelvic pathology) causing low-back symptoms. Other patients should be categorized as having sciatica or non-specific back pain. For them there should be no routine or special testing until re-evaluation after one month and if symptoms were then persisting.

(b) **Treatment.** Main recommendations on clinical care methods included:

i **Bed Rest.** Prolonged bed rest – "more than 4 days" – leads to debilitation and is inappropriate. Patients should remain active, returning to normal activities as soon possible. At most "bed rest for 2 to 4 days may be an option for patients with severe initial symptoms of sciatica."

ii **Symptom Control.** The two main recommended methods of symptom control were use of simple oral medications (acetaminophen and NSAIDs) and spinal manipulation. Other medications (e.g. muscle relaxants, opioids) should be avoided if possible and, if chosen, used only for a short time. Manipulation was recommended on a basis of treatment for one month, to be continued only if "symptomatic and functional improvement" had been documented.

The panel found no evidence of benefit from, and made recommendations against the use of, many treatments commonly used for patients with acute back pain – many physical agents and modalities (e.g. ice, heat, massage, traction, ultrasound , cutaneous laser treatment, TENS), biofeedback techniques, and trigger point, ligamentous and facet joint injections.

iii **Exercise.** Patients should be encouraged to commence "aerobic activities that minimally stress the back such as walking, biking or swimming" during the first 2 weeks. However, conditioning exercises for trunk muscles should not be commenced until the subacute phase – there was no evidence of effectiveness and risk of aggravating symptoms during the first 4 weeks.

D. Current Evidence and Guidelines

5. Since 1994 there has been huge growth in clinical research relative to the treatment of acute and chronic low-back pain, and many better quality randomized controlled trials (RCTs). Just in recent months, for example, there are new trials reporting the effectiveness of chiropractic manipulation and exercise for older patients (over 55 - mean age 63.1 years) and physiotherapy manual therapy and exercise for patients with subacute and chronic non-specific back pain.[6,7]

There has also been development of the Cochrane Collaboration, the science of systematic reviews, and many such reviews of the research relative to the management of back pain. Based on the research and reviews there are now clinical guidelines in many countries and all world regions – developed by multidisciplinary, medical and chiropractic panels for clinicians and payors, and ultimately for improved patient care. On one hand these developments have more firmly established the biopsychosocial model of back pain and provided new information in areas such as natural history and the importance of patient questionnaires in documenting disability and improvement.

On the other hand, and in the words of Haldeman and Dagenais in their recent editorial titled *What We have Learned about the Evidence-Informed Management of Chronic Low Back Pain* in *The Spine Journal*[8], the best available evidence on management today "is not materially different than the recommendations from the *Practice Guidelines on Acute Low-Back Pain in Adults* published in the US by the Agency for Health Care Policy and Research (AHCPR) in 1994." The evidence reviews now published "do suggest that a reasonable approach to chronic low back pain (CLBP) would include education strategies, exercise, simple analgesics, a brief course of manual therapy in the form of spinal manipulation, mobilization or massage, and possibly acupuncture." These should be preferred to more complex or invasive approaches. (For more from Haldeman and Dagenais see para 6 (d) below)

6. For some of the most authoritative recent evidence and guidelines, mostly available online, see:

(a) **Systematic Reviews.** Reviews by Assendelft, Morton et al. for the Cochrane Collaboration (2004)[9] and van Tulder, Koes et al. (2006)[10], internationally recognized experts from The Netherlands.

(b) **Clinical Guidelines – Europe.** *Low Back Pain: Guidelines for its Management*, current guidelines for acute and chronic low-back pain prepared for the European Commission by multidisciplinary working groups, and with recommendations based on Cochrane and other systematic reviews and on existing national guidelines. Available free online at www.backpaineurope.org.

(c) **Clinical Guidelines – North America.** *Diagnosis and Treatment of Low Back Pain,* 2007 guidelines from the American College of Physicians and the American Pain Society[11]. Available free online at www.annals.org. Here a panel of medical experts only, as opposed to a multidisciplinary team including DCs and others, provides recommendations for each of acute (defined as under 4 weeks duration), subacute and chronic (over 3 months) back pain. Manipulation is the only non-pharmacologic therapy found to have proven benefit and recommended as a first line option for patients with acute pain. Manipulation and exercise therapy are recommended for chronic pain with the advice that "best results come from exercise programs that incorporate individual tailoring, supervision, stretching and strength."

(d) **Comprehensive Review – Chronic Back Pain.** In January/February 2008 there was a special focus issue of *The Spine Journal*, the official journal of the

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bogus or legitimate? The clear and plain answer is that use of such methods is not only legitimate but that all health professionals use them in accordance with their clinical judgement on a daily basis.

As Redwood explains in a recent editorial titled *Chiropractic and Visceral Disorders* "We must become comfortable operating within the broad zones of uncertainty common to all healing arts." (Redwood D (2007) *Chiropractic and Visceral Disorders*, J Alt Comp Med 13 (5): 479-480)

The second main issue is what claims, if any, can and should be made with respect to the potential value of unproven treatments. On one hand, there should not be broad or inaccurate claims. On the other hand, various claims will be appropriate and in the public interest. On this it is noted:

1. What doctors of chiropractic have always explained, though often misunderstood, is that they assess and treat joint dysfunction/subluxation and other functional pathology in the spine and neuromusculoskeletal system – not specific conditions. Where such functional pathology exists many disorders can be relieved. Somatovisceral reflexes in the nervous system are understood to have a major role. Where this type of explanation is given there would seem to be a good case for listing examples of conditions that may be helped according to clinical experience or preliminary research evidence.

2. Consider the example of hypertension. There is long clinical experience of some patients with hypertension, and found to have concomitant functional pathology in the upper cervical spine, experiencing excellent results under chiropractic care. In 2007 there was finally confirmation of that in a first randomized controlled trial performed by a medical and chiropractic research team at the Rush University Hypertension Center in Chicago. (Bakris G, Dickholtz M et al. (2007) *Atlas Vertebra Realignment and Achievement of Arterial Pressure Goal in Hypertensive Patients: A Pilot Study,* J Human Hypertension, 1-7. See the May 2007 issue of *The Chiropractic Report* for detailed discussion – available online under Past Issues at www.chiropracticreport.com. In summary, chiropractic realignment of the atlas vertebra produced reductions in blood pressure similar to the use of two standard medications given in combination, and without any adverse results.)

Isn't it important that the public is aware of this – and that chiropractors therefore should be able to indicate, in appropriate terms, that they may assist such patients?

3. A recent systematic review by Hawk, Khorsan et al. confirms that the evidence from controlled studies and usual practice now "supports chiropractic care (the entire clinical encounter) as providing benefit to patients with asthma, cervicogenic vertigo, and infantile colic", and is "promising for potential benefit of manual procedures for children with otitis media and elderly patients with pneumonia." (Hawk C, Khorsan R, et al. (2007) *Chiropractic Care for Nonmusculoskeletal Conditions: A Systematic Review with Implications for Whole Systems Research*, J Alt Comp Med 13 (5): 491-512).

Clearly chiropractic is not offering bogus treatments for patients who have these conditions, together with functional pathology in the neuromusculoskeletal system amenable to chiropractic treatment. And clearly it is valuable for the chiropractic profession to make patients and their medical advisors aware of causes of complaints and avenues of relief they would otherwise not suspect.

Other Research Notes

1. **US - First Manipulation Trial for Older Patients with LBP**

There are few published trials of any treatments for older patients with low back pain, and no published trials for any form of spinal manipulation for this age group. Therefore the importance of this new trial from Maria Hondras, DC, MPH, Cynthia Long, PhD et al. from Palmer College in Davenport, Iowa reporting:

- For patients over age 55 (mean age 63.1 years) both high-velocity manipulation (side-posture Diversified) and low-velocity manipulation (flexion-distraction/Cox) produced clinically important changes in functional status in comparison with minimal medical care.
- There was no significant difference in either safety or effectiveness of both forms of manipulation/adjustment with these older patients – notwithstanding the strong clinical opinion some people have on this matter.

Summary points are:

1. This was a randomized controlled trial of 240 subjects aged 55 or older (mean age 63.1 years) with subacute or chronic nonspecific back pain (at least 4 weeks – 71% had experienced pain for more than 1 year), with or without radiating pain. Subjects were allocated to one of three groups:

(a) High-Velocity Low-Amplitude Spinal Manipulation Group (HVLA-SM). They received side-posture diversified SM, up to 12 visits over 6 weeks. SM had to be from T12 to L5 and/or the sacroiliac joints, but otherwise was in accordance with clinical judgment.

(b) Low-Velocity Low-Amplitude Spinal Manipulation Group (LVLA-SM). They received Cox flexion-distraction treatment, with the same frequency and duration and the same target areas as for the first group.

(c) Minimal Conservative Medical Care (MCMC). These subjects had at least 3 visits for assessment and prescription of medication as required, 1 visit each during weeks 1, 3 and 6. Patients could schedule additional visits if required.

Subjects in all 3 groups received 30 minutes of instruction in a home exercise program.

2. The primary outcome measure was disability according to the Roland Morris Disability Questionnaire (RMD). Secondary measures were current disability (Fear Avoidance Back Questionnaire), pain severity (VAS) and physical function (SF-36).

Measurements were taken at baseline, 3, 6, 12 and 24 weeks (i.e. 18 weeks after the end of the 6 week treatment period).

3. Results included:

(a) No serious adverse events

(b) On the RMD both the HVLA-SM group (2.7 point reduction) and the LVLA-SM (2.9 point reduction) had "clinically important differences" in comparison with the MCMC group (1.6 point reduction). This was both at 6 weeks (end of treatment) and through to last follow up at 24 weeks.

(c) There was no significant difference between the two SM groups either on the primary outcome measure (RMD) or on all secondary outcomes. Notably, there was nothing to suggest that low-velocity mobilization techniques (here flexion-distraction) are safer than high-velocity adjustment .

Hondras, Long et al. acknowledge some limitations in the study. There was a larger drop-out rate in the MCMC group, and patients receiving SM had more time and attention given to them. However, here at last we have a good quality trial of chiropractic manipulation for older patients – and one which reports clinically important improvements under care.

(Hondras M, Long CR et al. (2009) *A Randomized Controlled Trial Comparing 2 Types of Spinal Manipulation and Minimal Conservative Medical Care for Adults 55 years and Older with Subacute or Chronic Low Back Pain*, J Manipulative Physiol Ther 32 (5): 330-343)

2. **Spain – Medical Misdiagnosis of Subluxation**

Orthopedic specialists from the University of Navarre, Pamplona, Spain, provide an interesting new study reporting medical misdiagnosis of subluxation at C1-C2. Mönckenberg, Tomé et al. note that there is normally about 40° rotation to each side between C1 and C2, that the quite large loss of contact surface between the corresponding facets is also normal, but that this is not described in the medical literature and frequently leads to medical misdiagnosis of atlantoaxial rotary subluxation.

The authors reference a 1999 study by Villas et al. with healthy asymptomatic children which demonstrated such misdiagnosis from radiologists. This is a problem because the diagnosis "may require C1-C2 arthrodesis – especially in young people – with possible complications and sequels." In their new CT-scan study involving 40 asymptomatic adults (volunteer MDs) Mönckeberg, Tomé et al. showed that with normal rotation of the C1 on C2 an average of 70% of the contact surfaces of the corresponding C1 to C2 facets were separated/uncovered.

Although this was quite normal, all 3 blinded radiologists gave a diagnosis of atlantoaxial rotatory subluxation .

The authors explain that "the term rotatory subluxation should be used only to define a position beyond the limits of normal rotation" and call for better understanding to prevent misdiagnoses relative to the concept of rotary fixation and subluxation. (Mönckeberg, JE, Tomé CV et al. (2009) *CT Scan Study of Atlantoaxial Rotatory Mobility in Asymptomatic Adult Subjects: A Basis for better Understanding C1-C2 Rotatory Fixation and Subluxation*, Spine 34 (12): 1292-1295)

3. **Israel – Medical Management of LBP**

In the last issue (July 2009) this Report provided studies from Australia and the US showing that MDs – even those professing a special interest in back pain – had views and practice markedly inconsistent with current evidence-based guidelines. Another survey just published in *Spine* demonstrates the same thing in Israel - but has interesting feedback on the level of acceptance of spinal manipulation.

Finstone, Raveh et al. report a short survey given in 2005 to 393 family physicians and orthopaedic surgeons attending professional meetings in Israel. The survey questions were on drug and physical treatments, bed rest and patient encouragement, and whether to use imaging studies for patients with acute non-specific LBP. The survey "indicates that the orthopaedists' basic knowledge of simple LBP management is insufficient" and that, although family practitioners did better, "both groups of physicians showed deficiencies in their knowledge of pharmacological and physical treatments, as well as in the use of imaging studies". Points of note include:

1. 67% of orthopaedists and 46% of family physicians "incorrectly recommended some form of bed rest", which was inconsistent with the 1996 Israeli guidelines and many other international guidelines mentioned, and this despite the fact that "there has been compelling evidence against rest since the 1980s".

2. Even though the Israeli guidelines do not specifically recommend spinal manipulation, 51% of orthopaedists and 57% of family physicians rated manipulation as an "important" and "necessary" treatment when asked the importance of various listed treatments "for the effectiveness of simple back pain treatment." It is taking time – but the message from the literature is being received. The value of skilled spinal manipulation is increasingly understood – here by a majority of MDs surveyed in Israel.

(Finstone, AS, Raveh A, et al. (2009) *Orthopaedists' and Family Practitioners' Knowledge of Simply Low Back-Pain Management* Spine 34 (15): 1600-1603)

Belgium and Spain – PT Manual Therapy and Exercise for Chronic LBP

A new trial from Spanish physical therapy researchers adds to the now substantial body of evidence showing that a combination of manual treatments and exercise produces better results for patients with chronic, non-specific low- back pain than either of those treatment approaches alone. This is a first trial of the Godelive Denys-Stuyf Method (GDS Method), named after a Belgian physical therapist, and reports significantly better results with chronic LBP patients at 6 months follow-up than usual Spanish PT treatments.

The GDS Method, more fully described in the paper, combines the 3 elements of individual manual therapy sessions, group sessions with spinal stabilization exercises, and simple maintenance exercises in individualized home exercise routines. Its essence is "balancing the muscle tensions that provoke nonspecific subacute and chronic LBP through biomechanical alterations that affect lumbar-pelvis and spinal stability". Points are:

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Table 3. **Treatment Approaches Reviewed in *The Spine Journal***

Adjunctive analgesics
Back schools, brief education and fear-avoidance training
Cognitive behavioural therapy
Epidural steroid injections
Facet injections and radiofrequency neurotomy
Functional restoration
Herbal, vitamin, mineral and homeopathic supplements
Intradiscal electrothermal therapy
Lumbar extensor strengthening exercises
Lumbar stabilization exercises
Massage
McKenzie Method
Medicine-assisted manipulation
Minimally invasive nuclear decompression
Needle acupuncture
Nonsteroidal anti-inflammatory drugs, muscle relaxants, and simple analgesics
Opioid analgesics
Physical activity, smoking cessation and weight loss
Prolotherapy
Spinal manipulation and mobilization
Transcutaneous electrical nerve stimulation, interferential current, electrical muscle stimulation, ultrasound and thermotherapy
Traction therapy
Trigger point injections
Watchful waiting
Surgery

North American Spine Society (NASS), containing a comprehensive review of the evidence for and against the numerous methods of management of patients with this condition. There are separate papers by experts reviewing each common treatment approach from acupuncture to surgery. See Table 3. The reviews are more informative than usual because they include not only evidence of efficacy and safety but also a brief history and description of the treatment approach, comment on the practitioners involved, reimbursement available, mechanisms of action of treatment, and indications and contraindications.

Here is your opportunity to read a thorough description and review of all common treatments offered for CLBP. There is access online without cost – click on Volume 8 Issue 1 at www.sciencedirect.com/science/journal/15299430.

Project leaders were Scott Haldeman, DC MD PhD, Department of Neurology, University of California, Irvine, a Past-President of the North American Spine Society and widely acknowledged as an international leader in this field, and Simon Dagenais, DC PhD, then of the Department of Epidemiology and Community Medicine, Faculty of Medicine, University of Ottawa, Canada. We have already noted their conclusion that management guidelines are not materially different today from the US and UK Guidelines in 1994. Other key points from their editorial include:

(a) There are over 200 different treatments being offered for CLBP in North America, many promoted commercially by pharmaceutical companies, surgical instrument makers and others with little or no scientific evidence in support and seldom with discussion of potential harms.

(b) For recommended treatments, all of which have moderate rather than strong research evidence of efficacy, "no single approach has been able to demonstrate its definitive superiority".

(c) "There is clearly no consensus that commonly used diagnostic tests hold any value in the decision-making process before offering a treatment for CLBP" and this "brings into question the routine use of laboratory testing, x-rays, CT, MRI, discography, nerve conduction velocity, and electromyography by clinicians evaluating CLBP."

For MDs and others wanting to know more about spinal manipulative therapy/spinal mobilization (SMT/MOB) and the potential value of referring patients for chiropractic care, this special focus issue has a comprehensive chapter on spinal manipulative therapy titled *Evidence-Informed Management of Chronic Low-Back Pain with Spinal Manipulation and Mobilization*[12]. Authors, all prominent chiropractic scientists from the US and Canada, are Gert Bronfort, DC PhD (Northwestern Health Sciences University), Mitch Haas, DC MA (Western States Chiropractic College), Roni Evans, DS MS (Northwestern), Greg Kawchuk, DC PhD (Faculty of Rehabilitation Medicine, University of Alberta) and Simon Dagenais, DC PhD (Department of Epidemiology and Community Medicine, Faculty of Medicine, University of Ottawa).

Conclusions are that "SMT and MOB are at least as effective as other efficacious and commonly used interventions" and that the overall evidence relative to efficacy and safety "support SMT and MOB as viable options for the treatment of (patients with) CLBP". See the paper online for many specific findings.

E. Other Key Changes since 1990s

7**. The Biopsychosocial Model.** Back pain arises from a physical source (bio) but is then influenced by psychological (psycho) and social factors. Accordingly it is now recognized as a biopsychosocial problem requiring biopsychosocial assessment and treatment. Earlier biomedical and biomechanical models adopted respectively by the medical and chiropractic professions are inadequate. Figure 1 illustrates this model.

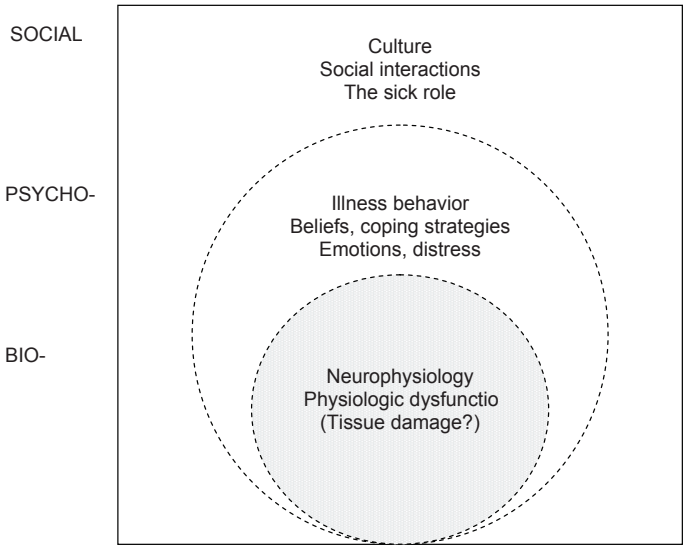
To quote Waddell from his text *The Back Pain Revolution*:

"We must accept that patients are not neat packages of mechanics or pathology, but suffering human beings. Professional life may be much simpler if we stick to physical treatment of mechanical problems, but health care demands that we treat people."[13]

A key result of adopting this new model (or more correctly this ancient model now rediscovered) is a new emphasis on the role of patients – in the use of patient questionnaires to assess baseline status and results of treatment, in new respect for patient preferences in treatment, which are now understood to be significant in terms of treatment effectiveness and satisfaction, and in terms of active participation of patients in self-care and recovery.

8**. Patient Preferences.** Partly because it is now known that patient preferences influence the effectiveness of treatments chosen, and partly because no single first line approach to treatment is clearly superior to others as already discussed, it is now appreciated that respecting patient preferences is important. In the words of the American College of Physi-

Figure 1. **The biopsychosocial model**



From *The Back Pain Revolution*, Waddell G, 2004.

cians Guideline, "patient expectations of benefit from a treatment should be considered when choosing interventions."[11]

9. **Patient vs Professional Assessment**. Until the 1990s it was felt that objective professional measures of function (e.g. ranges of motion, pain pressure thresholds) were more valid and reliable than subjective patient self-assessments of pain and disability. A key change, now recognized by all professional guidelines and now the standard adopted by third party payors for determining results of care, is primary reliance upon validated pain scales and disability questionnaires such as the Roland Morris and the Revised Oswestry completed by patients. These have been demonstrated to be more valid and reliable than professional measurements. Disability questionnaires go directly to ability to perform daily activities of living and involve no professional assumption, which may often be wrong, that certain structural pathologies or limited ranges of motion are relevant to the problem at hand.

10. **Natural History**. The basis for the passive approach to management of patients with non-specific back pain, relying on bed rest, relief of symptoms and 'wait and see', was the understanding that most pain was self-limiting and that most patients would recover anyway within one month. As Triano explains the literature up to the 1980s was misleading on this, data now show much more extensive chronicity, and "natural history is widely misunderstood."[14] Many patients with acute back pain have persistent pain for 1 to 2 years. As many as 6 in 10 (62%) will have one or more relapses during one year follow-up, and fully 40% report continuing back pain at 6 months.

Many workers compensation agencies use reports of return to work experience at one month to assess natural history and recovery rates, but this does not capture "the chronic episodic nature of back problems". In a typical case mix of workers compensation back pain patients "the presence of symptoms and impairment beyond 12 weeks may be as high as 31% to 40%, not the typical 10% often quoted."

There has never been broad agreement on the definitions of acute and chronic back pain. Given what is now known about the episodic natural history of both back and neck pain, with most people not achieving a complete resolution of symptoms over a period of years, many experts consider that non-specific pain should best be viewed and treated as acute episodes of an underlying chronic problem.

F. Conclusion

As part of the 1990s revolution in the management of patients we have been reviewing there has been much greater integration of medical and chiropractic services. The evidence, clinical guidelines and the preferences of many patients require the option of skilled assessment of functional pathology and joint manipulation – the most qualified and established specialists in this field are DCs. This integration is found in hospitals, spine clinics and referral networks from Denmark to Saudi Arabia to Mexico, where all graduates of the chiropractic school at the Universidad Estatel del Valle de Ecatapec (UNEVE), Mexico City, serve at least one year in the state hospital system.

However, integration is most advanced in the US where large private hospital systems such as Fairview Health Services in Minnesota (7 hospitals, 48 primary care clinics, 22,000 employees) and leading spine clinics such as the Texas Back Institute in Dallas, Texas, have had chiropractors on staff for the past 10-15 years. Here is how Fairview describes the situation on its website:

Integrated Spine Care

The Institute for Athletic Medicine combines chiropractic care with physical therapy to teach you how to strengthen your body and maintain the corrections provided through chiropractic. By getting you involved in your own healing, IAM helps you learn how to prevent injury.

Chiropractic care seeks to restore mobility and maintain normal function of the spine, head to tail. Chiropractors use hands on manipulation to reduce pain and inflammation in such areas as the back and neck, restoring range of motion and stretching muscles, ligaments and tendons. Treatment includes exercise, massage and self-care strategies.

Physical therapy is used to help people return to work and play after an injury, surgery or illness. Hands on treatment by a physical therapist may include massage, myofascial release, muscle and joint manipulation and exercise to help reduce pain, improve fitness, strength and flexibility.

Our physical therapists and chiropractors work together with physicians to create a treatment plan to:

- Evaluate acute and chronic muscle and joint conditions
- Reduce inflammation and pain
- Restore posture and balance to muscles and joints
- Improve circulation and stretch tight muscles, ligaments
- Promote muscle strengthening, endurance and flexibility
- Teach proper body mechanics and self-care to prevent re-injury

Since enabling Federal legislation in 2001 chiropractic services have been progressively established in the US Military and Veterans' Administration Medical Centers/Hospitals. Currently they are available at 81 such hospitals across the US, with that number expected to double soon, and chiropractic students from 11 US colleges are doing clinical rotations at these facilities. Dr. David Eisenberg of Harvard, in a keynote

lecture at the World Federation of Chiropractic's Congress in Montreal in May this year, reported upon his integration of chiropractic and other complementary services (e.g. acupuncture, massage) with medical care at Harvard and a pilot trial – soon to be published – showing greatly improved outcomes for chronic back pain patients as a result.

This, then, is the new medical and chiropractic consensus on how to better manage the huge individual and societal burden of back pain – a most rewarding new consensus for patients and all concerned. TCR

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1. In this multicentre RCT 137 patients with chronic nonspecific LBP, and no red (pathology) or yellow (psychological) flags, were randomized into one of two groups:

(a) Experimental group. Patients received 15 sessions of GDS therapy – 2 sessions per week of average duration of 50 minutes.

(b) Control group. Patients received 14 40-minute sessions of TENS plus 10 minutes of microwave treatment, and a last session in which they were given instructions for home postural health exercises. This represented a standard Spanish PT protocol.

2. Outcome measures were pain intensity (VAS), functional disability (Oswestry Questionnaire) and quality of life (SF-36) and measurements were taken at baseline, at end of treatment, and 3 months and 6 months after treatment.

3. Patients in both groups improved on all measures at the end of treatment and 3 months later, with improvement in the experimental group being significantly better than in the control group. However, 6 months after treatment patients in the control group had lost all benefit of treatment, whereas patients in the experimental group maintained their improvement on all measures. The authors claim that the GDS muscular chain method assists patients in a manner "in which the most ergonomic, adapted, and coordinated movements are recovered, contributing to maintaining spinal health".

There is further claim that, while other studies have shown benefit from self exercises, group exercises, manipulation and spine stabilization exercises, the results achieved in this trial are more significant and superior.

4. A limitation of this trial, acknowledged in the paper, is that patients were not blinded – they knew which treatment they were getting – this is not a double-blind trial. The trial repeats the general pattern of best results when you combine manual treatments with exercise – whatever the specifics of treatment.

(Arribas, MJD, Sánchez, MR et al. (2009) *Effectiveness of the Physical Therapy Godelive Denys-Struyf Method for Nonspecific Low Back Pain Spine* (15) : 1529-1538)