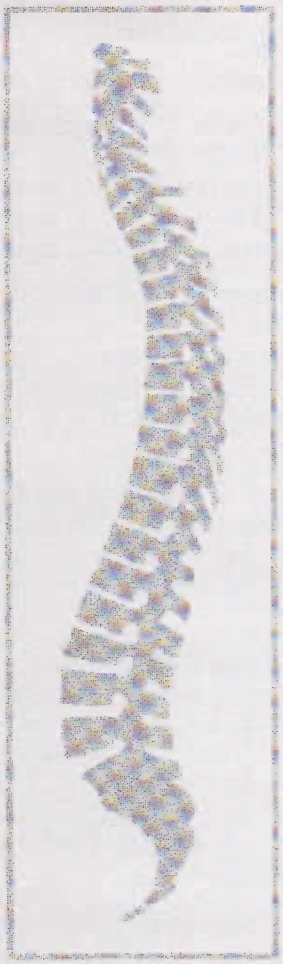

THE CHIROPRACTIC REPORT

An international review of professional and research issues, published bimonthly
Editor: David Chapman-Smith, LL.B. (Hons.), FICC (Hon.) **July 1995 Vol. 9 No. 4**

Redefining Whiplash and its Management

A. Introduction

"*Most therapeutic interventions currently used in patients with whiplash-associated disorders (WAD) have not been evaluated in a scientifically rigorous manner. These unproven therapies include cervical pillows, postural alignment training, acupuncture, spray and stretch, transcutaneous electrical stimulation, ultrasound, laser, short-wave diathermy, heat, ice, massage, epidural or intrathecal injections, muscle relaxants, and psychosocial interventions. Treatments evaluated in a scientifically rigorous manner show little or no evidence of efficacy. There is little or no evidence of efficacy for soft cervical collars, corticosteroid injections of the zygapophyseal joints, pulsed electro-magnetic treatment, magnetic necklace, and subcutaneous sterile water injection. Use of soft cervical collars beyond the first 72 hours probably prolongs disability in WAD.*

***Interventions that promote activity such as mobilization, manipulation, and exercises** in combination with analgesics or non-steroidal anti-inflammatory agents are effective on a time-limited basis. Based on limited evidence and reasoning by analogy, it is the Task Force consensus that the use of non-steroidal anti-inflammatory agents and analgesics, short-term manipulation and mobilization by trained persons, and active exercises are useful in Grade II and III WAD, but prolonged use of soft collars, rest or inactivity probably prolongs disability in WAD.*"

Quebec Task Force Report (May 1995).[1]

1. In December 1994 government-sponsored multi-disciplinary task forces in the U.S. and the U.K. published major reports on the management of acute low-back pain.[2,3] On the basis of the scientific literature both reports were critical of traditional medical management of most patients, those with simple or mechanical back pain, and endorsed a chiropractic approach.

The two treatments with most evidence of effectiveness and safety, and therefore recommended, were spinal manipulation and/or non-prescription over-the-counter medications (e.g. NSAIDS such as aspirin, or acetaminophen such as Tylenol). These should be combined with early return to activities, encouragement and education (e.g. on posture, exercises, self-care).

2. Now, in May 1995, a Quebec Task Force on Whiplash-Associated Disorders has presented what will be an equally influential report on cervical spine soft-tissue injuries, titled *Redefining Whiplash and its Management*.[1] An elite international, interdisciplinary task force comes to similar conclusions to the U.S. and the U.K. reports on back pain. For neck pain and other whiplash-associated disorders (WAD) rest prolongs disabilities, and passive modalities, muscle relaxants and injection techniques have no proven benefit. The patient should be kept active and given interventions such as mobilization, manipulation and exercises that promote activity. NSAIDS or analgesics may be used on a supplementary basis for pain relief, not to allow the patient to rest pain-free but to encourage the patient to remain active.

3. For WAD as for back pain, avoidance of chronicity and disability is a key goal from the commencement of treatment. The Task Force reports that in Quebec 46% or nearly half of the total cost of WAD comes from the 12.5% of patients who develop a chronic problem - symptoms persisting beyond six months.[4] Successful management prevents disability through early activation, education and reassurance.

4. First and foremost, however, the Task Force Report is an outspoken indictment of education, research and practice in the field of WAD throughout the world. Leading North American and European experts find:

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Professional Notes

'The Nation's Most Trusted Health Care Authority' Speaks on Back Pain

AMA Pocket Guide to Back Pain, Random House, New York, May 1995.

Last year, in *The Serpent and the Staff: The Unhealthy Politics of the American Medical Association* (Putnam, New York), Howard Wolinksy and Tom Brune from the Chicago Sun Times published a broadly researched indictment illustrating how the AMA acts in the interests of the medical profession rather than the public.

A striking new example of this is the AMA Pocket Guide to Back Pain just published in May. The AMA calls itself "the nation's most trusted health care authority" and claims in the preface to be providing "a *reliable* source of information" for the public. Is this so, or is the new booklet simply medical protectionism in reaction to the major US government-sponsored interdisciplinary guidelines on back pain published in December 1994? You be the judge.

The 1994 guidelines, published by the US government's Agency for Health Care Policy and Research, were based on an exhaustive review of the scientific literature. A multidisciplinary panel with 35 members, chaired by leading orthopedic researcher and surgeon Stanley Bigos of Seattle,

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1995 Centennial Celebrations: *United States:* July 5-10, 1995, Washington DC (incorporating the 1995 World Chiropractic Congress) and September 13-17, 1995, Davenport Iowa. Registrations: 1-800-324-1995.

a) **Terminology**. There is complete confusion in the use of terminology. A new classification is suggested and the Task Force thinks this may be "the most important contribution" it proposes. (See para 9).

b) **Scientific Evidence**. After three years of careful review of all of the international evidence the Task Force found it to be "sparse and generally of unacceptable quality." There was "surprisingly little evidence relevant to epidemiology, clinical decisions, preventive interventions and rehabilitation ...". In his editorial on the report in *Spine*, Nikolai Bogduk, a leading cervical spine researcher from Australia, is even more frank:

"The Quebec Task Force provides a cogent and exhaustive summary of the state-of-the art as of September 1993 .... this report is an indictment of the literature ... on the topic of whiplash there is no decent epidemiology, nothing written on diagnosis, and barely any treatment discussed works."[5]

The Task Force found 10,382 published articles on neck injuries. Only 1,204 related to soft-tissue injuries. On initial screening 294 of these were found worthy of detailed consideration. On detailed review only 62 were accepted as scientifically sound. Some of these related to risk, diagnosis and prognosis. Only 17 dealt with evaluation of treatments.

(As a matter of interest 2 of these 17 valid trials by all professions on all interventions were chiropractic trials - by Nansel et al in the U.S.[6] and Cassidy et al in Canada.[7])

c) **Education**. Everyone responsible for the primary management of WAD has significant gaps in necessary skills and knowledge and "we must realize that most primary interventions in the management of WAD have little chance of being effective given the present university teaching curricula."[8] (See para 12).

5. This Report now looks at how the Quebec Task Force was constituted, its methodology, its findings and recommendations.

B. Background

6. Dr. Walter Spitzer, Professor of Epidemiology and Biostatistics at McGill University, Montreal in Canada, may be the best known epidemiologist in the world. He has led task forces reporting on many important and controversial issues, including the value of the periodic medical examination and the correlation between passive exposure to smoke and disease. He was previously best known to the spinal care community for the 1987 Quebec Task Force Report on Spinal Disorders published in *Spine*.[9]

"Neck pain is to the automobile what low-back pain is to the workplace" and in 1989 the Société d'assurance automobile du Québec (SAAQ), the agency in the province of Québec, Canada which provides all auto insurance through a no-fault plan, decided to establish and fund a task force that would provide "an in-depth analysis of clinical, public health, social and financial determinants of the whiplash problem." This was because the costs of care, disability and indemnity were high and rising. SAAQ approached Dr. Spitzer.

7. **Members of the Task Force**. Members of the Task Force appear in Table 1. Most are from Québec but there are also experts from elsewhere in Canada, the United States, France and Sweden.

The three principal authors, Spitzer, Skovren and Salmi, are epidemiologists from Canada, the United States and France. Other principal authors, all from Canada, are Cassidy, a chiropractor and orthopedic specialist, Duranceau, a physiatrist, Suissa, a bio-statistician, and Zeiss, a research associate. The report has been published in two forms:

a) The official report, published in French and English. This can be obtained from the SAAQ, 333 boul Jean Lesage, Tour nord, 6ième étage, Québec, Québec, G1K 8J6, Canada, Tel: 418-528-4043.

b) The Scientific Monograph (73 pages). This is an abridged version of the official report published as a supplement to the journal *Spine* in May. Cassidy was the editorial coordinator for the monograph.

8. **Methodology**. There were a number of areas of study including:

a) An analysis of the 4,757 whiplash claims in Québec in 1987 to identify incidence of injury and prognostic factors.

b) A three year search and review of all the scientific literature.

c) Development of guidelines for management, and recommendations with respect to education and future research.

The goal was to base as many conclusions as possible on sound scientific evidence so that "opinion had to take a back seat to evidence". However, because the evidence was found to be remarkably thin, the Task Force acknowledges that it was "forced to evoke expert opinion to make recommendations" in many areas. Accordingly the method, as with the back pain panels in the U.S. and the U.K. already mentioned, was to combine evidence and interdisciplinary expert opinion to provide consensus findings. Task Force consensus on all conclusions in the Report was unanimous.

C. New Classification of WAD

9. Whiplash is defined as follows:

Whiplash is an acceleration-deceleration mechanism of energy transfer to the neck. It may result from rearend or side-impact motor vehicle collisions, but can also occur during diving or other mishaps. The impact may result in bony or soft-tissue injuries (whiplash injury), which in turn may lead to a variety of clinical manifestations (Whiplash-Associated Disorders).[10]

10. WADs are classified on two scales:

a) **Clinical Presentation**. Five grades from Grade 0 to Grade IV - for details see Table 2. The Task Force's Report relates to management of Grades I to III WAD and does not include management of fracture or dislocation.

Grade II WAD involves musculoskeletal signs, Grade III neurologic signs. For a

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summary of commonly used terms, and the Task Force's correlation of these with its new Grades I to III classification, see Table 3. Chiropractors would add 'subluxation' and 'joint dysfunction' under each of Grades I to III.

b) **Duration of Injury**. Classification according to duration of injury is an important guide to clinical management. Classifications are:

- 4 days from time of injury
- 4-21 days
- 22-45 days
- 46-180 days
- More than 6 months

Continuing complaints and residual disability after 45 days "are important warnings of chronicity, justifying vigorous clinical intervention and mandatory interdisciplinary clinical consultation. At six months the injury is chronic and deemed "a serious clinical development with public heath implications." For that reason "we believe that it is important to try to prevent chronicity at all stages of WAD."

What is "mandatory interdisciplinary consultation" where the patient is still partially disabled after 45 days? If there has not been chiropractic management already, this should frequently involve chiropractic assessment. This is clear from the Task Force's recommendations on management and its specific advice that "to address this problem .... we should create teams with imaginative combinations of primary care physicians, physiotherapists, chiropractors, physiatrists, orthopedists (and) occupational therapists ..."[11]

D. Management

11. The Task Force provides detailed advice, including recommended history forms and pain diagrams for completion by patients and clinicians. Its management algorithm, summarizing recommendations on management and incorporating the two classifications of WAD discussed above, appears as Table 4. It is noted:

a) The Task Force uses the term 'interventions' rather than 'treatments', presumably because this is more inclusive and would cover education and self-care.

b) Conceptually it draws a distinction between mobilization and manipulation, which is consistent with the literature of the past 10 years.

c) Even more importantly it classifies both mobilization and manipulation as active treatments. Interventions are classified as follows:

- *Immobilization* - includes rest and use of collars and pillows.
- *Activation* - includes manipulation, mobilization, exercise, traction, postural alignment and advice and spray and stretch.
- *Passive modalities and electrotherapies* - TENS, electrotherapy, ultrasound, laser, short-wave diathermy, heat, ice, massage.
- *Surgical treatment*
- *Injections*

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Table 1

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Table 2

Proposed Clinical Classification of Whiplash-Associated Disorders

Grade:	Clinical Presentation
O	No complaint about the neck. No physical sign(s)
I	Neck complaint of pain, stiffness, or tenderness only. No physical sign(s).
II	Neck complaint AND Musculoskeletal sign(s)*
III	Neck complaint AND Neurological sign(s)**
IV	Neck complaint AND Fracture or dislocation

* Musculoskeletal signs include decreased range of motion and point tenderness.
** Neurologic signs include decreased or absent deep tendon reflexes, weakness, and sensory deficits.

Symptoms and disorders that can be manifest in all grades include deafness, dizziness, tinnitus, headache, memory loss, dysphagia, and temporomandibular joint pain.

Adapted from *Spine*

Table 3

Clinical Spectrum of Whiplash-Associated Disorders

1. Neck Complaint of Pain, Stiffness, or Tenderness Only; No Physical Sign(s)		
	Common synonyms	Whiplash injury Minor whiplash Minor cervical sprains or strains
	Presumed pathology	Microscopic or multimicroscopic lesion Lesion is not serious enough to cause muscle spasm
	Clinical presentation	Usually presents to a doctor more than 24 hours after trauma
2. Neck Complaint and Musculoskeletal Signs		
	Common synonyms	Whiplash Cervical sprain Cervicalgia with headaches Headache of cervical origin Traumatic cervicalgia Cervicoscapulalgia Minor intervertebral dysfunction Sprained cervical facet joints Sprained cervical ligaments
	Presumed pathology	Neck sprain and bleeding around soft-tissue (articular capsules, ligaments,tendons, and muscles) Muscle spasm secondary to soft-tissue injury
	Clinical presentation	Usually presents to a doctor in the first 24 hours after trauma Nonspecific radiation to the head, face, occipital region, shoulder, and arm from soft-tissues injuries Neck pain with limited range of motion due to muscle spasm
3. Neck Complaint and Neurologic Signs		
	Common synonyms	Whiplash Cervicobrachialgia Cervical herniated disc Cervicalgia with headaches Headache of cervical origin Cervicoscapulalgia
	Presumed pathology	Injuries to neurologic system by mechanical injury or by irritation secondary to bleeding or inflammation
	Clinical presentation	Presents to a doctor usually within hours after the trauma Limited range of motion combined with neurologic symptoms and signs

Adapted from *Spine*

- *Pharmacologic interventions*
- *Psychosocial interventions*
- *Other interventions* - acupuncture and magnetic necklace

d) With respect to manipulation the Task Force constantly emphasizes that treatment should be by appropriately qualified persons only. A course of manipulation should be "on a time-limited basis" and "long-term repeated manipulation without multidisciplinary evaluation is not justified."

Speaking at a Canadian Chiropractic Association meeting in Toronto in June, Dr. Cassidy explained that the Task Force had consciously avoided any definition of 'time-limited', 'long-term' or 'short-term', and considered that definitions should be established by professional clinical practice guidelines.[12]

E. Education and Research

12. The Task Force defines the skills and knowledge needed for effective management of WAD patients, and criticizes current education in all disciplines:

"In our opinion the primary interventionist must possess the qualities of a clinical anatomist. In addition to his or her basic knowledge of topographic anatomy, this clinician must have an in-depth knowledge of neuroanatomy and more particularly, of peripheral neuroanatomy. He or she must possess fundamental knowledge of rehabilitation of the musculoskeletal system, including psychosomatic medicine and the social aspects of chronic disorders of the musculoskeletal system. Also, he or she must possess the essential knowledge for the prescription of combined care, including principles, scope and value of activation and other interventions. Finally, he or she must acquire knowledge of the basic principles of clinical epidemiology.

Unfortunately, there are significant gaps in the teaching of these skills and knowledge in the training programs of all clinicians. Some specialists in various disciplines (medicine, physiotherapy, occupational therapy, biomechanics, and chiropractic) have acquired these fundamental skills through individual voluntary postgraduate training. Most formal specialty training, however, does not encompass all the necessary areas of knowledge and skills for management of musculoskeletal disorders. We must realize that most primary interventionists in the management of WAD have little chance of being

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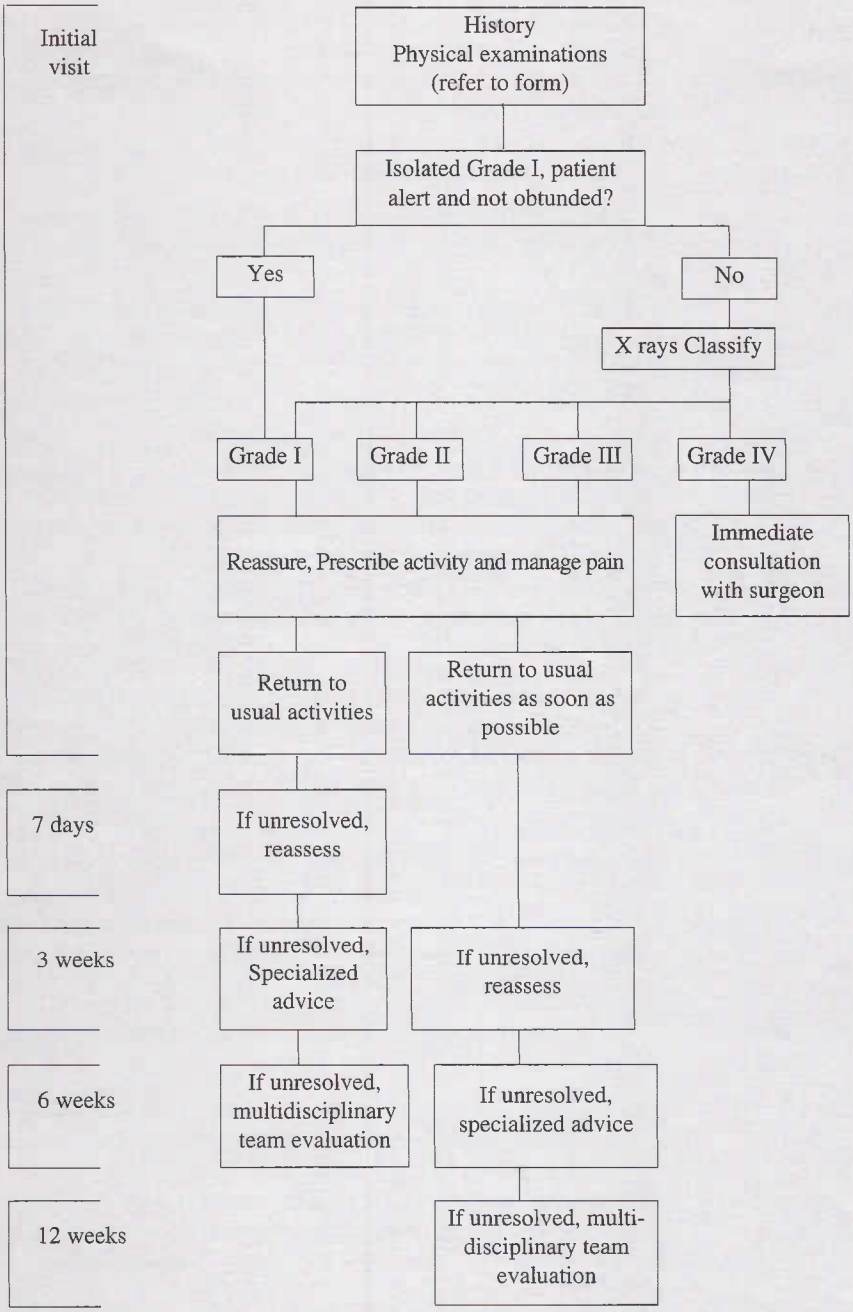
Table 4

The Quebec Guidelines for Patient Care



Operational Definitions

Isolated	Not associated with other injuries.
Obtunded	Dulled consciousness.
Form	Recording information from the history and physical examination, management decisions, and grading of the WAD should be completed for all initial visits and for all reassessment visits for Grade I - III and preferably on a standardized form.
Plain Radiographs	Include anteroposterior, lateral, and open-mouth views; all seven cervical vertebrae and the C&-TI level should be included.
Reassurance	Parents should be reassured that most WAD are benign and self-limiting, and they should be encouraged to resume usual activities of life as soon as possible.
Prescribe Activity	Interventions should focus on promoting activity. Range of motion exercises should be implemented. Techniques that promote mobility of the cervical spine can be used but should be applied by qualified personnel. Interventions that impede active mobilization of the neck are not indicated.
Return to usual activities	Patients should be advised to resume their activities of daily living (work, studying, leisure, social, etc.), as soon as possible (usually immediately for Grade I). It should be explained to patients that usual activities may betemporarily painful but not harmful in WAD.
Unresolved	Unable to resume usual activities. A patient who still has residual pain or limitation of range of motion but who is able to resume work and other usual activities is considered to have resolved WAD.
Specialized advice	Consultation with a health professional with in-depth formal raining in managing WAD.
Reassessment	Includes history taking and physical examination as during initial visit and specialized advice is required.
Multidisciplinary team	Health professionals with in-depth formal training in musculoskeletal disorders, psychological assessment, and other specialties.

From *Spine*

effective, given the present university teaching curricula."[13]

13. With respect to research, which it has found so sparse and thin, the Task Force identifies high-priority questions that urgently require good, completed studies. The therapeutic interventions needing immediate further assessment include manipulation and specific physiotherapeutic treatments such as mobilization, exercises, and passive modalities and electrotherapies.

The current research by David Cassidy, DC PhD in Saskatchewan and Åke Nygren, MD DDS PhD in Sweden is cited and endorsed as "a model for international and interdisciplinary research." On a grant of $1 million from the Saskatchewan Government Insurance Plan, Cassidy is halfway through a five year study looking at the incidence and management of whiplash injuries. This study is including controlled trials to determine the effectiveness and cost-effectiveness of chiropractic and other management. Nygren, Medical Director of Folksam Insurance, one of the largest insurers in Sweden, is leading a sister study at the Karolinska Institute, Stockholm, Sweden.

F. Conclusion

14. During the past six months state-of-the-art evidence-based multidisciplinary guidelines from Canada, the U.K. and the U.S. have dramatically altered the possibilities and challenges facing the chiropractic profession.

On one hand, and representing a fitting achievement during the profession's centennial year, the guidelines vindicate chiropractic management of spinal soft-tissue injuries causing back pain, neck pain and headache - the conditions most commonly presented in chiropractic practice. In 1995 there is more scientific evidence to support a chiropractic approach to management, based on early activation which includes skilled adjustment or manipulation, than any other. Task forces dominated by leading medical experts, but each having representation from the chiropractic clinical research community, call for much greater involvement of chiropractors in the multidisciplinary management of patients.

On the other hand the three reports, especially that of the Quebec Task Force, show that, as with other professions, there are still significant deficiencies in chiropractic education, research and practice.

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Main Article: *continued from page 5*

Perhaps the clearest message for the individual chiropractor is that he or she must cultivate the communication and other skills that allow successful practice in an interdisciplinary team environment. Chiropractic college programs must place further emphasis on these skills for students. Another clear message for the profession as a whole is that it must continue aggressively to develop and to support clear clinical practice guidelines. The unadorned frankness of the Quebec Task Force Report illustrates once more that a new era of accountability has arrived for all health professionals.

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13. Ref 1 supra, 38-39.

Professional Notes: *continued from page 1*

developed guidelines for the safe and effective management of acute back pain. They found:

- For most patients, those with common or mechanical back pain, the two treatments proven safe and effective are spinal manipulation and non-prescription medications (acetaminophen and NSAIDS).
- Bedrest should be avoided if possible, and used for a maximum of 2-4 days for patients with severe back and leg pain.
- There was no scientific evidence of benefit of many standard medical treatments including traction, TENS and cortisone injections.
- Muscle relaxants should be avoided since they were no more effective than NSAIDS and produced more side effects. There was almost a recommendation against use of oral steroids and anti-depressants.

These US recommendations were consistent with recommendations published by another government-sponsored panel in the United Kingdom at the same time. This is not surprising - the scientific evidence is the same worldwide, and one would expect evidence-based guidelines to be similar wherever published.

What does the AMA guide to back pain say as it summarizes "the key therapies" and provides "the latest information on treatment options" for back pain?

- There is no mention whatsoever of spinal manipulation in particular, or manual therapy in general. One of the two treatments supported by scientific evidence is simply ignored.
- "Bedrest may be necessary for a few days *or a few weeks*."
- "Corticosteroid drugs, such as cortisone, are especially effective in decreasing inflammation." The AMA guide proceeds to support the use of both injections and oral corticosteroids.
- Both muscle relaxants and anti-depressants are encouraged. "If your back pain is caused by muscle spasms .... your physicians may prescribe muscle relaxants." "Other medications frequently used to relieve back pain are anti-depressants which not only improve sleep and mood but are very good at providing pain relief."

There you have it. There can only be two reasons why the AMA has got it so wrong, neither of which will bring much joy to many fair-minded members of that organization:

1. The AMA is not aware of what the scientific literature says. (On the face of it this could be right because the three AMA doctors who were consultants for the back pain guide were an editor, an obstetrician and a surgeon - none with a research reputation in this field. However on this theory it would have to be a mere coincidence that the AMA booklet was published six months after an AHCPR Report saying that much medical practice was inappropriate. Spinal manipulation, likewise, has been omitted by mere chance, rather than because this treatment is offered by chiropractors and not MDs).

2. If the scientific evidence is inconvenient to medical interests, the AMA is quite happy to ignore or misrepresent it.

In the months ahead look out for a concerted attack by the AMA and political medicine on the AHCPR. The practice guidelines emerging from this agency, which is governed by public rather than medical interest, are far too frank and threatening. (For more detailed commentary on the U.S. (AHCPR) and U.K. back pain guidelines see the March 1995 issue of *The Chiropractic Report*).