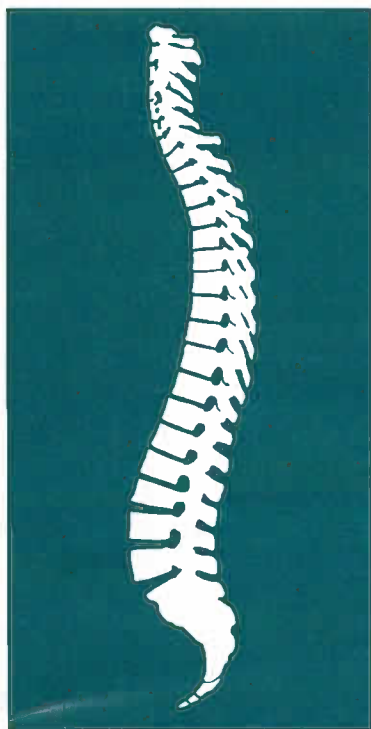


THE CHIROPRACTIC REPORT

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THE CHIROPRACTIC PROFESSION

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(CSAG, 1994¹) and in the US (AHCPR, 1994²) have endorsed the traditional chiropractic approach to management by recommending spinal manipulation and early activity for most patients. The expert panels for these guidelines, predominantly medical experts, have also included chiropractors.

One of the two experts featured in the new Time Life video on *Back Pain* in the US is Dr. John Triano of the Texas Back Institute, Dallas, a chiropractor. One of the three international experts recently chosen by the Cochrane Collaboration to review and report on all the back pain clinical trials for the international health science community is another prominent chiropractic researcher, Dr. Peter Aker of Toronto. (The other two are Paul Shekelle MD MPH of RAND in the US and Willem Assendelft MD PHD in The Netherlands).

In the UK the Royal College of General Practitioners' new guideline for the management of back pain was developed in partnership with the British Chiropractic Association and recommends to family physicians that, in the absence of certain red flags, they consider referrals of patients with back pain for skilled manipulation.³

b) *Neck manipulation.* In the past there has been misrepresentation of risk rates of neck manipulation⁴ and medical concern about unproven benefit. That era is gone. Recent multidisciplinary expert panels in Canada,⁵ and the US⁶ have reviewed the current evidence and specifically recommended cervical manipulation and mobilization for many patients with common categories of head and neck pain, including motor vehicle accident victims with Grades I-III whiplash associated disorders.

c) *General acceptance by medicine and nursing.* During the past year the World Federation of Chiropractic, the international body representing national associations of chiropractors in over 60 countries, has been accepted into membership by the World Health Organization (WHO) and WHO's affiliated organization for national and international medical organizations, the Council of International Organizations of Medical Sciences (CIOMS). Acceptance was widely supported by the mainstream health care community.

CURRENT U.S. MEDICAL POLICIES ON CHIROPRACTIC

Table 1

American College of Surgeons (1987)

- "There are no ethical or collective restraints to full professional cooperation between doctors of chiropractic and medical physicians".
- Such cooperation should include "referrals, group practice, participation in all health care delivery systems, treatment and services in and through hospitals, participation in student exchange programs between chiropractic and medical colleges, and cooperation in research and continuing education programs".

American College of Radiology (1987)

- "There are and should be no ethical or collective impediments to interprofessional association and cooperation between doctors of chiropractic and medical radiologists in any setting where such association may occur, such as in a hospital, private practice, research, education, care of a patient or other legal arrangement".

American Hospital Association (1987)

- The AHA "has no objection to a hospital granting privileges to doctors of chiropractic for the purposes of administering chiropractic treatment, furthering the clinical education and training of doctors of chiropractic, or having x-rays, clinical laboratory tests and reports thereon made for doctors of chiropractic and their patients and/or previously taken x-rays, clinical laboratory tests and reports made available to them upon (patient) authorization".

A. INTRODUCTION

Chiropractic (*Greek*: done by hand) arose as a separate profession in the United States in the 1890s. In that era of heroic medicine many alternative disciplines emerged - chiropractic has been the strongest survivor.

Through to the 1950s the chiropractic profession was flamboyant, controversial and largely North American. In the 1960s and 1970s controversy remained, but the foundations were being laid for broader mainstream acceptance of the profession, foundations such as:

- Educational standards and licensing examinations similar to medicine. (In many U.S. states chiropractors and medical doctors sat the same basic science examinations for licensure).
- The first significant research texts and scientific journals.
- Legal recognition and regulation in all US states and in various other countries.

Today, 100 years after its birth, chiropractic is taught and practised throughout the world and the profession has earned broad acceptance for its services, including its central art of spinal adjustment or manipulation. Evidence of this includes:

- a) *Back Pain.* New government-sponsored evidence-based national clinical guidelines for the management of back pain in the UK

The government referred the *Manga Report* and many other issues of access and funding to a Ministry of Health Chiropractic Services Review Committee chaired by a former Minister of Health, Tom Wells. The November 1994 *Wells Report* endorsed the central findings of the *Manga Report* and recommended:

- "That on grounds of effectiveness, safety, patient satisfaction and public acceptance ... chiropractic services should continue to be funded by the (government's) Ontario Health Insurance Plan."
- That a number of financial and other barriers to access should now be removed, that university chiropractic education should be publicly funded on a similar basis to education for medical doctors and other recognized health professions, and that the government should now develop a formal health human resources (manpower) plan reflecting the now established role for chiropractic services.¹⁷

D. COMMON QUESTIONS

15. **The Chiropractic Subluxation.** Medical critics have sometimes alleged "the chiropractic subluxation (the spinal lesion that is one focus of chiropractic treatment) has no objective existence at all". This is said to be confirmed by the fact that medical radiologists cannot see such subluxations on x-ray. The position is complicated by the fact that modern medicine has a competing definition of 'subluxation'.

16. 'Vertebral subluxation' is the term given by chiropractors to an entity with these essential elements:

- Abnormal function (movement) in a spinal joint.
- Neurological and vascular involvement;
- Often, but not necessarily, a structural (static) displacement of a vertebra.

It is essentially a functional entity, involving restricted vertebral movement in one or more planes of motion, and unless there is structural misalignment is no more visible on x-ray than, a limp or headache or any other functional problem.

17. The concept of subluxation is not unique to chiropractic. Its equivalents are the 'osteopathic lesion' and the 'segmental blockage' of the European manual medical school.

On account of the confusion of terminology, and the artificial barriers to understanding this can create, many North American chiropractors today simply refer to 'spinal dysfunction'. There is irony in this since, as Terrett explains, medical authors during the 18th and 19th centuries used subluxation in the chiropractic sense.¹⁸ And during the past 10 years, during which there has been greatly increased cooperation between medicine and chiropractic in research and practice, many medical authors are again using the term subluxation as formerly. (See for example *Sacroiliac Subluxation: A Common Treatable Cause of Low Back Pain in Pregnancy* (1991) by Daly, Frame et al MDs from the University School of Medicine, Rochester, New York who define and accept 'subluxation' in a manner completely consistent with chiropractic practice.¹⁹)

18. **Adjustment.** Chiropractors prefer the word 'adjustment' to 'manipulation' because it signifies something more controlled, specific and skilled. Leading practitioners of manual medicine and osteopathy have now adopted the term also.²⁰

Today, a wide range of manual techniques have been shared between the different schools of manual health care. It is not generally appreciated that the classic chiropractic adjustment techniques, although quick, are not forceful or violent. To quote the New Zealand Commission, "... it is alleged that (chiropractic) technique consists mainly of the 'dynamic thrust'. This is claimed to be dangerous because it is a sudden high-velocity movement, the patient cannot see what is being done, cannot resist the thrust, and is therefore at the chiropractor's mercy.

"Until the Commission saw chiropractors at work, it imagined from such descriptions that this was the only way the chiropractor operated, while the physiotherapist, with gentle articulations, extension, or mobilization was a very different practitioner. The truth is that, *while the chiropractor's movements are indeed often quick*, perhaps more so than those of the physiotherapist, *they are also usually small and precise. The most forceful manipulations we saw were performed by physiotherapists*".²¹ (Emphasis added).

19. **Manipulation.** The term 'spinal manipulation' has been used loosely in the past, often to refer to all manual techniques used to treat muscles or joints. During the past ten years the following definitions have become distinct in the international health science literature with respect to treatment of joint disorders:

- **Mobilization:** slower (low-velocity) techniques in which the joint remains within its passive range of movement. The treatment can be monitored and resisted by the patient, who therefore has final control.

- **Manipulation:** faster (high-velocity) techniques that take the joint beyond the passive range end barrier to what is known as the 'paraphysiological' space. Range of movement is greater. Because of the speed the patient does not have control. Potential for harm in unskilled hands is greater.

The chiropractic adjustment is a skilled and specific form of manipulation. A recent study from the RAND Corporation indicates that over 90% of manipulative services provided in the U.S. are given by the chiropractic profession.²² The importance of the distinction between manipulation and mobilization is emphasized by a growing body of research showing that manipulation has superior results to mobilization in reducing back pain,²³ reducing neck pain,²⁴ and increasing range of movement in a joint.^{24,25}

20. **Chiropractic and Medicine - Incompatible Philosophy?** The zealous and unsupportable assertion of many early chiropractors was that the vertebral subluxation influencing the nervous system was the source of all or most disease. This is as historical as a then current medical technique, blood-letting with the leech. This skeleton in the chiropractic cupboard, rattled by a fringe movement of extremists as exist in any profession, has sometimes been a continuing barrier to understanding and cooperation between the chiropractic and medical professions.

The best proof for MDs that chiropractic today is a modern health science compatible with medicine is to meet a local chiropractor and observe his/her practice. The next best evidence is to talk to a colleague who has a settled inter-referral relationship with a chiropractor. At the individual level today there is widespread cooperation between chiropractic and medicine at all levels of education, research and practice. In many North American cities a large number of MDs and DCs practice in offices in the same health centre with close cooperation and inter-referral, often now in full and formal partnership.

21. Independent respected health science journals have always published chiropractic research. In recent years journals published/endorsed by medical associations have dropped their former editorial bias. In 1992, for example:

a) The American College of Physicians, in its *Annals of Internal Medicine*, published medical research into chiropractic manipulation for back pain. MDs were asked to reappraise the roles of spinal manipulation and the chiropractic profession because of "recent research favourable to the chiropractic treatment of patients with low-back pain".²⁶

For the last 50 years use of spinal manipulation had been "labelled as unorthodox treatment by the medical profession" but new research demanded a change in attitude.

b) The *Journal of Family Practice*, endorsed by the American Academy of Family Physicians, was more outspoken. An article by Peter Curtis MD and Jeffrey Bove, DC from the University of Chapel Hill, North Carolina encouraged family physicians to "re-evaluate their relationship with chiropractors" and provided guidelines for referral.²⁷

Three perceived problems - the education of chiropractors, including ability to diagnose; lack of scientific evidence of effectiveness of chiropractic manipulation; and potential danger from manipulation, especially cervical manipulation - were answered and dismissed as unfounded.

22. In other countries than the U.S. there is a more established pattern of co-operation and inter-referral. Thus, for example:

a) In the United Kingdom, a 1986 survey of general medical practitioners showed that 50% had referred patients for non-medical spinal manipulation (chiropractors and osteopaths) during the past 12 months.²⁸ Today - 10 years later - referral rates will be significantly higher on account of the increased scientific evidence including the highly regarded and publicized British trial of chiropractic,²⁹ and the official support of the British Medical Association³⁰ and the Royal College of General Practitioners.

b) In Canada a 1989 study from the Faculty of Medicine, University of Toronto, reported that a clear majority (62%) of family medical practitioners were referring patients to chiropractors and that 1 in 10 (9.5%) of MDs in family practice were chiropractic patients themselves.³¹ A 1990 survey in Saskatoon, a city with 38 chiropractors, reported that 20% of all chiropractic practice related to neck and back pain patients referred by MDs.³²

23. Notwithstanding these developments many MDs retain the impression that chiropractors have an incompatible approach to health care. One powerful source of this perception, now exposed in the courts, has been the American Medical Association (AMA) and it is noted:

- AMA changed its ethics to allow referral in 1980 but continued a campaign to discourage cooperation.

- In the *Wilk Case*,³³ litigation between a representative group of chiropractors and the AMA and affiliated organizations, the AMA was found to have breached antitrust laws during 1966-1980 in conspiring to restrict cooperation between individual MDs and chiropractors in order to eliminate chiropractic as a competitor in the U.S. health care system. A patient care defence advanced by the AMA, alleging justifiable concerns about the practice of chiropractic, failed. The court found itself obliged to make a direct ruling on credibility against the AMA on this matter.

- Significantly, in the present context, the court also found that the basis of the AMA's illegal boycott of chiropractic was the calculated portrayal of chiropractors as unscientific, cultist and having a philosophy incompatible with scientific medicine.

If you still have the feeling this may be true, you should reflect upon the sources of your information, and what direct evidence you have to contradict the findings of a number of detailed government investigations.

24. **Conditions Treated.** Studies in North America, Europe and Australia report that approximately 80% of chiropractic practice is for musculoskeletal pain, with low-back pain the predominant presenting complaint. Another 10% is for headache, concerning which there is a growing body of research evidence of effectiveness.^{34,35,36}

The remaining 10% includes a wide variety of disorders aggravated or caused in part by spinal lesions. This is the 10% that concerns many MDs who have little exposure to manipulative health care. Much needs to be said here, but central issues are:

- No responsible chiropractor today claims to cure organic disease through adjustment of the spine. There is no research to support such a claim. However, clinical experience suggests that vertebrogenic pain plays an often unsuspected role in many conditions.

- The claims of modern chiropractors in this area, and their clinical experiences, are shared by all professions engaged in spinal manual therapy - including medicine, osteopathy and physiotherapy.

Kunert, a West German cardiologist, prominent in the European manual medicine school in the 1950s and 1960s, gives case examples where the medical diagnoses were respiratory block and heart disease. On reference to

his specialized unit, the primary causes were found to be vertebral problems, corrected by spinal manipulation. Following extensive clinical and research experience he concluded that "lesions of the spinal column ... are perfectly capable of simulating, accentuating or making a major contribution to organic diseases. There can ... be no doubt that the state of the spinal column does have a bearing on the functional status of the internal organs".³⁷

- Lewit, a Prague neurologist who is a leader of the manual medicine movement in Europe and whose major text is now available in English, writes at length of his experimental and clinical experience using spinal manipulation to treat patients with respiratory problems, heart disease, digestive problems, gynaecological disorders, migraine, vertigo/dizziness and other conditions.³⁸

- Grieve, a noted and well-published English physiotherapist says:

All those experienced in manipulation can report numerous examples of migraine headaches, disequilibrium (vertigo), subjective visual disturbances, feelings of retro-orbital pressure, dysphagia, dysphonia, heaviness of a limb, extrasegmental paraesthesia, restriction of respiratory excursion, abdominal nausea and the cold sciatic leg being relieved by manual or mechanical treatment of the vertebral column; but, while these effects are noted, and the underlying mechanisms investigated with the purpose of understanding better what we do, they are insufficient reason to put the cart before the horse.

In other words, the prime impulse for physical treatment of the vertebral column is properly vertebral column disorder, and not visceral disorder".³⁹

The final sentence could well have been written by a chiropractor.

- For the past 20 years a Japanese neurophysiology research team led by Akio Sato MD PHD, assisted in the 1980s by Rand Swenson DC MD PHD and in the 1990s by Brian Budgell DC MSc, has conducted extensive animal experiments to test the effects of mechanical irritation of spinal nerves on visceral functions mediated by the autonomic nervous system - gastrointestinal, cardiac, renal, etc.

This impressive body of work has now established a firm anatomic and physiological basis for the linkage between somatosensory input and modified autonomic function. Much of this work, which supports and provides an explanation for the wider effects of treatment of vertebral subluxation, is reviewed in Sato's newly released text *The Impact of Somatosensory Input on Autonomic Functions*.⁴⁰

25. **Temporary or Permanent Relief.** The early trials of spinal manipulation by chiropractic and medical researchers, which everyone now acknowledges were poorly designed, tended to show that the treatment was effective but that the benefits were short-lived. This, together with a need for continuing care for many patients, has sometimes led to the perception that chiropractic manipulation helps but only on a temporary basis.

Better designed research during the past 15 years has shown that the benefits of chiropractic manipulation, particularly when combined with appropriate modification of lifestyle by the patient, are long-term. Thus:

- With respect to back pain there are now strong studies showing that patients with either acute or chronic back pain get excellent results under chiropractic care - and that the benefit of treatment remains one and two years after treatment has finished.^{41,29}

The English study, a large multi-center randomized controlled trial commissioned by the British Medical Research Council and published in the British Medical Journal in June, 1990 with follow-up results published in 1995, specifically addressed the perception that manipulation did not have long-term benefit. These medical researchers concluded:

"For chiropractic our findings suggest otherwise".

- With respect to headache and migraine, the multi-disciplinary trial by Parker et al funded by the Australian government showed that chiropractic manipulation was an effective treatment - and a follow-up study by the researchers showed that cure/improvement was maintained at 20 months.³⁴

26. Cost Effectiveness. The majority of chiropractic practice involves patients with back pain, which has a vast socio-economic cost. In a chapter entitled *Economics, Epidemiology and Risk Factors* in the leading text *Managing Low-Back Pain* Charles Burton MD, neurosurgeon and Director, Institute for Low-Back Care, Minneapolis, Minnesota, and David Cassidy DC PHD, chiropractor and Director of Research, Institute for Health and Outcomes Research, University Hospital, Saskatoon, Canada, estimate that the costs of low-back pain in the US in 1992 were \$60 billion. They report that "low-back pain clearly represents the single greatest and most inefficient expenditure of health care resources in our society today." They also note that low-back pain "also represents the greatest single opportunity for productive change and cost savings."⁴² (Emphasis added).

In the western world 85% of people will be disabled by back pain at some point in their lives.⁴³ In the US disability from back pain is growing at a rate 14 times faster than the population growth,⁴⁴ and in Britain there are similar statistics.⁴⁵ In the 30-50 age group low-back pain is the single most expensive health care problem.⁴⁶

27. Medical leaders, such as the Glasgow orthopaedic surgeon Gordon Waddell MD, who was a consultant for the literature review for both the US² and the UK³ guidelines already mentioned, acknowledge that management of low-back pain has been "a 20th century health care disaster" and that "it is now time for a fundamental change in clinical management and reorganization of health care to meet the needs of these patients."⁴⁷

For most patients with back pain - and neck pain - new knowledge and multidisciplinary guidelines are leading to a fundamental change in management worldwide. This is a change from extensive diagnostic testing, rest and pain control based on *structural* pathology as in traditional medical practice, to exercise, manual treatments and early mobilization of the patient based on *functional* pathology as in traditional chiropractic practice.

28. This is not only effective but highly cost-effective. Summary comments on the evidence are:

a) *WCB Studies.* These suggest a 45-55% saving in overall costs - treatment costs and compensation for lost time - when the treatment is chiropractic rather than medical. The most thorough studies have been in California (1972),⁴⁸ Wisconsin (1978),⁴⁹ Florida (1988),⁵⁰ Utah (1991),⁵¹ and the State of Victoria, Australia (1992).⁵²

b) *Best individual trial.* Perhaps the single strongest research statement on the cost-effectiveness of chiropractic care, because of the quality and independence of the study, comes from the British randomized controlled trial comparing chiropractic and medical/physiotherapy management of patients with low-back pain.²⁹ Tom Meade MD, Director, Epidemiology Unit, Medical Research Council, and colleagues, in a trial published in the British Medical Journal in 1990, concluded:

- Chiropractic treatment was significantly more effective, particularly for patients with chronic (long-term) and severe pain and "the benefit of chiropractic treatment became more evident throughout the follow-up period" of two years.

- "The potential economic resource and policy implications of our results are extensive", so much so that now "consideration should be given... to providing chiropractic within the National Health Service either in hospitals or by purchasing chiropractic treatment from existing clinics."

The economic analysis published with the trial results showed that the British government would save in excess of \$20 million per annum just on the category of low-back pain patients included in the trial if care was given by chiropractors.

c) *Best review.* The best overview of all the evidence is the *Manga Report* titled *A Study to Examine the Effectiveness and Cost-Effectiveness of Chiropractic Management of Low-Back Pain*.¹⁰ This independent study by Canadian health economists commissioned by the Ontario government is by far the most comprehensive review of all the international evidence on cost-

effectiveness. It finds "an overwhelming case in favour of much greater use of chiropractic services in the management of low-back pain". With respect to a transferral of management from physicians to chiropractors in Ontario, Manga et al suggest:

"Evidence from Canada and other countries suggests potential savings of many hundreds of millions annually. The literature clearly and consistently shows that the major savings from chiropractic management come from fewer and lower costs of auxiliary services, much fewer hospitalizations, and a highly significant reduction in chronic problems and levels and duration of disability. Workers' compensation studies report that injured workers with the same specific diagnosis of LBP returned to work much sooner when treated by chiropractors than by physicians. This leads to very significant reductions in direct and indirect costs."

29. Safety. The two safety issues, raised by medical associations before every inquiry into chiropractic, are safety of treatment and risks from delayed diagnosis. Both alleged dangers have never been substantiated as significant and, in a chapter devoted to safety, the New Zealand Commission concludes that chiropractic treatment "is remarkably safe".

30. The one material risk arising from chiropractic treatment is vertebral artery syndrome (VAS) following cervical adjustment, which may lead to serious complications from stroke. The incidence and mechanisms have been well reported in the chiropractic literature since 1980.^{53,54}

The risk, however, is extremely remote - about .0001% or 1 case per million treatments. This is the figure given in the 1996 RAND Report on *The Appropriateness of Manipulation and Mobilization for Cervical Spine*.⁶ The Report compares this safety with the following risk rates for medical and surgical treatments given for the same symptoms:

- Serious gastrointestinal events from NSAIDs are 1000 per 1 million, serious neurological complications from cervical spine surgery are 15,600 per 1 million.

- Mortality rates are .3 per million (i.e. 3 per 10 million) for cervical manipulation, 6,900 per million for cervical spine surgery.

31. For reasons we can surmise, there have been grossly exaggerated reports of danger. A case in Boston, first reported in the medical community as stroke following chiropractic treatment - and probably retained in memory by many as such - was subsequently analysed in the New England Journal of Medicine and found to have no connection with chiropractic treatment.⁵⁴ Terrett's revealing article *Misuse of the Literature by Medical Authors in Discussion Spinal Manipulative Injury*⁶ reviews the many cases where complications following medical manipulation were wrongly ascribed to chiropractors. He found no example in the medical literature of a mistake the other way.

32. Research. In its earlier history the chiropractic profession failed to produce a reasonable volume of research. Chiropractors gave reasons that carried considerable force - such as major trial design problems that resulted in a dearth of clinical research in physical medicine generally, exclusion from public facilities and funding, and the financial priorities of survival and upgrading undergraduate education - but there was a neglect.

33. Over the last 20 years the profession has established a strong research presence for its size, and criticisms about lack of research are simply wrong. There is now an international network of fulltime researchers, many with PhDs and cross-appointments with health science universities, strong funding within the profession, and a new era of cooperation with medical and basic science researchers.

The depth of chiropractic research can be assessed by reading peer-reviewed journals such as the *Journal of Manipulative and Physiological Therapeutics* (JMPT), published by Williams and Wilkins, and the proceedings of major scientific meetings. These are held regularly by organizations such as the Foundation for Chiropractic Education and Research (annually) and the World Federation of Chiropractic (biennially).

34. **Over-treatment/Patient Dependency.** Some chiropractors over-treat, most do not. This problem exists for all professions. Points that can only be touched upon in the space available are:

- Figures worldwide show much fewer visits per patient than critics suppose. In Ontario, Canada, where government benefits are available for up to 22 treatments per annum, only approximately 10% of patients have used that maximum in recent years.

- Some conditions require ongoing treatment, as in medicine and physical therapy. This is readily apparent if one thinks of the nature of spinal disorders and the impact of continuing with a lifestyle that aggravates them.

- The view that manipulation either works in one or two treatments or not at all, which came from the British medical approach in the 1960s, has now been rejected by everyone familiar with the literature and this field of practice. In the U.S. a 1991 RAND expert panel, with a majority of medical specialists, concluded that:

"For acute, uncomplicated low-back pain, an adequate trial of spinal manipulation is a course of two weeks for each of two different types of spinal manipulation (four weeks total) after which, in the absence of documented improvement, spinal manipulation is no longer indicated".⁵⁵

On a basis of three treatments per week this represents a course of 12 treatments for a patient with acute, uncomplicated low-back pain. If there is documented improvement care may continue, otherwise it should not. Management will typically also involve other interventions such as exercise and education. This RAND definition of an adequate trial of spinal manipulation has now been accepted in the US government-sponsored AHCPR guideline² and formal practice guidelines established by the chiropractic profession. The latter also give fuller details on appropriate frequency and duration of care for acute, sub-acute and chronic conditions - in the U.S., for example, see the nationally based Mercy Center Proceedings.⁵⁶

E. CONCLUSION

35. In 1979 the New Zealand Commission of Inquiry, after looking at the matter more thoroughly than anyone before or since, decided that the history of opposition of organized medicine to chiropractic was based on three main factors

- "the history of chiropractic".
- "ignorance coupled with misinformation about modern chiropractic theory and practice".
- "unprofessional conduct by some chiropractors".

Since that time many developments have led to new common ground. There are, however, continuing misunderstandings. This review seeks to dispel them and give impetus to the rapidly growing cooperation between the chiropractic, medical and other health care professions. **TCR**

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