

# THE CHIROPRACTIC REPORT

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

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## Professional Notes:

### Visual Recovery

'Visual Recovery following Chiropractic Intervention', Gilman G and Bergstrand J, J Behavioral Optometry (1990) 1(3), reprinted in California Chiropractic Journal (June 1990) 15(6):22-28.

Chiropractic principles, now supported in a number of medical texts including the two reviewed in this Report (see main article), hold that spinal functional disorders may cause or aggravate many disorders seemingly remote from the spine – through the effects of spinal dysfunction (subluxation) on the nervous and vascular systems.

This is increasingly recognized by other health professionals – as in this case report by an optometrist and chiropractor:

- An elderly man suffered complete loss of vision following head trauma – he fell between two logs hitting his head, immediately experienced head pain and dizziness, and awoke blind the next day.
- He consulted an optometrist who ordered a CT scan to rule out cerebral blood clot as a cause and finally made a diagnosis of blindness due to head trauma<sup>a</sup>.
- The patient, now blind for over 3 months, was seen by an ophthalmologist for a confirming diagnosis which was "vision loss permanent, no treatment indicated". The optometrist, who had experience of vision changes following chiropractic adjustment, referred the patient for chiropractic evaluation. This revealed restricted motion in the

*continued on page 3.*

## The Winds of Change

### A. Introduction

1. Manual or musculoskeletal medicine, the formal study and practice of manipulation as a specialty within the medical profession, is in its infancy in North America. The first educational program is currently being established at Michigan State University's College of Osteopathic Medicine (MSU-COM), and there are no scientific journals. The North American Academy of Musculoskeletal Medicine (NAAMM), with only 250 members half of whom are doctors of osteopathy, doesn't even rate a mention on the AMA's annual listing of medical special interest societies.

Worldwide, manual medicine is most established in Germany, Switzerland and Austria, where the first university chair for manual medicine ever created was established in Graz in 1973. The only medical journal devoted to manual medicine, *Manuelle Medizin* (Springer Verlag), is published in Heidelberg, Germany. (An English version has been published since 1983).

2. During the past year new teaching texts to support the educational programs in Michigan and the German-speaking countries have been published, and these are of importance because:

- They have a greatly expanded vision of the role of manual health care, and accept all the fundamental premises of modern chiropractic.

- This vision is now the basis of education for MDs in many countries who will practise manual medicine tomorrow.

This issue of the Report reviews and comments upon these two books from either side of the Atlantic – they will be influential on medical thinking, and perhaps require a response in chiropractic thinking.

### B. Principles of Manual Medicine

Greenman PE, Williams and Wilkins, Baltimore, 1990 (347 pages).

### Author and background

3. Philip Greenman DO FFAO, Professor of Biomechanics, MSU-COM, is a doctor of osteopathy. In the United States osteopathy became osteopathic medicine in the 1960s, and changed radically from its roots and osteopathy elsewhere in the world.

Since then US doctors of osteopathy (DOs)

have had an equivalent training, and the same rights of licensure and practice, as MDs. Graduate DOs can proceed to medical postgraduate study and specialties. In a profession that once made no use of drugs or surgery there are now many anesthesiologists and surgeons, and DOs are largely indistinguishable from MDs in general family practice. Training in the theory and practice of manipulative health care, once the foundation of a four year osteopathic core curriculum – with similarities to chiropractic – has shrunk to 200 hours. None of this is in the final two years of study and clinical rounds, so most graduate DOs make little or no use of osteopathic manipulation.

4. Throughout these developments some osteopathic leaders have remained focused on the traditional basis of the profession – none more so than Greenman. His experience, scholarship, and leadership are acknowledged internationally by the chiropractic and medical professions as well as osteopathy, and his accomplishments include:

- Prominent participation at the NINCDS conferences in 1975 (Bethesda, Maryland) and 1977 (Michigan State University) which first brought leaders of chiropractic, osteopathy and manual medicine together in the United States.
- First editor of the English version of Springer Verlag's journal *Manual Medicine*. (This emphasizes the degree of his acceptance by the medical profession).
- Editor with Buerger of the 1985 text *Empirical Approaches to the Validation of Spinal Manipulation*<sup>1</sup> – which carries the most extensive report of the work by Cassidy DC and Kirkaldy-Willis MD in the treatment of chronic low-back and leg pain in Saskatoon, Canada.
- Keynote speaker at the first International Conference on Spinal Manipulation held by the Foundation for Chiropractic Education and Research, Washington DC, May 1989.
- As evidenced by this new text, a fair-minded man who is having significant influence on inter-disciplinary understanding in the field of manual medicine – a term used by him to include chiropractic and osteopathy.

### Purpose of book

5. This is a teaching manual "designed to support the educational series in manual medicine offered by Michigan State University and co-sponsored by the North

American Academy of Muculoskeletal Medicine".<sup>2</sup>

However Greenman has also been a leading advisor for courses in musculoskeletal medicine now being established for MDs in Europe, Australia and New Zealand. This text will be used by MDs worldwide and will thus have a major influence on medical attitudes towards the scope of manipulative health care and the chiropractic profession.

### Basic concepts

6. Chapter 1 sets the theoretical background for the text. Greenman describes "five basic concepts" fundamental to manual medicine:

1. Holistic man
2. Neurologic man
3. Circulatory man
4. Energy-spending man
5. Self-regulating man

As to the first, "we must all remember that our role as health professionals is to treat patients and not to treat disease ... the concept expressed here is one that speaks to the integration of the total human organism rather than a summation of parts".

"The musculoskeletal system deserves complete evaluation ... whenever the patient is seen, irrespective of the nature of the presenting complaint". It is "just as inappropriate to avoid evaluation of the musculoskeletal system in a patient presenting with acute chest pain thought to be cardiac in origin" as it is "to avoid evaluating the cardiovascular system in a patient presenting with a primary musculoskeletal complaint".<sup>3</sup>

7. The concept of 'neurologic man' receives most prolonged treatment. Greenman deals with the reflex, neurotransmission, and trophic functions of the nervous system, and illustrates connections between the autonomic nervous system and the internal organs with diagrams more familiar in chiropractic publications.

In Chapter 4 Greenman describes the various clinical goals for manipulative treatment. He starts with the 'postural structural model' which uses a biomechanical perspective, "is most useful in approaching patients with pain ...", and is "probably the one most familiar" to MDs practising manipulation. He then progresses to 'the neurological model' where the goal of treatment is "influencing neuromechanisms through manual medicine intervention". The three pathways are:

a) Through the autonomic nervous system. "There is a large body of basic research into the influence of the somatic (motor) system on the function of the autonomic nervous system ... This basic research is consistent with clinical observations ... The sympathetic nervous system has a wide range of influence on visceral function, endocrine organs, reticulo-endothelial system, circulatory system, peripheral nervous system, central nervous system, and muscle".

"It would seem reasonable, therefore, to attempt to reduce aberrant afferent stimulus to hyperirritable sections of the sympathetic nervous system to reduce the hyperactivity on target end organs".<sup>4</sup>

b) Interrelationships of the peripheral and central nervous system.

Focus is on "reflex patterns and multiple pathways".

c) Neuroendocrine control. "Since the late 1970s, there has been a rapidly expanding body of knowledge about the role of endorphins, enkephalins, and other neural peptides. These substances are not only active in the nervous system but also profoundly affect the immune system. There appears to be ample evidence that alteration in musculoskeletal activity influences their liberation and activity.

This neuroendocrine mechanism might explain some of the general body tonic effects".<sup>4</sup>

One must pause to recall that this is not a chiropractic text, but an influential new teaching manual for medical practitioners.

### Comment on chiropractic

8. MDs and others introduced to manual medicine through this text will see a spirit of acceptance of chiropractic, both as to its principles and practice. The founders of chiropractic and osteopathy, Daniel David Palmer and Andrew Taylor Still, are equally described as "two individuals who would profoundly influence the field of manual medicine".<sup>5</sup>

There is a review of chiropractic, including Palmer's original concepts of 'innate intelligence' and 'subluxation', which noticeably lacks the edge of criticism found in earlier texts by other authors.

### Terminology

9. Greenman has been a leading figure in the move to establish standard terminology, and his views reflect current medical thinking. Key usages are:

*Manual medicine:* Used to include all approaches to manipulative health care, including chiropractic and osteopathy.

*Somatic dysfunction:* Impaired or altered function of related components of the somatic (body framework) system; skeletal, arthrodial, and myofascial structures; and related vascular, lymphatic, and neural elements. (Hospital Adaption of the International Classification of Disease, ed 2. 1973). This is the "entity amenable to manipulative intervention. It has been called the *osteopathic lesion*, *chiropractic subluxation*, *joint blockage*, *loss of joint play*, *joint dysfunction*, and many others. Currently the acceptable term ... is somatic dysfunction".<sup>6</sup>

*Mobilization with impulse:* A high-velocity, low-amplitude thrust. (i.e. the classic chiropractic manipulation or adjustment). Most current authors from all disciplines call this 'manipulation' but Greenman, quoting an Advisory Committee to the International Federation of Manual Medicine of which he was a member, prefers *mobilization with impulse*.

### Manipulation v mobilization

10. With respect to high-velocity, low-amplitude manipulation techniques Greenman notes that "these procedures have long been deemed the treatment of choice for the 'manipulable lesion' ... despite recent developments in manual medicine procedures (e.g. muscle energy techniques, functional and indirect technique, myofascial release, craniosacral technique, etc.) high-velocity, low-amplitude thrust remains one of the most frequently used forms of manual medicine".<sup>7</sup>

### Cervical Spine

11. At a time when some medical writers are preferring mobilization and muscle energy techniques for treatment of the cervical spine,<sup>8</sup> Greenman describes and recommends a number of high-velocity thrust techniques for the cervical spine.<sup>9</sup> (And see this Report, para 20). The issue is adequate education, diagnosis, and technique.

(Greenman introduces the useful concept of 'relative contra-indications' to manipulation. Disease of the vertebral arteries, disc herniation, metastatic disease, osteoporosis, and degenerative joint disease, for example, are only relative

*continued on page 5*

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upper cervical spine with probable involvement of the autonomic nervous system and/or vascular supply.

- Treatment consisted of 11 adjustments or specific manipulations of the upper cervical spine over a period of 3 months. Vision improvement started following the third treatment, and there was progressive improvement to normal vision and ability to read comfortably after six weeks. This was monitored throughout by the referring optometrist.

- The authors rule out spontaneous remission and postulate two mechanisms to explain the success of chiropractic treatment:

- i) removing interference with the sympathetic innervation to the blood vessels of the optic nerve, thereby releasing constriction of optic nerve blood supply.

- ii) removing interference with other nerve pathways to the eye (specifically, the first four cervical nerves communicate with the Rami communicants; the Rami communicants communicate with the superior cervical ganglion; the superior cervical ganglion communicates with the cavernous plexus (internal carotid nerve); the cavernous plexus communicates with the ciliary ganglion, the oculomotor nerve, the ophthalmic branch of the trigeminal nerve and the ophthalmic artery).

### Medicine and Low-Back Pain – an Historical Perspective

'An Historical Perspective on Low-Back Pain and Disability', Allan DB and Waddell G, *Acta Orthop Scand* (1989), 60 (Suppl 234). (23 pages).

This is perhaps the most concise and authoritative review of medical management of low-back pain – history and current developments.

Authors are Gordon Waddell MD and David Allan MD from the Orthopaedic Department, Western Infirmary, Glasgow, Scotland. Waddell is at the forefront of the move to change medical management from drugs, surgery and rest to early active management and restoration of function. (This Report has previously reviewed his Volvo Award-winning article in *Spine* in 1987. (Vol. 2 No. 2 – January 1988)).

#### In summary

The review covers many topics and notes successes and failures, but its central thrust is criticism of 20th century medicine for too readily deserting 19th century orthopaedic principles. Allan and Waddell conclude:

- "Backache has affected human beings throughout reported history".

- "What is new is chronic disability due to simple backache. . . . this only began to appear in the late 19th century. It escalated after World War II".

- This growth in disability is "closely related to" medical management of backache (specifically looking for a physical cause, emphasis on surgery, reliance on bed rest) and has been "reinforced by improved social support which makes rest possible".

- "Sadly, we must conclude that much low-back disability is iatrogenic".

- Medicine's "whole strategy of management has been negative, based on rest. We have actually prescribed low-back disability!"

#### Bedrest

With respect to rest the authors argue:

- Back pain was first seen by medicine as a symptom of disease (rheumatism) rather than trauma or accident.

- Early medical authorities in the 18th and 19th century held that bedrest caused and promoted this disease and back pain, and should be avoided.

- Through the 19th century in Britain early orthopaedics "took much from bone-setters and sprain rubbers . . . Bone-setters had treated back pain by manipulation and mobilization. They did this in the context of every day life and their clients continued every day activities".

- However various developments changed this, including:

- a) In the late 19th century the discovery of x-ray (1895) began "a whole new perspective on spinal disorders" with back pain now being seen as the result of a specific accident and injury, and "every incidental x-ray finding proved an irresistible temptation to explain both back pain and sciatica".

- b) The unprecedented scale of casualties in World War I meant that "for the first time medical concern with trauma matched previous concentration on disease".

- c) In Britain "the pioneer of modern orthopaedics" was Hugh O. Thomas, an MD who came from "a long line of Welsh bone-setters". He used manipulative skills but "rejected . . . the bone-setter's principle . . . of mobilization (and) in complete contrast advocated rest – 'enforced, uninterrupted and prolonged'".

- "By 1900 a standard orthopaedic text could recommend two to six weeks strict bed rest for acute lumbosacral pain (Bradford & Lovett 1910)".

- "Bone-setters, like their descendants osteopaths and chiropractors today, continued to treat the common everyday aches and strains for which

orthodox medicine had no good answer and only equivocal interest".

#### Sacroiliac Dysfunction

Allan and Waddell trace medical interest in sacroiliac joint dysfunction in the early 20th century, and then the loss of interest in the sacroiliac joint by orthopaedic surgeons after Mixer and Barr's 1934 paper "shifted the whole emphasis of sciatica to the intervertebral disc".

"The sacroiliac joint reverted to the modern descendants of the bone-setters who continue to give relief to large numbers of sufferers".

(For full discussion of sacroiliac dysfunction see the March 1990 issue of this Report).

#### Disc

There is criticism of medical over-reaction to disc problems.

- "Diagnosis was originally based on neurological signs and a complete block on the myelogram (Mixer 1937, Camp 1939). It was soon made on symptoms alone".

- "These moves away from the early strict criteria unleashed on the unsuspecting public a wave of surgical enthusiasm hindered only by World War II".

- The concept of 'disc lesions' was constantly extended to explain backache "quite illogically and unjustifiably" particularly by "orthopaedic surgeons who were keen to re-establish their role in low-back disorders".

The "rapid and enthusiastic expansion in disc surgery soon exposed its limitations and failures. It was accused of leaving more tragic human wreckage in its wake than any other operation in history".

(For a review of chiropractic management of disc problems see this Report, (May 1989. Vol. 3 No.4)).

It need hardly be said that all professions, including chiropractic, have aspects of practice that require re-evaluation and change. Here the authors make their sharp criticism with a constructive aim – encouraging widespread change of medical practice to early active management emphasizing early restoration of function. These principles, as Allan and Waddell imply, are the basis of chiropractic management – and are fundamental to cutting the cost of disability.

#### Points

- ". . . there are few doctors of chiropractic in private practice who have not, knowingly or unknowingly, restored bowel or bladder function to a patient suffering from a lumbar disc lesion". Falk's conclusion in a useful new review of the literature and the mechanisms involved. ('Bowel and Bladder Dysfunction Secondary to Lumbar Dysfunctional Syndrome' Falk JW (May 1990) *Chiro Technique* 2(2):45-48).

- Literature on coupled motions of the sacroiliac joint is scarce. Using cadavers Vleeming et al from Erasmus University, Rotterdam, The Netherlands, report that "small changes in the tension of the sacrotuberous ligament influence the range of motion in the sacroiliac joint", that "load application along

### Oswestry Index

#### Omission

The last issue (Vol. 4 No. 5 July 1990) printed the Oswestry Back Disability Index used in the British MRC Trial, and gave instructions on scoring. These should have included this advice:

In each section scores of 0 (statement 1) to 5 (statement 6) are possible. Thus, if all sections are completed, a score of 50 (100%) is possible.

#### Errata'

The fifth question in Section 3 (Lifting) should be "I *cannot* lift very heavy weights". The second entry under 'Overall rating' should not be '20-24%' but '20-40%'.

direction of hamstring and gluteous maximus muscles significantly diminishes ventral rotation of the sacrum" and that the sacro-tuberous ligaments – because of the relatively large distance to the SI joints – and the sacroiliac joints are "important parts of the kinematic chain".

(Vleeming A, Stoeckart R et al (1989) 'The Sacrotuberous Ligament: a Conceptual Approach to its Dynamic Role in Stabilizing the Sacroiliac Joint', *Clinical Biomechanics* 4(4):201-203. 'Load Application to the Sacrotuberous Ligament; Influences on Sacroiliac Joint Mechanics', *Clinical Biomechanics* 4(4):204-9).

- New president of FICS (Federation Internationale de Chiropratique Sportive) is Dr. Noel Patterson of Stirling, Western Australia whose sports practice includes many well known athletes and teams – he treated the Australian national cricket team during its tour of England last year – there are few more important duties for an Australian health professional than that.

1st Vice President is Dr. David Pierson of San Francisco, 2nd Vice-President Dr. Enrique Benet Canut of Mexico City.

- The current issue of *Chiropractic History* (June 1990) reproduces many photographs of interest – including studies of B.J. Palmer in the 1940s and 1950s, broadcasting of 'Wonders of Chiropractic' over WOC during the 1947 Palmer Lyceum, and a gathering of 16,500 supporters of chiropractic at Madison Square Gardens, New York in January 1932 organized by the American Bureau of Chiropractic. The ABC was founded in 1927 by William Werner DC to support the licensure of chiropractic in New York and other states.

To receive this journal, published by the Association for the History of Chiropractic, edited by Mr. Russell Gibbons, and brimful with interest, join the AHC, 4920 Frankford Avenue, Baltimore MD 21206, U.S.A., Tel 301-488-6604. Annual fee US\$35.00 in North America, US\$42.00 overseas).

- Government studies in Norway (130 DCs) and Sweden (85 DCs) in the late 1980s led to new law recognizing the chiropractic profession, and the Nordic Council – a regional governmental agency representing Denmark, Finland, Norway and Sweden – ruled in 1989 that chiropractic education should be established within a university in Scandinavia. There are government benefits for chiropractic care in Denmark (240 DCs) and Norway.

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#### Medical

Bjorn Rydevik	Sweden	Nerve compression
Akio Sato	Japan	Neurovisceral reflexes
Gunnar Andersson	U.S.A.	Occupational back pain
Nicholas Bogduk	Australia	Spinal anatomy
Sam Wiesel	U.S.A.	Differential diagnosis of spinal disorders

For further details see enclosed notice or write to WFC Congress 1991, 3080 Yonge Street, Suite 1028, Toronto Ontario M4M 3N1 Canada. Fax: 416-484-9665.

The latest European country to study chiropractic is The Netherlands (60 DCs). The study, being performed by the Department of Epidemiology/Health Care Research, University of Limburg, Maastricht, will include a survey of chiropractors, a literature review, a meta-analysis of all trials of spinal manipulation, and a research proposal for a randomized clinical trial concerning chiropractic to be funded by the government. (Enquiries to: W.J.J. Assendelft MD, Research Associate, Department of Epidemiology, University of Limburg, P.O. Box 616, 6200 MD, Maastricht, The Netherlands).

## A Neurosurgeon's Views

### Whiplash

"I generally prefer to treat whiplash or flexion-extension injury symptoms with hot showers, exercises, mild weight-lifting, physical therapy, and chiropractic treatments. These are mainly musculoligamentous types of injury and should be treated conservatively.

I do not recommend medications because the patient may well become addicted to muscle relaxants or pain medication. Chronic, benign pain is best treated with exercise, physical therapy, and chiropractic treatment, not with medication."

### Chymopapain

"Injecting the disc space with a lytic substance such as chymopapain was extremely popular a few years ago. I and my partners ... felt that the allergic reaction, resulting in one death per 1000 procedures, was just too risky, considering that I had done 5000 disc operations with no fatalities. Interestingly enough, when I was at our national meeting last year and they asked for a show of hands of how many people were doing it actively, I could count no more than 15 hands. I must say that there are still some very skilled people in this country, and a number of them also in Canada, who use this technique and I think use it very well. The complications include death, paralysis, and injury to the nerves and the cauda equina. Also, the disc space itself is so destroyed by the chymopapain that many of these patients have chronic backache."

'A Neurosurgeon Looks at Low Back Pain', Rudy Kacmann MD Chapter 14 in 'Low-Back Pain: Mechanism, Diagnosis and Treatment', Cox J., Williams and Wilkins, Baltimore and London, Fifth Edition (1989) pp. 590-591.

### More Books

The free flow of new books during the past 12 months has included:

- The scholarly and impressive 'Anatomical Basis of Low Back Pain' by Australian chiropractor Lynton Giles DC, PhD (Williams and Wilkins, Baltimore, London and Sydney, 1989).
- A 5th edition of 'Low Back Pain: Mechanism, Diagnosis and Treatment' by James Cox DC DACBR. This is effectively a new book – the entire text has been re-written and there are excellent chapters by guest authors on chiropractic use of laboratory tests (David Wickes DC), short leg syndrome (Dana Lawrence DC), sacroiliac joint (Lawrence and Cha-Song Ro MD Ph.D), scoliosis (Donald Aspegren DC) and a neurosurgeon's perspective of low-back pain (Rudy Kachmann MD). There are superb illustrations and a very impressive research base including, interestingly, translation of an article on 400 cases of management of disc protrusion by manipulation from China). However the book remains practical, readable and accessible and, as is its stated goal, "a strong decision-making aid to the practitioner who treats low-back pain patients".
- 'Back pain and Spinal Manipulation: A Practical Guide' (Kenna C and Murtagh J, Butterworths, London, Boston and Sydney 1989) is the first medical text on manipulation out of Australia. It doesn't presume to be more than a practical guide. In marked contrast to the texts by Giles and Cox, for example, conclusions are not supported by research. Whereas Greenman's 'Principles of Manual Medicine' (see main article) acknowledges the pivotal role of chiropractic in the development of manual medicine, Kenna and Murtagh write as if the profession does not exist – their bibliography quotes their own work down to minor journal articles, but they seem not to have heard of fellow Australian Lynton Giles or Cox, Haldeman, Cassidy, JMPT or chiropractic – despite the existence of a chiropractic college in a university in their own city of Melbourne.

contra-indications.<sup>10</sup> Treatment of concomitant joint dysfunction by manipulation can be justified if there is proper education and understanding, and precise diagnosis and application of technique.)

### C. Chiropractic Therapy: Diagnosis and Treatment

Eder M and Tilscher H, translated and edited by Gengenbach MS, Aspen Publishers, Rockville Maryland (1990). (226 pages). Originally published in German as *Chirotherapie*, Hippokrates Verlag, Stuttgart (1988).

#### Background and authors

12. Despite its title this is a medical text, now translated by Marianne Gengenbach DC, CCSP, who has degrees in German literature and chiropractic and is presently Coordinator, Clinical Education, Logan College of Chiropractic, Chesterfield, Missouri. All of this requires some explanation.

13. A group of prominent West German physicians established a Research Association for Chiropractic (Forschungs- und Arbeitsgemeinschaft für Chiropraktik – FAC) in 1953. Their interest in chiropractic arose from the work and writings of a number of prominent European chiropractors, especially in Switzerland. Dr. Fred Illi, for example, had published his text *Wirbelsaule, Becken und Chiropraktik*<sup>11</sup> in German that same year. Later the FAC's name was changed with 'Chiropraktik' being replaced by 'Chirotherapie', and in 1963 the FAC merged with another medical group to form the German Society for Manual Medicine.<sup>12</sup>

Reasons for these developments included the FAC's desire to develop the manipulative approach to health care as a medical specialty, and the fact that it was now studying osteopathic as well as chiropractic practice. (There was still no chiropractic school or profession in Germany – today there are nine DCs in West Germany.<sup>13</sup>) However the chiropractic origins have had these results:

a) This German school of MDs has always seen a much wider role for manipulative health care than mere treatment of musculoskeletal pain – which has remained the more narrow goal of most medical manipulators elsewhere. There has been much research and practice focusing on the link between spinal dysfunction and cardiac, digestive, respiratory and other body functions.

b) Manipulation, practised as a medical specialty, has been called 'chirotherapie', a title used only in Germany and Austria. (Swiss Germans use the titles 'manual medicine' and 'chiropractic medicine' interchangeably.<sup>14</sup>)

14. This broader German approach to manual medicine appears in the text *Chirotherapie* by Eder and Tilscher, accessible because it is now available in English.

Manfred Eder MD and Hans Tilscher MD are both Austrian, and hold university appointments for the program in manual medicine at the University of Graz, Austria. They are widely published in German, having over 300 scientific publications and 11 texts between them. Eder was born and trained in Gratz. Tilscher comes from Vienna, but has served as Head, Neuro-orthopaedic Outpatient Clinic, Neurological University, Graz and has been teaching manual medicine for 20 years.

#### Purpose of book

15. This, as with Greenman's text, is a teaching manual. It presents a model for manipulative, manual, or chiropractic therapy – these terms being used interchangeably, then advice on techniques of diagnosis and treatment. It is the model that is of greatest interest.

In the preface Eder and Tilscher emphasize that one cannot learn chiropractic therapy from this or any other book alone, and that skill requires long practice and "performance on a daily basis".<sup>15</sup>

#### Basic concepts

16. The first concept of chiropractic therapy, they say, is change of *function* rather than *structure* in the spine – "vertebral dysfunction ... is the core and starting point." From the German school they adopt these terms:

a) *Motor-segment* (Junghanns): two adjacent vertebrae, the three joints between them (disc, and two facet joints), and the cartilage system.

b) *Vertebron* (Gutzeit): the motor segment plus other attached structures possibly causing dysfunction – muscular system, connective tissue, and vascular supply.

c) *Arthron* (Gutzeit): extremity joint equivalent of the spinal *vertebron*.

17. The second concept of chiropractic therapy is the link between dysfunction in the spine and change of function elsewhere in the body – through a complex set of interactions mediated by the nervous system. In plain language, for example, poor function in the digestive or respiratory system may be linked to vertebral dysfunction. Problems in the spine (pain, lost range of motion not appreciated by the patient) may aggravate or cause symptoms in other body systems – and vice versa. *Segmentally reflexive complex* (Eder) is the name given to vertebral dysfunction viewed in this whole body context. (Fig. 1).

Chiropractors, who have always seen spinal dysfunction in this wider context, call it subluxation. They must now acclimatise themselves to medicine adopting a

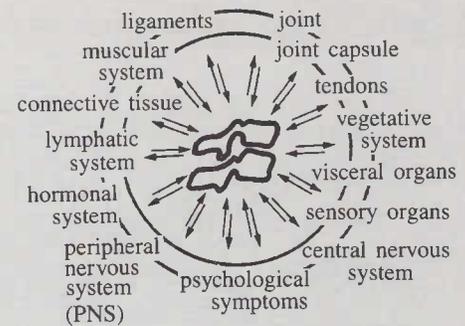


Figure 1.

The Segmentally Reflexive Complex. Eder, M. and Tilscher, H. 'Chiropractic Therapy' (1990).

theoretical basis for treatment that has formerly been the object of unleavened criticism.

18. Eder and Tilscher's essential message is that:

a) Diagnosis in the individual case is helped by knowledge of the most common causes of dysfunction in each spinal region – this provides an "initial basis for the use of chiropractic therapy".

b) However "the key to the comprehension of daily realities" lies in appreciating the complex "reflexive mechanisms" surrounding the spinal problem – what English language editor Gengenbach calls "the neurophysiological roots, both in terms of symptom causation and potential treatment effects".<sup>16</sup>

c) One must look not only at mechanical factors but also "viscerovertebral segmental sensitization; inflammatory, focal and metabolic predisposing mechanisms; and psychosomatic factors".

Combinations of these influence the cause of a spinal condition and "failure to observe these connections" leads to "failed therapies, with short term results at best".

d) Chiropractic therapy, and specifically high-speed, small-depth manipulation or adjustment of the spinal joints, "can set into motion strong increases in organic regulatory processes" through its effects on the nervous system.

#### Manipulation v mobilization

19. Eder and Tilscher define 'manipulation' as techniques using "minimal force to deliver impulses of high speed and small amplitude ... passively moving a joint beyond its physiological range of motion". (They expressly prefer 'manipulation' to Greeman's term 'mobilisation with impulse'). This is "the realm of chiropractic therapeutic manipulation ... often characterized by the well known 'cracking' sound. ... Stimulus intensity provided by manipulation seems higher than other therapeutic methods", such as mobilization. Mobilization is beneficial but "manipulation

must be used when mobilization proves insufficient”.

### Cervical spine

20. Like Greenman, Eder and Tilscher acknowledge an important role for manipulation with the cervical spine. They review the merits of various manual techniques, review the evidence of complication rates which “can be considered as quite low in risk”, specifically address medico-legal issues (they reproduce and support rulings of the International Federation of Musculoskeletal Medicine),<sup>17</sup> then describe and illustrate their use of various high-velocity manipulation techniques for the cervical spine.<sup>18</sup>

The upper cervical joints have “regulatory dominance” over function elsewhere in the spine, “influence the tonus of the entire muscular system” because they steer proprioception, and “can interfere with vital regulatory actions such as blood pressure, respiration, digestion, and the vomiting centre.”<sup>19</sup>

### X-ray

21. Of interest is a section on x-ray noting techniques “developed specifically for chiropractic diagnostic evaluation”. Routine sectional series used for pathologic diagnosis may have limitations. Weight-bearing formats may be necessary, and “a full-spine radiographic projection should be taken to obtain comparative and reproducible results ... if a functional static postural analysis is advisable (e.g. to verify a genuine difference of length in legs)”.<sup>20</sup>

### D. Conclusion

22. For many years the chiropractic profession has tended to dismiss manipulation by other health professionals as different in theory and unskilled in practice. These two texts herald a different era – chiropractic theory is being understood and applied by medicine, and formal postgraduate medical programs are currently being established worldwide. This is undoubtedly in part because of the huge growth, acceptance, and success of chiropractic during the past 20 years.

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This calls for an appropriate response from chiropractic – the profession that owns the history, best educational standards, best evidence of effectiveness, and most prominent market position in manipulative health care.

23. There are two roads to follow, both amply sign-posted by the history of health care. The first road is for individuals, the second for professional associations. Individual chiropractors in education, research and practice must be willing – as many evidently are from current developments – to share their knowledge with all others interested. Reasons, beyond those that it is professionally satisfying and in the public interest, include:

- Only in this way will other professionals appreciate the depth of chiropractic education, knowledge, and skill.
- Through such communication chiropractic will in turn be enriched by outside knowledge.
- This is the route to more widespread trust, growth of practice and participation in research.

Meanwhile chiropractic professional associations, living in the real world where all professional groups are necessarily involved in elements of competition and turf battle, must:

1. Argue the absurdity – particularly in these economic times – of training a health professional for manipulative health care by means of a full undergraduate health care program followed by postgraduate specialized training (e.g. as being developed in medicine and physical therapy) as opposed to a focused undergraduate degree program as in chiropractic.

Why incur the cost of undergraduate and postgraduate medical training for 7-8 years when there is an established discipline providing superior education for this health care need over 4-5 years? This is the same argument as leaving conservative vision care to optometrists, dentistry to dentists.

2. Present clear and concise comparisons of the length and quality of chiropractic, medical, osteopathic, and physical therapy educational programs – even the best postgraduate programs planned for MDs and PTs leave them with far less education and clinical experience than chiropractic training.

3. Present the now strong evidence of comparative effectiveness and cost-effectiveness of chiropractic in the overall field of manipulative health care – starting with the British MRC trial<sup>21</sup> reviewed in the last issue of this Report.

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