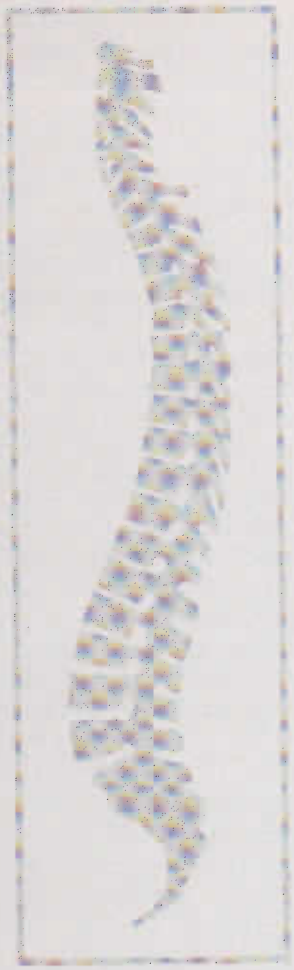

THE CHIROPRACTIC REPORT

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British MRC Trial – medicine backs chiropractic manipulation

A. Introduction

1. The British Medical Journal (June 2, 1990) has now reported the long-awaited results of the British Medical Research Council's 10 year, multicentre trial comparing chiropractic and hospital outpatient management of patients with acute (short-term) and chronic (long-term) mechanical low-back pain[1] – the most costly cause of work-loss injury in the western world.

2. This large (n 741) independent trial – by far the most thorough yet performed in the field of back pain – compared:

a) Chiropractic treatment – chiropractic techniques of adjustment or manipulation, supplemented with traction, exercises and modalities (e.g. electrotherapy).

b) Physiotherapy (physical therapy) treatment – mainly mobilization and manipulation by therapists, but also supplemented with traction, exercises and modalities.

Details of the type, frequency and duration of treatment were left to the discretion of the chiropractor or hospital team so that the trial "would test what happens in day-to-day practice ... because of the effectiveness of (this) ... is of most immediate interest" to patients, health care professionals, third party payors and those developing public policy.

3. Conclusions reported are:

a) Chiropractic treatment was significantly more effective.

b) Particularly for patients with chronic (long-term) and severe pain.

c) Results were long-term – "the benefit of chiropractic treatment became more evident throughout the follow-up period" of two years. (An addendum to the report, giving initial three year follow-up data, confirms long-term benefits).

d) The superior results for chiropractic patients were not the result of trial errors (bias) or placebo. (This conclusion follows a detailed analysis of the relevant factors.)

e) "The potential economic, resource, and policy implications of our results are extensive."

"Consideration should be given .... to providing chiropractic within the NHS (National Health Service) either in hospitals or by purchasing chiropractic treatment from existing clinics."

"Of those with jobs 21% of patients given chiropractic treatment had time off work because of back pain compared with 35% of hospital patients. ... Between 1 and 2 years the frequency and duration of absence from work were less in those treated by chiropractic."

An economic analysis, which appears conservative and uses patient numbers reported in 1979, shows savings in excess of £10 million per annum in Britain by having hospital outpatients with back pain treated by chiropractors.

4. The chiropractic profession has long asserted;

a) Its education in the diagnosis and manipulative treatment of biomechanical spinal disorders and their effects (in a 4 or 5 year undergraduate program focused on this specialty) is plainly superior to that of MDs and physiotherapists/physical therapists (typically with little training at undergraduate level, and part-time postgraduate courses); and

b) This better education produces better understanding, skill, and patient results.

That has been a convincing argument to those who have taken time to examine the issue thoroughly. A New Zealand Commission of Inquiry, which observed physiotherapy training in manipulation in England as well as New Zealand, and described it as "unstructured ... elementary, even crude", accepted the argument. (See Table 1 pg.4).

This new trial from the British Medical Journal, however, is the first to examine the matter in scientific terms. It provides very considerable support for the chiropractic case and the New Zealand Commission's findings.

5. This Report now looks in some detail at the background, design, results and significance of this major study, performed at a cost of over US$1 million.

(Publication of such an important trial was not missed by the British media – the story gained front page treatment in the national press (next to the Gorbachev/Bush Summit) and wide television coverage and debate).

B. Background

6. Previous research of manipulation has been as good as for any other treatment for back pain and generally supports the view that manipulation is at least as effective as any other treatment method in patients with

Professional Notes:

Somatic Dysfunction – a Medical View

"The field of manual medicine has suffered from multiple, divergent, and sometimes confusing definitions of 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 for this entity is *somatic dysfunction*. It is defined as:

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)".

'Principles of Manual Medicine' (1989) Greenman PE, Williams and Wilkins, Baltimore and London, 11.

Philip Greenman DO, Professor of Biomechanics, Michigan State University – College of Osteopathic Medicine has written this new text to support the educational series in manual medicine offered by MSU-COM.

This important new book, which deals extensively with the "neurological model" of manual therapy and acknowledges the "profound influence" of DD Palmer, will be reviewed in the next issue of The Chiropratic Report.

acute low-back pain and produces quicker results.[2,3,4,5]

However much of the research has design problems (e.g. poor choice of manipulation technique, inadequately trained manipulators, poor assessment of results, inadequate controls, etc.). It also lacks adequate patient numbers, and adequate follow-up periods after treatment.[6,7]

7. With things in this state the 1979 Cochrane Report[8] to the British government noted the huge impact of low-back pain, the many alternative treatments, and the lack of adequate scientific evidence of effectiveness for any of these – whether by surgeons, family practitioners, chiropractors, physiotherapists of anyone else. It concluded there was "an urgent need for rigorous comparative trials". These would require substantial government funding.

The British Chiropractors' Association (BCA) had appeared before the Cochrane Committee, and offered to participate in a comparative trial of chiropractic manipulation. In 1980 work commenced on a pilot study, to iron out design problems and demonstrate the number of patients required in the major trial. This was based on a chiropractic practice and hospital clinic in Harrow, near London. T.W. Meade MD, Director, MRC Epidemiology and Medical Care Unit, Northwick Park Hospital, Harrow was designated principal researcher. Allan Breen, BCA Research Director, was principal chiropractic coordinator. The feasibility study was performed during 1982-85 and reported in 1986.[7] At that time the extensive administrative arrangements for the multi-centre trial were underway. The treatment phase of the main trial commenced in 1986 and ended in March 1989.

C. Trial Design

8. Design of all trials of therapy is challenging but, as Grahame states, "drug trials look easy by comparison with trials in the back pain field".[7]

This was a randomized controlled trial comparing two treatment groups, performed by independent scientists appointed by the Medical Research Council. There are many subtleties, but the bottom line is that this trial was scientifically state-of-the-art.

External Validity

9. 'Internal validity' means that a trial is scientifically strong in controlling for bias or error. 'External validity' means that the trial results apply to the real world.

Two forms of trial were considered by the MRC:

a) A 'pragmatic' trial – testing "what happens in day-to-day practice and in which details of the type, frequency, and duration of treatment would be at the discretion of the chiropractor or hospital team".

b) A 'fastidious' trial – comparing one type of "chiropractic manipulation with a particular form of manipulative or non-manipulative physiotherapy".

Here the researchers adopted a pragmatic approach largely "because the effectiveness of treatment in day-to-day practice ... is of most immediate interest".

Accordingly the results of this trial can be well equated with everyday practice – the trial has good 'external validity'.

Size

10. This was a multi-centre study conducted in hospital and chiropractic clinics in each of 11 centres around Britain and involving 741 patients. This is far more than in any previous trial of manipulation, and renders the results that much more reliable and important. Size is necessary to avoid a common weakness in the published trials – failure to find a statistically 'significant' treatment effect because there are too few patients. (This is known as a 'false negative' or 'Type II error', or 'the problem of limited yield'). A minimum of 200 patients (100 in each treatment group) is required for a trial such as this.[6,7] Here there were 741.

Exclusion Criteria

11. The principal criteria for exclusion were:

- Outside age range 18-65.
- Major structural abnormalities visible on x-ray.
- Evidence of nerve root involvement.
- Treatment within the past month.
- Treatment at hospital or chiropractic clinic involved in the trial within the past two years.

Chiropractic manipulation is not necessarily inappropriate for patients excluded on these grounds – indeed there is evidence of effectiveness in the presence of nerve root compression and disc herniation,[10,11,12,13] and the percentage of chiropractic patients over age 65 is almost double that in the general population.[14]

The simple position is that, because these patients were excluded from this trial, its conclusions do not necessarily apply to them.

Treatment

12. Virtually all chiropractic patients (99%) received joint manipulation. Chiropractic manipulation typically consisted of quick, low-depth adjustments taking the joint through its full range of motion.

The great majority of physiotherapy patients (84%) received manipulation and/or mobilization (manual techniques with lower speed that take the joint through a more limited range of movement). This was according to the techniques of Maitland (72%), which are most widely used by PTs internationally, or Cyriax (12%).

13. Assessment of joint levels of dysfunction, and choice of style, frequency and duration of treatment was left in the discretion of the treating practitioner in order to correspond with normal practice. However total number of treatment visits was limited to 10. (See para 18 (c)).

In addition to manipulation/mobilisation some patients in both groups received exercises (chiropractic – 10%; physiotherapy – 30%), traction, use of corsets (elastic supports), and physical therapy modalities. Again this was in the discretion of the treating practitioners. "Many patients, especially those treated in hospital, received more than one type of treatment." (The BMJ report does not give exact figures).

Measurement of Results

14. This has been a problem area in past trials of manipulation. Usual goals of management of back pain are to restore function and limit pain but, in the words of Deyo, "measuring these variables is notoriously difficult ... recent studies have documented the poor reproducibility of aspects of patient history, physical examination and pain assessments ... in many patients progress can *only* be assessed in terms of pain resolution and improved function".[15]

Drawing on the considerable experience and refinements of the last 10 years, this trial used two methods of evaluation ('outcome measures'):

a) Changes in score on a back pain disability questionnaire. This was

continued on page 4.

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Fig. 1

Oswestry Back Disability Index

Patient Name: . . . . . **File #** . . . . . **Date:** . . . . . .

Please read:
This questionnaire has been designed to give the doctor information as to how your back pain has affected your ability to manage everyday life. Please answer every section and mark in each section only the ONE box which applies to you. We realize you may consider that two of the statements in any one section relate to you, but please just mark the box which most closely describes your problem.

Section 1 – Pain Intensity
- □ I have no pain at the moment.
- □ The pain is very mild at the moment.
- □ The pain is moderate at the moment.
- □ The pain is fairly severe at the moment.
- □ The pain is very severe at the moment.
- □ The pain is the worst imaginable at the moment.

Section 2 – Personal Care (Washing, Dresssing etc.)
- □ I can look after myself normally without causing extra pain.
- □ I can look after myself normally but it causes extra pain.
- □ It is painful to look after myself and I am slow and careful.
- □ I need some help but manage most of my personal care.
- □ I need help every day in most aspects of self care.
- □ I do not get dressed, I wash with difficulty and stay in bed.

Section 3 – Lifting
- □ I can lift heavy weights without extra pain.
- □ I can lift heavy weights but it gives extra pain.
- □ Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently positioned, for example on a table.
- □ Pain prevents me from lifting heavy weights, but I can manage light to medium weights if they are conveniently positioned.
- □ I cannot lift very heavy weights.
- □ I cannot lift or carry anything at all.

Section 4 – Walking
- □ Pain does not prevent me walking any distance.
- □ Pain prevents me walking more than 1 mile (1.6 km).
- □ Pain prevents me walking more than ½ mile (0.8 km.)
- □ Pain prevents me walking more than ¼ mile (0.4 km.)
- □ I can only walk using a stick or crutches.
- □ I am in bed most of the time and have to crawl to the toilet.

Section 5 – Sitting
- □ I can sit in any chair as long as I like.
- □ I can only sit in my favorite chair as long as I like.
- □ Pain prevents me from sitting more than 1 hour.
- □ Pain prevents me from sitting more than ½ hour.
- □ Pain prevents me from sitting more than 10 minutes.
- □ Pain prevents me from sitting at all.

Section 6 – Standing
- □ I can stand as long as I want without extra pain.
- □ I can stand as long as I want, but it gives me extra pain.
- □ Pain prevents me from standing for more than one hour.
- □ Pain prevents me from standing for more than 30 minutes. in 30
- □ Pain prevents me from standing for more than 10 minutes.
- □ Pain prevents me from standing at all.

Section 7 – Sex Life
- □ My sex life is normal and causes no extra pain.
- □ My sex life is normal but causes some extra pain.
- □ My sex life is normal but it is very painful.
- □ My sex life is severely restricted by pain.
- □ My sex life is nearly absent because of pain.
- □ Pain prevents any sex life at all.

Section 8 – Social Life
- □ My social life is normal and gives me no extra pain.
- □ My social life is normal but increases the degree of pain.
- □ Pain has no significant effect on my social life apart from limiting my more energetic interests, for example, dancing.
- □ Pain has restricted my social life and I do not go out as often.
- □ Pain has restricted my social life to my home.
- □ I have no social life because of pain.

Section 9 – Sleeping
- □ I have no trouble sleeping.
- □ I can sleep well only by using pills.
- □ Even when I take pills I have less than six hours sleep.
- □ Even when I take pills I have less than four hours sleep.
- □ Even when I take pills I have less than two hours sleep.
- □ Pain prevents me from sleeping at all.

Travelling
- □ I can travel anywhere without extra pain.
- □ I can travel anywhere but it gives me extra pain.
- □ Pain is bad but I manage trips over two hours.
- □ Pain restricts me to trips of less than one hour.
- □ Pain restricts me to trips under 30 minutes.
- □ Pain prevents me from travelling, except to the doctor or hospital.

Scoring (not seen by patients)

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.

Example: 16 (total scored) × 100 = 32%
50 (total possible)

If one section is missed or not applicable, score as follows:

Example: 16 (total scored) × 100 = 35.5%
45 (total possible)

Overall rating

0-20	Minimal disability
20-40%	Moderate disability
40-60%	Severe disability
60-80%	Crippled
80-100%	Bedbound or exaggerating

Interpretation. Examples of interpretation of change in Oswestry scores. *From Meade TW, Dyer S et al, British Medical Journal (1990).*

	Difference % points:
Mild pain, ability to lift heavy weights without extra pain, and ability to sit for up to one hour; *improved from* moderate pain, ability to lift heavy weights only if conveniently positioned, and unable to sit for more than half an hour.	6%
Mild pain, ability to lift light to medium weights and ability to sit for up to one hour; *improved from* fairly severe pain, unable to lift anything, and able to sit for up to half an hour.	10%

Main Article: *continued from page 2.*

completed by patients prior to treatment, and at the end of the each of the first six weeks, and at 6 months, 1 year and 2 years.

b) Measurement of degrees of straight leg raise, and lumbar flexion. This was done at entry and after 6 weeks by a coordinating nurse who was blind to the entry measurement at 6 week follow-up.

Thus there were subjective (self-report by patient questionnaire) and objective (professional measurement of physical change) measures, and an ability to compare these.

15. The questionnaire used was the Oswestry Back Disability Index. It is noted:

a) This type of questionnaire, once regarded as 'soft' evidence, is now accepted as 'hard' evidence.[15,16,17,18] A questionnaire should be used together with objective physical measurements, as here, but is currently the most reliable assessment of improved function and disability in an area in which where there is no 'gold standard'.

b) The Oswestry Index (OI) was developed in 1976 in a

continued on page 5.

New Zealand Commission of Inquiry into Chiropractic.
Findings relevant to training in spinal manipulation

Introduction

'Chiropractic in New Zealand' (377 pages, PD Hasselberg, Government Printer, Wellington, NZ, 1979), the report of a New Zealand government Commission of Inquiry into Chiropractic in 1978-79, is acknowledged internationally as being by far the most thorough investigation of the chiropractic profession. It also contains the most thorough independent assessment of necessary training for the practice of spinal manipulation.

The Commission heard from chiropractors, medical specialists, physiotherapist/physical therapists, and consumer experts from New Zealand, Australia, and the United States, Canada and England. It heard from many patients. Beyond this formal evidence, the Commission made informal visits to many chiropractic, medical and physiotherapy offices. It then travelled to England, the United States, Canada and Australia and met in each country with representatives of government and the professions of medicine, chiropractic and physiotherapy.

Given below are its central comments relevant to training for the practice of spinal manipulation.

Training in 'Manipulative Therapy'

"We come to training in manipulative therapy, to use the term adopted by the physiotherapists. This is defined by them to be movement of joints beyond their normal passive range. The basics are taught early, but only in the last year is some limited instruction given in manipulation, including the joints of the spine. *Both in New Zealand and in England the instruction appeared to be elementary, even crude.* At St. Thomas' in London, even under Miss J. Hickling who has so much influenced New Zealand therapists, the training appeared unstructured".

" ... the Commission has reservations about the way in which physiotherapists as a group acquire their manipulative training. They are taught techniques at weekend courses and at certain points are sent away to practise them, unsupervised, before they are fully trained. The Commission has a similar reservation about those medical practioners who, with even less training, in fact considerably less, undertake spinal and other manipulation. We are satisfied that the safest source of manipulative or manual therapy in New Zealand is the chiropractor".

"The manipulative therapist learning his techniques as he does in a fragmented fashion, first very sketchily at a physiotherapy school, then in a course spread over 3 years or more in small sections, contends that while practice is essential there is little point in over-refinement of what is only a strictly limited range of techniques.

The chiropractor, on the other hand, in his 4 or even 5 years at college *has a much greater and more systematic exposure to techniques*. He naturally believes that the expertise he achieves before he uses these techniques, unsupervised, on his patients, must with further practice give him a greater ability to help those patients".

"It is claimed that chiropractors over-refine their skill. At the same time it is alleged that their 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 chriopractor operated while the physiotherapist/manipulative therapist with his gentle articulations, extension, or mobilisations was a very different practitioner. *The truth is that while the chiropractor's movements are indeed often very quick, perhaps more so than those of the maniuplative therapist, they are also usually small and precise*. The most forceful manipulations we saw were performed by manipulative therapists.

... we find that chiropractic treatment is safe (see chapter 15)." (Emphasis added). (Report P.130-21).

Principal Findings

"The Commission accepts the evidence of Dr. Haldeman *(Scott Haldemann, DC, MD, Ph.D., neurologist and chiropractor, Los Angles)*, and holds that in order to acquire a degree of diagnostic and manual skill sufficient to match chiropractic standards, a medical graduate would require up to 12 months' full-time training, while a physiotherapist would require longer than that (Submission 131, pp.42-3, Transcript, pp.3312-3, 3332)." (Report P.198 para 2).

- 'Chiropractic is a branch of the healing arts specialising in the correction by spinal manual therapy of what chiropractors identify as biomechanical disorders of the spinal column. They carry out spinal diagnosis and therapy at a sophisticated and refined level.

- Chiropractors are the only health practitioners who are necessarily equipped by their education and training to carry out spinal manual therapy.

- General medical practioners and physiotherapists have no adequate training in spinal manual therapy, though a few have acquired skill in it subsequent to graduation.

- It is wrong that the present law should have the effect that a patient can receive spinal manual therapy which is subsidised by a health benefit only from those health professionals least well qualified to deliver it.

- The responsibility for spinal manual therapy training, because of its specialised nature, should lie with the chiropractic profession. Part-time or vacation courses in spinal manual therapy for other health professionals should not be encouraged." (Summary of Principal Emphasis added).

Main Article: *continued from page 4.*

hospital spine unit in Oswestry Shropshire, England. It scores patients' disability in 10 sections – dealing, for example, with intensity of pain, and lifting, walking, sitting, self-care, social life, sex life, etc.

See Fig. 1 for the text of the Oswestry Index and explanation of how it is scored.

c) Studies have confirmed that the OI has good *validity* (scores improve as observed disability lessens) and *reliability* (scores are consistent when answered on different occasions by a patient remaining in the same condition).[17] After many refinements it is in wide use in Britain in both research and clinical practice.

(Self-rating disability questionnaires are in wide use in North America. The equivalent of the OI, in terms of prominence, use, validation and length is the Roland Scale developed from the longer and thus less practical Sickness Impact Profile (SIP). There are as yet no studies comparing the OI, Roland, SIP and other disability scales).

D. Results

Oswestry Index (OI)

16. a) *Figure 2* illustrates results for all patients with complete data to two years follow-up. PT patients had an improvement of 12% at 6 weeks, 10% at 6 months, and 9% at 2 years.

Improvement for chiropractic patients "was consistently greater" – 15% at 6 weeks, 18% at 6 months, and 16% at 2 years – or 7% better on the OI than those receiving PT treatment. (For significance of this, see Fig. 1 'Interpretation').

b) The only patients for whom chiropractic management was not greatly superior were those with no history of back pain prior to the current attack, and mild pain/ disability – those scoring under 40% on the OI at entry into the trial. These are the patients most likely to recover over time without treatment.

If their results are put aside, leaving the patients in more severe pain/disability (over 40% on OI at entry) and/or those with long-term problems, *chiropractic superiority at two years was 13%. (See Fig. 3)*

Frequency and duration of work loss, as a result, were significantly less for chiropractic patients. 1 in 5 (21%) of chiropractic patients had time off work, 1 in 3 (35%) of PT patients (i.e. a saving of 60% in the number of patients requiring time off work).

c) It should be remembered that these are averages over many clinics and patients – this is what gives particular weight to the findings.

In 1 of the 11 treating centres PT treatment produced marginally better results than chiropractic management. As the BMJ observes "omitting its results increased the apparent effectiveness of chiropractic treatment in the other 10 centres".

SLR and Lumbar Flexion

17. Ranges of straight-leg raise (SLR) and lumbar flexion were re-measured after 6 weeks of treatment to see if patient survey evidence of improvement was supported by objective physical measures. It was.

Chiropractic patients did better on degrees of improvement of right straight-leg raise (PT 5.0°; DC 7.1°: difference 2.1°), left SLR (5.3; 5.8: 0.5) and lumbar flexion (0.62cm; 0.85cm: 0.23cm).

Why did chiropractic fare better

18. The trial suggests one or more of three reasons;

a) Skills

The first "obvious possibility" is the use of a different and more effective approach to manipulation. This involves not only treatment skills, but also skills in biomechanical (or in chiropractic terms 'neuromusculoskeletal') diagnosis.

Chiropractic manipulation involves a large number of manual techniques but emphasizes a fast, low-depth, very specific form of manipulation, traditionally called 'an adjustment'. (This produces a similar speed and range of joint movement to that experienced when you pull and crack a finger joint).

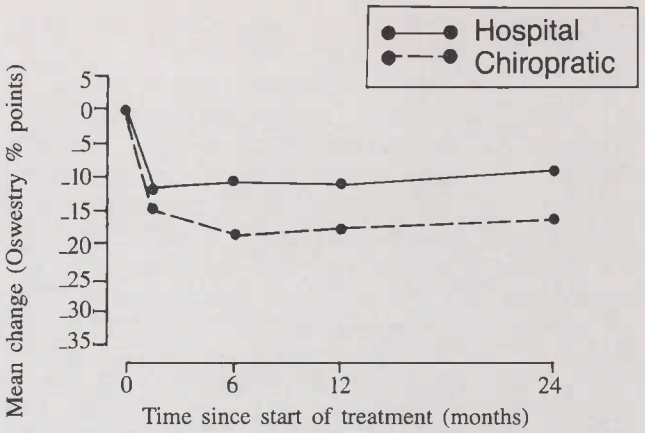

FIG 2 – *Mean changes in Oswestry scores for all patients followed up for two years*

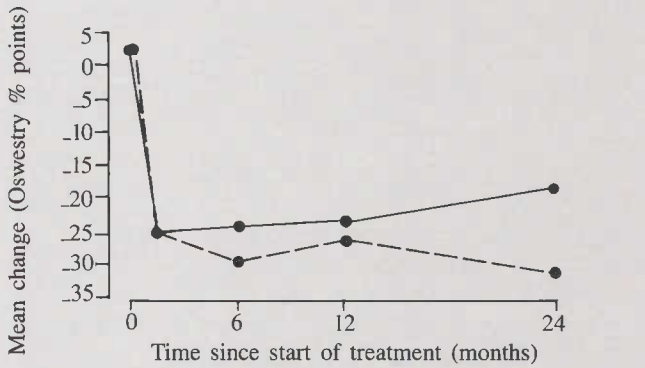

FIG 3 – *Mean changes in Oswestry scores for all patients followed up for two years with score over 40% at entry to trial (i.e. patients with greater pain and disability).*

b) Length of time under care

The second possible reason is the length of time the patients were under care. In this trial no patient received more than a maximum of 10 visits/treatments. However, 79% of PT patients (4 in 5) had finished treatment at 6 weeks, compared with only 29% (1 in 3) of chiropractic patients. Most chiropractic patients were seen over a 3-6 month period.

This is consistent with normal chiropractic management, which focuses not only on current *symptoms* (removing pain) but also the *cause* of pain (improper spinal mechanics, and muscle weaknesses, poor postures and aspects of lifestyle that contribute to the problem). These causes need to be addressed to prevent future episodes of pain. This takes time. The patient should often be under care for some time after immediate symptoms have resolved – to receive treatment restoring joint and muscle function at all spinal levels of involvement, and to keep him/her learning about back care, performing exercises given, and maintaining better habits of lifting, sitting, sleeping, etc.

The BMJ reports "the chiropractors generally treated all patients over a similar period, whereas the hospital therapists treated patients with long episodes of back pain ... for longer periods than those with short episodes".

c) Frequency of treatment

PT patients received an average of 6.3 treatment visits, chiropractic patients 9.1.

Analysis of results found "no clear relation between the number of treatments and extent of improvement for either chiropractic or hospital treatment". This suggests that time under care may have been more significant than number of treatments in this study.

It is interesting to compare other research. Kirkaldy-Willis and Cassidy, in the best previous study of chiropractic results with chronic mechanical low-back patients,[10, 19] used daily manipulation for 2-3 weeks in producing their excellent results. (Approximately 90% of patients returned to full activities of daily living, after several years of complete disability, and results were maintained at 12 month follow-up. Chiropractic treatment was combined with intensive back school).

In another new trial, from the Palmer College of Chiropractic[20] and presented last month at the annual meeting of the International Society for the Study of the Lumbar Spine in Boston, the frequency of treatment was 3 times weekly for 2 weeks then 1 treatment per week for the next 7 weeks. This totals 13 treatments in 9 weeks.

i) 68 patients with chronic low-back pain were randomly assigned to 3 groups – Group 1 (chiropractic manipulation),

Group 2 (sham manipulation consisting of light palpation and massage) and Group 3 (MD conservative care using analgesics, muscle relaxants and exercises).

ii) Assessment was by questionnaire (modified Million) and visual analog scale.

iii) Both the chiropractic and medical groups, but not the control group, showed significant improvement in functional impairment. Only the chiropractic group showed significant improvement in pain levels. Improvement was maintained at 2 year follow-up.

On the basis of all the evidence it might be argued that the chiropractic patients in the British trial may have done even better with more frequent visits during initial weeks. While the chiropractic patients always did better, it was during the first 6 weeks that this superiority was least marked.

Conclusion

19. In a 1986 editorial in the British Medical Journal[21] Jayson MD concluded that there were benefits to manipulation, but confined to patients with acute, minor pain. Early improvement could be expected, but there was no satisfactory evidence that manipulation helped severe or chronic problems, or reduced long-term complications.

In June 1990, making specific reference to these views, Meade et al point to the superior design of their trial to all past research and conclude:

"For chiropractic our findings suggest otherwise".

The main criticism many medical doctors have had with respect to chiropractic is that it does not stand up to scientific scrutiny. Here, culminating a decade of prolific new research in the 1980s, is the strongest possible answer – solid, independent trial results published in the British Medical Journal which are so convincing that the medical profession itself, to its great credit, is advocating inclusion of chiropractic services in the British National Health system.

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