THE CHIROPRACTIC REPORT

Editor: David Chapman-Smith LL.B. (Hons.) November 1997 Vol. 11 No. 6

PROFESSIONAL NOTES

Complementary Care - The Paradigm Shift Grows

In recent months there has been a parade of public surveys and professional developments demonstrating an accelerating trend internationally in the use and acceptance of alternative or complementary health care - the leading example of which, in terms of use and patient satisfaction, is chiropractic.

There is a new level of public demand for a health care system where there is access to and funding for both medical and complementary care. As John Robbins says in the US in his influential new book *Reclaiming Our Health: Exploding the Medical Myth and Embracing the Source of True Healing*, there is a growing awareness in patients that they are responsible for their own health, need the assistance of different kinds of health professionals for different health needs, and should seek out medical doctors, chiropractors and others who are willing to work together.

Some of the recent developments are:

- In New Zealand the September 1997 issue of the Consumer Institute's magazine *Consumer* reported a survey on use of alternative therapies by 8007 Consumer members. Half (51%) had tried at least one. "Chiropractic, herbal medicine and homeopathy were the most widely used therapies, but of these only chiropractic had a high satisfaction rating (74%)." The Institute advises that, of all alternative care, chiropractic

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EXERCISE PROGRAMS - DO THEY REALLY WORK?

A. INTRODUCTION

Chiropractors have traditionally given home exercise programs to patients for the prevention and management of back and neck pain, supervising these on subsequent office visits. In recent years they have made much greater use of exercise programs under direct supervision in the clinic - and third party payors who watch every dollar spent on chiropractic manipulation are often much more ready to fund exercise programs. It seems to be accepted wisdom that a patient will be better off with stronger more flexible muscles.

On the other hand there are many fit people suddenly disabled by back pain, and everyone knows of patients whose pain has been aggravated by exercise. Furthermore, improving muscle function will be of limited value if the primary biomechanical problem is a joint restriction.

2. Today there is strong evidence that spinal manipulation is effective for patients with acute non-specific or mechanical back pain,[1,2,3] and good evidence of effectiveness for patients with chronic mechanical back pain,[4,5,6] and acute and chronic mechanical neck pain.[7,8,9] How good is the evidence for exercises for these conditions? In particular:

- Is exercise of value - for prevention, for treatment?
- If so, what kind of exercise, how often, and should it be at home, in a fitness club or in a clinical setting?
- Where there is proven benefit is this for physical reasons (improved muscle condition) or psychological ones (removing fear of pain, giving confidence to pursue daily activities so that pain is not disabling?)
- Is manipulation plus exercise better than manipulation alone?

Everyone will have opinions on these things, forged from personal and clinical experience. But in an era of evidence-based practice, what does the reliable evidence say? Until recently it said very little - but there have been many good trials and reviews in the last 5 years.

3. Before we turn to the evidence there are two important matters of definition:

a) **Exercise v Activity**. In this review, exercise means therapeutic exercises prescribed by a chiropractor or other health professional, not simply maintaining general activity, which is often described as activities of daily living (ADL) or mobilization of the patient.

The evidence is now clear that patients with non-specific or mechanical back and neck pain should remain mobile and active and only be given bedrest or immobilization in cases of acute, severe pain[1,3,7] and then for a maximum of 2-3 days. Early activity is important for physical and psychological reasons.

Here, exercise means prescribed exercises - such as specific stretching routines to be repeated daily, a schedule of flexion or extension exercises, trunk muscle strengthening exercises, a prescribed general workout, Swedish back school, etc.

b) **Acute v Chronic**. Be warned that, surprisingly, there is no agreement on the meaning of the terms *acute, subacute* and *chronic*. In many trials acute pain is defined as pain for 2 weeks or less, and chronic pain as pain lasting more than 6 weeks.

However in the influential US AHCPR Guideline for Acute Low Back Problems in Adults, after a thorough review of the trials, acute was defined as a present episode of pain lasting up to 3 months. This could be a first or a recurring attack of back pain - so that someone disabled by back pain on and off for the past 5 years but having a fresh episode in the last 2 months, has acute pain for the pur-

poses of this Guideline. This lack of agreement complicates interpretation of the scientific evidence.

B. Exercise - Overall Evidence

4. The September 1996 back pain guidelines of the Royal College of General Practitioners in the United Kingdom, developed by an interdisciplinary expert panel on which Alan Breen DC PhD, Director of Research, Anglo-European College of Chiropractic represented the chiropractic profession, were based on the most current and impressive review.[3] This found 28 randomized controlled trials (RCTs) of specific back exercises for low-back pain as at September 1995 (which, as a matter of interest, compares with 36 RCTs for manipulation) and the RCGP panel concluded:

a) **Quality**: "Most trials are of poor quality". This echoes the findings of Koes, Bouter et al in 1991.[9]

b) **Acute Back Pain** (up to 6 weeks): "On the evidence available at present, it is doubtful that specific back exercises produce clinically significant improvement in acute low-back pain, or that it is possible to select which patients will respond to which exercises."

This guideline, which has broad international respect, recommends early activity and manipulation for patients with acute back pain - but not exercises.

c) **Chronic Back Pain** (lasting over 6 weeks). There is now sound evidence "that exercise programs and physical reconditioning can improve pain and functional levels". On this evidence and on "strong theoretical arguments" exercise programs and physical reconditioning should be given:

- To chronic pain patients
- To acute pain patients who have not largely recovered after six weeks of care.

These UK recommendations are supported by two other evidence reviews published in 1995, those by Faas et al[10] and Koes et al.[11]

d) **Prevention**. Recent guidelines deal with pain management, not prevention, but there is now good evidence of the value of structured exercise programs in the primary and secondary prevention of back pain, especially in occupational groups at risk. A leading trial is by Gundewall et al in Sweden, published in *Spine* in 1993:[12]

i) *Purpose*. To assess the effect of preventive back muscle training exercises on physical condition (strength, endurance, coordination) and frequency of complaints and working days lost for low-back pain in nurses and nurse aides who have heavy and repetitive lifting and spinal flexion in their work and high frequency of back injuries.

ii) *Study population and intervention*. 60 nurses (10) and nurse aides (50) were randomized into two groups.

- *Training group:* Subjects received individual instructions on a 20 minute exercise program at work which was then performed an average of 6 times monthly over 13 months. The exercises, fully described in the paper, involved trunk muscle strengthening with simple equipment such as wall bars, elastic bands and light weights and some simulated work tasks, supervised by physical therapists.
- *Control group:* These subjects received nothing other than instructions on how to complete report cards for back problems.

All participants were free of back pain, and each group was well matched for various factors relevant to back pain such as age and job position.

iii) *Results:* The training group had increased muscle strength of 20%, whereas the control group had none, and there was a statistically significant improvement in the training group in pain levels, number of complaints and days off work.

In fact only one person from the training group was absent from work over the period of 13 months, compared with 12 from the control group. Those in the training group had an average of 3.8 fewer days sick leave. The prevention program was not only effective but cost-effective. For every PT hour in the training program 1.3 days of work loss was saved, giving a cost benefit ratio of more than 1 to10.

Why did this program work? Gundewall et al acknowledge that there were probably both physical and psychosocial reasons including:

- Back strengthening
- Better and safer handling techniques, because of the training.
- Improved job satisfaction for those getting a training program because someone cared.

This final point was also demonstrated in a study with nurse aides by Dehlin.[13] For the value of exercises in prevention in the general population, see the trial by Ljunggren et al[14] in para 13 below.

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C. Chronic Pain - Type of Exercises

5. There is insufficient evidence to say that one category of exercise program is better than another. The two most highly rated trials reporting effectiveness with chronically disabled patients are those by Manniche et al in Denmark[15] (trunk muscle exercises for strength) and Deyo et al in the US[16] (stretching exercises for flexibility). Both trials dealt with adult patients aged 70 or under with non-specific back pain that was truly chronic - experienced on average for several years.

Manniche et al studied 105 patients in Copenhagen with a minimum of six months low-back pain, as follows:

a) **Interventions**. The patients were randomly assigned to three varied programs of back exercises:

i) *Intensive back strengthening*. Subjects received 30 one hour supervised sessions over three months, 3 times weekly during the first month then 2

times weekly. Exercises, fully described in the paper, included trunk lifting, leg lifting and pull-to-neck of weights. The full program, which subjects were eased into gradually during the first month, involved 100 repeats of each exercise per session.

ii) *Modified back strengthening*. Same as the above but at 20% of the volume - i.e. a maximum of 20 repeats per session.

iii) *Mild exercise*. Subjects received thermotherapy, massage and mild isometric exercises for the lumbar spine. This was during 8 sessions over one month, following by two months without treatment.

b) **Measurement of Outcomes**. Results were measured in two ways:

i) Quantitatively - through a Low Back Pain Rating Scale specially developed for the trial, and containing subjective and objective measurements of pain, disability, physical impairment and use of analgesics.

ii) Qualitatively - by a simple, global self-assessment by each patient (rating their response as *very satisfactory, satisfactory, acceptable, unchanged, aggravated* - only the first 2 responses were regarded as positive).

Measurements were taken prior to treatment, at 3 months (end of treatment), at 6 months (3 months after end of treatment) and at 12 months.

c) **Results**. Those in the intensive back strengthening group did significantly better on both qualitative and quantitative measures. Various aspects of the results emphasized that the improvement was linked to the intensive exercise:

- Those in the intensive exercise group did significantly better at the end of treatment (3 months) and this was even more pronounced after a further 3 months.
- Those in the intensive exercise group who voluntarily continued the exercise regime, but at the reduced rate of once per week, throughout the 9 months follow-up (13 of 27 or approximately 50%) were significantly better at 12 months - both in terms of pain level and disability. The others, who stopped exercise, lost their improvement. See Figure 1.
- However even those who voluntarily continued at the lower rate after 3 months saw this lower level of exercise reflected in the results - their disability and pain levels began to rise after 6 months. (See Figure 1).
- Those in the intensive exercise group who discontinued all exercise after the 3 month treatment phase, which had initially brought them good results, completely lost their improved pain and disability levels by 12 months. (See Figure 1).

6. In this trial the improvement with exercise came in all sub-groups of chronic patients - it was not influenced by sex, age, duration of back pain, severity of pain, presence of sciatica or x-ray findings.

Manniche et al conclude that "intensive back training can affect a lasting improvement of the pain condition but that continued training is necessary to avoid relapse." Commenting on other earlier studies did not produce such good results for strengthening exercises, Manniche et al consider that the reason was that exercises were not continued for a sufficient length of time - at least three months is necessary.

A closer reading of Manniche et al's paper reveals two other points of interest:

a) Whether or not a person enjoys the exercise program appears to be a factor throughout. Figure 1 reveals that those in the intensive exercise group who volunteered to continue with exercise after the 3 month treatment phase were already doing better during the treatment phase - in other words those patients who later discontinued exercises were achieving lower results early on when they were doing the full program under supervision.

b) The researchers note that they have now added abdominal exercises, general physical training and stretching exercises to their exercise protocol for chronic pain patients. This tends to confirm that the specifics of an exercise program are not as important as the general fact that there is one. In turn this suggests that the benefits of such a program are psychological as well as physical.

7. In the Deyo et al trial there was only one exercise program tested - a program of 12 relaxation and stretching exercises "designed to improve mobility and reduce pain by limbering muscles and ligaments that had become restricted in response to pain". The exercises were performed daily for 4 weeks, generally at home but with repeat instruction twice weekly and recording of all exercises in a diary. 135 patients were randomly assigned to 1 of 4 groups:

a) Transcutaneous electrical nerve stimulation (TENS) and exercises.

b) TENS alone.

c) Exercise with sham TENS

d) Sham TENS.

At one month there was significantly better improvement in pain intensity, pain frequency and levels of activity in patients in the two groups that received exercise compared with those receiving real and sham TENS only.

However two months after the trial most exercise patients had discontinued the exercises and the improvement was lost. Deyo et al conclude, as did Manniche et al, that exercise is effective in the management of chronic back pain but "requires sustained performance for beneficial effects."

8. These two trials suggest that different types of exercise programs are equally effective for chronic pain patients. In the last two years trials by Bronfort et al in the US,[17] Koes et al in the Netherlands[18] and Ljunggren et al in Denmark,[14] confirm this message. They also look at the issue of whether or not patients will actually follow through and perform exercise programs, known in the jargon as compliance, and factors relevant to that.

D. Fear, Motivation, and Compliance

9. Most people with acute or chronic pain fear movements and exercises since they may aggravate the pain and therefore, it is thought, bring risk of worse injury. This fear is fed by past experiences, the traditional medical approach of advising rest, and the advice of family and friends.

Recent trials, such as those by Indahl et al in Norway,[19] and Linton et al in Sweden,[20] have compared "medical treatment as usual" based on rest and medication with simple advice on the safety and benefits of early activity, and have shown major benefits simply from advice leading to patients maintaining activities of daily living.

a) Linton et al had a population of 240 adults with *acute* musculoskeletal pain and showed that, for those with no prior history of sick leave pain, early activa-

tion reduced the risk of developing chronic pain by 8 times (800%).

b) Indahl et al looked at 975 patients with *chronic* low back pain who had been on sick leave for 8-12 weeks. Those in the activation group, who were told that the "worst thing they could do to their backs was to be careful" and were given postural advice - but no treatment - had a highly significant 50% reduction in sick leave.

Both trials found that simple fear of movement was a major factor. Accordingly today's evidence-based guidelines for the management of patients with non-specific back and neck pain recommend early activation and avoidance of bed rest.[1,2,3,7]

10. If fear is a factor in maintaining normal activity, it is even more important when it comes to performing exercises. There is now good evidence that there is much greater compliance with exercises - people will actually do them - and effectiveness if they:

a) Are introduced on a gradual basis.

b) Are performed under supervision in a clinical setting or using regular follow up by the treating practitioner.

11. An early study in this area was by Dolce et al in the US[21] and involved 14 chronic pain patients (back, neck, shoulder - pain on average for 37.2 months) and looked closely at the role of fear and the need for supervision.

a) Patients received a 60 minute exercise session 2 times daily for 4 weeks under the supervision of a physical therapist. However the program was introduced as follows:

- First 3 sessions - no fixed volume of exercises or quota, with the patient staying well within his/her capacity.
- Sessions 4-20 - gradually increasing quotas, at first not challenging the patient's fear level but finally requiring the patient to perform well above that level.

b) Anxiety about each type of exercise in each session was recorded by the patient on a 10 point scale, described at the low end as "not worried at all" and at the high end as "very worried and concerned". Exercise quotas near the end of the study focused intentionally on exercises for which most concern was shown.

c) The researchers reported a significant increase in exercise performance and expectancy, and a significant decrease in concern about previously feared exercises. And they report that "these changes were the result of quotas, rather than exercising per se."

12. Fordyce et al[22] provided the first good evidence that the exercise leader plays a critical role in stopping poor behaviours, encouraging healthy behaviours, and guaranteeing compliance with exercises. That work was reinforced by Reilly et al in Colorado[23] in a trial which compared "the behavioural influences of a well-designed and closely monitored strength and conditioning program with those of an independent self-monitored exercise program" with 40 chronic low-back pain patients. They were randomly assigned to 1 of 2 groups:

a) *Control group* (n 20): Patients received a specific exercise program for flexibility and strength, plus aerobic exercises, to be completed in 96 sessions 4 times weekly over 6 months. They were given three health clubs to choose from, where compliance was monitored by health club staff.

b) *Experimental group* (n 20): They received exactly the same, except that they had a clinically assigned and personal certified strength and conditioning specialist.

The experimental group achieved significant improvements in aerobic fitness and strength and significant decreases in pain and body fat, whereas those in the control group did not. The explanation was simple - there was high compliance in the experimental group (average attendance of 90.75 sessions out of 96) but not the control group (average attendance of 31.95 sessions only).

13. In chiropractic practice, a common method of supervising exercise compliance by chronic pain patients is an office visit every two weeks for a period of months after earlier intensive care to get the patient active and mobile. Such biweekly visits are designed to keep patients at work and able to perform other daily activities, and are combined with adjustive and other care as necessary. For patients who are still recovering but are not disabled, and as prevention of future disabling episodes of pain (secondary prevention), this is more appropriate and far more cost-effective than prolonged supervised exercise programs.

Support for close ongoing supervision of home exercise programs, which as a result become satisfying and effective for patients, can be found in a new trial from Ljunggren et al in Norway.[14]

a) **Study Population and Purpose**. This trial studied 126 adults aged 18-65 with a history of non-specific low-back pain who had recently been referred by general practitioners to physical therapists for treatment. This was now complete and the patients were back at work. The purpose of the trial was to see whether supervised home exercises commenced at that stage would be performed by patients and would be successful in preventing future pain and disability.

b) **Interventions.** The subjects were randomly assigned to 1 of 2 groups:

i) *Conventional PT exercises*. General strength and flexibility exercises, as shown in Figure 2. Each exercise session took approximately 30 minutes and involved 9 exercises each performed in 3 series with 10 repetitions. There were 3 exercise sessions weekly for 12 months.

ii) *TerapiMaster Exercises*. An alternative set of exercises, also for strength and flexibility, using a new low-cost Norwegian apparatus designed for PT treatment and general exercise. There was the same dosage and frequency of exercise.

Both forms of exercise were performed at home. However to encourage consistent performance or compliance there was:

- A thorough initial instruction session.
- 1 follow-up every 6 weeks. This meant 8 follow-ups during the 12 month study - 4 were by telephone calls, 4 by patient visits to PT centres. During these follow-ups patients were specifically asked about compliance, though they kept no diaries, and modification of exercises was made where this was felt appropriate.

During initial weeks exercises were phased in gradually.

c) **Measurements**. Results (outcomes) measured were:

i) Compliance with exercises and days of sick leave - by PT survey on each follow-up, at the end of the trial (12 months) and at 24 months.

ii) Patient satisfaction - on a 10 centimetre Visual Analog Scale ranging from 0 (very bad) to 10 (very good).

At the end of the trial patients had no further supervision, but were encouraged to continue with their exercise program.

d) **Results.** There was high patient satisfaction with both exercise regimes and excellent compliance. This led to a highly significant reduction in absenteeism in both groups in the first 12 months - a reduction from 82.5 days off to 17.2 in the conventional exercise group, from 61.6 to 15.4 days in the TerapiMaster group.

i) At least 2 of 3 (67%) of all patients voluntarily completed a second 12 months of exercise (13 could not be contacted because of changed addresses), though level of exercise or compliance dropped by about 25%. Notably however, in the second 12 months there was a further improvement in work attendance - absenteeism declined to 9.9 days and 9.3 days respectively.

ii) Neither exercise program was significantly better than the other.

iii) Ljunggren et al[14] report that "both exercise programs reduced absenteeism by 75% to 80%" and conclude that general exercise "is beneficial for both the prevention and \treatment of back pain."

They particularly note that exercise compliance is a problem "to which more attention should be devoted", since most people have not continued with training programs in other studies. "It is important to ensure that (patients) are given support and encouragement when exercising, either on an individual basis as in our study, or by participating in group activities. ....

"One reason for the high level of compliance was probably the frequent follow-up procedures ... and the motivational effect of that contact on the patients." Indeed "frequent follow-ups seemed to be a prerequisite for good compliance."

E. Manipulation and Exercise

14. The evidence already discussed confirms that manipulation and exercise are each of value for patients with non-specific chronic spinal pain, and the most recent trial confirming this is by Koes et al in the Netherlands.[11] This found each of exercises and manual therapy by specialist physical therapists to be superior to standard medical management.

Is a combination of both treatments better than just one? In principle it should be since exercise addresses fear of pain and muscle tone whereas manipulation addresses underlying joint restrictions.

There is little firm evidence. Richard Erhard DC PT and colleagues from the University of Pittsburgh compared PT supervised extension-oriented exercises with chiropractic manipulation of the sacroiliac joints combined with general range of motion exercises (flexion and extension).[24] This trial showed much greater improvement one week and one month after treatment in the group receiving manipulation plus exercises, but this was a small study (24 subjects) with acute low-back pain patients. There was one week of treatment only (3 visits) and no long term follow-up.

15. The best trial, which also suggests a benefit from combined treatment, is from Bronfort et al at the Northwestern College of Chiropractic in the US.[17] This was designed to be compatible with the Manniche et al and Deyo et al trials already discussed (paras 5-7), and involved a population of 174 adults age 20-68 years with "long-standing, stable, moderately severe" chronic low-back pain. Many patients also had radiation of pain to the knees.

a) **Interventions.** Patients were randomly assigned into three groups:

i) Spinal manipulative therapy (SMT) plus trunk strengthening exercises (TSE)

ii) SMT plus stretching exercises.

iii) Non-steroidal anti-inflammatory drugs (NSAIDS) plus TSE.

SMT comprised chiropractic adjustment, as determined by the five treating chiropractors, without adjunctive therapy. TSE comprised trunk and leg strengthening exercises as in the Manniche et al trial plus abdominal muscle strengthening. Stretching exercises, designed to improve flexibility of the spine, hips and lower extremities, were as in the Deyo et al trial. All exercises were under supervision in a clinical setting. The NSAID used was Naproxen Sodium (500 mg capsule every morning and evening for 5 weeks).

Subjects received 5 weeks of combination therapy twice weekly (i.e. 10 treatment visits, one hour each) followed by 6 weeks of exercise only (comprising a further 10 one hour exercise sessions).

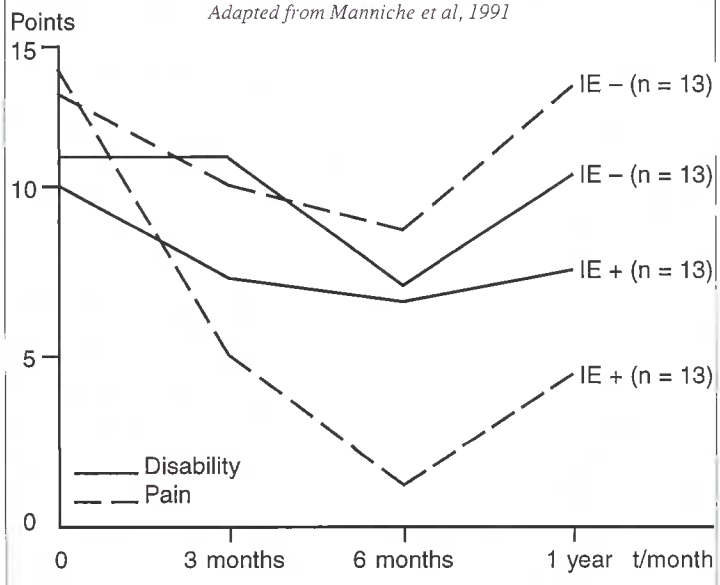
b) **Assessment**. Parameters measured were severity of low-back pain (Ordinal 11 box scale similar to VAS), disability from low-back pain (Roland Morris Index), general health status (COOP Charts) and trunk muscle strength endurance and ranges of motion (sophisticated equipment as described).

Measurements were taken prior to the study (baseline), during the trial at 3, 5 and 11 weeks, and at 12 months follow-up.

c) **Results.** There was a good compliance rate (85%) with all treatments during the 11 weeks treatment phase. Each of the three treatment approaches brought "clinically important improvement" with sustained improvement at 3, 5 and 11 weeks.

Both manipulation plus exercise groups showed a trend to greater pain reduction (greater than 40 point improvement in 30% of patients) than the NSAIDS plus exercise group (greater than 40 point improvement in only 15%) but there was no statistically significant difference between the groups at 11 weeks.

Figure 1



This figure shows the influence of an intensive exercise (IE) program on pain and disability over 12 months. The figure shows the performance of patients in two sub-groups - one that discontinued all intensive exercise at 3 months (IE -); and a second that continued intensive exercises from 3 to 12 months but at the lower rate of once per week (IE+).

Figure 2

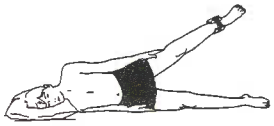
Conventional Norwegian Physiotherapy Exercises for Back Pain Patients - *From Ljunggren, Weber et al, Spine 1997*

1.Lie on your back with knees flexed
- Lift your upper body half way up
- Hold 3 seconds

Progression:
- *Hold a sandbag behind your neck*
- *Increase the weight gradually*

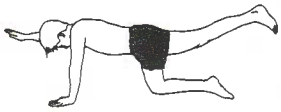
2.Lie on your side
- Lift your uppermost leg

Progression:
- *Apply a sandbag around the ankle*
- *Increase the weight gradually*



3.Support your body on your knees and hands
- Stretch one arm forwards and the opposite leg backwards

-Hold 3 seconds



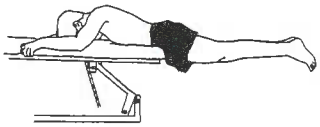
4.Lie prone, a firm support under the abdomen
- Place the hands behind your neck.
- Lift your upper body
- Hold 3 seconds

Progression:
- *Hold a sandbag behind your neck*
- *Increase the weight gradually*

5.Support your body on your feet and hands
- Do push-ups

6.Lie on your stomach on the edge of a table, feet on the floor.
- Grasp the edge of the table
- Keep your knees straight and lift your feet off the floor

Progression:
- *Lift your legs higher up (not higher than the edge of the table)*
- *Apply sandbags around the ankles*
- *Increase the weight gradually*

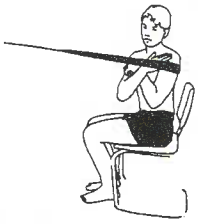


7.Place two objects on the floor, 50 cm apart.
- Bend down (flex your hips and knees) and pick up the objects
- Stand up straight
- Lift the objects above your head

Progression:
- *Increase the weights of the objects*

8.Tie a cut-off innertube of a bicycle-tire around a doorknob.
- Sit on a stool with the end of the tube around your shoulders
- Turn your body so that the tube stretches
- Repeat to the other side

Progression:
- *Increase the distance to the doorknob.*



9.Sit on your knees at the edge of a bed, feet outside the edge.
- Place your hands on your neck
- Bend forwards

-Straighten up

Progression:
- *Hold a sandbag behind your neck*
- *Increase the weight gradually*

Main Article: *continued from page 5*

Similar to the Manniche et al trial, one year later the manipulation plus exercise patients who continued exercises maintained a "clinically important reduction of pain", whereas those who discontinued exercise lost much of their early benefit. More importantly 80% of those continuing exercise had little or no current interference with daily activities. This, remember, was a group who had had long-standing, moderate to severe disabling back pain.

There were no side effects in the groups receiving SMT and exercise. In the NSAIDS group, despite screening to reduce risk, 2 patients had severe nausea/vomiting forcing them to drop out and 8 others had "substantial nausea and dyspepsia" which required balancing drug therapy.

The investigators draw attention to the following:

i) The two groups receiving TSEs had a substantial increase in trunk flexion/extension strength and endurance at 11 weeks, whereas those on stretching exercises did not. However, this did not translate into significantly less pain and disability than

in those who received stretching exercises. Accordingly increased strength alone is not the answer.

ii) By comparison with the patients in the Manniche et al trial, similar pain reductions were achieved by adding manipulation and reducing exercise hours by 50%. However there was less reduction in disability at 3 months.

iii) For the group receiving stretching exercises for 11 weeks, results were generally more lasting at 3 months than in the Deyo et al trial, where subjects had the same exercises but for 1 month only. Bronfort et al say it is unclear whether this was because of the longer period of supervised exercise or the addition of SMT.

In summary, there are indications in this trial that a combination of SMT plus exercise brings better results with chronic patients. However prolonged exercise remains important, and there will only be clear evidence when there is a trial in which one group receives manipulation only.

F. Conclusion

16. What are the messages for chiropractic practice, where a high proportion of patients have non-specific spinal pain and the majority of these have chronic pain? The evidence is:

a) **Acute Pain Patients**. Traditional chiropractic practice, based on joint manipulation and encouragement of the patient to keep mobile and commence relevant prescribed home exercises as soon as possible has strong support. This management approach will relieve acute pain, prevent chronicity, and continuing exercise will prevent future problems. Structured exercises are not necessary or proven effective in the first 6 weeks.

b) **Chronic Pain Patients**.

i) *Short-term Disability Under Care* (less than 4 weeks work loss). Traditional practice, as above, is appropriate for chronic patients too if they are making steady progress in return to and maintenance of daily activities.. At each patient visit there needs to be careful monitoring of exercise compliance, ideally with reference to a diary being kept by the patient. Exercises only have lasting effect if continued for 6 months or more - they should become a lifetime habit.

If patients have minor or no disability it is plainly much more cost-effective for them to be having a biweekly or monthly chiropractic visit to monitor exercise compliance and musculoskeletal function, with manipulative and other treatment as indicated, than to engage in a prolonged, intensive program in a clinical setting - for the 6 months or more required for lasting benefit. On the other hand, an intensive in-office program for 6 weeks may help many chronic patients during the initial phase of their chiropractic care, both in terms of early return to activities and promoting later compliance with home exercises.

ii) *Continuing Disability Under Care* (more than 4 weeks work loss). However for patients with continuing disability while under care clinicians must:

- introduce more intensive, supervised exercises in a clinical setting
- keep a strong eye on psychosocial factors, especially job satisfaction

c) **Generally.** This is excellent news for the clinician. It means you do not need sophisticated and expensive exercise equipment for most patients, and that you can use the range of exercises you personally prefer and find that patients, with your encouragement, will use. It also means, however, that monitored exercises must be an important part of overall management.

17. What the evidence suggests to medical practitioners and third party payors is that:

a) Early activation of the patient is important.

b) However the most cost-effective management of patients with acute and chronic non-specific spinal pain should include two further elements - skilled manipulation and, for all patients except those with acute pain which resolves quickly, appropriate quotas of monitored exercises.

The jury is still out on whether these exercises should emphasize relaxation (steady cardiovascular exercise for anxiolytic effect) flexibility (stretching) or strengthening. A combination is probably best. The better recent trials confirm that it is not the exact type and mix of exercises that is important - rather it is the fact that patients have a regular structured exercise program tailored to their needs and, through regular monitoring and encouragement, actually do these exercises. TCR

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Professional Notes: *continued from page 1*

is "the most regulated and the most respectable."

• In Canada an August 1997 nationwide poll of 1200 adults by CTV/Angus Reid reported that almost half (42%) of Canadian adults use alternative care, and that amongst them chiropractic is by far the most commonly used (59%) . (The next most common are herbology at 23% and acupuncture at 22%). There has been a 146% growth rate in use of alternative care by young adults (age 18-34) in the past 5 years. 70% of Canadians feel that government plans should cover the cost of alternative care and "an overwhelming majority (93%) of Canadians agree that doctors can give advice but people have the main responsibility to look after their own health."

Even more interesting is a September 1997 report from the Committee on Complementary Medicine of the College of Physicians and Surgeons of Ontario (CPSO), which regulates over 27,000 MDs in Canada's most populous province. Items from this report, now adopted by the CPSO as policy, are:

° "Physicians have a standing duty to respect and at times an obligation to help promote the free choice of a competent patient."

° "It should not be misconduct to refer a patient to complementary practitioners when appropriate."

° "Many complementary disciplines of healing have established a historical and respected role in healing and require arduous training and evaluation in these areas." Examples given include chiropractic.

° "In that our patients and society have clearly demonstrated wishes to consider non-traditional methods of treatment it would seem reasonable that in the education of physicians of today and tomorrow learners be aware of the diversity, philosophy and basis of complementary approaches *to better integrate their understanding and care of patients*." (Emphasis added).

° There is art as well as science in health care and "this art must not, need not, and should not be unduly limited by scientific reductionism."

(Note that the word most used by the CPSO in this policy is *complementary* rather than alternative. *Complementary* implies value and cooperation.)

• In Europe there has always been comparatively widespread acceptance of complementary health care. In its 1993 book *Complementary Medicine: New Approaches to Good Practice* the British Medical Association (BMA) acknowledges the significant role of 5 disciplines - acupuncture, chiropractic, herbal medicine, homeopathy and osteopathy - and the need for an improved basis for inter-referral of patients. In a recent issue of its *British Medical Journal* the BMA publishes an item asking whether the profession of medicine will retain its historical privileges in the present era. (*Do Professions Have a Future*, Abelson et al, August 16, 1997). It is argued that the profession will have to act more fairly and unselfishly or it will lose many of its rights - 1 of 3 key points made is that "medicine must be more willing to develop partnerships with the other caring professions and allow greater flexibility in working practices to improve the delivery of patient care."

"The demarcation lines between medicine and its partners are rapidly changing ... the public's increasing attachment to alternative medicine suggest that more serious attention should be given to its potential contributions."

• In the US an Office of Alternative Medicine was established by the government in 1992 but with a token budget only. Now a Senate sub-committee has been considering creating a National Centre for Complementary and Alternative Medicine Research on the same level as other National Institutes of Health agencies. At hearings in October many medical doctors and scientists have urged the government to take alternative medicine seriously and allocate more money. Says Dr. James Gordon, Professor of Psychiatry and Family Medicine at Georgetown University:

"For tens of millions of Americans it is no longer a question of either modern science or ancient wisdom, but of combining both in a new, richer, more effective and more humane synthesis.... We are in the midst of a revolution in the practice of medicine and a transformation in the kind of health care Americans want and receive."

A submission from several Noble Laureate scientists stated: "Many of us in the scientific community are strongly supportive of efforts to investigate the efficacy of therapies that are collectively referred to as alternative medicine." (Reuters and Health News Daily, October 11).

• In Israel people generally receive primary health care through health maintenance organizations (HMOs) which have close affiliations with area hospitals. Strong public demand for complementary care has led to rapid integration of chiropractic services during the past two years, with larger HMOs setting up well equipped chiropractic facilities and employing chiropractors, and hospitals opening complementary medicine departments.

Fore example Dr. Moshe Laub of Tel Aviv, who maintains a private practice but with many patients now referred by HMOs which pay approximately 70% of the cost of chiropractic services, has hospital privileges through the new Complementary Medicine Department of the Asaf Harofeh Hospital. This new department provides chiropractic services and other complementary treatments in public demand - including acupuncture, Feldenkrais Methods and shiatsu.

Whether or not chiropractic should be called alternative or complementary is a separate debate. However, given the historical dominance of the medical profession that is the way members of the public see it - and there is ample evidence they increasingly like what they see.

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