For self-perceived benefit from treatment for chronic neck pain, multimodal treatment is more effective than home exercises, and both are more effective than advice alone.

**Synopsis**


**Question:** Does multimodal treatment produce better outcomes for chronic neck pain than a home exercise program or advice on management? **Design:** Prospective randomised intervention study. **Setting:** Workplaces in Finland. **Subjects:** Aged 30-60 years, permanently employed, height more than 140cm, with non-specific, recurrent or chronic neck trouble lasting longer than three months. Exclusion criteria were neural tissue involvement, severe cervical spine instability, known anomalies in cervical structures, osteoporosis, fresh fractures, recent major operation, severe diseases, infection, refusal to cooperate. **Interventions:** All subjects attended the same lecture on home management of neck pain. Multimodal treatment: cervicothoracic stabilising training, relaxation training, behavioural support, eye fixation exercises and postural control training, delivered twice weekly for 45 minutes for 12 weeks by two trained physiotherapists. Loading and range of movement was progressed. Home exercises: Written information on neck exercises. No training was given. **Main outcome measures:** Measures were taken prior to intervention and at three and 12 months. Pain was recorded on a visual analogue scale (VAS). Total benefit from treatment was recorded on a five point scale (5 equalling maximum benefit) at three and 12 months post treatment. **Main results:** Seventy-six consecutive patients were enrolled, with 25 subjects assigned to each active intervention, and 26 subjects assigned to the control group. Eleven subjects withdrew by three months and another three by 12 months. At three and 12 months follow-up, the multimodal treatment group reported significantly higher total benefit (mean scores at respective follow-up periods 4.6, 4.2) than the active exercise group (3.8, 3.8), and the control group (3.3, 3.4). Average baseline VAS score was 51mm. At three months follow-up, pain scores on VAS were significantly lower in both active groups compared with the control (multimodal group 22mm, home exercise group 23mm, control group 39mm). This difference was not maintained at 12 months follow-up. **Conclusion:** Multimodal treatment was more effective than home exercises or advice alone in improving self-perceived benefit for patients with chronic neck problems.

**Commentary**

This is a good quality study from which physiotherapists can learn a number of things. Two features are highlighted. The first is that all the three trial interventions are currently advocated for the management of chronic neck pain. This study adds to the growing body of evidence that the popularly touted recommendations of merely providing the patient with advice and some exercises to do at home is inferior management compared with interventions delivered by a physiotherapist.

The second feature is what clinicians can learn from the successful intervention program itself, in that it highlights the benefits of multimodal treatment (rather than single therapeutic approaches). Physiotherapists use a number of methods to address pain, impairment and functional disability. This multimodal program tested active interventions. Of note, the components addressed physical impairments and psychosocial factors identified in chronic neck pain patients, and thus was not a general exercise approach (Bansevicius and Sjaastad 1996, Jull 2000, Karlberg et al 1995, Nederhand et al 2000, Revel et al 1991).

The results of this trial emphasise the need for physiotherapists to carefully supervise active interventions using their skills in movement analysis and therapeutic exercise to optimise training. Exercise for the management of chronic neck pain has been shown to be not as effective if merely relegated to a home program.

**Gwendolen Jull**

*The University of Queensland*

**References:**


Education and graded exercise improves fatigue and physical function in patients with chronic fatigue syndrome

Synopsis


**Question:** Is education and exercise more effective than standard medical care in improving fatigue and physical function in patients with chronic fatigue syndrome? **Design:** Randomised controlled trial. **Setting:** Chronic fatigue clinic, United Kingdom. **Patients:** All subjects fulfilled the Oxford criteria for chronic fatigue syndrome. Exclusion criteria included the use of antidepressants, psychotic illness, somatisation disorder, eating disorder, history of substance abuse and confinement to wheelchair or bed. Three hundred and twelve subjects were approached, 152 were excluded, 12 declined to participate, 148 were randomised and 124 completed the trial and 12 months follow-up. **Interventions:** Medical care consisted of a medical assessment, advice and an information booklet that encouraged graded activity and positive thinking. The three intervention groups all received a medical assessment, evidence-based explanations for their symptoms and a graded exercise program tailored to subject's functional abilities. The minimum intervention group received two face-to-face sessions totalling three hours. The telephone intervention group received an additional seven telephone contacts over three months. The maximum intervention group received an additional seven face-to-face treatment sessions over three months. Additional contact was used to reinforce the previous advice and to discuss problems associated with the graded exercise program. **Main outcome measures:** The primary outcomes were the physical functioning sub-scale of the SF-36 (range 10-30; 10 = maximum impairment, 30 = no limitation) and the fatigue scale (range 0-11; higher scores represent greater fatigue). **Main results:** At 12 months, each intervention group had less fatigue and greater physical function than the medical care group (p < 0.001) however, the difference between the three intervention groups was not statistically significant. The benefit of treatment was large. For example, the mean (95% CI*) difference between the minimum intervention group and control group at 12 months was 8.2 units (5.9 to 10.5) for physical function and 6.9 units (5.4 to 8.4) for fatigue. **Conclusion:** Advice and a graded exercise program, tailored to the functional abilities of the patient, produces large improvements in fatigue and physical functioning for patients with chronic fatigue syndrome. Increasing the duration of the program beyond the minimum two session/three hour format did not provide a demonstrable additional benefit.

*95% confidence intervals calculated by abstractor from data in paper.

Commentary

This is a very timely paper with the increasing acceptance of the use of cognitive behavioural principles in the management of chronic illness. Helping patients to reconceptualise the problem has been shown to be an important factor in chronic pain management, and so it would appear in chronic fatigue sufferers.

In this study, the patients were provided with evidence-based "wellness beliefs" in order to facilitate activity and bring about therapeutic change. The model used in this study is supported by rehabilitation studies incorporating exercise programs which have utilised the Nagi or WHO models of health, based on concepts of active pathology, impairment, functional limitation and disability (Mälkiä and Ljunggren 1996). For physiotherapists practising within a cognitive-behavioural framework, the WHO and Nagi models are a most appropriate way of helping change a patient’s beliefs about the attribution of symptoms to ongoing physical disease. This is an important step because, as Powell and colleagues point out, attributing symptoms to ongoing physical disease is an important predictor of poor prognosis. Using the WHO or Nagi model, the physiotherapist can challenge the patient’s thoughts to a more helpful way of seeing their problem and so help the patient focus on what they can do to improve their function.

This study is a valuable addition to the current available evidence. It supports the use of exercise, accompanied by appropriate information, to help patients with chronic illness return to normal function. In my opinion, physiotherapists are the most appropriate professionals to apply this approach, and to reverse disability associated with chronic illness.

Lois Tonkin
Royal North Shore Hospital, Sydney

Reference:
Post-operative exercise improves pain, disability and spinal function following microdiscectomy

Synopsis


Question: Does the addition of a post-operative exercise program in patients who underwent microdiscectomy for prolapsed lumbar intervertebral disc improve the outcome of pain, disability, psychological status and spinal function?

Design: Prospective randomised controlled trial. Setting: Not described. Subjects: Twenty-one patients aged between 18 and 60 years (18 men and three women) with radiological evidence of disc prolapse that was associated with sciatica of less than 12 months' duration in typical nerve root distribution. One patient withdrew from the trial at six weeks prior to the exercise program and was excluded.

Main outcome measures: Spinal function (comprising measures of posture, lumbar and hip mobility, back muscle endurance and EMG measures of back muscle fatigue during the Biering-Sorensen test) was evaluated prior to surgery, and at 6, 10, 27 and 52 weeks post-surgery. Patients also completed questionnaires regarding their pain, disability and psychological status.

Interventions: Concealed, random allocation into exercise or control groups. Both groups received the same post-operative care (physiotherapist recommendations on exercises and return to normal activities). Six weeks post-surgery patients in the exercise group undertook a four week exercise program (two hours per week) focused on improving strength, endurance of the back and abdominal muscles and mobility of the spine and hip.

Main results: Pain, back muscle endurance and hip and lumbar mobility improved in both groups of subjects. The exercise group showed further statistically significant improvements in these measures and in EMG measures of back muscle fatiguability. All these improvements were maintained 12 months post-surgery. The only improvement shown by the control group between six and 52 weeks was an increase in back muscle endurance.

Conclusion: A four-week physiotherapist-delivered post-operative exercise program significantly improves pain, disability and spinal function in patients following microdiscectomy.

Commentary

The main finding of this pilot study is that a four-week supervised post-operative exercise program by an experienced physiotherapist improved measures of pain, disability and spinal function in patients who had undergone microdiscectomy for a prolapsed lumbar intervertebral disc. Thus the study provides evidence that supervised physiotherapy rehabilitation exercises enhances recovery.

The benefits of general lumbar exercise programs have been reported in the literature (O’Sullivan et al 1997). Recent research (Taylor and O’Sullivan 2000) demonstrated that specific transversus abdominis and multifidus retraining programs reduce the recurrence of lumbar episodes.

In this study, a single physiotherapist supervised the exercise programme, unlike the randomised controlled studies conducted by O’Sullivan et al (1997) and Taylor and O’Sullivan (2000). While it could be argued whether the expertise and motivation of a single physiotherapist could be extrapolated to the general physiotherapy population, this research does support that exercise following microdiscectomy has positive clinical and psychological outcomes. These findings should encourage orthopaedic surgeons and neurosurgeons to refer patients to physiotherapists after microdiscectomy. This seems particularly relevant, as some surgeons may not be aware of the benefits of supervised exercise therapy after microdiscectomy while others appear to have concerns that exercises or passive mobilisation could exacerbate the patient’s surgical outcome.

This investigation was a pilot study in 20 patients and replication is required before a final conclusion can be made.

Peter Selvaratnam
Monash University, Melbourne

References:
