

Exercise therapy and low-back pain

Research Study under Discussion:

Systematic review: *Exercise therapy for the treatment of non-specific low back pain*
by Jill A. Hayden et al. (2005)

Educationally Influential Network Responding:
Physiotherapists

About the systematic review

Exercise therapy is widely used as an intervention for low-back pain but the evidence of its effectiveness in treating acute, sub-acute and chronic low-back pain is not clear.

This systematic review updated a previous systematic review from 1999 by examining the research literature up to October 2004. This review was conducted within the framework of the international Cochrane Collaboration. It synthesized findings from 61 randomized controlled trials that evaluated the benefits of exercise therapy for treatment of patients with non-specific low-back pain. The studies were analyzed for the effectiveness of exercise therapy in reducing pain, and improving disability compared to other treatments or no treatment.

The review found that exercise therapy decreased pain and improved function for adults with chronic low-back pain. There was also some evidence that graduated activity exercise programs were effective for sub-acute low-back pain in occupational settings. Exercise therapy for acute low-back pain was neither more nor less effective than other treatments or no treatment. It should be noted that exercise therapy and keeping active, the current recommended treatment for acute low-back pain, are

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This commentary was developed by a task group who are members of the Institute's educationally influential (EI) networks, which are also known as clinical networks. The study's researcher has reviewed it to ensure the results have been accurately reflected. The opinions in the commentaries are those of the task group.

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not the same thing. Keeping active means moving around as much as possible within the limits of your pain and trying to be more active each day.

A separate analysis took place with 43 trials out of the original 61 that dealt only with chronic low-back pain. It examined the characteristics of exercise therapy programs that improved pain and decreased disability for people with chronic low-back pain. The reviewers classified the types of exercises in the interventions and looked at several characteristics of the exercise programs, including how they were designed and how they were delivered (for example, in groups or individually supervised). This review

found that supervised, individually tailored exercise programs were the most effective. Stretching and strengthening programs provided the largest improvement in pain and function. Programs of longer duration (>20 hours) and those that had additional interventions were also better than shorter or fewer interventions, respectively.

Clinicians' commentary

Message to all health-care practitioners, policy-makers and payers:

As physiotherapists we are well aware of the health-care burden of low-back pain. Over the past decade the evidence from clinical trials about how to most effectively manage low-back pain has grown. This evidence is finding its way into the clinical decision-making of physiotherapists. However, we are concerned about the impact this evidence is having. Our concern stems from the interpretation that others such as policy-makers, payers and other disciplines, particularly family physicians are making (e.g. delaying referral to physiotherapy).

We do agree that the emphasis in the acute stage, during the first few weeks of an episode of back pain, should be:

- rule out red flags for other potentially serious ailments, and then reassure the patient about expected good recovery
- educate the patient on managing pain and staying active
- encourage the patient to avoid bed rest and gradually normalize activities
- monitor to ensure recovery is proceeding and that no yellow flags, which indicate risk of delayed recovery, are emerging

This constitutes good management, but we observe a trend in which physiotherapists are seeing fewer patients early in their episode of back pain. We believe this is because others may be

interpreting the evidence as “do **nothing** and see if the patient recovers.” We see the results of this misguided interpretation when patients are referred to us at six or eight weeks into their episode, and they have established inappropriate postures and are avoiding activity. Unfortunately they are sometimes on a path to chronic pain and dysfunction.

Physiotherapists can counter this trend by:

- promoting to family physicians, payers and policy-makers the fact that physiotherapists provide more than just exercises and physical treatment and are well positioned to manage the important **early education, reassurance and monitoring** of patients with acute low-back pain
- providing care that shows that most patients, in the first four weeks of an acute incident, can be adequately monitored with a visit once per week.

Physiotherapists are well-positioned to manage the early education, reassurance and monitoring of patients with acute low-back pain.

Messages to other physiotherapists:

(1) The majority of patients with long-standing back pain will derive the most benefit from an exercise program if it is delivered along with strategies to change behaviour and beliefs related to low-back pain, including:

- decreasing beliefs that physical or work activities would increase physical symptoms (fear avoidance)
- education about the benefits of exercise activity
- hurt versus harm education

Patients with long-standing back pain should be closely monitored and physiotherapists should be alert for flags that the patient's problems are more complex and that psychological or psychosocial issues should be considered. Screening for yellow flags can help to identify patients who are at greater risk for delayed recovery.

Yellow Flags:

- belief that back pain is harmful or potentially severely disabling
- fear and avoidance of activity or movement
- tendency to having a subdued mood and withdrawal from social interaction
- expectation or belief that passive treatment rather than active participation will help

When yellow flags are detected, the physiotherapist has an important role in:

- modifying the intervention to address flags
- determining when the patient needs to be assessed by a clinician from another discipline

(2) An essential component of exercise therapy for low-back pain patients is to set specific goals with the patient and to monitor the achievement of these goals, changing management plans if necessary. Generally by **six weeks** there should be important improvement in pain and function. If not, stop and reconsider – it may be time to refer on. If complicating factors are noted, then this timeline may need to be extended. Examples of such factors are the continuation of aggravating activities such as work/sport, a known diagnosis with a longer period of recovery or recurrent episodes.

(3) Exercise therapy is a fundamental treatment approach in physiotherapy. If deemed appropriate for a particular patient, we concur with the evidence that exercise programs should be tailored to the individual. We suggest that this tailoring should be reflected in goal setting, individualized program development and instruction, and ensuring ongoing compliance.

Goal setting should include:

- showing patients that their pain can be altered – that it is safe to get moving and that overcoming pain is possible
- restoring function and relieving pain
- setting individualized, short-term goals developed with patients and focusing on function as an important outcome

Developing **individualized programs** should be guided by:

- the patients' history and physical examination
- understanding patients in their social context – their fears and beliefs about their pain and disability; the goals they would like to achieve
- patients' previous activity level (Increase intensity gradually.)
- the need to begin with one-on-one exercise (Group methods can be used once compliance and mastery are well established.)

Most patients with chronic back pain will benefit from exercise therapy together with strategies to change behaviours and beliefs.

Instructing the patient in an exercise program also requires an individualized approach. Useful ideas include:

- review the principles of adult learning
- have patients show the exercises they've learned so that you provide any necessary correction – the goal is to have the patient become his/her own "expert" in ongoing exercise management
- reinforce with resources such as illustrated exercise sheets, booklets, audio cassettes and CDs

What happens in the clinic is important but success is linked to the patient's ongoing compliance. Tips on **improving compliance** include:

- follow-up – this is the key to compliance and should be done at least weekly initially (Knowing they are coming back for follow-up is incentive for patients to keep up with exercises at home.)
- use outcome measures that allow patients to track their own progress
- give patients the appropriate home exercise plan but keep it as simple as possible
- gear the home program to equipment the patient will have at hand or can readily acquire, such as a few weights and ball (Using these simple props can make home exercise more

interesting, but paying attention to what motivates the individual is important.)

- recommend that patients continue their ongoing exercise program at a local gym – this may be an appropriate progression for patients well along the road to recovery and a potentially important step in “normalizing” their ongoing self-management of back pain.

Messages to researchers:

(1) The evidence in these papers focuses on patients with “non-specific low-back pain.” As physiotherapists, we do not find this a clinically useful description. However, it is clear, from the discussion within the task group creating this commentary, that as physiotherapists we “classify” low-back pain in at least six different ways and we do not yet have a clinically relevant, universally applied classification system.

We do, however, send a strong message to researchers to work with physiotherapy clinicians to develop a clinically useful classification of back pain so that better prediction models can be developed and interventions can be tested with specific back pain populations.

(2) The term “exercise therapy” was defined in the two papers reviewed as, “a series of specific movements with the aim of training or developing the body by a routine practice or as physical training to promote good physical health.” We find this definition too broad and we send a strong message to researchers that specific exercise interventions need to be defined and studied. In addition, we urge researchers who conduct systematic reviews to include clinicians in the review process and to develop review methods that include evidence from non-randomized controlled trials.

(3) The systematic review finding that exercise therapy is useful for patients with long-standing back pain is consistent with what physiotherapists are experiencing in our day-to-day practice.

References

Hayden JA, van Tulder MW, Malmivaara A, Koes BW. Exercise therapy for treatment of non-specific low back pain. *Cochrane Database of Systematic Reviews*. 2005, Issue 3.

Hayden JA, van Tulder MW, Malmivaara AV, Koes BW. Meta-analysis: exercise therapy for nonspecific low back pain. *Annals of Internal Medicine*. 2005 May 3; 142(9): 765-75.

Hayden JA, van Tulder MW, Tomlinson G. Systematic review: strategies for using exercise therapy to improve outcomes in chronic low back pain. *Annals of Internal Medicine*. 2005 May 3; 142(9): 776-85.

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