

EXERCISE THERAPY (UPDATED APRIL 2008)

CLINICAL QUESTION

Is exercise therapy effective in the management of chronic non-specific non-malignant low back pain ≥ 3 months' duration? What type of exercise is the most effective?

THE EVIDENCE

Treatment	Condition/Measurement	Comparator	Relevant Results/Authors' Conclusions [#]
Strengthening exercise ^{†(1)} (combination of warm-up, aerobic, flexibility, balance, endurance, coordination, stretching, ergonomic education, mobilization, massage, functional restoration program)	Chronic non-malignant low back pain Assessment of pain (P) and function (F)	No treatment	Conflicting evidence on the effectiveness of strengthening exercise when compared with no treatment (P, F).
		Other exercise (McKenzie therapy, home exercise program, whole body exercises, walking exercise program) Other conservative treatment	Limited evidence that the following exercises are equally effective: <ul style="list-style-type: none"> ▪ strengthening and McKenzie therapy (P, F); ▪ isokinetic strengthening exercises and whole body exercises (P, F); ▪ strength back exercises at gym and home and home exercise program (F); ▪ mobilizing and strengthening with special equipment and walking exercise program (P, F). Moderate evidence that strengthening exercise and other conservative treatment are equally effective (P, F). Conflicting evidence on the effectiveness of strengthening exercise in combination with other exercises when compared with other conservative treatment (P, F).
Stretching exercise ^{‡(1)} (combination of warm-up, manipulation, strengthening, progressive exercise, light aerobic, back school, mobility exercise, walking in "flexible way")	Chronic non-malignant low back pain Assessment of pain (P) and function (F)	Sham treatment	Limited evidence that stretching exercise and sham treatment are equally effective (P, F).
		Other exercise (combination of strengthening, mobilizing, coordination, stabilizing exercise, extensibility walking without instructions, electroacupuncture, aerobic) Other conservative treatment	Moderate evidence that stretching combined with other exercises is equally effective with a combination of other exercises (P, F). Moderate evidence that combination of stretching exercises with other exercises is more effective than other conservative treatments (P, F). Moderate evidence that stretching exercises and relaxation are more effective than other conservative treatment (P, F).
Flexion exercise ^{§(1)}	Chronic non-malignant low back pain Assessment of pain (P) and function (F)	No treatment	Limited evidence that flexion exercise and no treatment are equally effective (P, F).
		Other exercise (extension, mobilizing and strengthening) Other conservative treatment	Conflicting evidence on the effectiveness of flexion exercise when compared to extension exercise (P, F). Limited evidence that flexion exercise is more effective when compared to strengthening and stretching (P, F). Limited evidence that flexion exercise and other conservative treatment are equally effective (P, F).
Aerobics ^{¶(1)} (combination of strengthening, stretching, warm-up, coordination, ergonomic education)	Chronic non-malignant low back pain Assessment of pain (P) and function (F)	No treatment	Limited evidence that aerobics combined with strengthening exercises or with stretching and warm-up exercises is equally effective as no treatment (P, F).
		Other exercise (functional restoration, comprehensive multidisciplinary approach, progressive exercises, exercises using Theraband and general strength training)	Conflicting evidence on the effectiveness of aerobic exercise in combination with strengthening or stretching exercise when compared with the combination of other exercises (P, F). Conflicting evidence on the effectiveness of aerobic exercise when compared with dynamic exercises, flexion exercises, posture, and behavioural therapy (P, F).

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Other exercises ^{¶(1)} : postural exercises (Cesar therapy); bending, rotation exercises and auto-stretching when appropriate, stabilizing exercises, home exercises	Chronic non-malignant low back pain Assessment of pain (P) and function (F)	No treatment	Limited evidence that home exercises and no treatment are equally effective (P, F).
		Usual general practitioner care	Limited evidence that postural exercises are more effective than general practitioner care (P, F). Limited evidence that stabilizing exercises are more effective than usual general practitioner care (P, F).
		Other conservative treatment	Limited evidence that bending and rotation exercises are more effective than other conservative treatment (P, F). Limited evidence that stabilizing exercises and other conservative treatment are equally effective (P, F).
Fitness program ^{††(2)} (warm-up, aerobics, strengthening, stretches, ergonomic education)	Chronic non-malignant low back pain Assessment of function (F)	Yoga	Limited evidence that a fitness program that includes various exercises is less effective than yoga (F).

[†]Based on three **GOOD*** five **AVERAGE*** and six **POOR*** quality randomised controlled trials (RCTs), as assessed by the authors of this review, published between 1968 and 2004; [‡]Based on two **GOOD*** one **AVERAGE*** and seven **POOR*** quality RCTs published between 1990 and 2004; [§]Based on three **AVERAGE*** and four **POOR*** quality RCTs published between 1968 and 2004; [¶]Based on one **GOOD*** one **AVERAGE*** and five **POOR*** quality RCT published between 1990 and 2001; ^{||}Based on two **AVERAGE*** and three **POOR*** quality randomised controlled trials (RCTs), as assessed by the authors of this review, published between 1997 and 2003; ^{††} Based on one **AVERAGE*** quality RCT published in 2005; [#]Refer to Grading Key document for explanation of evidence grading. ^{||}Other conservative treatment involved behavioural and manual therapy, advice to stay active, and education.

IMPLICATIONS FOR PRACTICE

What we don't know:

- What type of exercise is more effective for managing pain and for what group of patients?
- Is a combination of specific exercises more effective for functional improvement than only one type of exercise?

Research Evidence: What we know

Strengthening exercise is as least as effective as other conservative treatments. A combination of stretching exercises with other exercises or relaxation was more effective than conservative treatments for managing pain and functional improvement. Other conservative treatment involved behavioural and manual therapy, advice to stay active, and education.

Recommendation from Clinical Ambassadors

It is almost never wrong to encourage exercise in chronic low back pain. Patients with low back pain should be encouraged to participate in a balanced exercise program. Patients should be advised to initiate gentle exercise and gradually increase their exercise level within their pain tolerance. If exercise persistently exacerbates their pain, they should be further assessed by a knowledgeable physician to determine if further investigation, medications, other interventions, and/or consultation are required; and by a physical therapist to modify the exercise program. Although the evidence remains limited and conflicting in terms of the efficacy of specific exercises, patients should be encouraged to participate in meaningful physical activity that does not aggravate their condition. The best exercise program for the patient is the one they will actually do.

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Reference: This Evidence Brief is based on results from one **GOOD*** quality systematic review (SR): ⁽¹⁾ J. A. Hayden et al. Meta-analysis: Exercise therapy for nonspecific low back pain. *Ann Intern Med* 142 (9):765-775, 2005; and one **AVERAGE*** quality SR: ⁽²⁾ Lewis et al. Are physiotherapy exercises effective in reducing chronic low back pain? *Phys Ther Rev* 13(1):37-44, 2008.

*Quality ratings for RCTs & SR: Good ● Average ● Poor ●

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