In adults with chronic low back pain are core stability exercises more effective in improving function and decreasing pain compared to a general exercise program?

Clinical Bottom Line

There is evidence that spinal stability exercises are as effective as, and not superior to, usual physiotherapy practice, spinal manipulative therapy and general exercises in treating patient with chronic low back pain.

'Considering the feasibility of these exercises in practice, special training in order to teach these exercises is necessary and patients with poor body awareness have problems in learning them' Rackwitz et al 2006.

Criteria for Critically Appraised Topic

Population:
Male and female adults – 18 years and over
Chronic low back pain

***Intervention*:**
Core stability exercises

Comparison:

General or other exercises
No intervention
Control group
Usual care
Advice and education

Outcomes:

Primary Outcomes:

- Reduced back pain
- Return to work
- Reduced back disability

Secondary outcomes:

- Improved quality of life
- Medication use
- Cost effectiveness

Inclusions:
Back pain, pregnancy, core stability exercise

Exclusions:
Fractures, surgical interventions, children, cadaver studies, red flags, malignancy, psychiatric disease, chronic widespread pain

Databases Searched: Cochrane, Pedro, Medline, Amed, Cinahl, Embase, PsychInfo, Clinical Evidence, Bandolier, NELH, Professional websites, Clinical Guidelines, NICE,

Types of study:
- Systematic reviews
- Randomised Controlled Trials (RCTs)
- Guidelines
- English language

Key words searched:

Core stability, muscle activation, exercise, multifidus, stabilising, spine, segmental stabilisation, retraining, retraining, muscle, support system, pelvic floor, co-activation, muscle stabilisation, pregnancy, lumbar segmental stability, trunk recruitment, recruitment, abdominal muscle activity, feedback, motor control, 4 point kneeling, motor control, spinal pain, posture, instability, exercises, gym, weight training, exercise tolerance, back exercises, back schools, hydrotherapy, swimming, paced exercises, relaxation, conventional, physiotherapy, therapeutic exercises, function, comparison, pain, disability, rehabilitation, chronic, low back pain, general, systematic review, randomised controlled trial, back pain, spinal pain, lumbar spine, nerve root pain, patient education, rehabilitation, back school, clinical effect, treatment, chronic, community, physiotherapy, multidisciplinary functional status, primary care, sciatica, leg pain, exercise, outcome, lumbar disc disease .

Time Frame:
1995- 2008

Available Evidence

Database	**Number of relevant abstracts**	**Relevant articles**
Data star	**101**	
Cochrane	**10**	
PEDRO	**6**	
Total	**117**	**14**

Results:

117 abstracts were initially evaluated and 14 articles were reviewed. Subsequently 2 systematic reviews and 2 controlled trials were identified that answered our clinical question.

Systematic review evidence (Ferreira et al 2006, Rackwitz e al 2006)

In a review that included 9 trials of spinal stabilisation exercises for patients with chronic or recurrent low back pain, these exercises were superior to usual medical (GP) care alone and to an education booklet alone. They were not superior to spinal manipulative therapy and when added to conventional physiotherapy packages, they provided no additional benefit (Ferreira et al 2006).

In a review that included 6 trials relevant to this clinical question, Rackwitz et al (2006) found that for chronic low back pain, spinal stability exercises are more effective than GP treatment and as effective as other physiotherapy treatments in reducing pain and disability.

Randomised controlled trial evidence (Lewis et al 2005, Ferreira et al 2007)

2 recent RCTs were not included in the above systematic reviews. Lewis et al (2005) randomised 80 patients, to either one to one treatments of 30 minutes including manual therapy and spinal stabilisation or 60 minutes group sessions included manual therapy, aerobic exercise and stability exercises. Both groups received 8 treatments over an 8 week period. Results showed that both groups improved but there was no difference between the groups. Similar results are likely to be obtained using either individual treatments or group exercise approaches, and the potential cost savings of group exercise approaches make it an attractive option (Lewis et al 2005).

The most recent RCT by Ferreira et al (2007) randomised 240 Australian adults with chronic back pain to 12 treatments of either general exercises (in groups), motor control exercise or manipulative therapy (individual treatments) over 8 weeks. Although there was some advantage to the motor control exercise at 8 weeks, all groups had similar outcomes at 6 and 12 months.

Implications for practice

Core stability exercises are as effective as, and not superior to, other modes of physiotherapy management in the treatment of chronic low back pain. They can be incorporated into general exercise programmes or provided through one-to-one treatment sessions.

References

Lewis JS Hewwitt JKS Billington L Cole S Byng J Karayiannis S 2005 A randomised clinical trial comparing two physiotherapy interventions for Chronic Low back pain Spine 30 7 711-721

Ferreira P Ferreira ML Maher C Herbert R Refshauge K 2006 Specific stabilisation exercises for spinal and pelvic pain; A systematic review. Australian Journal of Physiotherapy Vol 52 79-87

Ferreira LM Ferreira PH Latimer J Herbert RD Hoges PW Jennings MD Maher CG Refshauge KM 2007 Pain Comparison of general exercise, motor control exercise and spinal manipulative therapy for chronic low back pain: a randomised trail Pain 131 31-37

Rackwitz B de Bie R Ewert T Strucki G 2006 Segmental stabilising exercises and low back pain. What is the evidence? A systematic review of randomised controlled trials Clinical Rehabilitation 20 553-567