

Doctors of chiropractic regularly utilize many forms of exercise for the management of low back pain. Descriptions of these common exercises, the currently available evidence for their use, and the relevance of these findings are summarized here.

Therapeutic Exercises for Back and Neck Pain

Which Exercise is the Most Appropriate?

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The benefits of physical exercise for prevention and treatment of various disorders are well-documented. There is also a growing body of evidence to support that therapeutic exercise is a reasonable approach for back and neck pain (particularly chronic conditions), whether it is used alone or in combination with other therapies (e.g. manipulation).¹⁻³ Doctors of chiropractic regularly utilize many forms of exercise for the management of low back pain (LBP),⁴ including lumbar strengthening and core stabilization. Descriptions of these common exercises, the currently available evidence for their use, and the relevance of these findings for doctors of chiropractic are summarized below.

Lumbar Strengthening Exercise

For the purpose of this article, lumbar strengthening exercise is defined as supervised progressive resistance exercise (PRE) with isolation of lumbar extensor muscles.² This therapy, which became popular in the 1980s as a component of comprehensive functional restoration programs, is based on standard exercise prescription guidelines for PREs. Lumbar strengthening exercise is typically performed with specialized machines, benches, Roman chairs, or free weights, over the full,

pain-free range of motion, and at higher intensities (e.g. use of external loads). Proposed mechanisms for lumbar strengthening exercise include improving structural integrity of affected region, enhancing metabolic exchange of lumbar discs, and improving kinesiophobia and locus of control. A recent systematic review by our group uncovered 11 randomized controlled trials (RCTs) on the use of lumbar strengthening exercise for the treatment of chronic LBP.² No serious harms were reported. Overall, the evidence suggests that:

► Lumbar extensor strengthening

exercise is effective in improving pain, disability, and physical function in patients with CLBP, especially in the short term.

- Efficacy of lumbar extensor strengthening exercise is superior or similar to common alternatives, including other exercises, standard physiotherapies, and physical agents/modalities.

Core Stabilization Exercise

For the purpose of this article, core stabilization exercise is defined as training of co-contraction of the deep trunk muscles (e.g. transverse abdominis, multifidus, quadratus lumborum) in order to enhance spinal stability.³ Core stabilization exercise has been postulated to facilitate motor control of the deep spinal muscles to improve firing patterns during functional activities. Core stabilization exercise is typically performed on a floor, table,

mat, or ball, isometrically or over very short ranges near the neutral position, and at lower intensities (e.g. performed without external loads). A recent systematic review found 3 RCTs on the use of core stability exercise for the treatment of chronic LBP (reference). No serious harms were reported. Regarding evidence for efficacy, the authors concluded that there is:

- Moderate evidence that stabilization exercise is effective in improving pain and function.
- Moderate evidence that stabilization exercise is no more effective than manual therapy.
- Strong evidence that stabilization exercise is no more effective than a less specific general exercise program.

Based on the above systematic reviews, the current best available evidence regarding lumbar strengthening and core stabilization exercises for the treatment of chronic LBP could be summarized as follows:

- The quantity of evidence (i.e. number of randomized controlled trials) is greater for lumbar strengthening than core stabilization (11 RCTs vs. 3 RCTs).
- Lumbar strengthening and core stabilization exercises are supported by moderate evidence of efficacy for the treatment of chronic LBP.
- No differences in pain and disability improvements are apparent between lumbar strengthening and core stabilization.

Which is More Appropriate?

Considering the above summary of recent systematic reviews, there is a noticeable lack of clarity regarding which of these two common exercises is most appropriate for the treatment of chronic LBP. There is little evidence to suggest what exercise should be used instead of the other, whether there is value in con-

currently administering these two exercises, and when to stop one form of exercise and try the other. Future research is needed to identify if specific subgroups of patients may be more responsive one form of exercise, the most effective exercises, and the optimal exercise dose, duration, frequency, and progression.

As suggested for other approaches for the management of chronic LBP,⁵ the best use of core stabilization and/or lumbar strengthening exercise for the treatment of chronic LBP may depend on the preference of the patient. It is clear, however, that therapeutic exercise in one form or another, either used alone or in combination with another modality, is beneficial for the treatment of chronic LBP. Therefore, in the absence of contraindications, doctors of chiropractic are encouraged to prescribe a

well-defined course of therapeutic exercise for their patients. ◀FCA

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