

Low Back Pain

This page only includes articles published in the last 5 years.

Guideline

A 2016 evidence-informed and consensus-driven guideline provided an update of the best practice recommendations for chiropractic management of low back pain (LBP). To substantiate care, a definite improvement in a patient's functional capacity should be documented using a measurable outcome, such as the following:¹

- Pain scales such as the visual analog scale and the numeric rating scale.
- Pain diagrams that allow the patient to demonstrate the location and character of their symptoms.
- Validated ADL measures, such as the Revised Oswestry Back Disability Index, Roland Morris Back Disability Index, RAND 36, and Bournemouth Disability Questionnaire.
- Increases in home and leisure activities, in addition to increases in exercise capacity.
- Increases in work capacity or decreases in prior work restrictions.
- Improvement in validated functional capacity testing, such as lifting capacity, strength, flexibility, and endurance.

General management of LBP

A 2017 systematic review² of clinical practice guidelines for the noninvasive management of low back pain (LBP) reported:

- Education, reassurance and instruction on self-management should be given to all patients with LBP
- Patients with acute LBP should be encouraged to be active and may benefit from paracetamol, NSAIDs or spinal manipulation (paracetamol challenged by recent evidence and needs to be reconsidered)
- Patients with chronic LBP may benefit from exercise, paracetamol or NSAIDs, manual therapy, acupuncture, and multimodal treatment (PT and psychological)
- Spinal manipulation may be beneficial for lumbar disc herniation with radiculopathy

A 2016 systematic review³ was conducted to determine if adding complementary therapies (chiropractic manipulation, massage, PT or yoga) to usual medical care would result in improved outcomes for nonchronic, nonradicular LBP. The authors did not find evidence to support manipulation or PT as an addition to typical medical treatment, and there was insufficient evidence to determine if yoga or massage is of benefit.

Specific therapies

Spinal manipulative therapy (SMT)

A 2016 systematic review studied the effectiveness of chiropractic care vs. other conservative care approaches for LBP. Six studies (with 5 having a low risk of bias) were included. Studies and pooled results showed “similar effects of chiropractic care compared to exercise therapy, physical therapy or medical care for the treatment of low back pain regardless of type of outcome.”

Another systematic review⁴ evaluated SMT vs. sham manipulation for nonspecific LBP. Results favored SMT for pain immediately posttreatment and at follow-up. Also, small to moderate clinically

relevant differences with wide confidence intervals were reported.

A 2016 narrative review discussed the safety and effectiveness of SMT following spinal fusion.⁵ This review found only case reports (10 total cases). The authors described successful management of fusions (n=4) mostly with flexion-distraction, but some cases (n=3) responded to HVLA manipulation and PT modalities. Three patients had positive outcomes following manipulation under anesthesia and 8 weeks of PT. None of the articles reported adverse events.

A controlled trial⁶ studied thrust and nonthrust SMT for patients aged 21-54 with subacute or chronic LBP. Both treatments provided short-term improvements in pain and disability and were clinically and statistically significantly superior to a wait list control. However, no significant differences were shown between the 2 treatments.

A 2014 systematic review found limited high quality evidence for the effectiveness of SMT for mid- and low-back pain in adults.⁷ Another systematic review in 2014 focusing on osteopathic manipulation found clinically relevant effects for reduced pain and improvement in functional status for patients with acute and chronic nonspecific LBP.⁸

Expert consensus recommends the following dosages for spine-related pain:^{1,7,8}

Acute and sub-acute	2-3x/wk for 2-4 weeks, re-eval in 2-4 wks
Recurrent/flare-up	1-3x/wk for 1-2 weeks, re-eval in 1-2 wks
Chronic	1-3x/wk for 2-4 weeks, re-eval in 2-4 wks
Mild exacerbation of chronic	1-6 visits per episode, re-eval at beginning of each episode of care
Moderate to severe exacerbation of chronic	2-3x/wk for 2-4 weeks, re-eval in 2-4 wks
Scheduled ongoing care for chronic pain management	1-4 visits/month, re-eval every 6 visits or as needed

Exercise

The results of a 2016 systematic review and meta-analysis of randomized control trials (RCTs) reported that exercise, in combination with patient education, is likely to reduce the risk of LBP. Additionally, exercise alone may reduce the risk of an episode of LBP and sick leave due to LBP in the short-term (up to 1 year). They also reported that the available evidence does not support the use of back belts, shoe insoles, and ergonomics in the prevention LBP.⁹

A 2016 Cochrane review evaluated the effects of motor control exercises (MCE) consisting of the integration of the control and coordination of the spine muscles for functional activities for acute or subacute LBP.¹⁰ The authors found evidence of varying qualities (very low to moderate) that showed no benefit of MCE over SMT, other forms of exercise, or medical care for pain or disability. Another Cochrane review¹¹ evaluated MCE for chronic LBP and found the same quality evidence showed clinically important effects of the exercises when compared to a minimal intervention or exercise with electrophysical agents. Moderate to high-quality evidence showed MCE was similar to manual therapies and low to moderate-quality that they were similar to other exercises.

A 2016 meta-analysis¹² of stabilization exercises vs. general exercises or manual therapy found that stabilization exercises had similar effects to manual therapy and were more effective than general exercises for pain reduction and disability improvement.

A RCT studied the effect of specific MCE (+ manual therapy) compared to general exercises (+ manual therapy) on disability in patients diagnosed with a motor control impairment associated with subacute non-specific LBP.¹³ Both treatment groups' disability scores improved, but specific MCE provided a significantly greater benefit at long-term follow-up.

Another RCT compared MCE to stretching exercises.¹⁴ The MCE group was reported to have more significant effectiveness for decreasing pain, compensatory pelvic motions and erector spinae activity.

A pre-planned secondary analysis of a RCT¹⁵ evaluated individualized directional preference management plus guideline-based advice vs. advice alone in patients with reducible discogenic pain. Greater pain reduction was shown at 5 and 10 weeks and leg pain at 10 weeks with the directional treatment; however, significant differences were not maintained at the 26- and 52-week follow-up. Additionally, clinically important differences were not found between the groups.

A very small (n=14) preliminary study¹⁶ examined an active soft tissue technique compared to end range loading exercises for LBP. After 10 sessions in 2 weeks, both groups showed significant decreases in pain (although greater decreases with the soft tissue technique), and the soft tissue group showed a significant decrease in disability.

Kinesiotape (KT)

A RCT¹⁷ compared the effectiveness of adding KT to a PT program (exercise and manual therapy) in patients with chronic LBP. Both groups showed improvement in pain and disability outcomes; there were no between-group differences after 5 weeks of treatment, suggesting no added benefit of KT.

Education

A Cochrane review¹⁸ assessed the effect of back school for people with acute/subacute LBP. The authors found very low-quality evidence that showed no difference between back school and placebo (sham or attention control) or active treatments (PT, myofascial therapy, manipulation, advice) in pain or disability for any of the follow-up periods.

A 2016 systematic review evaluated the effectiveness of education for the treatment of LBP.¹⁹ Education was not shown to have an effect in the intermediate or long term on pain, disability, quality of life, or work absence. There was conflicting evidence regarding education (function of the spine, information on activities and coping) for the prevention of LBP.

Massage

An updated Cochrane review²⁰ of massage for the treatment of LBP found 12 new trials with very low- to low-quality evidence. In the short term, massage was shown to have some benefit for LBP when compared to inactive controls; however, the authors concluded they “have very little confidence that massage is an effective treatment for LBP.”

Whole-body Vibration (WBV)

A secondary data analysis was performed to evaluate the effect of adding WBV and traction to an exercise intervention. Both groups showed improved pain and disability scores, but the group that included WBV therapy had greater clinical results.²¹

Cognitive-based Therapies

For pain and disability associated with chronic spine pain, a systematic review²² assessed the effectiveness of physical, behavioral/psychologically-informed, and combined interventions. There were no significant differences found between the physical and behavioral treatments or between the

behavioral and combined. Only a small significant difference was found between the physical and the combined group. No clinically significant differences were found between any of the groups, suggesting the clinician and patient could choose the most cost-efficient or appropriate option.

A narrative review evaluated the literature on combining manual therapy with pain neuroscience education (teaching people about the neurobiology and neurophysiology of pain; pain and tissue injuries are different constructs).²³ The review reported on outcomes favoring treatment combining passive or active manual therapy and pain neuroscience education.

A case report²⁴ presented the management of lumbar spinal stenosis with PT and cognitive functional therapy (CFT). The PT intervention “targeted the patient's maladaptive movement pattern, motor control strategies, faulty cognition, and belief system thereby resulting in a successful outcome.”

Specific conditions

Sciatica

When compared to physical activity-based interventions, surgery was shown in a meta-analysis to provide statistically significant reductions in disability, leg and back pain for sciatica associated with disc herniation in the short term.²⁵ Surgery was found to have significant benefit for sciatica associated with spondylolisthesis and stenosis for the same outcomes at short-term, but less so at long-term and greater than 2-year follow-up. However, the evidence was not high quality, the surgery benefits waned (especially for disc herniation) over time, and the effect sizes were modest, suggesting clinicians and patients should weigh all aspects of the decision to have surgery carefully.

Sacroiliac Pain

In a narrative review examining the literature on the SI joint, the authors identified non-operative treatment by a physical therapist or chiropractor as a first-line intervention for pain.²⁶

LBP and Obesity

A retrospective study²⁷ of participants with LBP who were originally randomized into medical care, medical care with PT, chiropractic care, or chiropractic care with PT modalities evaluated the relationship between BMI and treatment outcomes. Results indicated, in the medical or chiropractic care groups, there may be an association between obesity and less favorable treatment outcomes.

Scoliosis

A 2013 review on idiopathic scoliosis found potential advantages resulting from physiotherapy, including reduction in Cobb angle, reduction in risk of progression compared with the natural history of idiopathic scoliosis, and improvement in clinical parameters with fewer patients requiring brace treatment and fewer patients requiring surgical treatment.²⁸

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