

PIER

*Integrating Research into Practice:
Approach to Evidence-Based Practice*



PROBLEM: LOW BACK PAIN (LBP)

90%: The number of individuals who will experience low-back pain (LBP) in their lifetime.

65%: Increase in expenditure rate for spine problems in the last 8yrs; significantly more than health care expenditures overall.

40%: Adherence rate to current best-evidence care recommendations.²

90 Billion \$\$: The costs to the healthcare system in caring for individuals with lower back pain.¹

Diagnosis: Specific pathoanatomic diagnoses can rarely be made.³ Imaging studies are typically not helpful early on unless serious pathology is suspected,^{4,5} and routine MRI is associated with risk of unnecessary surgery.⁶

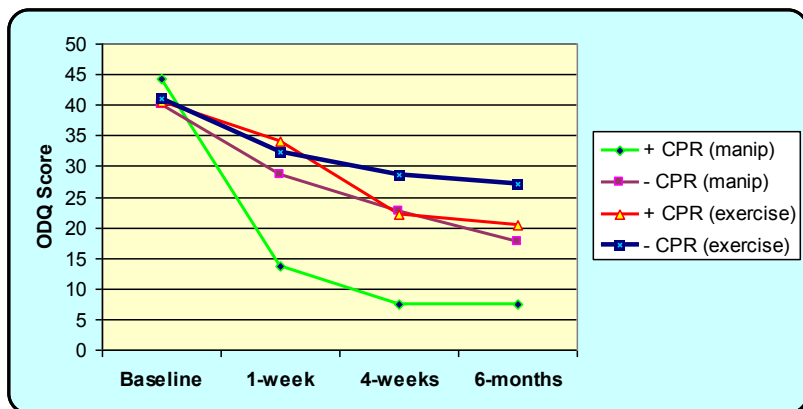
INTERVENTION:

Classification: An evidence-based approach that identifies subgroups of patients based on response to a specific intervention rather than labeling based on pathoanatomic findings.⁷

- Manipulation & Exercise
- Directional Preference Exercise
- Neuromuscular Re-education & Stabilization Exercise
- Aerobic Exercise
- Recommendation to Stay Active

Higher quality trials have also shown that a variety of soft-tissue manipulation techniques (collectively termed “massage”) administered by hand or a mechanical device are beneficial for improving pain and function in patients with subacute and chronic LBP. A combination of soft-tissue manipulation with exercise and education yields better outcomes than soft-tissue manipulation alone. Patients with chronic LBP may experience beneficial effects lasting up to one year.⁸

EVIDENCE: OXFORD EVIDENCE GRADE= A (LEVEL 1A STUDIES)



Patients managed with this treatment-based classification system experience significant decreases in pain, disability and work restrictions when compared to traditional care.^{7,9} Therapists can use predictive clinical examination findings to match patients to a specific treatment. This may include: manipulation and exercise,^{10,11} specific exercises in a particular direction,¹²⁻¹⁵ core stabilization exercise¹⁶⁻¹⁸ and traction.^{9,19}

Change in Oswestry Disability Scores: Childs JD, Fritz JM, Flynn TF, et al. Which patients with low-back pain benefit from spinal manipulation? Validation of a clinical prediction rule. *Ann Int Med.* 2004; 141:920-928



Return to Work Status at 4 weeks

Fritz JM, Delitto A, Erhard RE. Comparison of classification-based physical therapy with therapy based on clinical practice guidelines for patients with acute low back pain: a randomized clinical trial. *Spine* 2003; 28(13):1363-1371.

Number Needed to Treat (NNT):

2- When 4 of 5 clinical criteria are met, the NNT with manipulation and exercise to achieve one additional successful outcome (50% reduction in disability after 1 and 4 weeks) -- an outcome that would not have occurred if the patient had been treated with the standard treatment group (in this case exercise without spinal manipulation).⁶ This means that only 2 patients with LBP who are positive on the rule need to be treated with spinal manipulation before realizing benefits above and beyond that compared to the standard treatment group. Would further clarification be helpful? Let's consider 2 hypothetical patients with LBP, both of whom are positive on the rule. If both patients received exercise without spinal manipulation, one of them would not achieve a successful outcome. However, treating both of them with spinal manipulation would result in both patients achieving a successful outcome. Low numbers needed to treat imply that the benefits of decision-making based on the rule can be virtually realized almost every time you see a patient with non-specific LBP.

Relative Risk (RR):

4 and 3- The RR of a patient experiencing a worsening in disability at 1 and 6 months, respectively, when manipulation and exercise is indicated but NOT received.¹¹

REFER:

Acute LBP: Patients with the following findings are likely to experience a 50% reduction in disability and pain within 1 week 90% of the time when treated with manipulation and exercise^{10, 11}

- Current episode of symptoms is < 2-3 weeks
- Symptoms don't extend below the knee

Chronic LBP: Patients who have 3 or more of the following findings can achieve a 50% reduction in disability within 8 weeks 67% of the time when treated with a core stabilization and neuromuscular re-education program.¹⁶ Manipulation may confer an added benefit.¹⁸

- Average Straight Leg Raise test >91°
- Aberrant movements during lumbar flexion
- Positive prone instability test
- Age < 40 years
- Patients with **LBP and lower extremity symptoms distal the buttocks** who experience **centralization of symptoms with directional preference of movement** experience less pain short-term and less disability up to 6 months¹⁵ as well as a short-term reduction in medication use (50% less) and other outcomes.^{13, 14}
- Patients with **LBP, lower extremity symptoms** and **signs of nerve root compression** who **experience peripheralization with extension movements** or have a **positive a crossed straight leg raise** are likely to experience less disability and fear avoidance in the short-term.¹⁹
- Patients with **early access to physical therapy return to work sooner** than when referral is delayed.^{9, 20} Patients receiving **adherent guideline** and **active care** are more likely to have a successful physical therapy outcome (28% more), less disability (25% disability score reduction), less pain and reduced cost.
- A large study in the United Kingdom (UK) demonstrated that those patients who received **manipulation and exercise for LBP** had superior improvement in disability, pain and fear avoidance beliefs at 3 and 12 months than compared to those who received advice and a back care booklet.²¹ The UK National Health service now recommends manipulation as both an **efficacious and cost-effective** method of treatment for LBP²² which is consistent with the findings of a recent systematic review.²³

Based on evidence from high quality clinical trials, our manual physical therapy and exercise approach will benefit many of your patients with LBP. However, if you are unsure, please give us the privilege of consulting with you (just give us a call) or simply refer your patient with a request for physical therapy evaluation and treatment. We look forward to the opportunity to partner with you in an effort to improve the health of your patients and enable their return to optimal function during work and leisure activities.

The best way is to send a consult with the "Evaluate and Treat" option checked. You will receive a copy of your patient's initial note as well as a copy of the discharge note summarizing their outcome.

Contraindications:

Patients with rapidly progressing neurologic findings, cauda equina syndrome, spinal infection, cancer, and fracture are obvious contraindications. Patients who have a previous history of cancer, significant night pain, and unexplained weight-loss should be assessed carefully, and if referred we will monitor their status closely.²⁴

Minimally Effective or Unsupported Interventions:

Traditional passive interventions and physical agents other than heat²⁵ have not been shown to be effective for significantly reducing LBP symptoms and disability. Systemic corticosteroids are ineffective.²⁶ NSAIDs and muscle relaxants have a short term effect for reducing pain in acute LBP, but their effectiveness in chronic LBP is unclear.²⁶⁻²⁸

Intervention

Typical care episode:

- Acute problems: 1 - 2 visits weekly for 1-3 weeks (total of 4-6 sessions)
- Chronic problems: 2 -3 visits weekly for 3-4 weeks (8-12 visits)

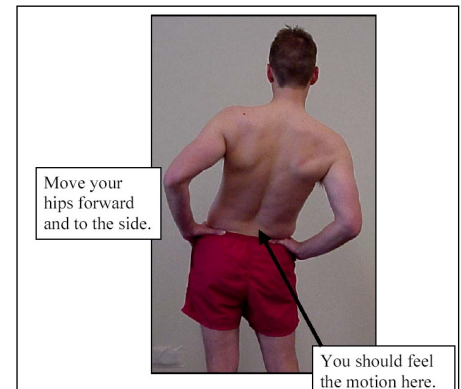
Content:

1. Evidence-based examination of lumbar spine and lower quarter.²⁹
2. Classification-based treatment approach consisting of the following 4 classification examples:⁷

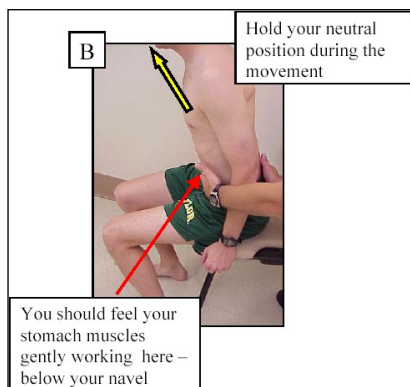
A. Manipulation+ Exercise



B. Directional Exercise



C. Core Stabilization



D. Traction



3. Education and advice based on a biopsychosocial model emphasizing a stay-active and self-responsibility philosophy.^{30, 31}
4. Home exercise and aerobic conditioning program.^{2, 32}

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