



Low Back Pain

PIER DOCUMENT

PROBLEM:

Low back pain is a common disorder affecting up to 90% of people in the lifetime and is the 2nd most common reason people seek medical attention^{1,2}.

Our health care system spends an average of over \$90 billion dollars on low back pain largely from increases in surgical procedures, injections, and medications³. Unfortunately, this rise in costs has not been associated with any improvements in low back pain outcomes.

Low back pain is a leading cause of missed work and sick days. Patients missing 6 months or more of work have only a 0-2% chance of returning to work.

It is important to note <5% of low back pain is related to serious pathology with the vast majority (85-95%) being non specific in nature. Given these results conservative care is first line management of low back pain⁶.

Multiple authors have documented the high rate of false positive MRI results. The incidence of pathology rises steeply in asymptomatic individuals over age 30⁸. Interestingly, the most serious lumbar disc injuries also have the greatest probability of healing/regression with conservative management on follow up MRI⁹.

INTERVENTIONS:

Many interventions used in Physical Therapy including manual therapy, exercise, and traction previously demonstrated equivocal or limited evidence for LBP. Authors report LBP is a heterogeneous condition and studying a large sample of patients with LBP leads to a wash out effect. Conversely, authors now recommend studying more homogenous groups (subgroups) of patients.

The non specific nature of low back pain limits the effectiveness of Physical Therapy interventions designed to treat an anatomical structure (intervertebral disc or nerve). In addition, many interventions used in Physical Therapy including manual therapy, exercise, and traction previously demonstrated equivocal or limited evidence for LBP. Authors report LBP is a heterogeneous condition and studying a large sample of patients with LBP leads to

a wash out effect. Conversely, authors now recommend studying more homogenous groups (subgroups) of patients.

Experts currently recommend treating patients based on their signs and symptoms which has been documented to provide superior outcomes compared to other approaches⁵.

The four sub groups of treatment for acute low back pain include:

- Manipulation
- Stabilization
- Direction Specific Exercise
- Traction



EVIDENCE:

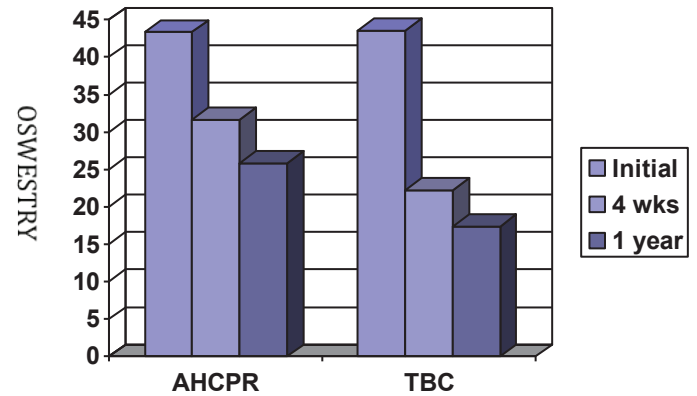
Spinal manipulation followed by stability exercises has been shown to rapidly reduce disability with benefits noted up to 6 months compared to other treatments. The number needed to treat for this intervention is 1-2 indicating for every patient receiving manipulation an additional patient will improve vs. exercise alone⁷.

In a randomized controlled trial of spinal stabilization training compared to usual medical management, Hides et al. reported reduced recurrence (30% vs. 84%) and future medical care (42% vs. 15%) in the stabilization group. The risk of recurrence for the medical management group remained high up to 3 years¹⁰. There does not seem to be a greater effect of local versus global stabilization training among patients who meet the spinal stabilization sub group criteria¹¹.

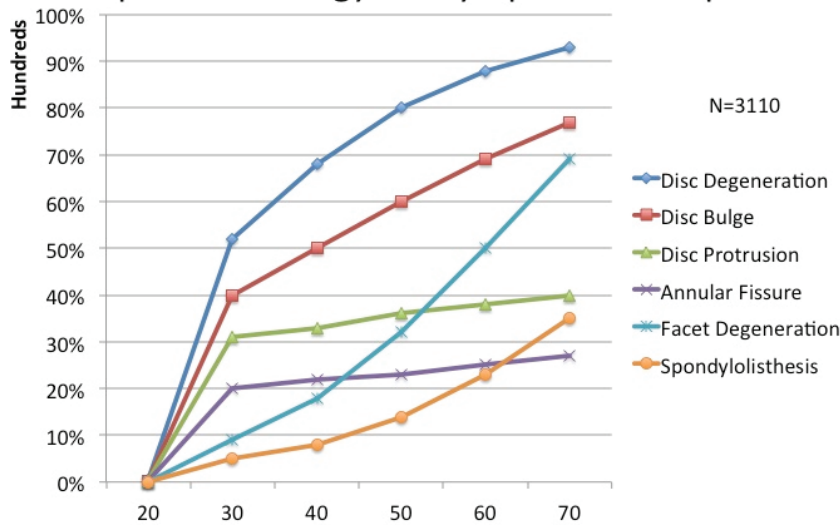
In a large, randomized controlled trial Long et al. reported the reduction of back and leg pain, disability, medication use, and psychosocial variables including depression when patients with a directional preference for lumbar exercises were matched to their respective directions¹². Browder et al. showed a reduction in pain and disability at both short and long term outcomes when manual therapy was combined with direction specific exercises (extension oriented treatment effect)¹³.

Traction is a less commonly indicated for acute low back pain, but a sub group of patients who may benefit from this intervention early include patients with signs of nerve root compression, whose pain does not centralize with movement and have a (+) contralateral straight leg raise¹⁴.

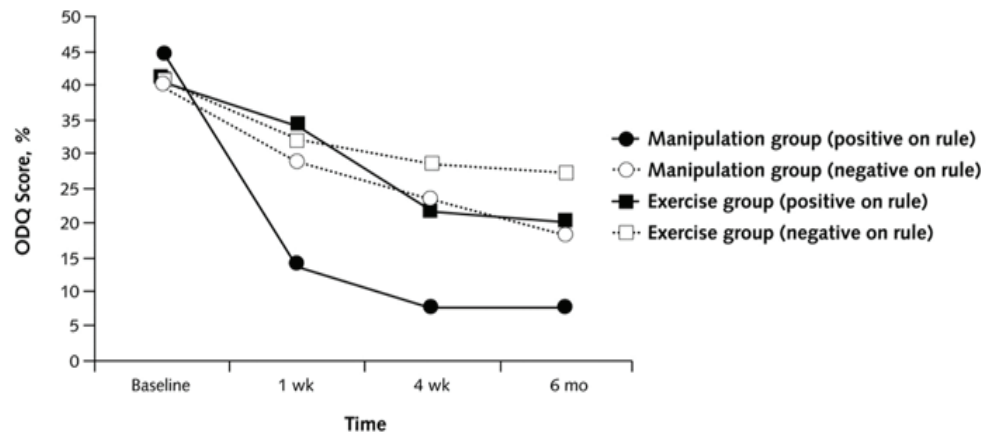
The treatment based classification system (TBC), based on a patient's signs and symptoms, is less expensive (\$774 vs. \$1004) and more effective at improving pain, disability, and return to full time work status compared to national medical guidelines (AHCPR)¹⁵.



Spinal Pathology in Asymptomatic Population



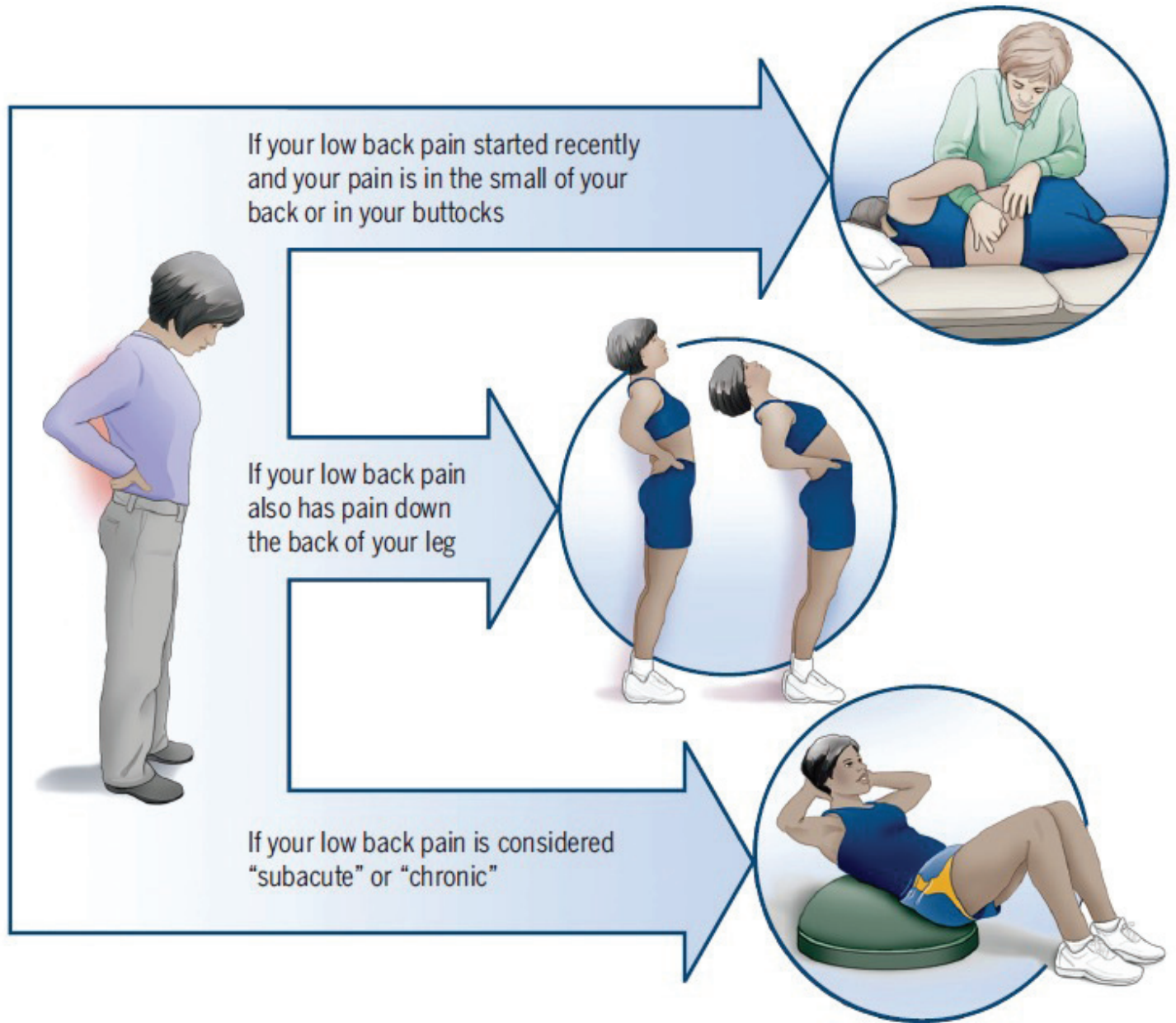
Brinjikji, W. Systematic Literature Review of Imaging Features of Spinal Disorders in Asymptomatic Population. Am J Neuroradiology. 2014.



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“Non specific LBP should not be viewed as a homogenous condition. Outcomes can be improved when sub grouping is used to guide treatment decision-making.”⁵

Patient’s with acute low back pain without red flags should be referred immediately to Physical Therapy for appropriate sub grouping and management.



References

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