



Treatment and Prevention of Low Back Pain

Chelci Kuiack PT, DPT

Education/Work Experience

- I have been a physical therapist for 8 years
- Graduated from Wichita State University
- Worked in Outpatient setting for 7 years
- Currently working in a special education school



About Me

- I am married and have 3 wonderful kids
- We have 2 Dogs and 1 Cat
- We currently live outside of Detroit, Michigan
- I love to be outside exploring with my kids, going to the beach and exercising.



Occurrence of Back Pain

- Worldwide, back pain is the leading cause of disability, preventing many people from engaging in work as well as other everyday activities.
- Back pain is one of the most common reasons for missed work. One-half of all working Americans admit to having back pain each year.
- Experts estimate that up to 80% of the population will experience back pain at some time in their lives.
- 30% of the population have back pain in any one month and 38% of the population have back pain in any year
- Most people with low back pain recover, however 2/3 recurrence is common within the first year after recovery and for a small percentage of people, the condition will become chronic and disabling.
- Low back pain costs Americans at least \$50 billion in health care costs each year—add in lost wages and decreased productivity and that figure easily rises to more than \$100 billion.

Recommended for First-Line LBP Management

- Exercise Therapy
- Education
- Self-management
- Advice to remain active
- Addressing psychosocial factors
- Reassurance and encouragement

What is Not Recommended

- High use of imaging
- Rest
- Opioids
- Spinal injections
- Surgery
- Electrical modalities

2 Lifestyle Factors that affect LBP

- Sitting
 - Slouched sitting places the spine in flexion and is similar to the fully flexed standing posture
 - Over time, the slouched sitting position causes overstretching of the posterior spinal ligamentous structures



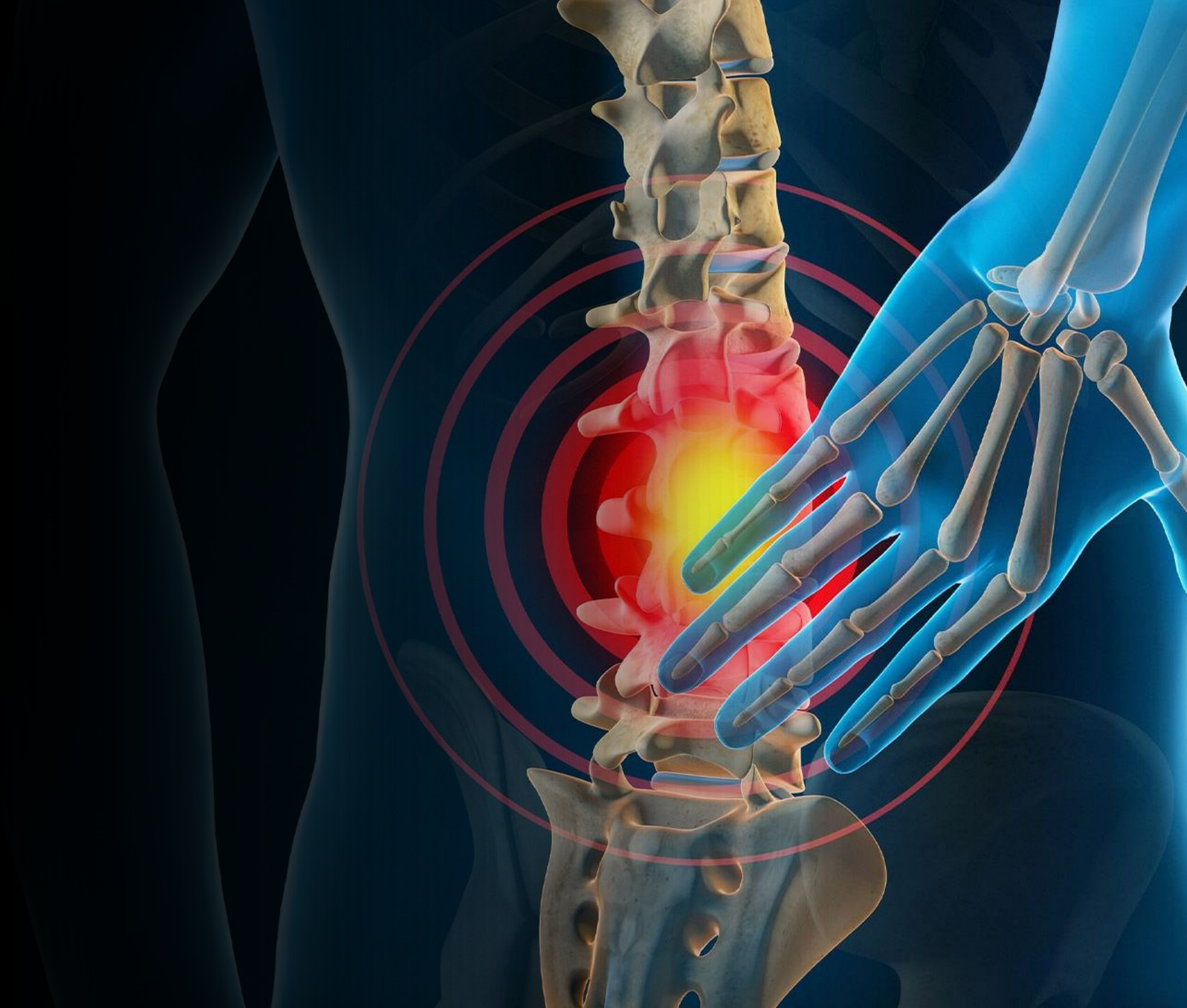
2 Lifestyle Factors that affect LBP cont.

- Frequency of Flexion
 - From rising in the AM until returning to bed at night people are predominantly in flexed spinal posture. We rarely extend throughout our day. (Bakker 2007)
 - Repetitive lumbar flexion with insufficient rest periods between may be a risk factor for the development of lumbar disorders (Hoops 2007)
 - We spend 4.0 hours per day in a flexed position and only 24 min of extension
 - On the average, human beings flex 3000 to 5000 times a day.
 - There is a 300% increase in intradiscal pressure the first 3 hours of the day



Classifications of Back Pain

- Derangement
- Dysfunction
- Postural syndrome
- Other



Derangement Syndrome

- Most common category of back pain
- Symptoms are variable, local, referred, radiating, and move side to side
- Presents with directional preference
- Centralizing only occurs in a derangement
- The most common reason for patients to seek assistance and most seen in the clinic

Dysfunction Syndrome

- Symptoms are produced consistently and only at a limited end range of movement.
- Pain will be local and symptoms will never last
- No rapid change in range of motion during the assessment

Postural Syndrome

- Symptoms are produced only from prolonged static loading.
- Time in static position is the cause
- No pain with activity of movement

Extension Exercises

- Slouch Overcorrect
- Standing Extension
- Prone Lying
- Prone on Elbows
- Prone extension (press up)
- Extension with Overpressure



Slouch Overcorrect



Standing Extension



Prone Extension Progression



Flexion Exercises



- Supine Flexion
- Seated Flexion
- Standing Flexion



Other Treatment Options

- Manual Therapy
- Therapeutic Exercises
- Electrical Stimulation
- Dry Needling
- Taping

Manual Therapy

- Myofascial Release
- Trigger Point Release
- Soft Tissue Massage
- IASTM
- Spinal mobilizations
- Spinal Manipulations



Therapeutic Exercises

- Core Strengthening
- Postural re-education
- Proper Lifting Techniques
- Generalized Strengthening





Electrical Stimulation

- TENS Unit
- IFC

Dry Needling

- Performed by skilled, trained physical therapists, certified in the procedure
- Utilizes a thin monofilament needle
- decrease banding or tightness, increase blood flow, and reduce local and referred pain.



Taping

- Kinesiology Taping
 - Flexible, breathable, water resistant
 - Helps increase body's proprioception to the treatment area
 - Help improve postural awareness
- McConnell Taping
 - Rigid and highly adhesive therefore it does require pre-tape to protect the skin
 - Helps to reduce pain during functional movements by improving alignment and mechanics



Prevention of Low Back Pain

- Staying physically active
- If you must sit, take frequent standing breaks, watch posture, utilize lumbar roll, complete extension following long duration sitting
- Use proper body mechanics during work, play and daily activities
 - Proper lifting technique
 - Proper set up of office
 - Proper backpack/purse wear



Questions



1. Jensen M, Brant-Zawadzki M, Obuchowski N, et al. Magnetic Resonance Imaging of the Lumbar Spine in People Without Back Pain. *N Engl J Med* 1994; 331: 69-116.
2. Hoy D, March L, Brooks P, et al The global burden of low back pain: estimates from the Global Burden of Disease 2010 study *Annals of the Rheumatic Diseases* Published Online First: 24 March 2014. doi: 10.1136/annrheumdis-2013-204428
3. Valfors B. Acute, Subacute and Chronic Low Back Pain: Clinical Symptoms, Absenteeism and Working Environment. *Scan J Rehab Med Suppl* 1985; 11: 1-98.
4. The Hidden Impact of Musculoskeletal Disorders on Americans, United State Bone and Joint Initiative, 2018.
5. Rubin DL. Epidemiology and Risk Factors for Spine Pain. *Neurol Clin.* 2007; May;25(2):353-71.
6. Sauver, JL et al. Why patients visit their doctors: Assessing the most prevalent conditions in a defined American population. *Mayo Clinic Proceedings*, Volume 88, Issue 1, 56–67.
7. Hartvigsen J et al. Low Back Pain Series: What Low Back Pain Is and Why We Need to Pay Attention. *Lancet*, June 2018; Volume 391, Issue 10137; p2356-2367.

8. In Project Briefs: Back Pain Patient Outcomes Assessment Team (BOAT). In MEDTEP Update, Vol. 1 Issue 1, Agency for Health Care Policy and Research, Rockville, MD.
9. Katz JN. Lumbar disc disorders and low-back pain: socioeconomic factors and consequences [review]. *J Bone Joint Surg Am.* 2006;88(suppl 2): 21-24
10. Bakker E, Verhagen A, Kucas C, et al. Daily spinal mechanical loading as a risk factor for acute non-specific low back pain: a case – control study using the 24 hour schedule. *Eur Spine J* 2007; 16:107-113
11. Hoops, Zhou B, Lu Y, et al. Short rest between cyclic flexion periods is a risk factor for a lumbar disorder. *Clinical Biomechanics* 2007;22: 745-757
12. McKenzie, Robin. *Treat Your Own Back*. Raumati Beach, N.Z. : Spinal Publications New Zealand, 2011.