

# MAPLE CITY PHYSICAL THERAPY

## Lumbar Spine

### Summary

1. Low Back
  - A. Pathology
  - B. Risk Factors
  - C. Posture and Body Mechanics
  - D. Return to Function & Prevention

### Low Back

#### A. Pathology

50-80% of adult population will experience low back pain at some point in their life. The total costs of back pain are larger than any other disease for which economic analysis is available. Only 25% to 40% of those with back pain seek healthcare. Treatment options vary depending on the many different classifications of low back pain including nerve root problems, stenosis, lumbar fusion, inflammatory, fracture, mechanical, chronic pain, etc. Over the past few decades, MDT (McKenzie Method of Mechanical Diagnosis and Therapy) has been one of the leading treatment options in reducing and maintaining low back pain. Qualified physical therapists lead the front in educating and instructing individuals in self-treatment that is effective and typically revolves around repetitive movements of the spine.



#### B. Risk Factors

- Individual and lifestyle (sedentary versus on the move)
  - History of back pain
- Physical or biomechanical
  - Heavy or frequent lifting
  - Whole body vibration (as when driving)
  - Prolonged or frequent bending or twisting

- Postural stresses (high spinal load or awkward postures)
- Psychosocial
- Prognostic factors include heavy manual work, sitting occupation, low job satisfaction, and lower income associated with higher rates of low back pain
  - Lower extremity pain, numbness, tingling and weakness, whether all the way down the leg or even in just a localized region, can be referred from the low back. Many times, symptoms are diagnosed improperly, as the source of the problem is the lower back. Your health care provider should always screen the low back initially to treat the basis of the problem.

## C. Posture and Body Mechanics

### Poor Sitting Posture

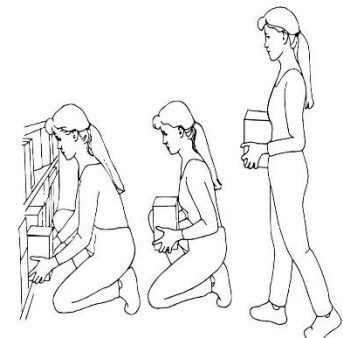
- Slouched sitting places the spine in flexion and is similar to the fully flexed standing posture
  - In the sitting position, the more the lumbar spine flexes forwards, or slouches, the higher the intradiscal pressure; when the spine accentuates lumbar lordosis (concavity of the low back) by sitting in upright posture, the lower the intradiscal pressure.
  - The slouched sitting position also causes overstretching of posterior spinal ligaments at end range
    - \*\*Some low back pain is caused and nearly all low back pain is aggravated and perpetuated by poor sitting



### Body Mechanics

- Frequency of flexion
  - From rising in the morning until returning to bed at night people are predominantly in flexed spinal postures and activities, and rarely extend. Frequent and sustained flexion stresses are present during work and during daily activities.
  - These two predisposing factors, when combined, eventually lead to loss of extension.
  - The average person will bend forwards between 3,500 and 5,000 times per day, nowhere near the frequency of bending backwards.
  - In order to avoid stress from poor posture, you should learn to avoid bending at the waist to pick up objects, tie shoes, etc. Instead, squatting or kneeling is an improved position for the spine as it will prevent repetitive lumbar flexion, which can lead to injury. Additionally, we tend to use lower extremity and core muscles in place of primarily low back muscles when adopting these positions as opposed to stooping.

LIFTING - 3  
Low Shelf



Squat down, and bring item close to lift.

-Environmental modifications can improve overall spine health. Keeping medications, houseware, papers, etc. within reach can reduce the amount of bending you perform during the day.

\*\*\*Note that all low back pain does not present as the same. While most individuals get better over time and are better with postural correction and awareness of body mechanics, not all people get better with just these factors. More details can be provided to you by your physical therapist for further incite or treatment options.

#### D. Return to function/Prevention

-Practicing sitting and standing or walking with good posture can limit the amount of postural stress on the low back.

-Depending on classification of low back pain, exercise can help to reduce onset and exacerbation of low back pain. Exercises that help strengthen the lower extremities and core muscles can help in using those muscles more in combination with spinal muscles.

-Developing a walking program can be helpful to reducing onset of low back pain. Often times, low back pain is exacerbated with a sedentary lifestyle and sustained intradiscal pressure with slouching. Walking can help to improve disc health during upright posture as well as avoiding overstretching ligamentous structures that would occur in slouched sitting.

-Changing your environment, such as keeping items within reach to avoid bending repetitively at the waist or sitting can help to reduce onset of low back pain.

-Most important, if you have been prescribed exercises that work for you, consistent performance of those exercises can help to reduce onset of low back pain. Stiffness is a warning sign that your pain will return at some point. Using your exercises can act as a check to reassess your back health. Get in the habit of doing them daily as you would brush your teeth.

-Remember, if you have had low back pain before, you have a higher risk of reoccurrence. Do not wait until you have stiffness or pain to perform exercises that help reduce your pain.

