

# MAPLE CITY PHYSICAL THERAPY

## Cervical Spine

### Summary

1. Neck
  - 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 neck pain at some point in their life. The total costs of back and neck pain are larger than any other disease for which economic analysis is available. Only 25% to 40% of those with neck pain seek healthcare. Treatment options vary depending on the many different classifications of cervical spine pain including nerve root problems, stenosis, cervical 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 neck pain
- Physical or biomechanical
  - Heavy or frequent lifting (typically overhead)
  - Whole body vibration (as when driving)

- Sustained protrusion of the chin, as seen with sitting at a computer or lying in bed on pillows while reading
- Sustained looking down at your phone or article
- Psychosocial
- Prognostic factors include heavy manual work, sitting occupation, low job satisfaction, and lower income associated with higher rates of neck pain
- Upper extremity and scapular pain, numbness, tingling and weakness, whether all the way down the arm or even in just a localized region, can be referred from the neck. Many times, symptoms are diagnosed improperly, as the source of the problem is the neck. Almost 50% of individuals with shoulder pain have origins of symptoms coming from the neck. Your health care provider should always screen the cervical spine initially to treat the basis of the problem.

## C. Posture and Body Mechanics

### Poor Sitting Posture

-Slouched sitting places the lumbar spine in flexion and the neck in protrusion so that instead of an even distribution of pressure, your cervical spine bears an unequal weight of the head

-The head weighs about 14 kilograms. With slouched sitting, the cervical spine has to endure excessive load from the head in a protruded position. Because the cervical spine does not have discs (cartilaginous material that cushions between the vertebrae) in the upper portion, the weight of the head if consistently unequal on the spine can act to cause neck symptoms. Depending on the severity, this can cause a wide range of symptoms, from neck or upper extremity symptoms or even headaches.

-The slouched sitting position also causes overstretching of posterior spinal ligaments at end range, which are much smaller than that of the thoracic and lumbar spine. The neck can not deal with similar stresses that the low back can due to the delicate nature and smaller stature of the vertebrae and soft tissue surrounding the neck.

\*\*Some neck pain is caused and nearly all neck pain is aggravated and perpetuated by poor sitting



### Body Mechanics

-Frequency of protrusion

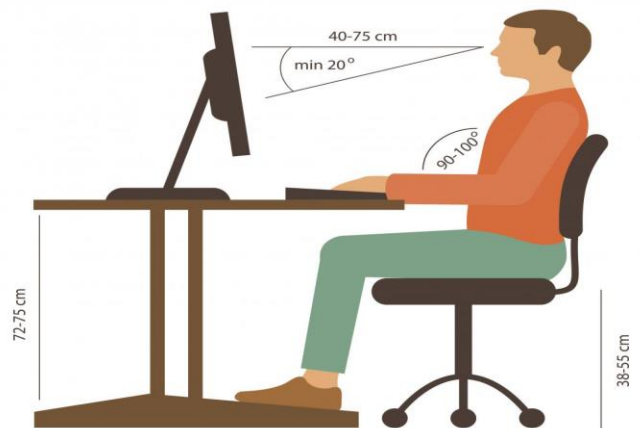
-From rising in the morning until returning to bed at night people are predominantly in flexed spinal postures and activities, and rarely extend. Frequent and sustained flexion stresses of the back are present during work and during daily activities. Excessive flexion of the back will lead to excessive protrusion of the neck. In addition, individuals tend to protrude their neck for long periods particularly with driving, sitting at a computer, or using phones.

-These predisposing factors, when combined, eventually lead to loss of neck retraction and/or extension range of motion that may lead to onset of pain.

-The average person will protrude his or her neck forwards between 3,500 and 5,000 times per day, nowhere near the frequency of pulling the neck back into retraction.

-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 and cervical flexion, which can lead to injury. Avoiding repetitive overhead lifting or overhead work can reduce strain on the neck. Taking breaks can help to reset your posture and reduce postural stress that takes a toll on a very mobile cervical spine.

-Environmental modifications can improve overall neck health. Keeping medications, houseware, papers, etc. within reach can reduce the amount of bending you perform during the day. Additionally, sitting yourself close to a desk or computer can help to reduce the frequency of protrusion of the neck. Using a mouse at a computer can help to avoid consistent looking down at your work. Adjusting the height of your monitor can ensure that you are looking straight forwards as well. Taking breaks throughout the day to get up and walk can help realign structures and help to reduce onset of neck pain.



\*\*\*Note that all neck pain does

not present as the same. While some 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 neck.

-Depending on classification of neck pain, exercise can help to reduce onset and exacerbation of neck pain. Exercises that help strengthen the upper 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 neck pain. Often times, neck 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 repetitive reaching overhead can help to reduce onset of neck pain. In addition, changing your

home and work environment such as raising the height of your computer monitor, changing the direction of the sofa with respect to the television, or holding your cellular device at eye level can help to prevent onset of neck pain.

-Most important, if you have been prescribed exercises that work for you, consistent performance of those exercises can help to reduce onset of neck 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 neck health. Get in the habit of doing them daily as you would brush your teeth.

-Remember, if you have had neck 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.

