

Understanding Back Pain

Causes of Back and Neck Pain

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Low back and neck pain can arise due to many causes, some of which are complex. Back pain is rarely the result of a single injury or accident. It is more often the result of the cumulative effect of physical stress on spinal tissues combined with progressive degenerative changes. The initiating factor may involve a simple movement or action. The physical stressors are often compounded over months or years of poor posture, abnormal body mechanics, harmful work habits, stressful living and deconditioning with a loss of strength and flexibility. The aging process is typically associated with a decline of physical fitness which negatively impacts posture. Additional risk factors include chronic emotional stress, lack of rest, smoking and poor nutrition. For some, there may be genetic or developmental predispositions with structural abnormalities of the spine, which contribute to the development of back pain.

A degenerative back disorder usually develops long before the onset of symptoms such as pain. The pain develops after tissues of the spine become inflamed from repetitive microinjury to spinal structures. When the inflammation resolves during the healing process the back pain dissipates. The underlying tissue “weak link” often remains leaving the individual prone to re-injure the area and once again experience pain. Some of the most common causes for back pain include muscle guarding and spasm, postural strains/sprains, joint degeneration, osteoarthritis, abnormal vertebral movement, and acute strains/sprains.

It is often a challenge for a physician to accurately determine the primary cause of back pain, particularly a physician who does not have extensive experience in the evaluation and care of spine disorders. This dilemma is due to the complexity of the spine which contains numerous pain sensitive tissues such as muscles, ligaments, tendons and joint membranes/capsules. There are two primary classifications of back pain, acute and chronic. Acute pain refers to pain that is less than three months in duration, whereas chronic pain is persistent, lasting more than three months. Chronic pain can persist throughout an individual’s life. An individual with chronic pain can also have periods of acute exacerbation, referring to periods where this a temporary increase in the pain level. Pain may be intermittent, persistent or progressive. Back pain and neck pain may have more than one cause.

Back pain is most commonly experienced at or below the level of the waist. It may be reported as sudden and sharp or dull and aching. The low back is the most common region of the spine to be affected with a very high prevalence throughout the population. The most common cause of low back pain is muscle strain associated with heavy physical labor, from lifting or forceful movement. Individuals who have underlying degenerative changes in the low back are more susceptible to suffer a muscular strain/sprain injury. Muscular strain may also arise from sustaining an awkward position or standing position too long.

Sometimes neck or low back pain will be accompanied by radiating pain, numbness, tingling and/or weakness involving the extremities. This type of pain indicates a more serious condition. Low back pain associated with bowel or bladder dysfunction and /or leg weakness requires the immediate attention of a spine specialist. Neck pain associated with abrupt onset or progressive

upper extremity weakness or incoordination also requires the immediate attention of a spine specialist. Surgery may be required to protect the spinal cord and/or the spinal nerves. Surgery is not required to treat most cases of neck or low back pain.

Back pain afflicts an estimated 70 to 80 percent of adults at some point during their lives. During any given year, approximately ten percent of adults will experience back or neck pain. It remains one of the most common reasons for an individual to visit their primary care physician. Approximately 80 percent of individuals who have back pain achieve relief within two to three months of care. Most back pain arises from the spinal muscles and/or tissues of the spine although pain can be referred to the back from internal organs. For example, bladder infections and kidney stones can cause back pain. Stomach pathology can refer pain or discomfort to the mid-back region. Pelvic disorders can refer pain to the low back. Atypical angina pectoris secondary to coronary artery disease may be associated with referred pain to the midback (thoracic) region. Cancer can also spread to the spine from a tumor arising in another area of the body. Tumors which have predilection to spread or metastasize to the spine include breast cancer, prostate cancer, and lung cancer. It is rare for tumors to originate in the spine, but it does occur.

The spine or vertebral column is a stack of more than 25 vertebrae. Together the stacked vertebrae create a bony column with a canal that which surrounds and protects the spinal cord and exiting spinal nerve roots. The vertebrae are held together by muscles, tendons and ligaments. There is an intervertebral disc which lies in between the vertebrae serving as a shock absorber and spacer. The intervertebral disc and pair of spinal (facet) joints at each level of the spine allow mobility to occur at each spinal segment allowing an individual to twist, bend, flex and extend.

The low back carries the majority of the weight of the spine. For this reason it is the frequent site of low back pain. Strains /sprains can occur due to a variety of reasons, including improper lifting, excessive body weight and habitual poor posture. Awkward movements or lifting something heavy at a vulnerable angle can lead to muscular and ligamentous injury. Pain associated with strain or sprain of the back is generally felt immediately after the injurious event. Pain arising from the spine can lead to unconscious muscle spasm or guarding of the spine, which is the body's attempt to reduce further movement and injury.

Another common cause of neck and back pain is spondylosis which may involve osteoarthritis. The pain is from degeneration of the joints of the spine (facet joints). Spondylosis refers to degenerative changes involving the spine particularly the disc and facet joints. Osteoarthritis is often referred to as a wear-and-tear arthritis because it develops slowly over a long period of time. Chronic loading stress, injury and obesity are known risk factors for the development of osteoarthritis.

Back pain may occur as a consequence of the loss of integrity of the intervertebral disc. Age-related changes, as well as normal wear and tear or exceptional strain, can cause an intervertebral disc to herniate. Some physicians and individuals refer to this as a "slipped disc." The disc is not truly slipped, but the gelatinous central portion of the intervertebral disc migrates away from its central location in the disc through compromised disc (annular) fibers. This is referred to as a "herniation". A herniated disc can result in nerve compression leading to symptoms in the arms and legs, such as radiating pain, numbness, and weakness. A more centralized herniated disc in the cervical or thoracic spine can cause spinal cord compression.

