

WHAT'S CAUSING MY BACK PAIN?

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Low back pain is common and affects people of all ages. More than 85% of people will experience lower back pain in their lifetime. It is the second leading cause for doctor visits, following common cold. It is the leading cause for disability in people under 45 years of age. Fortunately, the low back pain resolves for the vast majority within 2-6 weeks. Most often back pain has no definite recognizable cause. In some cases the symptoms may be correlated to a specific traumatic event, but they may also be a result of cumulative microtraumas. The lumbar spine position most at risk for producing low back injury is forward flexion, rotation and attempting to lift a heavy object with out-stretched hands. Repetitive, compressive loading of the discs in flexion (e.g. lifting) and torsional forces put the discs at risk for internal disruption. The underlying systemic disease is a rare cause of back pain. The goals of treatment are to reduce pain, improve mobility and prevent development of a chronic condition.

Initial evaluation should determine whether the symptoms are of musculoskeletal origin or represent a systemic disease. Careful history of the symptom quality and duration may uncover some red flags: nighttime pain, weight loss, overflow incontinence, fever, chills, recent infection. A comprehensive back examination may yield some clues as to the cause of the pain.

Since most abnormalities found on imaging studies are nonspecific, such studies are not necessary during the initial evaluation of acute low back pain unless systemic process, such as infection or malignancy is suspected. Plain X-rays may be appropriate initially if the patient has risk factors for vertebral fractures, or if the patient does not improve after a course of conservative treatment. Magnetic resonance imaging (MRI) is the preferred test if a doctor suspects a tumor, infection, disc pathology, or spinal stenosis. Computed tomography (CT) shows bony details better than MRI does, but lacks in disc, ligament and muscle resolution. MRI and CT are not ordered routinely, but only for specific indications to answer specific questions, when specific findings would indicate specific treatment. Electrodiagnostic studies (EMG/NCS) are useful in patients with suspected radiculopathy to localize specific root lesion and determine the severity of the disease. These tests can objectively assess whether the symptoms are due to a spinal problem versus peripheral nerve problem, such as neuropathy. EMG/NCS have a relatively high degree of sensitivity for detecting radiculopathy, particularly with use of the needle EMG portion of the testing, when performed by an appropriately trained physician.

Further, because a patient is unable to voluntarily influence the appearance of abnormal EMG/NCS findings, the testing can be helpful in providing objective evidence of nerve pathology in cases in which symptom magnification or malingering is suspected.

Despite the multitude of tests available, sometimes the actual pathology or more likely pathologies of back pain remain elusive. Multiple anatomic structures and elements of the lumbar spine (e.g. bones, ligaments, tendons, discs, muscle) can all play a role. All of these components have sensory innervation that can generate painful signals representing responses to mechanical stimuli (sharp or dull ache). Others may be neuropathic in nature, suggesting nerve irritation (burning and stinging sensation). Most chronic back pain cases involve mixed mechanical and neuropathic etiologies.

Conservative treatment should be initiated early and efficiently to achieve the best results. Ice, transcutaneous electrical nerve stimulation (TENS), and relative rest may help with controlling the pain and the inflammatory process. Nonsteroidal anti-inflammatory drugs and acetaminophen are the drugs of choice for pain control in acute back pain. Patients should be referred to a neurosurgeon or orthopedist if they have cauda equina syndrome (a serious condition caused by compression of the nerves in the lower portion of the spinal canal); severe or progressive neurologic deficits; infections, tumors, or fractures compressing the spinal cord. Patients should also be referred to a specialist, such as neurologist, physiatrist or other professional specializing in back disorders if there is no response to conservative therapy for 4 to 6 weeks.

In patients who have failed conservative treatment other options exist. Evidence-based clinical practice guidelines from the American Pain Society (APS) recommend use of epidural steroid injections in patients with herniated disks. Facet injections may be used in patients with axial low back pain. This procedure allows the physician to insert the drug directly between the involved spinal joints. In more recalcitrant cases, minimally invasive percutaneous (*endoscopic*) surgical procedures, as well as more invasive open surgical treatment may be required to minimize the pain.

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