

Treating Low Back Pain: The Latest Guidelines

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Over the course of a lifetime, almost 25% of adults in the United States experience low back pain (LBP) and have expressed at least one full day of LBP during the past 3 months.¹ LBP comprises the fifth most common complaint for which a patient seeks assistance from a medical professional. Healthcare costs related to LBP are astronomical each year, with an estimated cost of \$26.3 billion

included function, general health, pain, disability, or patient satisfaction. Databases searched over a 10-year period from 1996 to 2006 were MEDLINE, the Cochrane Database of Systematic Reviews, the Cochrane Central Register of Controlled Trials, and EMBASE.¹

■ Patient Education

Most cases of acute LBP resolve spontaneously within a few days to weeks. Many individuals do not seek

quality of evidence (high, moderate, low, insufficient) and strength of recommendation (strong, weak). Quality of the evidence is based on the research design and protocol. Strength of the recommendation is determined by the risk/benefit ratio of the intervention. The evidence for all seven recommendations was found to be of moderate quality and all were strongly recommended. The benefits and risks and burdens are finely balanced for all except the seventh recommendation.¹

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spent on the treatment of LBP.¹ Not only is LBP treatment costly in dollars, it is also costly in lost wages from work. It is estimated that approximately 2% of the adult work force in the United States is compensated each year for on the job injuries affecting the low back¹.

As NPs, it is not uncommon to see at least one patient daily with the complaint of LBP. Therefore, NPs must become familiar with the latest guidelines for diagnosis and treatment. These guidelines were released in October 2007 by the American College of Physicians and the American Pain Society.¹ Recommendations are based on research conducted on nonpregnant women over 18 years of age with LBP of any duration. Medication treatment and outcomes

medical assistance, and instead use self-care measures such as heat and over-the-counter (OTC) pain relief products. It may be difficult to educate patients that in most instances the use of muscle relaxants and opioid pain medications is not necessary. Many have come to expect these medications just as antibiotics; our role now is to educate patients with LBP that the only interventions needed may be heat, OTC pain medications, and education regarding prevention of further injury.

The guidelines encompass seven recommendations, each regarding an aspect of diagnosis and treatment of the patient presenting with LBP (see *Low Back Pain Recommendations*). The recommendations were based on ratings of the research for

■ History and Physical Exam

It is felt that more than 85% of LBP seen in the primary care setting is not related to injury or disease, and is nonspecific in nature.¹ Through a focused history and physical exam, LBP can be delineated into one of the three categories—nonspecific low back pain, back pain associated with radiculopathy or spinal stenosis, and back pain potentially associated with another specific spinal cause—with the majority of patients falling into the nonspecific LBP category. The prevalence of specific diagnoses is very low and includes cancer at less than 1%, compression fracture at 4%, spinal infection at 0.01%, ankylosing spondylitis at 0.3% to 5%, spinal stenosis at 3%, herniated disc at 4%, and cauda equine syndrome at 0.04%. Each of these pathologies may put the patient at risk for permanent nerve damage, as each can cause compression or damage to the spinal cord. Ankylosing spondylitis is a chronic, inflammatory arthritis of

Low Back Pain Recommendations¹

Recommendation 1	Triage LBP patient into one of three groups via focused history and physical examination: <ul style="list-style-type: none"> • Nonspecific low back pain. • Back pain with potential radiculopathy or spinal stenosis. • Back pain with another specific spinal cause other than radiculopathy or stenosis.
Recommendation 2	Routine diagnostic imaging and testing is not recommended in patients with nonspecific low back pain
Recommendation 3	Diagnostic imaging and testing should be done when radiculopathy, stenosis, or other potential spinal causes are suspected.
Recommendation 4	MRI is preferred over computerized tomography for imaging, and should only be done if patients are potential candidates for surgery or epidural steroid injections.
Recommendation 5	Educate patients with LBP regarding expected course, staying active, and self-care.
Recommendation 6	First line interventions for treatment of pain include acetaminophen or NSAIDs along with patient education. Before initiating additional medications, efficacy, safety, and risk-benefit ratio, as well as the severity of pain and functional deficits, should be evaluated.
Recommendation 7	For patients in which self-care and first line pharmacotherapeutics are not effective, nonpharmacological, proven therapies such as spinal manipulation, intensive interdisciplinary rehabilitation, exercise therapy, acupuncture, massage therapy, yoga, cognitive-behavioral therapy, or progressive relaxation should be considered.

the spine that may lead to new bone formation along the vertebrae, as well as immobility of the vertebrae. Spinal stenosis is a narrowing of the spinal canal that may cause undue pressure on the spinal cord. Disc herniation can also lead to compression of nerve roots via expulsion and herniation of the nucleus pulposus through the fibrous outer membrane of the intervertebral disc. Cauda equine syndrome results from compression of the nerve roots in the lower portion of the spinal cord and leads to an array of symptoms, including bilateral lower extremity weakness and paresthesias, as well as change in bladder and bowel function from loss of sphincter control.

History should include questions regarding pain and its onset, duration, and frequency; associated symptoms, as well as any previous history of similar symptoms; and treatment and response. Note any potential risk for trauma, such as accidents, occupational hazards, or both. Risk factors for cancer or infection should also be discussed, especially in individuals over the age of 50 years; those with a cancer history, recent

unexplained weight loss, or fever; intravenous drug use; or in patients whose back pain does not improve within a month. Risk factors for compression fracture include history of osteoporosis, advanced age in both men and women, and past history of fracture. Ankylosing spondylitis occurs in younger age groups and includes morning stiffness, stiffness that improves with exercise, alternating buttock pain, and late nighttime awakenings due to back pain.

During the history and physical examination, psychosocial and emotional factors should also be assessed. Depression, anxiety, and stress may increase the perception of pain as well as impede LBP resolution. The guidelines recognize that screening adequately for these variables, specifically as they relate to LBP and disability, are lacking.

Depression and anxiety are stronger predictors for negative outcomes of LBP than physical examination findings, severity, or duration of symptoms. Emotional stability has been shown to impact the health of patients with heart

disease and cancer, and in overall morbidity and mortality. Only one trial demonstrated that patients with chronic back pain reported improved results from intensive multidisciplinary rehabilitation over more usual care.¹ Regardless, patients with depression and anxiety are at risk for long-term disability and increased use of healthcare dollars through intensive rehabilitation or frequent practitioner visits with or without disability insurance. The guidelines identify that evidence is currently lacking as to how best to both assess and treat those at psychological risk. Factors that may predict poorer outcomes include diagnosed depression, anxiety, evidence of poor coping skills, job dissatisfaction, relationship dissatisfaction, higher disability levels, compensation claims, or somatization.

Patients who present with LBP and leg pain may be at risk for herniation. Most herniations (90%) occur at L4-5 or L5-S1 level. The examination for herniation included straight leg raise, knee strength, knee reflexes (L4), great toe and foot dorsiflexion (L5), and foot plantar flexion and

This Just In

ankle reflexes (S1). Sensory symptoms such as paresthesias or tingling must be assessed for nerve root distribution. Each of these tests differs in sensitivity and specificity. The straight leg raise is very sensitive (over 90%) but not specific (26%). The crossed straight leg raise test is much more specific (88%) but is also less sensitive (29%).¹

■ Avoid Unnecessary Radiation

The guideline committee found that

4 weeks without invasive interventions. In patients without severe deficits or pain, a watch and wait plan with conservative treatment may be initiated before advanced imaging.

■ Evaluation

When surgery or epidural steroid injections are being considered, advanced imaging techniques are warranted. When radicular symp-

potentially lead to increased pain and disability. In patients who are injured at work or who have physically demanding jobs, the guideline states that there is insufficient evidence to make specific recommendations as to work limitations. However, specific information regarding body mechanics and ways to prevent or worsen back injury should be given.

The application of cold and lumbar supports is not recommended, as there is no evidence showing improved function and decreased pain with their use. In patients with chronic back pain, using a medium firm mattress is recommended. The guideline also suggests that a watch and wait period, along with the same interventions for nonspecific LBP, may be employed in patients with radiculopathy.

■ Medications

Treatment of pain in patients with nonspecific LBP should mainly consist of OTC pain relievers and heat application.

Recommended first line pharmacologic intervention is acetaminophen and non-steroidal anti-inflammatory drugs (NSAIDs). Most often, the use of these medications is considered adequate for the treatment of acute LBP. Other pain medication options—such as opioids and tramadol—may be utilized in patients with either acute or chronic LBP if pain is severe and debilitating, is not controlled by acetaminophen or NSAIDs, or if the likelihood of addiction or abuse is low. Currently, not enough evidence exists to recommend one opioid over another.¹

Skeletal muscle relaxants are medications that have been approved by FDA to treat musculoskeletal conditions or spasticity. These agents are most often used for acute conditions. Benzodiazepines show similar efficacy to skeletal muscle relaxants;

Medications cannot cure everything, and may ultimately have more risks than benefits.

routine radiography is not associated with improved diagnosis or outcome and is related to unnecessary radiation. Therefore, routine radiography is not recommended in patients with nonspecific LBP. In patients where vertebral compression fracture is suspected, radiographic imaging should be obtained. The guidelines suggest that if back pain persists beyond the normal 1 month expected resolution date, then plain films may be a reasonable option. Many third-party insurance companies require plain radiographs prior to authorizing advanced imaging techniques.

■ Imaging Instances

In patients who demonstrate neurologic deficits or when underlying pathology is suspected, immediate advanced imaging should be obtained. Situations that warrant immediate advanced imaging include suspicions of vertebral infection, cauda equine syndrome, or cancer. Magnetic resonance imaging (MRI) is preferred over computed tomography (CT) because there is less radiation and better visualization of the soft tissues, vertebral marrow, and the spinal canal.¹

Herniations may resolve within

toms, pain, and decreased function remain persistent or progress, surgery or epidurals should be considered for herniation or stenosis.¹ Thermography, electrophysiologic testing, and other testing techniques are not recommended for the evaluation of nonspecific LBP. In instances where pain and disability are severe and MRI or CT is nonspecific, additional diagnostic testing may be needed. However, the guidelines do not discuss additional testing, and suggest that such testing may require input from a specialist.

■ Provide Information

Self-care education includes a good prognosis of improvement and resolution of symptoms within a month, including those displaying sciatica. Explain to your patient that X-rays and other imaging techniques have not been shown to change or improve treatment choices or final outcome, but do increase both out-of-pocket and insurance expenses. Patients should be encouraged to remain as active as possible. Discourage bed rest unless absolutely necessary, and even then for a short amount of time. Inactivity will decondition the core muscles, weaken the back, and

however, the potential for abuse and sedation is greater. The guideline suggests that if a benzodiazepine is used, it should be used as a short-term therapy only. It should also be noted that benzodiazepines are not FDA approved for LBP.

A few herbal remedies may have some benefit for treatment of acute or chronic LBP. The herbs that have been studied so far and show minimal to moderate pain relief include devil's claw, willow bark, and capsaicin. The use of oral or injectable corticosteroids, except in the case of the aforementioned epidural steroid injections, has not been shown to be more effective than placebo in the treatment of LBP with or without radiculopathy. Their use is not recommended.¹

■ Nonpharmacologic Therapy

If patients are not improving with self-care options of OTC pain relief medications and heat, the guidelines state that nonpharmacological therapies can be considered. If pain has been for less than 1 month, spinal manipulation can be tried. Supervised exercise therapy or home exercise can be started at approximately 2 to 6 weeks, although the exact time to initiate exercise therapy to reap the best benefits of improvement of function and decreased pain is unknown at this time. For LBP not improved in 1 to 2 months, the initiation of an interdisciplinary rehabilitation approach should be considered. Interdisciplinary teams combine coordinated efforts from the primary care office or other provider, along with psychology, physical therapy, and social or vocational interventions. Interventions with a cognitive-behavioral component have been shown to reduce absenteeism due to LBP in work-related settings. For patients with chronic LBP, interventions such as acupuncture, exercise therapy, massage therapy, yoga, cognitive-behavioral therapy, progressive relaxation, spinal manipulation, and intensive interdisciplinary rehabilitation may be helpful. Programs that are individualized and include both stretching and strengthening demonstrate the most positive outcomes.

The use of traction has not been shown to be beneficial in LBP patients with or without radiculopathy. Transcutaneous electrical nerve stimulation has also shown to be ineffective in the treatment of chronic LBP. Other non-pharmacological interventions such as acupressure, neuroreflexotherapy, spa therapy, percutaneous electrical nerve stimulation, inferential therapy, low-level laser therapy, shortwave diathermy, or ultrasound have demonstrated little beneficial evidence to recommend these interventions at this time.

The guideline also recommends that patients invest in a self-care book on back care such as *The Back Book*.¹

For nonspecific LBP, it is felt that these self-help books, classes, videos, and so on are well suited for most patients and less costly in time, commitment, and money than other interventions.

■ Time Will Tell

Evidence-based guidelines are beginning to show that medications cannot cure everything, and may ultimately have more risks than benefits. The goal of these guidelines is that someday, patients will see that education for self-treatment is worth any time and money spent, and recognize that these types of remedies may work better than any type of medication. **NP**

REFERENCE

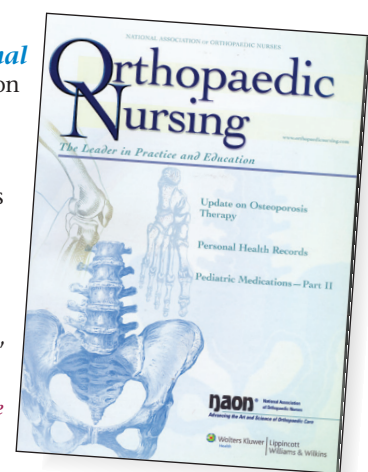
1. Chou R, Qaseem A, Snow V, Casey D, Cross JT, Shekelle P, Owens DK. Clinical guidelines: Diagnosis and treatment of low back pain: A joint clinical practice guideline from the American College of Physicians and the American Pain Society. *Annals of Internal Medicine*. 2007;147:478-491.

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