



**Management of Acute Low Back Pain in Adults**  
**Clinical Practice Guideline**  
**Reviewed August 2014**

**General Principles:** Acute low back pain in the adult patient is defined as <3 months of activity intolerance due to lower back pain and/or back related leg symptoms. The specific cause often cannot be identified but has a benign course in 90% of patients. Recurrences and functional limitations can be minimized with appropriate exercise and patient education. This clinical practice guideline should assist primary care clinicians by providing an evidence-based analytical framework for management of acute low back pain in adults. It is not intended to substitute for clinical judgment or to establish a protocol for all patients.

**Initial Evaluation:** A focused medical history and physical exam including general observation of the patient, regional back exam, testing for sciatic nerve tension, neurological screening and straight leg raise can identify the small percentage of patients with serious conditions that require immediate further evaluation. These conditions include infection, malignancy, rheumatologic diseases, neurological disorders, and referred pain from other organ systems.

**The clinician should look for “Red Flags” to identify which patients need more aggressive evaluation.**

Possible Fracture	Possible Tumor or Infection	Possible Cauda Equina Syndrome
From: Medical History		
Major trauma, such as vehicle accident or fall from height.	Age over 50 or under 20	Saddle anesthesia
Minor trauma or even strenuous lifting (in older or potentially osteoporotic patient).	History of cancer.	Recent onset of bladder dysfunction, such as urinary retention, increased frequency or overflow incontinence.
	Constitutional symptoms, such as recent fever or chills or unexplained weight loss.	Severe or progressive neurologic deficit in lower extremity.
	Risk factors for spinal infection: recent bacterial infection (e.g. urinary tract infection), IV drug abuse, or immune suppression (from steroids, transplant or HIV).	
	Pain that worsens when supine, severe nighttime pain.	
<b>Physical Examination</b>		Unexpected laxity of the anal sphincter.
		Perianal/perineal sensory loss
		Major motor weakness: quadriceps (knee extension weakness); ankle plantar flexors, evertors, and dorsiflexors (foot drop)

**Laboratory Tests:** Laboratory tests are generally not necessary during the initial evaluation, however, they can be useful when infection or malignancy is considered a possible cause and may include a CBC, ESR, PSA, alkaline phosphatase, blood culture, and/or PPD. The HLA-B27 assay is positive in 90% of patients with ankylosing spondylitis.

**Special Studies:**

1. Plane-film radiography is rarely useful in the initial evaluation of patients with acute-onset low back pain. At the first visit, AP and lateral radiographs should be considered in patients with red flags.
2. MRI and CT scanning have been found to demonstrate abnormalities in “normal” asymptomatic people. Thus, positive findings in patients with back pain are frequently of questionable clinical significance. MRI or CT studies should be considered in patients with worsening neurological deficits or a suspected systemic cause of back pain such as infection or neoplasm. These imaging studies may also be appropriate when referral for surgery is a possibility.

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3. Bone scintigraphy can be useful when radiographs of the spine are normal but the clinical findings are suspicious for osteomyelitis, bony neoplasm or occult fracture. However, this technique is unlikely to demonstrate bone changes when radiographs and the ESR are normal.
4. Electrodiagnostic studies such as EMG/NCS have only a limited role in the evaluation of acute low back pain and are most useful in differentiating peripheral neuropathy from radiculopathy or myopathy. If timed appropriately, these studies are helpful in confirming the working diagnosis and identifying the presence or absence of previous injury. They are also useful in localizing a lesion, determining the extent of injury, predicting the course of recovery and determining whether structural abnormalities (as seen on radiographic studies) are of functional significance.
5. Special Note: ABIM Foundation recommendations in Choosing Wisely, endorsed by American College of Physicians recommendations as follows:

“In patients with back pain that cannot be attributed to a specific disease or spinal abnormality following a history and physical examination (e.g., non-specific low back pain), imaging with plain radiography, computed tomography (CT) scan, or magnetic resonance imaging (MRI) does not improve patient outcomes.”

More information can be found at <http://www.choosingwisely.org/doctor-patient-lists/american-college-of-physicians/>

 Summary of the American College of Physicians Best Practice Advice: Diagnostic Imaging for Low Back Pain	
Disease or condition	Imaging for low back pain
Target audience	Internists, family physicians, and other clinicians
Target patient population	Adults with low back pain
Interventions	Radiography Computed tomography Magnetic resonance imaging
Indications for diagnostic imaging	Immediate imaging is recommended in patients with acute low back pain who have major risk factors for cancer, risk factors for spinal infection, risk factors for or signs of the cauda equina syndrome, or severe or progressive neurologic deficits Imaging after a trial of therapy is recommended in patients with minor risk factors for cancer, risk factors for inflammatory back disease, risk factors for vertebral compression fracture, signs or symptoms of radiculopathy, or risk factors for or symptoms of symptomatic spinal stenosis Repeated imaging is only recommended in patients with new or changed low back symptoms
Evidence that expanding imaging to patients without these indications does not improve outcomes	Randomized trials of routine imaging versus usual care without routine imaging in patients without indications for diagnostic imaging suggest no clinically meaningful benefits on outcomes related to pain, function, quality of life, or mental health Other supporting evidence includes the weak correlation between most imaging findings and symptoms, the favorable natural history of acute low back pain with or without imaging, the low prevalence of serious or specific underlying conditions, and unclear effects of imaging on treatment decisions
Harms of unnecessary imaging	Radiation exposure (for lumbar radiography and computed tomography) Labeling Hypersensitivity reactions and contrast nephropathy (for iodinated contrast with computed tomography) Potential association with subsequent unnecessary, invasive, and expensive procedures
Approaches to overcome barriers to evidence-based practice	Patient expectations or preferences for routine imaging: Use talking points based on evidence-based guidelines to aid in patient education Time constraints: Use evidence-based online or print education material to supplement face-to-face education Clinician uncertainty: Recognize the low likelihood of serious conditions in the absence of clinical risk factors and the evidence that shows no benefit associated with routine imaging Clinician incentives based on patient satisfaction: Advocate for incentives that are based on providing appropriate care
Talking points for clinicians when discussing low back pain imaging with patients	Risk factor assessment can almost always identify patients who require imaging The prevalence of serious underlying conditions is low in patients without risk factors The natural history of acute low back pain is quite favorable, but patients require reevaluation if they are not better after about 1 month Routine imaging does not improve clinical outcomes but increases costs and may lead to potentially unnecessary invasive treatments, such as surgery Imaging abnormalities are extremely common, especially in older adults, but most are poorly correlated with symptoms In most cases, treatment plans do not change after imaging studies Back imaging is associated with radiation exposure, which can increase the risk for cancer in the case of lumbar radiography and computed tomography

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**Management**

If no significant improvement in symptoms is noted after 4-6 weeks of treatment, the clinician should reassess the treatment plan. To avoid misdiagnosis and unnecessary or inappropriate treatments, the physician may then want to refer the patient to a spine specialist.

1. Education and Assurance. Patients should be informed that a rapid recovery is likely, but also the likelihood of a recurrence of symptoms based on the natural history of low back pain. They should be told how to control their symptoms during this and future episodes and the lack of need for tests to evaluate acute low back pain symptoms during the initial period of symptoms. Psychosocial obstacles to recovery including depression, low job satisfaction, and substance abuse may exist and should be explored.
2. Pharmacologic therapy for most patients is acetaminophen or an NSAID. If no medical contraindications are present, a 2-4 week course of NSAIDs at anti-inflammatory levels is suggested. For relief of acute pain, short-term use of a narcotic may be considered. The need for prolonged narcotic therapy should prompt a reevaluation of the etiology of a patient's back pain and a consideration for addition of muscle relaxant with caution with use in patients over the age of 65. When a narcotic pain mediation is considered and the patient is at risk for addiction or has reach 30 days of use, the MedStar Policy on Narcotics Prescribing and Patient Contract should be consulted and potentially utilized.
3. Bed rest is recommended for patients with acute radiculopathy for 2-3 days in a supine position. Activity modification rather than bed rest is recommended for patients with nonneurogenic pain wherein the patient avoids painful arcs of motion and tasks that exacerbate the back pain. Exercise programs that facilitate weight loss, trunk strengthening and the stretching of musculotendinous structures appear to be most helpful in alleviating low back pain. Aggressive exercise programs have been shown to reduce the need for surgical intervention.
4. Physical therapy modalities including superficial heat, ultrasound (deep heat), cold packs and massage are useful for relieving symptoms in the acute phase after the onset of low back pain. There is no convincing evidence for lumbar traction or TENS. The role of corsets is controversial, but may be indicated for a short period in patients with osteoporotic compression fractures. A short course of spinal manipulation has potential value, however, further research is needed to clarify the subgroup of patients most likely to benefit.
5. Surgical evaluation is indicated in patients with worsening neurological deficits or intractable pain that is resistant to conservative treatment. Studies examining the outcomes of conservative and surgical treatment of back pain have revealed no clear advantage for surgery. Patients with suspected cauda equina lesions (characterized by saddle anesthesia, sensorimotor changes in the legs and urinary retention) require immediate surgical investigation.

**Summary of Recommendations**

Taken from Annals of Internal Medicine (retrieved from <http://annals.org/article.aspx?articleid=736814> doi:10.7326/0003-4819-147-7-200710020-00006)

**Recommendation 1:** Clinicians should conduct a focused history and physical examination to help place patients with low back pain into 1 of 3 broad categories: nonspecific low back pain, back pain potentially associated with radiculopathy or spinal stenosis, or back pain potentially associated with another specific spinal cause. The history should include assessment of psychosocial risk factors, which predict risk for chronic disabling back pain (strong recommendation, moderate-quality evidence).

**Recommendation 2:** Clinicians should not routinely obtain imaging or other diagnostic tests in patients with nonspecific low back pain (strong recommendation, moderate-quality evidence).

**Recommendation 3:** Clinicians should perform diagnostic imaging and testing for patients with low back pain when severe or progressive neurologic deficits are present or when serious underlying conditions are suspected on the basis of history and physical examination (strong recommendation, moderate-quality evidence).

**Recommendation 4:** Clinicians should evaluate patients with persistent low back pain and signs or symptoms of radiculopathy or spinal stenosis with magnetic resonance imaging (preferred) or computed tomography only if they are

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potential candidates for surgery or epidural steroid injection (for suspected radiculopathy) (strong recommendation, moderate-quality evidence).

**Recommendation 5:** Clinicians should provide patients with evidence-based information on low back pain with regard to their expected course, advise patients to remain active, and provide information about effective self-care options (strong recommendation, moderate-quality evidence).

**Recommendation 6:** For patients with low back pain, clinicians should consider the use of medications with proven benefits in conjunction with back care information and self-care. Clinicians should assess severity of baseline pain and functional deficits, potential benefits, risks, and relative lack of long-term efficacy and safety data before initiating therapy (strong recommendation, moderate-quality evidence). For most patients, first-line medication options are acetaminophen or nonsteroidal anti-inflammatory drugs.

**Recommendation 7:** For patients who do not improve with self-care options, clinicians should consider the addition of nonpharmacologic therapy with proven benefits for acute low back pain, spinal manipulation; for chronic or subacute low back pain, intensive interdisciplinary rehabilitation, exercise therapy, acupuncture, massage therapy, spinal manipulation, yoga, cognitive-behavioral therapy, or progressive relaxation (weak recommendation, moderate-quality evidence).

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**Related Policy**

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