



## Learning Objectives

After reading this *CME Bulletin*, you should be able to:

- Understand the family physician's role as advocate for his or her patients who have chronic low back pain.
- Conduct a focused, evidence-based medical history and physical examination to place patients who have chronic low back pain in appropriate diagnostic categories.
- Identify high-risk patients for whom poor outcomes can be predicted.
- Help patients choose appropriate treatment options.
- Determine when interventional or surgical therapy is warranted.
- Provide follow-up care for patients who have received interventional or surgical therapy.

## Caring for Patients Who Have Chronic Low Back Pain

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*Disclosure statements:* Dr. Herring returned a disclosure form indicating that he is on the Spine Scientific Advisory Board for UnitedHealth Group. His disclosure information was reviewed for potential conflict of interest and this was resolved prior to confirmation of his participation. Dr. O'Connor, Dr. Bagley and Ms. Watkins returned disclosure forms indicating that they have no financial interest in or affiliation with any commercial supporter or providers of any commercial services discussed in this educational material.

## Introduction

Low back pain (LBP), defined as pain that affects the lumbar segment of the spine, is the second most common symptomatic reason for physician office visits in the United States<sup>1</sup> and the most expensive cause of work-related disability.<sup>2</sup> In the United States, estimated lifetime prevalence of LBP is between 60 percent and 90 percent. A variety of factors may increase a person's risk for LBP, including obesity, male sex, cigarette smoking, poor physical fitness, age between 30 and 50 years, and history of depression or substance abuse.<sup>3,4</sup>

Most cases of LBP are acute and resolve within four to six weeks; however, up to one-third of all patients who visit a physician for acute LBP will develop chronic LBP, which is defined as pain that persists for more than three months.<sup>5</sup> Chronic LBP is the focus of this *Bulletin*. The diagnosis and management of acute LBP are discussed in another *Bulletin*, available at <http://www.aafp.org/cmebulletin/lbp>.

Only rarely can cases of chronic LBP be attributed to a specific cause, and severity of injury does not necessarily correlate with the patient's level of pain.<sup>4</sup> Chronic LBP can affect a patient's family, employment and social roles, which can lead to psychological distress that further influences pain.<sup>6</sup> Advocating for patients who have chronic LBP over the long term helps family physicians ensure their patients receive appropriate care and experience an improvement in function.

## Diagnosis

When a patient's LBP becomes chronic, a reevaluation for specific underlying conditions, neurologic deficits and/or psychosocial factors that may contribute to pain can be helpful. Labeling all patients with a specific anatomical diagnosis has not been shown to improve patient

outcomes; however, placing patients in one of the following three broad diagnostic categories can help guide pain management:

- Nonspecific LBP, or pain with no specific pathoanatomical diagnosis;
- Back pain potentially associated with radicular symptoms (pain or tingling in a spinal nerve distribution), radiculopathy (sensory loss, weakness, reflex change) or spinal stenosis (neurogenic claudication); or
- Back pain potentially associated with another specific spinal cause, which might include patients who have higher risk factors for cancer, infection or cauda equina syndrome.<sup>5</sup>

A specific pathoanatomical cause cannot be identified in more than 85 percent of patients who visit a primary care physician for LBP.<sup>5</sup> In approximately 5 percent to 15 percent of cases, a specific cause of LBP can be identified.

## History and Physical Exam

A focused history for chronic LBP includes revisiting the full history for acute LBP,<sup>6</sup> paying particular attention to the patient's functional status, the nature and duration of prior complaints, the nature and relative success of previous interventions, and any comorbidities.

The physical exam for acute LBP<sup>7</sup> can be repeated for patients who have chronic pain. Palpation, evaluation of range of motion of the hips and spine, a neurologic examination and selected special tests, such as the straight leg raise (SLR) test, can help place the patient into one of the three diagnostic categories. Evaluating a patient's core stability—using a pelvic bridge assessment<sup>8</sup> or a Trendelenburg's test, for example—and looking for evidence of general deconditioning can identify patients who may benefit from

physical therapy. A positive response to three or more of the nonorganic physical signs (Waddell's signs) listed in *Table 1* indicates need for further psychosocial evaluation.

**Psychosocial Screening**

Psychosocial factors can significantly affect pain and functional disability in patients who have LBP.<sup>9,10</sup> For most patients who have LBP, certain psychosocial factors, known as “yellow flags,” are better predictors of treatment outcomes than are physical factors<sup>6</sup>; these psychosocial factors may help explain why the condition becomes disabling in some patients.<sup>11</sup>

Chronic pain is characterized by vegetative signs similar to those found in depressive disorders. Fear of pain and fear of injury may be more disabling than pain itself. Both depression and disuse are associated with decreased pain threshold and tolerance<sup>11</sup>; therefore, identification of yellow flag findings (*Table 1*) may help family physicians choose appropriate therapies, avoid unnecessary interventions and improve outcomes.

Among patients who have chronic LBP, there is a strong relationship between the amount of time spent out of work and the likelihood of returning to work. For example, patients who are off work for six months due to disability have a 50 percent chance of ever returning to work. Among those who are off work for one year, the likelihood of ever returning to work is 25 percent, and most patients who miss two years of work never return to work.<sup>3</sup>

Prior to his or her exam, the patient can complete simple questionnaires to identify psychosocial factors shown to predict poor patient outcomes, such as self-reported disability, depression, fear avoidance, catastrophizing, widespread pain, low recovery expectations, alcohol or substance abuse, and history of litigation. In addition, the physician may inquire about psychosocial factors while taking the patient's history. Evaluative tools are available at: <http://www.aafp.org/cmebulletin/lbp/yellowflags>.

Further psychological assessment is also warranted by the presence of three or more Waddell's signs (*Table 1*).

*Case Presentation 1:* Todd is a 45-year-old surgeon who has a long history of LBP. He visits his family physician because he is finding it increasingly difficult to stand for long periods of time in the operating room and wants to discuss opioid analgesic therapy for his pain. Todd has had two discectomy surgeries and takes daily nonsteroidal anti-inflammatory drugs (NSAIDs) and gabapentin (Neurontin) for pain. Todd's family physician notices that he has a limited range of motion with an abnormal lumbosacral rhythm and no lumbar shift. There is marked withdrawal to light palpation of the lumbar paraspinals. Todd's neurologic examination is within normal limits, excluding an absent Achilles reflex on the right.

Reviewing Todd's answers to a brief psychosocial screening questionnaire for yellow flags, the family physician notes that Todd is not confident that his pain will improve and is concerned that, if it progresses, he won't be able to operate. Todd indicates he has been avoiding physical activity because he believes activity will exacerbate his pain.

*Fact or Fallacy:* Because Todd has yellow flags, he is probably consciously exaggerating his pain.

*Fallacy.* The presence of any of the yellow flags identified in *Table 1*, including the presence of three or more Waddell's signs, is an indication of a poor prognosis, not necessarily of malingering.<sup>12</sup> Todd's family physician keeps these yellow flag findings in mind when considering management options.

**Diagnostic Imaging**

Because imaging studies are specific for structural abnormalities rather than pain,<sup>13</sup> initial diagnostic imaging is not routinely recommended in patients who have nonspecific LBP. Immediate imaging and further testing are warranted when serious underlying conditions are suspected or in cases of possible vertebral compression fracture. In these cases, delays in diagnosis and treatment may produce poorer outcomes.<sup>5,14</sup> *Table 2* summarizes

“red flag” findings that indicate the need for imaging and/or immediate referral. A complete table of red flag findings and indications for further evaluation is available at <http://www.aafp.org/cmebulletin/lbp>.

The majority of patients who have chronic back and leg pain will have undergone diagnostic imaging in the past. Current diagnostic imaging is strongly recommended for patients who have chronic back and leg pain (radicular symptoms or radiculopathy) and are potential candidates for interventional or surgical therapy.<sup>5</sup> Magnetic resonance imaging (MRI) is most often the test of choice<sup>13</sup>; however, it is prudent to discuss advanced imaging with an appropriate consultant.

**Management**

The majority of patients who have chronic nonspecific LBP and some of those who have chronic LBP due to radiculopathy or spinal stenosis do not become pain free with treatment; therefore, management goals focus on reducing pain and improving function. Most cases of chronic nonspecific LBP can be managed with nonsurgical therapies.<sup>15,16</sup> Management of adult patients who have chronic LBP is summarized in *Figure 1*.

Patients often expect interventions, especially invasive ones, to allow them to return to work, stop

**Table 1. Yellow Flag Findings in the Medical History and Physical Examination**

<p><b>Belief Systems</b></p> <ul style="list-style-type: none"> <li>■ Fear avoidance behavior (avoidance of activities caused by fear of increased pain)</li> <li>■ Expectation of increased pain with return to work or normal activity</li> <li>■ Catastrophizing (excessive focus on pain and feeling of helplessness to control pain)</li> <li>■ Passive attitude to rehabilitation</li> </ul>	<p><b>Comorbidities</b></p> <ul style="list-style-type: none"> <li>■ Impaired sleep because of pain</li> <li>■ History of other disabling injuries or conditions</li> </ul>
<p><b>Affective Factors</b></p> <ul style="list-style-type: none"> <li>■ Poor work history or unsupportive work environment</li> <li>■ Poor compliance with exercise</li> <li>■ Withdrawal from activities of daily living</li> <li>■ History of substance abuse</li> <li>■ Depression</li> <li>■ Irritability</li> <li>■ Anxiety</li> <li>■ Disinterest in social activity</li> <li>■ History of physical or sexual abuse</li> </ul>	<p><b>Waddell's Signs (Nonorganic Signs of LBP)</b></p> <ul style="list-style-type: none"> <li>■ Pain on simulated tests for axial loading</li> <li>■ Nonanatomical tenderness/superficial tenderness</li> <li>■ Overreaction during physical examination</li> <li>■ Straight leg raise (SLR) that improves with distraction</li> <li>■ Regional weakness or sensory changes</li> </ul>

*Information from references A and B.*

*Evaluative tools available at: <http://www.aafp.org/cmebulletin/lbp/yellowflags>.*

**Table 2. Summary of Red Flag Findings**

Age over 50	Significant muscle weakness (muscle grading 3/5 or less) on presentation*
History of trauma	
History of cancer	Progressive muscle weakness (e.g., muscle grading from 4/5 to 3/5)
Fever	
Metabolic disorders	Significant sensory loss in a radicular distribution
Recent infection	
History of osteoporosis	Bladder or bowel dysfunction*
Use of corticosteroids	Saddle anesthesia*
Atherosclerotic disease	Intravenous drug use
Unrelenting night pain	Failure to improve with therapy
Unexplained weight loss	

\*Presence of any of these red flags (muscle weakness is usually bilateral) may indicate the cauda equina syndrome, which is rare, is always an emergency and calls for immediate surgical evaluation.

Information from references C and D.

taking narcotic drugs and function at a high level.<sup>10</sup> When these expectations aren't met, patients are understandably dissatisfied. Participation and responsibility on the part of the patient are important for successful outcomes.<sup>13</sup> Managing patients' expectations and educating them about reasonable management goals can be an effective way to decrease their apprehension, promote quicker recovery and reduce the unnecessary use of health care resources.<sup>5,6,14</sup>

In general, returning to activity is more effective than bed rest for patients who have LBP,<sup>13</sup> though activity may need to be modified initially. However, for patients who have severe pain, brief periods of bed rest may be advisable when used as a means to return to normal activity. Thermal modalities (heat/cold) may be beneficial self-care tactics. There is insufficient evidence to support the use of lumbar corsets or support belts to prevent or reduce LBP.<sup>17</sup>

**Pharmacologic Therapy**

Selecting pharmacologic agents to manage chronic nonspecific LBP is challenging because of the complexity of pain, lack of a specific pathoanatomical diagnosis, comorbidities and the unique benefit versus risk profiles of various medications. Understanding the basic mechanisms of chronic pain can assist the family physician in the initial selection of appropriate pharmacotherapy.

Three principle pain types are represented in patients who have chronic LBP: nociceptive, neuropathic and central. Nociceptive pain involves traditional pain pathways at the tissue and nerve cell levels with local sensitization mechanisms that account for pain generation (e.g., facet arthropathy). Neuropathic pain is commonly initiated by peripheral tissue or nerve injury, though a specific injury is not required for persistent pain to occur (e.g., persistent postoperative radicular pain). Patients who have neuropathic pain often complain of allodynia and/or paresthesias. Central pain occurs when abnormally functioning neurons exist within and throughout the central nervous system (e.g., pain after multiple failed back surgeries). Because there is pathologically functioning anatomy, central pain is typically nondermatomal.

Nociceptive pain typically responds well to NSAIDs and opiates. Neuropathic pain may respond to antidepressants, anticonvulsants or opioids. Central pain can be more complex to manage, requiring a combination strategy of neuropathic pain treatment, as well as multidisciplinary assistance.

In Case Presentation 1, Todd wants to discuss opioid analgesic therapy as a management option.

*Fact or Fallacy:* Opioids can be appropriate for pain relief in patients who have severe, chronic LBP.

*Fact.* Opioids may be effective for reducing pain in selected patients<sup>18</sup> in both the short and long term when used as part of a comprehensive plan that addresses both functional disability and the patient's beliefs about pain.

The majority of patients who have chronic LBP self-medicate with acetaminophen (Tylenol) or ibuprofen (Motrin, Advil), and most are prescribed at least one medication to control pain and facilitate activities of daily living. Various medications have been shown to offer moderate short-term benefits for patients who have LBP, though head-to-head trials within drug classes are lacking. Weighing the potential benefit, potential harm and cost of medication options, and considering the patient's risk factors for complications, severity of pain and concomitant medication use can help patients and family physicians choose appropriate pharmacologic therapy.<sup>19</sup>

Good evidence supports the use of NSAIDs and skeletal muscle relaxants for the management of acute LBP,<sup>19</sup> but these agents may be less effective when used as monotherapy in patients who have chronic LBP. NSAIDs, which have both analgesic and anti-inflammatory properties, are commonly used for patients who have mild to moderate pain and inflammation; however, these agents can cause gastrointestinal (GI), renal and hepatic side effects. Selective cyclooxygenase-2 (COX-2) inhibitors have fewer GI effects than certain nonselective NSAIDs and are equally effective analgesics.<sup>13,20</sup> However, recent evidence suggests that selective COX-2 inhibitors may increase a patient's risk for cardiovascular events. More studies are necessary to determine whether the findings for selective COX-2 inhibitors are also relevant for nonselective NSAIDs. Potential benefits, side effects and risks for each patient must be carefully evaluated. The safest strategy is to employ NSAIDs and COX-2 inhibitors in the lowest possible dose, for as short a time as possible.<sup>21</sup>

Although a short course of treatment with a benzodiazepine can be helpful in cases of severe pain and muscle spasm associated with acute LBP,<sup>19</sup> these medications can produce significant physical and psychological dependence, and their use to manage pain, muscle spasm or sleep disturbance among patients who have chronic LBP is discouraged.<sup>22</sup> Anticonvulsants, such as gabapentin and topiramate (Topamax), can reduce neuropathic pain<sup>13</sup> and are a better choice for patients who have difficulty sleeping. Neither benzodiazepines nor anticonvulsants are approved by the U.S. Food and Drug Administration (FDA) for the treatment of LBP. Tricyclic antidepressants can also be used to manage sleep disturbance in patients who have chronic LBP.

Depression is a common comorbid condition in patients who have chronic LBP.<sup>24</sup> Antidepressants have been shown to be effective for pain relief in patients who are depressed; however, evidence regarding their use in patients who are not depressed is conflicting,<sup>2</sup> and this use is not approved by the FDA. There is evidence for the effectiveness of tricyclic antidepressants and limited evidence for the effectiveness of selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) in patients who have neuropathic or centrally mediated pain.<sup>23</sup>

No published studies have shown systemic corticosteroids to be effective for pain relief for patients who have acute or chronic LBP with or without sciatica,<sup>5,19</sup> but anecdotal case reports suggest they may be helpful for some patients. Limited evidence



supports the use of herbal remedies, including devil's claw, willow bark and capsicum, for short-term relief of acute episodes of chronic nonspecific LBP.<sup>5</sup>

Opioid analgesics are safe for the majority of patients for whom they are prescribed, and most patients are able to adapt to side effects, such as sedation, nausea, cognitive impairment, constipation, itching, sweating and myoclonic jerks.<sup>18</sup> Evidence supports the use of opioids for short-term pain relief; their effectiveness in long-term management is less clear.<sup>1</sup> Long-term opioid therapy carries an inherent risk for addiction or abuse,<sup>5</sup> and these agents do not treat the pathologic condition.<sup>13</sup> The following characteristics describe the subset of patients who may benefit from long-term opioid therapy:

- Well-established patient
- Well-defined structural or neuropathic pathology
- Pain and impairment are consistent with pathology
- No significant psychopathology
- No history of addictive disease
- No serious medical conditions that might interfere with therapy
- Good response to a therapeutic trial.<sup>18</sup>

It may be appropriate to seek consultation with a pain management specialist before instituting long-term opioid therapy.

**Nonpharmacologic Therapy**

A short course (three to four sessions) of passive therapy can be beneficial when used as a catalyst for a self-directed, active exercise program. There is some evidence that acupuncture may relieve pain, increase activity and improve sleep in patients who have chronic LBP.<sup>17,24</sup> Therapeutic massage and spinal manipulation may reduce pain and improve function when used as part of a comprehensive treatment plan.<sup>13,24</sup> However, prolonged passive treatments of any type are rarely beneficial and can create dependency in patients who have chronic pain.

Various types of active nonpharmacologic therapy—such as physical therapy, exercise, cognitive behavioral therapy (CBT), and multi- or interdisciplinary rehabilitation—can provide relief for patients who have chronic LBP.

*Physical therapy and exercise:* Intensive therapeutic exercise has been shown to reduce pain and improve function in patients who have chronic nonspecific LBP.<sup>2,17,25</sup> Exercise programs based on completing a defined number of repetitions have been shown to increase spinal range of motion, flexibility, trunk strength and endurance faster than those guided by the patient's experience of pain.<sup>6</sup> One study showed that patients who had spinal stenosis could benefit from physical therapy programs and that patients participating in a program that incorporated physical therapy and exercise experienced even better outcomes.<sup>26</sup> Core stabilization exercises, commonly thought to improve intersegmental stability in the lumbar spine, can improve function when included as part of a comprehensive treatment plan for chronic LBP. However, evidence from multiple studies indicates that they provide no additional benefit when compared to other active exercise programs.<sup>27</sup>

*Cognitive behavioral therapy (CBT):* There is evidence that CBT interventions, designed to change patients' assumptions and behaviors to promote adjustment to chronic pain,<sup>24</sup> may be beneficial for patients whose responses to psychosocial screening indicate fear avoidance and depression. Interventions include counseling, stress management, relaxation therapy and psychological crisis management.<sup>13</sup>

*Multi- and interdisciplinary rehabilitation:* For patients who have significant disability, multi- and interdisciplinary therapy is more effective than a single intervention. There is strong evidence that intensive multidisciplinary rehabilitation that combines medical, psychological and rehabilitative components, and functional restoration programs with a CBT component are effective for improving physical function and moderate evidence that they are effective for improving pain in patients who have chronic LBP.<sup>10,17</sup> Intensive interdisciplinary rehabilitation, involving more than one therapeutic component, is more effective than rehabilitation that involves a single treatment component.<sup>17</sup>

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*Case Presentation 2:* Terri is a 65-year-old retired pilot and active golfer. She has a history of LBP but has noticed over the past several years that she can no longer walk the golf course because of fatigue in her lower extremities and pain that radiates into her buttocks and upper hamstrings. Her pain is somewhat relieved by rest and bending, and a COX-2 inhibitor provides minimal relief. Terri has limited range of motion, an abnormal lumbosacral rhythm, local tenderness over the paraspinal muscles and no lumbar shift. She has normal neurologic and vascular examinations.

*Fact or Fallacy:* Patients who have spinal stenosis should be referred for surgery immediately because nonsurgical programs rarely promote improvement.

*Fallacy:* Family physicians should feel comfortable with the initial management of patients who have spinal stenosis, who can benefit from nonsurgical interventions such as physical therapy, exercise programs<sup>26</sup> and injections. Surgical referral is appropriate for patients who have significant loss of function and don't respond to nonsurgical care, as well as for those who have progressive signs or symptoms.

### ***Interventional or Surgical Therapy***

Interventional or surgical therapy may be appropriate for patients who have chronic LBP and a significant loss of function that does not respond to first-line therapies, particularly for those who have radicular symptoms, radiculopathy or spinal stenosis. Interventional and surgical therapies for chronic pain are most effective when combined with oral medication and nonpharmacologic management. When referral is required, a specialist who supports comprehensive care is preferred.

*Injections:* A series of one to three fluoroscopically guided epidural steroid injections may benefit patients who have radicular pain or painful radiculopathy that has not resolved or improved after four to six weeks of conservative therapy. Routine administration of a series of three epidural steroid injections is not necessary; the number of injections depends on the patient's needs and should be evaluated on a case-by-case basis. Epidural steroid injections are most effective when used as part of a complete treatment plan.<sup>13</sup>

While facet joint pain has been reported to affect up to 15 percent of all patients who have LBP<sup>13</sup> and the prevalence of sacroiliac joint pain among patients who have chronic LBP is thought to be 13 percent to 30 percent,<sup>13</sup> evidence to support the use of facet joint injections, facet neurotomy and sacroiliac joint injections is limited. These procedures should be used sparingly and as part of a complete treatment plan.

Soft tissue injections, also called "trigger point" injections, may be somewhat useful in select cases, although they too should be used sparingly as an adjunct to a complete treatment plan. However, there is a lack of well-controlled, randomized studies of their use in chronic LBP.<sup>13</sup> As with all spinal injections, trigger point injections carry a risk for damage to nerves and other tissues, infection and hemorrhage.<sup>6</sup>

*Surgery:* Unless surgery is emergent, the North American Spine Society (NASS) generally recommends referral for surgery only for patients who fail a minimum two- to four-month trial of nonsurgical therapy and only in cases in which a patient's physical examination and symptoms are consistent with objective findings of structural defects.<sup>13</sup>

Suppose that in Case Presentation 2, Terri's spinal stenosis symptoms have not resolved following a reasonable course of nonsurgical therapy.

*Fact or Fallacy:* Terri's physician should consider referring her for surgical evaluation.

*Fact.* Terri's diagnosis of spinal stenosis makes her a good candidate for surgery.

Spinal fusion surgery is the most common surgical treatment for chronic nonspecific axial LBP, though such intervention is controversial. In the United States, fusion surgery rates increased 220 percent from 1990 to 2001.<sup>28</sup> However, patient outcomes did not improve and are unlikely to meet patient expectations.<sup>10</sup> In fact, one study showed that a higher proportion of spinal fusion procedures and the introduction of improved surgical technology between 1993 and 1997 did not reduce spine reoperation rates.<sup>28</sup>

NASS recommends considering spinal fusion for patients who fail a minimum six-month course of nonsurgical care<sup>13</sup> and warns that there is incomplete evidence to judge the scientific validity of spinal fusion for LBP, except in cases of spondylolisthesis, certain fractures and tumors, and documented segmental instability. Fusion surgery outcomes are less favorable in patients who have greater than single disk involvement<sup>13</sup> and are no more favorable than aggressive nonsurgical treatment in the presence of psychosocial factors that have been shown to predict poorer outcomes.<sup>10</sup>

Development of artificial disk replacement procedures is ongoing.<sup>13</sup> While some initial positive results have been reported, there is insufficient evidence to recommend their use.

Poor spinal surgery outcomes, known as Failed Back Surgery Syndrome (FBSS),<sup>29</sup> can occur for one or more reasons, including inappropriate patient selection, unrecognized or incomplete diagnosis, incomplete surgical treatment, and simple failure to achieve the desired surgical outcome. Patients who have LBP that does not resolve following reasonable nonsurgical and surgical treatments often require ongoing care to maximize function.<sup>13</sup>

### **Follow-up Care**

To maintain functional gains and pain reduction, a patient who is referred for multidisciplinary treatment needs a physician who can act as his or her advocate over the long term. Communication between the family physician and any specialists to whom a patient has been referred is critical to ensure that follow-up issues, such as medication management, disability and return-to-work issues, are managed effectively. Scheduling post-intervention follow-up visits allows for continued monitoring of the patient's progress toward agreed-upon management goals.

**Practice recommendation:** For patients who have low back pain, physicians should consider the use of medications with proven benefits in conjunction with back care information and self-care. Physicians 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.



**Practice recommendation:** Physicians should conduct a focused history and physical examination to help place patients who have low back pain into one of three broad categories: nonspecific low back pain; back pain potentially associated with radicular pain, 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.

**Available at:** <http://www.annals.org/cgi/content/full/147/7/478>

**Strength of evidence:** Strong recommendation, moderate-quality evidence

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*CME Bulletin* is published by the American Academy of Family Physicians, 11400 Tomahawk Creek Parkway, Leawood, Kansas 66211-2672 [www.aafp.org](http://www.aafp.org)

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## Self-Assessment Quiz

- Which one of the following statements about diagnostic imaging is true?
  - "Yellow flag" findings indicate the need for diagnostic imaging and/or immediate referral.
  - Diagnostic imaging is useful because it is specific for pain.
  - Diagnostic imaging is strongly recommended for patients who have chronic back and leg pain and are candidates for interventional or surgical therapy.
  - Immediate imaging and further testing are warranted for all patients who have nonspecific low back pain.
- Which one of the following statements about chronic LBP is true?
  - Only two principle pain types are represented in patients who have chronic LBP: nociceptive and central.
  - Identification of yellow flag findings in a patient who has chronic LBP can help his or her physician choose appropriate therapies and improve outcomes.
  - The majority of patients who have chronic nonspecific LBP eventually become pain free with treatment.
  - In most cases of chronic LBP, an in-depth examination that includes a detailed medical history, a physical evaluation and diagnostic imaging will enable the physician to pinpoint a specific pathoanatomical cause of the pain.

The AAFP designates this educational activity for a maximum of 1.0 AMA PRA Category 1 Credit(s)<sup>™</sup>. Physicians should only claim credit commensurate with the extent of their participation in the activity.

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- Which one of the following statements about therapy for chronic LBP is true?
  - Good evidence supports the effectiveness of skeletal muscle relaxants as monotherapy in patients who have chronic LBP.
  - Because it carries a risk for addiction, long-term opioid therapy is never appropriate for a patient who has chronic LBP.
  - Strong evidence indicates that functional restoration programs with a cognitive behavioral therapy (CBT) component are effective for patients who have chronic LBP.
  - Benzodiazepines are a good first-line option for managing pain or muscle spasm in patients who have chronic LBP.
- Which one of the following types of injection has been shown to be beneficial for patients who have chronic radicular LBP?
  - Facet joint injections
  - Facet neurotomy
  - Epidural steroid injections
  - Soft tissue injections
- Placing patients who have LBP into one of three broad diagnostic categories can help guide pain management.
  - True
  - False

Answers: 1. C, 2. B, 3. C, 4. C, 5. A

Vol. 7/No. 3 • March 2008 • Caring for Patients Who Have Chronic Low Back Pain • Web site: <http://www.aafp.org/cmebulletin>

## CME Bulletin Evaluation / Self-Assessment Quiz Answer Sheet

Note: On this scale, 5 is the highest rating, 1 is the lowest.

Relevance of topic to my practice	5	4	3	2	1
Currency of clinical information	5	4	3	2	1
Usefulness of clinical information	5	4	3	2	1
Overall rating	5	4	3	2	1

What changes will you make to your practice based on this information?

### Directions for Obtaining CME Credit Online (AAFP members only):

Log on to the AAFP Web site at <http://www.aafp.org/cmebulletin>. Follow the online instructions to complete the quiz and evaluation, and indicate the credit you are reporting. Your credit will be posted automatically to your CME record.

### Directions for Obtaining CME Credit by Mail or Fax:

• AAFP Members—After completing the quiz and evaluation, please indicate the credit you are reporting in the space below (up to 2.0 Prescribed credits). The AAFP will enter these credits into your CME record for you.

\_\_\_\_\_ credits reported/Fax: (913) 906-6092

• Nonmembers wishing to claim CME credit for this activity may only do so by mail or fax. Please check the box below if you require documentation. Follow the directions above and return the Answer Sheet to the AAFP.

### Answers (Please circle one):

- |            |            |
|------------|------------|
| 1. A B C D | 4. A B C D |
| 2. A B C D | 5. A B     |
| 3. A B C D |            |

### Nonmembers MUST provide name and address to receive credit.

Request letter of documentation for activity completion (nonmembers)

AAFP Member ID# (Please Print)

Name

Address

City, State, Zip

Signature

Specialty

Date

70-03012008-001  
70-01012009-038  
70-01012010-005

Please retain a photo copy of this *CME Bulletin* Evaluation/Self-Assessment Quiz Answer Sheet as proof of participation in this activity.