

# Acute and Chronic Low Back Pain



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## KEYWORDS

- Acute low back pain • Chronic low back pain • Patient education
- Treatment protocols

## KEY POINTS

- Numerous factors put patients at risk for the development of chronic back pain, including age, educational status, psychosocial factors, occupational factors, and obesity.
- Evaluation of patients with back pain includes completing an appropriate history (including red-flag symptoms), performing a comprehensive physical examination, and, in some scenarios, obtaining imaging in the form of plain radiographs and magnetic resonance imaging.
- Treatment of an acute episode of back pain includes relative rest, activity modification, nonsteroidal anti-inflammatories, and physical therapy.
- Patient education is also imperative, as these patients are at risk for further episodes of back pain in the future.
- Chronic back pain (>6 months' duration) develops in a small percentage of patients. Clinicians' ability to diagnose the exact pathologic source of these symptoms is severely limited, making a cure unlikely. Treatment of these patients should be supportive, the goal being to improve pain and function rather than to "cure" the patient's condition.

## MAGNITUDE OF THE PROBLEM

Low back pain is an extremely common problem that affects at least 80% of all individuals at some point in their lifetime, and is the fifth most common reason for all physician visits in the United States.<sup>1–3</sup> Approximately 1 in 4 adults in the United States reported having low back pain that lasted at least 24 hours within the previous 3 months, and 7.6% reported at least 1 episode of severe acute low back pain within a 1-year period.<sup>4,5</sup> In addition, low back pain is a leading cause of activity limitation and work absence (second only to upper respiratory conditions) throughout much of the world, resulting in a vast economic burden on individuals, families, communities, industry, and governments.<sup>6–9</sup> In 1998, total incremental direct health care costs attributable to low back pain in the United States were estimated at \$26.3 billion.<sup>10</sup>

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Furthermore, indirect costs related to days lost from work are substantial, with nearly 2% of the work force of the United States compensated for back injuries each year.<sup>11</sup>

## RISK AND PROGNOSTIC FACTORS

Factors that play a role in the development of back pain include age, educational status, psychosocial factors, job satisfaction, occupational factors, and obesity. Age is one of the most common factors in the development of low back pain, with most studies finding the highest incidence in the third decade of life and overall prevalence increasing until age 60 to 65 years. However, there is recent evidence that prevalence continues to increase with age with more severe forms of back pain.<sup>1,12</sup> Other studies show that back pain in the adolescent population has become increasingly common.<sup>13</sup>

An increased prevalence of low back pain is associated with patients of low educational status.<sup>1</sup> Lower educational levels are a strong predictor of more prolonged episode duration and poorer outcomes.<sup>14</sup> Psychosocial factors such as stress, anxiety, depression, and certain types of pain behavior are associated with greater rates of low back pain. The presence of these conditions also increases the risk that a patient's episode of back pain will last long enough to be considered chronic.<sup>1,15</sup> Likewise, patients who are dissatisfied with their work situation are at risk of having an acute episode of back pain transition to a chronic situation.<sup>16</sup> Occupational factors, specifically the physical demands of work, are also associated with an increased prevalence of low back pain. Matsui and colleagues<sup>17</sup> found the point prevalence of low back pain to be 39% in manual workers, whereas it was found in only 18.3% of those with sedentary occupations. A more recent systematic review found manual handling, bending, twisting, and whole-body vibration to be risk factors for low back pain.<sup>18</sup> Lastly, obesity, or a body mass index of more than 30 kg/m<sup>2</sup>, has been connected with an increased incidence of low back pain.<sup>1,19</sup>

## PRESENTATION

For most patients, an episode of acute low back pain is a self-limited condition that does not require any active medical treatment.<sup>5</sup> Among those who do seek medical care, their symptoms and disability improve rapidly and most are able to return to work and normal activities within the first month.<sup>20</sup> Up to 1 in 3 of these patients, however, report persistent back pain of at least moderate intensity 1 year after an acute episode, and 1 in 5 reports substantial limitations in activity.<sup>21</sup>

Initial evaluation of patients with back pain should begin with a focused history. Key aspects of this should include: duration of symptoms; description of the pain (location, severity, timing, radiation, and so forth); presence of neurologic symptoms (weakness or alterations in sensation or pain) or changes in bowel and bladder function; evidence of any recent or current infection (fever, chills, sweats, and so forth); previous treatments; and pertinent medical history (cancer, infection, osteoporosis, fractures, endocrine disorders). Key facets of the history are listed in **Box 1**. Some historical facts, referred to by many as red-flag symptoms, may be a harbinger of a dangerous clinical situation (**Box 2**). When present, these symptoms should raise the level of suspicion of the provider that this patient is presenting with more than a simple, benign episode of acute low back pain. In patients presenting with 1 or more of these red flags, there is a 10% chance that they have a serious underlying source of their symptoms of low back pain. These patients should have plain radiographs taken of their lumbar spine to rule out serious structural abnormality. In a patient in whom an infectious cause is considered, plain radiographs may be normal early in the disease process. A white blood cell

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