

Nonspecific Low Back Pain and Return to Work

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As many as 90 percent of persons with occupational nonspecific low back pain are able to return to work in a relatively short period of time. As long as no “red flags” exist, the patient should be encouraged to remain as active as possible, minimize bed rest, use ice or heat compresses, take anti-inflammatory or analgesic medications if desired, participate in home exercises, and return to work as soon as possible. Medical and surgical intervention should be minimized when abnormalities on physical examination are lacking and the patient is having difficulty returning to work after four to six weeks. Personal and occupational psychosocial factors should be addressed thoroughly, and a multidisciplinary rehabilitation program should be strongly considered to prevent delayed recovery and chronic disability. Patient advocacy should include preventing unnecessary and ineffective medical and surgical interventions, prolonged work loss, joblessness, and chronic disability. (*Am Fam Physician* 2007;76:1497-1502, 1504. Copyright © 2007 American Academy of Family Physicians.)

► **Patient information:**
A handout on occupational low back pain, written by the authors of this article, is available on page 1504.



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The management of low back pain and determining the patient’s safe return to work are common issues encountered by family physicians. Challenges include unfamiliarity with the patient’s job demands, complex workers’ compensation systems, and a vast array of diagnostic and therapeutic interventions with questionable effectiveness and value.

The objectives of this article are to encourage conservative care in patients with occupational nonspecific low back pain (i.e., pain occurring predominantly in the lower back without neurologic involvement or serious pathology¹), to promote early return to work, and to prevent prolonged disability.

Epidemiology

According to the U.S. Bureau of Labor Statistics, there were 4.2 million nonfatal occupational injuries and illnesses reported by private industries in 2005.² Sprains and strains accounted for approximately 42 percent of injuries and illnesses requiring time away from work.² The body part most often involved in these injuries was the trunk, and 63 percent of injuries to the trunk involved the spine.²

Cost

Workers’ compensation systems cover 127 million U.S. workers.³ The estimated

annual cost for all occupational injuries and deaths is \$128 billion to \$155 billion,⁴ and the estimated annual cost for back pain is \$20 billion to \$50 billion.⁵ Lumbar injuries result in approximately 149 million lost work days per year; about two thirds of these days are caused by occupational injuries.⁶ The annual productivity losses resulting from lost work days are estimated to be \$28 billion.⁶

From 1991 to 2001, individual indemnity and medical costs increased by 39 percent and 62 percent, respectively, despite significant decreases in the rates of injuries and illnesses and in the number of lost work days.⁷ In addition, patients covered by workers’ compensation plans have more office visits, hospital admissions, treating physicians, diagnostic referrals, and therapeutic procedures, and longer duration of care compared with patients covered by other forms of insurance.⁷

Factors that may contribute to these rising costs include lack of managed care involvement, patients’ freedom to choose their treating physician, lack of deductibles and copayments, increased cost of prescription drugs, and an increased number of persons who continue to work into their retirement years. California’s workers’ compensation data from 1993 to 2000 indicated that indemnity costs increased eightfold when there was legal involvement.⁷

SORT: KEY RECOMMENDATIONS FOR PRACTICE

<i>Clinical recommendation</i>	<i>Evidence rating</i>	<i>References</i>
Antidepressants and nonsteroidal anti-inflammatory drugs can reduce pain severity in patients with low back pain.	A	21
Physicians should address personal and occupational psychosocial barriers in patients who are having difficulty returning to work.	A	1, 8, 11
Multidisciplinary programs can help patients with chronic low back pain prepare to return to work, decrease pain, and improve function.	A	1, 8, 11, 22
To minimize complications and prevent prolonged work loss, patients with low back pain should be encouraged to remain active and to support conservative care.	A	1, 8, 11, 22
Physicians should communicate with the patient and his or her employer, insurance companies, and other health care providers to facilitate return to work.	C	1, 8, 11
If indicated, temporary modified duty should be requested to promote early return to work.	B	1, 8, 11, 22

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, see page 1435 or <http://www.aafp.org/afpsort.xml>.

Prognosis

Most patients with low back pain recover within four to six weeks,⁸ and 80 to 90 percent improve within three months regardless of treatment modality.^{5,9} However, the 10 percent of patients who develop chronic low back pain (i.e., pain lasting more than three months) account for 65 to 85 percent of the costs.^{5,6} After an episode of non-specific low back pain, 20 to 44 percent of patients have a recurrence within one year, and up to 85 percent have a recurrence during their lifetime.⁸⁻¹¹

Risk Factors

The cause of low back pain cannot be clearly identified in 90 percent of patients.^{9,10} Some physical demands, including manual lifting, bending, twisting, and whole body vibration, are associated with an increased likelihood of low back pain.¹¹ It should be noted that association is not equivalent to causation. However, there is strong evidence that personal and occupational psychosocial variables play a more important role than spinal pathology or the physical demands of the job.¹¹ The strongest predictor of future low back pain is a history of such pain.¹¹

RISK FACTORS FOR DELAYED RETURN TO WORK

Psychosocial variables, both personal and occupational, are strong risk factors for work absenteeism and chronic disability (Table 1).^{8-10,12} It is unclear which factors are most important.^{9,10,13} Lifting requirements at work and the unavailability of modified duty can delay early return to work.^{10,14}

Patients older than 50 years are more likely to have prolonged, severe low back pain and

Table 1. Psychosocial Risk Factors Associated with Work Absenteeism and Chronic Disability

- Depression
- Education level
- Excessive pain level
- Fear avoidance
- Job dissatisfaction
- Legal representation
- Somatization disorder
- Unemployment
- Workers' compensation case

Information from references 8 through 10, and 12.

are less likely to respond to treatment. This population is also at higher risk for chronic disability.^{11,12}

Assessment of Patients with Occupational Back Pain

The quality, anatomic location, severity, duration, and frequency of symptoms such as pain, numbness, paresthesias, and weakness should be documented. Symptom onset and duration, factors that make symptoms better or worse, and any interference with activities of daily living should be described. The patient's job title and description of duties are also relevant, as is current work status (i.e., with or without restrictions) and determining whether the patient has sought care elsewhere.

The patient's medical history is important and should include patient's age, comorbidities, medication use, and history of diagnostic testing and response to treatment for low back pain.^{1,8} "Red flags" should be kept in mind when determining the need for further diagnostic studies (*Table 2*).^{1,8} The physical examination should be thoroughly documented to rule out serious spinal pathology.^{1,11}

Imaging studies have limited value in the assessment of patients with nonspecific low back pain. There is strong clinical evidence that radiography and magnetic resonance imaging (MRI) findings do not correlate with clinical symptoms of nonspecific low back pain or a patient's ability to work.^{9,11,15} MRI and other imaging studies should be reserved for patients with radicular symptoms who fail conservative care and those with worsening neurologic findings, objective weakness, uncontrolled pain, or suspected cauda equina syndrome.⁸

Treatment of Chronic Low Back Pain

Treatments that may improve outcomes in patients with chronic low back pain include analgesic and anti-inflammatory medications, and massage in combination with exercise and patient education.^{9,16} Treatments for which evidence of effectiveness is unclear include acupuncture, epidural steroid injections, muscle relaxants, spinal manipulation,

Table 2. Signs and Symptoms of Potentially Serious Etiology in Patients with Low Back Pain

Drug or alcohol abuse
Fever
Genitourinary difficulties
History of malignancy
Immunocompromised status
Long history of steroid usage
Lower extremity weakness or numbness
Major trauma
Osteoporosis
Pain at rest
Suspected ankylosis spondylitis
Worsening neurologic symptoms

Information from references 1 and 8.

transcutaneous electrical nerve stimulation, trigger point injections, heat therapy, and therapeutic ultrasound.^{9,17-20} Antidepressants reduce pain intensity, but do not improve the ability to perform activities of daily living.²¹

Electromyography biofeedback, short-wave diathermy, botulinum toxin type A (Botox) injections, facet injections, prolotherapy, tractions, and lumbar braces and supports are not beneficial and are not recommended.^{1,9,22}

Bed rest should be limited to less than two days.^{8,11} Patients should be encouraged to remain as active as possible.^{1,8,11} Exercise conducted under the supervision of a therapist three to five times per week is highly recommended as first-line therapy in the treatment of low back pain. However, there is conflicting evidence as to which type of exercise therapy is most effective.^{8,22} As treatment progresses, passive modalities should decrease and active modalities should increase, and the number of exercise sessions per week should be tapered. Home exercises should be initiated with the first therapy session and regularly assessed for compliance. The patient's status in therapy should be reevaluated after the first six visits (i.e., in about two weeks). If there is no progression, factors that inhibit improvement of

pain and activities of daily living should be addressed, and multidisciplinary rehabilitation should be considered.^{22,23}

Because of limited or conflicting evidence, surgical procedures such as intradiskal electrothermal therapy, spinal decompression, nerve root decompression, or lumbar fusion cannot be recommended for patients with chronic nonspecific low back pain.^{1,22}

Helping the Patient Return to Work

Patients with nonspecific low back pain should be able to work when they are symptomatic. Complete pain relief often does

not occur until after resumption of normal activities.⁸ It is not necessary for the patient to wait until all pain is eliminated before returning to work.^{8,11} Remaining at work or returning early does not increase the risk of reinjury and can help decrease missed work days, chronic pain, and disability.^{8,11,22}

If work absences occur, they should be brief.^{1,8,11} Sickness-related absence without clear indications should be avoided to prevent chronicity.¹ The median disability duration for the diagnosis of lumbago is

seven days (see online Table A for median disability duration for common low back pain diagnoses).²³

Table 3 lists recommendations for duration of modified duty for patients with

lumbago (see online Table B for return-to-work recommendations for additional diagnoses).²³ Initial passive treatments should progress within one week to active exercise and self-care. To continue physical therapy, improvement must be documented. Passive treatments should be minimized.⁸

Communication with the patient, his or her employer, insurance company, and case manager can improve clinical outcomes by reducing the adversarial situation, promoting a good worker-employer relationship, and providing an opportunity for the physician to assess the patient's job duties and to request adequate work modifications.^{1,11,14,24} Recommending light or modified duty on a short-term basis can decrease work absenteeism (online Table C²³).^{1,11,14,24}

Workers who have difficulty returning to work after four to 12 weeks may benefit from multidisciplinary rehabilitation programs.^{1,22} Such programs should include an exercise regimen to improve physical conditioning, goal-setting for the patient to return to work, vocational rehabilitation, biopsychosocial interventions, and medication management. These programs, which should be conducted by a team consisting of a physician, a physiotherapist, and a psychologist,^{22,25} can decrease pain, improve function, and prepare the patient to return to work.²²

Cognitive behavior therapy has been shown to decrease pain intensity and may allow patients with disabling low back pain to return to work sooner. This type of treatment is generally categorized as operant, cognitive, and respondent. The operant approach is positive reinforcement of healthy practices. Cognitive management helps patients to identify and modify beliefs about pain and to control the pain. The respondent strategy teaches patients to use relaxation techniques to alleviate muscular tension.²² Patients should be encouraged to actively participate in their medical care; this can decrease work absenteeism and lead to a quicker recovery.^{1,8,11}

Work hardening is physical training specific to the job task. Back schools generally consist of an exercise program and anatomic and functional education about

Complete pain relief often does not occur until after resumption of normal activities.

Table 3. Recommended Duration of Modified Duty for Patients with Lumbago

Severity of pain	Job type (force required during work)	Days of modified duty*
Mild	Clerical (up to 20 lb [9.1 kg])	0
	Manual (up to 50 lb [22.7 kg])	7 to 10
Severe	Clerical (up to 20 lb)	0 to 3
	Manual (up to 50 lb)	14 to 17
	Heavy manual (more than 50 lb)	35

*—See online Table C for weight limits for modified duty.

Adapted with permission from Musculoskeletal system and connective tissue. In: Work-Loss Data Institute. Official Disability Guidelines. 12th ed. Encinitas, Calif.: Work-Loss Data Institute, 2007:1015.

the back. This type of rehabilitation is not recommended because studies have shown that it does not improve pain and function after one year.²² Use of educational methods based on the anatomy and biomechanics of the back without any other intervention is also ineffective.¹¹

Although functional capacity evaluations have been promoted as a way to determine a patient's readiness to return to work, physicians should approach such protocols cautiously. There are no functional test protocols in the United States with established levels of validity and reliability.²⁴

Long-Term Complications of Chronic Disability

Family physicians should be aware that labeling a patient as "disabled" is often not in the patient's best interest. Joblessness and chronic disability are associated with poverty, depression, suicidal behavior, family breakdown, domestic violence, infant mortality, crime, increased cancer mortality rates, and heart disease.²⁶⁻³² There is strong evidence that if a person misses work for four to 12 weeks, he or she will have up to a 40 percent chance of missing work for the ensuing year. It is unlikely that an employee who misses work for up to two years will ever return to work in any capacity, regardless of treatment.^{1,9,11,33}

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