

Nonspecific low back pain: Evaluation and treatment tips

This review will help you avoid a common evaluation misstep and better refine your approach to treatment.

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PRACTICE RECOMMENDATIONS

- › *Avoid imaging in cases of uncomplicated low back pain (unless there are specific clinical indications).* **A**
- › *Use acetaminophen, non-steroidal anti-inflammatory drugs, or muscle relaxants for short-term relief of acute nonspecific low back pain.* **A**
- › *Consider matching specific physical therapy options to the patient's history and exam findings.* **B**

Strength of recommendation (SOR)

- A** Good-quality patient-oriented evidence
- B** Inconsistent or limited-quality patient-oriented evidence
- C** Consensus, usual practice, opinion, disease-oriented evidence, case series

CASE ▶ A 50-year-old construction worker comes in for an office visit because he's been experiencing intermittent low back pain that's been occurring more frequently. He says he has not been injured and that he always takes care on the job to minimize physical risk. He reports no symptoms other than the back pain.

How would you proceed with this patient's care? Would you order a plain radiograph to be sure nothing dire is causing the patient's pain—or would you skip it? And would you know how to match your patient's history and exam findings with specific physical therapy interventions?

The following review brings the latest guidelines and research to bear on these questions—and others—as you care for patients with nonspecific low back pain.

Categorizing low back pain to direct your investigation

The 2007 Joint Clinical Practice Guideline issued by the American College of Physicians and the American Pain Society encourages clinicians to perform a focused history and physical exam to classify patients into 1 of 3 broad categories: nonspecific low back pain (LBP), LBP potentially associated with radiculopathy or spinal stenosis, or LBP potentially associated with another specific spinal cause.¹

Patients in the last category often exhibit findings in the history and physical examination suggestive of severe or progressive neurologic deficits. Refer these patients for further diagnostic testing.

Patients presenting with persistent (>4 weeks) LBP and signs and symptoms of radiculopathy or spinal stenosis are best referred for, preferably, magnetic resonance imaging (MRI) or for computed tomography (CT)—but only if the patient is a candidate for surgery or epidural steroid injection.

For patients with nonspecific LBP, which accounts for most cases, practice guidelines recommend against rou-

Immediate imaging for nonspecific low back pain does not improve clinical outcomes.

tine use of imaging or other diagnostic procedures.¹

■ **Unfortunately, however,** some clinicians still use routine imaging in the absence of significant findings or without clear indication.² One argument used to justify this action—particularly by some who consider nonspecific LBP to be a diagnosis of exclusion—is the desire to rule out a serious underlying spinal condition.

What the research tells us about routine imaging

A recently published systematic review and meta-analysis compiled data relevant to more than 1800 subjects from 6 randomized controlled trials (RCTs). The authors examined early, routine use of lumbar imaging (radiography, MRI, or CT) in patients with acute or subacute LBP. They found that, without clear indication from findings in the history and physical examination, immediate imaging does not improve clinical outcomes (ie, diminish pain or improve daily function).³

■ **Another study took a closer look at advanced imaging for LBP.** In an RCT including more than 300 patients with a mean age of 53 years, investigators compared outcomes for patients receiving either plain radiographs or rapid MRI. No differences were noted in outcomes for back-related disability, pain, health survey results, preference scores, satisfaction, or costs at 12 months.

Furthermore, patients receiving rapid MRI were more likely to undergo surgery, which also failed to improve outcomes. As a result, the authors cautioned against unnecessary use of advanced imaging, as it could increase costs of care and possibly increase surgical intervention without improved outcomes.⁴ These studies substantiate practice guidelines regarding the use of imaging for patients with nonspecific LBP.

Not helpful, and perhaps harmful?

When imaging is unwarranted, it unnecessarily exposes patients to ionizing radiation, especially objectionable for younger women.¹ Imaging can also lead to the identification of pathology unrelated to a patient's LBP.^{1,5}

As mentioned above, patients receiving rapid MRI were more likely to receive surgical intervention that did not improve outcomes.⁴

Are we out of step?

Recent data suggest that frontline clinicians who typically treat patients with low back pain (LBP) may have insufficient knowledge to do so.^{11,12} Using an observational design, Buchbinder et al¹² surveyed nearly 4000 general practitioners, with and without special interest in LBP, to assess their knowledge in managing acute LBP and their attitudes toward patients with LBP.

Using a 5-point Likert scale ranging from "strongly agree" to "strongly disagree," the investigators asked physicians questions related to such topics as bed rest, work, imaging, physical activity, interventions by physicians or other healthcare providers, patient expectations, chronic LBP, patient motivation, and usefulness and utilization of practice guidelines. Interestingly, physicians with a special interest in treating LBP actually had poorer management beliefs (ie, not in accord with best available evidence) than those who did not have such an interest.¹

A similar study found that both family practitioners and orthopedists were deficient in knowledge for treating patients with nonspecific LBP; orthopedists were less informed than family practitioners.¹³

This observation may reflect, in part, findings of pathoanatomical abnormalities that have little or no correlation with patient symptoms. In a random sample of 148 subjects ages 36 to 71 years—nearly half of whom had never experienced back pain—Jarvik and colleagues⁵ found MRI evidence of annular tears, disc bulges, disc protrusions, facet joint degeneration, end plate changes, and mild spondylolisthesis. The authors concluded that such MRI findings are therefore of limited diagnostic value.⁵

■ **Labeling can be harmful, too.** Identification of pathology that could well be unrelated to LBP can result in a specific, presumed diagnosis, possibly inducing a phenomenon known as the labeling effect. The search for a specific diagnosis or label for patients with nonspecific LBP could cause them to perceive their low back

TABLE

Matching physical therapy to low back pain attributes can improve outcomes

Treatment recommendation	History and examination findings
Manipulation	<ul style="list-style-type: none"> No symptoms distal to the knee Recent onset of symptoms (<16 days) Low fear-avoidance Hypomobility of the lumbar spine Good hip internal rotation ROM (>35° for at least 1 hip)
Stabilization/motor control	<ul style="list-style-type: none"> Younger age (<40 y) Greater general flexibility (postpartum, excessive hamstring length) Aberrant movements, Gower's sign during lumbar flexion/extension ROM Decreased pain during provocation via spinal/core musculature activation (positive prone instability test)
Specific exercise	<ul style="list-style-type: none"> Extension <ul style="list-style-type: none"> Symptoms distal to the buttock Symptoms centralize with lumbar extension Symptoms peripheralize with lumbar flexion Directional preference for extension Flexion <ul style="list-style-type: none"> Older age (>50 y) Directional preference for flexion Imaging evidence of lumbar spinal stenosis Lateral shift <ul style="list-style-type: none"> Visible frontal plane deviation of the shoulders relative to the pelvis Directional preference for lateral translation movements of the pelvis
Traction*	<ul style="list-style-type: none"> Signs and symptoms of nerve root compression No specific exercise/directional preference centralizes symptoms

ROM, range of motion.

*This fourth category was not included in the original study; patient selection criteria were developed at a later date.

Source: Fritz JM, Cleland JA, Childs JD. Subgrouping patients with low back pain: evolution of a classification approach to physical therapy. *J Orthop Sports Phys Ther.* 2007;37:290-302.¹¹ Adapted with permission from the Orthopaedic and Sports Physical Therapy Sections of the American Physical Therapy Association and *The Journal of Orthopaedic and Sports Physical Therapy.*

condition as being more serious than it actually is. Patients may then develop distorted beliefs regarding the true nature of their health status. The labeling effect could even alter the natural course of an otherwise benign condition.^{6,7}

It's time to treat: Tell patients to remain active

Practice guidelines for nonspecific LBP recommend providing patients with evidence-based education that emphasizes the favorable course of this condition and that encourages

them to remain active.¹ This recommendation was assessed retrospectively in a study of nearly 1200 patients receiving physical therapy for acute LBP. The authors found that adherence to the recommendation for activity and exercise yielded significant reductions in disability and pain, and resulted in significantly fewer visits and lower charges.⁸

For acute cases of nonspecific LBP, good evidence supports the short-term effectiveness of acetaminophen and nonsteroidal anti-inflammatory drugs, as well as skeletal muscle relaxants.^{1,9} For chronic cases,

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Labeling nonspecific low back pain with a specific diagnosis can make the pain seem more serious to patients than it is.

Promising evidence suggests that subgrouping patients with nonspecific low back pain can improve outcomes.

good evidence exists for prescribing tricyclic antidepressants.⁹

Nonpharmacologic interventions include, in acute cases, active care, spinal manipulation, and superficial heat (eg, hot packs). For subacute and chronic cases, think about intensive interdisciplinary rehabilitation interventions—therapeutic exercise, soft-tissue manual techniques, acupuncture, movement re-education techniques, spinal manipulation, cognitive-behavioral therapy, or progressive relaxation.^{1,10}

Further customize your Tx approach

While recent data suggest that some front-line physicians who treat patients with LBP may have insufficient knowledge to do so¹¹⁻¹³ (see “Are we out of step?” on page 446), there are promising developments, as well. Many primary care clinicians and researchers believe that nonspecific LBP resembles a heterogeneous condition and that intervention is more effective when treatment is matched to the patient’s history and examination findings.^{14,15} In a survey of more than 600 primary care clinicians from multiple disciplines, including physical therapy, chiropractic, and medicine, 93% of the participants reported that they treat nonspecific LBP cases differently, depending on signs and symptoms, with 74% believing there are recognizable

subgroups to guide management.¹⁴

An example of subgrouping patients with nonspecific LBP is the idea of treatment-based classification, which evidence has found to be reliable, effective, and cost-efficient for patients with LBP (TABLE).¹¹ In an RCT, Brennan and colleagues¹⁵ examined 123 patients with acute LBP (ie, back pain lasting <90 days) referred to a physical therapist for treatment. Patients were examined and then classified into 1 of 3 subgroups according to the type of treatment expected to work best for them: manipulation, stabilization, or specific exercise. Each patient was then randomly assigned to receive 1 of the 3 treatments. Post-treatment analysis compared outcomes between patients who received treatment matched to their classification and those whose treatment did not match their classification.

At 4 weeks, the matched-treatment group had significantly greater reductions in disability compared with the unmatched-treatment group; this difference was still evident at 1 year. The authors agreed that LBP should not be thought of as a homogenous condition, and found that outcomes can be improved with subgrouping to guide intervention selection.¹⁵

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