

Acute Low Back Pain: Imaging, Treatment, and Referral

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Back pain is a very common complaint.

It accounts for two to three percent of all physician visits in the US. According to two national surveys, the 2002 National Health Interview Survey and National Ambulatory Medical Care Survey, 26.4% of respondents reported a whole day of low back pain in the last three months and 13.8% had an entire day of neck pain during the same period.¹ Because low back pain is so common, it is important to be able to differentiate the features that distinguish serious from not serious conditions. This will lead to proper evaluation and treatment.

WHAT IMAGING SHOULD BE USED TO EVALUATE AND MANAGE ACUTE LOW BACK PAIN AND WHEN SHOULD IT BE OBTAINED?

One of the main goals in the evaluation of acute low back pain is to identify red flags that require a more detailed work-up and imaging. These red flags include the following:⁴

- Age under 20 or over 50. Age under 20 is a red flag because low back pain in this age group is unusual and therefore warrants further workup. Back pain in persons over age 50 is more common, but in this age group, malignancies are more common, therefore making pain in this age group concerning.
- History of cancer. The most common causes of metastatic tumors of the spine are lymphoma, lung, breast, and prostate cancers.
- Unexplained weight loss
- Immunosuppression. This includes patients with HIV/AIDS, transplant recipients, diabetics, and patients on chronic steroids, immunomodulators, and chemotherapeutic agents.
- Known infection
- Intravenous drug abuse
- Fever or chills

- Back pain not improved with rest
- History of significant trauma
- Prolonged use of steroids
- Acute onset of urinary retention or overflow incontinence
- Fecal incontinence or loss of anal sphincter tone
- Saddle anesthesia
- Global or progressive weakness of lower extremities

Any of the above conditions should warrant a more detailed evaluation for systemic disease as well as an MRI of the spine. Contrast enhancement is indicated only when an infection or tumor is part of the differential diagnosis.

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Plain lumbosacral x-rays can be used in an acute trauma if no CT scanner is available. However, for fractures of the spine, CT is preferable, and for imaging of the spinal cord and soft tissue, MRI is the best imaging modality.

Of note, of the patients presenting with acute low back pain, over 95% do not need any imaging within the first four weeks of symptoms. The incidence of significant pathology in the remainder is as follows:³

- Compression fracture (4%)
- Cancer (0.7%)
- Cauda equina syndrome (0.04%)
- Spinal infection (0.01%)

The Joint Clinical Practice Guidelines from the American College of Physicians and American Pain Society make a strong recommendation against clinicians routinely obtaining imaging in patients with nonspecific low back pain.³ In a meta-analysis of imaging strategies for low back pain performed by Chou *et al*, the authors found that increased frequency of lumbar MRI's is associated with higher rates of spine surgery, without a clear difference in patient outcomes.² Therefore, the treatment strategy for these patients is conservative management for the first four to six weeks.

WHICH TREATMENTS FOR LOW BACK PAIN ARE PROVEN EFFECTIVE?

During the first four to six weeks of acute low back pain, patients are advised to remain active. In addition, books about self-care for back pain have been shown to be as effective as other therapies such as supervised exercises, acupuncture, massage, and spinal manipulation. Additional strategies include heating pads and firm mattresses.³

Although the evidence on the efficacy of these modalities is mixed, there is some proven benefit to spinal manipulation during the first four weeks of pain.³ In a meta-analysis of exercise therapy for nonspecific low back pain, Hayden *et al* found that exercise therapy was as effective as either no treatment or other conservative treatments in acute low back pain.⁵ Beyond the initial four-week period, the evidence for the best treatment modalities is very mixed with success found with physical therapy, acupuncture, massage, spinal manipulation, and self-education.

First line medications for acute low back pain should include nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen. Opioids can be used for severe pain that is unresponsive to NSAIDs.

WHEN SHOULD A PATIENT WITH LOW BACK PAIN BE REFERRED FOR SPECIALTY CARE?

After conservative therapy for four to six weeks, up to 90 percent of patients recover from acute low back pain. In one

study by Coste *et al*, a cohort of 103 patients with acute back pain was followed, and 90 percent recovered within two weeks. Of these 103 patients, only two developed chronic low back pain.¹ Of the patients who do not recover, those with the following symptoms would warrant further workup with MRI imaging:⁴

- Related leg symptoms and signs of nerve root compression
- Neurogenic claudication, which includes pain with ambulation that is improved by bending forward. It does not improve with rest, as does vascular claudication.
- Symptoms consistent with lumbar spinal stenosis, which includes pain or numbness radiating down the leg

MRI abnormalities may indicate the need for an orthopedic or neurosurgery evaluation. The absence of MRI explanations for the pain make a surgically remediable cause highly unlikely. If surgery is not recommended, a referral can be made to an interventional pain specialist. If the MRI has no findings, a consultation with a rheumatologist may be beneficial.

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