

	<b>Clinical Protocol:</b> Treatment for Back Pain	
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## PROTOCOL OVERVIEW

This protocol follows the recommendations by the American College of Physicians and American Pain Society. Per the recommendations, clinicians should:

- Conduct a focused history and physical exam separating patients into categories as nonspecific pain, that associated with radiculopathy or spinal stenosis, and that potentially associated with another specific cause
- Avoid routinely obtaining imaging in patients with nonspecific pain
- Urgently perform diagnostic imaging when severe or progressive neurologic deficits are present or when serious underlying conditions are suspected, as in those with major risk factors for cancer, spinal infection, cauda equine syndrome, bladder disturbance, bowel disturbance, spinal fracture, significant trauma or lytic lesion
- Evaluate patients with symptoms of radiculopathy or stenosis with imaging after failure of adequate conservative management only if they are potential candidates for invasive intervention
- Use medications with proven benefits in conjunction with self-care information
- Consider the addition of nonpharmacologic therapies with proven benefits for patients who do not improve with self-care, for example beginning an exercise program after 2 to 6 weeks, etc.

## INDICATIONS

The following are clinical indications when an MRI is needed:

### Urgent Indicators for MRI

1. Evidence of cauda equine or spinal cord compression (urinary retention, spasticity, significant sensory or motor deficits, saddle anesthesia, incontinence, significant or progressive neuromotor deficits)
2. Suspected malignancy (history of neoplasm, unexplained weight loss, concurrent diagnosis of neoplasm, progressive weakness, persistent symptoms in patient older than 50)
3. Fever associated with back pain (after excluding viral syndrome, particularly in immune-compromised patients or suspected post-operative infection).
4. Suspected osteomyelitis (with positive bone scan, elevated ESR, pain exacerbated by motion and relieved by rest or localized segmental tenderness)
5. Recent significant trauma

## RECOMMENDATIONS

It is reasonable to separate patients into those with acute back pain and those with chronic pain. Patients with acute Low Back Pain generally experience substantial improvement in the first month after initial presentation, suggesting that a reasonable approach is to re-evaluate patients with persistent, unimproved symptoms after a month. Psychosocial factors and emotional stress should be assessed because they are stronger predictors of Low Back Pain outcomes than either physical examination findings or severity/duration of pain. Those factors that may predict poorer outcomes include presence of depression, passive coping strategies, job dissatisfaction, higher disability levels, disputed compensation claims and somatization. Behavioral treatment is an effective adjunct for short-term pain relief. Substance abuse disorders are common in patients requiring opioids to control symptoms. Patients with failed back surgery have significant prevalence of psychosocial problems such as alcoholism, drug abuse, marital discord or personality disturbances. Consultation with a mental health professional is recommended for patients suspected of having underlying psychological issues.

The Primary Care Provider plays a vital role in treatment of Low Back Pain by recommending any of a number of valuable interventions including strengthening and flexibility exercises, teaching proper lifting technique and appropriate weight loss.

The recommendations for routine treatment of Low Back Pain include lifestyle, pharmacologic and non-pharmacologic interventions, beginning with clinicians informing patients of the generally favorable prognosis of acute Low Back Pain with or without sciatica, including likelihood for substantial improvement in the first month. Patients should limit any activity that causes an increase in symptoms and gradually reintroduce activities as recovery begins. Bed rest is not advised. If a patient must rest, bed rest should be limited to two days and the patient should return to normal activity as soon as possible. Application of heat can provide short-term relief, but there is insufficient evidence to recommend lumbar support or cold packs as self-care options.

Supervised exercise therapy and home exercise regimens are not generally effective for acute Low Back Pain. Guidelines suggest starting exercise after two to six weeks. For pain of longer duration, interdisciplinary rehabilitation including a physician along with psychological, physical therapy and/or vocational intervention may be beneficial.

Medications in several classes have been shown to provide moderate, short-term benefit. Acetaminophen is less effective than NSAIDS, while there is insufficient evidence to recommend for or against analgesic doses of aspirin. Opioid analgesics or tramadol are options when used judiciously in patients whose pain is not controlled by first-line medications. Failure to respond to a time-limited course of opioids should lead to reassessment and consideration of alternative therapies. Tricyclic antidepressants are another option for patients with chronic pain and no contraindications to their use. SSRI's and SNRI's have not yet been shown to be of substantial value, although depression is common in patients with any chronic pain and should be treated appropriately. Systemic steroids have not been shown to be more effective than placebo for treatment of Low Back Pain.

Low back pain is one of the most common medical problems, afflicting a significant proportion of the adult population. The majority of cases are thought to be due to muscular or ligamentous injuries that are usually self-limited, although the precise cause may not be determined in a particular patient. Most patients recover spontaneously and without medical intervention. Therefore, the preferred approach is to identify patients with severe underlying spinal problems requiring urgent diagnostic imaging and intervention (e.g., tumor, infection, fracture, etc.) and to treat the others conservatively.

Many patients however receive routine imaging that is not beneficial and may, in fact, be harmful. Amir Qaseem, M.D., director of clinical policy for the ACP, stated that unnecessary imaging can lead to additional tests, interventions and referrals that do nothing to improve patient outcomes. For that reason, new guidelines for diagnostic imaging for Low Back Pain were published in the Feb. 1, 2011 issue of *Annals of Internal Medicine*. These expand upon recommendations by ACP and the American Pain Society through their joint multidisciplinary panel. Evidence that expanding imaging to patients without indications for advanced imaging does not improve outcome includes randomized trials of routine imaging vs. "usual care" without imaging. These trials suggest no clinically meaningful benefits from expanded imaging on outcomes including pain, function, quality of life or mental health. Potential harms of unnecessary imaging include the radiation exposure, hypersensitivity reactions and contrast nephropathy; and the possibility that additional unnecessary procedures will be performed. Additionally, clinically irrelevant findings may cause patients to worry more and avoid exercise or other recommended activities for fear of causing structural damage.

Initial recommendation for evaluation of Low Back Pain is that clinicians should conduct a focused history and physical examination to place the patient into one of three categories: nonspecific back pain, pain potentially associated with radiculopathy or spinal stenosis, or pain potentially associated with another specific cause. For the 85% of patients who present with pain that cannot reliably be attributed to a specific disease or abnormality, no evidence suggests that labeling them with a specific anatomical diagnosis improves outcomes. The third category would include the small proportion of patients with serious or progressive neurologic deficits or underlying conditions requiring prompt evaluation (e.g., tumor, infection or cauda equine syndrome), as well as those with other conditions that may respond to specific treatments (e.g., ankylosing spondylitis or vertebral compression fracture).

Clinicians should inquire about the location, frequency and duration of pain as well as any history of previous symptoms, treatment and response. The possibility of pain due to problems outside the back (pancreatitis, aortic aneurism, nephrolithiasis, viral syndrome, etc.) should be considered. All patients should be evaluated for rapidly progressive or severe neurologic deficits including motor deficits at more than one level, incontinence or bladder dysfunction. The most common finding in cauda equine syndrome is urinary retention (90% sensitivity).

Clinicians should also assess risk factors for cancer, fracture, and infection. A history of cancer, unexplained weight loss, failure to improve after one month and age older than 50 years were each associated with a higher likelihood of cancer. Factors predicting vertebral infection include fever, intravenous drug use or recent infection. While risk factors for vertebral fracture are advanced age, osteoporosis and steroid use.

In patients with back and leg pain, a typical history of sciatica in a classic nerve root distribution has a fairly high sensitivity but uncertain specificity for herniated disc. More than 90% of symptomatic

lumbar disc herniations occur at the L4/L5 and L5/S1 levels. A focused exam that includes straight-leg-raise and a neurologic exam that includes evaluation of knee and ankle strength and reflexes, and distribution of any sensory symptoms are vital.

Another recommendation is that clinicians should not routinely obtain imaging or other diagnostic tests in patients with nonspecific Low Back Pain, as there is no evidence that such imaging is associated with improved patient outcomes. Ionizing radiation should be avoided when possible, particularly in young women. The amount of gonadal radiation from a single plain radiograph (2 views) of the lumbar spine is equivalent to being exposed to a daily chest radiograph for more than a year. Routine CT or MRI is also not associated with improved outcomes and identifies anomalies that are poorly correlated with symptoms and could lead to unnecessary interventions. Likewise, thermography and electrophysiologic testing are not recommended for evaluation of nonspecific back pain. Plain radiography, however, is recommended for initial evaluation of possible vertebral compression fracture in selected higher-risk patients such as those with a history of osteoporosis or steroid use.

Importantly, it is recommended that diagnostic imaging and testing be done urgently in those patients with Low Back Pain when severe or progressive neurologic deficits are present or when serious underlying conditions (such as vertebral infection, cauda equine syndrome, or cancer with impending spinal cord compression) are suspected on the basis of history and physical examination. MRI is generally preferred to CT because it does not use ionizing radiation and provides better visualization of soft tissues and the spinal canal.

Another recommendation is that clinicians should evaluate patients with persistent Low Back Pain and signs or symptoms of radiculopathy or spinal stenosis with MRI (preferred) or CT only if they are potential candidates for surgery or epidural steroid injection. Plain radiography cannot visualize discs or accurately evaluate the degree of spinal stenosis. However, clinicians should be aware that findings on MRI or CT (such as bulging disc or nerve root impingement) are often nonspecific.

Transcutaneous electrical nerve stimulation (TENS) and intermittent or continuous traction have not been proven effective for chronic Low Back Pain. Back School, epidural steroid injection and spinal manipulation therapies may be effective options.

It may be appropriate to consider consultation with a back specialist when patients with nonspecific Low Back Pain do not respond to standard noninvasive therapies. Published guidelines suggest referring such patients after a minimum of three months of failed conservative management. All decisions about consultation should be individualized and based on assessment of a patient's symptoms and response to interventions.

## CITATIONS

1. Chon, Quasem, et.al., "Diagnosis and Treatment of Low Back Pain: A Joint Clinical Practice Guideline from the American College of Physicians and the American Pain Society", *Annals of Internal Medicine*, Oct. 2, 2007, vol. 147, no. 7, pp. 478-491
2. Barclay, "ACP Issues Guidelines for Diagnostic Imaging for Low Back Pain", *American College of Physicians, Clinical Guidelines, Best Practical Advice*, Feb. 2, 2011, vol. 154, no. 3, pp. 181-189
3. MCG, 23<sup>rd</sup> Edition, "Low Back Pain and Lumbar Spine Conditions", and "Spine, Lumbar (MRI)"; 2/26/2019