Acute Low Back Pain

North American Spine Society
Public Education Series

What Is Acute Low Back Pain?

Acute low back pain (LBP) is defined as low back pain present for up to six weeks. It may be experienced as aching, burning, stabbing, sharp or dull, well-defined or vague. The intensity may range from mild to severe and may fluctuate. The pain may radiate into one or both buttocks or even into the thigh/hip area.

Low back pain may begin following a strenuous activity or jarring trauma, but often is seemingly unrelated to a specific activity. The pain may begin suddenly or develop gradually.

At least 80% of individuals experience a significant episode of LBP at some point in their lives. At any given point in time, at least 15% of individuals report that they are experiencing LBP. Some consider the symptom of LBP to be a part of the human experience.

What Causes Acute LBP?

The exact source of acute LBP is often difficult to identify. In fact, there are numerous possible pain producers including muscles, soft connective tissue, ligaments, joint capsules and cartilage and blood vessels. These tissues may be pulled, strained, stretched or sprained. Additionally, annular tears (small tears that occur in the outer layer of the intervertebral disc) can initiate severe pain. Even if the actual tissue damage is minor, and likely to repair quickly, the pain experienced may be quite severe.

No matter which tissue is initially irritated, a cascade of events occurs which contributes to the pain experience. Numerous chemical substances are released in response to tissue irritation. These substances "stimulate" the surrounding pain-sensitive nerve fibers, resulting in the sensation of pain. Some of these chemicals trigger the process of inflammation, or swelling, which also contributes to pain. The chemicals associated with this inflammatory process feed back more signals which perpetuate the process of swelling. The inflammation attributable to this cycle of events may persist for days to weeks.

Muscular tension (spasm) in the surrounding tissues may occur resulting in a " trunk shift" (the body tilts to one side more than the other) due to muscular imbalance. Additionally, a relative inhibition or lack of the usual blood supply to the affected area may occur so that nutrients and oxygen are not optimally delivered and removal of irritating byproducts of inflammation is impaired.

How Long Will it Last?

The good news is that even if the exact source of pain is not determined, usually the acute pain subsides spontaneously over time. The originally irritated tissue heals. Fifty percent of episodes nearly completely resolve within two weeks, and 80% by six weeks. Unfortunately, the duration and severity of a single episode cannot be predicted based on the onset, location of pain or even the initial severity. Excruciating initial pain may resolve within several days, while moderate or mild symptoms may persist for weeks. However, up to 30% of individuals will experience recurrent pain or develop persistent pain in the future.

Is Acute LBP Dangerous?

The seriousness of LBP is relative. The symptoms of acute LBP are usually benign and self limited. Even a ruptured disc has a chance of improving without surgery. Rarely, however, LBP is caused by a more serious process such as a fracture, infection or cancer. This is more common in individuals over age 50, those with a history of cancer, those with severe pain at rest, with associated fever, with underlying medical problems such as diabetes, heavy alcohol or drug use, long time corticosteroid use, or osteoporosis.

Pain in the legs, weakness, or difficulty with bowel or bladder control warrant prompt medical evaluation. For all cases of pain lasting longer than six weeks, medical evaluation is advised.

How Is it Treated?

Some of the best advice for treatment for acute LBP is to continue to remain active "as tolerated". Continuing to perform everyday activities may seem counterintuitive, and the natural inclination may be to stay in bed or "freeze", to guard and avoid activity. Yet, activity keeps blood and nutrients flowing to the affected area, inhibiting inflammation and reducing muscular tension. Many individuals with LBP find that they can perform their usual, but more controlled cardiovascular activities (such as walking) in spite of the pain and often feel better after the activity. More vigorous or uncontrolled activities such as weight lifting or competitive or contact sports are inadvisable while pain is severe.

There is no reason to completely avoid stretching muscles and tissues in the legs and back during an acute episode, but stretching should not cause more severe pain.

Local application of heat or ice can temporarily reduce pain and heat may facilitate stretching, but does not necessarily speed long term recovery.

Medication: Both acetominophen and nonsteroidal antiinflammatory drugs (NSAIDs) are analgesics (pain relievers) which are known to provide effective reduction of acute LBP. NSAIDs also inhibit the above described inflammatory process described earlier. These medications should be used only as prescribed by a physician. NSAIDs are associated with possible side effects in certain individuals and risk for such effects increases when used for prolonged periods. The more common side effects include excessive bruising and bleeding, and stomach upset irritation, with kidney and liver problems possible with sustained use.

"Muscle relaxants" are medications that do not actually relax skeletal muscle. However, they do calm or sedate the central nervous system and can be useful to facilitate sleep and secondarily reduce contributing emotional or muscular tension in the setting of severe pain. These medications must be used under the direction of a prescribing physician.

Narcotics (also called opioids) are strong pain relievers and do reduce the symptoms of acute LBP. Because narcotics are sedating, they can be useful to facilitate sleep during the first few nights of symptoms. Long term use of narcotics is associated with undesirable side effects including physical dependency, sedation, depression, constipation, increased sensitivity of pain sensitive fibers, and interruption of restorative sleep cycle. Narcotics should only be used as prescribed by and under the direction of a physician.

Treatments

Other Treatments: Physical therapy modalities such as ultrasound, electrical stimulation, traction, mobilization, and chiropractic manipulation can provide temporary relief, but are not proven to improve long term recovery. Acute LBP usually resolves spontaneously and in most cases, as long as activity can be maintained, formal therapy may not be required.

If the pain is severe, participation in activities is impaired or if motion is significantly restricted, a physical therapist can provide additional education and advice regarding strategies for restoring motion, resuming activities, preventing deconditioning and achieving a position of comfort during sleep.

For those with persistent or recurrent LBP a medical evaluation is indicated and a physical therapist supervised exercise program is likely advisable. The goal should always be towards developing and transitioning to a fully independent home or health club exercise regimen. Emphasis will likely be placed on optimizing trunk or "core" strength and improving general flexibility and cardiovascular endurance.

Spinal Injections: Spinal injections are generally not considered an appropriate treatment for acute, self-limited LBP. There are several injection options for persistent or recurrent pain, including epidural steroid, facet joint and trigger point injections, which can be determined following a comprehensive medical evaluation.

Do I Need an X-Ray or MRI?

In most cases of acute LBP diagnostic testing is not required. X-rays or other diagnostic tests may be advised in cases of pain associated with severe trauma, history of cancer, fever, diabetes, other medical problems, illicit IV drug use, age over 50, bowel or bladder dysfunction, nocturnal pain or osteoporosis. Various types of imaging tests can be obtained. These include regular x-ray, bone scan, computed tomography (CT) scan, and magnetic resonance imaging (MRI). The choice of test depends on what medical condition your physician suspects. It is important to realize that the "final" diagnosis is based on a combination of history, physical examination and diagnostic testing, not imaging tests alone.

Summary

Acute low back pain can be a very painful experience, but fortunately often resolves fairly quickly. There are situations when the pain does not improve satisfactorily, which should then prompt comprehensive medical attention. A variety of diagnostic tests and treatment options are available. The primary goal is to resolve the acute episode as quickly as possible and secondarily to prevent future episodes through proper education, exercise and conditioning.

Notes

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DISCLAIMER

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