Low Back Pain Overview

Pain in the lower back or low back pain is a common concern, affecting up to 90% of Americans at some point in their lifetime. Up to 50% will have more than one episode. Low back pain is not a specific disease; rather it is a symptom that may occur from a variety of different processes. In up to 85% of people with low back pain, despite a thorough medical examination, no specific cause of the pain can be identified. America spends approximately $50 billion a year on low back pain.

Back pain can have many underlying reasons, but often no specific cause will be found and the pain will stop. This chapter will review many of the causes of back pain and proper evaluation and diagnosis. Please be sure to discuss your individual symptoms as well as the suggested treatments with your health-care professional to determine the appropriate diagnostic and treatment plan for your circumstances.

- Low back pain is second only to the common cold as a cause of lost days at work. It is also one of the most common reasons to visit a doctor’s office or a hospital's emergency department. It is the second most common neurologic complaint in the United States, second only to headache.

- For 90% of people, even those with nerve root irritation, their symptoms will improve within two months no matter what treatment is used, even if no treatment is given.

- Doctors usually refer to back pain as acute if it has been present for less than a month and chronic if it lasts for a longer period of time.

Low Back Pain Causes

Back pain is a symptom. Common causes of back pain involve disease or injury to the muscles, bones, and/or nerves of the spine. Pain arising from abnormalities of organs within the abdomen, pelvis, or chest may also be felt in the back. This is called referred pain. Many disorders within the abdomen, such as appendicitis, aneurysms, kidney diseases, kidney infection, bladder infections, pelvic infections, and ovarian disorders, among others, can cause pain referred to the back. Normal pregnancy can cause back pain in many ways, including stretching ligaments within the pelvis, irritating nerves, and straining the low back. Your doctor will have this in mind when evaluating your pain.

- Nerve root syndromes are those that produce symptoms of nerve impingement (a nerve is directly irritated), often due to a herniation (or bulging) of the disc between the lower back bones. Sciatica is an example of nerve root impingement. Impingement pain tends to be sharp, affecting a specific area, and associated with numbness in the area of the leg that the affected nerve supplies.

  - Herniated discs develop as the spinal discs degenerate or grow thinner. The jellylike central portion of the disc bulges out of the central cavity and pushes against a nerve root. Intervertebral discs begin to degenerate by the third decade of life. Herniated discs are found in one-third of adults older than 20 years of age. Only 3% of these, however, produce symptoms of nerve impingement.
Spondylosis occurs as intervertebral discs lose moisture and volume with age, which decreases the disc height. Even minor trauma under these circumstances can cause inflammation and nerve root impingement, which can produce classic sciatica without disc rupture.

Spinal disc degeneration coupled with disease in joints of the low back can lead to spinal-canal narrowing (spinal stenosis). These changes in the disc and the joints produce symptoms and can be seen on an X-ray. A person with spinal stenosis may have pain radiating down both lower extremities while standing for a long time or walking even short distances.

Cauda equina syndrome is a medical emergency whereby the spinal cord is directly compressed. Disc material expands into the spinal canal, which compresses the nerves. A person would experience pain, possible loss of sensation, and bowel or bladder dysfunction. This could include inability to control urination causing incontinence or the inability to begin urination.

Musculoskeletal pain syndromes that produce low back pain include myofascial pain syndromes and fibromyalgia.
Myofascial pain is characterized by pain and tenderness over localized areas (trigger points), loss of range of motion in the involved muscle groups, and pain radiating in a characteristic distribution but restricted to a peripheral nerve. Relief of pain is often reported when the involved muscle group is stretched.

Fibromyalgia results in widespread pain and tenderness throughout the body. Generalized stiffness, fatigue, and muscle aches are reported.

- Infections of the bones (osteomyelitis) of the spine are an uncommon cause of low back pain.
- Noninfectious inflammation of the spine (spondylitis) can cause stiffness and pain in the spine that is particularly worse in the morning. **Ankylosing spondylitis** typically begins in adolescents and young adults.
- Tumors, possibly cancerous, can be a source of skeletal pain.
- Inflammation of nerves from the spine can occur with infection of the nerves with the herpes zoster virus that causes **shingles**. This can occur in the thoracic area to cause upper back pain or in the lumbar area to cause low back pain.
- As can be seen from the extensive, but not all inclusive, list of possible causes of low back pain, it is important to have a thorough medical evaluation to guide possible diagnostic tests.

**Low Back Pain Characteristics**

Pain in the lumbosacral area (lower part of the back) is the primary symptom of low back pain.

- The pain may radiate down the front, side, or back of your leg, or it may be confined to the low back.
- The pain may become worse with activity.
- Occasionally, the pain may be worse at night or with prolonged sitting such as on a long car trip.
- You may have numbness or **weakness** in the part of the leg that receives its nerve supply from a compressed nerve.
  - This can cause an inability to plantar flex the foot. This means you would be unable to stand on your toes or bring your foot downward. This occurs when the first sacral nerve is compressed or injured.
  - Another example would be the inability to raise your big toe upward. This results when the fifth lumbar nerve is compromised.

**When to Seek Medical Care**

The Agency for Healthcare Research and Quality has identified 11 red flags that doctors look for when evaluating a person with back pain. The focus of these red flags is to detect fractures (broken bones), infections, or tumors of the spine. Presence of any of the following red flags associated with low back pain should prompt a visit to your doctor as soon as possible for complete evaluation.

- Recent significant trauma such as a fall from a height, motor vehicle accident, or similar incident
• Recent mild trauma in those older than 50 years of age: A fall down a few steps or slipping and landing on the buttocks may be considered mild trauma.

• History of prolonged steroid use: People with asthma, COPD, and rheumatic disorders, for example, may be given this type of medication.

• Anyone with a history of osteoporosis: An elderly woman with a history of a hip fracture, for example, would be considered high risk.

• Any person older than 70 years of age: There is an increased incidence of cancer, infections, and abdominal causes of the pain.

• Prior history of cancer

• History of a recent infection

• Temperature over 100 F

• IV drug use: Such behavior markedly increases risk of an infectious cause.

• Low back pain worse at rest: This is thought to be associated with an infectious or malignant cause of pain but can also occur with ankylosing spondylitis.

• Unexplained weight loss

The presence of any of the above would justify a visit to a hospital's emergency department, particularly if your family doctor is unable to evaluate you within the next 24 hours.

• The presence of any acute nerve dysfunction should also prompt an immediate visit. These would include the inability to walk or inability to raise or lower your foot at the ankle. Also included would be the inability to raise the big toe upward or walk on your heels or stand on your toes. These might indicate an acute nerve injury or compression. Under certain circumstances, this may be an acute neurosurgical emergency.

• Loss of bowel or bladder control, including difficulty starting or stopping a stream of urine or incontinence can be a sign of an acute emergency and requires urgent evaluation in an emergency department.

• If you cannot manage the pain using the medicine you are currently prescribed, this may be an indication for a reevaluation or to go to an emergency department if your doctor is not available. Generally, this problem is best addressed with the doctor writing the prescription who is overseeing your care.

**Low Back Pain Treatment**

**Self-Care at Home**

General recommendations are to resume normal, or near normal, activity as soon as possible. However, stretching or activities that place additional strain on the back are discouraged.

• Sleeping with a pillow between the knees while lying on one side may increase comfort. Some doctors recommend lying on your back with a pillow under your knees.
• No specific back exercises were found that improved pain or increased functional ability in people with acute back pain. Exercise, however, may be useful for people with chronic back pain to help them return to normal activities and work. These exercises usually involve stretching maneuvers.

• Nonprescription medications may provide relief from pain.

  o **Ibuprofen** (Advil, Nuprin, or Motrin), available over the counter, is an excellent medication for the short-term treatment of low back pain. Because of the risk of ulcers and gastrointestinal bleeding, talk with your doctor about using this medication for a long time.

  o **Acetaminophen** (Tylenol) has been shown to be as effective as ibuprofen in relieving pain.

  o Topical agents such as deep-heating rubs have not been shown to be effective.

  o Some people seem to benefit from the use of ice or heat. Their use, although not proven effective, is not considered to be harmful. Take care: Do not use a heating pad on "high" or place ice directly on the skin.

• Most experts agree that prolonged bed rest is associated with a longer recovery period. Further, people on bed rest are more likely to develop depression, blood clots in the leg, and decreased muscle tone. Very few experts recommend more than a 48-hour period of decreased activity or bed rest. In other words, get up and get moving to the extent you can.