

LOW BACK PAIN: CAUSES AND NON-SURGICAL TREATMENT

Low back pain is a common problem. It is one of the major causes of lost time at work, decreased productivity and chronic disability in the United States. It is estimated that 80 percent of all people in the United States will suffer from at least one episode of back pain in his/her lifetime. For many this can be a recurrent problem. For some, it can be a chronic ongoing pain disorder. With proper medical evaluation, appropriate treatment, and selective use of diagnostic studies, ***the majority of patients with lower back pain can be effectively treated without any invasive or surgical treatment.***

Low back pain has many causes. Fortunately 85-90 percent of all patients with back pain will never need surgery for their problem. It is important to remember that surgery never cured isolated ***back pain*** and never will. The lower back has many pain sensitive structures that if injured can result in varying degrees of lower back pain. The most obvious and commonly injured back structure is the large group of muscles that form the lower back area. These muscles anchor and stabilize the spine, sacrum and pelvis. In addition to this there are two powerful muscles, the psoas and iliacus, located deep in the lower abdomen that help to control leg function. If injured, these can be another unrecognized source of lower back pain. The muscles, tendons and ligaments in the buttocks and hips are also subject to injury. Injury to any of these structures is collectively referred to as a ***muscle strain***. Working around the house or occasionally engaging in sports activities can result in over use of these muscles, thereby causing lower back pain. Poor posture, sedentary life style and poor back muscle conditioning can be a major contributing factor to both acute and chronic lower back pain. Arthritic degeneration of the spine may be an infrequent contributing cause of lower back pain. Finally, the proverbial herniated or "slipped" disc, can sometimes cause lower back pain with associated leg pain. Uncommon causes of lower back pain include spine and spinal cord tumors, kidney problems and aneurysm of the aorta-the major blood vessel that carries the blood from the heart.

Patients may also have leg pain with their back pain. This can involve one or both legs. Most commonly, patients who have had a severe low back strain injury can have a vague pain that can radiate down one or both legs. This does not necessarily mean that they have a "pinched nerve" or "slipped disc." Some individuals may have pain that predominately radiates down one leg (***sciatica***). Although sciatica may be caused by a herniated disc, there are several other causes. These include referred pain from the back, tailbone, hip or knee joint arthritis, spinal stenosis, blood vessel(***vascular***) disease or infection in the leg. It should be noted that although this paper is not on diagnosis and treatment of neck and arm pain, the information and treatment presented applies in similar fashion to patient's with neck/arm pain.

The diagnosis of most causes of back pain can be determined on the basis of a thorough medical history and neurologic examination. For most problems involving back and leg pain, a CT (cat scan) or MRI (magnetic resonance imaging) scan is ***not*** necessary. It is a common misconception that x-rays are needed to find "the cause" of someone's lower back pain. This is simply not the case. Why?-because in the majority of these cases, x-rays will not change the way that a patient's low back problem will be managed--including patients with sciatic pain. Plain x-rays do not show the spinal cord, nerves or vertebral discs, nor do they show muscles and ligaments. Injury to the latter is the single most common cause of lower back pain. Once the history and physical exam have been done, your physician should have a good idea as to the most likely cause of your back pain. If the pain is due to a muscle strain injury (the most common cause), disc herniation or arthritic problem, ***treatment (not a test) is then indicated.*** If there is a concern that some other more serious problem is causing the pain,

then tests may be necessary. Fortunately, less than 5 percent of all patients with lower back pain have a more serious underlying problem.

Non-surgical treatment is indicated for the majority of patients with lower back pain and/or sciatica because, most of the time, the pain will improve with conservative measures. The same is true for patients with herniated discs. One or two days of bedrest is a commonly prescribed treatment and can be effective for some lower back injuries. Inactivity for longer periods may result in other muscle groups weakening and make the problem worse. Other treatments that can be tried during the first week include simple analgesics such as aspirin, acetaminophen or ibuprofen and ice packs. Ice is generally more effective than heat in an acute back injury. It lessens the amount of swelling and inflammation. If the back pain persists for more than a week, one should seek out medical attention. Certainly the sooner the problem is treated, the faster it will improve. Patients that develop back pain, who have a history of cancer or who lose bladder control, should get medical attention immediately.

The next level of treatment may include prescription anti-inflammatory agents (NSAIDs), muscle relaxants and infrequently narcotic analgesics. Physical or neuromuscular therapy is also commonly prescribed. In addition to medication and therapy, the patient should be instructed on back stretching and strengthening exercises. These exercises should be done daily in combination with ice pack treatments. Ice should be applied for 20 minutes two or three times daily. Reusable gel ice packs are convenient for this purpose. Back exercises not only keep lower back muscles stretched out and in good physical condition, they also help to strengthen the back to prevent future injury. Pool exercise therapy is good for both back strengthening, rehabilitation and for general body conditioning. Most patients treated in this manner will have good results in 3-6 weeks. Occasionally, longer treatment is needed. No additional testing is indicated as long as the patient's condition is improving. The same therapy principles that apply to lower back pain also apply to the treatment of neck pain with or without radiating arm pain. The combined treatment therapies of soft tissue (muscle) spinal problems can be compared to baking a cake: one must include all the ingredients to get an acceptable final product. In other words, it is important to do the exercises, take the medications and use ice or heat packs regularly to obtain significant relief.

The recovery period for lower back pain may be longer than two months. Some patients can be helped by merely changing anti-inflammatory agents. It is important to remember that any one anti-inflammatory agent is not effective for all people. Fortunately, there are many different anti-inflammatory agents. In patients whose pain persists despite trying different NSAIDs, a physician may prescribe a class of drugs known as tricyclic antidepressants (TCADs) or muscle relaxants. These medications have several advantages: they are not habit forming, the pain relieving effect does not wear off (unlike narcotics), they have a good long term safety profile and they are inexpensive. The TCADs and some muscle relaxants work by raising the level of certain neurotransmitters in the brain. This modifies the way that pain is perceived without relying on narcotic effect. This effect may take several weeks to develop before maximum benefit is obtained. **The use of TCADs to relieve soft tissue (muscle) and lower back pain is unrelated to their use in the treatment of depression.** In some patients, the use of a corticosteroid injection, either epidurally or in the spine joint facet, may be helpful. Occasionally patients can get relief by using a TENS unit. This device gives a low voltage electrical stimulation to the area affected in the lower back, blocking pain impulses. TENS units have the advantage that no medications are needed.

Diagnostic studies for sciatica and other leg pains that do not respond to conservative treatment may be needed. This can be accomplished by a CT or MRI scan of the lower back. The purpose of MRI or CT scanning in the evaluation of sciatic pain is usually for

pre-surgical diagnostic testing. These tests are helpful in identifying different causes of sciatica including herniated discs, spinal stenosis (severe arthritic narrowing of the spinal canal), arthritic joint disease, tumors, and infectious abscesses. ***MRI or CT should be reserved for patients who have failed to respond to conservative therapy and are potential surgical candidates.*** It is important to note that ***not every case of back or leg pain has an identifiable cause that can be found on x-ray or other diagnostic tests.*** This is why careful examination of the patient is necessary to make sure that no other cause of leg pain can be identified. If some abnormality is found on one of these diagnostic tests, it must correlate with the patient's neurologic exam, prior to any consideration of surgical treatment. It is a known medical fact that ***30-35 percent of patients who have no back or leg pain will have symptomless disc abnormalities on CT or MRI.*** These are x-ray findings only--the abnormalities are not causing the patient any problem. They do not require any type of treatment.

Patients who have a history of ***recurrent or persistent lower back or sciatic problems*** should continue with on-going, self-administered back care. It is important for these patients to do a daily back stretching and strengthening program at home. Good physical conditioning, weight control and regular exercise play a significant role in maintaining good health and in preventing future back injuries. So often we become complacent and slack up on our fitness routine when we are feeling good. This contributes to reoccurrence of back problems.

In conclusion, low back pain and sciatica commonly cause many people to have temporary disability. For the majority, these problems can be effectively treated with conservative, non-surgical measures. It is important for patients with these problems to seek out medical attention early on and not let the problem persists for weeks or months without treatment.

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