

LOW BACK PAIN REPORT

If you're suffering from lower back pain you're not alone. More than 80% of North Americans will at some time in their life suffer from disabling lower back pain.¹ In fact, 31 million Americans experience low-back pain at any given time.²



According to experts, lower back pain is the number one cause for disability in workers' compensation claims and accounts for more than \$50 billion annually in the US through medical care and lost production.³

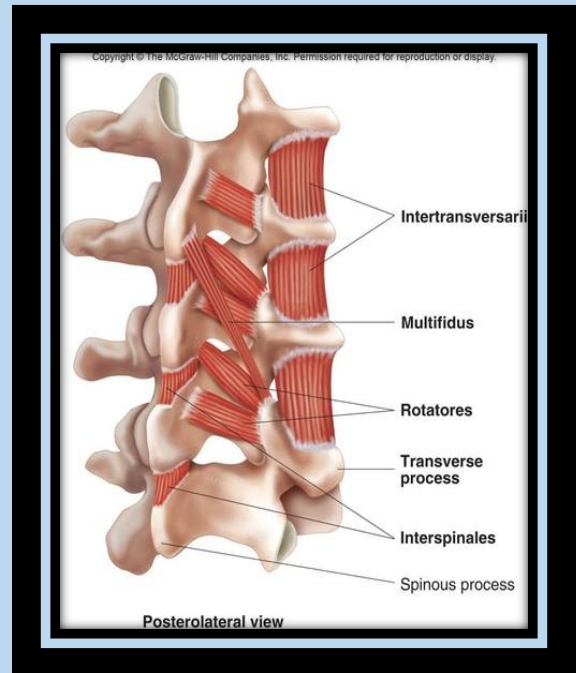
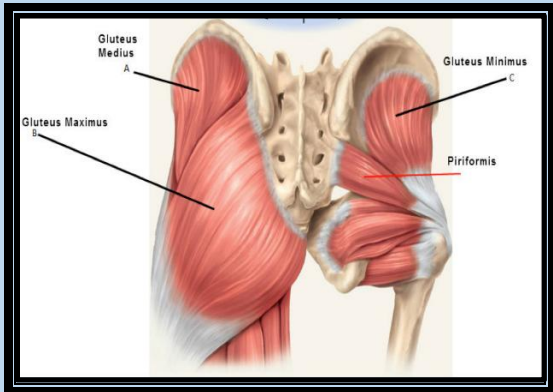
Studies show that 90% of low back pain sufferers under regular medical care still suffer low back pain 1 year later.⁴



In addition, research also shows most lower back problems which cause low back pain do not fully resolve without extensive treatment and proper rehabilitation, contrary to previous beliefs.⁵

As seen in these photos, proper rehabilitation programs like Advanced Corrective Care are necessary to fully resolve your low back pain.

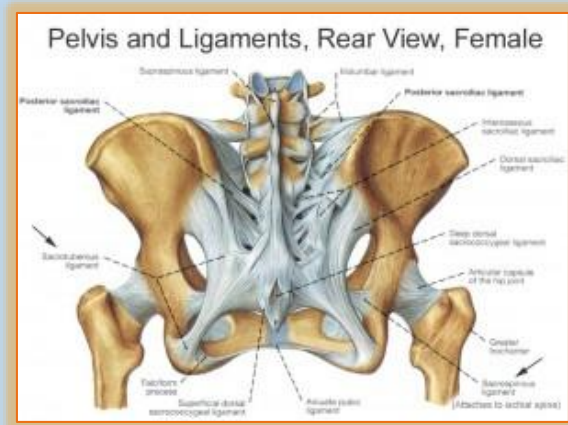
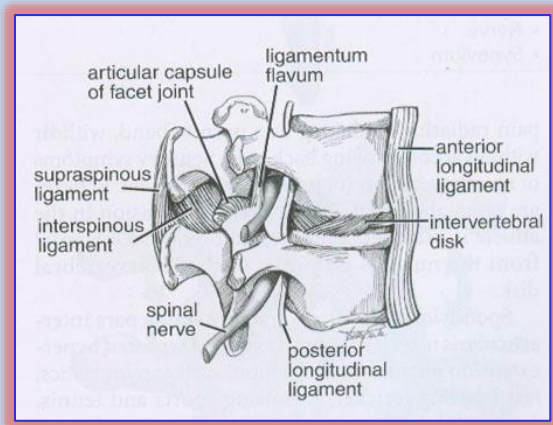
Low back pain can originate from any of the various tissues around the lower spine and/or pelvis. This makes it difficult for the average person to know where the source of the pain is coming from.



MUSCLES-the function of muscles is to contract and move our bones through space. They have pain fibers imbedded in them. These pain fibers will get very excited and let our conscious brain know when there is a problem. This usually happens when there is an increase in inflammation (inflammation is acidic and irritates the pain fibers).

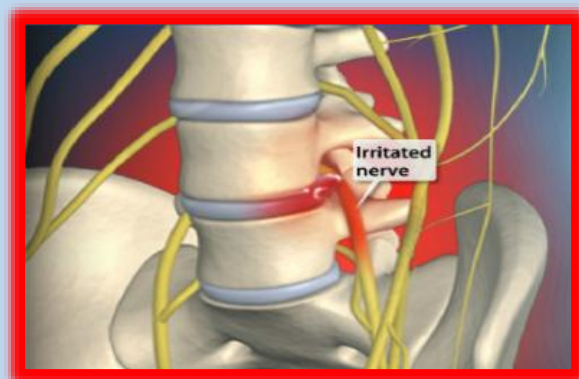
Any of the muscles of the lower spine and/or pelvis can cause pain. There are several muscle groups located in this region. There are three intermediate intrinsic back muscles – the iliocostalis, longissimus and spinalis. Together these muscles form a column, known as the erector spinae. The deep intrinsic muscles are located underneath the erector spinae. They are a group of short muscles, associated with the transverse and spinous processes of the vertebral column. There are three major muscles in this group – the semispinalis, multifidus and rotatores. Another common source of lower spinal pain is the Quadratus Lumborum.

Pelvis muscles that can cause low back pain are any of the gluteal muscles and the piriformis musculature. However, the most common muscle involved is the ***Piriformis*** which causes the back of the hip or gluteal area to hurt and can even radiate pain down the back of the leg. **The most common causes of muscle pain are 1.) tearing of the muscle or tendon from injury and 2.) muscle imbalance due to excessive weakness and/or tightness of the muscle.**

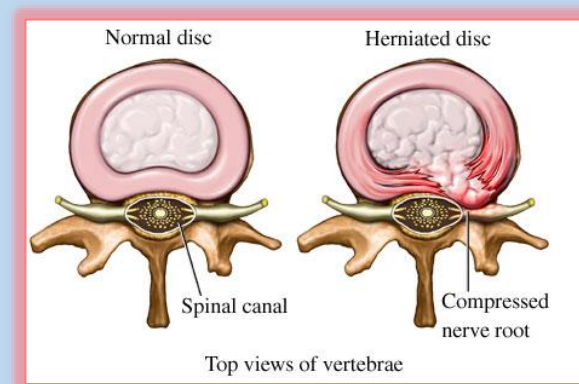


LIGAMENTS- Their function is to stop excess motion and provide stability to the **joint**. They also have an abundant supply of pain fibers associated with them. These fibers will get stimulated when inflammation occurs, resulting in pain. **The inflammation can occur due to trauma (blunt or accumulative), lack of motion (joint locking), or too much motion.**

NERVES- Their function is to transmit messages usually from the brain to other parts of the body. A nerve can become inflamed, resulting in pain locally or cause symptoms down the length of the nerve (e.g. leg pain/numbness/tingling). One example of an inflamed nerve is when either the lumbar joints or sacroiliac joints become dysfunctional, resulting in inflammation that irritates the sciatic nerve.



DISCS- Their function is mainly shock absorption but also help with movement. They also have pain fibers located in them. As discs are damaged the fibers are excited and can cause pain. More seriously, the disc can protrude outwards from a severe injury or an accumulative injury(s) over time and directly encroach upon a nerve, causing more intense symptoms down the length of the nerve.



Causes of Tissue Damage, Resulting in Inflammation to the Pain Sensitive Tissues.

1.) BLUNT TRAUMA- Auto accidents, falls, sports injuries, lifting improperly, and other body collisions can all cause joint locking, tearing and over-stretching of the muscles and/or ligaments (sprain and strain injuries). Inflammation results from the trauma, causing irritation to the pain sensitive nerves. Muscle spasms may also occur resulting in more joint locking.



2.) ACCUMULATIVE TRAUMA- Performing an activity repeatedly can cause an accumulative trauma. Examples of this are running, martial arts, prolonged sitting, laying carpet, warehouse workers, playing golf, tennis, and other sports. Accumulative trauma can be compounded by poor gait, a poorly designed work station, poor posture, muscle weakness, poor stretching habits, previous injuries that did not heal completely, and/or sitting/ standing in one position for too long. Inflammation occurs causing irritation to the tissues, muscle spasms occur and more joint locking results.



3.) PREVIOUS INJURIES WHICH WERE NOT HEALED CORRECTLY- Many of us had previous injuries growing up that did not get taken care of properly. Most of us do not even remember these traumas because we were too young and they may have hurt for only a short amount of time. Because these injuries were not taken care of properly, at the beginning, they healed with excess scar tissue. Excess scar tissue formation will cause the surrounding tissues to become less mobile (locked joints and tight muscles). Over time, the scar tissue becomes laden with sensitive pain fibers and calcium deposits (osteoarthritis). The scar tissue also becomes more predisposed to inflammation, causing the pain fibers to become excited.

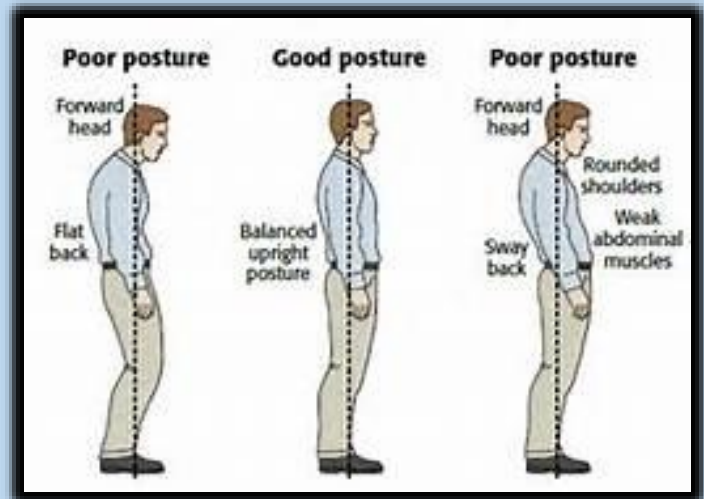


4.) POOR POSTURE AND POOR GAIT- Poor posture can lead to low back pain.^{6,7,8,9} This occurs when the pelvis becomes displaced forward due to tight hip flexors, weak gluteal muscles and hamstrings. This will eventually

cause the joints to lock up, muscles to spasm, and inflammation, resulting in pain.

Contributors of poor posture are prolonged sitting, prolonged computer use, lack of exercise, muscle imbalance, etc.

Gait refers to the way we walk or run. Poor gait can be a source of significant low back pain. Faulty mechanics in the way we walk or run may lead to early degeneration of the low back.



5.) MUSCLE IMBALANCE-Caused by certain muscles being too tight and other muscles being too weak, relative to other muscles. This condition is called crossed posture syndrome. Crossed Posture Syndrome causes joint locking, muscle spasm, and inflammation. Uncorrected, crossed posture syndrome results in pain and disability.



6.) OTHER CONDITIONS THAT MAY CAUSE LOW BACK PAIN-There are uncommon or rare causes of low back pain. Examples are some autoimmune diseases (e.g. rheumatoid arthritis, etc.), rare genetic conditions (e.g. ankylosing spondylitis, etc.), or certain internal organ disorders referring pain to the low back (e.g. kidneys, ovaries, etc.). A comprehensive examination is needed to rule out a rarer organic pathology as the source of the low back pain.

Treatment of Low Back Pain

Chiropractors, physical therapists, medical doctors, massage therapists, acupuncturists, etc. all treat low back pain. *Most low back pain is caused by inflammation irritating the pain fibers.* By reducing the inflammation and muscle spasm the pain will decrease accordingly. However, the underlying causes for the inflammation and pain will not necessarily be addressed.

Chiropractors will adjust the low back and pelvic joints that are locked up, use physical therapy modalities to help reduce the inflammation and muscle spasm, and instruct the patient to ice, stretch and rest at home. **Physical therapists** will use physical therapy modalities to help with reducing the inflammation and muscle spasms, do gentle stretches with the patient, maybe some short massage work and instruct the patient on home stretches. **Medical doctors** will

prescribe medication to reduce the inflammation and instruct the patient to rest. In more severe or advanced cases surgery may be needed. All of them have some benefit, but again may not be addressing the underlying cause.

HERE'S THE REAL PROBLEM: The underlying cause of most low back pain cases is mechanical (the tissues noted above are not functioning correctly). When there has been injury(s) to the low back, or there has been long-term postural problem or a combination of any of these, and they are not corrected, consequences to the integrity of the low back occur over time. Joints become locked, muscles tighten, inflammation ensues, and scar tissue eventually forms. Then, calcium deposits in the scar tissue, forming degenerative arthritis. The longer this is allowed to degenerate the more risk of severe damage occurs. **Symptoms often do not correlate with the extent of damage until the end stages.** This degenerative condition can lead to disability and more pain. At some point, the tissues may degenerate so severely, that surgery may become an option. Unfortunately, success with surgery is usually minimal at best.

HERE'S THE REAL SOLUTION: *CORRECT THE FAULTY MECHANICS,* which in most cases should be done conservatively. The challenge is that over a lifetime a person may have had numerous injuries to the low back (known, unknown or unremembered). In addition, our society places our body in abnormal postures causing muscle imbalances to occur from a very early age. **To use a computer analogy, this is like an operating system that has been infected by numerous viruses over time. A total reformat is needed.** Correcting the faulty mechanics begins with a comprehensive examination assessing posture, gait, muscle strength, flexibility, joint mechanics, balance, mobility, stress, range of motion, and neurologic/orthopedic integrity. Once all the mechanical deficits are known a comprehensive treatment approach can be devised. Treatment should include posture and gait correction, exercises to increase: mobility, strength, flexibility, balance, and nerve function (CNS and PNS). Treatment should also include chiropractic care to increase joint motion, physical therapy modalities to be used to address the inflammation and muscle spasm, and programs to decrease stress. ***In our office, this is achieved with the Advanced Corrective Care Program.***

Chiropractic care alone for treating low back pain has been shown to be safe, cost effective, and just as successful at reducing low back pain as NSAIDS, without the risk of side effects.^{10,11,12,13} Advanced Corrective Care adds structural and physical therapy rehabilitation to address the underlying causes.

A patient information article published in the Journal of the American Medical Association in 2013 also suggested chiropractic care as an option for people suffering from low back pain--and noted that surgery is usually not needed and should only be tried if other therapies fail.¹⁴

LITERATURE CITATIONS

1. Rubin DI. *Epidemiology and Risk Factors for Spine Pain*. *Neurol Clin*. 2007; May;25(2):353-71.
2. Jensen M, Brant-Zawadzki M, Obuchowski N, et al. *Magnetic Resonance Imaging of the Lumbar Spine in People Without Back Pain*. *N Engl J Med* 1994; 331: 69-116.
3. *In Project Briefs: Back Pain Patient Outcomes Assessment Team (BOAT)*. In *MEDTEP Update, Vol. 1 Issue 1*, Agency for Health Care Policy and Research, Rockville, MD.
4. *British Medical Journal*. 1998;316:1356-9
5. *Reuters*. June 03, 1998.
6. Lennon J, Shealy N, Cady, RK, Matta W et al. *Postural and Respiratory Modulation of Autonomic Function, Pain, and Health*. *American Journal of Pain Management*. 1994;4 (1):36-39.
7. Peterson Kendall F, Kendall Mc Creary E, Geise Provance P, McIntyre Rodgers M, Romani WA. *Muscles: Testing and Function*. 5th ed. Lippincott Williams and Wilkins. Baltimore, MD. 2005.
8. Christie HJ, Kumar S, Warren SA. *Postural aberrations in low back pain*. *Arch Phys Med Rehabil*. 1995;76(3):218-224.
9. Cacciatore TW, Horak FB, Henry SM. *Improvement in automatic postural coordination following Alexander technique lessons in a person with low back pain*. *Phys Ther*. 2005;85(6):565-578.
10. *Time to recognize value of chiropractic care? Science and patient satisfaction surveys cite usefulness of spinal manipulation*. *Orthopedics Today* 2003 Feb; 23(2):14-15.
11. Bigos S, Bowyer O, Braen G, et al. *Acute Low Back Problems in Adults*. *Clinical Practice Guideline No.14*. AHCPH Publication No. 95-0642. Rockville, MD: Agency for Health Care Policy and Research, Public Health Service, U.S. Department of Health and Human Services, December, 1994.
12. Chou R, Hoyt Huffman LH. *Nonpharmacologic therapies for acute and chronic low back pain: a review of the evidence for an American Pain Society/American College of Physicians Clinical Practice Guideline*. *Ann of Internal Med* 2 Oct. 2007;147(7):492-504.
13. Bronfort G, Haas M, Evans R, et al. *Evidence-informed management of chronic low back pain with spinal manipulation and mobilization*. *Spine*. 2008;8(1)213-225.
14. Goodman D, Burke A, Livingston E. *Low Back Pain*. *JAMA*. 2013; 309(16):1738.

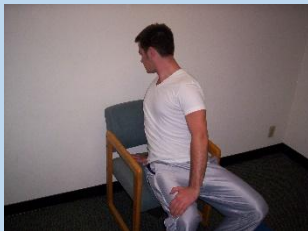
STRETCHES FOR THE MUSCLES OF THE LOW BACK

LOW BACK

Rotation

Start in the sitting position. Slide buttocks to the edge of the seat, careful to not fall off the chair. Place hand flat on the back of the seat behind your body, so that the fingers are pointing toward the back of the seat. Other hand contacts the outside of the opposite leg. Lean back, then rotate the body and head to the same side as the side the hand is contacting the leg. The hand that is contacting the leg is also applying a gentle pressure at the same time you are rotating the body. You should rotate only until a gentle stretch is felt.

Hold the stretch _____seconds
Do this stretch ____times per day



LOW BACK Lateral Bending

Start in the standing position, side to be stretched is against the wall. The arm closest to the wall should be raised over the head. Bend your body away from the wall, while still contacting the wall. The raised arm should be extended over the head at the time of the stretch so the weight of the arm helps stretch the low back.

Hold the stretch _____seconds
Do this stretch ____times per day



LOW BACK

Flexion

Start in a standing position with feet shoulder width apart and pointing straight ahead. Always keep knees slightly bent. Slowly bend forward from the hips. Let your arms and neck relax. Lower your hands to the floor until you feel a stretch in the low back.

Hold the stretch _____seconds
Do this stretch ____times per day



LOW BACK

Extension

This is a slightly more advanced stretch than the last one. Start in the laying position on your stomach. Push your torso up slowly by your hands. The bottom half of the body stays contacting the floor. You should feel a gentle stretch in the low back.

Hold the stretch _____seconds
Do this stretch ____times per day

