

## Anatomical Short Leg Leads to Back Pain

Often times in my office, I will examine a patient who presents with low-back pain that has eluded multiple specialists. This patient has typically undergone pain medications, muscle relaxants, anti-inflammatories, physical therapy, and epidural steroid injections, yet still has not obtained any significant relief. Diagnostic imaging such as MRI will usually show single-level degenerative disc disease and herniation, often at the lower lumbar spine, without any known injury. The typical scenario is of a patient aged 25 to 50 who seems healthy in all aspects, except for constant nagging low-back and sometimes leg pain that worsens the longer he is standing.

When I see this situation, my first inclination is to rule out an anatomical leg-length inequality, caused by an anatomically short bone in the leg. It should be noted that anatomical (structural) leg-length inequality is entirely different from and should not be confused with physiological (functional) leg-length inequality. Physiological leg-length inequality is due to muscular imbalances, not bone length. So why does anatomical leg-length inequality leading to back pain often get overlooked? It's very simple: every diagnostic test such as X-ray, CT scan, and MRI performed in a medical and hospital setting prior to my consultation has had the patient lying on his back! One can **not** evaluate the effects of gravity on the spine, hips, knees, and ankles with the patient lying on his back. The patient must be standing when the X-ray is taken to make accurate leg-length measurements. Also, if you have ever experienced severe back pain, lying on your back is about the only comfortable position you will find. Taking an X-ray with the patient lying comfortably on his back when the patient has pain while standing, is like performing a cardiac stress test on a patient while he is sleeping. It makes no sense.

A majority of people have a measurable anatomical leg-length difference of ¼ inch or more, although most people adapt to the difference with no apparent ill effects. Unfortunately, some do not. The ill effects range from low-back or sacroiliac pain to hip, knee, or foot problems.

A number of causes can contribute to leg-length discrepancy, including the following:

- Any previously broken leg bone, particularly during growth years.
- Congenital differences or uneven growth.
- Disease-caused shortening of the muscles and connective tissue, a common after-effect of polio.
- Surgically induced differences, especially common after hip- or knee-replacement surgery.
- Compensation for problems elsewhere in the body, such as pelvic or spinal scoliosis.

These biomechanical adaptations and compensations for even a slightly short leg can have long-term side effects, manifesting as low-back pain, hip and knee pain, uneven gait, and various foot and lower-leg problems. These problems are often related to the bodily adaptations that occur due to continuous unbalanced movement and can be aggravated by the stresses of sports activities such as running.

The diagnosis and treatment of such leg-length differences and their effects is the subject of volumes of medical history and research. Our office uses a specific protocol to diagnose and correct this condition without the use of drugs or surgery.

If you or someone you know is suffering from back pain and have not found the relief for which you are looking, please contact our office. We may be able to help you.

*Information provided by Christopher M. Renze, D.C., D.I.B.C.N., of Renze Chiropractic Clinic, P.C. For more information, visit [www.renzechiro.com](http://www.renzechiro.com) or call the office at 965-3844.*