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Need a Lift? It Depends on Whom You Ask

Leg-length imbalance prompts a 'chicken-or-egg?' debate

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By Michael Gibbons

Vol. 22 • Issue 20 • Page 32

Leg Length

Is leg anisomelia real? The long and short of it is, opinion is split.

When he practiced as a chiropractor, Arthur B. Gross, DC, saw leg anisomelia, or leg-length imbalance, routinely in patients complaining of lower- or mid-back pain, chronic headaches and other symptoms. He treated it with heel lifts plus spinal manipulation and exercise.

"Leg length imbalance creates an unsettling of the spinal foundation," Dr. Gross said. "It creates curvatures and compensatory curvatures. As a result, the facet joints of the spine become irritated, along with muscle imbalances, and you have chronic back pain."

For Christopher Ford, MPT, however, leg anisomelia is largely a myth, or, more accurately, an illusion. Legs just don't grow unevenly, he said. In almost all cases, it's a rotated pelvis that causes one leg to appear longer than the other.

"In 16 years of practice, I've had hundreds of people say they have a leg-length difference," said Ford, president of Alternative Back Care Physical Therapy in Tacoma, WA. "Out of those hundreds, I've seen only five or six with true leg-length difference. One had polio. One had a fracture that didn't heal right. Even in patients who have had hip-replacement surgery, and I've seen a lot of them, I check their leg length and they are pretty good."

Five-Millimeter Difference

To bolster his case, Dr. Gross cites a researcher named Ora Friberg, who in a paper published in Spine magazine in 1983 described a standing X-ray examination of 798 patients with chronic and

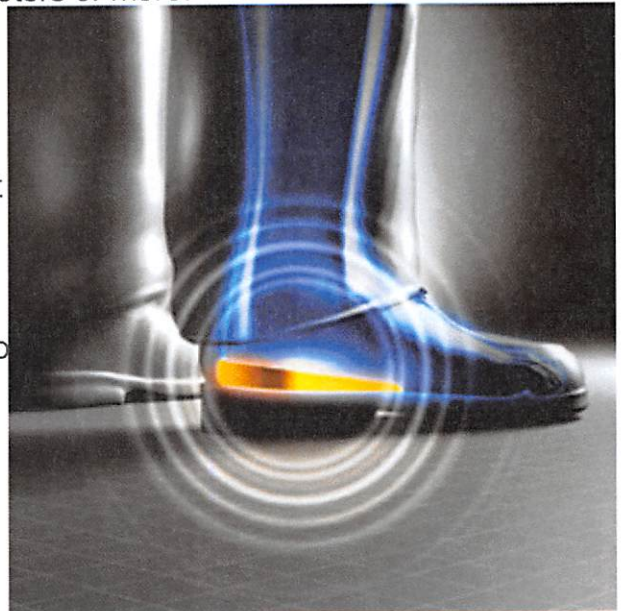
therapy-resistant, low-back and/or unilateral hip symptoms and 359 patients with no back pain.¹ "Of the 798 patients with therapy-resistant back pain, 75.4 percent of them had leg-length deficiency of five millimeters or more, five millimeters being considered significant," Dr. Gross explained. "Of the control group, 43.5 percent had leg deficiency of 5 millimeters or more."

Rarely does the pelvis rotate on its own, he continued, except in the case of trauma to the pelvis or sacroiliac joints. "If you examine patients standing, and put gravity on them, the pelvis will twist because of a leg-length deficiency," Dr. Gross said. "Only if they stand and you see one iliac crest higher than the other, and when you sit them down and see the same thing, then the problem is the pelvis, not leg length." In most cases, though, it's an anatomical leg-length difference that causes the pelvis to rotate, he said.

Ford sees it as precisely the opposite. "When patients go to a chiropractor, they lay on a table and the chiropractor looks at their ankles and sees a discrepancy," he said.

"They assume one leg is short and lift it. You need to correct the innominate rotation.

"At the beginning of my career, when I graduated, I worked in nursing homes and did a lot of shoe corrections. In less than a year I learned about the sacroiliac joint and all the abnormalities that go with it, including leg-length differences. Ever since then I've addressed the SI joint. It's the most under-



diagnosed issue in the medical world."

Many Possible Causes

Many variables can cause a person to have back pain or difficulty walking, including true anatomical leg-length differences and pelvic rotations, offered David Apts, PT, of Premier Occupational and Physical Therapy, Ashland, KY.

"Five to 10 percent of patients with back pain may have a sacroiliac component," he said. "Of them, some may have a pelvis that is stuck. You must do a complete neuromuscular biomechanical evaluation to determine if it's an anatomical long leg or a pelvis rotation. One foot might even have a fallen arch and not the other. So it's not just one factor."

For true anatomical leg-length difference, heel lifts are a low-cost, noninvasive and highly effective treatment, according to Dr. Gross. "I look at the research each month as it comes in and my idea hasn't changed much as to how this issue should be addressed," he said.

Heel lifts tend to level an inferior pelvis or sacrum due to an anatomical short leg that has initiated a scoliosis, he said. They can inhibit further degradation, and improve spinal balance and gait. "The heel lift jacks up and levels your foundation so you don't have cracks in your walls," Dr. Gross said. "The next thing to be done-since a heel lift won't do it all as the problem didn't happen overnight-is spinal manipulation, or mobilizing the spine. With that, plus exercise to balance the musculature of the spine, the discomfort goes away."

Building by Layers

Patients must comply with heel-lift therapy, Dr. Gross continued. "They must wear it 100 percent of the time during the treatment phase," he said. "You can't walk barefoot around the house-at least, not until you strengthen the musculature. By and large, the lift needs to be in there permanently because the leg isn't going to grow anymore. After 10 or 12 visits, they are usually pain-free."

Heel lifts have four layers to them, Apts explained. Therapists build the lift by adding layers. "If the anatomical leg imbalance is one inch, you use a quarter of an inch lift for one week then graduate to a half-inch," he said. "You usually can't put a whole inch in there. And each layer has an adhesive underside. You want to fixate it. You don't want it sliding around inside the shoe."

Patient demand for shoe lifts may be growing. One shoe repair business in Cleveland now devotes itself entirely to installing "buildups" in customers' shoes.

"My father had a shoe repair shop in Cleveland for 20 years," Ilya Romanov told *ADVANCE*. "After college, I thought I'd do shoe repair work through the Internet. So we created a website for repair of men's and women's shoes. People began writing us, asking 'Do you do shoe lifts?' I saw there was a need for this. Now that's all we do. We have a full-time staff. A local cobbler might see this type of work every couple of months. We do a couple hundred buildups a week for customers from all over the world. We had someone from South Korea the other day."

Bulging Discs

Nevertheless, Ford remains adamant that leg-length imbalance, and its associated back pain, is rooted in a rotated pelvis. Accordingly, that's the area he treats.

"If your foundation, your sacrum, is tipped, the whole spine tips," he said. "You are walking around crooked. Your body naturally goes to vertical. The lumbar spine will flex inside to allow the spine to go to vertical. The trunk curves, putting a constant load on the discs. That's why they bulge. If you do that year after year, it's problematic."

In other words, what makes discs bulge are the joints dictating the misaligned position of the vertebrae. "It follows that if you take away the mechanical twist of the spine, you take away the disc bulge," Ford said. "To correct the bulge, you realign their pelvic rotation. Then there is no mechanical reason for the discs to bulge. They will go back to where they are supposed to be. After the pelvis rotation is corrected, utilizing an SI belt to create compression will allow normal function without displacing the joint. By keeping the pelvis level, you keep the leg lengths even."

Reference

1. Friberg, O. (1983). Clinical symptoms and biomechanics of lumbar spine and hip joint in leg length inequality. *Spine*, 8(6), 643-651.

Michael Gibbons is an editor with ADVANCE.