

Update 6

UNEQUAL LEG LENGTH INCREASES RISK OF SPINAL DISORDERS AND DEGENERATION

A recent study by researchers from the Gifu University School of Medicine, Japan, focused on evaluating the effects of unequal leg length on the motion of the spine during walking.

The researchers had subjects wear a heel lift that raised the heel of one leg by 3 cm. Twenty-two healthy male volunteers participated. The curvatures of the spine were then evaluated during walking. The researchers used special equipment, called a VICON system, to analyse the subjects' leg length differences.

The researchers found that the spine had to bend to the side more during walking when the legs were a different length.

The thoracic spine (mid to upper back) bent to the side a maximum of 4.2° when walking with a leg length difference, whereas it had to bend only 3.0° when walking with equal leg lengths. Maximum side bending of the lumbar spine (low back) was 8.1° when leg lengths were different, whereas it was only 6.1° when walking with legs the same length.

The researchers concluded that:

“Patients who have leg length differences are at greater risk of developing disabling spinal disorders due to exaggerated degenerative change. Therefore, treatment for leg length discrepancy may be helpful in preventing degenerative spinal changes.”

REFERENCE:

Kakushima M, Miyamoto K, Shimizu K. The Effect of Leg Length Discrepancy on Spinal Motion During Gait: Three-Dimensional Analysis in Healthy Volunteers. *Spine* 2003; 28:2472-6.