

Evaluation of Spinal Disorders

Leg Length Inequality

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The human body is not perfectly symmetric in development from right to left. This becomes readily evident when assessing leg length. The right and left legs are not usually exactly the same length nor do they have exactly the same dimensions throughout. There are many structural and functional variables which could alter the length of each leg. These differences are usually not obvious to the individual or to others with an untrained eye. Most standard physical examinations are unable to detect leg length inequality (LLI) less than 25 mm (approximately 1 inch).

LLI can be the result of structural (anatomical) causes which include unequal bone growth rates, trauma, degeneration, infection and hereditary (congenital) abnormalities. Functional LLI is a term that refers to differences in leg length which are not associated with fixed structural differences. The functional LLI can result from causes such as pelvic rotation, excessive foot pronation, inability to fully extend the knee, a cavus or high arched foot on one side, and muscle contractures.

Research has demonstrated that patients with a LLI of more than 10 mm have a greater risk for developing low back pain. Individuals with significant LLI who spend a considerable amount of time on their feet are more apt to develop back problems.