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## **Effects of leg length difference**

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A full physiotherapy exam, for a range of different injuries and problems, includes looking for differences in leg length. Leg length discrepancies can contribute to inefficient mechanics and create uneven stresses on the body. Although many people can live life without correcting a leg length difference, in activities like running or walking briskly, where the foot hits the ground up to hundreds of times in an hour, this difference may need to be corrected to prevent overuse injuries.

The first step is to determine what type of leg length difference you have. Leg length discrepancies fall into two main categories. The first is a true anatomical leg length difference and the second is a functional leg length difference. It is very important to know what you have because treatment of the two is very different.

True anatomical leg length difference occurs when either of the two main weight bearing bones in the lower extremity, the thighbone (femur) or shinbone (tibia) are a different length than their counterpart on the opposite leg. This type is relatively rare, with some studies suggesting that only 1 in 450 people affected. These can occur secondary to fractures early in life, from congenital malformations, or from other childhood diseases such as polio. Anatomical leg length difference is treated with the use of a heel lift on the short side, either on its own or built into a special insole, called an orthotic.

Functional leg difference is a condition that usually develops over time. Muscles on one side of the spine may grow stronger than the other side. This can occur as a result of asymmetrical activities like carrying a backpack repeatedly on the same shoulder, sleeping on the same side every night, or carrying kids on one hip. To compensate for injuries around the hip and back, some people rotate their pelvis and low back, thereby creating an apparent leg length difference.

Often runners can feel this difference when they are running. One leg feels like it always hits harder. They may also have noticed that the same pant cuff always seems to get frayed (a sign of dragging it on the ground), or in photos they also may have noticed that one shoulder is lower than the other.

The best way to determine if you have a functional or anatomical difference is to have a physiotherapist assess your posture, muscle balance, and body symmetry. Physiotherapists are university-trained in assessing the mobility and strength of the body, and they will take the time to do a thorough assessment. If an anatomical difference exists, the physiotherapist will first need to decide if the discrepancy is significant enough to require change. Our bodies are not perfect and symmetrical so sometimes minor discrepancies are better left alone. If the anatomical discrepancy is large enough to be causing the problem, then your physiotherapist may suggest you use a heel lift or some corrective footwear.

If a functional difference exists, your physiotherapist may use hands-on techniques including specific joint mobilization, manipulation, or soft tissue stretching to address the imbalance. As well, specific exercises will usually be prescribed to help you correct the imbalance.

Having a leg length difference, either anatomical or functional is fairly common. Although it doesn't always affect a person's health, runners and regular walkers in particular are at increased risk from its effects because of the repeated impact. Fortunately, together with your physiotherapists, you can do something about correcting its impact on your life.

For further information on this topic please contact the Fawzia Sultan Rehabilitation Institute (FSRI) in Hawally at 264-2862, or check out our website at [www.rehabinstitutekuwait.com](http://www.rehabinstitutekuwait.com)

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