ABSTRACT

Background: Leg-length inequality (LLI) is a musculoskeletal condition where one lower extremity is longer than the other. There is conflicting evidence on the relevance of LLI and conservative treatment options. Iliac crest height difference (ICHD) is a good estimate of LLI.

Objective: To observe changes in pain and performance among recreational runners with running-induced lower extremity pain who received ICHD correction.

Methods: A 12-week case series with multiple baseline and intervention (A-B-A-B) phases was used to observe the effects of ICHD correction on pain and performance among three symptomatic recreational runners. Primary outcome measures included the Lower Extremity Functional Scale (LEFS), the Visual Analog Scale –Worst Pain (VAS-W), symptom-free running distance, and average running speed. A standardized procedure for fabricating an in-shoe shim was utilized for ICHD correction.

Results: There were no clinically important differences in functional capacity for any subject between any phases. Also, two subjects demonstrated trends towards increased pain over the 12-week experimental period, whereas one subject demonstrated a decrease. One subject demonstrated a statistically significant increase in running distance during intervention phases, but the others demonstrated reductions. All subjects demonstrated trends towards increased running speed, but none were statistically significant.

Conclusion: The correction of small ICHD < 9mm did not improve pain or performance among recreational runners. Individuals with small ICHD may be able to effectively compensate for lower extremity asymmetries; therefore, correction seems to be unnecessary and potentially harmful in short-term.

Level of Evidence: Therapy, level 4

Keywords: Distance, injury, leg-length inequality, movement system, Palpation Meter, running