

Abstract

Title: Influence of gait in high heels on posture, and division of pressure on the contact area level of the feet and the floor.

Objective: The aim of the dissertation was to confirm how walking in high-heeled shoes influences the time and pressure parameters of the step cycle and posture during slow and very slow walking in low experienced wearers.

Methods: The research study was an empirical, comparative intra-individual study. Pedar-X® measuring inserts (Novel, Munich, Germany) were used to measure the distribution of plantar pressures and to evaluate time parameters while walking on a conveyor belt at $v_1 = 0.97 \text{ ms}^{-1}$ and $v_2 = 0.56 \text{ ms}^{-1}$ in straight shoes and high-heeled shoes. SonoSens Monitor Analyzer® (Gefremed, Chemnitz, Germany) was used to assess posture. The research group consisted of thirty healthy women wearing high-heeled shoes occasionally (age: 21.8 ± 2.09 years, weight: 55.7 ± 4.05 kg, height: 1.66 ± 0.03 m). Anova test and paired t-test were used for statistical analysis, and the Cohen coefficient d was used to calculate material significance.

Results: Significant differences in time and plantar pressure variables were found when walking in high-heeled shoes compared to straight footwear. For both types of footwear, walking speed only affected time variables, but not dynamic parameters. In the sagittal plane, significant differences were found in all parts of the spine for v_1 and v_2 . When walking in high-heeled shoes, lordosis in the lumbar region of the spine as well as in the cervical region decreases significantly and the kyphosis in the thoracic spine increases. In the frontal and transversal planes, we found significant differences in motion amplitudes, but with a small magnitude of effect. In the heel shoes, we observed statistically significant differences in posture between walking speeds, especially in the thoracic area of the spine.

Keywords: step cycle, standing phase, swing phase, spine, sagittal plan

