

Abstract

Title: An influence of barefoot walking on postural stabilization

Objectives of the thesis: The subject of my diploma thesis is to assess an immediate effect of outside walking on a postural stabilization in two groups through an experiment. First group of tested subjects (proband) walked barefoot and the other group walked in the conventional shoes. An ambulation took place in outside conditions. The objective of this work is to judge if barefoot walking can have a positive influence on stabilization capabilities of individuals. Farther objective is to judge, if there is a correlation between motor reactions on the tactile stimulation of the soles of the feet and two walking's manners (shod/unshod).

Methods: In this thesis were used a method of analysis and a method of comparison in this thesis. The experiment was made in form of pretest (3 measurements) and posttest (3 measurements) on 30 probands. Required data for analysis were obtained by measurements of postural somatoscigraphy (pSOG). There was evaluated the postural provocation test on the platform of Posturomed. During test was measured a stopping and persistence of one leg stand for the period of 8 seconds. Oscillation curves of platform recorded by an accelerometer and programme Microswing 5.0 were evaluated in programme Posturomed Commander. Proband's motor reactions on the tactile stimulation of their soles of the feet was evaluated by clinical test according to Hermach. Comparative part includes statistic methods and graphic visualization made in programme Microsoft Excel 2010.

Results: It was found that first group used to walk barefoot in outside conditions have worse quality of postural stabilization, but an improvement of postural stabilization between pretest and posttest was larger in this group. Statistically greater improvement between the "barefoot group" and the "shod group" was uncovered in lesser part of assessed parameters in pSOG. After the intervention the „barefoot group“ had lower motor reactions on the tactile stimulation of their soles of the feet than the „shod group“.

Keywords: bare feet, footwear, exteroceptive stimulation of the feet, natural gait pattern, off-road conditions, stability, posture