

Abstract

Title: Walking step coordination characteristic comparison for walking on running simulator and off-road walking.

Objectives: Goal of the thesis is to measure, analyze and evaluate data of activity and involvement of lower limb muscles for offroad walking and walking on running simulator. The measured characteristic will be intra-individually and extra-individually compared.

Method: Surface polyelectromyography method for data measurement and kineziological movement analysis method for values comparison are used in the thesis. Ten muscles of lower limb (2×5 muscles on left and right lower limb) were chosen.

Results: Ten lower limb muscles were chosen and their activity for walking on running simulator and offroad walking was measured by surface polyelectromyography method on ten sportsmen. The results indicate that chosen muscles participate on monitored movement. The analysis shows that the muscles activity follows the same order for each of tested sportsmen independently on the external condition (running simulator and offroad walking). The thesis that correlation of measured values is higher for running simulator have been confirmed. But m.gluteus.med. and m.glut.max. have variation in the activity of the involvement in the field and on the treadmill. Similar results have also m.vastus med.

Key words: walking, offroad walking, running simulator walking, step, lower limb muscles, surface polyelectromyography (EMG), kineziological analysis