Abstract

This diploma thesis is focused on the effect of peripheral vestibular dysfunction and locomotion speed on the ability to walk a straight path. Nineteen patients with chronic peripheral vestibular dysfunction and twenty healthy volunteers participated in this study. The angle deviation from 10 meters long straight path while walking with eyes closed was measured, using three locomotion speeds: slow, preferred and fast walking. Tandem gait with eyes opened and closed was also tested for maximum of 15 steps. There was no statistical difference between group of patients and the control group in any of the tested gait speeds. Within both groups, there was a significant difference between deviations in different gait speeds, specifically between slow and preferred speed and between slow and fast speed. There was a statistical difference in tandem gait between patients and controls when walking with eyes closed. It has been shown that locomotion speed effects magnitude of deviation in path integration task. However, slow walking with eyes closed did not quantitatively differ in chronic compensated patients and healthy subjects. Tandem gait has been proven to be more sensitive with overall obvious difference, although in individual tandem gait testing it is important to consider the results carefully and take into account condition of other sensoric systems.