

Abstract

Title: Evaluation of postural stability in subjects after whiplash injury

Objectives: The aim of this thesis is to assess the impact of whiplash injury on postural stability of the subjects who sustained this injury and, subsequently, to compare the results with a group of healthy subjects.

Methods: In this pilot study, 16 subjects forming an experimental and a control group were involved. The experimental group consisted of 8 probands after whiplash injury, about 3-5 months after sustaining the injury. The average age of this group was 29.4 years. The control group consisted of 8 healthy probands with average age 28.8 years. All probands were free of neurological diseases, previous serious trauma and orthopedic surgeries in the region of lower extremities or torso, which might significantly affect the results of postural stability measurements. To evaluate postural stability, the device Smart EquiTest System by Neurocom was used and the data obtained were subsequently processed using the Neurocom Balance Manager Software programme. The results of both groups were statistically evaluated using the Shapiro-Wilk test of normality and then compared using the paired t-test or the Mann-Whitney test.

Results: The results of this thesis point out that the persons who sustained whiplash injury show worse levels of postural stability. Statistically significant differences of certain parameters were found as compared with the control group, namely in the static testing of postural stability. In dynamic testing, only one measured parameter was statistically significant.

Keywords: whiplash injury, postural stability, dynamic computed posturography, Neurocom Smart EquiTest