

## **Abstract**

**Title:** Evaluation of selected postural stability parameters of diabetic patients

**Objectives:** The main objective of this thesis is to describe the level of postural stability using the selected parameters in diabetes mellitus type 2 and to try to find a relationship between the severity of disease. We also want to compare the level of postural stability for such an illness with respect to the values of selected parameters of the healthy population.

**Methods:** It is a descriptive study. The theoretical part was the basis of the processing problems of diabetes mellitus, with a focus on neuropathy. After that we evaluate data of selected parameters of postural stability in diabetes mellitus type 2. The second part involves the experiment, which refers to the evaluation of this issue in terms of posturographic analysis. A group of 30 type 2 diabetic patients were divided according to their diabetologist disease severity into 4 groups. A control group of healthy subjects included a sample of 7 probands. The patient group was composed of 18 men and 12 women, whose average age was  $62.63 \pm 15.55$  years, average weight  $91.17 \pm 19.97$  kg, who were subjected to measurement using a pressure plate FootScan (RScan International, Belgium).

**Results:** We managed to prove, that subjects with diabetic neuropathy have decreased postural stability relative to a control group of healthy individuals. Furthermore, there is a difference between the degree of severity of the disease diabetes mellitus and levels of postural stability. This difference was demonstrated in selected postural stability parameters and positions and analysis of data within the statistical processing. As evidence, we have adopted a statistically significant difference in selected postural stability parameters and positions.

**Keywords:** diabetic neuropathy, posturography, postural stability, diabetes mellitus, polyneuropathy