Abstract

Title: Postural stability of school age children

Objectives: The purpose of this work is description of selected postural stability parameters of school age children population and evaluation of sensomotoric stimulation and ball excercises effect on the postural stability.

Methods: This work is a descriptive work with included intervention. During the study, four groups of 10 and 11 year old children were examined, each group had 21 members (n=84; average height=148,2 ± 5,67 cm; average body weight=37,4 ± 4,29 kg, average age=10,96 ± 0,69 years). All 84 children participated in the first measurement on a Footscan to evaluate the level of postural stability based on the selected parameters. Then 15 children were chosen for a 5 week long intervention. After this intervention the group took the measurement again. The final number of children tested in this work was 12 (n=12; average height=151,7 ± 4,61 cm; average body weight=39,71 ± 2,99 kg; average age=11,43 ± 0,29 years). Outcome of the first and second measurement was compared and processed.

Results: Most of the selected parameters have shown, that girls have better postural stability than boys of the same age and that 11 year olds have better postural stability than 10 year olds. The parameter TTW (Total Traveled Way) was chosen for the statistical evaluation. This parameter on the Specify α level 0,05 has shown a significant difference between group of 11 year olds and the group of 10 year olds in all types of stance. In the question of intersexual differences there were significant differences only in some types of stance. In the experimental group, the TTW parameter on the Specify α level 0,05 has shown significant differences between the first measurement and the second measurement in all types of stance. Therefore, in the experimental part of this work it has been shown, that a five week period is long enough to improve the postural stability significantly.

Keywords: Centre of body mass, testing, base of support, balance, posture, intervention exercise