

Abstract

Title: Postural strategy of volleyball players and their ability to dynamically stabilize.

Objective: The aim of this diploma thesis is to find and describe the parameters, which enable the level of postural stabilization in professional volleyball players to be traced, depending on their playing position. These parameters were obtained by taking measurements using dynamic computer posturography (Smart EquiTest System).

Methods: In this experiment, 10 professional players between the ages of 18 and 28, who actively compete in the highest national volleyball league, were specifically selected. The selected individuals were divided into groups according to their game specialization (left side hitter/ right side hitter (n = 3), middle blocker (n = 3), setter (n = 2) and libero (n = 2)). In addition, a control group was selected, consisting of 5 recreational volleyball players. In this thesis, in order to objectively assess the postural stability of test subjects (top athletes and control groups), Neurocom's Smart EquiTest System was used, and the measured data was then processed in Neurocom's Balance Manager Software. Statistical evaluation using Shapiro - Wilk's Normality Test, Student's t - test and Mann - Whitney test subsequently made it possible to compare the game specializations of the test group down to individual parameters. As well as this, the average values of each parameter of the test group with the average values of the control group parameters were compared.

Results: From the results of the work, significant differences in the parameters among the specializations of professional volleyball players were found. Generally the strongest ability of dynamic stabilization was found in the group of left side hitters/ right side hitters, followed by setters and liberos and the weakest in middle blockers. In addition, it was found that the group of professional volleyball players differed significantly from the control group by their average values in only one parameter (Limits of Stability – reaction time during motions leading backwards), and in many other parameters the two groups coincided. These facts have been statistically confirmed.

Keywords: Dynamic Computer Posturography, Neurocom Smart EquiTest, Postural Stability, Volleyball, Left side hitter, Right side hitter, Middle blocker, Setter, Libero