Abstract

Title: Evaluation of dynamic postural stability in football players

Objectives: The main objective of this diploma thesis is to investigate the difference of dynamic postural stability between football players and the common population and measure all the data by computerized dynamic posturography SMART EquiTest System from company of Neurocom. **Methods:** This is a quantitative cross-sectional study. The research is divided in two groups, an experimental group involving 25 football players aged between 20 and 30 years without injuries, an active career over 5 years and a control group involving 25 participants, who are recreational athletes aged between 18 and 31 years from the Faculty of Physical Education and Sport, Charles University. Measurements of dynamic postural stability were performed on Neurocom SMART EquiTest in the Laboratory of applied kinesiology of Charles University Faculty of Physical Education and Sport. Everyone was tested just one time for all seven test batteries – Sensory Organization Test, Motor Control Test, Rhythmic Weight Shift, Unilateral Stance, Weight Bearing Squat, Adaptation Test and Limits of Stability. One testing session took about 45-60 minutes. The measured data was subsequently processed by Neurocom Balance Manager Software. For the analyses of the data there were used statistical methods: Shapiro – Wilk test, Pair t – test, Mann – Whitney test and Cohen´s d effect size. **Results:** A statistically significant disadvantage of football players was found in COND4 of Sensory Organization Test (SOT), where p-value was 0,01, in Motor Control Test (MTC) in parameter ML-backward ($p = 0,03$) and also in the Limits of stability, movement velocity ($p = 0,02$) and maximal excursion ($p = 0,03$). There weren´t found any statistically significant advantages for football players, **Conclusion:** Based on the statistical analysis we disproved all of our expected hypotheses. The experimental group was worse in 81 % of all analysed parameters. We can think that football as a sport has a negative influence on dynamic postural stability of a person. From this we conclude that it would be suitable to continue in more precise research on this topic. First of all it would be better to have a larger sample size or compare the postural stability of individual players position on the field.

Keywords: Dynamic postural stability, posture, computerized dynamic posturography, Neurocom SMART EquiTest, football, biomechanical aspects of football