

Abstract

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Title: Postural stability of the trunk in relation to floorball players' lower limbs injuries

Objectives: The aim of this diploma thesis is to investigate the level of postural stability by evaluating the quality of the deep stabilization system function in elite floorball players. Then, take into account its relation to the occurrence of lower extremity injuries in the anamnesis of each player. The next goal is to compare these results with evaluation of the stabilizing abilities of the lower extremities.

Methods: 28 elite floorball players from the FBC Liberec club took part in this research. The players were 16-35 years old. Testing and data collection were done in September and October 2023 before practice unit in the gym of the floorball club FBC Liberec. Anamnestic data focused mainly on lower extremities injuries were taken at first from each player. Subsequently, the level of trunk stability was examined using the diaphragm test and the hip joint flexion test according to Kolář. Then was measured the Y-balance test. Finally was done the evaluation according to the Return to activity algorithm Level 4 (90° balance hop and square hop test). The MS Excel 365 program and statistic software Jamovi (version 2.3) were used for data evaluation. The results were processed using logistic regression, linear regression model and Pearson correlation coefficient. As a level of statistical significance was considered $\alpha=0,05$.

Results: The statistical evaluation of the measured data did not show any correlation between the quality of trunk stability and the number of lower limb injuries in the past. Furthermore, the hypothesis predicting a higher incidence of injuries in players with worse postural stability results, measured by the Y-balance test and the Return to activity algorithm (Level 4), was not confirmed. Finally, it was also not possible to demonstrate a connection between the quality of trunk stability and the results of these lower limbs postural stability tests. After a more detailed evaluation of the data, but

outside the framework of the originally proposed hypotheses, it was found that there is a statistical significance between the quality of trunk stability and the frequency of injuries of the dominant lower limb in individual players. Then it was found that the results of the Y-balance test do not depend on the dominance of the lower limb or on the lower limb injuries. It showed that if a player performs poorly on one leg, it will be the same on the other one.

Keywords: core stability, core stability in sport, risk of lower limb injury, floorball, Y-balance test, Return to activity algorithm