Bibliographic identification

Author´s first name and surname: Bc. et Bc. Kateřina Levínská

Title of the master thesis: Effect of various types of sensory and cognitive dual-tasking in high performance athlete´s stance stability

Department: Department of Rehabilitation and Sports Medicine, 2nd faculty of medicine, Charles University and FN Motol

Supervisor: PhDr. Ondřej Čakrt, Ph.D.

The year of presentation: 2017

Abstract: This study focused on the influence of various types of cognitive and sensory dual-tasking to the stability of stance of the elite floorball players, elite floorbal players with anterior cruciate ligament reconstruction and healthy controls. A total of forty probands were divided into 3 groups according to the sports activity and the history of ACL injuries. Volunteers underwent examination of bipedal and monopedal standing on a stabilometric platform using a foam pad. We chose three types of secondary task, which we tested first at probands in a sitting position. Subsequently, we combined them with a bipedal and monopedal stance on a foam mat. In secondary tests, latency of response and error rate were measured. Our results show that the combination of a postural challenging situation with a secondary task significantly more affects performance in the sensory-cognitive task than the stability parameters. The smallest effect on stability had a concurrent task amongst top athletes, on the contrary, stability was worse in unsporting controls. In comparison to the healthy athletes and athletes after the ACL reconstruction, there was a statistically significant decrease in performance in secondary tasks when standing on the operating limb.

Keywords: ACL, dual-tasking, floorball, posturography, stance stability