



## Effect of fatigue on kinematic characteristics during gait, balance and accuracy of football shots in high school boys of Kahnooj nomads with a history of coronavirus

### Oral Presentation

1Reza Rahimpour moradi \* ; 2Mohammadreza Amirseyfaddini; 3Mohammadtaghi Amiri-khorasani

<sup>1</sup>Master of Science, Department of Sports Biomechanics, Faculty of Sports Sciences, Shahid Bahonar University of Kerman, Kerman, Iran(rezarhm9679@gmail.com)

<sup>2</sup>. Associate Professor, Department of Sport Biomechanics, Faculty of Sports Sciences, Shahid Bahonar University of Kerman, Kerman, Iran

<sup>3</sup>Associate Professor, Department of Sport Biomechanics, Faculty of Sports Sciences, Shahid Bahonar University of Kerman, Kerman, Iran

### Abstract

**Introduction:** After a long period of school and sporting events closures, we will face the post-corona era and reopening of schools. Because gait imbalance and general weakness are symptoms of corona disease for people who have recovered and re-exercised skills such as walking, balance and accuracy, especially after fatigue compared to healthy individuals can be a challenge. Therefore, the aim of this study was to investigate the effect of fatigue on kinematic characteristics during gait, balance and accuracy of football shots in high school boys with a history of coronavirus in Kahnooj nomads.

**Methods:** The present study is quasi-experimental research. Statistical sample was selected from the students of nomadic schools in Kahnooj city, of which 15 were in the healthy group and 15 were in the group with coronary heart disease. First, the selected kinematic gait parameters, balance and shot accuracy were measured by iPhone mobile camera. Then, by applying fatigue by the non-functional fatigue protocol of the step, the selected parameters were immediately re-measured. To measure the balance and gait parameters, the rise and fall test and to test the accuracy of the shot, the Moore-Christine test was used and the data were measured by the Kinovea program. Independent t-test, paired t-test were used to analyze the research data at a significant level( $\alpha=0.05$ ) in SPSS22software.

**Results:** The results of the present study showed that fatigue had no significant effect on step length, dynamic balance and shooting accuracy of healthy students( $P>0.05$ ) and caused a decrease in maximal knee flexion in both groups ( $P=0.005$ ), but fatigue has been able to Significantly reduce, step length( $P=0.001$ ), dynamic balance ( $P=0.001$ ) and football shot accuracy( $P=0.001$ ) in students with corona disease compared to healthy students( $P<0.05$ ).

**Conclusion:** According to the results of the present study, fatigue after corona disease and its recovery can cause pronounced reduction changes in the length step, dynamic balance and especially the accuracy of football shots compared to healthy students and people who recovering from corona disease when they return to Training and competitions must take these changes into account.

### Keywords

Fatigue; Accuracy; Balance; gait; Coronavirus

### Reference:

1. Li W, Yang Y, Liu ZH, Zhao YJ, Zhang Q, Zhang L, Cheung T, Xiang YT. Progression of mental health services during the COVID-19 outbreak in China. International journal of biological sciences. 2020;16(10):1732.
2. Duan L, Zhu G. Psychological interventions for people affected by the COVID-19 epidemic. The Lancet Psychiatry. 2020 Apr 1;7(4):300-2.
3. Carter SJ, Baranuskas MN, Fly AD. Considerations for Obesity, Vitamin D, and Physical Activity Amid the COVID-19 Pandemic. Obesity. 2020; 28(7): 1176-1177.