

ABSTRACT

Title: Changes of selected parameters of postural stability under influence of physical workload and shooting accuracy of modern pentathletes within combined event.

Objective: Aim of study was to analyze influence of workload to postural stability and determine dependency between postural stability and shooting result.

Methods: Study was carried out on the sample of modern pentathletes (6 male, 4 female), members of junior national team. Experimental design can be described as quasi experiment with time series. Changes of selected postural stability parameters have been observed during shooting from air pistol between running laps (3 x 1 km). As an output from shooting, pistol kinematics and shooting result have been used. We have used ANOVA as a main statistical tool for evaluation of data. As a measure of effect size we have used ω^2 .

Results: Running workload on ANT significantly influences postural stability ($p < 0.01$, $\omega^2 = 0.41$), difference has been observed mainly between shooting without preceding run and after first run lap. Shooting accuracy has not been influenced neither by running workload on ANT nor by postural stability ($p > 0.05$, $\omega^2 = 0.01$). During pistol shooting left leg is more loaded than right one ($p < 0.01$, $\omega^2 = 0.99$). We have confirmed weak degree of correlation between postural stability and pistol sway ($r=-0.23$). Dependency between pistol sway and shooting accuracy has not been confirmed ($p > 0.05$, $\omega^2 = 0.00$).

Keywords: Postural stability, running workload, shooting accuracy, combined event, modern pentathlon.