

Abstract

Title: Selected fitness aspects of professional firefighters competing in fire sport and TFA

Objectives: The aim of the thesis was to find out the level and the difference in the parameters of body constitution, postural stability and muscular and explosive force of lower limbs with groups of professional firemen competing in fire sport and TFA

Methods: The research sample was represented by two groups of professional firemen (17 fire sportsmen and 17 TFA competitors). We assessed chosen parameters of body constitution (Tanita MC-980MA), postural stability (RS Footscan), explosive force (Kistler) and muscular force (Cybex Humac Norm). Assessed parameters of body constitution were percentage of body fat and fatless matter. In the tests of postural stability we assessed total travel way of the centre of pressure (TTW), narrow stand (open and closed eyes) and one-leg stand (right, left). When testing explosive force, overall produced maximal force and height of the leap were assessed. Muscular force was assessed with the help of muscular force moment in concentric muscle activity with angular velocity $60^{\circ}\cdot s^{-1}$.

Results: We found out a significant difference between the two groups in the tests of postural stability - narrow stand with open and closed eyes ($F_{1,32} = 9,94$, $p < 0,01$), in the tests of explosive force of the lower limbs in the parameters height of the leap ($F_{1,32} = 19,00$, $p < 0,01$) and overall produced force ($F_{1,32} = 10,98$, $p < 0,01$) and muscular force of the flexors and extensors ($F_{2, 65} = 5,08$, $p < 0,01$). We didn't find out any significant differences in chosen parameters of body constitution (percentage of body fat and fatless matter) and in tests of postural stability – one-leg stand (right, left).

Keywords: Strength, explosive strength, physical fitness, jumps, profil, Cybex, Kistler