



Implementation of New Methodology of Testing of Body Cooling Systems into the Education Process

R. Karkalić,^{a*} Z. Veličković,^a M. Stojičić,^b S. Cvetanović,^c P. Otrisal,^d and S. Florus^e

^a*University of Defense, Military Academy, Belgrade, Republic of Serbia*

^b*246th CBRN battalion, Serbian Armed Forces, Kruševac, Republic of Serbia*

^c*University of Nis, Faculty of Occupational Safety, Niš, Republic of Serbia*

^d*Faculty of Physical Culture, Palacky University, Olomouc, Czech Republic*

^e*University of Defence, NBC Defence Institute, Vyskov, Czech Republic*

*rkarkalic@yahoo.com

The present research was conducted in order to evaluate possibility of implementation of new methodology of testing of body cooling systems into the education process at Military Academy in Belgrade. According to previous evaluation of personal body cooling systems based on different technologies and its effects on human's physiological suitability during exertional heat stress in hot environment in the laboratory conditions, performed results are based on realized tests in especially unique designed testing ground. Ten healthy and prepared test subjects were subjected to exertional heat stress test consisted of specific working activities in hot environment. The students had significant roles in the collection and processing of data. Tests were performed with and without cooling system. As a physiological strain indicator the following parameters have been determined: mean skin temperature, auditive temperature, tympanic temperature, heart rate and sweat rate. Results confirmed that cooling vest worn under the protective clothes was able to attenuate the physiological strain levels during exercise, when compared to identical exposure without the cooling system. The lessons were recorded, uploaded to the advanced distance learning platform and are actively used in the teaching process.

Keywords: impermeable protective clothing, heat stress, cooling vest, strain indicators.

References:

1. Moran DS, et al. A Physiological Strain Index to Evaluate Heat Stress, *Am J Physiol*, 275 1998, 129-134. DOI: 10.1152/ajpregu.1998.275.1.R129.