

INDIVIDUALLY-TYOLOGICAL PREDICTORS OF RESISTANCE TO THERMAL STRESS

Martirosov Eduard, Martirosova Karina, Semenov Muradin

Department of Biomedical Support, MGFSO, Moscow Sport Committee, Moscow, Russia

The purpose of this study was to investigate the influence of different individual-typological indicators for resistance to thermal stress (heat stabilization). 38 well-trained athletes and soldiers were surveyed twice before and after the heat load in a special heat chamber. A survey of one person was held for two days and took an average of 4 hours a day. The heat load to +40 degrees Celsius, at 85% humidity was simulated in a heat chamber. The hardware control via remote sensor and humidity sensor was provided. The load represented 60-min stay in the cell. The subjects were not allowed to sit, or drink the water. During all time of staying in the cell they quietly walked or stood. All participants signed a voluntary agreement to participate in the experiment. Over 200 different indicators were taken from each participant prior and after the heat load. As criteria of stability to thermal stress the following conditional indices of physical disability were taken: the difference of average work power on a bicycle ergometer in Wingate Anaerobic Test before and after a stay in the heat chamber, and others. The differences were taken into account. Individuals with maximum differences were seen as less resistant to the thermal stress. Among proposed indicators of physical disability, the impact of different individual-typological indicators and their complexes, such as morphological features, personal and psychological traits, visimetrics indicators, indicators of psychomotoric system, cognitive index, fingerprint dermatoglyphics, electroencephalographic portrait (profile), biorythmological characteristics, astrological portrait, as well as the combination of all those indicators were studied. Some predictors are selected, and the decision rules are developed, allowing in laboratory conditions to predict what individually-typological characteristics will limit physical capacity of a person in the conditions of heat stress.

Key words: individually-typological characteristics, physical capacity, thermal stability, prediction

Contact information: Martirosov Eduard, e-mail: mgfso_martirosov@mail.ru.