Dynamics of some vegetative and cardiovascular indices in young athletes and in sedentary youngsters

Vitalie Scripnic
Republican Center for Medical-Social Rehabilitation, Chişinău, Republic of Moldova

Abstract

Background. The normality of some autonomic and cardiovascular indices is discussed as well in normocardiac and in bradycardiac physically active or sedentary youngsters.

Aims. The author follows up the influence of an active life style on the adaptive resources of the organism among youngsters, aiming to increase their health level, compared to sedentary subjects.

Methods. To measure the adaptive peculiarities of the cardiovascular system various functional tests are used: physical tolerance, pharmacological indices, procedures which modify other physical parameters. The subjects were a group of 19 handball players (with normo- or bradycardia at rest) and 20 control subjects. Their mean age was 23 years.

Results. The work to improve one's own health status and the adaptive capacities by means of physical exercise, without knowing ones personal actual abilities, leads often to invalidity or even to sudden death. Therefore non-competitive athletic activities are of interest for experts in rehabilitation. In their experimental research laboratory Dembo and Zemtsovsky (St. Petersburg) performed several experiments which proved that the genetic basis of every subject establishes his optimal maximal level of physical exertion. The overrunning of this limit can induce many health impairments. These results are very important to protect the health of athletes as well as for sedentary persons.

Conclusions. The results obtained from our study as well as by several other research projects show that the trained organism has a more economically functional adaptation compared to the untrained one, at rest as well as during moderate exercise. During long-lasting severe physical strain the response to the higher demands work more efficiently. Regarding the cardiovascular system a moderate physical exercise induces among trained subjects an increase of the cardiac output with rise of the systolic volume but smaller tachycardia. Bradycardia in athletes and in non athletes restrains the adaptive capacity of the organism with higher demands to the neuroendocrine control systems.

Key words: electrocardiography, rhythmography, hypokinesia, sympathetic and parasympathetic systems, cardiac output, systolic volume, heart rate, training.