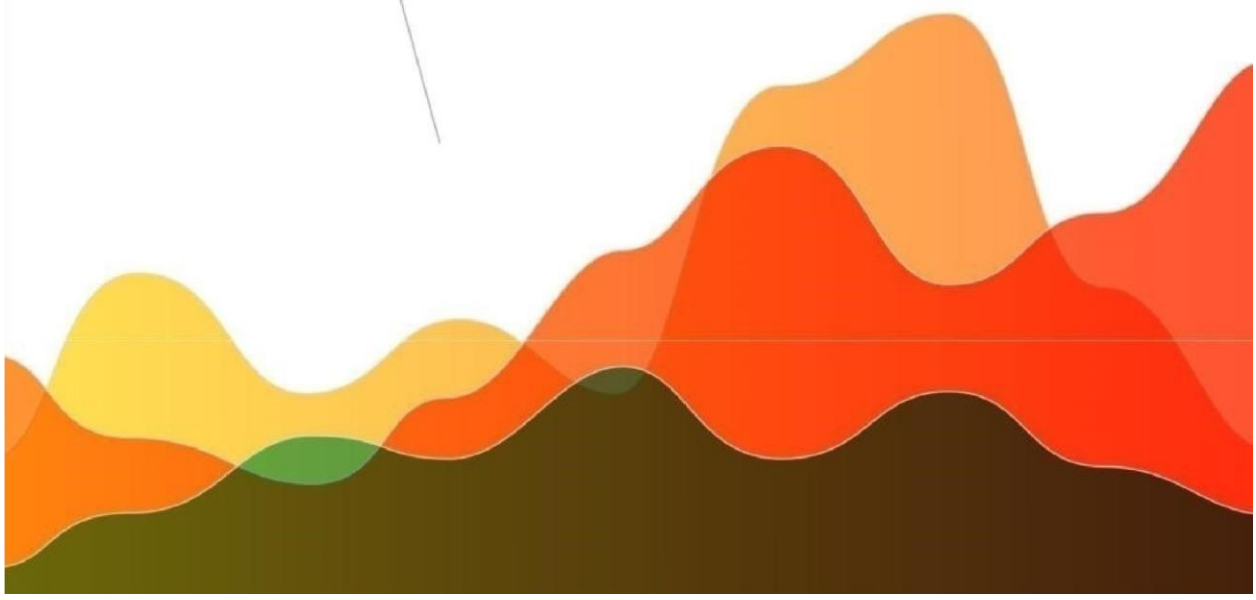
ADVANCES OF SCIENCE

Proceedings of articles the international scientific conference
Czech Republic, Karlovy Vary -
Ukraine, Kyiv, 28 September 2018



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COLD FACTOR AND PHYSICAL ENDURANCE IN THE ATHLETES

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Introduction. At present time the widely used traditional methods of training process in some rate exhaust their opportunities, and there is great need for search of the new nontraditional approaches to this problem focused on natural reserves of an organism. Close interrelation between mental and somatic spheres of an organism, defined necessity for providing of early prevention of desadaptation disturbances.

The purpose of our work was the investigation of health condition changes, physical body development and physical work capacity under some influence of cold effect on a stress-limiting system of athletes.

Material and methods. Under own observation during 4 years there were 45 athletes aged 18-23 years old and going in for various kinds of sports (the sports experience on the average was 6,5 years). It was investigated group. The control group consisted of 23 athletes with training regimen on their usual program. All the athletes were investigated in the conditions of sport-medicine center.

We developed the special system of physical and psychoemotional training with the purpose of activation of stress-limiting system in

athletes at extreme conditions. This system includes unitary immersing of athletes into the water of an open natural reservoir located in the public park with stable water temperature about 10ºC C and for 20-30 sec. with the interval of 2-3 days. The using of cold effect influences demands especial attention to individualization of cold biodoses (time of a day, duration and intensity of the cold exposition) taking into consideration the imperfection of physical thermoregulation and possibilities of the prognostic unfavorable psychoemotion effects.

Before immersing into the water all athletes fulfilled a complex of general physical exercises for elimination of initial muscular contracture and rising of muscular heat production within 20 minutes. The control of pulse properties in all the athletes was carried out before immersing in water and just right after going out of it. The adaptive reaction period of an organism on the cold effect (influence) was 2040 sec. Then all the athletes have been playing for 30-40 minutes in mobile games. Some athletes were upset or they had bad mood, but in any case, the training lesson was not missed.

Results. After immersing (diving) in cold water the tolerance to a physical exertion (stress) was increased in 2-3 times, the frequency of heart beating (contractions) in the rest was decreased (on the average on 12,8). Unlike the control group, the cold influenced persons demonstrated changing of dermal (skin) reactivity during the contact thermometry, decrease of vasopressor reactions, decrease of thermoasymmetry on various sides and different parts of the skin on 30-60%. At the beginning of process of cold factor influences all the athletes demonstrated

decreasing of skin temperature of the feet – on 7,2ºC C, legs on 6,2ºC C, lips - on 8,4 ºC C, breast on 9,7 ºC C, shoulders on 7 ºC

C, lands – on 6,8 ºC C. After regular applications of harden procedures the cooling of skin considerably decreased (on the average on

2,7 ºC C).

Before the beginning of the course of cold factor trainings the athletes demonstrated the pulse acceleration on 10-15% (on the average).During these training procedures the pulse was gradually stabilized and by the end of the second year it did not almost react on the cold factor influence. The initial immersing in cold water caused rising of blood pressure on 15-18%. Under influence of cold training factor this phenomenon had been gradually decreased and after 2-3 years, it absolutely disappeared.

Discussion. The effect of cold factor action is based on hardening process. It is the process of formation of specific reactions as uniform functional thermoregulation system ensuring the active reaction of the whole organism on the concrete cold influence. The morpho-functional structure of this system is determined by all complex of internal and external conditions of cooling. The resistance to cooling will be completely expressed in the same conditions or in those that are similar to them.

Conclusions.

1. As the result of application of the proposed training method there was a positive effect consisted in equilibration of activity of sympathetic and parasympathetic parts of vegetative nervous system.
2. The given system of cold trainings is effective, natural and soft, considerably improves posture, increases the level of carried out physical exertions during training and competitions, increases psyhoemotional resistance of the central nervous system and its readiness to stress.