

The influence of air negative ions on cardiovascular and exercise indicators in athletes

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Abstract

Background. Negative ions cause a decrease of the systolic blood pressure. In hypertensive individuals the effects are obvious, negative ions being associated with an improvement of the general condition. In healthy individuals, including athletes in the broad sense of the word, exposure to negative ions in the air causes the regulation of the systolic pressure in relation to the diastolic one, as well as a better adaptation of the cardiovascular system to exercise, indirectly an improvement of sport performance.

Objectives. The paper attempts to extend the investigations carried out to the present regarding the effect of negative air ionization on the adaptation of the cardiovascular system to exercise, in order to confirm the improvement of sport performance in athletes.

Methods. The equipment used for air ionization was the BION 90 Raum-ionizer. The study was carried out in a group formed of 17 women handball players aged 15-16 years, submitted to a moderate air concentration of negative ions for a period of 10-17 days, according to standard methodology. The physical exercise tests were: 30 meters running with start in a standing position, 30 minutes handball dribbling, long jump from a still position. The indicators studied were: blood pressure (systolic and diastolic) and cardiac frequency.

Results. A significant improvement of the sport performance and a decrease of both systolic and diastolic pressure were found. Cardiac frequency was significantly lower following exposure to negative ions.

Conclusions. In the study group the negative air ionization influenced physical exercise positively. The findings included the significant improvement of the 30 m. running times and of dribbling, significant decrease of the systolic and diastolic pressure, and a significant cardiac frequency decrease. It may be concluded that negative ions in the air represent an inexpensive and innocuous method of adaptation of the cardiovascular system to physical exercise and improvement of sport performance.

Keywords: negative ions, air ionization therapy, health development, sport performance.