Influence of regular running on the level of general physical fitness of young men

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Abstract

Objective of the study was to assess the impact of regular running on the level of general physical fitness in young men.

Methods and structure of the study. 29 clinically healthy young men were recruited. Of these, an observation group (14 persons) was assembled, which began regular jogging. The comparison group (15 people) retained their initially physically inactive lifestyle. The state of the physical status of the observed was recorded using standard functional tests. The digital data obtained in the work were processed by correlation analysis and Student's t-test.

Results and conclusions. Regular jogging led to a significant increase in coordination parameters with an increase in the overall stability of the body. Jogging increased the physical fitness of the trainees and contributed to the increase in the clarity of the performed motor actions.

Systematic jogging improves the coordination of movements in young men, increases strength characteristics, stimulates speed capabilities and endurance.

Keywords: *adolescence, jogging, physical activity, mobility, coordination, physical activity.*

Introduction. A reasonable increase in the level of muscle activity can ensure the activation of all vital processes, improves the general condition [6] and reduces all manifestations of the existing pathology [7, 8]. Systematic physical training develops the musculoskeletal system and increases the functional reserves of all internal organs [10].

Unfortunately, in modern society, weak physical activity is becoming more and more common, leading to obvious detraining, especially among people of working age. This creates a huge need to develop options for getting the body out of physical inactivity and determining the rational start of systematic muscle loads after low physical activity [11]. Only if this problem is solved, it is possible to overcome the mass hypotrophy of the muscular system and achieve the activation of the leading physiological characteristics of the body [2]. The need to continue this search is reflected in a number of observations made on different groups of subjects [9, 12]. In this regard, science continues to improve the methods of physical activation, primarily to improve health and increase labor potential [5].

The society is most urgently in need at the present time to improve the health of young people studying at the university, who are the "golden fund" of any society. Very often, young students have poor physical activity due to the tight schedule of the university educational process and leading to the formation of low physical capabilities [3]. It is clear that in order to increase the effectiveness of the educational process and improve health, it is required to increase the overall physical activity of students [1]. A very effective solution to this problem for young students can be considered systematic jogging in addition to the usual university physical education classes.

Objective of the study was to assess the impact of regular running on the level of general physical fitness in young men.

Methods and structure of the study. We observed 29 clinically healthy young men (17-21 years old), who are university students. They were divided into two comparable groups. The first group became known as the observation group (14 people). These young men began to run regularly every day at a free pace for at least 30 minutes a day in addition to their physical education classes at the university. The second group - comparisons - consisted of 15 young men who showed physical activity only at lesson lessons in physical culture twice a week. To assess the condition of the subjects, the results of the main functional tests were taken into account, which allow assessing the general physical fitness at baseline and after four months of observation. Statistical processing of the obtained data was carried out by methods of variational statistics by calculating the value of the Student's t-test and the value of the Pearson correlation coefficient.

Research results and discussion. At the first examination, the young men under observation had a weak general physical development (see table). Initially recorded their speed-strength parameters were small. This was confirmed by the low level of results in the test of running a distance of 30 m (in 6.1 ± 0.52 s), in the test of running a distance of 60 m (in 10.8 ± 0.76 s) and the small length of the jump, which turned out to be 1 .47 ± 0.16 m. Initially, the observed were able to run 944.0 ± 35.22 m in 6 minutes, which indicated weak endurance. Considering the number of pull-ups performed on the crossbar (4.9±0.66 repetitions), all examined had low strength characteristics. The initial weak development of motor coordination was also noted, which was confirmed by the low results of their participation in the 4x9 shuttle run (12.5 ± 0.72 s) and a small number of jumps with a standard rope (25.7 ± 1.75 repetitions). Given the initial physical data of the young men, they could be assessed as having poor physical development.

Before the start of jogging in the observation group, shuttle running, pulling up and lifting the body from a prone position turned out to be very difficult to implement. The long-term implementation of unmistakable sports movements while maintaining rhythmic breathing was very difficult in the end. At the very beginning of the observation in the group of trainees there was an early development of fatigue with a mass of motor errors and a rapid weakening of attention to the clarity of their movements and to the environment.

By the end of the observation, no significant changes in the monitored parameters were found in the persons of the comparison group. By the time the study was completed, young runners had a significant decrease in the degree of general fatigue. This was confirmed in trainees by an improvement in their subjective sensations in combination with a decrease in their heart rate in the process of running (the level of heart rate during exercise decreased by 27.9%, reaching the level of 110.1 ± 7.4 beats per minute).

After four months of regular jogging, an increase in

Parameters of physical development of the observed groups

Objective indicators	Initial state, M±m, n=29	Final state, M±m	
		Observation group, n=14	Comparison group, n=15
Standing long jump distance, m	1,47±0,16	2,09±0,12, p<0,01	1,53±0,17
Running distance in 6 minutes, m	944,0±35,22	1183,0±47,75 p<0,05	969,0±51,92
Number of pull-ups on the crossbar, repetitions	4,9±0,66	8,0±0,57 p<0,01	5,2±0,36
The number of body lifts from a lying position in 1 minute, repetitions	21,7±1,31	35,3±0,37 p<0,01	23,0±1,46
Shuttle run duration 4x9, s	12,5±0,72	9,3±0,45 p<0,01	11,9±0,73
The number of jumps with a rope in 25 s, repetitions	25,7±1,75	45,7±0,63 p<0,01	26,9±1,14
Running a distance of 30 m, s	6,1±0,52	4,5±0,17 p<0,01	5,9±0,19
Running a distance of 60 m, s	10,8±0,76	8,1±0,77 p<0,01	10,5±1,12

Note: p - statistical significance of changes in indicators during the study.

the level of general physical development was noted in the observation group (table). This was confirmed by an increase in the speed-strength characteristics of runners (a decrease by 35.5% in the duration of running thirty meters, a decrease by 33.3% in running sixty meters, an elongation by 42.2% of the long jump), an increase in strength capabilities (the number of pull-ups performed on the crossbar increased by 63.2%, the number of torso lifts from a lying position in one minute increased by 62.6%). The runners also showed an improvement in coordination of movements (acceleration by 34.4% of the implementation of the shuttle run, an increase in the ability to jump rope by 77.8%) with an increase in the level of endurance (lengthening by 25.3% of the distance run in six minutes).

Those who made regular runs noted the presence of correlations between the duration of the shuttle run and the time of running the thirty-meter race ($r=0.668$; $p<0.044$). The number of jumps with the help of a rope had a correlation with the length of the long jump ($r=0.528$; $p<0.054$). The speed parameters monitored in the 60-meter run test in runners were correlated with the number of pull-ups performed on the crossbar ($r=0.634$; $p<0.055$).

As a result of regular loads, in the aerobic mode, the trainees began to strengthen the musculoskeletal system. This effect was based on a number of positive changes in the body of athletes of a physiological and biochemical nature, gradually increasing during training. In the observation group, after four months of training, the clarity of the movements made increased, which was demonstrated when performing jumps and pulling up. Apparently, this was possible due to the growth of general physical fitness with an increase in dexterity, coordination characteristics and power parameters.

Under conditions of regular runs, the time required to complete tests with the run of short distances taken into account has been reduced. This effect occurred due to an increase in muscle development in the conditions of daily running training [4]. Also in the observation group, after four months of running, an increase in body stability in space was noted. The achieved effect can be explained by the high fitness of the muscles of the chest and lower extremities with the simultaneous strengthening of the vestibular mechanisms [5, 12].

Conclusions. The effect of aerobic exercise on the body under conditions of regular physical training is being studied by many modern researchers. By the end of four months of jogging, the young men had improved clarity of movements and a strengthening of the cardiorespiratory system. In the course of regular jogging, the surveyed young men increased their general strength characteristics, improved coordination, increased speed capabilities and their endurance. The presence of physical activity only in physical education lessons had little effect on all monitored parameters, keeping them at the level of outcome.

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