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**THE IMPACT OF WORKOUT LESSONS  
ON THE PHYSICAL FITNESS OF STUDENTS IN GRADES 10–11**

*The article is devoted to the application of workout at the sectional classes for high school students. The study reveals peculiarities of the dynamics of physical fitness indicators of high school students. The effectiveness of the use of workout in the physical education of students of 10–11 grades that live in Vetka city was experimentally proved.*

Healthy lifestyle problems of the population, particularly the younger generation, are among the most pressing issues in modern society. The health of modern children and adolescents is exposed to several adverse factors, among which are poor nutrition, unfavorable ecology, and, most importantly, reduced level of physical activity. Human life in modern society has become much more difficult: the pace of life has increased, as well as the amount of stress, increased psychological stress, while the physical load has decreased [1].

Currently, in the physical education of children, adolescents and young people there is a paradoxical situation: despite the unconditional both personal and social importance of health, optimal physical development and level of physical fitness, all these indicators tend to deteriorate from one generation to the next. To a large extent this can be countered by means of physical education, so to address this negative problem are used different means and methods: improving the program of physical education of students of secondary schools, developing its new types, which have sports, health, educational orientation. However, the problem of preserving and strengthening the health of the younger generation of the country is still far from its real resolution [2].

To rationally organize physical education of high school students, it is necessary to know the age development patterns of the basic systems of the body. High school age is the period of the end of puberty, which is characterized by a high rate of physical development in general. During this period of life muscle strength and endurance are growing, the formation of physical coordination skills is coming to an end, and posture is formed. Besides, there are changes in the cardiovascular and respiratory systems, the strength of the skeleton increases, and the development of the central nervous system is coming to an end [3].

At the same time, according to the data from literature sources, there is a catastrophic decrease in motor activity of people, both adults and schoolchildren, due to the mechanization and automation, computerization of many aspects of labor and learning activities.

The health-improving effect of physical exercises is observed only when they are rationally balanced in orientation, intensity, and volume considering the capabilities of the individual student. In addition, it is important to consider the aspirations and wishes of schoolchildren themselves, since specifically active and conscious physical exercise is the basis of effective physical education at all educational stages [4; 5].

In connection with the above, the purpose of our study was to research the effect of workout exercises as part of sectional classes on the physical fitness of high school students.

The modern paradigm of physical education of students in schools involves the formation of abilities in the optimal way to solve motor tasks, considering the characteristics and capabilities of the body of children and adolescents. However, with the modern approach of physical education at school, the functioning of this system is complicated by the fact that it requires doing exercises regularly. It makes it even more urgent to use innovative means and methods of physical training in the lessons of physical education.

New areas of sports activity (parkour, gimbar, break-dance) allow today's youth to become active and athletic, to evaluate themselves more critically in physical and social terms. One of these

new directions is the youth movement of workout (street-workout). The unique feature of workout, on the one hand, is the ability to train free of charge anywhere and anytime, because sports equipment can be any urban facility – from special areas and city parks to the courtyards. On the other hand, it is a freedom from limits and conventions in exercises being used, when a physical training becomes a way of self-expression.

Workout is a rational combination of elements of strength exercises, gymnastics, and cardio training, used in an accessible form to improve physical fitness and maintain an active lifestyle.

The pedagogical experiment was conducted to substantiate the effectiveness of the use of workout at section classes of high school students living in Vetka. For this purpose, based on secondary school number 1 of Vetka an experimental program of workout classes as extracurricular physical education classes (sections of general physical training) was implemented. Eleven students of the 10th grade and 14 students of the 11th grade (boys) participated in the study.

The main purpose of the workout was to increase motor activity and promote a healthy lifestyle among the younger generation. The training process was carried out by performing well-known gymnastic exercises such as pull-ups, push-ups, squats, lunges, and plank on an outdoor sports ground (or gymnastics equipment in the gym) – horizontal bar, uneven bars, wallboard, handrail, and an inclined bench. The wide range of variation in the performance of basic exercises, as well as combining them into more complex elements and combining them into bundles allows you to build a multi-functional workout aimed at developing all major muscle groups of our body. All kinds of workout exercises allow the development of all leading human motor abilities – strength, agility, endurance, speed, flexibility and coordination qualities.

The experimental program implied workout training during extracurricular classes of physical education – general physical training sections. The program of workout training as elective classes was drawn up for 140 hours (70 training sessions) with a session's frequency of 2 times a week. The exercises that were included in the training program were designed for the elementary level of physical fitness.

The total duration of one session was up to 120 minutes. Training began with a running warm-up for 10–15 minutes, then there were general training exercises on the spot and in motion.

The main method in the session's major part was circuit training. Trainees were divided into several groups. Each group performed certain exercises: for example, Group 1 – pull-ups, Group 2 – push-ups, Group 3 – abdominal exercises. All exercises, except for the abs, were performed one at a time. After completing a set, the equipment and exercises were changed.

Approximate distribution of exercises by stations was as follows:

- pull-ups – 5 approaches of 5 reps: 1 approach – wide grip, 2 – middle grip, 3 – narrow grip, 4 – lower grip, 5 – multi-grip;
- push-ups: 5 sets of 10 reps: 1st set – on fists, 2nd – with clap in front of chest, 3rd – decline pushups (feet on the bench), 4th – with narrow arms, 5th – with wide setting of hands;
- bench press: hanging from the bar – 2 sets of 10 repetitions, from the pose; lying on the back, torso raising – 2 sets of 20 repetitions;
- arm bending and extensions on uneven bars – 5 sets of 5 repetitions;
- squat jumps – 2 sets of 15 reps.

In the main part of a class, we learned the simplest exercises of street-workout: different standing positions, horizontal positioning, exercise "human flag", and acrobatic exercises.

In the final part of a class stretching exercises to relax muscles were performed, which contributed to speedy recovery of muscles and ligaments after exercise.

**The results and discussion of the study.** Pedagogical control tests were conducted using the tests recommended by the curriculum, but for a more qualitative assessment of the growth of strength abilities we additionally used 4 tests recommended by the curriculum for the subject "Physical Education and Health" for grades X–XI of institutions of general secondary education with Russian language teaching and education as educational standards for mastering skills, skills, development of motor abilities of students in grades X–XI.

At the end of the pedagogical experiment statistically significant changes in the physical fitness indicators of high school students were established.

The most pronounced changes were seen in standing long jump: while the average result of 10th graders at the beginning of the year was  $226.12 \pm 4.25$  cm, by the end of the experiment it improved to  $236.8 \pm 4.31$  cm (reliability of differences was up  $t=3.22$ ,  $p<0.01$ ); for students of 11 grade at the beginning of the year the average result was  $232.28 \pm 5.23$  cm, having improved to  $243.08 \pm 5.65$  cm ( $t=3.34$ ,  $p<0.01$ ).

In the 30 m run, which characterizes the level of speed development, the 10th grade students at the beginning of the year had an average group result of  $4.61 \pm 0.14$  s, improving to  $4.57 \pm 0.12$  s by the end of the year, with  $t=2.46$ ,  $p<0.05$ . In grade 11, at the beginning of the year, this index was  $4.56 \pm 0.16$  s, with improvement to  $4.49 \pm 0.17$  s, with  $t=2.34$ ,  $p<0.05$ , by the end of the school year.

The results of the test "4x9m shuttle running", which characterizes the level of development of coordination abilities, have improved in grade 10 from  $9.49 \pm 0.09$  to  $9.28 \pm 0.11$  seconds (with  $t=2.46$ ,  $p<0.05$ ), in grade 11 – from  $9.31 \pm 0.11$  to  $9.12 \pm 0.12$  seconds (with  $t=2.41$ ,  $p<0.05$ ).

There were significant differences at  $p<0.001$  for "pull-ups on the crossbar" test: in grade 10 students it improved from  $6.12 \pm 1.59$  times to  $11.31 \pm 2.04$  times (at  $t=6.12$ ), in eleventh graders – from  $7.92 \pm 1.65$  times to  $13.21 \pm 1.88$  times (at  $t=6.19$ ).

The flexibility index (test "Lean forward from sitting position"), in grade 10 improved from  $9.04 \pm 1.68$  cm to  $12.56 \pm 1.85$  cm ( $t=2.41$ ,  $p<0.05$ ), in grade 11 it improved from  $9.67 \pm 1.73$  cm to  $12.67 \pm 1.84$  cm ( $t=2.37$ ,  $p<0.05$ ).

Similar reliability of differences was revealed in the test "Running 1500 m", which characterizes the level of endurance. For 10th graders at the beginning of the year this indicator was  $6.42 \pm 9.23$  minutes, improving to  $6.18 \pm 9.68$  minutes by the end of the year (with  $t=2.31$ ,  $p<0.05$ ). For 11th grade students at the beginning of the experiment, the average index of this test was  $6.18 \pm 9.33$  minutes, improving to  $6.34 \pm 9.39$  minutes by the end of the year (with  $t=2.33$ ,  $p<0.05$ ).

The positive dynamics of test results could not but affect the average scores received by students for performing exercises.

Thus, the 10th grade students' overall average score improved from  $5.75 \pm 1.33$  to  $7.30 \pm 1.42$  during the experiment. There was an enhancement from  $6,84 \pm 1,34$  to  $7,62 \pm 1,15$  for the 30 m run, from  $5,61 \pm 1,28$  to  $6,21 \pm 1,18$  for shuttle run 4x9 m, from  $6,22 \pm 1,38$  to  $8,14 \pm 1,16$  for standing long jump, pull-up and hanging on the bar - from  $4.86 \pm 1.25$  to  $8.26 \pm 1.19$ , forward leaning from a sitting position - from  $5.79 \pm 1.29$  to  $7.34 \pm 1.22$  and for 1500 m run – from  $5.18 \pm 1.31$  to  $6.23 \pm 1.28$ . Significance of differences was  $t=3.27$ ,  $p<0.01$ .

In the 11th grade high school students the total average score increased from  $5,99 \pm 1,49$  to  $7,29 \pm 1,52$ . For the 30 m run it improved from  $6.62 \pm 1.39$  to  $7.21 \pm 1.42$ , for the shuttle run 4x9 m – from  $4.98 \pm 1.36$  to  $6.14 \pm 1.39$ , for standing long jump – from  $6.08 \pm 1.42$  to  $8.23 \pm 1.45$ , pull ups hanging on the bar from  $6.84 \pm 1.37$  to  $8.32 \pm 1.44$ , for the forward leaning from a sitting position from  $5.78 \pm 1.41$  to  $7.47 \pm 1.52$ , and for the 1500 m run from  $5.68 \pm 1.32$  to  $6.34 \pm 1.39$ . The reliability of differences was  $t=3,31$ ,  $p<0,01$ .

**Conclusion.** As the results of our pedagogical experiment have shown, the workout classes contribute to improving the physical fitness of students in grades 10–11.

According to the results of physical fitness tests of high school students in grades 10-11, reliable differences at  $p < 0.05$  were seen in such tests as "Running 30 m", "4x9 m the shuttle run", "Forward leaning from a sitting position" and "Running 1500 m". With the reliability of differences  $p < 0.01$  the results for "standing long jump" with the average score for the 6 main tests (both in grade 10 and 11), as well as the pull-ups on the crossbar (for tenth graders) improved.

The most significant changes (with reliability  $p < 0.001$ ) were seen in the tests "Pulling up on the crossbar", "L sitting on the parallel bars", "Bar pullover", "Dips on parallel bars" for students in grades 10–11, and "Muscle-up" for students in grade 11.

Thus, the conducted research of the influence of workout classes during additional sectional classes for the students of high school in Vetka has proved the effectiveness of our proposed approach, which has resulted in the increase of physical fitness of the students.

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#### **THE APPLICATION OF ELASTIC SHOCK ABSORBERS TO IMPROVE THE PHYSICAL CONDITION OF SPORT VETERANS**

*This article presents the results of the analysis of the use of elastic shock absorbers to improve the strength and flexibility of sports veterans, middle-aged men, members of the Gomel regional organization of the Belarusian public association “Veterans of Physical Culture and Sports”.*

*We have received reliable information about the improvement of the physical condition of sports veterans, which indicates the rationality of using elastic shock absorbers for individual correction of the physical condition of sports veterans, middle-aged men.*

The analysis of the scientific and methodological literature and the results of the research on the practical activities of the Gomel regional organization of the Belarusian public association “Veterans of Physical Culture and Sports” made it possible to identify the theoretical prerequisites for the need for individual correction of the physical condition of sports veterans, middle-aged men, in modern conditions.

The social significance of the professional and social activities of sports veterans in the formation of a healthy lifestyle for young people is great, as well as the preservation, strengthening and improvement of the physical condition of representatives of economically active age groups [1; 2; 3].

It should be noted that veterans of sports, middle-aged men, whose multifaceted professional and social activities require good physical condition, often themselves need its individual correction.

**The purpose of the study** is to experimentally evaluate the effect of using exercises using elastic shock absorbers to improve the physical condition of sports veterans, middle-aged men.

#### **Organization and research methods**