



## LEVEL OF PHYSICAL HEALTH OF STUDENTS SPECIALIZING IN MINING ENGINEERING

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### **Abstract:**

Physical activity plays an important role not only in maintaining physical fitness but also in improving mental well-being. Testing students through the performance of physical activities is a way to assess their individual capabilities and tailor physical programs to their needs. Regular tests can determine students' fitness levels, including strength, endurance, flexibility and coordination. based on the results of the tests, instructors can develop personalized exercise programs that are tailored to students' individual abilities and goals.

**Keywords:** Physical training, effectiveness, departments, students, self-monitoring, research.

### **Introduction**

The organization of the educational process with students requires a careful selection of physical exercises that promote health and develop various qualities. It is important to take into account that physical activity not only improves physical fitness, but also has a positive effect on the mental state, developing volitional qualities such as perseverance, discipline and resistance to stress.

This is why team sports are included in the program, which promote team spirit and communication skills. Aerobic exercise, such as jogging or swimming, helps to improve cardiovascular fitness and endurance.

The increase in the number of students with certain diseases, who belong to the preparatory and special departments, requires physical education specialists to pay constant attention to controlling the level of physical fitness and health status of these students.

### **Purpose of the Study**

Applying a systematic approach to organizing physical activity for students. In this regard, it is necessary to take into account several key aspects: 1. individual approach: each student is unique and his/her physical condition may vary. It is necessary to





develop individual training programs that take into account the peculiarities of health and physical fitness. 2. organizational features: Creating specialized groups for students with certain medical conditions will help provide a safe environment for exercise and allow for more effective control of physical activity. 3. correction of physical loads: Timely correction of loads depending on the state of health and level of physical fitness of students is critical. Regular monitoring of their condition will help to avoid overloads and injuries. 4. control testing: Comparative analysis of control testing allows to monitor the dynamics of physical fitness of students. This will help to identify changes in the state of health and adapt the training process in accordance with the obtained data. 5. Methodological recommendations: The selection of exercises should be based on scientific evidence and recommendations of medical professionals. This includes the use of adapted exercises that will promote health without risk to students.

For students specializing in “Mining Engineering”, who have some deviations in the state of health, during the period of training and future professional activity it seems necessary to introduce health improvement in the process of physical education and imparting individual skills during self-study.

For students studying in the specialty “Mining Engineering” and having certain deviations in the state of health, the introduction of health-improving measures in the process of physical education is especially important. This will help not only to improve their physical fitness, but also to prepare them for their future professional activity. It is necessary to take into account some aspects, such as the development of adapted programs of physical activity, which will take into account the health characteristics of each student. These can be special exercises to strengthen muscles, improve endurance and flexibility. Incorporating practices that promote general wellness, such as breathing exercises or Pilates. These practices can help reduce stress and improve psycho-emotional well-being. Inculcating independent physical activity skills will allow students to maintain their physical fitness outside of school hours. It is important to teach them proper exercise techniques and self-monitoring of their health.

The study of the level of physical health of students of the 1st and 2nd year of the basic and special educational department of the specialization “Mining Engineering” was carried out - to create an effective program of physical education and health improvement.



## Materials and Methods

Various methods were used to assess the physical condition of the students, such as tests of endurance, strength, flexibility and coordination. Medical examinations were taken into account to help identify chronic diseases or other abnormalities. It is necessary to systematically collect data on the health status of students to identify general trends and peculiarities. This included questionnaires, individual interviews and testing. Based on the information collected, helped to create individual health profiles for each student, which will help to further develop adapted physical activity programs tailored to their needs and abilities. Feedback from students is necessary, which gave the opportunity to share their feelings and problems related to physical activity. Ongoing regular monitoring and evaluation of students' physical condition helps to track progress and make necessary changes in physical activity programs.

Studying the level of physical fitness plays a key role in assessing the cardiovascular, muscular and respiratory systems of students. Using a methodology that defines five levels of physical fitness - very low, low, satisfactory, good and excellent - allows to get a clear picture of physical fitness and health of each student.

To assess the cardiovascular system, endurance tests such as long-distance running or the Cooper test were included to determine how efficiently the heart and blood vessels provide oxygen to the body during physical activity. Using exercises such as pull-ups, push-ups, and squats to assess students' levels of muscular strength and endurance. Maximum oxygen uptake ( $VO_2$  max) tests or simple breathing exercises help assess how well the respiratory system is functioning.

The following parameters were taken into account: body length and weight, maximum right and left hand strength, blood pressure, which changed before and after exercise, heart rate, vital capacity of the lungs, breath-holding on exhalation (Henchy's test). These indices were used to calculate: strength index:  $MSC / \text{body weight} \times 100$ ; vital index  $ZHEL / \text{body weight}$ ; endurance coefficient:  $HR \times BP$ ,  $HR$  - at rest,  $BP$  - pulse  $BP$ ; Robinson index:  $HR \times BP / 100$ .

## Result and Discussion

The results of the study showing that the weight and height indices of the students correspond to age norms, which indeed indicate proportional physical development. This is an important aspect, as body proportionality is an indicator of general health and physical condition. This concludes that the compliance of weight and height indicators with age norms and indicates that students are on the right track in their physical development. This may be due to regular physical activity and healthy lifestyle.





The study of hemodynamic indices, which revealed no significant differences between the students of the main and special education departments. Here are some important points worth noting: Comparison of hemodynamic indices - the absence of significant differences in hemodynamics between the two groups of students indicates similarity in their physical condition and level of adaptation to loads. May be due to the fact that both groups of students engage in similar amounts of physical activity. Small fluctuations in performance - small changes in average hemodynamic performance may be normal and may not indicate a problem. Such fluctuations can be caused by a variety of factors including stress levels, diet, sleep quality, and type of physical activity. Health significance - stable hemodynamic indices are important for the overall health of students. It indicates good cardiovascular function, which in turn has a positive effect on physical endurance and learning ability.

The average blood pressure data corresponding to the norm indicate that in general the group of students has adequate indicators. However, the increase in blood pressure in some students at rest may cause some concerns. Individual differences need to be considered. Even if averages are within the normal range, individual data can vary greatly. Increased blood pressure in some students may be due to various factors, such as stress, lack of physical activity, poor diet, or even genetic predispositions may be the cause of increased blood pressure.

The average vital capacity of the lungs (VCL) and the results of the Henchy test, which are within the normal range, indicate that in general the students have a good respiratory system.

Normal GEL values indicate that students are able to ventilate their lungs effectively, which is important to ensure adequate oxygen levels in the body and to maintain physical activity.

The studies conducted provide valuable information about the physical condition and fitness of students, which opens up many opportunities to improve the learning process.

Personalized recommendations are given based on research findings instructors can develop personalized recommendations for each student. This may include advice on exercise, diet, and rest to help students improve their performance.

Correction of the educational process, knowing the level of physical fitness of students, teachers can adapt educational programs and loads. This will create a more effective and safe environment for sports and physical activity.

Supporting weaknesses, research can identify weaknesses in students' physical fitness. 40 first and second year students took part in the study. Determination of five



levels of physical fitness allows not only to assess the current state of students' health, but also to set goals for their further development.

With the results of the study, teachers will be able to focus on these aspects, offering additional lessons or special programs to improve them.

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