JOURNAL OF MULTIDISCIPLINARY SCIENCES AND INNOVATIONS

VOLUME 04, ISSUE 09
MOPNTHLY JOURNALS

ISSN NUMBER: 2751-4390
IMPACT FACTOR: 9,08

DOSING PHYSICAL EXERTION FOR SCHOOLCHILDREN IN PHYSICAL EDUCATION CLASSES, TAKING INTO ACCOUNT PHYSIOLOGICAL INDICATORS

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INTRODUCTION. During classes, it is necessary to monitor, self-monitor, and have medical control over the condition of schoolchildren's bodies, their physical fitness, and strictly adhere to safety rules during physical education and sports.

Keywords: physical exertion, health-improving, physical fitness, sport, education, individual.

Special attention should be paid to dosing physical exertion in physical education classes. It should be differentiated because the solution of the health-improving task and the achievement of the effect of increasing students' physical fitness depend primarily on this. In order to determine the load in the lesson more or less accurately, it is necessary to take into account the health status and functional capabilities of all students, their physical fitness, individual characteristics, as well as the degree of previous loads when studying previously covered material. During the lesson, the load can be adjusted by changing the number of repetitions, the pace of movements, the amount of weights, the duration of tasks related to intense exercises. One of the most accessible methods of controlling the amount of load can be monitoring the heart rate (HR).

The upper limit of HR after intense exertion for students of the main medical group is 170-180 beats per minute. It is important for the teacher to control the pulse rate, especially in those who missed classes due to illness, who have an insufficient level of physical fitness, as well as in schoolchildren assigned to the preparatory medical group. It is necessary to be attentive to the manifestation of external signs of student fatigue.

One of the important conditions for the correct regulation of the load is a differentiated approach to students. In other words, when studying the same program material for the entire class, the teacher can modify and clarify the task in the course of the lesson in relation to the characteristics of individual groups of students.

A differentiated approach is especially important in relation to schoolchildren assigned to the preparatory medical group for health reasons, as well as those who missed classes due to illness. These children, to a greater extent than others, require close attention, which should be manifested in compliance with accessibility, gradualness and consistency when choosing exercises, in dosing the load, etc.

Following all these methodological recommendations, the teacher should not forget about one very significant feature of the modern lesson. It consists in the complex passage and assimilation of the program material. In other words, its four components related to the study of theoretical information, mastering motor actions, skills and abilities of independent studies, the

development of motor qualities, should constitute a single process. Based on the health-improving and educational orientation of the lesson, this feature of the modern lesson is reflected in the structure of the training program.

According to many authors, a differentiated approach will protect the practice of physical education from the use of insufficient and, along with this, excessive loads that are dangerous to the health of students. All of the above made it possible to formulate the topic of the study: "Dosing physical exertion for schoolchildren in physical education classes, taking into account physiological indicators"

The object of the study is the dosing of physical exertion in physical education classes.
The subject of the study is the anatomical and physiological characteristics of students.
Purpose: to study the physiological indicators of students using functional tests.
To achieve this goal, the following tasks are set:
• to study the anatomical, physiological and psychological characteristics of students;
• to study the mechanisms of adaptation of the body ChatGPT4 | Midjourney, [13.10.2025 14:36] to stress using functional diagnostics;

Anatomical, physiological and psychological characteristics that distinguish schoolchildren of different ages have a significant impact on the organization of the educational process, teaching methods and, of course, the normalization of loads. Let us dwell on some age-related characteristics of students that should be taken into account in physical education classes.

It was revealed that from 7-8 to 9-10 years old, endurance increases only to loads performed in the mode of aerobic energy supply, i.e. to those whose ultimate duration is more than 2.5 minutes. The maximum duration of work at 70% load increases on average by 2.5 minutes, and at 50% load - by 4 minutes.

Thus, the results of studying the age dynamics of the natural development of performance indicators of schoolchildren 7-8 and 9-10 years old and the peculiarities of adaptation of their respiratory and circulatory systems give reason to believe that the use of high and moderate intensity loads will increase the effectiveness of physical education lessons aimed at developing the endurance of younger schoolchildren.

Students 10-14 years old, growth and development occur unevenly. Especially rapid morphological and functional changes in all systems of the body occur with the onset of puberty. A common phenomenon inherent in all children during this period is an increase in the growth rate of body length, which can reach 10 cm per year. All bone and muscle sizes of the body also change, although not to the same extent.

At 15-17 years old, the morpho functional maturation of the body is practically completed, but the development of the musculoskeletal and ligamentous apparatus continues: the hardening of the bones of the legs, arms, and spine is not yet complete, so you should avoid excessive loads when exercising with weights. In high school students, the development of nervous regulation of the heart is not yet complete. Too large episodic loads can lead to adverse consequences.

The definition and assessment of the physical condition of the body is the task of functional diagnostics, the essence of which is to study the mechanisms of adaptation of an organ, system or the body as a whole to a particular load. In the field of functional diagnostics, a wide range of methods is used to determine the state of the body, including the cardiovascular, respiratory, nervous, neuromuscular and other systems. A group of methods for assessing the physical condition of the body with a task of various kinds of loads is called functional methods. Among them, functional testing with the use of tests and tests with physical exertion is of particular importance, since in this case the level of physical condition of the body and its changes are most

clearly manifested. To date, many tests have been proposed that are used to determine the ability to perform various kinds of movements with different loads.

In functional tests with physical exertion during testing, natural movements are used in the form of squats, jumps, running, lifting weights, as well as the performance of specific physical exercises, the dosing of the load is determined by the duration and pace of its performance. The most widespread tests are: Martin-Kushelevsky test - 20 squats in 30 seconds, Kotova-Deshna - 2-3 minutes of running in place at a pace of 180 steps per minute with the thigh raised to the height of a right angle with the torso.

In the conditions of a physical education lesson, the correspondence of the applied load to the functional state of the body can be judged by the pulse before the start of the next lesson. If their number is approximately the same before each lesson, this indicates a normal recovery and readiness of the body to start the next lesson.

During physical exercises, the degree of increase in pulse depends on many factors, the main of which are the intensity and volume of physical exertion. The pulse mode during the performance of physical exercises should be such that a physiologically justified load is ensured, aimed at the development of certain motor qualities. The basis for determining the intensity of training load by HR is the relationship between them, the greater the load, the greater the HR.

The values of HR and blood pressure in children and adolescents are very variable due to increased reactivity.

Conclusion: Thus, the norm of training loads depends on the individual abilities of those involved. In the learning process, developing, restorative, preparatory-stimulating and activating loads should be used. The training load performed in physical education classes is determined by the criterion of the effectiveness of training and mastering by students the corresponding skills and abilities.

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