



DYNAMICS OF INDICATORS OF PHYSICAL FITNESS OF SCHOOLCHILDREN AGED 11-13 YEARS WITH DISORDERS OF THE MUSCULOSKELETAL SYSTEM, ENGAGED IN THE OFP SECTION

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Abstract

The article presents the results of testing physical fitness and coordination abilities of children aged 11-13 years with disorders of the musculoskeletal system, engaged in the section of general physical training on the basis of the state educational institution of the city of Moscow "School No. 1995". Parents chose this section as an additional means of improving the physical fitness of the child during the school year.

Keywords: dexterity, coordination, schoolchildren, physical fitness, dynamics, testing, complex indicators.

Аннотация

В статье представлены результаты тестирования физической подготовленности и координационных способностей детей 11-13 лет с нарушениями опорно-двигательного аппарата, занимающихся в секции общей физической подготовки на базе государственного общеобразовательного учреждения города Москвы «Школа №1995». Родители выбрали данную секцию в качестве дополнительного средства совершенствования физической подготовленности ребенка в течение учебного года.

Ключевые слова: ловкость, координация, школьники, физическая подготовленность, динамика, тестирование, комплексные показатели.

Relevance

In the conditions of the modern natural, social and ecological situation in the Russian Federation, the problem of children's health is becoming global. The modern technologies of health improvement offered in educational institutions are focused either on group types of work [3,4,8], which does not provide an individually differentiated approach, or are aimed only at the development of lagging physical qualities [6,9].





The state of children's health is of serious concern to the pedagogical community. Comprehensive medical examinations conducted in various regions of the country indicate a progressive deterioration in the health of children.

At the same time, diseases of the musculoskeletal system occupy a special place in pediatric pathology. Violation of the arch of the foot and posture is the most common medical and social problem among schoolchildren. The number of children with pathologies of the musculoskeletal system continues to grow. The presence of orthopedic pathology leads to a decrease in physical and mental performance, a deterioration in the course of concomitant diseases, the development of somatic pathologies, and a reduction in the capabilities of the cardiovascular and respiratory systems [7, 8]. Lack of movement, associated functional insufficiency in the form of a lag in the development of dexterity requires prevention and correction. The main problem of children with pathology of the musculoskeletal system, which worsens the quality of life, is the limitation of the ability to fully rationally and consistently control the movements of the links of their body when solving various social tasks [9]. The fixed form of physical education of schoolchildren does not allow to fully satisfy the need for the necessary correction in this category of children [6]. In order to solve the tasks of improving various motor qualities necessary for adequate social and household activities, a section on general physical training was organized on the basis of school No. 1995 in Moscow, which has a material and technical base and a professional staff.

Methods and organization of research

The purpose of this study is to assess the dynamics of indicators of general physical fitness of children during observation during one academic year (2017-2018 academic year).

The object of the study is the process of the impact of physical exercises on students aged 11-13 with disorders of the musculoskeletal system in the conditions of the general physical training section.

The subject of the study is methods of complex exposure taking into account the individual characteristics of the disease of children.

Hypothesis: It is assumed that the use of complex effects, taking into account the individual characteristics of the musculoskeletal system disorders of children aged 11-





13 years, will significantly increase their physical fitness in the conditions of the OFP section.

Specialized literature was studied for the organization of the study [1, 2, 3, 4, 5], the analysis of medical data of students was carried out, testing of children was carried out in order to determine the initial level of general physical fitness, followed by their distribution into groups. Enrollment in the section was carried out at the request of schoolchildren. Groups for classes were formed from students with pathology of the musculoskeletal system, taking into account the degree of violations. The observation involved 19 children who were divided into 2 experimental and control groups (1 - 10 and 2- 9 people, including 8 boys and 11 girls). A larger number of children in the group, as our experience shows, leads to a decrease in the effectiveness of classes.

Classes in the section were conducted on the basis of generally accepted educational standards. A distinctive feature of the program proposed by us was the possibility of its implementation taking into account the individual characteristics of children and the inclusion in the program of more special gymnastic exercises, auxiliary equipment (loops, hemispheres, balancing pillows, soft mats, elastic bands, gymnastic sticks and jump ropes), the inclusion of elements of sports rock and roll. Music classes promote the development of a sense of rhythm, exercise cardio, strengthen muscles, increase self-esteem, correct excess weight. The method of circular training was used - children performed exercises at each station for a given amount of time. Exercises, the mode of their performance, were selected for the individual capabilities of each student. During the year, the children kept a diary of the content of the lesson and their anthropometric data. Educational work was carried out with both children and parents.

Monitoring of the effectiveness of sectional classes was carried out by testing students during the school year (see Table No. 1). The first cut was carried out in early September 2017, the second – at the end of December 2017, the third – at the end of May 2018.

During the testing process, a group of students with health abnormalities was identified, who were transferred to a special medical group and were not included in our study.

At the end of the year, a survey of parents was conducted.

The results of the study and their discussion. The initial testing of the students of the section did not reveal significant differences in their physical fitness. The level of physical condition of children at the initial stage was low. During the classes, the indicators improved, reaching average values at the end of the school year.



Control exercises	пол	1 slice M±m	2 slice M±m	Naturect, %
1	2	3	4	5
1. Lifting the trunk from the prone position, the number of times	Д	18,20±1,56	19,60±1,81	7,6%
	М	19,50±3,06	20,50±3,27	5,10 %
2. Long jump from a place, see	Д	138,80±10,58	141,40±11,21	1,85%
	М	148,00±8,21	154,00±9,35	4,03 %
3. Shuttle run, 3x10, sec	Д	10,01±0,28	9,68±0,22	-3,1 %
Control exercises	пол	1 срез M±m	2 срез M±m	Прирост, %
1	2	3	4	5
	М	9,67±0,21	9,39±0,26	-2,9 %
4. Throwing the ball 150 g with a run-up, m	Д	14,6±0,74	15,96±1,21	9,2%
	М	22,43±1,21	23,76±0,75	6,05%
5. Inclines on 1 leg with a taper touch for 30 seconds, the number of times	Д	10,00±0,89	11,40±0,58	14,4 %
	М	11,16±1,6	11,7±1,8	4,7%
6. Pull-up (on a high crossbar -m, on a low crossbar - d), the number of times	Д	11,98±1,31	13,4±0,81	11,3%
	М	3,00±0,81	3,56±0,43	23,8%

After four months of classes, the most pronounced increase occurred in the performance of coordination tests in girls and strength qualities in boys. The girls progressed in throwing the ball with a run (by 9%), in bending on one leg with a taper touch (by 14%) and in pulling up (by more than 11%). The boys showed the most pronounced positive dynamics in pulling up on a high crossbar (more than 20%).

Table 2 Results of testing of physical fitness of children, in the second academic half of the year

Control exercises	пол	1 slice M±m	2 slice M±m	Naturect, %
1	2	3	4	5
1. Lifting the trunk from the prone position, the number of times	Д	19,60±1,81	20,5±1,23	4,9%
	М	20,50±3,27	21,3±3,34	3,85%
2. Long jump from a place, see	Д	141,40±11,21	144,40±10,4	2,15%
	М	154,00±9,35	158,00±8,75	4,35 %
3. Shuttle run, 3x10, sec	Д	9,68±0,22	9,44±0,28	-2,6 %
	М	9,39±0,26	8,91±0,24	-5 %
4. Throwing the ball 150 g with a run-up, m	Д	15,96±1,21	17,78±1,36	10,45%
	М	23,76±0,75	25,6±1,98	7,65%
5. Inclines on 1 leg with a taper touch for 30 seconds, the number of times	Д	11,40±0,58	12,3±1,21	8,1 %
	М	11,7±1,8	12,1±2,0	3,2%
	Д	13,4±0,81	13,9±1,01	3,65%
Control exercises	пол	2 срез M±m	3 срез M±m	Прирост, %
1	2	3	4	5
6. Pull-up (on a high crossbar -m, on a low crossbar - d), the number of times	М	3,56±0,43	4,61±0,67	25,1%

In the second academic half of the year, the positive dynamics remained in all indicators, without any significant changes in the structure.





The annual increase in the main indicators of physical fitness in girls reflects Figure 1. Significant dynamics was observed in lifting the trunk from a prone position (13%), throwing a ball from a run (19%), bending on 1 leg (22%) and pulling up (15%).

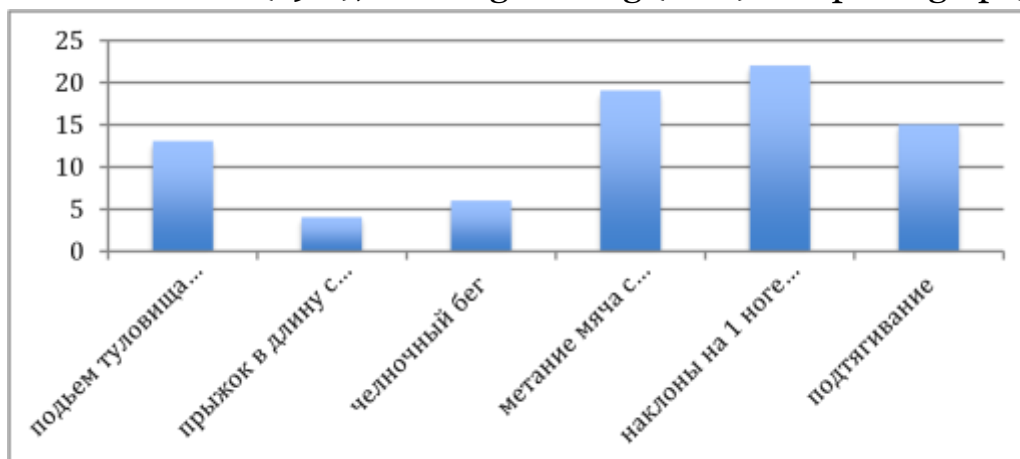


Fig.1. Annual increase in physical fitness in girls

The annual increase in the main indicators of physical fitness in boys reflects Figure 2. Significant dynamics was observed in pulling up (30%), throwing the ball with a run (14%), and lifting the trunk from a prone position (9%). According to the results of classes, most boys have a significant increase in the strength abilities of the upper shoulder girdle.

In the next academic year, it is recommended to pay attention to the development of speed abilities and continue the development of coordination qualities.

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