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# Mechanisms of improving the motor activity of children aged 6-7 years through initial gymnastics classes

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## Abstract

*Purpose:* Development of motor activity, physical fitness of children by means of rhythmic exercises based on initial gymnastics.
*Methods:* in the study we used the following methods: pedagogical testing, pedagogical experiment, heart rate monitoring, somatoscopy, mathematical statistics.
*Results:* As a result of the study, it was found that in children 6-7 years old, on the basis of rhythmic exercises based on initial gymnastics, motor activity increases by 11.4%, and physical fitness-by 11.32%. After the experiment, changes in the statistical reliability of the test results were revealed ($p<0.05$ and higher, 847 ±0.9, tct =1.55).
*Conclusion:* In The experimental program in comparison with the traditional program of physical education provided for the motor intensity of classes of 75-87% and the intensity of the load, the heart rate in the main part from 87 to 187% per minute, when choosing the means and methods of physical education, the age characteristics of children 6-7 years were taken into account.The results of the experiment showed a high efficiency of the program developed during the study and applied in the experimental group in comparison with the traditional program used in the control group.

**Keywords:** Children aged 6-7 years, primary gymnastics, rhythmic exercises, pedagogical experiment, motor activity, physical fitness, physical qualities.

## Introduction

Priority directions of activity of educational organizations in the field of development of children's sports and selection (selection) of talented youth are defined, one of the main tasks of which was the formation of students ' interest in physical culture and sports for physical development and health promotion through conducting classes in primary gymnastics in preschool educational organizations (Ukaz Prezidenta, 2018).

In the education system of developed countries, preschool age plays an important role in the physical and all-round harmonious development of preschool children. It is during this age period that the foundation of health, proper physical development is laid, physical abilities are formed, and interest in physical culture and sports is formed (Kholboeva, Khaydarov et al., 2020; Kholboeva et al., 2020).

It is necessary to ensure the possibility of physical development of children and their active movement, to scientifically approach the development of the content and methods of the process of physical development, to solve important issues of physical hardening, increasing endurance, forming an interest in sports activities from childhood, independent thinking in classes and in play activities, to take the first steps in physical culture and sports activities (Kholboeva, 2020; Khaydarov et al., 2020; Runova, 2004).

The purpose of the study: to improve the motor activity of children in the process of physical education of preschool educational organizations, which consists in the development of a methodological program and a module of rhythmic exercises.

Objectives of the study: to identify in the course of the study the mechanisms of development of motor activity of children aged 6-7 years in preschool educational organizations. Development of a program of rhythmic exercises aimed at preventing problems of the musculoskeletal system, taking into account the age characteristics of children aged 6-7 years. Give practical recommendations based on an improved model of the development of indicators of physical fitness of children in preschool educational organizations.

## Methods

Pedagogical testing. To study and assess the level of physical fitness of respondents aged 6-7 years, tests were conducted on the long jump from a standing position, running in a squat, bending the trunk, leaning forward, running for 10 meters in order to determine the effectiveness of the developed program.

*Pedagogical experiment.* In order to develop physical fitness and determine the motor activity of children aged 6-7 years, experiments were conducted in state schools 76, 38 in Samarkand. The program of the experiment covered the means and methods aimed at solving the problems of physical education of preschool children. To increase the physical, functional and adaptive capabilities of the body, a group (frontal) method of performing exercises of various types of running and jumping, dancing, outdoor games, and preliminary gymnastic complexes was introduced. From 50 to 70 percent of the content of the lesson is devoted to the development of motor activity (figure 1).

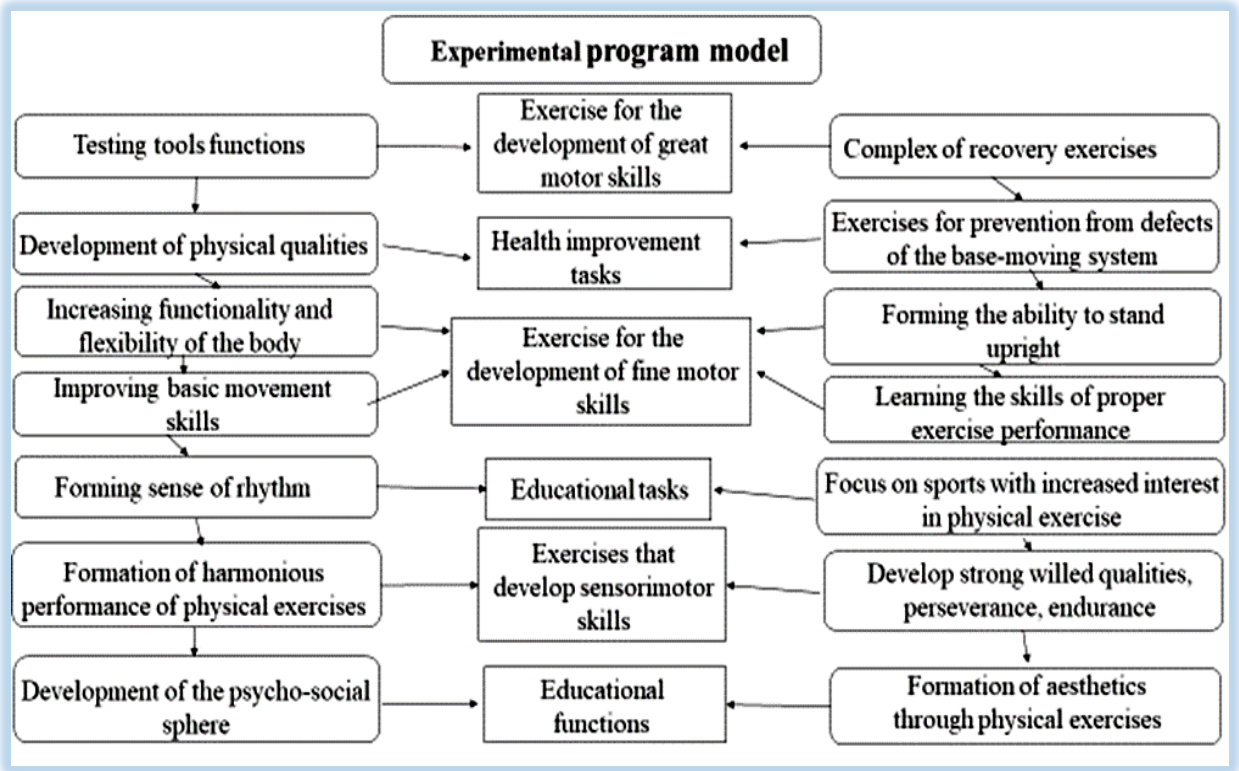



**Figure 1. Model of the experimental program.**

The experiment was conducted on the basis of a set of exercises, including health, educational, and educational orientation when choosing a program model and tools (figure 1).

Somatoscopic examination was conducted to study and evaluate the physical development of preschool children. Somatoscopy assessed the posture, chest, abdomen, features of the external and internal structure of the body, features of the development of the musculoskeletal system in accordance with the generally accepted methodology covered in the literature. Somatoscopic examination of respondents in the experimental-test and control groups revealed a predisposition to various diseases of the musculoskeletal system (17.5% in the control group, 16.5% in the experimental-test group).

The heart rate measurement method is entered in the heart rate measurement register (record). Based on the data obtained, physiological curves were established that reflect changes in heart rate during various physical exercises. It was used to determine the intensity of motor activity in the process of motor activity, to determine its compliance with the capabilities of the child's body and the tasks solved in the process of physical education. In the experimental and test group, the method was used to study the effect of training on the body, load control, and heart rate control. The experimental program in comparison with the traditional program of physical education provided for the motor intensity of classes of 75-87% and the intensity of the load, the heart rate in the main part from 87 to 187% per minute, when choosing the means and methods of physical education, the age characteristics of children 6-7 years were taken into account.

The method of mathematical statistics was used to determine the objectivity and reliability and regularities of data processing obtained during the experiment, and to determine their properties and values. The data was processed in the Exel program using the Student and Fischer criteria.

After the experiment, changes in the statistical reliability of the test results were detected ($p<0.05$ and higher, 847 ±0.9, $t_{ct}$ =1.55).

## Results and discussion

In the course of the study, a comparative pedagogical experiment was conducted in order to identify and test the effectiveness of the experimental and testing methodology.

The experiment involved respondents aged 6 -7 years from 120 preschool educational organizations (60 experimental control groups, 60 control groups). At the beginning of the experiment, a comparative analysis of the physical development and physical fitness of the respondents of the experimental-test and control groups was carried out. effectiveness of the proposed method was evaluated by comparing the indicators of physical development and physical fitness, as well as by the data of the musculoskeletal system of the respondents of the experimental-test and control groups at the beginning and at the end of the experiment.

*Review of the results of the experiment.* The results of somatoscopic examination of children in the experimental-test and control groups after the experiment showed that the number of children with a predisposition to diseases of the musculoskeletal system in the control group decreased from 17.5% to 14.5%, and in the experimental-test group-from 16.5% to 10.5% (figure 2).

In comparison with the traditional and research program, the experimental and test program had an effective effect on the prevention of various

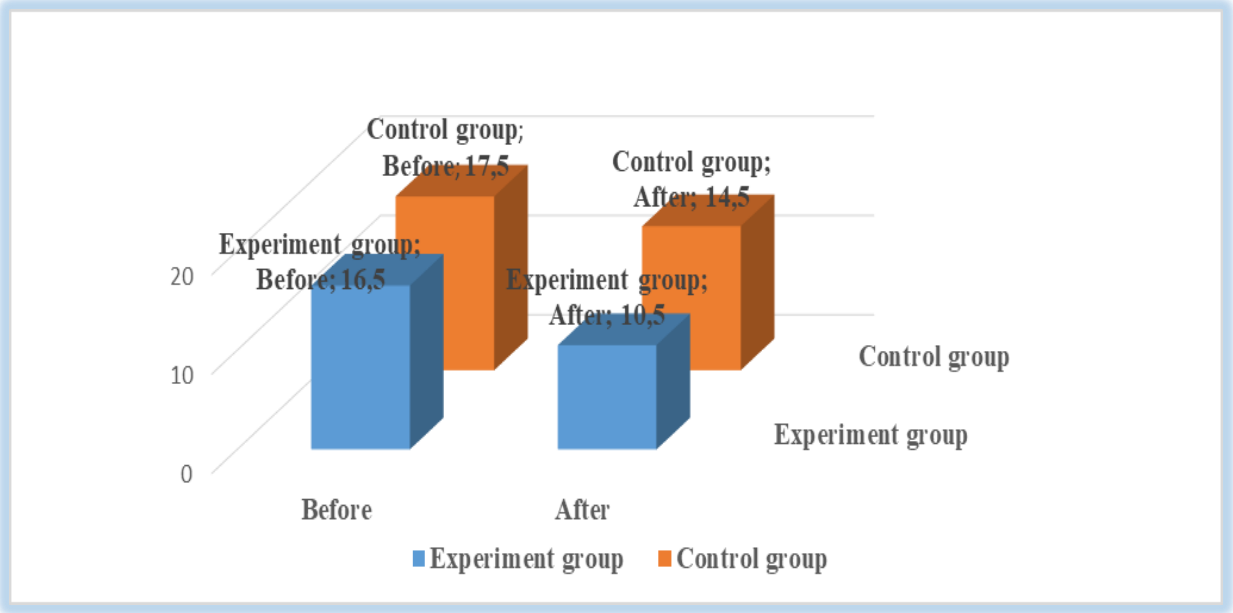



**Figure 2. Analysis of respondents who have problems with the musculoskeletal system among children in the experimental and control groups at the beginning and at the end of the experiment.**

In the experimental and control groups of respondents, 30-minute classes were conducted according to a program consisting of a set of rhythmic exercises based on initial gymnastics, three times a week for six months. Those who were in the control group, all this time were engaged in a permanent traditional program of physical education (the duration and time of classes are similar).

The motor intensity of physical education in the experimental group varied from 60-65% to 75-87%, depending on the tasks and type of activity, and in the control group it was lower and amounted to 50-68%. In the experimental and test group, the effect of training on the body according to the method, load control, and heart rate control. The musculoskeletal disorders in children with the help of special program methods and tools aimed at forming the correct posture, as well as exercises aimed at strengthening the muscles.

Analysis of respondents with problems with the musculoskeletal system of children in the experimental-test and control groups at the beginning and at the end of the experiment.

At the beginning of the experiment, there was no significant difference in the indicators of physical development and the results of physical fitness of the respondents of the experimental-test and control groups (Table 1).

**Table 1. Analysis of physical performance indicators of children in the experimental-test and control groups during the experiment (n = 60).**

| Test | Group | Start of the experiment | | | End of the experiment | | | Absolute difference | Relative difference % | $t_{ст}$ | P |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $\overline{X}$ | σ | V, % | $\overline{X}$ | σ | V, % | | | | |
| Shuttle run | CG | 11,15 | 1,43 | 12,83 | 10,81 | 0,91 | 8,42 | -0,34 | -3,05 | 1,55 | >0,05 |
| | EG | 11,22 | 1,45 | 12,92 | 10,63 | 0,9 | 8,47 | -0,59 | -5,26 | 2,68 | <0,01 |
| Jumping from the position | CG | 101,95 | 12,56 | 12,32 | 106,33 | 10,9 | 10,25 | 4,38 | 4,30 | 2,04 | <0,05 |
| | EG | 103,27 | 12,73 | 12,33 | 110,61 | 11,16 | 10,09 | 7,34 | 7,11 | 3,36 | <0,001 |
| Torso folding | CG | 10,12 | 7,41 | 10,41 | 10,32 | 0,84 | 11,33 | 6,23 | 4,37 | 2,14 | >0,05 |
| | EG | 10,15 | 8,35 | 11,3 | 13,45 | 0,98 | 13,54 | 6,85 | 7,13 | 4,52 | <0,01 |
| Tilt forward | CG | 2,59 | 0,51 | 19,69 | 2,73 | 0,46 | 16,85 | 0,14 | 5,41 | 1,58 | >0,05 |
| | EG | 2,65 | 0,52 | 19,62 | 4,61 | 0,45 | 15,63 | 0,23 | 8,68 | 2,59 | <0,01 |
| Crawling for 10 meters | CG | 7,61 | 0,98 | 12,88 | 7,29 | 0,93 | 12,76 | -0,32 | -4,20 | 1,83 | <0,05 |
| | EG | 7,65 | 0,99 | 12,94 | 7,01 | 0,84 | 11,65 | -0,44 | -5,75 | 2,63 | <0,01 |

After the experiment, changes in the statistical reliability (P<0.05 and higher) of the test results are detected:

*1-test.* Shuttle run-from 11.22 to 10.61 seconds;

*2-test.* Jump from the position-from 103.27 cm to 110.61 cm;

*3-test.* Torso folding from 13.11 s to 26,05 s.

*4-test.* Crawling for 10 meters-from 7,65 s to 7,01 s;

*5-test.* Tilt forward from-2,65 cm to 4,61 cm.

At the end of the experiment, a one-sided significant change in physical development indicators was observed in both groups. Thus, the increased loads did not have a negative impact on the body of the respondents (as evidenced by the results of pedagogical observations and heart rate monitoring data).

A comparative analysis of the indicators characterizing the physical condition of children in the experimental group at the beginning and at the end of the experiment allowed us to ensure a significant change in the results in all control exercises.

In comparison with the traditional program, the use of the experimental program and the model gave effective advantages, which positively affected the dynamics of physical fitness and motor activity indicators (figure 3).

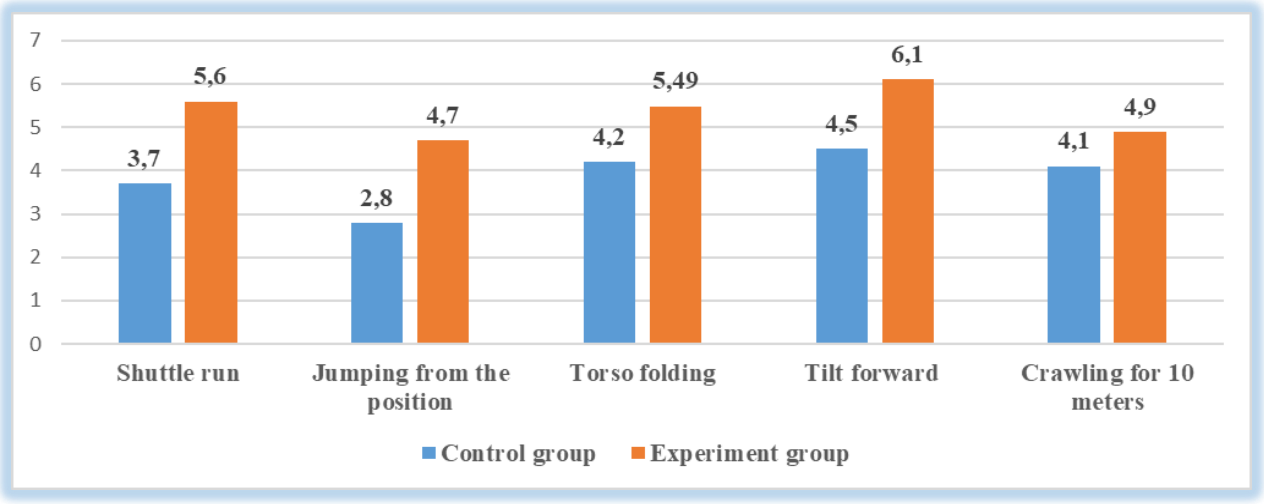



**Figure 3. Relative dynamics of growth of indicators of physical fitness of the experimental-test and control groups during the experiment ( % , n = 60).**

Heart rate monitoring data showed that the loads in all parts of the experiment corresponded to the age of the respondents, the recommendations of the "First step" program and state requirements. The analysis of the pulse dynamics in the classes of the experimental-test and control groups showed that physical exercises in the experimental-test group, in comparison with the classes in the control group, have a more positive effect on the child's body (see figure 4). Thus, the pulse measurement data confirm the effectiveness of the experimental-test method:

- experimental program compared to the traditional physical education program, the motor intensity of training is 75-87 % and the intensity of the load, the heart rate in the main part was from 87 to 187% per minute;

- when choosing the means and methods of physical education, the age characteristics of children aged 6-7 years were taken into account.

jumps from a standing position - from 103.27 cm to 110.61 cm, torso flexion - from 13.11 to 26.05, crawling for 10 meters-from 7.65 to 7.01 s, leaning forward - from 2.65 cm to 4.61 cm. The growth dynamics can be traced, and the listed factors confirming the effectiveness of the program indicate that we have achieved our goal. According to the results of the experiment, it was found that in children 6-7 years old who studied according to the traditional program in CG, the length and weight of the body increased by 3.7 and 2.8%, respectively, by the end of the experimental period, and in EG who studied according to the improved experimental program, these indicators were 5.6 and 4.7%.

In other words, there were no statistically significant changes in the functional parameters observed by anthropometric and physical indicators in children brought up in EG, in CG. Physical abilities (shuttle running, long jumps from a standing position, torso flexion, leaning forward, crawling up to 10 m) also differed in

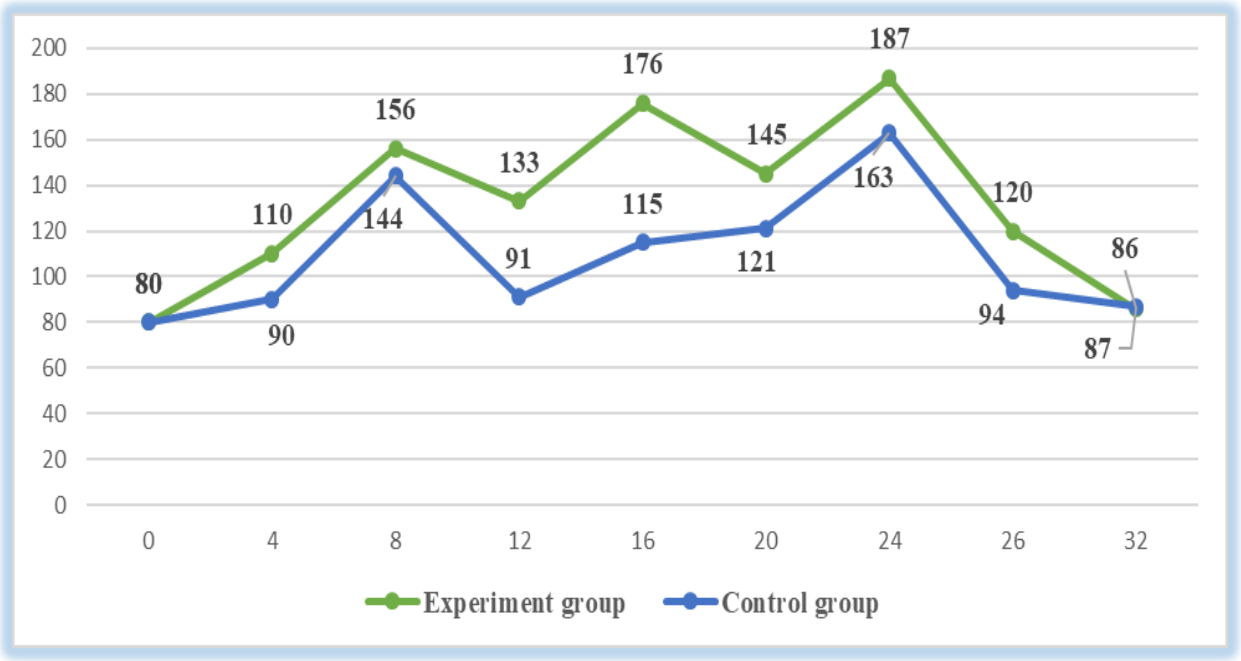



**Figure 4. Dynamics of heart rate in physical education classes of experimental-test and control groups.**

## Conclusion

The results of the respondents of the experimental group were good compared to the results of the respondents of the control group, which led to a positive change in statistical reliability. After the experiment, changes in the statistical reliability of the test results were revealed ($p<0.05$ and higher, 847 ±0.9, tst =1.55). Shuttle running - from 11.22 S to 10.61 s, long

that children with EG had more intensive growth than those with CG, the relative dynamics of growth in physical fitness indicators is reflected in Table 1 and Picture 3.

The result of the study proves the effectiveness of experimentally tested methods for the development of physical fitness of children for motor activity.

## References

Ukaz Prezidenta Respubliki Uzbekistan ot 5 marta 2018 goda №UP-5368 “O merakh po korennomu sovershenstvovaniyu sistemy’ gosudarstvennogo upravleniya v oblasti fizicheskoj kul`tury’ i sporta” [Decree of the President of the Republic of Uzbekistan dated March 5, 2018 No. PF-5368 “On measures to radically improve the system of public administration in the field of physical culture and sports”]. (2018). *Naczional’naya baza danny’kh zakonodatel’stva, 06.03.2018 g., № 06/18/5368/0851—National database of legislation, 06.03.2018, No. 06/18/5368/0851* [in Russian].

Kholboeva G.Kh., Khaydarov B.T., Tojieva Kh.B. (2020) Methodology of the improvement of preliminary gimnstic disciplines in increasing activity of preschool age children (case of Uzbekistan). *International Journal of Psychosocial Rehabilitation*, **6,** 4562-4569.

Kholboeva G.Kh. (2019) Maktabgacha yoshdagi bolalar harakat faolligini oshirishda dastlabki gimnastika mashg`ulotlarini takomillashtirish mexanizmlari [Mechanisms of improving primary gymnastics in increasing the motor activity of preschoolers]. *Scientific Bulletin of the Samarqand State University,* **6,** 140-144 (in Uzbek).

Kholboeva G.Kh. (2020) Methods of development of physical qualities in gymnastics for 5-7 years old. *Novateur publications JournalNX*, **6(6),** 743-747.

Kholboeva G.Kh., Nazarova D. (2020) Dastlabki gimnastika mashg`ulotlari asosida 5-6 yoshli bolalarning harakat faolligini oshirish mexanizmlari [Mechanisms of increasing the motor activity of children aged 5-6 years on the basis of initial gymnastic exercises]. *Science to sport,* **6,** 72-75 (in Uzbek).

Khaydarov B.T., Kholboeva G.H. (2020) *Jismoniy tarbiya nazariyasi va metodikasi* [Theory and methodology of physical culture]. SamDU. (in Uzbek).

Runova M.A. (2004) *Dvigatel’naya aktivnost’ rebenka v detskom sadu: posobie dlya pedagogov doshkol’nyh uchrezhdenij, prepodavatelej i studentov ped. vuzov i kolledzhej.* [Motor activity of a child in kindergarten: a guide for preschool teachers, teachers and students of pedagogical universities and colleges]. Moscow. (in Russian)

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