



---

## STUDY OF THE DYNAMICS OF THE PHYSICAL QUALITY OF FLEXIBILITY IN CHILDREN FROM THE PRIMARY STAGE AFTER THERAPEUTIC PHYSICAL EDUCATION CLASSES (FOLLOWING THE EXAMPLE OF "ST. KLIMENT OHRIDSKI" SECONDARY SCHOOL)

D. Peeva<sup>1</sup>, N. Gocheva<sup>2</sup>

<sup>1</sup>South-West University "Neofit Rilski", Blagoevgrad, Bulgaria

<sup>2</sup>Faculty of Economics, Trakia University, Stara Zagora, Bulgaria

### ABSTRACT

The article is presented data from long-term activities with students, who have been subjected to different methods of physical therapy, with the purpose to increase their flexibility. The degree of improvement as a result of the regular activities has been analyzed. An experimental program for self-learning and self-control has been presented concerning the following developmental stages of every student. The strong dependence on the joint work of parent, teacher and student has been proven.

**Key words:** flexibility, physical therapy, developmental program, measurement methods

### INTRODUCTION

One of the most negative aspects of the modern information society, which most strongly affects children and young people, is associated with an inactive physical life, a long stay in the school building - especially in a full-day mode of study - filling the small amount of free time with interactive rather than real games. All this leads to the great hypodynamics among young people, indicated by a number of researchers. As a consequence of these factors, a large number of children develop spinal curvatures in varying degrees of manifestation, as well as various other anomalies - difficulty breathing, increased blood pressure, etc.

In elementary school students, the manifestations are weaker, but they are indicators of the possibility of developing serious diseases. With the help of physical therapy, these malformations, especially in terms of spinal curvatures, can be corrected.

Successful work with regard to the possibilities of therapeutic physical education requires strong

motivation on the part of children and their parents. Suspension of activity for vacation periods leads to restoration of the original physical condition and even to deterioration of the indicators.

Therapeutic physical education (PE) is a complex of physical and breathing exercises that have a general health and therapeutic effect on the child's body. Physical therapy exercises are very useful for chronic or congenital abnormalities of the musculoskeletal system, respiratory and digestive systems, but also for any child who nowadays, under the weight of the school reality, begins to distort and deform his posture. Regular and adequate physical activity promotes the harmonious development of the child and also reduces the incidence of other diseases.

The spine is the basis of the musculoskeletal system. It is not by chance that it is called a pillar, which distributes and transfers the weight during our movements from the hands to the feet and vice versa.

The shape is not random either. The S-shaped curve in combination with the intervertebral discs play a key role in distributing of weight in every position of our body. The spine can be likened to a spring that takes enormous loads every day. When this "spring" is properly built, it can easily distribute the burden of the work process.

The correct functioning of the spine depends entirely on the habit that is acquired in childhood. Correct posture is the position in which the spine is supported every day, every hour and even every minute. The goal of remedial physical education is to build a strong and upright foundation on which the child builds his development with age. Corrective physical therapy exercises teach children proper posture, develop the muscles that are the main support of the spine and protect against pain in the back and lower back at a later age.

Among the main problems of children with deviations related to the musculoskeletal system is flexibility - one of the main physical qualities. Flexibility is the ability to perform movements with a large amplitude depending on the nature of the motor activity. It is determined by the mobility of the musculoskeletal system of the person and is measured by the amplitude of the movements [1].

Flexibility is a motor quality, the level of which can be increased relatively easily and quickly, but without systematic exercises it rapidly deteriorates its condition. The best conditions for the development of flexibility are considered in the early years of an individual's development.

**Table 1.** Students' 'entry level' results (average)

Test	Girls - 12	Boys - 9
Lean forward from a standing position, see	-12	-14.5
Leaning forward from a seat, cm	-10	-17
Tilt to the side - left, see	18	16
Tilt to the side - right, see	17	15
Rotation – left, degrees	13°	14°
Rotation - right, degrees	11°	13°

The results almost unidirectionally prove the greater flexibility of girls between the ages of 6-10. The difficulties associated with the manifestations of hypodynamics and problems

Physiotherapy classes are held during the winter semester in a gym, and in the spring - outdoors. The duration is 1 astronomical hour, and the frequency is 2 times a week. The exercises are selected according to the physical and mental abilities of the children.

In the study are covered 21 elementary school students (grades I-IV) over the course of one school year.

The methods for measuring the initial and final state of flexibility in children are:

- leaning forward from a standing position: the performer stands straight on a chair and bends down, without buckling the knees, and if the result is above the chair, it is recorded with "-";
- leaning forward from a sitting position: the goal is to reach the toes, recording with "-" if they are not reached;
- slopes to the side: the actual achievement in cm of the slope is recorded
- rotation of the trunk to the left and right: starting position sitting and rotation to the left and right, reporting the results in degrees of rotation.

The research equipment is easily accessible - a lath graphed in centimeters, a rope for reading the values for forward inclinations, a tape marked with degrees, taking into account the degrees of rotation of the outer arm (left-right arm and vice versa).

At the beginning of the experiment, an "entry level" is conducted for students who wish to or are directed to the classes by a specialist. The results by gender and number of participants are presented in **Table 1**.

with the musculoskeletal system are also represented by the achievements - there are no positive values on the two tests for inclinations from standing and sitting. The rotation is weak, as

only in this exercise, and in general, the boys have a small advantage.

During the school year, exercises are established by practice and proven effectiveness, such as stretching, lunges, sit-ups and twisting, tilting, working on the floor for flexibility of the spine, etc.

An extremely important moment of our work was convincing and motivating the children and their parents in the correctness of the actions, although at first it was difficult, even painful for most of the participants.

At the end of the program for the academic year, a "baseline" of achievement was made to determine progress or stagnation in the development of flexibility. The achievements are presented in **Table 2**.

The results show a significant improvement in performance on all tests. This proves the right approach to solving some health problems in children.

The emotionality of the children from overcoming the difficulties and the gratitude of the parents are the great reward of the team that carried out this experiment, which must continue in the following years.

**Table 2.** Final results after therapy PE classes

Test	Girls	Boys
Lean forward from a standing position, see	-3	-4
Leaning forward from a seat, cm	-2	-2
Tilt to the side - left, see	20	18
Tilt to the side - right, see	19	17
Rotation – left, degrees	20°	24°
Rotation - right, degrees	21°	22°

It is important that remedial physical education is applied in time, because there is a risk that some diseases can lead to more serious problems in children, such as retardation of growth and development, as well as damage to some of the basic functions of the body. Therefore, it is extremely important to apply exercise therapy, not only as a treatment, but also as a prevention.

## REFERENCES

- Oja, P. (Author), Tuxworth, B. (Editor), Eurofit for Adults: Assessment of Health-Related Fitness, CE, 1995.
- Petkova, L., Kwartirnikova, M., Tests for Assessment of Physical Capability, Sofia, 1985.
- Racher, K., Theory and Methods of Physical Education, Sofia, 1984.
- Oja, P. (Author), Tuxworth, B. (Editor), Eurofit for Adults: Assessment of Health-Related Fitness, CE, 1995.
- Nedkova, M., "Current state of physical fitness of students from higher education institutions in Bulgaria. Normative basis for evaluation"

*Yearbook of the Sports Department of the University of St. Kliment Ohridski*, Volume 87, 2015, ISSN 1313-7417, pp. 417-430, Sofia, 2015.

- Nedkova, M., Peeva, D., Gocheva, N., "Physical condition and development of students practicing rugby at Todor Kableskov Transport universitie and Thrace University - St. Zagora". *XI International Conference "Contemporary trends in physical education and sports"*, SU "St. Kliment Ohridski", ISSN 1314-2275, Department of Sports, pp. 319-324, Sofia, 2019.
- Peeva, D., Nedkova, M, Ivanov, G., "Physical availability of Bulgarian students and current issues of physical education and sport in the educational system", *Research in Physical Education, Sport, and Health*, Vol . 11, No. 2, pp.21-23, ISSN(Print):1857-8152; ISSN(Online):1857-8160, 2022.
- <https://chudesabg/service/lechebna-fizkultura/>
- <https://gimnastika.eu>