AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 5,October ,2025

METHODS OF EFFECTIVE USE OF A COMPLEX OF SPECIAL PHYSICAL EXERCISES TO PREVENT DISORDERS WITH BODY STANDING OF STUDENTS IN GRADUATE CLASSES

Karakalpak State University named after Berdakh Lecturer
at the Department of Theory and Methodology of Physical Culture
Norboyev Ahmad Hamro ugli
E.mail: ahmadnorboyev1123@gmail.com
Theory and Methodology of Physical Culture and
Sports Training Master's student
Uzakbaev Ruslan Anvarovich
E-mail: rusuzakbaev@gmail.com

Annotation: This article outlines guidelines for organizing physical education lessons for schoolchildren with scoliosis. It explains what exercises are appropriate for students with spinal curvature. The need to refrain from certain prohibited actions is indicated.
Keywords: Body development, scoliosis levels, spinal disc, spine mobility, anthropometric measurements, LFK.

Introduction

During the years of independence, special attention has been paid to the development and popularization of physical education and sports in our country. In recent years, consistent measures have been implemented in the Republic to popularize physical education and sports, promote a healthy lifestyle among the population, create the necessary conditions for the physical rehabilitation of people with disabilities, and ensure the country's worthy participation in international sports arenas. Today, there is a growing need to study the optimal coefficients of training equipment and loads for the healthy development of the adolescent and proper posture development, as well as to organize the training process on a scientific basis. In Uzbekistan, boarding schools specializing in scoliosis have been established, but scientific and practical programs for physical rehabilitation are outdated. Therapeutic gymnastics complexes for elementary school students cannot be directly applied to the morphological and functional state of children's development; the situation itself determines the relevance of these studies.

The Decree of the President of the Republic of Uzbekistan dated June 3, 2017 No. PP-3031 "On Measures for the Further Development of Physical Culture and Mass Sports," the Decree of the President of the Republic of Uzbekistan dated January 24, 2020 No. UP-5924 "On Measures for the Further Improvement and Popularization of Physical Culture and Sports in the Republic of Uzbekistan," the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan dated December 23, 2010 No. 307 "On Measures to Further Enhance the Effectiveness of Medical, Social, and Vocational Rehabilitation of Disabled Persons," as well as other regulatory legal documents related to this area, contribute to the implementation of the tasks set forth in this dissertation research.

Extensive scientific research is being conducted in many countries around the world on the prevention of posture disorders. Therefore, scientifically substantiating the system for preventing posture disorders is of paramount importance. As a result of observing schoolchildren, it can be verified that numerous scientific research studies have been conducted in the field of treating spinal curvatures in students with postural changes. Especially in schoolchildren, the

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5,October ,2025

organization of a system for proper posture development or the prevention of the degree of spinal curvature with the help of physical education tools plays an important role in the field of large-scale scientific work. When studying comprehensive scientific and methodological work, we became convinced that students with postural disorders often develop spinal curvature due to improper sitting in chairs and lifting loads of varying weights. It should be noted that there are practically no scientifically based recommendations regarding the training equipment and workloads suitable for students with physical disabilities.

Object and subject of research:

The object of the research: the process of conducting classes with students of secondary schools No. 19, 36.

Subject of research: A set of special exercises and methods for their application in physical education classes for students with spinal defects.

Research goals and objectives:

Purpose of the research. Developing a complex of special physical exercises to prevent posture disorders in primary school students and improving the mechanism for their practical application.

Research objectives:

- Determine and classify the anatomical and physiological status of primary school students according to the degree of spinal curvature (I-II - frontal and sagittal) in posture disorders;
- Developing a complex of special physical exercises based on the selection of highly effective means used in physical education lessons aimed at preventing posture disorders in primary school students and improving their load norms based on optimization;
- Experimentally substantiate the effectiveness of using a complex of special physical exercises to prevent posture disorders in primary school students.

Characteristics of the anatomical and physiological characteristics of primary school students

It would be advisable to use therapeutic physical education, therapeutic gymnastics, and special exercises to prevent spinal curvature and posture disorders in primary school students. In this regard, the correct grouping of equipment, the selective orientation of exercises based on spinal deformities, their systematization, and the use of specific terminology in the training process are of paramount importance.

Grade I is characterized by a slight curvature; in a standing position, the muscles are strengthened, and the spine is regulated. In this case, the curvature of the spine is from 1° to 10°.

Second-degree spinal curvature ranges from 11° to 25°. By joining the fingers and placing them on the occipital region of the head, the spinal column is regulated when the prevertebral muscles are strengthened.

In stage III, the spinal curvature is 26° - 50°, externally the patient's shoulders and shoulder blades are at different heights, and there is no symmetry of the triangular sides between the back and arm. But when hanging on a horizontal bar, the prevertebral muscles strengthen, and the weight of the hip girdle regulates the spine.

In grade IV, the spinal curvature is 51° and higher, and the spine is not regulated under any circumstances.

Scoliosis disrupts the function of organs located in the chest cavity and abdominal cavity even more than changes in posture.

Tools, methods, and features of therapeutic gymnastics exercises for the prevention of posture disorders:

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5,October ,2025

Yu. According to the long-term experience of Yunusova and A. Yefimenko, the essence of functional readiness lies in the purposeful development of the body's functional systems in an environment and through significant physical loads, i.e., achieving endurance of large muscle functional and psychological stress.

Functional training includes special preparatory exercises that affect the following:

improving the function of the nervous system. The central nervous system must be prepared so that it possesses a certain strength of the nervous process to withstand significant physical and psychological stress.

Effects all functions, primarily the autonomic supply of cerebral vessels, the development of the cardiovascular and respiratory systems, as well as the excretory organs.

The development and improvement of analyzer functions will influence the design.

influences the development of the musculoskeletal system to cultivate physical qualities.

At the same time, it is essential to determine, from both theoretical and practical perspectives, the laws governing the rational relationship between moderate physical loads and end-of-life physical exertion.

The issue of an organism's adaptation to various natural conditions is of great practical importance. In this matter, the study of the organism's adaptation to high and low temperatures occupies a special place. Therefore, the natural-scientific justification of the system and methods of sports training should be carried out taking into account all biological factors that indicate the ability of people to move in specific natural-metrological conditions.

According to Q. A. Nurmuhamedov, the bone marrow, cartilage, and skeletal muscles together form the musculoskeletal system. The increase in the speed and elasticity of ligaments in these areas depends on the temperature of the area being massaged. In these areas, therapeutic massage techniques are rarely used [85; [p. 16-17]

Due to age-related changes in the joints of older adults, overall body speed decreases, and with lethargy, joint movement becomes more difficult, sometimes even limited. This is also affected by cold weather. In these cases, massage is widely used as a warming agent and to prevent minor injuries.

In second-degree scoliosis, DJT sessions are conducted only in medical facilities. Treatment exercises are performed in a reclining position on a chair. This increases the range of motion of the spine and allows for the widespread use of symmetrical exercises to strengthen the muscles of the body. In the second stage of scoliosis, self-correction exercises, asymmetrical correction exercises, and detorsion exercises (when recommended) are used in conjunction with general development exercises. The use of breathing exercises is also of great importance. Various hanging exercises are not used, as strong muscles on the concave side of the spine can contract even more strongly than those stretched at the apex of the spinal curvature. Exercises are used to strengthen body muscles.

In the initial position of lying on the stomach:

- Place your hands on your shoulders and raise your head and upper body without bending your back;
- Raise your hand up and perform the above movement;
- Exercises are performed with alternating legs pushed back, slightly bending at the waist, and alternating legs lifting.
- arm movements like swimming in the breaststroke;
- applying a pinch to the hand and chest, holding it in this position for a while.

Lying on your back in the starting position:

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5,October ,2025

- Lifting the bent legs consecutively and simultaneously;
- Lifting both extended legs consecutively and simultaneously;
- in a lying position, transition to a sitting position with arms in various positions (at the waist, along the body, to the sides of the waist, on the shoulders, to the base of the head, raised upwards) [56; 75-76 p.

In the correct formation of posture, physical exercises, massage, and orthopedic care are used from the means of **complex treatment.** For proper posture development, corrective, asymmetric, and symmetrical exercises are used. Corrective exercises are aimed at maximizing the movement of the spine. In such cases, special exercises are conducted to prevent deviations.

Asymmetrical exercises are also based on the principles of spinal correction. Thus, by optimally influencing its curvature, it is distinguished by moderately stretching the cartilages and muscles on the concave side of the curvature and strengthening the passivated muscles on the peak of the curvature.

When performing symmetrical exercises, the muscles located on both sides of the body do not contract in one rhythm. To maximize the movement of the spine from right to left, stretched and weak muscles should contract more strongly, while contracted muscles should contract less. Therefore, lower body muscles (body-stimulating) and long back muscles are trained more intensively when performing symmetrical exercises compared to strong muscles. This condition is the essence of the correction of the neuromuscular apparatus and the creation of a balanced "muscle" sign. As changes develop, the shape of the spine changes, and respiratory function and heart function are impaired. Breathing exercises used to prevent posture disorders contribute to improving the functions of the respiratory and cardiovascular systems, and the development of active correction of the spine and chest. When the parallel position of the pelvic and leg bones is disrupted, the parts of the spine become unsuitable for each other.

In suppressing such changes, detorsion exercises involve rotating the spine in the area of scoliosis in the opposite direction relative to the flexure.

2. Correction of scoliosis by straightening the pelvis.
3. Stretch (stretch) contracted muscles in the lower back and chest.

tosni tuwırlab skoliozni korrektsiyalaw (tuwırlaw);
bel hám tós bólimlerindegi qısqargan bulshıq etlerdi jazıw (soziw);

Used to strengthen stretched and loose muscles. When selecting exercises, it is important to consider that in right-sided scoliosis, the spinal curvature (torcia) should be clockwise, while in left-sided scoliosis, it should be counterclockwise. In the chest area, exercises are performed using the muscles of the shoulder girdle. In the lumbar region, exercises are performed using the muscles of the chest girdle. Detersion exercises are performed while lying down, standing with knees and palms on the ground. Hanging on a gymnastic wall on an inclined plane is performed after muscle relaxation. Spinal stretching exercises are divided into active and passive types. On a special functional bed with a raised head during low stretching, using a waistband.

A 5-10 kg weight is used. Active stretching is performed with special exercises. Exercises are used for correcting spinal curvature and in some affected muscle groups. In lower correction, massage, various stretches of the spine, orthopedic corsets, and gestures are used [56; 76-77].

Postural disorders (physical defects) consist of changes in the position of the occipital bone, pelvis, and head, as well as changes in the physiological curvature of the spine.

Basically, such cases occur in physically underdeveloped children. Postural defects impair the function of internal organs, lead to limitations in chest and diaphragm movement, alter the function of the respiratory and cardiovascular systems, and impair gastrointestinal function due

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 5,October ,2025

to changes in abdominal pressure. The patient complains of sleep and abdominal disturbances, and deterioration of movement coordination. Such children are shy, timid, and rarely participate in games with their peers.

In the prevention of postural changes, rational physical education and the implementation of hygiene rules at home are of great importance. A child must lie on a flat, hard bridge, sit straight at school desks, and not lift heavy objects in one hand for a long time.

In therapeutic exercises for posture changes, various general developmental exercises are applied to the arms, legs, and body. Exercises that strengthen the muscles of the body are applied in a supine position, leg movements in a supine position: raising the legs upwards, moving the legs apart and bringing them closer together, rotational movements, transitions from a lying position to a sitting position. Exercises such as lying on the stomach with legs pushed back and extended, lifting the head and shoulders and bending the body with legs pushed back, and simultaneously extending the legs from behind and bending the body with legs and shoulders pressed back without raising them too high are given.

Conclusions:

The anatomical and physiological changes occurring in children aged 7-10 years have been studied by many scientists. In children with spinal curvature, adverse changes are observed both in the anatomical state (bone shape) and in the physiological state (heart rate, blood pressure, respiratory system). This condition leads to changes not only in children's appearance but also in their internal organ systems.

He emphasized the importance of using physical education supplements to prevent spinal curvature in children aged 7-10.

A newborn's spine is in a perfect position, and physiological curvature occurs in its parts during growth and development. With the development of the infant's muscular system, they can hold their head upright, and as a result, a physiological curvature in the cervical spine, i.e., the curvature of the cervical spine, is forward. When a child learns to sit, thoracic kyphosis develops in the area of the sternum, protruding to the outer back of the spine. If this arc has a convex arc, it will face backward. Gradually, a convex auricle appears in the lumbar region, facing forward. Physiological lumbar lordosis becomes pronounced by 6-7 years of age.

References:

1. 1. Decision of the President of the Republic of Uzbekistan, dated 03.06.2017 No. PQ-3031
2. 2. Decision of the President of the Republic of Uzbekistan, No. PQ-449 dated 23.12.2022
3. 3. "Lechebnaya physical culture in scoliosis and child" D.A. Chechyotin, A.N. Tsukanov, A.E. Philistine. Gomel 2015
4. 4.E.A. Nadyrov, D.V. Charnashtan, N.M. Ivanova "Zdorovyy pozvonochnik - osnova jizni", 2008
5. 5. N.S. Lazutina "Lechebnaya fizkultura i massage", 2001.
6. 6.“ Spine and spinal cord injuries" A.M. Mamadaliyev. A. Sh. Shodievich.
7. 7. Hamro oglu, N. A. (2023). PHYSICAL REHABILITATION OF HIGH SCHOOL AGE CHILDREN WITH SCOLIOSIS. RECENT SCIENTIFIC RESEARCH THEORY, 6(6), 38-42.
8. 8.Karamatdinovich, T. S. (2024). Method Of Using Physical Exercises For High School Age Children With Scoliosis. Texas Journal of Multidisciplinary Studies, 30, 33-38.