

## CORRECTING CHILDREN KYPHOTIC ATTITUDE BY MEANS OF RHYTHMIC GYMNASTICS

*Oana Pata<sup>1</sup>*

<sup>1</sup>*Stefan cel Mare University of Suceava, Romania*

### **Keywords: children, kyphotic attitude, rhythmic gymnastics**

**Abstract:** The paper aims to demonstrate the rhythmic gymnastics wrole, in the prevention and correction of kyphosis in children of school age. Rhythmic Gymnastics, very diverse nature of its contents and attractive, particularly through corrective elements of body technique and handling of portable objects, can be a beneficial way to prevent kyphosis in children of school age. Low overall physical ability and attitude Kyphotic, or even more advanced types of kyphosis caused by a number of factors pests small school life, such as position in the bank for 4-5 hours, time spent at the computer, or other activities extracurricular, largely involving incorrect position of the spine, it can prevent and correct by practicing rhythmic gymnastics.

### **Introduction**

Frequently kyphosis is the most typical and deviation of the spine and can take very different aspects and characters, the causes and mechanisms of production, shape, extent and localization in the spine, the evolution and the possibilities of correction.

By location, Kyphotic deviations may be typical when exaggerates normal curvature of the spine in the thoracic region, and atypical when located in the lumbar, cervical, thoracic or lumbar they comprise the entire column.

Being very close to a branch of art, which combines fine ballet movements, technical elements of body, dance steps, techniques for handling objects become truly portable and choreography, rhythmic gymnastics are particularly attractive to students all ages and especially for those of school age and its content has a strong correction character.

## **Material and methods**

Stretching the spine kyphosis, largely conditions as curvature. The short kyphosis have a look angular, rounded curvature determines the medium and the long oval shape have. Evolution kyphosis is very different and is conditioned by causes and mechanisms that produced them. After Prof. Dr. A.N. Ionescu, deviations Kyphotic, kyphosis are divided into functional and pathological kyphosis.

Functional kyphosis, takes a number of common features, namely: are typical deviations, lightweight, easy to install, have a long evolution and a favorable prognosis. In this group are described four clinical forms: Kyphotic attitude, habitual kyphosis, training and compensation.

Kyphotic attitude is usually an exaggeration of physiological thoracic curvature, which is installed during growth. The main cause of this deviation is a functional disorder of the spine support capacity due to insufficient development of the back muscles, a joint laxity and control exaggerated nervous enough.

The spine remains mobile for a long time, then becomes permanent stretching ligaments, muscle elasticity decreases and the minimum and structural changes occur.

The habitual Kyphosis and professional Kyphosis , are the result of uncorrected Kyphotic attitudes to time, structural changes occurring in the elements making up the device support. The mobility of the spine is preserved but in a lesser degree.

Compensatory kyphosis is a column secondary deviation, occurs by offsetting a primary lordotic curves reached a certain stage of development.

Pathological or structural Kyphosis: are greater and more serious deviations of the spine, with profound changes in form, structure and fucțiile them. These deviations have cause and mechanisms for well-defined, appear in a variety of forms, requiring complex treatment, support and individualized. In this group the following are clinical forms:

Congenital kyphosis malformations are caused by the existence of vertebral body level (aplasia, squash, blockage), intervertebral joints or ribs. These kyphosis are usually short, angular, located in thoraco-lumbar region, painless and fixed. The spine remains mobile above and below the malformation. Correct diagnosis is on the basis of radiological examination is essential in these forms.

Rachitic kyphosis, are easy to diagnose because always appear together with other signs and symptoms of the disease such as

deformities of the head, chest, abdomen or legs. This kyphosis is painless, mobile, it emphasizes seated and standing position improves or disappears. The location is its most Frequently lumbar region, where the skin from the spinous is pigmenting, becomes rough and thick.

Paralytic kyphosis, are due to the destruction of motor neurons in the spinal previous horns by polio virus, the agent of infantile paralysis. Since the affected muscle groups are very different aspect of these deviations is very varied and uncharacteristic. The spine remains long while mobile, spinal curvatures are gradually stresses under the action of gravity and contraction of antagonistic muscle groups. The evolution of these kyphosis deformity is severe paralytic forms monster can reach or even collapse column. Even with early treatment and application of a complex still unsatisfactory results in this type of deviation.

Traumatic kyphosis occurs following an accident, sometimes very small, spine, which occurs after a certain time a slight thinning process. This subtracting process vertebrae resistance leads to their flattening and with it the occurrence of deformation. This deformation presents a short angular deflection curvature, fixed accompanied by painful phenomena and motor disorders and sezitive.

Pott kyphosis (TB), resulting from the destruction of 1, 2, 3, vertebral body by the action of Koch bacillus. They flatten and collapse earlier, while intact vertebral arches are pushed back creating a "hump" or kyphosis Pott. Predilection of thoracic kyphosis or Pott is the region in the thoraco-lumbar passage. The curve is short, angular and flat.

Rheumatic kyphosis, in its most severe form, is encountered during spondylartritei spondylitis (as kyphosis). It is a progressive and irreversible due to ossification of ligaments and bone formation bridges between vertebrae.

Juvenile kyphosis (Scheuermannn vertebral epiphysis)

Vertebral epiphysis is an adolescent growth dystrophy which causes a painful dorsal kyphosis. Clinical signs of vertebral epifizitei comes down to a round back painful. These signs do nothing to attract attention, radiological examination is the key that gives stabillească diagnosis and severity of the condition allows the spine. Frequently vertebrates are met: T6-T12. Frequently achieve increases ranging from T12 to the lumbar vertebrae. In more advanced stages of the disease, clinical signs appearing skin pigmentation Frequently it in the right dorsal spinous. Radiological signs are essential

Other different kyphosis in this group included some deviations Kyphotic which are extremely rare. This post kyphosis tetanus, which is actually a traumatic kyphosis, kyphosis psycho neurotic, nervous common in children and a sensitivity exaggerated kyphosis and drug myopathy.

The children posture changes under the influence of the general condition of the body and various external causes. An enormous importance is proper nutrition of the child's physical, participating in various games, sports exercises. Besides general gymnastics and swimming, rhythmic gymnastics ensure a harmonious development, and torso muscle growth .

All the unhealthy factors in the child's life are, long stay in the desk , playing the piano for a long time, sitting in front of computer for more than 30 minutes, or stay with various other electronic devices such as phones and tablets in hand.

Recovery programs:

In making recovery programs taking into account a number of local general parameters.

The general characteristics of which more importance are:

- The type and specific deficiency;
- Duration of disease and recovery;
- Age deficiency;
- General physical capacity;
- profession and branch of sport;

Complete medical diagnosis of the condition and location, general outlines first milestones of the programs.

Duration of disease and recovery

Condition type requires different recovery times and then set up a plan of action stretches variables.

Age deficiency also causes some general indications of the nature of the recovery program. In children recovery, it is recommended imitation and games for adults and adolescents gym, occupational therapy and sports.

Physical capacity is general intensity and recovery programs is determined by tests of O<sub>2</sub> consumption in effort on dynamometry and ergometry. After testing the maximum capacity is up programs that require 30-50% of muscle strength.

Rhythmic gymnastics

Rhythmic Gymnastics is a branch of gymnastics expression, which is basically the art of combining elements, plant and equipment handling the portable objects, due to various musical rhythms.

Rhythmic Gymnastics is a branch as beautiful, artistic and expressive, the more complex and attractive to practice requiring relatively little material conditions, unsophisticated. Unlike artistic gymnastics which implies a large number of devices and aids, it is necessary for rhythmic gymnastics gym with a reasonable height, equipped with fixed ladders, mirrors and front wall, objects and portable music devices. For this reason, rhythmic gymnastics proves to be an affordable branch practiced in schools, colleges and universities.

The character of the show, given the combination of elements in various choreographers, accompanied by background music very attractive, is another feature that should determine practicing rhythmic gymnastics with pupils and students, who will always be attracted to these types of activities.

The content of rhythmic gymnastics, synthesized in 4 groups as preparatory group means, technical means, special rhythmic means, and general physical training means, ensures proper development of the organism small school age children to practice this branch attracts sports beauty, harmony and plasticity movements.

The first group exercises aimed at preparing the body and overall physical development include multilateral exercises, or selective influence locomotor movements consisting of rotating, and extension, balancing, tension and relaxation of body segments and posture exercises executed at bar Wall (sin from classical ballet).

A second group of rhythmic gymnastics content, is the most representative, including specific motor skills rhythmic gymnastics, exercises like torso and wave, balance exercises, turns and pirouettes, jumps, dance elements, exercises with portable objects and acrobatic elements. Of these exercises with portable objects, clearly defines character as distinct branch of rhythmic gymnastics and represents the specific purpose of training, which presents the competition gymnasts joint mastery of all other movements.

The group of special means is the harmonious combination of background music means presented in the second group, as freely chosen exercises with and without portable objects.

The means of general physical training subject of the fourth group, consisting of exercises to develop motor skills in a balanced way, optimal

specific individual exercises in pairs, active, passive, and without strength, isometric, isotonic and intermediate exercises objects (elastic cord, stick, rope, sand bags, sand coils, medicine ball, dumbbells, etc., fixed scale exercises at the bank of gymnastics, trampoline or elastic net, gymball, etc.) .

Rhythmic Gymnastics is a branch which, from early childhood age, may interfere with the correct attitudes deficiencies, especially Kyphotic attitude through posture exercises which are present from the preparatory training such as locomotor exercises influence, executed free or with portable objects, individually or in pairs, with or without musical accompaniment, and exercises executed at wall bar, arms and legs positions, battement fondu, battement Jette, or plie exercises.

Specific fundamental means as dance steps, elements of balance, which involve maintaining the body in different positions ( standing on the toes, back straight, shoulders pulled back, head straight, long neck, abdomen pulled), small jumps, jumping higher, and torso movements like waves, and dynamic and static acrobatic elements, all contribute decisively to correct Kyphotic attitude.

During these exercises the methodical indications has to continue and as well the frequent corrections, an important role is played by the introduction of portable objects that either helps maintain proper body segments in posterior plans, or can influence carrying body parts (arms, head, shoulders) in the posterior plane, the kyphosis deficiency attitude can be corrected. For example keeping circle at the back in the frontal plane, held with both hands from inside the circle, determines a straight position of the torso, even a torso extension, pulling the shoulders back and so correcting Kyphotic deficiency attitude. Also back circle passing, from a hand to another, can be an effective exercise for correcting kyphotic deficiency position, while developing and muscles of the arms, back and scapular-humeral articular mobility.

All exercises with portable objects handling, moving objects from one hand to another, from behind, be it a circle, ball, rope, ribbon or clubs, causes carrying shoulder back, head and torso in extension, which will contribute selectively to correct Kyphotic attitude, a habitual kyphosis, a professional kyphosis or compensatory kyphosis.

These specific rhythmic gymnastics exercises with portable objects, may be used for structural or pathological kyphosis, but in different ways depending on the nature of disability, diagnosis, individual peculiarities (age, sex, health, etc.)

### **The study premises**

In conducting this study, we started from the premise that through rhythmic gymnastics, can prevent and correct Kyphotic attitude, habitual kyphosis, professional and compensatory kyphosis at children. This study is based on an observation of a particular case of a 9 year old girl, who began attending training gym two years ago. The girl present a functional kyphosis. After two years of preparation it was corrected total. As a result, we considered important to initiate a study on several girls attending training rhythmic gymnastics.

### **Hypothesis work**

**Practicing regular rhythmic gymnastics at the age of childhood, causes preventing or correcting where necessary the different types of kyphosis in children.**

### **Research methods:**

- Method of literature study
- The observation method
- Experimental methods
- Graphic and tabular method
- Statistical and mathematical method

### **Research Subjects**

The research subjects consisted of a total of 12 girls practicing rhythmic gymnastics for a year. Subjects age is between 6 and 10 years old.

### **Organize and conduct the experiment**

The experiment was conducted on a total of 12 girls, practicing rhythmic gymnastics at Sports Club Profesport of Suceava. The period during which the measurements were made was in October 2014 - March 2015. In early October were conducted and anthropometric measurements were recorded initial data from early tests and in March 2015 were recorded resulting data After final testing. After analyzing and comparing data were formulated experimental study conclusions.

**Tabel 1. Anthropometric measurements**

Numele și prenumele	Age	Heigt	Weight
Ianul Teodora	8	1,23	22 kg
Bodnar Irina	8	1,25	21 kg
Culiță Maria	7	1,26	28 kg

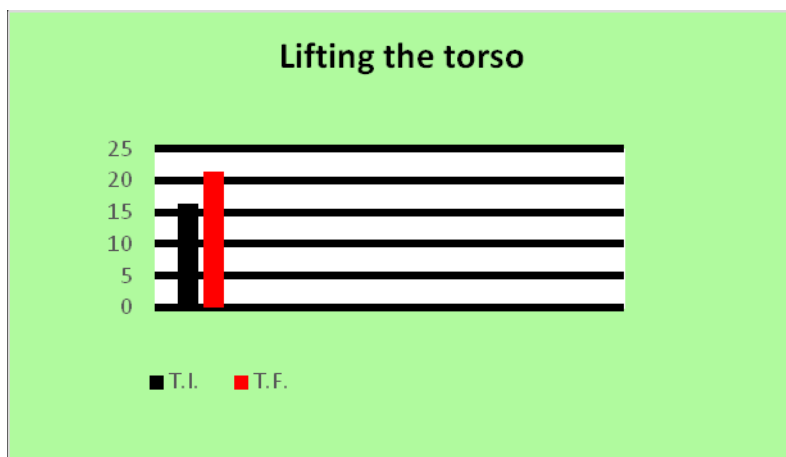
Simioniu Alexia	7	1,50	19 kg
Rurac Miruna	6	1,24	24 kg
Cazac Delia	8	1,28	30 kg
Anastasei Daria	10	1,39	39 kg
Balcic Iasmina	8	1,28	29 kg
Băişanu Alexandra	8	1,29	30 kg
Moraru Sabina	5	1,12	18 kg
Teşu Ioana	9	1,25	18 kg
Joroveanu Francesca	9	1,28	30 kg

### Tests

#### Lifting the torso from horizontale pozition in 30 seconds

Table 2. Dynamics of experimental group statistical indicators  
Lifting the torso to experimental group

Lifting the torso	Experimental group	
	I.T	F.T.
<b>x</b>	16,33	21,46
<b>S</b>	1,175	2,503
<b>Cv</b>	0,07	0,11



Media representation experimental group E. G. for the lifting of the torso

The test " Lifting the torso from horizontale pozition in 30 seconds " arithmetic values between initial testing (IT), and final testing (FT) are



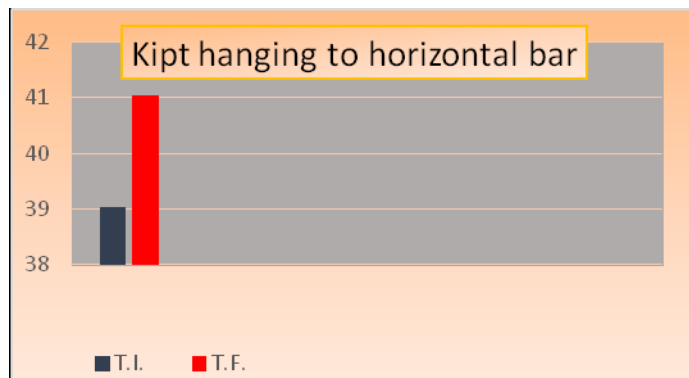
16.33 and 21.46 experiment group, which represents a breakthrough 5, 13 lifts, when final testing. Analyzing the results obtained at the end of the experiment, it is observed that the experimental group progressed from practicing rhythmic gymnastics.

As a result, it can be said that the means of rhythmic gymnastics applied to the experimental group had a significant influence on the development of abdominal strength, demonstrated proven lifting the torso from horizontale position in 30 seconds

**Test- Kipt hanging on horizontal bar**

**Table 3. Dynamics of statistical indicators experimental group**

Test- kept hanging	Experimental group	
	I. T	F. T.
<b>x</b>	39,04	41,04
<b>S</b>	2,189	1,198
<b>Cv</b>	0,05	0,02



**Graphic. 2. Representing the group average experience it E. G kipt hanging on horizontal bar**

The test " kept hanging " arithmetic values between initial testing (IT), and final testing (FT) are the experimental group of 39.04 sec. and 41.04 sec. which represents progress for 2 sec., the final testing. Analyzing 39.04 sec. obtained at the end of the experiment, it is observed that the final testing, the experimental group made considerable progress.

### **Conclusions**

Physical development exercises, in the first part of rhythmic gymnastics lessons, influences abdominal muscles growth opportunities, arm strength and back muscles strength, leading to maintain the spine in the correct position, which has a beneficial role in correcting and preventing Kyphotic attitude and functional kyphotic to children.

Specific core exercises, like waves, balance exercises, turns and pirouettes, jumps, dance steps adapted to specific movements, exercises portable objects and the acrobatic exercises, best assist the development of general labor, but especially the development of the body's upper body muscle strength. Development of abdominal and back muscle strength contribute adequately to maintain the spine in the correct position and therefore demonstrating the correct rhythmic gymnastics exercises to correct and prevent Kyphotic attitude and kyphosis in children.

The results of the two tests, it was observed that the initial testing to final testing were developed abdominal strength indices, motor skills and strength back, which demonstrates the influence of rhythmic gymnastics on growth opportunities keeping the spine in the correct position and that Kyphotic correct and prevent poor attitudes to young schoolchildren.

By lifting the sample placed in the torso of lying in 30 seconds, there has been progress on development of abdominal strength and initial testing to final testing, progress that has demonstrated the beneficial influence they have years of gymnastics, to 7-10 years girls. Specific movements of rhythmic gymnastics, consisting of specific steps, equilibrium positions, small jumping and big jumping, portable objects manners in different directions and plans, turns and pirouettes, acrobatic elements and semiacrobatic, all led to the development of abdominal muscle strength, favoring an better support the spine and therefore optimal prevention and correction of attitude to 7-10 years old Kyphotic children.

The test kept hanging on horizontal bar, final tests have also shown considerable progress on developing strength back and upper limbs, the six months of training by attending gymnastics workouts three times a week, proved to be extremely useful. Development indices back and upper limb muscles also contribute to maintaining the spine in an upright position and allow proper torso constant correction and recovery from negative influences caused by harmful factors in the lives of children, the

desk sitting position at school , the computer sitting position at home, holding tablet or phone in hand position, etc.

By its contents, rhythmic gymnastics is a sport branch extremely beneficial in terms of growth and harmonious development of body girls 7-10 years and the growth and development of general and specific motor skills, strength development torso or abdominal force and back strength, directly responsible for preventing and correcting Kyphotic attitude and even functional kyphotics at school age children.

We can say that the rhythmic gymnastics, may occupy a far better place than in the physical education lessons, at school and secondary school, could continue even at the high school level, means more weight on dance, and should be the object of study for students from faculties of physical education and kinesiology, for then through P.E. specialists, to return to school. His character coordinative / corrective, gives importance and value through other branches that are taught in school, which can of course add beauty and attractiveness specific artistic and rhythmic gymnastics show available.

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**Titlul:** Corectarea atitudinii cifotice la copii prin mijloace ale gimnasticii ritmice

**Cuvinte cheie:** copii, atitudine cifotică, gimnastică ritmică

**Rezumat:** Lucrarea își propune să demonstreze rolul gimnasticii ritmice în prevenirea și corectarea cifozei la copiii de vârstă școlară mică. Gimnastica ritmică, prin natura conținutului său foarte divers și atractiv, în special prin elementele corective, de tehnică corporală și de mânăuire a obiectelor portative, poate constitui un mijloc benefic de prevenire a cifozei la copiii de vârstă școlară mică. Capacitatea fizică generală scăzută, cât și atitudinea cifotică, sau chiar tipuri mai avansate de cifoza, determinate de o serie de factori dăunători din viața școlarului mic, precum poziția în bancă timp de 4-5 ore, timpul petrecut în fața calculatorului, sau alte activități extrașcolare, care presupun în mare măsură poziții incorecte ale coloanei vertebrale, se pot preveni și corecta prin practicarea gimnasticii ritmice.