

## **PREVENTION WITH MULTISENSORY KINESITHERAPY AT RISK GROUPS OF CHILDREN 0-12 MONTHS**

*(Preliminary communication)*

**Evelina Nikolova**

*South-West University „Neofit Rilski“ Blagoevgrad,  
Department of Kinesitherapy, Blagoevgrad, Bulgaria*

### **Abstract**

*An examination includes 100 children aged 0 - 12 months, divided into two groups - control -45 and experimental 55. Children from the experimental group were treated with multisensory kinesitherapy involving the application of motor and sensory exercises into trimesters. Along with that was conducted epidemiological study for the frequency of risk at newborns in Blagoevgrad city and Blagoevgrad's environs for the period 2000 – 2009.*

**Keywords:** *experimental group, control group, motor and sensory exercises, newborns, parents, medical risk factors, social risk factors, anthropometric data, motor development, epidemiological method, arithmetic mean*

### **INTRADUCTION**

Within the research it's been made an identification of risk groups newborns based on the presence of one or more risk factors. These factors are conveniently divided into two major groups:

- Children with prevailing medical and biological risk factors, which are the subject of our research.
- Children with prevailing social risk factors.

Providing quality comprehensive prevention and rehabilitation of vulnerable groups need professional work of a team of many professionals.

Our assumption for the large number of risk for newborns within Blagoevgrad region, suggesting that early and proper conduct of all complex activities, especially physical therapy, the majority of children classified as hazardous will catch up in their development their peers normally born, and in a few treatment and rehabilitation, after their good state will last a lifetime. Scope of our work are children with specific developmental disorder of motor function and the NDP who have certain clinical abnormalities and were referred for rehabilitation code ICD10: F82; P94; P07; P68 and the like from a doctor neonatologist or pediatrician. The object of our study are newborns at risk from Blagoevgrad, 100 in number, divided into two groups of 55 children with experimental and control group of 45 children aged 0 to 12 months, of which 51 boys and 49 girls.

The aim of this study is to realize the clinical and socio-economic assessment of the effect multisensor physical therapy as a preventive and curative part of complex therapy of risk groups of children in order to get practical observations and results, and to enhance the common methodology in working with these children.

### **METHODS**

#### ***Methods of testing***

1. Analysis of literature
2. Epidimiological method
3. Inquiry of anthropometric data
4. Inquiry of motor development
5. Inquiry of neuro-psychical development
6. Monitoring and analysis
7. Disquisition, training and working with parents of children at risk
8. Methods of mathematical and statistical analysis

Original methodology for rehabilitation of children at risk that used for experimental group „The world enters the mind of people through the sense's door. If this door is closed, it can not enter and could not contact him. Then there is the world close for the consciousness“.

• Program multisensor physical therapy includes: motor and sensory exercises divided trimesters, with exercise ball fiziorol, stimulation of normal reflexes and balance by standing motor age.

- Promotion of speech and emotions
- Passive methods of kinesitherapy
- Electrotherapy

#### ***From birth to three months***

• Movement activities during this trimester include exercises for the head, neck, and gradual integration of those for upper and lower limbs, while respecting the principle of proximal to distally. Starting with position that is running the occipital leg. The movements are performed slowly and carefully, ensuring that the reaction of the child who shows us what and how much is the repetition of exercises are enabled.

• In this trimester of sensory exercises include stimulation of the visual, in consequence of hearing analysts. Stimulation of the interface is preferably used those which are stimulated by reflex, reflex e.g. suction, abdominal reflexes etc.

Present of the exercises in this trimester:

#### ***Exercises three to six months***

• Movement activities in this stage are performed by starting position of lying. Exercises are complicated to stimulate locomotor patterns upper and lower limbs at the end of the period and for the body, turning from back to stomach.

• From sensory exercises include a combination of mostly visual-auditory, visual interfaces irritations. Essential at this stage is to encourage the „hands-eyes.“ From reflexes to stimulate reflex blinking and trace the source of the visual irritation. In this period began and activities to provide the child to communicate with the environment.

#### ***Exercises six to nine months***

• Motor exercises during this period aimed to prepare the child for independent rotation from back to stomach. Furthermore, the aim of strengthening and dorsal muscles, limb muscles and stable support for the face hands. Includes exercises to adopt the legs. During this period, the child is preparing for the seat, and the use of arms for lateral support.

• From sensory exercises should be noted as a complication combining sound with touch handling of

three-dimensional objects, tracking falling objects. An important element is the coordination of the „hands-eyes“ and an attempt to mimic the movements of the hand of the mother. Stimulates and exercises the hand control production volume. Teaches the child that the hand can give and receive. It is especially important at the end of this period the child has mastered the opposition to the thumb grip with the index finger.

#### ***Exercises from nine to twelve months***

• Motor exercises during this period was carried out mostly by the seat, bringing to stimulate and encourage exploratory behavior. Child learns to lean forward, take an object from the floor to fall and sits. It also makes the first move.

• Sensory classes include irritation combined with the participation of three or four analyzer. Child learn his or her image in the mirror, be informed of the anatomical parts of the face, eyes, ears, mouth and identify them. Place objects on top of each other, localize sounds coming from different levels. Understanding the role of adults. Already knows and responds to the name, and shows parents and relatives, with which it communicates. At the end of the period to stimulate the feeling of hands as a „tool to hold.“

#### ***Exercise with BALL FIZIOROL***

• The inclusion of exercises fiziorol ball occurs after 6 months. Unlike ordinary balls, ball fiziorol allows movement in two planes. This provides certainty within the child's need. Many of the exercises used the movement of the ball itself, which can increase or decrease the movement of the child.

#### ***Promotion of speech and emotions***

• The baby can not say a word, but through your body it already tells us. Communicating daily with him we learn to understand what your baby wants to tell us and we learn to recognize and „read“ his body language.

## **RESULTS**

In reporting the results of the use of motor development in designated national consensus groups (study described in the detailed research methods).

*Table1. Motor development of children in groups*

Group	Motor development	Without hitch	Borderline	Easy form	Moderately easy form
Experimental group	3	18,18	43,64		
	6	1,82	83,64	38,18	
	9	12,73	85,45	14,55	
	12	81,82	18,18	1,82	
Control group	3	28,89	44,44	24,44	2,22
	6	6,67	73,33	15,56	4,44
	9	17,78	71,11	11,11	
	12	64,44	28,89	6,67	

With the 0-mark problem in children without motor development with 1 - limit states in motor development; C2 mild problems in motor development and 3 - moderately mild problems in motor development.

Indicator motor development checked every three months 3rd, 6 th, 9 th, 12 th. The table of average motor development of children from the control and experimental groups shows 81.82% of the children from Experimental group 12 months is no problem, but limits are only 18.18%, while KG 12 months no problems were 64.44%, 28.89% are borderline and has children with mild motor retardation 6.67%. These are children who have not Pass up to 18 months of age and that the future will prove one of the forms of cerebral palsy.

Based on the results once again consider the importance of stimulating the senses through multisensory and responses in a high percentage motor development of children.

## CONCLUSIONS

1. This epidemiological study to establish the extent of children at risk for 0-12 months and Blagoevgrad Blagoevgrad environs over 10 years indicates a high percentage risk infants who may have a problem in development.

2. Physical development of our children of experimental and control groups within the age limit for the Republic of Bulgaria. Anthropometric measurements, height, body weight, head circumference, chest circumference are higher, especially for boys of experimental group. In girls of experimental groups are within normal development, but with lower average values.

3. It's been developed a documentation to the raise risk children question and been created a file for each child which facilitated the preparation of a specific program tailored to the characteristics of the child and an individualized approach to work.

4. The results of the final tests of the motor nerve and mental development of children from experimental and control groups showed a significant improvement, especially for children from experimental group. The indicator motor development of children as experimental group averages are 81, 82% of normal development and 18, 18% border (grade 1), which statistically significant ( $p < 0,05$ ) proves the effectiveness of our applied multisensor physiotherapy.

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Correspondence:  
Evelina Nikolova  
South-West University „Neofit Rilski”  
Department of Kinesitherapy, Blagoevgrad, Bulgaria  
St. Ivan Michailov 66, 27000 Blagoevgrad, Bulgaria  
E-mail: nikolova\_ev@gbg.bg