

## THE IMPACT OF LATERALITY DISORDERS ON THE GROWTH AND DEVELOPMENT OF THE CHILD

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The purpose of this paper is to highlight the level of growth and development of pre-school children with lateral disorders, which was expected to be below normal limits. The paper started from the premise that any lateral disorder has a negative impact on both: the growth and the level of physical and neuropsychotic development. The research consisted of the evaluation of the children from «Constantin Păunescu Special School Iasi». A total of 8 children from the preparatory class, aged approximately 7 years, were evaluated. The research started on the 20 of January 2016 and was finished on 4<sup>th</sup> of June 2016. Between those dates the children benefited from specialized kinesitherapy programs that were held over a 5 months period of time with a frequency of 3 common sessions per week.

**Keywords:** laterality disorder, growth and development, child.

**Introduction.** The lateralization of brain functions is the tendency for some neural functions or cognitive processes to be more dominant in one hemisphere than the other. It is a process based on a certain functional organization of the brain structures, which determines the functional inequality of the right and left halves of the body.

More than that, it appears a sensorial and motor asymmetry, a functional inequality, the dominance of one part of the body over the other part.

Intervention on the laterality chosen by the child, otherwise inborn, leads to problems related to school activity generating fatigue and inconvenience. Laterality is very important in the child's normal development, because it allows him to form an idea about himself and the surrounding area.

Laterality disorders have a particular importance in the field of education, schooling and medicine. Ambidexterity is a normal manifestation in the child's motor activity until 4 years. The children were evaluated twice. Between initial evaluation and the final evaluation was implemented a physiotherapy program.

**Materials and methods.** The study was conducted on a group of 8 children aged between 7 and 8 years old who were classified according to the initial evaluation in children with normal laterality and lateralization disorders. To evaluate the psychomotor behavior of the childrens I used Harris Test, Oseretski Test, Neuropsychotic Development Characteristics Test and Appreciation of Physical Development Test.

It has been conceded that lateral disorders have coincided with some motor delays, with a motor age clearly lower than the chronological age. The objectives of the intervention program were to integrate children into the environment through the awareness of their own body and the relationships they establish with each other and the surrounding world. In the intensive psychomotricity program implemented over a 5-month period, kinetotherapy had an important role with the used exercises. The therapy program was spread over a 5-month period, with three-weekly appointments. Reeducation and improvement of all components of psychomotricity have been attempted, considering that not only laterality disorders, but also other components may influence growth and development negatively. The psychomotric intervention program

was particularly focused on education and empowerment laterality through a series of exercises that have been experienced or processed, improved and adapted to the given context.

The kinetotherapy program included exercises for developing kinesthesia, complex perception of movement, developing the body's ability to move and adapt to various demands, developing basic and applicative motor skills (walking, jumping, running, throwing, balancing, climbing, crawling, traction), as well as for development of motor skills – speed, strength, skill and resistance.

**Results.** In order to highlight the results obtained, we performed the graphical interpretation of the results. After the implementation of the five-month, three-week therapy program, a final evaluation of the components initially tested was performed. Neuropsychiatric disorders were found to exist due to the existence of lateral disturbances, but normal laterality subjects also showed some discrepancies in growth and development. We will continue to present the differences between initial and after-therapy results.

Nr. crt.	First name, last name Age, gender	Laterality test Harris
1.	P.E.A. – 7 aniși 2 luni, M	D.D.D.
2.	P.S.A.M. – 7 aniși 4 luni, F	S.S.S.
3.	C.M.A. – 7 aniși o lună, M	M.S.M
4.	P.A.B. – 7 aniși 3 luni, M	D.s.s.
5.	G.I.A. – 7 aniși 4 luni, M	d.d.S.
6.	C.A.M. – 7 aniși 3 luni, M	D.D.D.
7.	I.I.A. – 7 aniși 5 luni, F	d.S.S.
8.	M.V. – 7 aniși 4 luni, F	D.D.D.

Fig. 1.

Figure 1 The Harris Laterality Test subjects III, IV, V and VII were identified with certain lateral non-fixed laterality disorders. The Oseretski Test continued to evaluate children in order to determine the motor age.

Figure 2 highlights the difference between chronological age and driving age at the initial evaluation moment.

Figure 3 highlights the difference between chronological age and driving age at the final evaluation moment.

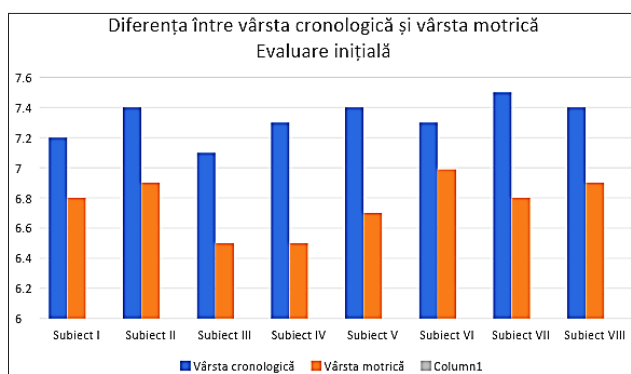


Fig. 2. The difference between chronological age and motor age Initial evaluation

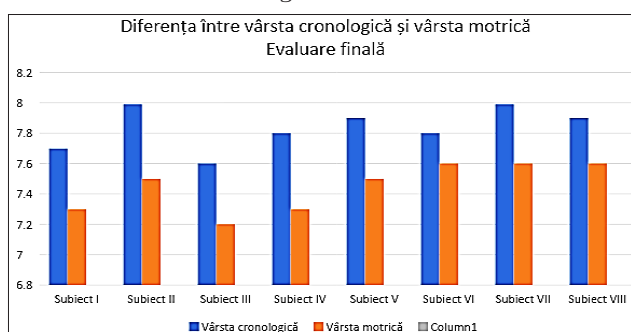


Fig. 3. The difference between chronological age and motor age Final evaluation

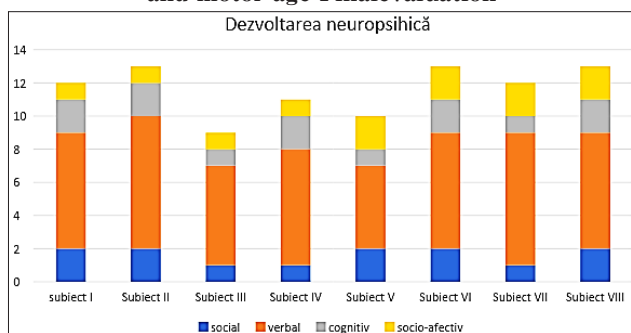


Fig. 4. Neuropsychological development

According to the Figure 4, none of the children under evaluation did not accomplished age-specific items. The maximum number of items was 13, and the minimum was 9.

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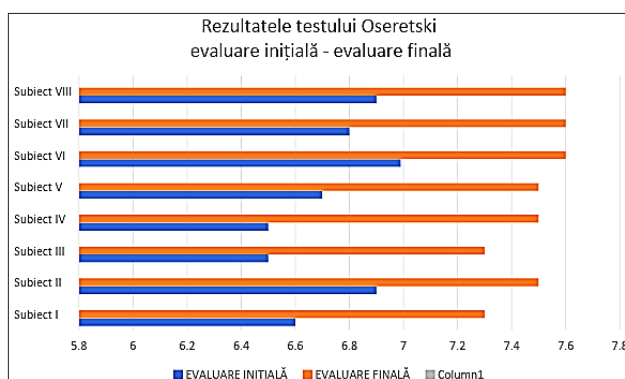


Fig. 5. The results of Oseretski Test Initial evaluation-final evaluation

According to Figure 5, after the implementation of the therapeutic program, qualitative leaps were recorded in the motor behavior of children. The differences between chronological age and driving age have been greatly diminished after therapy.

The children were able to complete the six Oseretski test tasks for their age and were finally evaluated with the 7-year test. The subjects with laterality disorders, subjects III, IV, V and VII, have shown progress: subjects no. IV and VII use the left hand in the current work, subject no. V uses the right hand and subject no. III did not make any changes.

**Conclusions.** After this series of tests and measurements, it was concluded that lateral disorders lead to large differences in chronological and motor age and automatically have a negative impact on neuropsychological growth and development.

The hypothesis of the study was confirmed. In addition, we have confirmed that laterality and disturbances related to this motor perceptual behavior can negatively influence growth and development because of the detected subjects that have experienced higher delays. Regarding the laterality, the children found with disorders at the initial evaluation, reached the end of the treatment period mainly to use only part of the body.

After the implementation of the therapeutic program, there were qualitative leaps in motor behavior of children, as well as improvements in social behavior. Through dances and group games, children have developed their ability to communicate, share ideas, and relate.

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**ВПЛИВ ЛАТЕРАЛЬНИХ ПОРУШЕНЬ НА ЗРОСТАННЯ І РОЗВИТОК ДИТИНИ****Анотація**

Мета даного дослідження полягає у висвітленні рівня зростання та розвитку школярів з латеральними порушеннями, які і очікувались, були нижчими за норми. Стаття починається з того, що будь-яке латеральний розлад негативно впливає на: зростання і рівень фізичного та нейропсихічного розвитку. Дослідження складалося з оцінки розвитку дітей, що навчаються в спеціалізованій школі «ім. Константина Паунеску» міста Ясси. Загалом були оцінені 8 дітей з підготовчого класу, у віці близько 7 років. Дослідження розпочалося 20 січня 2016 року і було завершено 4 червень 2016 р. Між цими датами діти отримали користь від спеціалізованих програм кінезіотерапії які проходили протягом 5 місяців з частотою трьох загальних занять на тиждень.

**Ключові слова:** розлади латеральності, ріст і розвиток, дитина.

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**ВЛИЯНИЕ ЛАТЕРАЛЬНЫХ НАРУШЕНИЙ НА РОСТ И РАЗВИТИЕ РЕБЕНКА****Аннотация**

Цель данного исследования заключается в освещении уровня роста и развития школьников с латеральными нарушениями, которые и ожидалось, были ниже нормы. Статья начинается с того, что любое латеральное расстройство негативно влияет на: рост и уровень физического и нейропсихического развития. Исследование состояло из оценки развития детей, обучающихся в специализированной школе «им. Константина Паунеску» города Яссы. В общем были оценены 8 детей с подготовительного класса, в возрасте около 7 лет. Исследование началось 20 января 2016 и было завершено 4 июня 2016 Между этими датами дети получили пользу от специализированных программ кинезиотерапии которые проходили в течение 5 месяцев с частотой трех общих занятий на неделю.

**Ключевые слова:** расстройства латеральности, рост и развитие, ребенок.