

NEW CONCEPTS “HYBRID “ IN NEUROREHABILITATION “STEP BY STEP TO THE FUTURE WITH THE ZOLI BOXES TECHNIQUES”

LOGO



Regarding educating/ re-educating the posture, the body alignment and balance

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Key words: posture, postural alignment, balance, children with neuro-motor conditions

Cuvinte cheie: postură, aliniament postural, echilibru, copii cu afecțiuni neuro-motorii

Abstract

The means of physical therapy are quite varied and they have changed, they have been modernized along the years. The „Zoli box” technique is an idea already met in my book „Physical Therapy in Neuro-Pediatrics”, but it hasn’t been experimented yet in each stage of neurological disorders of 0-12 year-old children. Our intention is to prove that facilitated PNF/ stretching technique can influence positively the premature obtaining of stato-kinetic function of children with neuro-motor disorders. From this point of view it is very important to know the development of muscular physiology and pathology, biomechanics, motricity, and nervous central system of the children in order to optimum explore and recover their stato-kinetic function and capacity. The (work) presents notions regarding physical therapy means, regarding “the box” the objectives of physical therapy that can be achieved by using this box and it ends with the conclusions resulted from daily activity using the box.

The **basic conclusion** is the following: the box is a mean (apparatus) that allows the gradual pleasant acceptable passing from the fixed ladder (old method) to the big Bobath ball, leading to the obtaining of the strategies of the central axis in children with disabilities.

Rezumat

Mijloacele kinetoterapiei sunt variate și în continua modificare, fiind modernizate de-a lungul anilor. Tehnica „Lădița Zoli” este o idee deja întâlnită în cartea mea ”Kinetoterapia în neuropediatrie”, dar nu a fost experimentată încă în fiecare stadiu al afecțiunilor neurologice la copilul de 0-12 ani.

Intenția noastră este de a dovedi că tehnicile de facilitare PNF/ stretching pot influența pozitiv copilul prematur obținându-se funcția stato-kinetică la copilul cu afecțiuni neuromotorii. Din acest punct de vedere, este foarte important să se cunoască fiziologia și patologia musculară, biomecanica, motricitatea și sistemul nervos central al copilului, pentru o explorare optima în vederea recuperării funcției și capacității stato-kinetice. Lucrarea prezintă noțiuni privind mijloacele kinetoterapiei, în ceea ce privește obiectivele kinetoterapiei pot fi obținute cu ajutorul ”lădiței Zoli”, finalizându-se cu concluziile rezultate din utilizarea zilnică a lădiței.

Concluzia de bază este următoarea: lădița este un mijloc (aparat) ce permite trecerea gradual, plăcută și acceptabilă de la lădița fixă (metodă veche) la mingea mare Bobath, permitând astfel obținerea strategiilor axului central la copiii cu dizabilități.

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Curriculum Vitae

Published and presented paper works between 1980 – 2012, during the 40 years of scientific activity in the interdisciplinary domain, physical therapy, adapted physical activities, biology, rehabilitation medicine, psychopedagogy, physical education and sports, there are **over 167 paper works**.

Speciality information

Kinetology or kinesiology “terms created by Dally”, (Sbenghe, 1999) is the science concerned with *the study of movement of living bodies and of structures which participate to these movements*.

From here results, as independent science, **the human kinetology** which is concerned with the study of human movement and of structures which participate to it, the rest of the scientific sub-disciplines being concerned with the study of human motility.

The following aspects are worth emphasizing:

- Physical therapy is science and art.
- *Science* is concretized in physical therapy by stating the motor diagnosis, neuro-motor assessment of each individual, while *art* proves its involvement in the therapeutic act. The purpose of physical therapy is sanogenetic, therapeutic-rehabilitating and of neuro-motor diagnosis.
- **Living, working and researching for 40 amongst patients I have come to certain conclusions which can be valid for many future therapists of the domain.**
- There are many testimonies of patients, their parents and relatives regarding the physical therapist's contribution to the finalization, prophylactic clinical evolution and rehabilitation of children, adults and high performance sportives.
- *One of our theoretical conceptions which has found an echo in the specialty scientific environment is focused on the static-kinetic function and the approach of the theory which achieves the strategy of central axis in children, using correct means of muscular stretching combined with the «Zoli box technique»*(Pásztai, 2005 Bibliog.). The tendency is to elaborate realistic prognoses, as well as praxiological ones, in preventing and treating the static-kinetic function for children through the stretching and hydro-stretching technique at the patient's home, **to increase the quality of life and the fitness level of these children, adults, elderly people and also athletes.**

The main goal : Arguments regarding the device for *functional motor behavior* (D-FMB) and used techniques – OSIM;

There have been years of research, questions, uncertainties, treatments, successes and revelations. Proportionally with the number of articles appeared (since the 1980's until present time, N = 167), our desire has increased to form our own opinion, considering our personal experience, even the launching, *Intellectual property*, and innovations through “Zoli box technique” (Pásztai, 2005), patent application number **Registered at OSIM A/01124 from November 8th, 2011**. The invention patent application was published in BOPI nr. 4. 2012, pg. 16 and 83 under the name of **device for *Functional Motor Behaviour* (FMB) and usage techniques**. 14.11.2012.

http://www.osim.ro/servicii/licente_cesiuni.html. Offer patent appeared published

http://www.osim.ro/servicii/licente_cesiuni.html

I started from careful clinical observations, from daily practical applications, permanently looking for assessment techniques and methods which were gradually concretized on paper and applied in practice through various studies ever since 1993/1995 (“Central axis strategy”, “Zoli chart”, “Assessment of controlled mobility with the graded Zoli box”, “Zoli patent test”). The practical implementations were accomplished through “Authorized physical person in Physical Therapy” and within the Medical Rehabilitation Clinical Hospital Felix Spa, Adults' Section and Children's Section – 1 Mai Spa, at the University of Oradea (research projects).

Results of the „Zoly box „ tehnic - D-FMB investigation

The data obtained within the research have been processed through the SPSS system/ non-parametrical tests such as: [Wilcoxon Mann-Whitney Test](#), [Wilcoxon Signed Ranks Test](#), [Kolmogorov-Smirnov Test](#). The results of these studies scientifically confirm the hypotheses through the significance degree which has reached significant values (one $p < 0,005$ and $p < 0,001$), bringing a definite contribution to the treatment and effective progress of patients (Total nr. = 2185 and total nr of progresses = 1820) encompassed in Table nr 1.

Table nr.1 Study results

YEAR	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	TOTAL patients	rezults
Nr patients PFA	15	41	67	50	26	21	17	16	10	10	19	22	17	16	16	25	388	388
Nr patients MasterPZ.							1										1	1
Nr patients PhD thesis							120			79							120	79
Study I											921						921	674
Study II													409				409	359
Study III														203			203	180
APA Project																		
Pilot Study													10				10	10
TENAPA Project																		
Pilot Study											10						10	10
Lucr Licenta I										10							10	9
Lucr Licenta II													10				10	10
Lucr Master I													1				1	1
Lucr Master II														10			10	9
Lucr Master III															20		20	18
Amputee									5	8	6	10	13	9	7	14	72	72

2158 180

Conclusions

“The Zoly Box tehnic - device functional motor behavior ” (D-FMB) – to be patented at OSIM: is used in various techniques to obtain human body coordination, mentioned in the patent application as well:

- Techniques to fight genu flexum of the equin leg;
- Techniques to finalize correct posture maintenance in individuals other than children aged 1-6, especially in young people or teenagers;
- Technique of correction and global training of balance in individuals other than children aged 1-6, especially in young people or teenagers;
- Technique of using the device in unipodal position in adult individuals;
- Training technique of bipodal orthostatics and training postoperation NPMAK balance in adults;
- Techniques of using the device in posttraumatic cases, amputations, stroke and athletes;

The most significant data regarding the use of the device are the following:

A. Between 1997-2012 as APP at 389 patients (Table 1)

- Processing data obtained in the Disertation Paper/Master from 2003, Oradea, Faculty of Physical Education and Sports with the title “Psycho-motility of the 4-6 year-old child involved in adapted physical activities”;

B. The researches continued within the Doctoral Thesis as well, during 2003 – 2006, on 120 (85) children out of which 79 had good and very good results, that is $p < 0,001$ significant (children

with hearing, visual, mental and neuro-motor disorders, but also healthy children with social problems). Table nr. 1 centralizer.

C. **Three studies** conducted within the Medical Rehabilitation Clinical Hospital Felix Spa / Children's section 1 Mai Spa: Table nr. 1 centralizer.

- 2007 – 2009 on N = 921 children, out of which N = 674 made progress;
- 2009 – 2010 on N = 409 children with various neurological and posttraumatic disorders, N = 359 made progress;
- 2010 – 2011 out of N = 203 children, N = 180 made progress.

D. **Projects during 1996 – 2010** Table nr. 1 centralizer.

- Research projects with **elderly people** within the University of Oradea, using Adapted Physical Activities and applying these techniques with the Zoli box as well.

Books appeared within these projects: (1;2;3)

Other studies were presented during various national and international conferences

(Balkan Congress of Physical Therapy, European Congress of physical education and sports at Bratislava, Conferences in Hungary at Szeged, Debrecen and within Erasmus mobility program for teaching staff at the University of Szeged), etc, as follows:

- 2010 – 2012 – we signed a bilateral agreement with University of Szeged from Hungary, Therapy and Rehabilitation domain SM and TA, domain code 726;
- 2010, Pászta Zoltán, dr.Fărcășan Monica, Adaus Dumitru, Chiriac Mircea, dr.Bogdan Radu, Pászta Elisabeta, Cristea Andrei, Jakab István – contributions to the study „Identification of locomotion moment in functional neuro—otor rehabilitation” appeared in the volume „Formators in Physical Therapy studies and researches at the 3rd Balkan Physical Therapy Congress, „Vasile Goldiș University Press” Publishing House, Arad ISBN 978-973-664-394-1, pg 104-110;2 (4,5,6,7,8,9,10,)
- 2006- Pászta Z., Pászta Elisabeta - A kinetoterapeuta képzés alapjai és kibontakozása Romániában - (Dezvoltarea kinetoterapiei și formarea kinetoterapeuților în România/ Development of physical therapy and formation of physical therapists in Romania) International Physical Therapy day Nyiregyháza” – Ungaria; Program and abstracts, pg 2-3; (11,12,13,)
- **Tens of students were coordinated and supervised in finalizing their licence and master theses** (1997 - 2011) Table nr 1 (Licence theses I, II, III) and (Master I, II, III) who applied tests and exercises/ techniques with this device and processed the obtained data – out of which we emphasize the followings:
 - 2012 – Pászta Z, Rebeca Balint.”Formation of willing movements stages in children aged 0-4 , after cerebral hypoxia at birth “Physical education and sport in the benefit of health ” Oradea 25-26 May http://www.fefisoradea.ro/catedre_en.html
 - 2012 Pászta Z, Rebeca Balint.”Contribuții la cuantificarea rezultatelor aplicate copiilor cu afecțiuni neurologice centrale“/ „Contributions to the quantification of results applied to children with central neurological disorders”- the 9th Physical Therapy Congress with international participation „The values and image of the physical therapy profession, humanity and competences”, Bucharest, 4-6 Oct 2012.
 - 2010 Pászta Zoltán, Cristea Andrei, Dana Cristea- Rolul kinetoterapiei funcționale și proprioceptive în profilaxia complexului gleznă-picior plat/The role of functional and proprioceptive kinetotherapy in the prophylaxis of the ankle-flat-foot complex - a case study, Revista Palestrica Mileniului III Civilizație și Sport, Revistă trimestrială de studii și cercetări interdisciplinare Vol. 11, no. 4, Octombrie-Decembrie 2010, Cluj Napoca), pg.325 / 332; Rezumatele RO și EN pot fi accesate pe site-ul revistei. www.pm3.ro B+9 (14,15,16)
- **There were other projects such as „The ABC of Health” in schools from Oradea with prophylactic purpose of Zoli box!** <http://www.crisana.ro/stiri/invatamant-17/liceul-teologic-greco-catolic-iuliu-maniu-abc-ul-sanatatii-descifrat-de-cei-mai-micuti-elevi-106290.html>.
 - **It is tested and widely used in kinetic programs too** for patients with posttraumatic disorders of lower limbs (**personal protocols for ankle, knee**) in the treatment and rehabilitation of

individuals after **lower limb amputation**. Table nr. 1 centralizer ; **Guide for patients with lower limb amputations**;

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