SEDENTARITY OF YOUNG ADULTS IS ASSOCIATED WITH POOR VASCULAR PROPERTIES THAT COULD PREDICT A PREMATURE VASCULAR AGEING

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Abstract
The modern society that has become increasingly technological generates by itself impairments regarding human health, especially for the young people who replace an active lifestyle with a sedentary one.

Purpose: The study aims to demonstrate the negative impact of sedentary lifestyle for young people on the blood vessels, as a predictor of premature vascular ageing and an early development of the disease.

Methods: The study comprise: a group of athletes (S=35) and a group of young non-athletes (T=41). In comparing the two groups were analyzed the hemodynamic parameters: the systolic (SBP), the diastolic blood pressure (DBP), the mean arterial pressure (MAP), the pulse pressure (PP) and the aortic pulse wave velocity (PWVao), all of them correlated with age and heart rate (HR).

Results: The values of the hemodynamic parameters obtained were: group S with a mean age of 40.7 years vs group T 29.1 years (p=0.015); SBP: group S 112.5mmHg vs group T 139.5mmHg (p <0.001); DBP: group S 67.1 mmHg vs group T 83.9 mmHg (p <0.001); MAP: group S 82.5 mmHg vs group T 102.4 mmHg (p <0.001); PP: group S 46.1 mmHg vs group T 55.4 mmHg (p=0.008); PWVao: group S 5.9 m/s vs group T 8.5 m/s (p <0.001); HR: group S 65.3 beats/min vs group T 68.2 beats/min (p=0.047).

Conclusions The study clearly demonstrated, that physical exercises performed regularly, significantly influence the elasticity of the blood vessels, validated through a far better hemodynamic parameters in the group of athletes.

Keywords: physical training, sedentariness, hemodynamic parameters, vascular ageing, aortic pulse wave velocity.
DOES DANCE INFLUENCE ON QUALITY OF LIFE IN CHILDREN WITH HEARING IMPAIRMENTS?

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Abstract. Quality of life is given by individuals on their social perceptions in the context of cultural value systems in which they live and, depending on their needs, aspirations and standards. Studies on quality of life are particularly useful in clinical practice to assess the effects of physical, psychological and social aspects of illness and medical treatment on the people lives.

Music and dance can improve the quality of life for children with physical needs, emotional and psychological in a variety of ways.

The objective of this paper is to determine the role of dance and how it affects the quality of life of children with hearing impairment. Subject group consists of 24 students, 9 girls and 15 boys, enrolled in special education with ages between 9 and 15 years old.

The subjects were tested initially, intermediate and final for functional, biomechanical and somatic measurements. As aims we want to develop a program of recovery, allowing a significant change in the quality of life of deaf children.

After implementing the work programs, we could see improvements in body schema, self-esteem and confidence. Following the results we chose 6 students with hearing impairment and 6 normal children to form a troupe of modern dance at the school level called ,,Just Us“. Under this name they had participated on several dance contests for children with special educational needs, winning all stages.

Keywords: quality of life, hearing impaired, dance, coordination
ASPECTS ON MUSCULO-SKELETAL TRAUMA INCIDENCE IN COMPETITIVE SPORTSMEN. A COMPARATIVE STUDY BETWEEN SPORT BRANCHES

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The aim of this study is to establish the incidence, frequency and location of musculo-skeletal trauma in the joints at competitive athletes, in a comparison between sport branches, age groups and time spent in training.

MATERIAL AND METHOD: The study was performed on a batch of 155 sportsmen who practiced athletics, basketball, handball, football and volleyball. The sportsmen were between 13-42 years old and had been practicing sports for 4-20 years. We recorded and compared the percentage of traumas in the group of athletes, depending on the affected segment, the age groups and the time spent in training, in two periods of time. The study covered three years of competitions, the Z test was applied and considered a significance level α = 0.05.

RESULTS

Comparing the percentages between basketball and handball players traumas, we obtained significance for the following segments:

Spine, leg, knee, shoulder - traumas in basketball are significantly less (p=0.014, α=0.05) than in handball.
Hand, palm, fist - traumas in basketball occurring significantly often (p<0.001, α=0.001) than in handball.

between basketball and volleyball players

Knee and shoulder – traumas in basketball are significantly less (p<0.001, α=0.001) (p= 0.003, α =0.01) than in volleyball.

between handball and volleyball players

Hand, palm, fist - traumas in handball are significantly less (p<0.001, α=0.001) than in volleyball

CONCLUSIONS:
The performance level and the number of training sessions influenced the high number of traumas that occurred.
The extrinsic factors have a strong influence.

Key words: sport branches, musculo-skeletal traumas, competitive sportsmen, affected body segment.
Abstract

Introduction. Due to a not very high number of cases, as well as the diversity of the related diseases, the research progress of Osteogenesis Imperfecta (OI) complicates significantly.

As it is also specified in the specialty bibliography, this is a rare and very complex disease, that presents many types of classification. Moreover, the means and ways of approaching this disease, with the scope of developing the effort and movement capacity of children diagnosed with OI, are very low.

Knowledge stage. The complexity of this disease significantly restrained the practicability part of the programs that improve the quality of life for worldwide children suffering from OI. According to previous articles related to OI, the most effective environment for conducting a physical activity in such cases, is the aquatic medium.

Perspectives in the field. The adapted aquatic bicycle presented in this paper, will make a significant contribution towards the capacity and movement progress of subjects diagnosed with OI. Moreover, it will become also a mean of effort capacity assessment for in water.

Functional Applications. The programs that we propose and apply with the adapted aquatic bicycle, are based on the fundamentals of using a stationary normal bicycle on land, while respecting also the principle of progressivity, as well as the one of individualization.

Conclusions. Adapted aquatic bicycle has become an indispensable accessory within the improvement program of the life quality, for subjects diagnosed with OI. The risks of using the adapted bicycle are minimal for its users. Subjects suffering from OI can successfully integrate into an adapted program based on the adapted aquatic bicycle.

Key words. Adapted aquatic bicycle, aquatic medium, Osteogenesis Imperfecta.
THE EFFECTS OF EARLY PHYSICAL THERAPY IN WOMEN WITH BREAST IMPLANTS

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Abstract
Full appearance of the breasts is lost over time due to natural ageing process after significant weight loss or after childbirth. Breast augmentation has a huge impact on self-esteem, offering increased self-confidence, femininity and therefore the most popular surgeries available today are breast amending ones.

Any gain comes with a cost, thus enhancing breast leads to the need for breast augmentation recovery and rebalancing the body in standing, in both static and dynamic pose, because the gravitational centre changes and the subject will be compelled to adopt such vicious position such as shoulder adduction with thoracic kyphosis and a compensation of lumbar segment deviation with its additional complications. So there is a need to prevent these disorders with postural re-education through specific relaxation techniques, awareness techniques, massage absorbent system draining and kinesiotaping.

By early physical therapy we can influence faster recovery, control pain, combat and prevent vicious attitudes through specific modalities of positioning, breathing exercises, posture awareness techniques, massage, lymph drainage and kinesiotaping.

We noticed that in the period right after surgery in women who have benefited from the methods mentioned above, there was an improvement in pain reduction, a decrease in edema, increased joint mobility and most importantly that they have not adopted deficient positions. Our purpose is to pull an alarm on early prevention to combat the appearance of post surgical pain and spinal deformities after breast implant.

Keywords: specific means, breast implant, physical therapy, kinesiotaping, lymphatic drainage, back pain.
The influence of climate on exercise capacity in patients with cardiovascular and respiratory diseases – A case study

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Introduction

Population vulnerability and adjusting reaction:

Researches on potential health effects caused by weather, climate variability and climate changes requires a great deal and is exposure of interest. Although often terms such as weather and climate are used interchangeably, but in fact they are different sides of the same spectrum. Weather is the complex and continuously changing the state of air taken into account, habitually, on a time scale of minutes, weeks and months. Researches on the impact of health influenced by variability and climate change aims to increase understanding of the potential risks and identify effective options for adaptation of human body to the surrounding environment. As a result of climate change extreme events are expected to become increasingly common, can have devastating effects on human society (Sakamoto, M.M., 1977). In many temperate countries there is a very obvious seasonal variation in mortality, so winter death rates are 10-25% higher than in summer. (Laake, K. & Sverre, J.M., 1996). The main causes of winter deaths are cardiovascular pathologies, cerebrovascular, circulators and respiratory (Donaldson, G.C. et al., 1998). Social and behavioral adaptations to cold plays an important role in preventing deaths from cold weather in countries at high latitudes (West, R.R. & Lowe, C.R., 1976). Although it is well established that summer heat waves are associated with increased short-term mortality, degree of mortality associated cold season directly attributed to stress caused by bad weather is difficult to be determined and currently is intensely debated. „Whoever wishes to investigate medicine properly, should do so: first consider the seasons and what effects they produce each, are not all the same and differ greatly from one another in terms of changes that occur.” (Hippocrates, 1978). Greek physician Hippocrates (400 b.J.) described the link between certain epidemics and climate changes caused by the seasons. He wrote that physicians should take into account the seasons and the diseases they produce, characteristics and country-specific wind intensity and its water quality.

Key words: physical activity, exercise capacity, climate, cardio-respiratory diseases.
STUDY REGARDING THE RELATION BETWEEN CHRONOLOGICAL AGE, MENTAL AGE AND WEIGHT OF THE PREMATURES INCLUDED IN A PHYSICAL THERAPY PROGRAM

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Abstract. A premature is a newborn whose birth weight is equal to or less than 2500 grams, regardless of the duration of gestation. Early identification of these children who may have delays or difficulties motor assessment and intervention are important in the future. PURPOSE: To assess the implemented recovery programs by correlating the results of the premature: mental age, chronological age and weight. Hypothesis: We assume that a physical recovery program, customized and adapted, leads to favorable neuromotor development of the premature suitable to the chronological age. MATERIAL AND METHODS: The study included 10 children born prematurely. They were subjected to the Portage Test (calculation of mental age) and weight test. Applied therapeutic program included: exercise (performed through the game), massage, neuromotor rehabilitation methods, hydrotherapy and music therapy. RESULTS AND DISCUSSION: For the Portage Test, we proceeded to calculate the mental age, which was further correlated with children’s weight. A complete development of the two ages are assumed to be equal, therefore a ratio of one of them. In our study, the report shows values between 0.625 and 0.923, with an overall average of 0.791 for the 3-step test. Mean values in stages range from 0.729 in the initial stage, to 0.803 in the intermediate stage and 0.839 in the final stage. CONCLUSIONS: Regression models show that mental age of the premature can be well estimated by their weight, in which case the degree of explanation of variance is 93.6%. Following statistical interpretation we can confirm the effectiveness of the recovery program implemented to the patients and suggest to the parents and professionals in the field to compile and apply recovery programs for the premature.

Keywords: premature; physical therapy; weight; chronological / mental age.
STUDY ON THE BENEFITS OF PERSONALIZING DIET IN THE OBESITY TREATMENT

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Abstract. Today, obesity is not only a chronic disease but also, a motivation in promoting commercial diets combined with food supplements.

This paper aims to demonstrate long-term benefits of a personalized diet in the treatment of obesity vis-a-vis commercial diets and is based on a case study of a man of 36 years old diagnosed with grade II obesity.

Methods:
- bibliographic study of literature
- case study: anamnesis, initial and final evaluation by clinical examination and laboratory tests, development diet-therapeutically plan through personalized diet.

Results: highlighting the main risks of commercial diets, weight loss, improved body composition, improved functionality evidenced by laboratory tests, improved endurance.

Conclusions:
- commercial diets presents health risks, mainly due to non-compliance with nutritional balance
- personalized diets support weight loss due to adipose tissue without affecting the health and long term effect are helping to improve quality of life.
- a personal diet approach the patient as a bio-psycho-social entity.

Keywords: obesity; treatement; diet; personalisation ;)
POSTURAL CONTROL IN DOWN SYNDROME SUBJECTS

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Abstract:
Objective - The Down’s syndrome children present important motor problems which affect static and dynamic balance. Equilibrium represents the capacity of keeping the body steady in standing position as well as the ability to perform usual dynamic tasks (walking, jumping and running) without falling. The objective of this paper is to present by comparison the postural control in Down syndrome subjects and non-disabled persons.

Method - Five young Down syndrome subjects, aged 8 to 15 years old and five normal age-matched subjects were included in the study. Static equilibrium was evaluated on a posturograph (Smart Balance from NEUROCOM) which has a force-plate. Equipment allows time and frequency domain analysis of the center of pressure of the subjects.

Subjects have to maintain upright position as steady as they can for 20 seconds, on the stabilised force-plate in two conditions – eyes closed and eyes opened.

Results - Analysis of the postural control revealed a lower performance in maintaining the upright position from time domain point of view in Down syndrome group.

Conclusion - Motor control problems are present in Down syndrome children since birth (hypotonia, low joint stability and joint hypermobility) and impede upon the development of motor control if early rehabilitation is not provided. This characteristic lasts for the whole life of the Down syndrome person.

Keywords: Down syndrome; postural control; posturography
FREEZING OF GAIT EPISODES IN PARKINSON’S DISEASE

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Abstract. Research goals: (1) to establish the role of weight support on FOG of patients who were staged on UPDRS and Hoehn & Yahr (Y&H) scale. All patients had previous history of freezing gait (FOG) that was assessed subjectively using the new freezing of gait questionnaire (NFOG-Q); (2) to establish the optimum rehabilitation program for patients with normal gait and loaded gate (Loading was achieved by wearing a belt with the correct amount of lead weights distributed evenly around the waist); (3) to establish the optimum period of therapy after which the patient’s symptoms will improve;
Methods: Reading the literature; freezing of gait questionnaire (NFOG-Q); Observations; Tests; Trials
Results: Our research was based on 12 patients with Parkinson’s disease (PD) stage II-III(Y&H), with ages between 55 and 75, with an average age of 60 years.
By studying these cases we have come to know the effect of weight load on FOG during gait initiation.
Impaired force control during walking may contribute to freezing episodes, with difficulty to unload the swing leg and initiate the swing phase; we used external loading to manipulate force control and to investigate its influence on freezing of gait.
We evaluated: (1) Normal gait, number of FOG episodes on: normal walking, fast normal walking, rapid left turn, rapid right turn, walking with short steps, fast walking with short steps. We used gait tasks known to provoke FOG, such as rapid 360° turns and walking with steps smaller than the self-preferred step length; (2) The weight load on FOG during gait initiation achieved by suspending patients from a parachute harness or wearing a belt with lead weights.
Conclusions: Our study tries to determine the role of weight support on FOG with the intention of establishing an optimum rehabilitation program for patients with Parkinson’s disease (PD) stage II-III(Y&H).

Key words: freezing of gait; Parkinson’s disease; weight support
Kinetic treatment in hip dysplasia

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Overview: This thesis proposes to show the results of physiotherapy in congenital hip dysplasia. Untimely treatments show far better results, helps with quality of life and the formation of cortical engrams closer to the appropriate age development, lowers the costs of interventions and lowers the outcome of physical and psychological trauma. Adaptation of a child with locomotor deficiencies to the requests of an ever-changing society represents a necessity not only for the child but also for the family. The specific objectives of the study consist of the particularisation of the recovery programs based on age, illness stage (dysplasia or luxation) and either surgical or non-surgical intervention. To show to importance of physiotherapy in gait rehabilitation of a child with hip dislocation we started from the hypothesis: using an adequate rehabilitation program after an individualised methodology, optimises the functional recovery and ensures the gains of hip stability and the formation of an engram of gait as close as it could be to normal. The research methods used in this study are: the observation method, the bibliographic study method, the experimental method, the graphics method and the statistical mathematical method to process the data and to represent the results graphically. End results obtained are significantly different from the initial evaluations and we came to the conclusion that starting an untimely analytical kinetic treatment and globally personalising it to every patient has better biomechanical results for the hip.

Key words: congenital hip luxation, hip dysplasia development, muscle training, treatment objectives.
CONSIDERATIONS ON THE GROWTH AND DEVELOPMENT OF CHILDREN WITH VISUAL IMPAIRMENTS

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Abstract. This theme proposes to reveal whether there are significant differences on the rate of weight gain and height of children with visual impairments, towards children without sensory disorders. The aim of the study is to assess the parameters of growth, physiological markers of massive accumulation process by which the body increases its weight and height. We used the following research methods: bibliographic study, case study, observation, weighing, height measurement and questionnaire. Subjects were selected from among students with visual impairments, with particular comorbidities of Special Secondary School for the Visually Impaired in Bucharest, being included in third grade. Criteria on which subjects were included in our study are the presence of vision impairment and exclusion criteria relate to students with visual blindness. The findings and results are highlighted by the fact that the visually impaired are malnourished, on long term influences height, and on short term, weight.

Due to dynamic data analysis it was found that the height, weight and body mass index of children with visual impairments is below the average child of the same age without sensory disturbances.

Keywords: amblyopia; height; weight.
RATING OF PERCEIVED EXERTION AND SERUM LEPTIN RESPONSES TO MAXIMAL EXERCISE IN OBESE FEMALE ADOLESCENTS: EFFECTS OF EXERCISE TRAINING INTENSITY

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Abstract. Intensive exercise is one of the rarely used solutions to avoid obesity. This study aimed to examine the intensity effect [high-intensity interval training (HIIT) vs. moderate-intensity interval training (MIIT)] in severely obese female adolescents. Twenty one participants (age = 15.7 ± 0.9 years, percentage body fat (%BF) =40.0±1.5%) were assigned to HIIT: 100%; MIIT: 80% of Maximal Aerobic Speed (MAS) or control group (CG). Training program lasted 12-weeks with sessions performed 3-times a week on the track. Running distances lasted 15 sec, interspaced with 15 sec active recovery. Body composition was assessed by Bioelectrical Impedance Analysis, blood pressure and perceived exertion (RPE) were measured. Blood samples were collected at fast and peak oxygen uptake (\(\dot{V}_\text{O}_2\text{peak}\)) was measured breath-by-breath using a calibrated portable telemetric system. All the values were taken before starting and after achieving the last training session in the intervention. Both exercise training programs enhanced positively; body composition (body mass, BMI-Z-score, %BF), cardiovascular fitness (blood pressures, resting heart rate, \(\dot{V}_\text{O}_2\text{peak}\)). Both exercise groups decreases plasma glucose (p<0.05), insulin (p<0.01 and p<0.05; HIIT and MIIT, respectively) and leptin (p <0.01). HIIT-group noted greater values in RPE score to maximal exercise (~29.0%, p<0.001) compared to MIIT-group (~14.9%, p<0.05). Overall, HIIT and MIIT induced beneficial changes in leptin sensitivity independently of the exercise intensity. However, HIIT can be considered an efficient approach in decreasing the RPE score compared to MIIT, which may reduce the effort hardness and the drop-out from exercise in severely obese female adolescents.

Keywords: enjoyment; post exercise; energy expenditure; satiety; obesity
CHILDREN’S OBESITY TREATMENT BY PHYSICAL ACTIVITY

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Abstract

Purpose: The goal of this study was to find out, whether the obese and overweight children reduced their body weight after 4-week stay in a Children’s Treatment Centre of Kretin

Introduction: Physical activity plays the crucial role in obesity prevention. Particularly in children, physical activity also helps to develop other qualities - confidence, independence, self-control, emotional stability and overall well-being and satisfaction. It reduces stress, anxiety or aggression. Nowadays, however, sedentary lifestyle prevails not only in adults but also in children. The lack of movement has a negative impact to incidence of overweight and obesity and consequent diseases. Obesity causes a strain to skeletal and joint system in a growing body. Orthopedic problems further occur in difficult and painful locomotion. From psychological and social aspects obese children suffer from low self-confidence and feelings of inferiority. Treatment of children’s obesity depends on its level as well as the age of the child. The complete change of lifestyle often represents the foundation stone of the therapy. This study brings results concerning weight loss in children after 4-weeks treatment at The Children’s Treatment Centre of Kretin, Czech Republic.

Children undergoing 4-weeks treatment at The Children’s Treatment Centre of Kretin, due to their overweight or obesity, have a daily programme which includes 2 hours of active physical activity a day, either indoor (in a gym) or outdoor - within the area of park, playground or sport ground in the vicinity of Treatment center, or by long walks to forest.

Methods: At the beginning of 4-week therapy the children are measured for their body weight, body height, BMI and fat amount. At the end of the curative stay, the same parameters are measured again, to verify a weight loss.

Results: After completion of 4-weeks curative stay all children have lost some weight. The difference between initial and final weight was in boys 3.68 ± 2.10 kg and in girls 3.50 ± 1.83 kg in average.

Conclusion: Even after completion all therapies and curative procedures, all children have lost some weight, but all children remained in the same percentile of BMI category, i.e. their initial category of overweight or obesity remained unchanged.

Keywords: children; overweight; obesity; physical activity
Abstract.

Purpose: Childhood and adolescent overweight and obesity are important public health concerns. Common definitions of pediatric overweight and obesity are based on BMI (Going et al., 2011). Slovakia is one of few countries with national BMI standards that take into consideration dietary habits and local genotypes. The purpose of this study was to determine the prevalence of overweight and obesity among adolescents of Presov region in Slovakia.

Methods: A non-randomized cross-sectional study was used to determine incidence of obesity in adolescents living in the region of Presov. Research sample consisted of 1,015 participants (550 girls; 465 boys) aged between 15 and 18 years. BMI values in particular age groups of both genders were assessed according to Slovak National Reference Standards.

Results: For both genders, mean values of body height and body weight and mean BMI values across all age categories fell between 50th and 75th percentile. In total, 6.4% of boys and 6.8% of girls were overweight and 9.4% of boys and 8.2% of girls were obese. The highest prevalence of overweight was found for 18-year-old boys and for 17-year-old girls and the highest prevalence of obesity was found for both 15-year-old boys and girls.

Conclusion: The comparison of our findings with available data from National Anthropometric Survey on physical development of Slovak youth in 2001 showed lower prevalence of overweight, but higher percent prevalence of obesity in girls and boys.

Keywords: body weight; body height; BMI; Slovak National Reference Standards; prevalence
STUDY ABOUT THE PERCEPTION AND PRACTICE OF NORDIC WALKING, AS A COMPONENT OF ACTIVE TOURISM IN ROMANIA

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Abstract. This paper approaches some general aspects related to Nordic walking, a leisure sports activity with many positive influences on the body and mind, but unfortunately almost unknown in our country. The study has started from the hypothesis that if Nordic walking is systematically practiced, it will have multiple beneficial effects on the individual’s health and social relations. But to prove it, we need theoretical arguments and concrete evidence coming to support this assumption. To this purpose, we used bibliographic documentation and we conducted a research in Campina, between 8 and 29 December 2013, on a group affiliated to the Association for Health and Performance, made up of practitioners of the weekend tourism in Breaza-Nistoresti region. Participants in Nordic walking, 21 subjects aged 22 to 64 years, responded to an 18-item questionnaire designed to identify, among others, their perception on the natural conditions and those created for the practice of leisure sports activities, on the dimension and utilization of their free time available, on Nordic walking in general, they also being asked to give their reasons for the practice of this sport. The collected data were processed and interpreted, our findings underlying some relevant aspects related to Nordic walking, which might be both necessary and interesting, as we have to do with a sports discipline at its beginning in our country.

Keywords: Nordic walking; free time; leisure sports activities; benefits
STROKE RECOVERY THROUGH THE USE OF THE COERCIVE THERAPY

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Abstract. The topic of this research is of utmost importance in the area of health policies in the European Union and Romania. The stroke represents a central public health issue in our country and in the rest of the world. Strokes are the most common cause of kinetic disability due to a nontraumatic affliction of the nervous system, the second most frequent cause of dementia (after Alzheimer), and the third cause of death (after cardiopathy and cancer). Presently, there has been an increase in strokes amongst young people between 15-45 (with a frequency of 3-4% in Western countries). The purpose of the research was to highlight the effects of the coercive therapy applied to the functional deficits caused by strokes, and the main objective was the study of the effects of the inductive coercive therapy in comparison to the classic therapy. The hypothesis of the research: the repeated application of a kinetic learning program using spastic segments leads to a more rapid functional reeducation of the patients who have suffered secondary brain damage after a stroke than using conventional methods. The sample of the research included 20 persons who have suffered a stroke. We consider that the results confirm the hypothesis and fulfill the purposes of this research.

Keywords: stroke; coercive therapy; recovery