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INFLUENCE OF PHYSICAL EXERCISE DURING MUSCULOSKELETAL GROWTH AND DEVELOPMENT

***Mihai Constantinescu*[1]**
student ***Luţac Sinziana*[2]**
[1]Constantinescu Mihai Physiotherapy cabinet, Romania
[1]Stefan cel Mare University of Suceava, Romania

Keywords: growth and development, exercise, prevention.
Abstract: This article presents a study conducted by questioning of students from three different schools in the city Suceava. This aims to determine the students participate in sports and outside of curriculum hours school. Exercise practiced physical constant may be a factor determining the growth and harmonious development as well as maintaining optimal health status.

Introduction: Development of living matter is dependent on the forefront of nutritional exchanges. Rubner has calculated that the formation of a gram of living matter, are necessary 3 calories. This will be "all phenomena of weight and stature development posed any living organism, from procreation his adulthood" (Marfan) Increase in basic function of a living substance, was due to a "growth energy" (Springer), inherited conditions influenced by heredity and environment in which the body develops (aeration, light, nutrition, exercise, disease, etc.).

Osteogenesis. The complex process by which bone formation is reached body. The only areas remaining cartilage in children and young people who are developing metaphyses, which continues to operate cartilage growth which, until their closing, improve the long bone length. Structural organization of bone - body is not possible without the intervention of forces musculare.Reserarch performed on embryos have shown that the structural orientation occurs when the orientation imposed by the forces of muscle and bone trabeculele begin to have traectorial only after the appearance of muscle contractions (Murray). As shown in research conducted so far in phylogeny locomotion, movement affects the human body, structuring it and forming it apt to make movements.

Body segments not grow proportionally, on puberty, P. Godin has established three laws in terms of growth:

A. Size due largely to its development, before puberty, legs, and after puberty, bust.

B. Two. Before puberty predominates in long bone development, and after puberty, the thickness.
C. Three. Before puberty, growth is mainly bone, and after puberty, especially muscle.

Some tissues and organs grow and develop more intense, others slow their pace, while others become useless, slow down their activity and regresses. Pubertal changes and segmental growth rate permanently established body proportions.

Exercise meet by modeling the importance of form and structure of the human body, especially the elements making up the device for support and locomotion. (Bones, joints, muscles, tendons, fascia and other soft tissues). By moving the osteoarticular system traction is exerted, pressure, tension, compression and stretching acting as stimuli continue and variations that increase blood supply and nutrients in these segments, enlarged them and making them functional capabilities. Form, structure, thickness and bone strength are determined mostly by requests through exercise.

Exercises with the most pronounced influence are those of force, resistance and static. The practice of continuous and systematic increases in diameter occur transverse thickening of periosteum and even the appearance of roughness and tubers us. Bones are not required by exercise have a lower resistance to traction, pressures and strains and can easily suffer deviations, deformations, fractures.

Movement is (food joints), according to an old saying that indeed no exercise can not speak proper functioning of body joints. The motion requested increase their surfaces, their thickened articular cartilage, allowing to carry out more extensive and precise movements.

Conversely, lack of exercise entails a progressive numbness joint, degeneration of their easy installation of all kinds of diseases ranging from limitation of movement up to twists, sprains and arthritis. Under the influence of exercise, muscles, organs active movement, increase their volume and change their internal structure. Research has proven that muscle hypertrophy is due not only to increase the transverse diameter of the fibers, following an intensive nutrition and assimilation of albumin, but also increasing the number of muscle fibers involved in the effort musculare. In noticed and open to a rich network of vessels capillaries, an impressive increase in oxygen consumption and other biochemical changes which favour increased exercise capacity. It was also revealed increased functional capacity, particularly of neuromuscular excitability, which shows that exercise, in addition to structural changes, causes and major functional changes.

Materials and methods

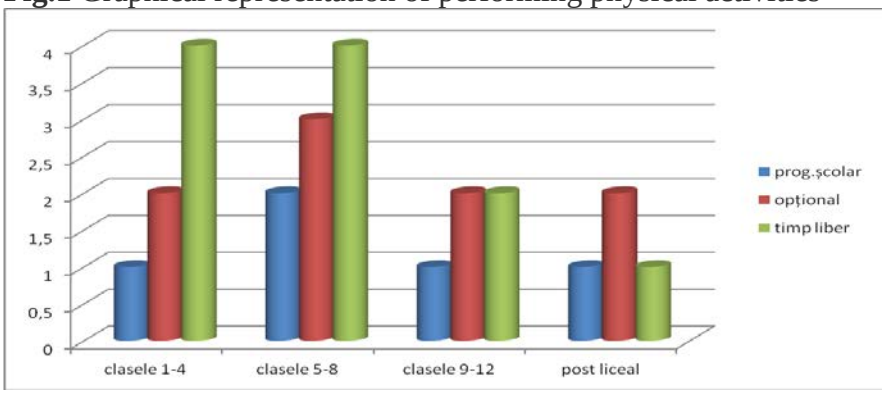
To conduct this research were used statistics and recorded data from surveys conducted in the school environment (school type 1, No. 3, No. 8)

The questionnaire used to collect quantitative data aimed at estimating the actual hours of making exercise included in the curriculum and beyond.

Table nr.1 Physical activity performed

Type of activity	Grades 1-4	Grades 5-8	Grades 9-12	Post secondary
curriculum	1 h per week	2 h per week	1 h per week	1 h per week
optional	1-2 h per week	1-2 h per week	1-2 h per week	1-2 h per week
Activitie performed during free	2-4 hours a day	1-2 of per week	1-2 h per week	1-2 h per week

Fig.1 Graphical representation of performing physical activities



Favorite physical activities are limited and offer students, Suceava available in terms of sports facilities, as well as the lack of promotion of mass sport. In order of preference in the first place is football, then you can not do a top choice objective will include: swimming, basketball, athletics, handball, table tennis, martial arts, dance etc..

We present a table you can see some aspects of the need to exercise growth and harmonious development.

Table no. 2

Major objectives of training	Physical activity plan
Children 6-14 yers - Normal growth and harmonious development. - Normal mental development. - Develop interest and skills to form an activelifestyle as an adult. - Reducing risk factors for illness.	Type: effort based on large muscle mass, dynamic exercises, few ex. Type: effort based on large muscle mass, dynamic exercises, exercises little heavy resistive exercises asuplizare. Intensity: moderate to high Duration: in total, more than 30 min. Per day in a meeting or several meetings Frequency: every day
Teens and young adults 15-21 years - optimal growth and physical development - normal mental development - risk factors for illness - interest and skills development for active lifestyle	Type: exercises performed with large muscle groups, strength and mobility exercises. Intensity: moderate to high. Duration: in total, more than 30 min. The meeting. Frequency: at least every 2 days.

Conclusions:

The fact that no physical exercising regularly practice or organized as playful or activities of sports, is confirmed by several specialists. The study cant be considered as standard, however the one that stood out is that free time students have used increasingly less for physical activity in favor of the static (watching movies or computer games). This acting negatively on the growth and development, promoting the establishment of functional physical disability or disease outbreak Metabolism. We believe that the involvement of sports teachers in presenting and developing attractive programs to motivate students to choose sport as a core activity, would result, since teachers are those who have specific methods. The plot can be seen that the options have a constant plateau, so there may try to implement programs playful activities, sporting, recreational facilities.

Bibliography:

1. Dragomir Petrică, Scarlat Eugeniu (2004)- Educaţie Fizică Şcolară, Editura Didactică şi Pedagogică Bucureşti.
2. Dr. Baciu Clement (1981)-Aparatul Locomotor(anatomie funcţională, biomecanică,semiologie clinică, diagnostic diferenţial) Editura Medicală Bucureşti.
3. Mîrza Doina (2005) Kinetoprofilaxie Primară Editura Tehnopres, Iaşi.
4. Moţet Dumitru (2011) Kinetoterapia în beneficiul copilului (corectarea deficienţelor fizice la copii) Bucureşti.

Titlu: Influenţa exerciţiului fizic asupra aparatului locomotor in perioada de crestere şi dezvoltare.
Cuvinte cheie: creştere şi dezvoltare, exerciţiu fizic, profilaxie**.**
Rezumat: Acest articol prezintă un studiu, efectuat prin chestionarea unor elevi de la trei şcoli diferite din oraşul Suceava. Acesta are scopul de a determina elevii să participe la activităţi sportive şi în afara orelor din programa şcolară. Exerciţiul fizic practicat constant poate fi un factor determinant în creşterea şi dezvoltarea armonioasă cât şi menţinerea stării optime de sănătate.

Titre: Influence de l´exercice physique pendant la croissance et le développement musculo-squelettique.
Mots- clés:croissance et le développement, l´exercice, la prévention.
Résumé: Cet article présente une étude menée par interrogatoire d´étudiants de trois écoles différentes dans le Suceava. Cet ville vise a déterminer les élèves participent à des activités sportives et en dehors des heures curriculum. Exercices pratiqué constante physique peut être un facteur la determination de la croissance et le développement harmonieux ainsi que le maintien de l´état de santé optimal.