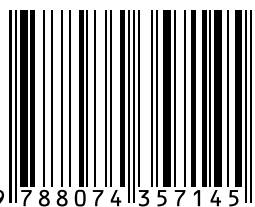




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Changes in physical development and performance of 6 – 7 years old children in athletic preparations

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ABSTRACT

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The aim of the research was to verify the influence of a versatile preparation for six months to change levels of physical development and physical abilities of 6 – 7 years old children in athletic prep.

In the theoretical background, we focused on the period of younger school age in terms of physical, psychosocial and motor development. We focused on the complete development of physical abilities in the stage of sports preparation as well as on the diagnosis of physical abilities.

The experimental group consisted of children at the age of 6 – 7 years (24 probands – 17 boys and 7 girls) who attended sports preparation focused on athletics during the school year of 2016/2017. The control group consisted of children at the same age (31 probands - 22 boys and 9 girls) who did not attend athletic prep. The experimental stimulus in our case was a motion program in athletic prep lasting six months at a frequency of two training sessions per week, lasting for 60 minutes each. The effect of the experimental stimulus was found on the basis of changes in the conditional, conditional and coordination, coordination abilities and body-composition parameters. We used parametric and non-parametric mathematical-statistical methods to evaluate the results as well as substantive expression of the effect size of applied motion program.

In the experimental group compared to the control group did not show any statistically significant difference in the amount of skeletal muscles ($t = -0.739$, $p > 0.05$, $d = 0.10$). We recorded a statistically significant difference in the percentage of body fat in favor of the experimental group ($t = -2.048$, $p < 0.05$, $d = 0.28$ – small effect).

Despite the natural developmental increase in body weight and skeletal muscle mass, which were in the experimental and the control group nearly the same, the percentage of body fat in the experimental group decreased.

We recorded a statistically significant difference ($U = 247, Z = -2.125, n_1 = 24, n_2 = 31, p < 0.05, r = 0.29$ – small effect) in the level of running speed with changes of direction. We recorded a statistically significant difference ($U = 248.5, Z = -2.105, n_1 = 24, n_2 = 31, p < 0.05, r = 0.28$ – small effect) in the level of explosive power of lower extremities. We recorded a statistically significant difference ($t = -1.938, p < 0.05, d = 0.24$ – small effect) in the level of trunk flexibility. We did not recorded any statistically significant difference ($U = 340.5, Z = -0.536, n_1 = 24, n_2 = 31, p > 0.05, r = 0.07$) in the level of explosive power of upper body muscles. We recorded a statistically significant difference ($U = 150.5, Z = -3.821, n_1 = 24, n_2 = 31, p < 0.01, r = 0.52$ – large effect) in the level of speed frequency of lower extremities. We recorded a statistically significant difference ($t = 2.462, p < 0.05, d = 0.33$ – small effect) in the level of running endurance. We recorded neither statistically nor objectively significant difference ($T = 237, Z = -0.216, n = 31, p > 0.05, r = 0.03$) in the level of rhythmic ability. We did not recorded any statistically significant difference ($U = 306.5, Z = -1.112, n_1 = 24, n_2 = 31, p > 0.05, r = 0.15$ – small effect) in the level of balance ability. We did not recorded any statistically significant difference ($U = 323, Z = -0.832, n_1 = 24, n_2 = 31, p > 0.05, r = 0.11$ – small effect) in the level of reaction ability. We did not recorded any statistically significant difference ($t = -1.503, p > 0.05, d = 0.20$ – small effect) in the level of kinaesthetic-differentiation ability of upper extremities. We did not recorded any statistically significant difference ($t = -1.340, p > 0.05, d = 0.18$) in the level of kinaesthetic-differentiation ability of lower limbs. We did not recorded any statistically significant difference ($U = 360, Z = -0.204, n_1 = 24, n_2 = 31, p > 0.05, r = 0.03$) in the level of space-orientation ability. The results of the research show that applied motion program focused on general development in athletics prep was long enough to change physical development and general physical performance of 6 – 7 years old children. More significant changes were recorded in the level of conditional abilities, compared to the coordination.

Key words: athletic preparations, younger school age, general physical performance, body composition

PREFACE

Physical movement and activity is an important part of daily life for all people and it is one of the most important factors for the proper development of individuals. It helps us to keep in good physical and mental conditions and it also contributes to prevention of various diseases. However, nowadays we can observe greater decrease of physical activities in adults as well as children. This lifestyle has a negative impact on the physical and mental health of the individual.

The character of children's physical activity is different from the character of physical activity of adults. It is necessary to motivate children to move, to choose the right methods and procedures, however, not to overload children in any case. It is always necessary to consider their current state of health and respond appropriately to changes in physical development. For the optimal development of the organism, it is necessary to develop all human physical abilities equally and regularly. Nowadays, in some cases, we face a big problem in disregarding the particular developmental patterns of children and neglecting the development of some physical abilities towards others.

In accordance with the optimal development of the organism and the development of physical abilities many researches, focused on the issue of physical activity of children, have been done. Based on findings from many studies, various intervention programs have been developed to promote the health of children and youth.

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INTRODUCTION

Physical activity should be an integral part of every person's life to promote his / her healthy physical and mental development and also prevent the occurrence of variety of diseases. The issue of overall physical activity is currently highly discussed, especially in the context of a change of lifestyle that is more and more influenced by modern technologies contributing to passive life in all age categories. Therefore, physical activity is decreasing not only in adults having sedentary jobs, but mainly in school-age children which is proved by a number of research dealing with this issue.

Children have a natural and spontaneous need for any physical activity. Slight decrease in spontaneity, due to the character of teaching and concentration, is caused by starting school and compulsory school attendance. If children are motivated to attend a sport activity already in the pre-school age, it is likely that they will also engage in this physical activity at a later age without any deliberate guidance. In many cases it is about an internal motivation, when the child is engaged in some activity even without any compulsion. Sometimes children need to feel more encouragement and motivation from the environment. Many of today's motion programs and activities are innovative and focused on the principle of correct and targeted motivation of children.

In the research, we have tried to find scientific answers and the bases for the impact of systematic sports training on the child's organism applying the athletics program. Athletic preparation was focused on general development of physical abilities by appropriate means with the use of non-traditional and child-adapted athletic implements. The purpose of the athletic leisure activity, besides the development of motor skills, was also to make children interested in regular physical activity and increase their overall interest in movement. Using the psychological test of the hierarchy of interests, we have tried to answer questions about the status of physical activity in the life of children and frequencies to other general after-school activities and activities.

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