

**SECTION 2. HUMAN HEALTH, FITNESS
AND RECREATION, PHYSICAL EDUCATION
OF DIFFERENT GROUPS OF POPULATION,
PHYSICAL REHABILITATION**

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**INFLUENCE OF HIKING ON THE PHYSICAL CONDITION
OF STUDENTS AGED 11–13 YEARS**

**ВПЛИВ ЗАНЯТЬ ПІШОХІДНИМ ТУРИЗМОМ
НА ФІЗИЧНИЙ СТАН 11–13-РІЧНИХ ШКОЛЯРІВ**

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The relevance of the research. An analysis of scientific publications shows that there is a large number of studies in which the authors note an increase in the number of students with deteriorating health, functional and physical fitness. Researchers emphasise the need to find effective ways to address this situation [1].

One of such approaches is the introduction of various forms and means into the process of physical education of general secondary education students [5].

Hiking is a unique form of physical activity that combines physical exercises with orientation, endurance and teamwork skills, and contributes not only to the physical but also to the psychosocial development of children [2, 4].

Sports tourism performs various sports, health, recreational, cognitive, educational, economic and other functions. Sectional sports tourism classes in schools are an effective tool for physical education, as they contribute to the comprehensive development of students. It combines physical activity, hardening and development of endurance with the formation of moral and social qualities. During tourism classes, students learn to work in a team, overcome difficulties, make decisions in non-standard situations, and this builds self-confidence [3].

The growing need to preserve health, increase the level of physical activity, physical training of students and the lack of sufficient science-based data about the impact on the physical condition of classes in the section of hiking tourism determines the relevance of our study.

The purpose of the research is to determine the influence of sectional hiking classes on physical condition of 11–13-year-old students.

Research methods: analysis, synthesis and generalisation of scientific and methodological literatures; pedagogical experiment, pedagogical observation; physical fitness testing; anthropometric measurements; medical and biological tests; statistical analysis.

Results of the study. To find out the impact of sectional hiking classes on the physical condition of students, we organised a pedagogical experiment. It involved 12 boys and 8 girls aged 11–13 years. The children attended sectional classes three times a week for 60 minutes. The content of the training in the hiking section included the following activities: theoretical education (studying the basics of tourism, orienteering, route planning); practical training (learning obstacle course techniques, packing equipment, organising a bivouac); hiking (short training trips, multi-day hikes, participation in tourism competitions).

To assess the physical condition of 11–13 year old students, we analysed their physical development, level of physical fitness and functional state of physiological systems of the body.

The research has confirmed the positive impact of sectional hiking classes on the physical development of 11–13-year-old pupils. As a result of classes in the group of boys and girls, a statistically significant increase in the following indicators was observed: height (2.4–2.8%), body weight (7.3–6.0%), chest circumference (2.8–2.9%) and physical development index (3.9–5.5%) (Fig. 1).

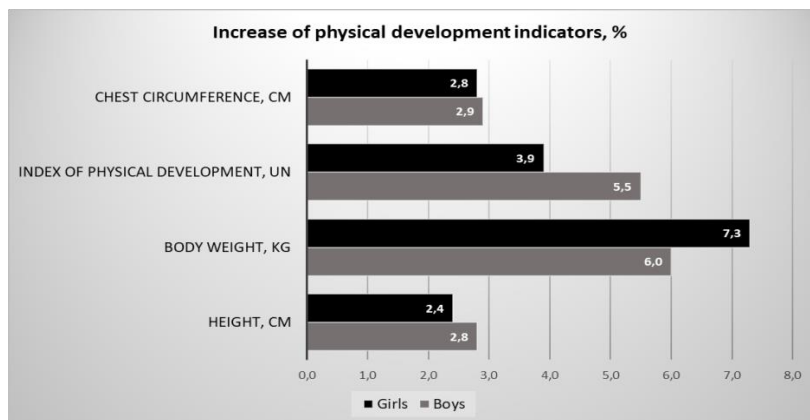


Fig. 1. Changes in physical development of 11–13-year-old students, who attended the hiking section (%)

The increase in these indicators corresponds to age-related norms and is consistent with other researches on the effects of physical activity on children's bodies. Boys had a slightly greater increase in height and physical development index, which may indicate their better adaptation to physical activity. Girls had a more significant increase in body weight, which may be related to the formation of muscle mass and general physical strengthening.

The results of our research confirm the positive impact of sectional hiking classes on the functional state of students aged 11–13 years. In both groups during the period of experiment the indicators of Ruffier index (26,5–25%), Stange test (23,0–21,7%), Hench test (18,4–18,1%), vital capacity of lungs (6,4–6,5%) significantly improved at the level of statistical significance ($p < 0,05$) (Fig. 2).

Boys showed greater positive dynamics in the Ruffier index and Stange test, which is probably due to physiological characteristics. There was a smaller increase in the Hench test and lung capacity, which indicates a more uniform effect of training on these indicators.

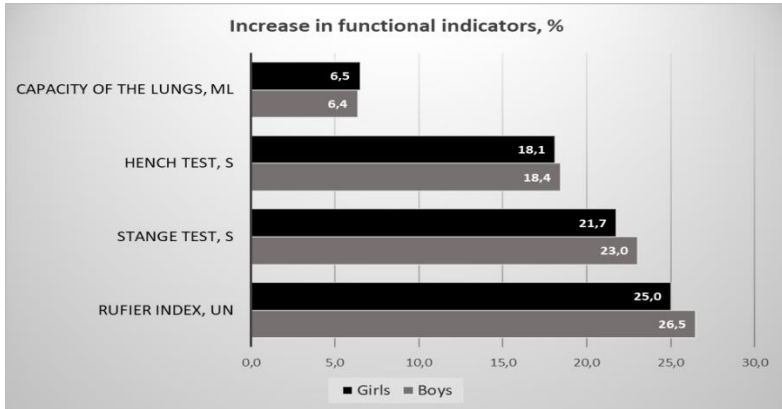


Fig. 2. Changes in functional indicators of 11–13-year-old students, who attended the hiking section

During the experiment, the improvement of physical fitness indicators was established. In both groups of boys and girls, indicators of strength capabilities in different tests (flexion-extension arms, lifting of a trunk, pulling up) increased within 26,6–51,1%; improvement of speed made 4,7–5,3%; agility increased by 4,8–5,3%; increase of flexibility made 33,3–32,7%; speed and power qualities improved by 6,6–7,3%; increase of endurance made 11,6–13,1% (Fig. 3).

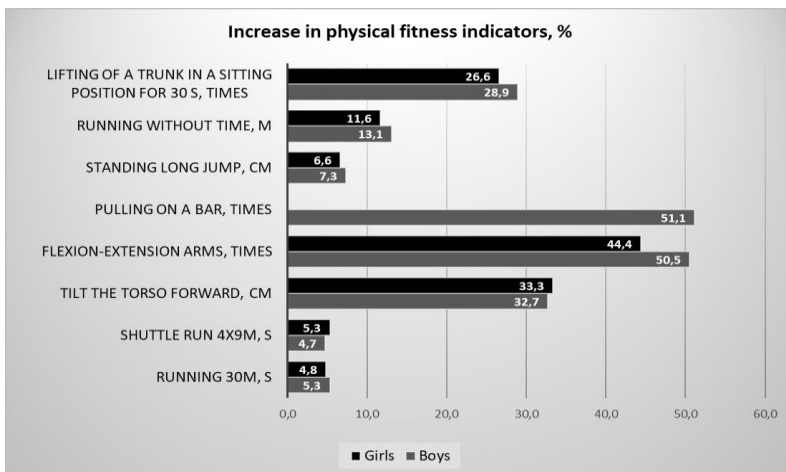


Fig. 3. Changes in physical fitness of 11–13-year-old students, who attended the hiking section

Boys had a greater increase in the majority of indicators, especially in exercises associated with strength and endurance. Girls had a greater increase in flexibility and agility.

Conclusions. The results of our research indicate positive influence of sectional hiking classes on indicators of physical development, physical fitness, functional state of cardiovascular and respiratory systems in 11–13-year-old boys and girls. Thus, sectional hiking classes are an effective means of improving the physical condition of students and it is advisable to introduce it into the practice of physical culture and sports activities of secondary schools.

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