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# Effect of regular training on body composition and physical performance in young cross-country skiers: As compared with normal controls

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## Abstract

The aim of this study was to determine body composition parameters and level of physical performance together with evaluation of changes in body composition and in the level of physical performance under the influence of regular training performed during a preparatory training period in a group of young cross-country skiers (both genders), pupils of sport primary school, and the participants of ski-clubs between the ages of 12–15 years ( $n = 81$ ), as compared with normal controls ( $n = 49$ ). The multi-frequency BIA method (B. I. A. 2000M, Data Input, Germany) was used for determination of body composition. The level of physical performance was estimated through basic motor tests. Results from the present study indicate the positive effect of systematic regular training performed through the special cross-country skiing sport primary school. Firstly for cultivation of young elite cross-country skiers, resp. sport talents for high performance, and secondly as a factor influencing the body composition and the level of physical performance in children and youth with regular physical activity via ultra physical education lessons. Regular cross-country skiing training seems to be favorably influenced by BC related to physical performance in children and youth. Hence, regular training functions also as a means of prevention of overweight or obesity-affected health and psychological, social, economic and other complications in youth, as in those of adult age. The results from this study can provide valuable feedback affecting the improving of training preparation of the followed subjects as well as the enriching of the sport primary school programme in general. In addition, it can be used to observe how childrens' bodies respond to special and specific training stimuli in relation to changes in body composition, let us say in the distribution of body liquid and changes in muscle mass as well as in connection with the differences of physiological profile. This study is a part of the longitudinal study of young cross-country skiers in the Sport Research Centre, the Faculty of Physical Education and Sport, Charles University in Prague.

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