The Abstract

The subjekt of the dissertation: Evaluation of morphological and functional parameters of physical fitness by using the escalating exercise test for students of the sports high school in Ostrava.

The objectives of the dissertation: The main aim of this dissertation is to evaluate the changes of morphological and functional parameters after the annual training cycle for the students of a sports high school, using the escalating exercise test on the bicycle ERGO meter during sports medical examination.

Methodology: Research investigation was carried out in the preparatory period for all students tested in 2012 and then in 2013 after annual training. In preparation for the investigation were included 101 students of a sports high school in the field of sports preparation. They were divided into 4 experimental groups: women up to 15 years of age, males up to 15 years, women over 15 years of age and men over 15 years. There were involved the competitors of following disciplines in the investigation - sports-judo, athletics, volleyball, swimming, basketball, sports and modern gymnastics. We measured the indicators of morphological parameters of physical fitness using bioelectrical impedance (BIA), which provided us with the results of the body fat, body weight and BMI. Body height was measured using medical altimeter. Morphological parameters have been rated using sources obtained from literature. Functional prerequisites have been measured on the center of accredited sports medicine using a bicycle ERGO meter during the escalating exercise test of the spiroergometry. Research data has been processed with the relevant procedures in Microsoft Office Excel 2007 and the significance of these values were calculated by using a pair T-Test, based on the average of the groups.

Results: Changes of morphological parameters with regard to annual training preparation are manifested in all of the measured components. In both groups of men and women over 15 years there have been reduced the absolute values in the representation of the body fat. For the most within the growth increases the body height and affects with that the increase of the weight and the BMI. For a group of younger men and women we observe the faster increase in the given morphological parameters. In older groups, these changes are already negligible. In the evaluation of the functional assumptions, we can say that the increase in performance is 62 persons tested, which
can be expressed as 61.39%. We can say that 24 students is in the border of high level and 43 has a higher value.

**Keyword:** physical fitness, morphological and functional parameters, exercise test, spiroergonometry.