A BODY SHAPE INDEX - ABSI IN RELATION TO THE PREVENTION OF CIVILIZATION DISEASES IN FEMALES

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Abstract

Obesity is often quantified using the Body Mass Index (BMI). Nevertheless, the disadvantage of BMI is that it does not distinguish between the accumulation of fat and muscle mass. On the other hand, the proportion of body fat in the body does not distinguish between abdominal and peripheral fat. Abdominal fat is negatively associated with the onset of cardiometabolic diseases. The aim of this research was to evaluate changes in the parameters of anthropometry and body composition - risk values of civilization, especially cardiometabolic diseases. The specific objective was to compare the novel index - A Body Shape Index (ABSI) and the conventional Body Mass Index (BMI), as well as their relationship to other parameters.

Anthropometry and body composition measurements were performed in a group of 198 randomly selected females (university students) aged 20 to 25 years (average age 21.73 ± 0.88 years) from the Slovak University of Agriculture in Nitra. Body composition parameters were determined using a Bodystat Quadscan 4000 (Bodystat Ltd, Doubles, Isle of Man, UK) based on the multifrequency method of bioelectrical impedance. For statistical evaluation we used: T-test, χ2-test, ANOVA, Tukey's post-hoc test and nonparametric correlation analysis (Spearman's coefficient) using the statistical software Statistica Cz 10 (Dell Statistica, USA).

In the second repeated measurement after 21 calendar months and evaluation, we observed an increase in hip circumference of 1.41 cm ($p < 0.001$), an increase in body area of 0.01 m^2 ($p < 0.001$) and a decrease in anhydrous active body mass increased by 0.93 kg ($p < 0.01$) with increasing age. The BMI was significantly lower by 0.22 kg x m^{-2} ($p < 0.05$), while ABSI increased slightly by 0.001 ($p > 0.05$). The waist to hip ratio (WHR) was significantly lower by 0.01 ($p < 0.01$) in the second measurement, the waist to height ratio (WHtR) did not change significantly.

Our results point to the potential use of ABSI in a group of young females in clinical decisions and to correlate with lifestyle and other health risk factors.

***Key words**: A body shape index (ABSI), Body mass index (BMI), Body composition, Females, Risk factors, Cardiometabolic diseases.*