Date: 23rd January-2026

HYGIENIC ASSESSMENT OF BODY COMPOSITION IN WOMEN WITH DIFFERENT LEVELS OF PHYSICAL ACTIVITY USING BIOIMPEDANCE ANALYSIS

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In recent years, a decrease in physical activity levels among women has become a significant hygienic and public health concern, contributing to increased body weight, obesity, and metabolic disorders. Insufficient physical activity adversely affects key body composition parameters and overall metabolic health.

The present study aimed to conduct a hygienic assessment of body composition parameters in women with different levels of physical activity using the bioelectrical impedance analysis (BIA) method. A total of 10 women participated in the study and were divided into two groups according to their physical activity coefficient: **Group 1 – low physical activity (n = 5)** and **Group 2 – higher physical activity (n = 5)**.

Women in the low physical activity group demonstrated a significantly higher mean body weight (**70.74 ± 3.36 kg**) and body mass index (**29.48 ± 1.49 kg/m²**), exceeding recommended reference values. Body fat percentage in this group reached **41.88 ± 1.46%**, while the visceral fat index was **7.20 ± 0.42**. In addition, reduced total body water (**41.48 ± 1.05%**) and protein content (**13.04 ± 0.35%**) were observed, indicating unfavorable body composition and increased metabolic risk.

In contrast, women with higher physical activity levels showed body weight and BMI values within hygienic norms (**51.80 ± 5.69 kg** and **19.46 ± 1.88 kg/m²**, respectively). Body fat percentage was significantly lower (**24.86 ± 4.34%**), and visceral fat index was **2.40 ± 1.10**. Total body water (**53.66 ± 3.55%**) and protein content (**19.12 ± 1.99%**) corresponded to physiological reference ranges. Differences between the groups were statistically significant (**$p < 0.05$**).

In conclusion, low physical activity is associated with unfavorable changes in body composition, including increased body fat, elevated BMI, and impaired water and protein balance. Higher physical activity contributes to maintaining healthy body composition and metabolic status. Bioelectrical impedance analysis is a practical and informative screening tool for hygienic assessment of body composition in women.

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