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ASSOCIATION BETWEEN ADIPOSE TISSUE AND SERUM MYOKINE CONCENTRATIONS IN YOUNG HEALTHY INDIVIDUALS

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Background and Aim. This study aims to evaluate the relationship between body composition – particularly adipose tissue mass – and exercise-induced myokine levels to explore potential metabolic interconnections. The investigation was conducted on young, healthy adults with an average age of 25 years. Demonstrating a correlation between myokine levels and total fat mass could offer valuable insights into the regulation of adipose tissue and pave the way for new strategies to target lipid-associated metabolic disorders.

Materials and Methods. Fifteen young, healthy adults participated in the study. Anthropometric measurements were conducted using an ACCUNIQ BC300 scale to assess body composition. Blood samples were collected before and after exercise to evaluate myokine concentrations. Specifically, levels of Brain-Derived Neurotrophic Factor (BDNF) and Irisin were measured in response to both low- and high-intensity exercise. Myokine concentrations were determined using ELISA. Statistical analysis was performed using Wilcoxon tests to assess correlations between fat mass and myokine levels.

Results. Descriptive statistics for total adipose tissue mass (kg) ranged from 11.60 to 32.20, with a mean of 19.28 and a median of 18.40. Wilcoxon test results revealed a significant relationship between total fat mass and BDNF concentration ($p = 0.041$), as well as between fat mass and Irisin levels ($p = 0.030$).

Conclusions. The significant relationship suggests that BDNF and Irisin may play an active role in the regulation of adipose tissue. These findings highlight the potential of myokines as biomarkers for metabolic risks associated with increased fat mass, including conditions such as stroke. Further research is warranted to clarify the underlying mechanisms and explore their implications for clinical applications and therapeutic strategies.

Keywords. Adipose tissue; fat mass; myokines; BDNF; Irisin; metabolic risk.