

**BODY COMPOSITION IN PEDIATRIC TYPE 1 DIABETES MELLITUS*****Shakti Atul****Student (specialist)*Мордовский государственный университет им. Н.П. Огарёва, Медицинский институт,  
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Relevance. Type 1 diabetes mellitus (T1DM) in children and adolescents is associated with chronic metabolic regulation that may influence excess fat accumulation, decreasing skeletal muscle mass, and overall body composition. Although body mass index (BMI) is commonly used in routine practice, it does not differ between adipose and lean problem components and may therefore underestimate metabolic risk. A more detailed assessment of body composition may provision additive insight into cardiometabolic status and insulin requirements in pediatric patients with T1DM.

Aim. To equal body composition parameters in children and adolescents with T1DM and to determine their relationship with glycemic control, insulin requirement, and duration of disease.

Materials and Methods. We performed a cross-sectional study including 21 pediatric patients aged 9–18 years with established T1DM. Body composition was used bioelectrical impedance analysis. Anthropometric measurements included height, weight, BMI standard deviation score (BMI SDS), and waist-to-hip ratio. Metabolic parameters included HbA1c, insulin level, and duration of diabetes. Statistical analysis was conducted using Pearson correlation to evaluation associations between adiposity indicators, lean mass, and metabolic indicators.

Results. A statistically significant positive correlation was identified between BMI SDS and fat percentage ( $r = 0.62$ ,  $p < 0.001$ ), indicating that received BMI SDS responses to higher adiposity in this population. Lean mass demonstrated a moderate positive correlation with insulin level ( $r = 0.62$ ,  $p = 0.003$ ), suggesting that patients with greater lean mass may require higher insulin doses, possibly due to increased metabolic demand. Fat percentage show a negative trend with HbA1c; however, this association did not reach statistical signature ( $p = 0.051$ ). No statistically significant correlations were observed between duration of diabetes and fat percentage, nor between waist-to-hip ratio and glycemic indicators ( $p > 0.05$ ). Although female participants demonstrated brightly higher mean fat percentage compared to males, the difference was not statistically significant ( $p = 0.64$ ).

Conclusion. Our findings indicate that children and adaptables with T1DM exhibit measurable variations in body composition, partial in adaptability as reflected by BMI SDS. Lean mass appeals to be associated with insulin request, while glycemic control does not show a direct linear relationship with adiposity in this sample. These results are emphasize the importance of assessing body composition in addition to BMI during routine follow-up of pediatric patients with T1DM and highlight the need for further research with a large sample size.

**Источники и литература**

- 1) American Diabetes Association, 2024, ISPAD Guidelines, 2022, Mayer-Davis EJ et al., Diabetes Care, 2017, Nadeau KJ et al., Pediatric Diabetes, 2016, Kyle UG et al., Clinical Nutrition, 2004