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An analysis of overweight and obese children versus normal weight children in a primary care practice

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Background: The childhood obesity is a serious public health problem. The prevalence of obesity among children and adolescents is increasing.. The majority of the overweight and obese children can be diagnosed, monitored and treated by family doctors The objective of the study was to evaluate clinical and paraclinical parameters and to create a regression model with body mass index as a dependent variable and other clinical and paraclinical factors that could have an influence on the excess weight.

Method: The observational study included 156 individuals: 78 overweight and obese children (39 girls/39 boys) and 78 healthy children (39 girls/39 boys) who served as a control group, in the evidence of the family medicine practice in 2015. We recorded the family and personal medical history and performed the clinical exam and laboratory tests (blood sugar, lipids) in every patient.

Results: The average age of entire groups was $11,6\pm 04$ years (6 - 18 years), the average age of the excess weight children group was $12,6\pm 03$ years vs. $11,6\pm 03$ years in the healthy children group. We recorded a higher average BMI for children with birth weight less than 2500g, the estimate risk was 1,5 (95%CI 1,01-2,24) in the overweight and obese children group. The prevalence of family history of diabetes mellitus was two times higher in the excess weight children group vs healthy children group. The systolic and diastolic blood pressure values were higher in the overweight and obese children group vs healthy children group ($p<0,001$). The average plasma serum glucose was also higher in the excess weight children group ($p<0,05$).

Conclusions: We have found a significant correlation between BMI values and low birth weight, family history of diabetes, systolic and diastolic blood pressure values and plasma serum glucose. Overweight and obese children are likely to develop cardiovascular diseases or diabetes.