Evaluation of the prevalence of overweight and obesity in teenagers of the metropolitan area of Warsaw.

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Objectives: Evaluation of the prevalence of overweight and obesity in adolescents aged 15-17 years in the metropolitan area of Warsaw, Poland.

Methods: The study group consisted of 690 middle and high school students, 366 boys and 324 girls aged 15-17 years, from the metropolitan area of Warsaw, who underwent screening. Anthropometric measurements included: body weight, height, arm, hip and abdominal circumference. On the basis of taken measurements following indexes were determined: body mass index-BMI, Waist to Hip Ratio-WHR, Waist to Height Ratio-WHIr, Hip to Height Ratio–BAI (Body Adiposity Index). Skinfold thickness was measured on the rear surface of arm, below the inferior angle of the scapula, and at the belly.

Results: We found that 23.6% of children were overweight or obese, based on BMI. Obesity was diagnosed in 11.3% and overweight in 12.3% of children. These percentages were comparable among boys and girls also in different age groups. Based on the growth charts, obesity was diagnosed in 8.6% (n=59) and overweight in 9.3% (n=64) of the study group. A discrepancy has been noticed between the assessment based on the body weight growth charts and the calculation based on BMI. In 29 (4.2%) patients body weight was assessed as correct based on growth charts, while the assessment on the basis of BMI showed overweight or obesity. Only in 11 (1.6%) patients method based on the growth charts overestimated the assessment. Very strong correlations have been found for BMI and waist, hip and arm circumference, subscapular and abdominal skinfold thickness, WHtR and BAI - (properly: r=0.86; r=0.84; r=0.88; r=0.81; r=0.75; r=0.88; r=0.81; p<0.05).

Conclusions:
1. The prevalence of overweight and obesity in middle and high school students in the analyzed region is alarmingly high.
2. Research methods and standards for body weight categorization on the basis of grow charts and BMI, lead to slightly different epidemiological results.
3. BMI strongly correlates with anthropometric measurements, which justifies its use for the assessment of overweight and obesity in daily practice.