

## **Prevalence and Association of Cardiovascular Risk Factors in Children: Preliminary Results on Overweight and Obesity.**

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**Background:** Several variables contribute to the development of cardiovascular risk factors (CRF) since childhood. Worldwide, there is an increased prevalence of overweight and obesity in children and both are associated with numerous health risks. In fact, a high percentage of obese children present comorbidities in dependency of obesity, although many are asymptomatic. The first aim of this cross-sectional study was to determine the prevalence of overweight and obesity, according to body mass index (BMI), and understand the association between BMI and waist circumference (WC), considering also the variation according to age and gender. After, we will explore the associations between BMI and WC, sedentary behavior, physical activity, physical fitness, nutrition and other CRF (history from birth, clinical family history and blood pressure).

**Methods:** 227 children (7–10 years) from a convenient sample were surveyed. The body weight was measured to the nearest 0.1kg using an electronic scale (Omron BF511T) with the participants wearing light clothing and no shoes. Height was measured without shoes, to the nearest 0.1cm using a stadiometer (Seca 206). Overweight and obesity were determined using BMI, according to age-specific and sex-specific World Health Organization cut-offs. WC was measured at the narrowest point between the lower rib and the iliac crest. After Kolmogorov-Smirnov and Shapiro-Wilk tests, nonparametric techniques were applied to compare results between genders. The associations between age, weight, height and BMI were assessed by Spearman correlation. Statistical significance was established for P value less than .05.

**Results:** Prevalence of overweight and obesity is 24,2% and 18,5%. Gender only represent a discriminatory variable regarding the height (MW-U=.034,  $p \leq .05$ ). Significant correlations were found between weight and WC ( $r_s=.844$ ,  $p \leq .01$ ), as well as between BMI and WC ( $r_s=.853$ ,  $p \leq .01$ ). Moreover, we verified a significant direct variation of WC according to the age ( $r_s=.221$ ,  $p \leq .01$ ).

**Discussion:** We found a high prevalence of overweight and obesity in pediatric ages and a significant direct variation of WC over age. Considering that the prevention of obesity is much easier than her reversion, these preliminary results increase the importance of early multidisciplinary interventions to prevent cardiovascular and metabolic diseases in older ages.

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