Introduction. Obesity in children is epidemic worldwide, and it raises concerns about associated cardiovascular risks. Besides being a tool in the work-up of children with growth disorders, somatic disproportion has also been viewed as a biomarker of cardiovascular risk, which is suggested to be increased in adults with short leg length.

Objectives To evaluate the relationship between body proportions - assessed by the ratio between sitting height and height - and excess body weight - assessed by body mass index (BMI) - in children from a public school in Vila Velha city, Brazil.

Methods A total of 337 children aged 6 to 13 years were evaluated. Weight, height, and sitting height were measured twice and converted to standard deviation scores (SDS) adjusted for age and sex. Statistics were carried out using Pearson correlations, linear regressions and t-tests. Results. The overall prevalence of overweight and obesity was 14% and 11%, respectively. There was a positive and linear correlation between BMI SDS and sitting height SDS, either adjusted (p= 0.01) or not adjusted (p 0.001) for height (R2= 0.02). Children with overweight or obesity presented SH, on average, 0.9 SDS superior to normal weight children (p 0.001). Conclusion. We provided evidence that measurements of sitting height are strongly influenced by body weight in children. Further studies are required to define if this relationship represents a simple measurement bias due to increased buttocks fat or if there are other mechanisms linking both anthropometric parameters to increased cardiovascular risk.