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ASSOCIATION OF BIRTH WEIGHT WITH ADIPOSITY AND BLOOD PRESSURE IN CHILDHOOD

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Background: Several studies suggested that low birth weight is a cardiovascular risk factor. However, there is scarce information regarding the effects of birth weight on longitudinal trends on anthropometric parameters and blood pressure in childhood.

Objectives: To evaluate the association of birth weight with adiposity and blood pressure in school children.

Methods: Cohort study was conducted in Passo Fundo, RS, in children of teenage and young adult mothers, evaluated after birth and aged 7 to 9 years through questionnaires and anthropometric measures taken in 2001 and 2008-10. Weight, height and circumferences of neck, waist and hip were measured. Blood pressure was verified using automated equipment (OMRON, model CP-705) and calculated the averages of systolic and diastolic blood pressure in three measurements, discarded the first. Children were classified according to birth weight in under 2500 grams, between 2500 and 3499 grams and 3500 grams and over, as well as the appropriate weight for gestational age in small (SGA), appropriate (AGA) and large (GIG). The analysis of the birth weight, anthropometric characteristics and blood pressure was performed by ANOVA, and linear regression was used to test the associations adjusting for confounding factors.

Results: In the follow-up visit 451, out of 664 children, were re-examined, 52.5% boys. At the baseline 3.4% were SGA and 12% GIG, born to mothers with 12-15 (6%), 16-19 years (50%) and 20-24 years (54%). The average birth weight did not differ between groups based on ethnicity, maternal age and sex. The circumference of the neck, waist and hip in the follow-up visit showed a strong correlation with each other and were significantly associated with birth weight ($P < 0.001$) and the adequacy of birth weight for gestational age. In the multivariate analysis, birth weight was positively associated with adiposity measures, independently of gender, gestational age, current age, and obesity.

Conclusions: Birth weight is associated with measures of adiposity in school age children.