

# Low weight at birth can be an indicative in childhood as a marker of metabolic syndrome and hypertension

## Abstract

As low weight at birth can be a marker for future risk factors for cardiovascular diseases, public school children who had this positive history were studied S to nutritional status, lipids, glucose, uric acid, blood pressure and socioeconomic conditions. The main interest of the investigation is to find statistically significant correlations among data collected from young public school children from a city outside of the capital of Sao Paulo in Brazil. Results: risk factors for metabolic syndrome presented higher impact considering blood pressure and socioeconomic conditions, calling for better prenatal care and surveillance plus intervention in the low weight at birth children.

**Keywords:** low weight at birth, cardiovascular, risk factors, blood pressure, socioeconomic status, cholesterol, glucose and lifestyle

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## Background and aims

Low weight at birth has been described as a marker for various future health effects complications, such as risk factors for cardiovascular disease.<sup>1-4</sup>

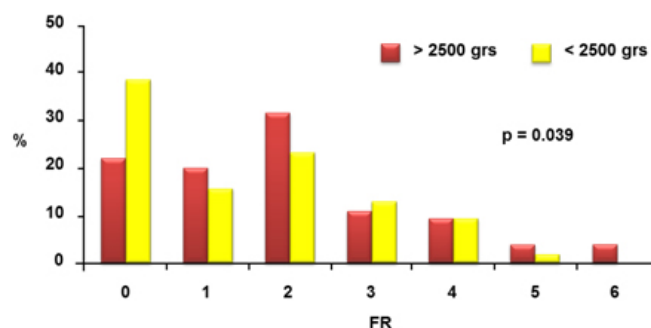
Evaluation of risk factors for metabolic syndrome in public schools children that were low weight at birth and plan to promote its prevention in childhood and adolescence.

## Methods

A total of 450 public schools students who had presented a low weight at birth, under 2.5 Kg, ages 02 to 19 years were studied: nutritional status (Waterloo till 6 years and by Body Mass Index for the older group), Total Cholesterol, HDL Cholesterol, LDL Cholesterol and Triglycerides, glucose, uric acid, blood pressure and socioeconomic conditions. Statistics: Chi-squared and Fisher test.

## Results

Nutritional status correlated with a 2.75 probability of overweight in the group that was not low weight at birth. Total cholesterol divided in tertiles did not show differences, neither did LDL or HDL fractions or triglycerides. Blood pressure presented association by itself with the number of risk factors as diastolic ( $p < 0.039$ ) in Figure 1, and as systolic there was a trend with the same association ( $p < 0.067$ ). These results point to susceptibility in the low weight at the birth group for peripheral vascular resistance to environmental changes. The socioeconomic status difference was significant, higher prevalence in the less than threefold minimum wage classification ( $p < 0.0030$ ).



**Figure 1** Diastolic blood pressure and number of risk factors.

## Conclusion

As already better documented with adults, risk factors for metabolic syndrome presented higher impact considering blood pressure and socioeconomic conditions. The established association of this syndrome with insulin resistance and even with future diabetes is a signalization for precaution of cardiovascular disease.

These data lead to the conclusion that prematernal care must be improved and blood pressure plus all risk factors be taken care of periodically and orientation for intervention applied whenever necessary in low weight at birth children and adolescents.

## Acknowledgments

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## Conflicts of interest

No conflict of interest.

## References

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