

## Hours of sleep and childhood obesity in school-aged children: preliminary results of the project “Por Mais Saúde”

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### ABSTRACT

**BACKGROUND:** Childhood obesity is an important public health problem. In Portugal, 17.3% of children under 10 years old are overweight and 7.7% are obese<sup>[1]</sup>. The lack of balance between what is eaten and consumed appears as the main cause of obesity, however, literature supports a complex etiology, admitting other several risk factors such as sleep<sup>[2]</sup>. According to National Sleep Foundation (NSF) guidelines, school-aged children (6-12 years) should sleep 9 to 11 hours a day for a healthy physical, emotional and cognitive development <sup>[3]</sup>. Nevertheless, over the last few years it seems to exist a growing trend of decreasing the number of hours of sleep, particularly in this age group<sup>[4,5]</sup>. **OBJECTIVE:** Taking these facts into account, this study, integrated in a broader project about children’s health status and promotion named “Por Mais Saúde”, aimed at analyzing the association between sleep duration and the nutritional status of school-age children. **METHODS:** To do that, it was performed a cross-sectional and quantitative analysis, involving 30 schools from the Oporto district of Portugal, from which participated 909 children (51% male and 49% female) with a mean age of 9.15 years old. Through a self-reported questionnaire, were recorded several variables, such as age, gender and number of hours of sleep. Height was measured using a portable stadiometer (Seca®) and weight and body composition were measured through a Tanita Segmental Body Composition BC- 601®. **RESULTS:** Z-score values of Body Mass Index (BMI) show that 24% of the children were overweight and 15.9% were obese. Moreover, the mean of daily sleep duration was 9.68 hours and the mean of the BMI z-score was 0.78, with a statistically significant ( $p < 0.01$ ) low negative correlation ( $r = -0.15$ ) between sleep duration and the BMI z-score. Data was additionally analyzed according to the gender and the same pattern was observed. Therefore, results suggest a negative association between sleep duration

and overweight / obesity, which may be related to the inversely proportional need between food intake and hours of sleep which agree with literature, that presents sleep duration as a risk factor.

**CONCLUSIONS:** Our results reinforce the idea that childhood obesity prevention needs an integral approach that includes a sleep evaluation and the development of interventions that promote sleep quantity. Moreover, studies should also address to analyze sleep quality, which might also be an important issue to include in intervention strategies.

**Keywords:** *children, sleep, overweight, obesity, school-aged.*

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