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PhD in Biomedical Sciences

Research Area: Childhood obesity

Title: Identification and quantification of nutritional and physical activity risk factors for overweight / obesity in a child population

Child overweight / obesity is currently considered one of the most serious global public health challenges of this century. According to the WHO Global Health Observatory, in 2016, on average, two out of ten children and adolescents aged 5 to 19 years were overweight. In Portugal, the prevalence values of overweight / obesity reported by the WHO European Childhood Obesity Surveillance Initiative (COSI / WHO) in 2015 according to IOTF criteria are among the highest in the European Union: by age 8, 25.0% of children were already overweight while 6.9% were obese.

A seemingly important aspect of increasing overweight / obesity in children and adolescents is often associated with little or no physical activity, unbalanced eating and sleep changes. These factors are thought to contribute strongly to chronic energy disharmony between assimilated and expended calories, resulting in an excessive accumulation of fat which, although in some situations are reversible, has direct consequences on health.

In this sense, the main objective of my thesis is to explore various statistical methods in order to identify patterns of diet and physical activity associated with overweight and metabolic disorders (e.g. dyslipidemia and insulin resistance) in a child population. This assessment will be adjusted for personal background. (e.g. gestation time, type of delivery, and birth biometrics) and family (e.g. BMI of parents and siblings). Other objective will be the statistical validation of models containing the previously identified risk factors, for early clinical screening of children at risk of developing overweight / obesity, concomitantly or not with metabolic changes. This will allow intervention, preventing associated pathologies, as well as outlining strategies for overweight or obese children adopt healthy eating and exercise habits.

Keywords: Obesity, overweight, children, nutrition

**Publications**

<https://doi.org/10.24873/j.rpemd.2018.11.239>

<https://doi.org/10.1007/s12020-018-1587-3>

<https://doi.org/10.1371/journal.pone.0197922>

<https://doi.org/10.1016/j.archoralbio.2018.08.016>

<https://doi.org/10.1590/1807-3107bor-2019.vol33.0081>

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