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&  
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**Alteration in melatonin profile associated to metabolic impairment in childhood obesity**Martin-Carbonell V<sup>1</sup>, Gombert M<sup>1</sup>, Carrasco-Luna J<sup>1,3</sup>, Pin Arboleda<sup>2</sup> and Codoñer Franch P<sup>1,4</sup><sup>1</sup>Universidad de Valencia, Spain<sup>2</sup>Quironsalud Hospital, Valencia, Spain<sup>3</sup>Universidad Católica Valencia, Spain<sup>4</sup>Hospital Universitario Dr. Peset de Valencia, Spain

**Introduction:** Circadian rhythms are the changes in biological processes occurring on a daily base, among them, the reactions involved in the metabolic homeostasis. Melatonin is the main circadian hormone, with increased levels at night. Impairment in circadian rhythms is evidenced by altered melatonin expression, and in adult age, this condition is associated to metabolic dysregulations.

**Methods:** One group of obese children and a control group were constituted based on their BMI percentile for age and sex. The variations of the main circadian hormone, melatonin are assessed in saliva by immunoassay. Blood sample is collected for basal biochemistry, complemented with leptin and omentin quantification by immunoassay with Luminex technology. Life habits are assessed by self-reported questionnaires. Preliminary results on 14 patients (7 obese and 7 controls).

**Results:** The children from the obese group displayed poorer metabolic characteristic and increased inflammation markers: C-reactive protein, Gamma-glutamyl transferase, albumin are altered. In the control group, melatonin in saliva increased during the evening (+20.46±16.1), whereas in the obese group, the melatonin profile was altered and globally decreased (-3.05±28.4).

**Conclusion:** In conclusion obesity seems to be associated with circadian rhythm impairment even at a young age. The continuation of this study, in association with other studies investigating circadian rhythms and health during childhood will facilitate the development of life habits prevention campaigns, adapted to the children physiology and development.

**Biography**

Martin-Carbonell V is currently pursuing her PhD in Physiology from University of Valencia. She has completed University degree of Nutrition from Valencia University and Master degree in Pediatric Nutrition from Granada University. She has received best abstract in the International Health Days, Granada 2017. Title "Libro de Resúmenes-Book of abstracts I Jornadas Internacionales de Actualización del Conocimiento Ciencias de la Salud" ISBN: 978-84-15450-26-9. She got her abstract certificate for Shorter sleep associated with higher energy intake-Preobe study in 9TM Biannual Early nutrition Project Meeting, Granada, May 2016. She has volunteered in the 42<sup>nd</sup> Annual Conference of the International Society for Pediatric and Adolescent Diabetes, Valencia in 2016.

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