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The impact of overweight and obesity on adolescence: Consequences on metabolic biomarkers

n the last decades of the 20th century obesity has appeared as a public health problem. The recent epidemics of overweight and obesity across the world have challenged researchers to investigate the underlying pathophysiologic mechanisms involved in these nutritional disorders that can involve severe metabolic and inflammatory alterations. The causes for obesity include the imbalance between high energy intake and low energy expenditure together with genetic factors, as well as the interactions between them. Thus, both genetic factors and lifestyle contribute significantly to the susceptibility to develop metabolic disorders, leading to an impairment of the immune system function, which is linked to an important risk to suffer from inflammation related pathologies, such as type 2 diabetes, coronary artery disease, atherosclerosis, hypertension, and very frequently infections and allergies. In addition, there are several confounder factors, such as age, gender, eating behaviour, physical activity, sedentariness and sleep that are essential to take into account in order to implement successful treatments and achieve the best results. The increase in childhood obesity has been reported to lead to adult associated comorbidities that give rise to elevated healthcare costs. Therefore, treating obesity in young people is critical to prevent adult obesity-related complications. However, as adolescence is characterized by important changes in body size and composition, it is important to highlight that weight management treatments for obese adolescents should aim to ensure adequate growth and development, by reducing excessive fat mass accumulation, avoiding loss of lean body mass, improving well-being and self-esteem and preventing cyclical weight regain. During treatments a follow-up of biomarkers evaluation is essential to assess changes in the metabolism. Among them, very recently during the last decade, the gut microbiota composition has been shown up as a potential partaker in the development of obesity and its association with the subsequent insulin resistance. In summary, obesity prevention in early ages and the evaluation of biomarkers acquire a great interest to promote life quality through preventing inflammatory mechanisms along life.

Biography

Ascensión Marcos got her PhD at the School of Pharmacy at the Complutense University in Madrid, Spain (UCM) in 1982 and Master in Clinical Analysis by UCM in 1986 and got a grant at the Spanish National Research Council (CSIC), and she was the Head of the Institute of Nutrition and Food Technology at the Mixed Center CSIC-UCM (1998-2002). She is the leader of the Immunonutrition Research Group at the Department of Metabolism and Nutrition at CSIC since 1987. She achieved the highest category at CSIC as a Research Professor in 2006 and her scientific consolidation has been recognized for 5 six-year terms since 1985. She is a pioneer in the field of Immunonutrition in Spain, Founder and President of the International Forum of Immunonutrition for Education and Research (i-FINER) since 2007. In 2014 the i-FINER group has developed the International Society for Immunonutrition (ISIN), she being also the President.

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