

Serum levels of appetite-controlling hormones after a multidisciplinary obesity treatment programme in adolescents Preliminary results from the EVASYON study

by

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Objective: Obesity in childhood and adolescence has become an ever-increasing public health problem. The aim of the current study was to evaluate the effects of a multidisciplinary obesity treatment programme, called EVASYON, on body mass index (BMI) and gut appetite-controlling hormones in adolescents with overweight or obesity.

Methods: Twenty-five adolescents (12 girls and 13 boys; BMI mean 31.37 ± 4.43 ; range, 25.01-40.43; age mean 14.08 ± 1.11 ; range 12.0-16.0) from Madrid were classified within the overweight or obesity ranges according to the International Obesity Task Force BMI criteria, and were voluntarily involved in a longitudinal multidisciplinary intervention study based on calorie-restricted diet (10-40%), increased physical activity (calorie expenditure = 15-23 kcal/kg body weight/week), psychological therapy and nutritional education for 13 months. Weight and height were measured and BMI was calculated, before and after intervention. Serum levels of leptin, peptide YY (PYY) and insulin were also measured by Luminex-100 IS (Integrated System: Luminex Corporation, Austin, TX, USA) using the human gut hormone multiplex immunoassay kit, before and after intervention.

Results and conclusions: No changes in serum peptide YY (PYY) and insulin levels were observed after intervention. On the contrary, a decrease ($p < 0.001$) in BMI mean values (-6.8%) and serum leptin levels (-48.4%) were observed after the 13 month intervention programme. These preliminary results point out to a prominent BMI reduction after the intervention programme, suggesting the potential usefulness of implementing the EVASYON intervention programme for weight management in adolescents with overweight or obesity. Moreover, since serum leptin has been identified as a sensitive marker of body composition and weight reduction in obese children, the lower leptin concentrations after the intervention, confirm the success of the EVASYON programme.

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