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Abstracts

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Results: The risk allele (G) and the homozygous GG genotype were present in 57.6% and 36.4% of obese individuals and 54% and 29% of eutrophic individuals. Although the chi-square test was not significant for the distribution of the DRD2 polymorphism rs6277 genotypes among eutrophic and obese subjects, the Z-score for proportions of two populations was significant (0.00001; CI = 0, 05), indicating a tendency of the homozygous genotype for the risk allele (GG) to focus on the sample of the obese population.

The comparison of the allelic and genotypic distribution carried out between the Metabolically Sick (OMD) and Obese Metabolically Healthy (WHO) subgroups were significantly different for the distribution of the genotypes ($X^2 = 5.860$ and $p = 0.053$), with a predominance of the GG genotype among the OMD. The Odds Ratio was estimated for two or more cardiovascular factors between the groups, which resulted in an OR of 2.65 (CI = 1.016 to 3.682; $p = 0.031$) when the genotypes contained the risk allele.

Conclusion: The allelic and genotypic distribution proved to be significantly different from the distribution of the genotypes, with a predominance of GG among the metabolically ill obese. The A allele can be correlated with a protective effect in eutrophic individuals, despite its variation.

Keywords: pediatric obesity; DRD2 gene; polymorphisms; genotyping.

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A Comprehensive, Multidisciplinary, Personalized, Lifestyle Intervention Program is Associated with Increased Leukocyte Telomere Length in Children and Adolescents with Overweight and Obesity

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Background/Aim: Leukocyte telomere length (LTL) is a robust marker of biological aging and is associated with obesity and cardiometabolic risk factors even in childhood and adolescence. The aim of the present study was to assess the effect of a structured, comprehensive, multidisciplinary, personalized, lifestyle intervention program of healthy diet and physical exercise on LTL in children and adolescents with overweight and obese.

Materials and Methods: Five hundred (n=508) children and adolescents (239 males, 269 females; 282 prepubertal, 226 pubertal), aged 10.14 ± 0.13 years were recruited to participate in the study. Participants were classified as obese (n=267, 52.6%), overweight (n=174, 34.2%) or of normal BMI (n=67, 13.2%) according to the IOTF cut-off points and were studied prospectively for one year. All subjects followed a structured, comprehensive, multidisciplinary, personalized, lifestyle intervention program of healthy

diet and physical exercise, with frequent clinical and laboratory evaluation. LTL was measured using quantitative real-time PCR and telomeric restriction fragments (TRF) at the beginning of the study and following 12 months of intervention. In addition, success of the intervention was assessed by employing two criteria: i) The change (improvement) of IOTF category, and ii) The change of BMI z-score by 0.6. Secondary measures were metabolic and hormonal parameters that are known to change in obesity.

Results: Following 12 months of intervention, there was a significant decrease of BMI z-score (1.72 ± 0.06 ; $P < 0.01$). In 193 subjects (47.42%) the IOTF category improved, while in 175 subjects (42.99%) the BMI z-score decreased by 0.6. In all subjects, LTL increased significantly after 1 year of the lifestyle interventions (LTL_{baseline}: 1.35 ± 0.01 , LTL_{12 months}: 1.41 ± 0.01 , $P < 0.01$), irrespective of gender, pubertal status or BMI. Waist circumference was the best negative predictor of LTL at initial assessment. The implementation of the lifestyle interventions also resulted in a significant improvement in clinical (BMI, BMI z-score and waist to height ratio) and body composition indices of obesity, inflammatory markers, hepatic enzymes, HbA1C, QUICKI index, and lipid profile in all participants.

Conclusion: Our findings suggest that a comprehensive, multidisciplinary, personalized, lifestyle intervention program is associated with increased LTL in children and adolescents with overweight and obesity. Furthermore, the increase in LTL may be associated with a favorable metabolic profile and decreased morbidity later in life.

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Diagnostic accuracy of Tri-Ponderal mass index (kg/m³) for identifying glucose intolerance in obese children and adolescents

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Introduction: The identification of obese patients with increased susceptibility and risk for glucose intolerance and type 2 diabetes requires an oral glucose tolerance test (OGTT). Reference values for Body mass index (BMI) and Tri-Ponderal mass index (TMI) according to age and sex of healthy children in Spain without malnutrition or obesity have recently been published (*). TMI values remain very uniform in both boys and girls from the age of 8 to 18 years, therefore a single cut-off point is optimal to identify overweight (TMI ≥ 13.8 and ≤ 15.2) and obesity (TMI ≥ 15.3).

Objectives: to determine the prevalence of glucose intolerance and Type 2 diabetes in a cohort of obese children and adolescents and to establish the predictive value of the Tri-Ponderal mass index (TMI) and other anthropometric parameters to identify these comorbidities.

Patients and Methods: Cross-sectional study of 239 obese patients (125 males) aged 8 to 18 years (12.5 ± 2.3). 45.9% of which have grade 3 obesity. ROC curves were used to find the best cut-off point for: TMI (kg/m³), BMI (kg/m²), BMI z-score value (zsBMI)