Material and Methods: Data was obtained during two National Surveys on Childhood Obesity, at Évora in 2007 and 2008. Children were classified according to Body Mass Index (BMI) percentile. ''Children's Body Image Scale'' was used to children between 7 and 12 years old and their parents, in order to evaluate both discrepancies between actual and perceived BMI category and children's satisfaction about their body image.
Results: Overall 151 children were evaluated (average age: 7.3 years) 59.6% were female, and 35.2% were overweight/obese. From the 66 children with ages between 7 and 12 years, evaluated regarding their body image, 55 (83%) misjudged their own body image, having the majority (86.3%) underestimated it, fact that was independent of children's sex or BMI. Forty eight (72.7%) showed dissatisfaction with their body size. There was a positive correlation between children's BMI and dissatisfaction (χ^2-square, $P = 0.00001$). When evaluating the parents, we found that 75% underestimated their own children's body image, independently of children's BMI.
Conclusion: Children between 7 and 12 years old that are overweight/obese are conscious about how inadequate their weight is. They show dissatisfaction and wish to decrease their body size. Helping parents recognizing their children's overweight/obesity, could make it easier for them to engage with their children getting a healthier lifestyle and eating behaviour that will ultimately be of great help to prevent eating disorders.

P12

Interaction of apolipoprotein E polymorphism and adiponectin levels with lipid profile in obese children and adolescents – a preliminary study

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Our aim was to evaluate how lipid profile associates with apolipoprotein (apo) E gene polymorphism, adiponectin plasma levels and body-mass index z-score (BMI z-sc) in Portuguese obese children and adolescents. The study was performed in 75 obese children and adolescents [32 males and 43 females; age range between 4 and 16 years (mean=11 years)]. The participants were grouped according to the presence of the apo E alleles 2 or 4 in E2 + ($n = 5$) and E4 + ($n = 12$) carriers respectively, or as E3E3 ($n = 56$). The E2E4 genotypes ($n = 2$) were excluded from this analysis. We further analysed our results in terms of BMI z-sc, by dividing participants in three groups (G1: z-sc<2, $n = 16$; G2: z-sc 2–2.5, $n = 36$; G3: z-sc>2.5, $n = 23$). The lipid profile included the evaluation of triglycerides (TG), total cholesterol (TC), LDL-cholesterol (LDL-C), HDL-cholesterol (HDL-C), Apo A and Apo B serum levels. Compared with E2+ carriers and E3E3 individuals, E4+ carriers presented with significantly higher LDL-C and TC levels and the lowest HDL-C value, and thus a significantly higher TC/HDL-C ratio. Adiponectin correlated inversely and significantly with age, BMI and TG and correlated positively and significantly with HDL-C. Regarding the analysis of BMI z-sc, G3 presented the lowest HDL-C value and the highest TC/HDL-C ratio ($P < 0.05$ for both). In conclusion, our data suggest a more atherogenic lipid profile with increasing BMI z-sc in obese children and adolescents. Moreover, by altering lipid profile, some apo E genotypes are likely to increase the atherogenic risk of obesity, whereas adiponectin seems to play a protective role.

P13

Red blood cell changes in obese children and adolescents – a preliminary study

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Overweight has been associated to a higher oxygen demand to perfuse larger body tissues. The rise in cellular metabolism and haemoglobin turnover may favour reactive oxygen production with the development of an oxidative stress condition within the red blood cells (RBC). Our aim was to evaluate RBC changes and oxidative damage according to the degree of obesity. We studied 54 Portuguese obese children and adolescents (19 males and 35 females; 4–16 years old). The participants were divided according to body-mass index z-score (BMI z-sc) in three groups (G1: z-sc<2, $n = 10$; G2: z-sc 2–2.5, $n = 26$; G3: z-sc >2.5, $n = 18$). We performed a basic haematologic study; membrane bound haemoglobin (MBH) and band three profile - high molecular weight aggregates (HMWAg), monomer and proteolytic fragments (Frag), as markers of RBC damage. When comparing groups according to BMI z-sc, no differences were observed in the haematological study, band three profile and MBH. However, G3 (with the highest z-sc) presented the highest HMWAg and lowest Frag. Considering only those presenting a Tanner stage >1, the haematocrit in G1 was significantly lower than in G3 and a trend to rise in RBC count and haemoglobin was found for groups with increasing BMI z-sc. Our data suggest that accelerated erythropoiesis caused by a higher demand of oxygen may underlie the haematological changes, and be influenced by puberty onset. The alterations in band three profile suggest the existence of a more heterogeneous RBC population, probably due a higher number of young RBCs released in response to a higher erythropoietic stimulus.

P14

CAT –262 C/T gene polymorphism as a risk factor for child obesity

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Introduction: Reactive oxygen species (ROS) are known players in several cardiovascular conditions. Hydrogen Peroxide is one of the ROS that can be relevant in obesity, since it can induce adipogenesis via PPARs. The T allele of the CAT –262 C/T polymorphism on the catalase gene has been associated with a higher transcriptional activity in healthy individuals. However, there are no studies regarding the influence of this polymorphism in obesity.
Aim: To determine the influence of CAT –262 C/T polymorphism in child obesity.
Population and Methods: Population – The population consisted of 54 obese children (O), with an average age of 11.7 ± 2.4 years. The control population consisted of 33 healthy children (C) with an average age of 11.5 ± 1.0 years.
Methods: The CAT –262 C/T gene polymorphism was determined by PCR-RFLP; anthropometric parameters, which were used to calculate the BMI Z-scores, were assessed by internationally

