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1: [Br J Nutr.](#) 2008 Aug 28:1-5. [Epub ahead of print]

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Serum leptin levels in overweight children and adolescents.

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Leptin is an adipocyte-secreted hormone which plays a key role in energy homeostasis. Our aim was to determine the relationship between serum leptin and clinical and biochemical features in overweight children and adolescents. Overweight children and adolescents followed in this Unit with serum leptin ascertained were included. Clinical, biochemical and abdominal ultrasound data were analysed. Statistical analysis was performed by t test, chi2, Pearson's correlation and linear regression. One outlier of serum leptin was excluded to perform correlation and regression. Serum leptin was determined in 357 patients. At the first visit, the mean age was 9.5 (sd 3.2) years and mean BMI z-score was 1.72 (sd 1.34) (girls 1.71 (sd 1.16); boys 1.72 (sd 1.11)). Serum leptin levels were significantly related to: sex (mean: girls 48.0 ng/ml, boys 34.4 ng/ml; P = 0.003); Tanner stage (mean: I-II 37.0 ng/ml, III-V 45.2 ng/ml; P = 0.035); systolic blood pressure (mean: normal 41.3 ng/ml, high 44.0 ng/ml; P = 0.009); BMI z-score (r 0.136; P = 0.010); C-peptide (r 0.17; P = 0.002); insulin (r 0.34; P < 0.001); homeostasis model assessment of insulin resistance (HOMA-IR) (r 0.25; P < 0.001) and aspartate aminotransferase (r - 0.12; P = 0.023). In the multivariate analysis (with leptin as the dependent variable and sex, Tanner stage, BMI z-score, systolic blood pressure, aspartate aminotransferase, C-peptide, insulin and HOMA-IR as independent variables), sex and BMI were determinant factors. The present study in overweight children and adolescents showed that being female and greater BMI were significantly and independently associated with increased serum leptin. In this large cohort other associations with leptin described in the literature can be discharged.

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