

## Texas Obesity Research Center

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### Relationship Between Dyslipidemia and Obesity in Children

AVILA-RODRÍGUEZ EH<sup>1</sup>, AVILA-RODRÍGUEZ A<sup>1</sup>, ARAUJO-CONTRERAS JM<sup>1</sup>, CAMACHO-LUIS A<sup>1</sup>, TELLEZ-VALENCIA A<sup>1</sup>, MIER N<sup>2</sup>, RODRÍGUEZ-ORTEGA J<sup>1</sup>, RIVAS-AVILA E<sup>1</sup>.

<sup>1</sup>Centro de Investigación en Alimentos y Nutrición, Facultad de Medicina y Nutrición, Universidad Juárez del Estado de Durango; Durango, Mex, <sup>2</sup> Texas A&M School of Rural Public Health; College Station, Texas

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#### ABSTRACT

**Background:** Dyslipidemia is a general term that refers to abnormal levels of lipids. **Purpose:** The purpose of this research was to determine the relationship among the nutritional state and the percentage of body fat with the levels of lipids in 10 to 13 year old children living in the city of Durango, Mexico. **Methods:** The study was carried out with 823 elementary school children. The selection was done at random. The biochemical studies were done in a subpopulation of 425 children. Each child underwent the following studies: sociodemographic, anthropometric and corporal composition. After fasting overnight, a venous blood sample was obtained. Lipid profile including cholesterol, LDL-C, HDL-C and triglycerides were determined in serum. In order to classify lipid levels we used the reference values suggested by the National Cholesterol Education Program (NCEP). The desirable values were: TC <170 mg/dl, HDL -C >45 mg/dl, LDL -C <110 mg/dl and TG <100 mg/dl. The nutritional state was calculated according the age and sex specific BMI values developed by the CDC. Fat mass content was determined using a bioelectrical impedance analyzer (Tanita TBF-215). Statistical analyses were performed using SPSS14. **Results:** This study included 428 (52%) boys and 395 (48%) girls. Mean age was 11.5 years. The prevalence of overweight and obesity was 36.7. In the population studied we found abnormal levels of lipids in: cholesterol (41.8%), HDL-C (55.8%), LDL-C (32.3%) and TG (38.5%). The girls showed lower levels of HDL-C than the boys ( $p < 0.05$ ), the other lipoproteins were not statistically different ( $p > 0.05$ ). The lipids levels (TC, LDL-C and TG) were higher in those with a BMI greater than 85 th percentile of BMI, and HDL-C was lower. In those with a body fat greater than 20%, all the lipids levels resulted abnormal. **Conclusions:** A high risk of dyslipidemia was associated with gender, BMI and body fat.

KEY WORDS: Children, Dyslipidemia, Obesity, Body Fat