

Relationship between Dyslipidemia and Physical Activity in Mexican Children

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ABSTRACT

Purpose: The purpose of this research was to determine the relationship between physical activity and lipid levels in children 10 to 13 years of age living in Durango, Mexico. **Methods:** Cross-sectional study performed in 823 children (n=428, 52% boys; n=395, 48% girls) enrolled in nine elementary schools. Physical activity was monitored in two ways: a) a questionnaire was used to obtain information about physical activity done in the previous week, and b) steps were counted for 24 hours with a Yamax SW-200 pedometer. A subsample of 425 children provided serum samples to determine total-cholesterol (TC), HDL-cholesterol (HDL-C), LDL-cholesterol (LDL-C) and triglycerides (TG). **Results:** Over half (52.9%) participated in a sports team inside or outside of school; most (90.9%) reported one sport, with few (9.1%) reporting 2-3 sports. The most commonly reported vigorous PA was: soccer (33%), basketball (24%), jogging (8-12 km/h) (23%), volleyball (17%) and others (3%). Those who participated in a sports team had higher levels of HDL-C and lower TG. Participation in 2 or 3 sports reduced TG levels just over 20%. Boys who reported 30 minutes or more per day of vigorous activity had lower triglyceride levels than those who reported less ($p = 0.020$). Boys accumulated significantly more steps per day ($m=17,030 \pm 6444$) than girls ($m=12,991 \pm 5316$; $p < 0.001$). The prevalence of lipid abnormalities was higher in children with fewer steps. Hypercholesterolemia was lower in boys with the highest number of steps ($p = 0.044$), in girls the differences were not statistically significant. Hypertriglyceridemia in both sexes was lower in the group with the highest number of steps ($p < 0.05$). **Conclusions:** In this group of Mexican children, increased physical exercise improved lipid levels, which implies the importance of implementing programs to promote physical activity at early age.

KEY WORDS: Children, Dyslipidemia, Physical Activity