

# LEAD CONCENTRATIONS IN CANDIES FREQUENTLY CONSUMED BY CHILDREN LIVING IN MEXICO CITY

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**Background and aims:** For more than a decade Mexican candies have been found to have lead concentrations higher than the FDA recommendation of 0.1 ppm. A study that assesses the type, quantity, and frequency of candy that children eat has not been previously carried out in Mexico. This study aims to identify what candy brands are consumed by children, to measure the lead concentrations in the candies that children consume more frequently and to evaluate if the recent ingestion of these candies has an association with their blood lead concentrations.

**Methods:** We conducted a cross-sectional study nested in a cohort of children living in Mexico City. From June 2007 to July 2008 a recall questionnaire for recent candy ingestion was administered to 181 children between 1 and 6 years of age and their mothers. Children had a capillary blood lead test at the time of the interview. The most frequently consumed candy brands were analyzed for their lead concentrations.

**Results:** Children reported 171 different candy brands. We analyzed 137 samples of the top 30 brands reported. Three brands exceeded a lead concentration of 0.1 ppm and 9 candy samples exceeded 6 µg of lead (FDA's provisional total tolerable intake level for lead by small children of per day). The mean blood lead concentration was 4.96 µg/dL. After adjusting for sex and age, we found an association between blood lead concentrations and candy ingestion ( $\beta=0.025$ ,  $p$ -value 0.025, 95% C.I. 0.003, 0.047).

**Conclusions:** Eating candies with lead concentrations above 0.1 ppm may have an association with an increase of blood lead concentrations in children. The results of this study suggest that Mexican health authorities should further supervise the quality control of candy production and advice the general population with respect to candy intake by small children.