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A CURRENT EXAMINATION OF DIETARY INTAKES OF FIBER, CALCIUM, IRON, AND ZINC AND THEIR RELATIONSHIP TO BLOOD LEAD LEVELS IN U.S. CHILDREN AGED 1-5 YEARS

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by

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The effect of lead on the health and well-being of those exposed has been well documented and many efforts have been made to reduce exposure of lead to the United States population. Despite these efforts, many studies have documented cognitive impairments and behavioral problems in children with even low levels of lead in their blood. Previous studies have suggested that a proper diet may have a role in the prevention of elevated blood lead levels in children. The objective of this study was to determine if there was an inverse correlation of blood lead levels (BLL) in children to their dietary intakes of fiber, calcium, iron, and zinc considering low levels of lead exposure. This study examined 1019 children in the National Health and Nutrition Examination Survey (NHANES) conducted from 2005-2006. Data were analyzed using Spearman's rank correlations to correlate continuous variables to BLL in children and independent samples t-tests were used to compare mean blood lead levels of categorical variables. Results indicate that BLL in children is significantly correlated with and weight, recumbent length/standing height, dietary fiber intake and continine, a marker of cigarette smoke exposure. BLL was not significantly correlated with calcium, iron, zinc, or vitamin C. A significant difference was found in the mean BLL of children who took supplements, lived in smoking homes, as well as those who lived in homes built before 1978. Overall, this study shows that children living in homes built before 1978 remain at

greater risk for lead exposure, and adequate dietary fiber intake may provide benefits to children who are exposed to lead.