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The Impact of environmental lead poisoning on iron and haemoglobin status in Kenya

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Lead is an environmental and public health hazard of global proportions with leaded petrol causing more widespread human exposure to lead than any other single source. This is particularly the case in Kenya, where the major transport mode is by motor vehicles. The lead particles settle on soil, water, vegetation and food. Even with the well-established health implications of lead poisoning, the global dimensions of lead pollution remain poorly understood due to persisting lack of information particularly in developing countries such as Kenya. This study, therefore, undertook to determine the impact of lead poisoning on iron and haemoglobin status in Kenya. The study group was divided into classes depending on area of residence for the past 5 years (exposure to motor vehicle pollution). Both maternal and cord blood samples were analyzed for lead, iron and haeme content. The subjects were also checked for blood pressure (both systolic and diastolic) and birth weight. There was a significant negative correlation ($r=0.99$) between maternal blood lead concentration and haemoglobin concentration. Similarly, there was a significant negative correlation ($r=0.80$) between maternal blood lead concentration and maternal blood iron concentration. However, there was no significant correlation between cord blood lead concentration and cord blood iron concentration, although a significant correlation ($r=0.99$) between cord blood lead concentration and haemo-globin levels existed. In conclusion, there appears to be a significant correlation between lead concentration in human blood and proximity to traffic volume. Concomitantly, cases of anemia were also predominant in areas with high traffic volume. Blood lead concentration in all these areas were higher than the WHO recommendation of $10\mu\text{g}/\text{dl}$ of blood.

Dietary and health characteristics of rural Korean farmer families with patients

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Recent WTO and FTA led agricultural globalization has brought crisis to already impoverished Korean farmers. This study was proposed to assist in comparing health and dietary characteristics of farmer families with chronic disease 'patients' to farmer families non-chronic disease patients. For the study, 1870 families were selected from 9 rural Korean provinces. Trained evaluators interviewed farmer housewives to collect demographic, health behavior, and dietary relative information about family members. Statistical analyses were performed using SAS (ver 8.1). Chi-square tests and General Linear Models were used. In general, 'patient' family members were older than 'non-patient' family members. For 'patient' families, mean age was 70.4 for husbands and 64.3 for wives. For 'non-patient' families, mean age was 64.2 for husbands and 57.3 for wives. Therefore we analyzed data after stratifying subjects by age 65. 'Patient' families snacked less and "dined out" less than 'non-patient' families. However, they consumed cookies more frequently, and milk and fruits less frequently, when compared to 'non-patient' families. There were no significant differences in nutrient supplementation, food taboos, and/or instant food intake frequencies between 'patient' families and 'non-patient' families. 'Patient' families made less homemade traditional fermented food (kimchi) than 'non-patient' families. Sixty-two percent of 'patient' family members complained about health problems such as shoulder stiffness, lumbago, numb limbs, dizziness, nocturia, breathlessness, sleeplessness, and abdominal fullness, whereas 52% of 'non-patient' family members complained about health problems. Husband cigarette smoking was not significantly different among groups. However, smoking amongst wives was significantly higher in 'patient' families. Alcohol consumption was also higher in 'patient' families. In summary, it was determined that rural 'patient' families had poorer dietary behavior and poorer health in general, when compared to 'non-patient' families, and accordingly, diverse community-level health and nutrition support is suggested to solve farmers' health problems and to improve their quality of life.