Abstract

Objective. To assess the extent of exposure for Volatile Organic Compounds (VOCs) among nonoccupationally exposed commuters in Mexico City. Material and Methods. Blood concentrations of benzene, toluene, ethylbenzene, m- /p-xylene, o-xylene and methyl tert-butyl ether were determined on samples collected from participants after the morning commute. Results. Median blood concentrations of benzene (0.11 mg/l), ethylbenzene (0.081 mg/l), m-/p-xylene (0.32 mg/l) and toluene (0.56 mg/l) in the Mexico City participants were all approximately two times higher than in a nonsmoking subset of the Third National Health and Nutrition Examination Survey population of the United States. On the other hand, median VOC blood levels were similar to medians observed in other studies involving commuters in specific U.S. cities, despite the fact that only half the Mexico City study participants commuted by personal vehicles compared with all U.S. commuters. Conclusions. These results reflect the extent of the air pollution problem in Mexico City. The surrounding topography exacerbates the problems caused by heavy vehicular traffic, poor emission-control devices on older vehicles, and poor maintenance practices. Elevated levels of gasoline components in the blood of nonoccupationally exposed commuters emphasize the need for shipregulatory initiatives and mass-transit options to reduce hydrocarbon emissions and thus reduce the risk for nonoccupational exposure for the residents of Mexico City. The English version of this paper is available too at: http://www.insp.mx/salud/index.htm

Keywords

benzene; blood benzene levels; volatile organic compounds; commuters; Mexico