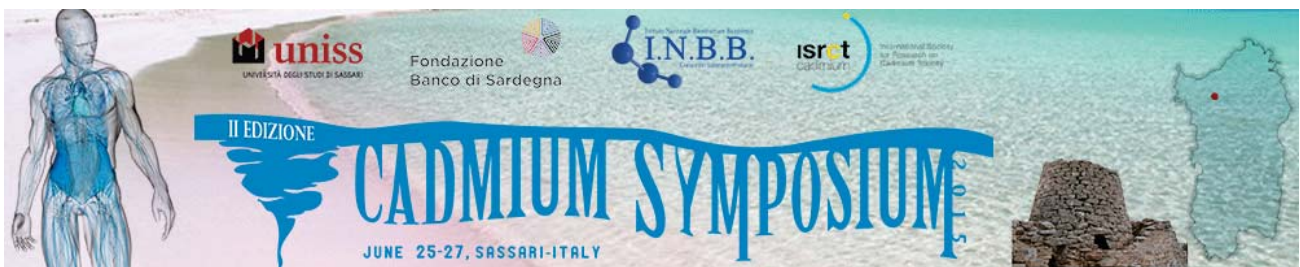


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## P-1 \_ SOURCES OF CADMIUM EXPOSURE IN AN ITALIAN POPULATION: A CROSS-SECTIONAL STUDY

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Main sources of Cadmium (Cd) exposure in the human are food and cigarette smoking as, but also outdoor and indoor air pollution can be important, mainly from industrial emissions, fossil fuel combustion and solid waste incineration. The aim of this study was to assess the influence of outdoor air pollution on serum Cd levels in fifty residents randomly selected from the municipal population of Modena, Northern Italy. We geocoded the current residence of these subjects and modeled their outdoor ambient air concentration of particulate matter  $\leq 10\mu\text{m}$  (PM<sub>10</sub>), with the CALifornia LINE Source Dispersion Model version 4 (CALINE-4), as a proxy of environmental air Cd. Information on smoking habits and Cd dietary intake were also collected, to assess these two additional

sources of exposure. We used both crude and multivariate linear regression models to determine the influence of outdoor PM<sub>10</sub> levels, smoking and dietary Cd intake on serum Cd. Median values (25th–75th) for serum and dietary Cd were 40.85 ng/l (30.05–53.50) and 13.36  $\mu\text{g}/\text{die}$  (10.45–16.63). Crude  $\beta$ -coefficients were 0.617 (95% CI -0.194–1.428, P=0.133), 0.026 (-0.827–0.829, P=0.952) and 6.962 (-0.022–13.945, P=0.051) for PM<sub>10</sub>, diet and smoking, respectively. Corresponding adjusted values were 0.463 (-0.365–1.292, P=0.266), -0.036 (-0.866–0.793, P=0.930) and 6.057 (-1.175–13.289, P=0.099), respectively. In our population, the most important factor influencing Cd serum content thus appears to be cigarette smoking, followed by outdoor air pollution and lastly by diet.