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

Filippini Tommaso¹, Cherubini Andrea², Greco Salvatore², Maffeis Giuseppe², Malagoli Carlotta¹, Bottecchi Ilaria¹, Malavolti Marcella¹, Sieri Sabina³, Krogh Vittorio³, Vescovi Luciano⁴, Modenesi Marina⁴, Castiglia Paolo⁵, Michalke Bernard⁶, Vinceti Marco¹

¹*Environmental, Genetic and Nutritional Epidemiology Research Center (CREAGEN), Department of Diagnostic, Clinical and Public Health Medicine, University of Modena and Reggio Emilia, Reggio Emilia, Italy*

²*Italy TerrAria srl, Milan, Italy*

³*Epidemiology and Prevention Unit, Fondazione IRCCS Istituto Nazionale dei Tumori Milan, Italy*

⁴*IREN, Reggio Emilia and Piacenza, Italy*

⁵*Department of Biomedical Sciences, Hygiene and Preventive Medicine Unit, University of Sassari – AOU Sassari, Sassari, Italy*

⁶*Research Unit Analytical BioGeoChemistry, Helmholtz Zentrum München – German Research Center for Environmental Health GmbH, Munich, Germany*

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 $\leq 10\mu\text{m}$ (PM10), 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 PM10 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 β -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 PM10, 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.