

BIOMBIENT.ES: ONGOING HUMAN BIOMONITORING OF THE SPANISH POPULATION

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Background and Aims: BIOAMBIENT.ES Is the first Human Biomonitoring study made in Spain at national level including Canary Islands and the autonomous African province of Ceuta. The study is carried out under the responsibility of the National Spanish Institute of Health, Carlos III, and funded by the Ministry of Environment.

Methods: The study involved 1936 voluntaries, from 18 to 67 years old, using a complex design intended to reflect the Spanish active population structure by sex, economic activity sector and region. Recruitment campaign, started in March 2009 finished in July 2010, included four sampling periods in order to cover for season variability. Urine, blood, serum and scalp hair were analyzed for persistent organic pollutants, cotinine and heavy metals and followed up by epidemiological questionnaires of living style and diet.

Results: Analysis are not finished. The first results show: Geometric mean (GM) and 95% confidence intervals (CI) for urinary cadmium concentrations were 0.24 (0.23-0.25) $\mu\text{g Cd/g creatinine}$. Mercury concentration (GM) in scalp hair was 1.86 (1.76-1.97) $\mu\text{g Hg/g hair}$ (only given by 31% of the participants volunteers) The GM (CI95%) for the sum of PCB 138, 153 and 180 was 135.6 (130.5-140.8) ng/g lipid . For PCB 28, PCB 52, 99% of the studied population was below 59 ng/g lipid and 94% below 11,8 ng/g lipid for PCB 101. Polybrominated diphenyl ethers (PBDEs) levels were below the quantification limit (0,01 ng/mL)

Conclusions: Results from BIOAMBIENT.ES show that the concentrations of environmental pollutants in the Spanish population are similar to that reported in HBM studies from other countries (USA; CDC 2009, Germany; Schulz et al 2003). The exception is mercury in hair which is much higher in the Spanish population, probably because of a high consumption of fish and other marine products.

References: CDC. 2009. Fourth National Report on Human Exposure to Environmental Chemicals. Department of Health and Human Services, USA.