**HUMAN BIOMONITORING SURVEY IN GREECE**

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**ABSTRACT**

The presence of chemical pollutants in our environment is everywere and part of our modern way of life. Some of these chemicals are hazardous and pose risks to human health. To assess the potential health risks, a good understanding of exposure is needed, next to the toxic potency of the chemicals. Human biomonitoring (HBM) is an important tool to measure the concentration of chemicals present in the human body.

The CROME study (Cross-Mediterranean Environment and Health Network) collected samples in Greece (Thessaloniki) between July 2020 and March 2021 during the covid-19 pandemic. The CROME study was initiated as a parent-children cohort investigating the levels of environmental pollutants and biochemical markers of exposure. Participants were invited through bilateral meetings and word of mouth as due to the covid-19 pandemic the initial planning, i.e. to take place through the school structures was not feasible. The CROME study includes the recruitment of children and adolescents as well as the whole of their family and parents. For children the ages were between 6-11, adolescents between 12-18 and the adults in the study were from 19-68 years. A total of 560 participants were recruited. Furthermore, participants had to live in Thessaloniki for the last 3 years to be included. From CROME, 161 children and 150 teenagers were included in the HBM4EU survey, where 200 adults had provided their samples for exposure biomarker analysis, in order to complete the puzzle with the corelations among the family members. Blood samples have been collected for selected children (N = 55), teenagers (N = 52) and adults (N= 80).

In total, the levels in human biofluids for the following exposure biomarkers have been quantified: 15 phthalate metabolites: MEP, MBzP, MiBP, MnBP, MCHP, MnPeP, MEHP, 5OH-MEHP, 5oxo-MEHP, 5cx-MEPP, MnOP, OH-MiNP, cx-MiNP, OH-MiDP, cx-MiDP; 2 DINCH metabolites: OH-MINCH and cx-MINCH; 10 BFRs: TBBPA, DBDPE, 2,4,6-TBP, BDE-47, BDE-153, BDE-20, DP-syn, DP-anti, α-HBCD, γ-HBCD; 12 medium and long-chain PFAS: PFPeA, PFHxA, PFHpA, PFOA, PFNA, PFDA, PFUnDA, PFDoDA, PFBS, PFHxS, PFHpS and sum of all isomers PFOS.

**KEYWORDS:** Human biomonitoring, CROME cohort, phthalates, Hexamoll® DINCH