

URINARY CONCENTRATIONS OF PHTHALATES AND PHENOLS IN A POPULATION OF SPANISH PREGNANT WOMEN AND CHILDREN

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Background and aims: phthalates and phenols exposure is prevalent among the general population and of potential concern for pregnant women and children because of their suspected susceptibility to endocrine effects. In the present study, we aimed to evaluate the extent of exposure to several phthalates and phenols in a sample of Spanish pregnant women—according to their individual characteristics (age, social class, education, body mass index)—and children who participated in the INMA – Infancia y Medio Ambiente (Environment and Childhood) project.

Methods: one spot urine sample was taken during the third trimester of pregnancy from 120 pregnant women and from 30 4-year old children belonging to 5 Spanish birth cohorts, and analysed for 11 phthalate metabolites and 9 phenols.

Results: Three metabolites of di(2-ethylhexyl) phthalate, mono-2-ethyl-5-carboxypentyl phthalate, mono-2-ethyl-5-hydroxyhexyl phthalate, and mono-2-ethyl-5-oxohexyl phthalate; two metabolites of dibutyl phthalates, mono-isobutyl phthalate and mono-n-butyl phthalate; monoethyl phthalate (MEP), the main metabolite of diethyl phthalate; and two phenols, methyl paraben (M-PB) and 2,5-dichlorophenol were detected in the urine samples of all women. The highest urinary concentrations were for MEP and M-PB. Urinary concentrations of all phthalate metabolites and of 2,4-dichlorophenol, 2,5-DCP, and bisphenol A were lower in the pregnant women than in the children. Among women, a positive relationship with social class and education was shown for most of the phthalate metabolites and phenols. Almost all phthalate metabolites varied by region even after adjusting for social class and education.

Conclusions: Phthalate and phenol exposures are prevalent in a group of pregnant women and young children, two susceptible populations, and these exposures might be positively related to social class.