



2013 ENVIRONMENT AND HEALTH - BASEL

Abstract Number: 4978 | ID: P-3-15-02

Adult's exposure to bisphenol A by biomonitoring

Maria, Fiore, Department G.F. Ingrassia, Hygiene and Public Health, Univer, Italy; Gea, Oliveri Conti, Department G.F. Ingrassia, Hygiene and Public Health, Italy; Caterina, Ledda, Department G.F. Ingrassia, Hygiene and Public Health, Italy; Placido, D'Agati, Department G.F. Ingrassia, Hygiene and Public Health, Univer, Italy; Adriana, Florida, Department G.F. Ingrassia, Hygiene and Public Health, Univer, Italy; Antonio, Maieli Diaz, Department G.F. Ingrassia, Hygiene and Public Health, Univer, Italy; Giuseppe, Covato, Department G.F. Ingrassia, Hygiene and Public Health, Univer, Italy; Roberto, Fallico, Department G.F. Ingrassia, Hygiene and Public Health, Univer, Italy; Margherita, Ferrante, University of Catania, Italy

Exposure: [food \(http://ehp.niehs.nih.gov/isee/tag/food/\)](http://ehp.niehs.nih.gov/isee/tag/food/)

Background Bisphenol A (BPA) is a chemical used extensively to manufacture commonly used plastics and epoxy resin liners for food and beverage cans. Because the ester bonds in these BPA-based polymers are subject to hydrolysis, leaching of BPA has led to widespread human exposure. Although no clear association has been established between human exposure to BPA and adverse health effects, studies to investigate the prevalence of exposure are required because of BPA potential harmful effects.

Aims Exposure was evaluated by urinary BPA levels in general adult population of the south Italy.

Methods The subjects fill out a questionnaire to assess occupation, education, and lifestyle habits, such as tobacco smoking, alcohol consumption, and other common demographic data. Pooled 24 h urine samples were collected in polyethylene containers and stored at -20°C until the analysis. Both free and total BPA were determined by HPLC/MS. Results Participants were adults non occupational exposed to BPA with mean age of 50 ± 13.6 years, with mean weight of 68.7 ± 13.9 kg, and mean height of 166.4 ± 7.7 cm. Total BPA was observed above the LOQ in 61% of samples. The median concentration was 1.1 ?g/L ; the 95th percentile concentration was 30.3 ?g/L . Free BPA was observed above the LOQ in 28% samples. The median concentration was 1.2 ?g/L ; the 95th percentile concentration was 5.3 ?g/L . Median daily BPA intakes for men are statistically significantly higher than for women; there is a significant decrease in daily BPA intake with increasing age.

Conclusions

The frequent detection of BPA suggests widespread exposure to this compound in residents of the south Italy. The daily human intake of BPA is $<50 \text{ ug/kg bw/day}$ (US EPA reference dose) like others studies. These doses, anyway can have an adverse endocrine disruptive effect on humans, especially fetuses, therefore others more detailed studies needed.

