

Exposure to bisphenol-A and phthalates in obese girls

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INTRODUCTION

The increasing incidence of obesity is a global public health challenge. Although energy imbalance is the major cause of obesity, evidence suggests that other risk factors such as exposure to endocrine-disrupting chemicals (EDCs) may contribute to the development of obesity. Early life exposure to obesogens may result in a higher risk of developing obesity. Among the chemicals suspected to have obesogenic effects, bisphenol A (BPA) and phthalates are under worldwide investigation

OBJECTIVE

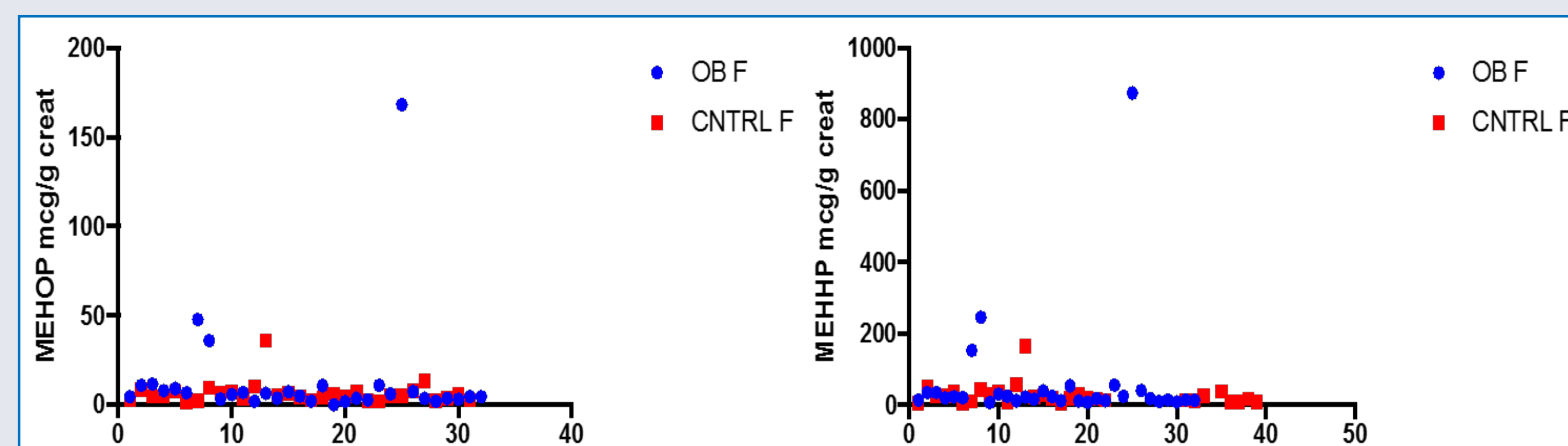
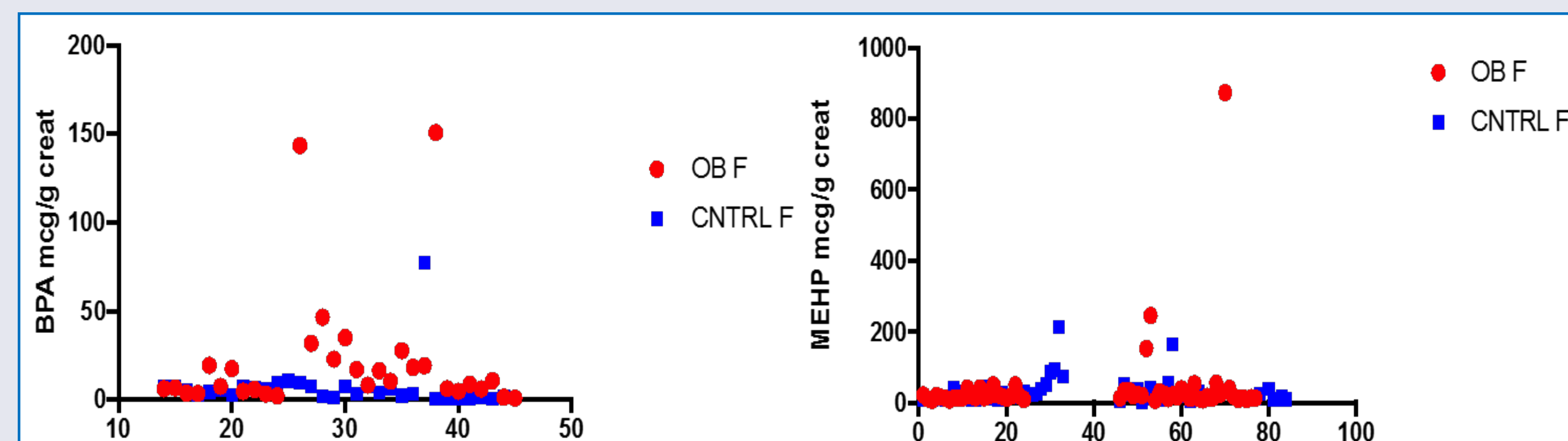
The aim of our study was to investigate the association between the exposure to BPA and phthalate metabolites in idiopathic obese (IO) girls.

METHODS

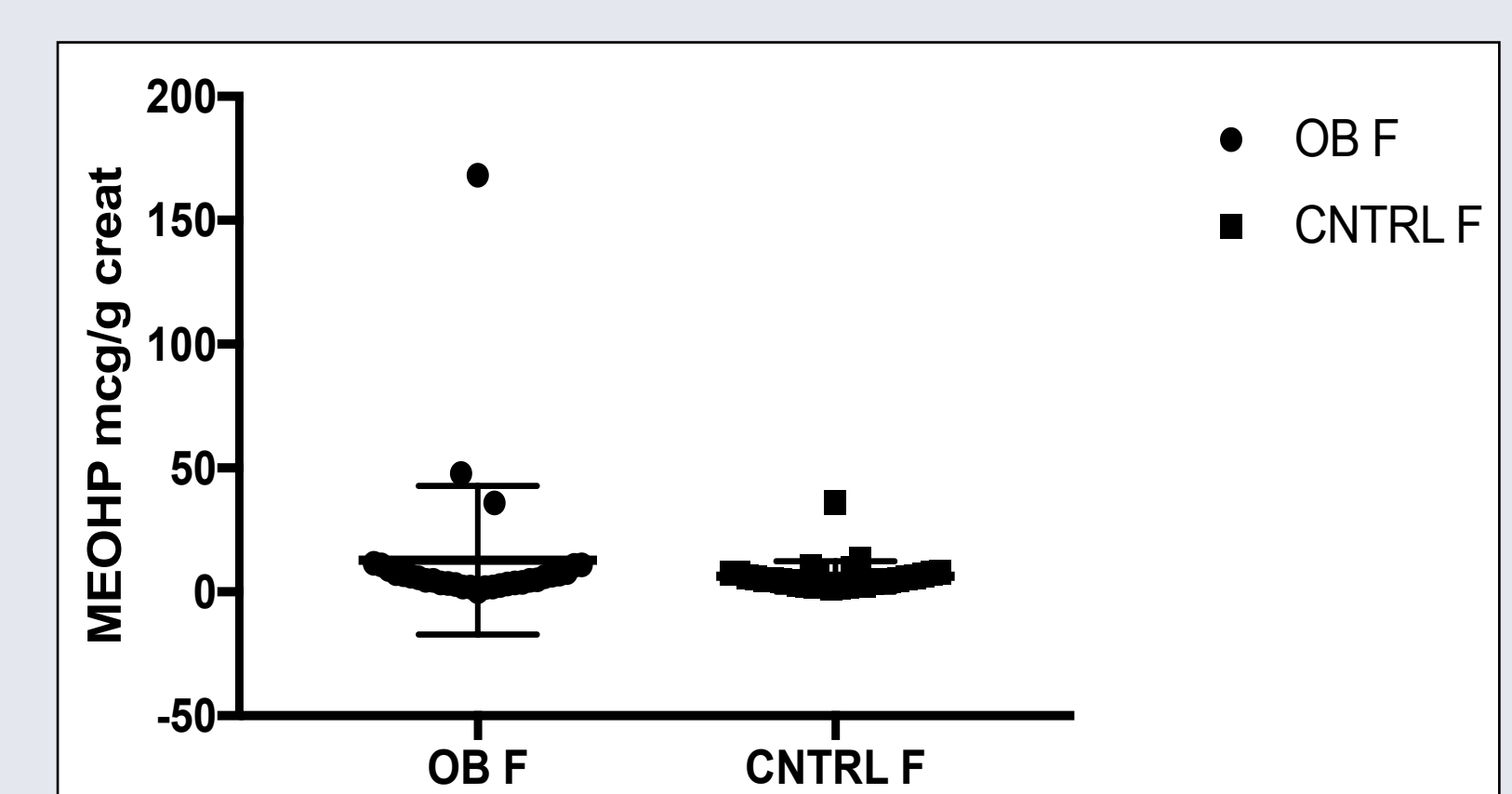
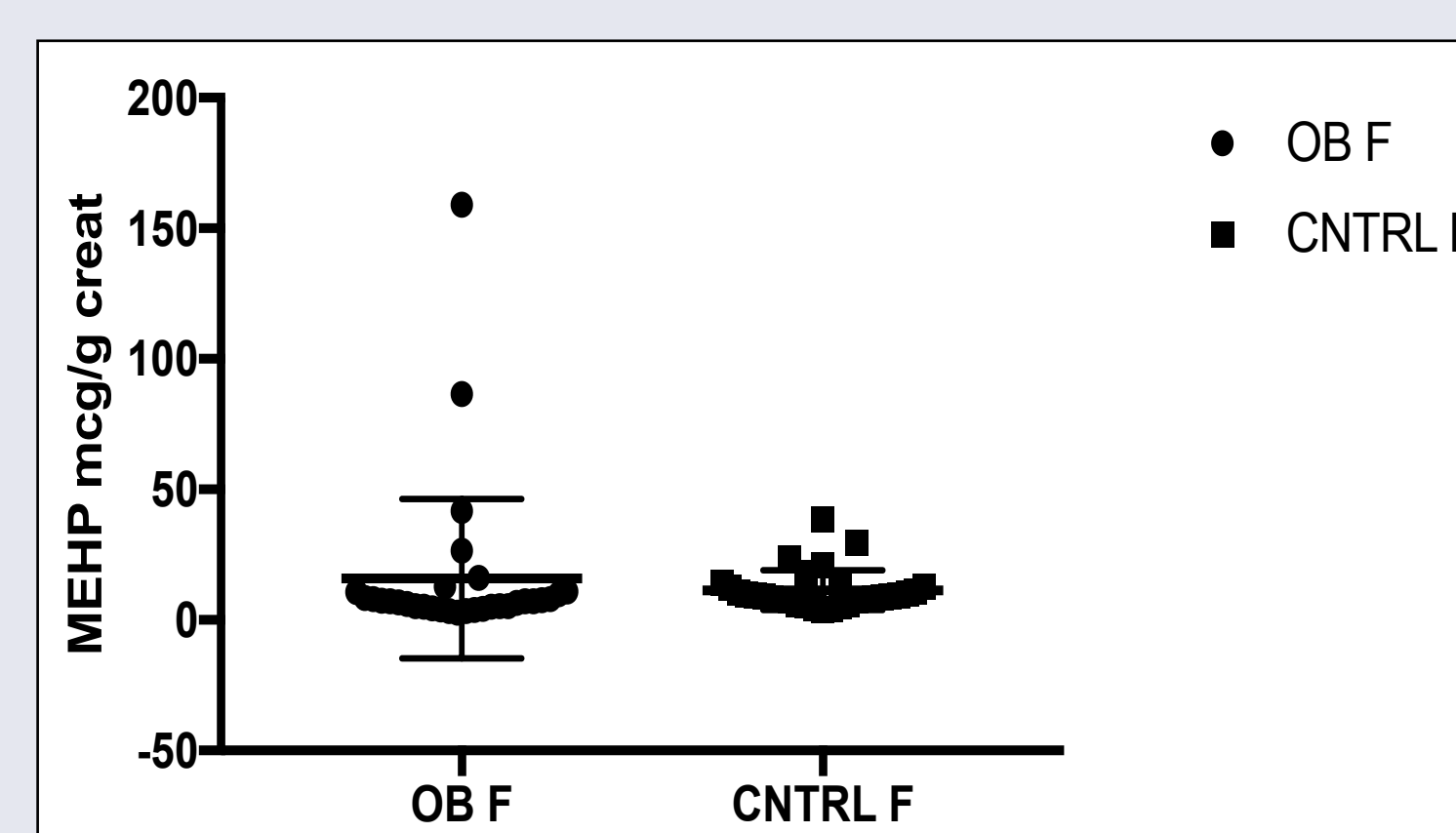
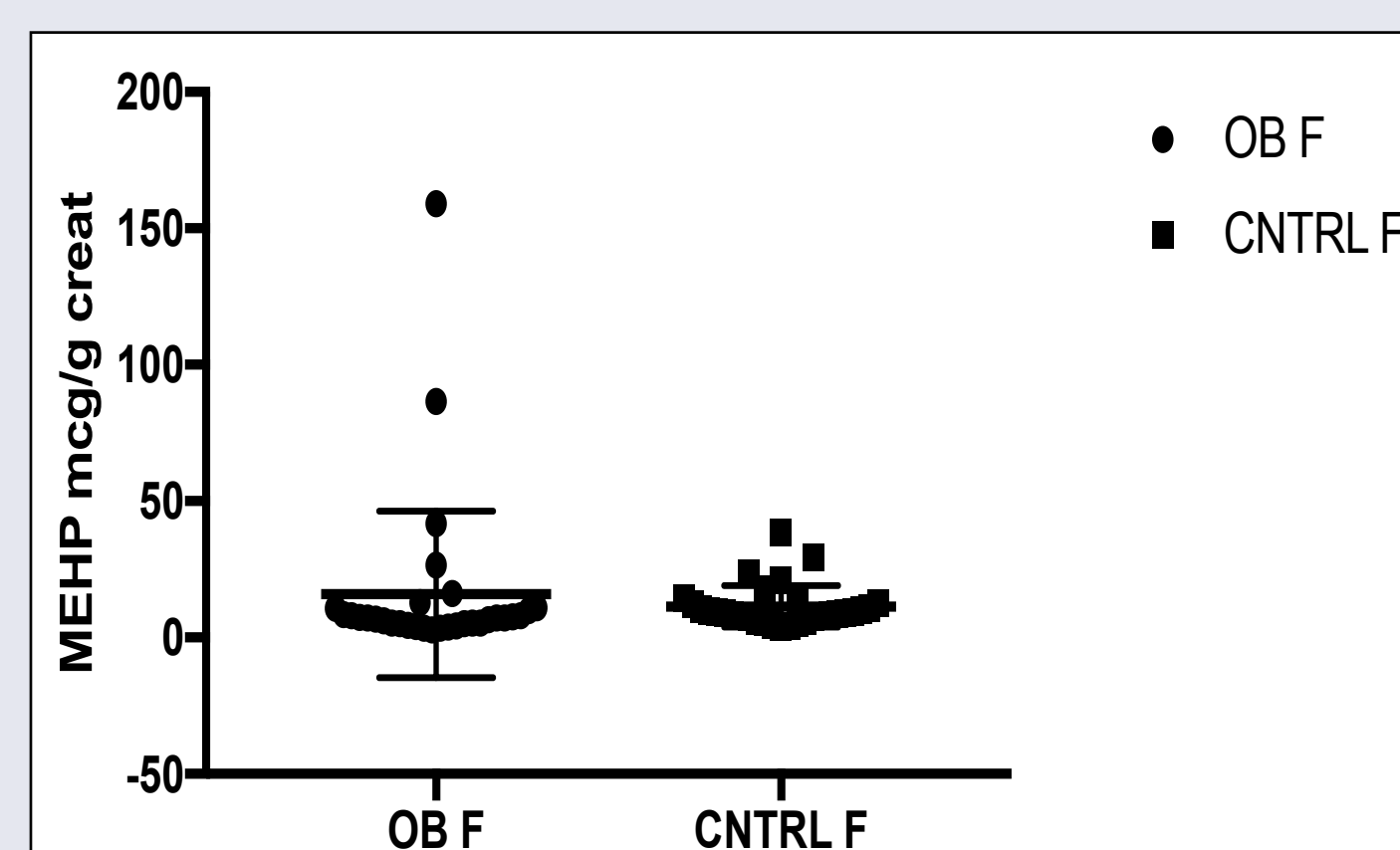
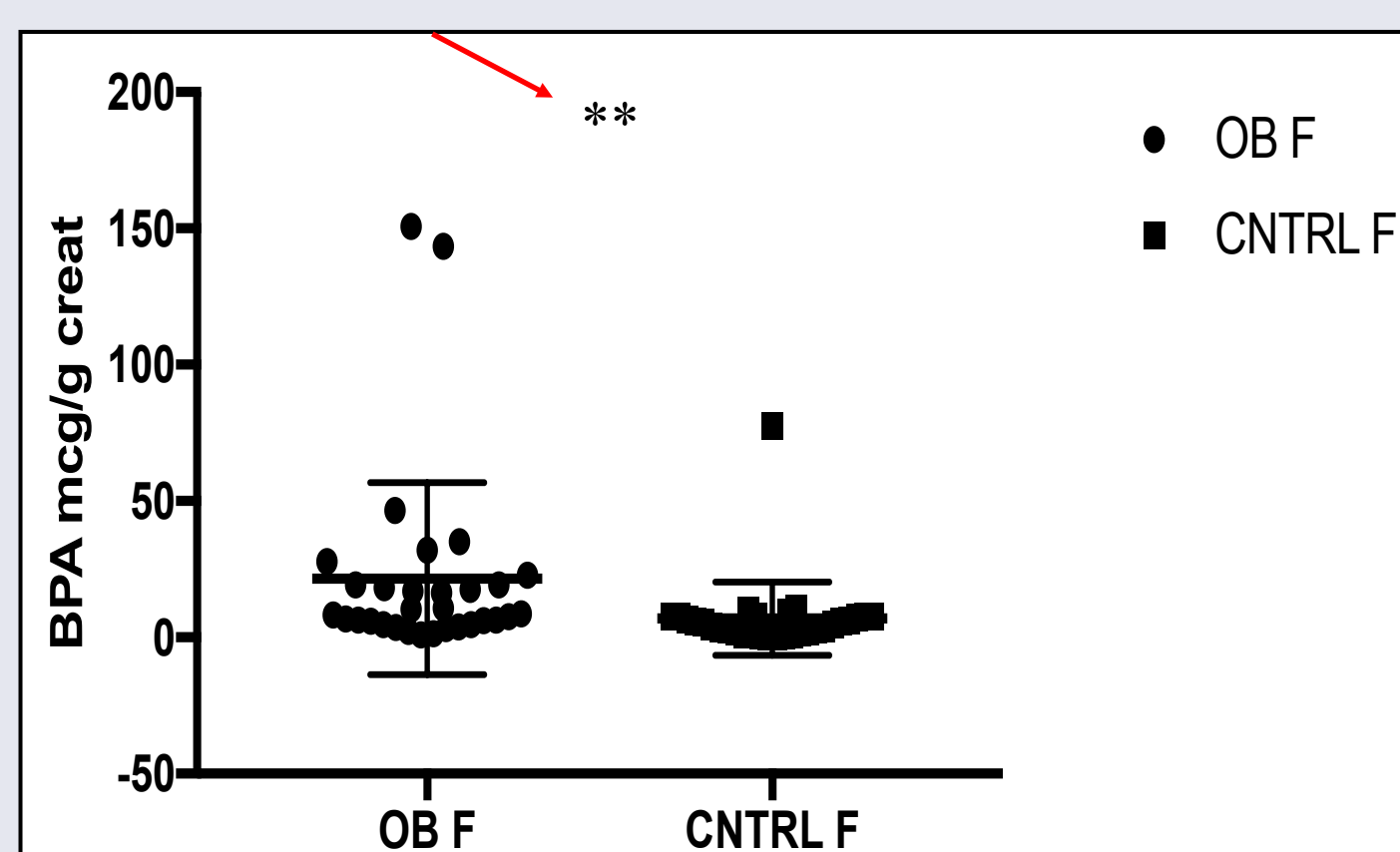
A case-control study was conducted on 62 girls, subdivided into 2 groups: 31 girls with IO (mean age 8.07 ± 1.54) and 31 controls (mean age 6.67 ± 2.3). Urine BPA and phthalate metabolites were evaluated by high-performance liquid chromatography coupled with mass spectrometer (LC-MS/MS). Individual exposure was evaluated through "ad hoc" questionnaires providing data on life styles, diet and other potential determinants of exposure.

RESULTS

Both BPA and phthalate metabolites were measurable in all tested samples, including those from control group.



- Obese girls showed significantly higher BPA urinary levels than controls: median BPA $8.7 \mu\text{g/g}$ creatinine (range 0.88-150.69) vs $4.61 \mu\text{g/g}$ creatinine (range 0.4-10.80), respectively ($p < 0.001$).
- No significant difference in phthalate metabolites was found. In the obese group, no significant correlation between EDC levels and metabolic parameters was observed



CONCLUSIONS

Our findings show the widespread exposure to BPA and phthalates and suggest that the exposure to BPA is significantly higher in obese girls. Further experimental and clinical investigations are necessary to unveil the potential cause-effect relationship

