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279092 Urinary phthalate metabolite concentrations among custodians using green cleaners

Monday, November 4, 2013 : 2:30 p.m. - 2:46 p.m.

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Meeting Information

When:

November 02 - 06, 2013

Where:

Boston, MA

Background: Phthalates represent a class of ubiquitous chemicals that are commonly found in consumer and personal care products and used as plasticizers and stabilizers in building materials. DEHP, DBP, and MBzP are commonly found phthalates in cleaning products or materials used by custodians, who may represent a high-risk occupational group. This study characterizes the urinary phthalate metabolite concentrations among custodians as they transitioned from traditional cleaners to the use of green or Environmentally Preferable Products (EPP).

Methods: Sixty-eight custodians provided four urine samples per shift (first void, before shift, end of shift and before bedtime). During each hour of the work shift, trained observers recorded cleaning tasks, and the type of product used (traditional or EPP). Five different phthalates metabolites MEHP, MMP, MBzP, MEP, MnBP corresponding to DEHP, DBP, BBP DEP, DBP were quantified in the urine using Liquid Chromatography-tandem Mass Spectrometry (LC-MS/MS).

Results: Geometric mean (standard deviation) urinary levels MEHP, MPB and MBzP are 6.9 (3.3), 20 (3.2), 8.8 (2.6) ug/g, respectively. For MBZP, we observed significantly ($p=0.001$) higher levels among custodians using traditional cleaners >4hrs. Custodians with >4hrs traditional cleaners use had higher end of shift MBzP urinary levels (19.5 ug/g) as compared to custodians using EPPs (13.1 ug/g). We will report urinary metabolite levels among custodians using EPPs and traditional cleaners during different times of the shift.

Conclusion: Our results suggest that different species of urinary phthalate metabolites measured in urine may be associated with occupational exposure.

Learning Areas:

Occupational health and safety

Learning Objectives:

Compare the urinary phthalate metabolite concentrations among custodians as they transitioned from traditional cleaners to the use of "green" or Environmentally Preferable Products (EPP). Identify species of urinary phthalate metabolites that may be associated with occupational exposures.

Keyword(s): Occupational Health, Occupational Exposure

Presenting author's disclosure statement:

Qualified on the content I am responsible for because: I have been involved in all aspects of data analysis and data interpretation.
Any relevant financial relationships? No

I agree to comply with the American Public Health Association Conflict of Interest and Commercial Support Guidelines, and to disclose to the participants any off-label or experimental uses of a commercial product or service discussed in my presentation.

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