American Public Health Association
133rd Annual Meeting & Exposition
December 10-14, 2005
Philadelphia, PA

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4049.0: Tuesday, December 13, 2005 - 9:06 AM

Abstract #114231

A pilot study: Characterizing phthalate exposure among nail salon workers

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Background: Dibutyl phthalate (DBP) is used to reduce brittleness and cracking in nailpolish. DBP is a reproductive toxicant in rodents, and in humans it has been associated with allergic reactions as well as reproductive and respiratory impairments. To determine if manicurists are occupationally exposed to DBP, a pilot study is underway. Methods: Between January 2004 and October 2004, 19 female and 2 male manicurists were recruited. Five manicurists worked in shops with local exhaust ventilation while the others did not. Urine samples were collected before and after work on the same day. Phthalate monoester concentrations were measured by automated solid phase extraction coupled with isotope-dilution-high performance liquid chromatography-tandem mass spectrometry. Results: Monobutyl phthalate (MBP) was detected in all manicurists. Median MBP levels among the women and men were more than 2 &#65533; and 5 times higher, respectively, than general population levels. MBP levels increased 6.9 ng/mL across the work shift. MBP levels rose 12.9 ng/mL across the work shift in shops without local exhaust ventilation, compared to a decrease of 0.74 ng/mL in shops with local exhaust ventilation. None of the above findings reached statistical significance. Conclusion: This pilot study quantified occupational exposure of manicurists to DBP. Although the sample size is small, observed suggestive associations indicate manicurists are being exposed to DBP during work and that local exhaust ventilation can mitigate that exposure. These analyses will need to be repeated once recruitment is completed to confirm the robustness of the findings.

Learning Objectives:

- At the conclusion of this session the participant in this session will be able to
  - 1.List 5 personal care products that contain phthalates
  - 2.To identify workplace characteristics that influence phthalate levels
  - 3.To contrast occupational phthalate levels with general population phthalate levels documented from the NHANES 1999-2000 surveys
  - 4.To determine the effectiveness of local exhaust ventilation in reducing occupational phthalate exposure

Presenting author's disclosure statement:

I wish to disclose that I have **NO** financial interests or other relationship with the manufactures of commercial products, suppliers of commercial services or commercial supporters.

Recorded presentation

Nail Salon Workers: Hazards and Controls

The 133rd Annual Meeting & Exposition (December 10-14, 2005) of APHA