

## **Concerns on Cocaine Residues in Salt Lake City Home**

In early July 2011, the Environmental Epidemiology Program (EEP), Utah Department of Health received a phone call from concerned homeowners in Salt Lake City in regards to testing their newly purchased home for the presence of illicit drug residue, particularly methamphetamine. The homeowners contacted Meth Lab Cleanup LLC based in Athol, ID. The homeowners ordered a battery of tests for illicit drug residue and upon completion were informed that although the test results were negative for methamphetamine, the samples turned up positive for cocaine residue in the amount averaging 3.05 ug/100 cm<sup>2</sup> over eight areas in the household. These areas include walls and floors in seven different rooms in the house.

The homeowners took proactive actions to clean the house thoroughly. These actions included re-painting walls, re-carpeting, and using commercially available cleansers to remove unwanted residues. The homeowners once again took samples of all areas that had previously been tested and additionally included the air-ducts (which they had also cleaned with cleansers). They submitted these samples to ALS Environmental based in Salt Lake City. These tests proved negative for all areas except the air ducts, which produced a sample yield for cocaine of 4.25 ug/100 cm<sup>2</sup>. Concerned that their child might be at risk of harmful exposure, the homeowners had the child's urine assayed for the presence of cocaine metabolites by their family pediatrician. This test proved negative.

The concerned homeowners then scheduled a meeting with EEP staff to discuss the potential health hazards of the amounts of cocaine found in their home and the potential associated risk to themselves and especially their child. After researching this issue, it is our finding that the amount of cocaine that will result in observable responses such as vasoconstriction (a common early effect) is 2 mg/kg taken nasally (Lange et al., 1989). To achieve doses taken recreationally, users commonly ingest two to three times that amount. Should the child be able to effectively remove the drug residue from the contaminated surface, it would require roughly 1,000 times that amount of available residue to elicit a physiological response. Furthermore, the negative results of the urinalysis strongly suggest that the child is not being exposed to an airborne contamination of cocaine.

The EEP recommends the homeowners use both a bleach-based and an ethanol-based cleaning solution on the surfaces that tested positive for the presence of cocaine and conduct another test assay. Cocaine will be most soluble in an ethanol-based cleaning solution. A bleach-based solution may result in oxidation of the cocaine molecule, thus destroying those molecules. It is the opinion of the EEP staff that the amounts of cocaine found in the home in question does not pose a health hazard to the residents; however, the further removal of the substance in question is encouraged.

Craig J. Dietrich, Ph.D.  
Toxicologist / Health Hazards Assessor  
Environmental Epidemiology Program  
Utah Department of Health

## REFERENCES

Lange, R. A., Cigarroa, R. G., Yancy, C. W., Jr., Willard, J. E., Popma, J. J., Sills, M. N., et al. (1989). Cocaine-induced coronary-artery vasoconstriction. *N Engl J Med*, 321(23), 1557-1562.