

Occupational Health Group is a service offered to the business community of North Alabama by Huntsville Hospital and Decatur General Hospital Systems

## Methamphetamine and Passive Exposure: A Case of a Drug-Testing Dilemma

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Methamphetamine, in its non-prescription form, is a powerful, illegal, recreational stimulant drug. Its use is popular and, for those who make and sell this drug, lucrative. The production technique is not particularly complicated or capital-intensive. In fact, it is relatively easy to make methamphetamine, which has led to the proliferation of so-called "meth labs." These labs are hard to detect, since they operate on a small scale in private settings by people with no great sophistication in drug manufacture. News programs remind us of the presence of this problem.

Following is an interesting case that portrays how a random drug screening situation intersected with the issue of a meth lab.

### CASE SUMMARY

A 51-year-old female tested positive for methamphetamine on a routine random urine drug screen. I spoke with her about this. She offered an unusual explanation.

She explained that her son had been running a meth lab in their home. She stated that she was unaware of this. She only became aware after she learned that her son was in jail for his enterprising ways. She explained further that she did not clean the area of the former "home lab". She gave as a reason the fact that she had a pet bird and was concerned about harming the bird with bleach. At any rate, she stated that she, herself, did not use methamphetamine. She believed that there was still methamphetamine in the home and that she had been accidentally contaminated. She reasoned that this led to a positive drug test. She added that since her positive drug screen she has thoroughly cleaned her home by using bleach on the walls and tearing out the carpeting.

It is not clear how the son's activity was discovered or the extent of his mother's complicity. It is not clear how much a mother's blind eye may have been turned or what fear she may have had for herself. These questions of motivation are not within the scope of determining the status of a drug test. Rather our question would be: **Could such a passive exposure mechanism account for the positive drug screen in this case?**

### APPROACH

After my conversation with the woman I verified her son's incarceration by obtaining documentation from the respective authorities. I also talked to the toxicologist at Advanced Technology Network, the facility that processed the drug test. Luckily, as it turned out, this toxicologist had the special interest and expertise I needed. He had worked with police in the past on the problem of clandestine meth labs

and the forensics involved. He explained that it is possible that methamphetamine can be spread to the atmosphere, particularly during the drying phase of the operation when the substance is in a powder form. This would provide an opportunity for passive inhalation. Also, contact with the material can occur from residue adhered to walls, furniture, or carpeting, or can occur (in the case of sloppy work) from a spill. As to why the situation may not have been noticeable in the home the toxicologist offered some history. With the beginning of at-home methamphetamine synthesis, people would obtain chemical precursors to make the intermediate chemical, 2-propanol, the basic building block. Methylamine would be added to this to generate methamphetamine. The methylamine had a fishy smell and could make itself known. Nowadays, through Burt's Reduction Method one can take pseudoephedrine (once easily obtained in over-the-counter decongestant medications), iodine, and red phosphorous (from match heads), put these into one container like a sport water bottle, let it sit for 24 hours, pour off the product and let it crystallize to form the final product. This is a seemingly compact and non-odiferous route.



Mobile Meth Lab

As to the credibility of this story, the toxicologist admitted skepticism. He thought that the metabolite level seen in the drug screen seemed high if one were to explain the result on passive inhalation alone. He felt that the methamphetamine more probably was actively used. But, he could not rule out the role of an inadvertent contamination effect, since the quantity of residue on objects in the home was not known and could have been significant.

### CONCLUSION

Firm scientific evidence for passive exposure to methamphetamine resulting in a positive drug screen is lacking at present. One large and comprehensive review article looked at how a drug screen might be positive other than by active taking the drug. In the case of methamphetamine, the current understanding is that although passive inhalation is theoretically possible, no data is available to confirm this (Ref: El Sohly, M., Jones, A.B. 'Drug Testing in the Workplace: Could a Positive Test for One of the Mandated Drugs be for Reasons other than Illicit Use of the Drug?' Journal of Analytical Toxicology Vol. 19. No. 6. October, 1995).

The legal effort continues against clandestine meth labs. The FDA has changed the formulary of common decongestants and has taken the pseudoephedrine out. This reduces access to a key ingredient for would-be manufacturers. Public awareness is maintained by general news media and reports. Interdiction efforts continue with the seizing of labs and the prosecution of the labs' inhabitants.



Residential Meth Lab

# Methamphetamine and Passive Exposure: A Case of a Drug-Testing Dilemma (con't)

And, in this one drug-screening case, the employer has placed the individual involved in a random drug-screening program as a follow-up measure. The issue might be raised as to whether an excuse of "I was around a meth-lab but I don't use it myself" could aid the defense of an individual who tested positive for methamphetamine and had, in fact, actively used the substance. While this might be raised (and it was in this case) the next point facing the individual would be the question of how he or she was associated with a meth lab. This might prove awkward for the individual to try to explain and wouldn't be attempted,

as in this case with a household member convicted of having such a setup in the home itself.

Since a passive exposure mechanism is still unclear in the use of methamphetamine, it is advisable to perform random drug testing in an individual after there is some alleged passive mechanism involved. The individual should be warned to avoid the situation and must understand that a second attempt at explaining the same passive mechanism will not be accepted.

## Warm Weather Hazards

Employers and workers cope with heat-related work hazards during the summer months. Some of those hazards include heat, direct sun exposure, and Lyme Disease (from ticks). The following is advice taken from the Center for Disease Control and OSHA to help employers and employees be aware of the potential hazards that are a part of working in an outdoor environment in the summer:

### SUN (1)

Sunlight contains ultraviolet (UV) radiation, which causes premature aging of the skin, wrinkles, cataracts and skin cancer. There are no safe UV rays or safe suntans. Be especially careful in the sun if

you burn easily, spend a lot of time outdoors, or have any of the following physical features:

- Numerous freckles
- Lighter natural skin color
- Blonde, red, or light brown hair

#### Here's how to block those harmful rays:

- **Cover up.** Wear tightly woven clothing you can't see through
- **Use sunscreen.** A sun protector factor (SPF) of at least 15 blocks 93% of UV rays. Be sure to follow application directions on the bottle or tube.
- **Wear a hat.** A wide brim hat, not a baseball cap, works best because it protects the neck, ears, eyes, forehead, nose and scalp.



- **Wear UV-absorbent shades.** Sunglasses don't have to be expensive, but they should be able to block 99 to 100% of UVA and UVB radiation. Before you buy, read the product tag or label.
- **Limit exposure.** UV rays are most intense between 10 a.m. and 4p.m.

### HEAT (2)

The combination of heat and humidity can be a serious health threat during the summer months. If you work at a beach resort, on a farm, or in a kitchen, laundry or bakery, for example, you may be at risk for heat-related illness. So, take precautions.

#### Here's how:

- Drink plenty of water before you get thirsty.
- Wear light, loose-fitting, breathable clothing - cotton is good.
- Take frequent short breaks in cool shade.
- Eat smaller meals before work activity.
- Avoid caffeine or large amounts of sugar
- Find out from your health-care provider if your medications and heat don't mix.
- Know your equipment such as respirators or work suits can increase heat stress.

(1) [http://www.cdc.gov/cancer/skin/basic\\_info/](http://www.cdc.gov/cancer/skin/basic_info/)

(2) <http://wonder.cdc.gov/wonder/prevguid/p0000449/p0000449.asp>



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All OHG clinics will be closed in observance of the following holidays:

Independence Day (Observed)	July 5th
Labor Day	Sept. 6th



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