Drug Exposure vs. Ingestion

What You Need to Know

Environmental exposure to illicit drugs is an indirect marker of harm. Exposure testing is different from workplace drug testing.

Zero Metabolite ≠ Zero Exposure

Child hair samples often do not contain drug metabolites, because the child has not ingested illicit substances.

Standard drug tests use government workplace testing guidelines, which can report negative results **even when a native drug is present.**

Workplace guidelines can result in false negative reporting for drug exposure in children.

Hair testing is 3.5x more likely to detect methamphetamine exposure. Combined with the D/L methamphetamine isomer testing option, a hair test can give professionals the information they need to make an informed decision.

CHILDGUARD®
Hair Exposure Testing

The Association Between Drug Exposure and Harm to Children

Children in environments where they are exposed to illicit drugs are at higher risk for abuse and neglect

4.2x
more likely to experience **neglect**

2.7x
more likely to experience **abuse**

43%
of child **abuse** cases before the court involve substance abuse

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Information is up-to-date as of 06.17.2019

Workplace Testing Rules are Poor Governance for Environmental Exposure Analysis in Child Samples

"A drug endangered child is a person, under the age of 18, who lives in or is exposed to an environment where drugs, including pharmaceuticals, are illegally used, possessed, trafficked, diverted, and/or manufactured and, as a result of that environment: the child experiences, or is at risk of experiencing, physical, sexual, or emotional abuse; the child experiences, or is at risk of experiencing, medical, educational, emotional, or physical harm, including harm resulting or possibly resulting from neglect; or the child is forced to participate in illegal or sexual activity in exchange for drugs or in exchange for money likely to be used to purchase drugs."

- Federal Interagency Task Force for Drug Endangered Children (2010)

Properly conducted forensic drug analysis of hair specimens is valuable for identifying exposure of children to environments where illicit substance abuse is a problem. Specialized drug testing for environmental exposure should take into account the differences between levels of native drug compounds and drug metabolites in the sample. Exposure testing should also recognize that workplace testing guidelines set forth by the Substance Abuse and Mental Health Services Administration (SAMHSA) are not the appropriate parameters for conducting this type of analysis. The health and well-being of a child are far too important to not take these factors into account.

Environmental exposure analysis can be carried out using several specimen types — oral fluid, urine, or hair for example — but is most effectively carried out using hair samples. For example, a recent study found that hair samples were 10 times and 3.5 times more likely than oral fluid and urine respectively to detect environmental methamphetamine exposure.[1]

Many drug testing groups apply SAMHSA workplace drug testing guidelines to environmental exposure testing, but this is problematic for two reasons. First, responsibly done, exposure analysis should examine native drug compounds first and metabolites second. Under SAMHSA guidelines only drug metabolites are analysed for several drug classes. Marijuana exposure, for example, will result in detectable levels of native-THC in hair samples, but little or no carboxy-THC, the metabolite that results from marijuana ingestion, and which is mandated under SAMHSA as the analyte for cannabinoid testing. The same can be said for cocaine versus benzoylecgonine, the cocaine metabolite. When detected, drug metabolites in a child's specimen may indicate very heavy drug use by adults and subsequent exposure to the child, heavy enough to cause incidental ingestion, or that the child has gained access to, and used, an adult's illicit substance. But, testing solely for the drug metabolite, which can only occur from ingestion, may completely miss the signs of exposure evidenced by the presence of the native drug in the hair sample.

A second concern with SAMHSA workplace drug testing rules is that mandated cutoffs are often too high to trigger the report of a positive result in an exposure test. SAMHSA positive cutoff values are set at the ng/ml level, yet environmental exposure

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results are typically in the pg/ml range, especially in the case of cannabinoid testing.[2] The application of standard workplace testing guidelines to children's samples runs the risk of false negative testing results and the possibility of leaving a child in a harmful environment.

Living in circumstances where they are exposed to illicit substance abuse by adults around them, children are often subject to other harms including physical and sexual abuse and neglect. Children in drug environments are almost three times more likely to experience abuse and four times more likely to experience neglect.[3] Such high stakes demand the application of proper and responsible criteria to drug testing children's samples for environmental exposure.

References

1. Castaneto, M.S. et al. (2013). Identifying Methamphetamine Exposure in Children. Therapeutic Drug Monitoring, 35(6), 823-830.

2. Uhl, M. and Sachs, H. (2004). Cannabinoids in Hair: Strategy to Prove Marijuana/Hashish Consumption, Forensic Science International, 145(2-3), 143-147.

3. Substance Abuse and Mental Health Services Administration (SAMHSA). (1996). National Household Survey on Drug Abuse: Main Findings. Rockville, MD: SAMHSA, Office of Applied Studies.