

Hair forensics could yield false positives for cocaine use

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Hair analysis has become standard practice for determining whether someone has abused illicit drugs. But some experts have questioned whether current methods to wash away external contaminants from samples might affect test results. Now one team confirms that for cocaine detection, a pretreatment step can cause the drug on the outside of a hair shaft to wash into it and potentially lead to falsely identifying someone as a drug user. Their study appears in ACS' journal *Analytical Chemistry*.

Testing a person's locks for evidence of [drug](#) abuse has several advantages over urine and blood analyses. Sampling is simple and non-invasive. And a person's hair provides a record of use over a long period, whereas body fluids can only provide a short-term picture. However, it can be difficult to distinguish drugs incorporated into hair because someone has taken them from drugs that externally contaminate a non-user's hair when he or she was in the same room as the substances. To address this uncertainty, testers wash hair samples to get rid of any potential external contaminants. Eva Cuypers and colleagues wanted to find out if this step could affect the results.

The researchers followed standard procedures to wash off cocaine from non-users' hair. They then examined cross-sections of these samples and found that the drug had migrated into the hair shafts. The results suggest that current methods to decontaminate hair can have the opposite effect. The researchers conclude that this new insight could have implications for future hair analyses.

More information: Eva Cuypers et al. Consequences of Decontamination Procedures in Forensic Hair Analysis Using Metal-Assisted Secondary Ion Mass Spectrometry Analysis, *Analytical Chemistry* (2016). [DOI: 10.1021/acs.analchem.5b03979](https://doi.org/10.1021/acs.analchem.5b03979)

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