

## Oral Fluid and Hair Testing Need Improvement Before Consideration for Federal Workplace Testing

The members of the Society of Forensic Toxicologists (SOFT) are anything but soft when it comes to toxicology. The members of SOFT convened in Austin, TX in October 2006 for the annual meeting.

At the Austin meeting, attendees had the choice of several workshops including: the Standardization of Sobriety Tests from the National Highway Traffic Safety Administration, interpretation of positive opioid results, validation of analytical methods in forensic laboratories, anti-doping efforts in professional sports, oral fluid testing, hair testing, and a variety of other topics.

The most note-worthy topics were the oral fluid and hair testing discussions. The Society of Forensic Toxicologists presented the most recent SAMHSA studies with the two alternative testing matrices for forensic toxicology.

In April 2000, SAMHSA's National Laboratory Certification Program initiated a pilot Performance Testing (PT) program for oral fluid testing. The PT program was spread out over a period of four years and concluded in January 2004. In that period there were five drugs<sup>1</sup> tested in the oral fluid samples including: THC, PCP, 6-monoacetylmorphine (heroin metabolite), Codeine, and Morphine. Those samples were sent to 6 to 12 laboratories during a six-cycle period.

The purpose of the study was to develop quality assurance testing for Federal Drug-Free Workplace testing programs, evaluate oral fluid testing, and evaluate the ability of laboratories to accurately detect and qualify drug analytes in oral fluid.

Oral fluid samples were collected from a drug-free donor. The samples were frozen, thawed, and filtered prior to the spiking of the samples. The samples were then spiked with 0.25 to 25 times the SAMHSA proposed confirmatory cut-off level for oral fluid testing. The samples were frozen and shipped overnight to participating laboratories.

The study illustrated that regression analysis demonstrated poor analytical performance for all analytes present.

Additionally, there was a severe loss of THC (marijuana) in the human oral fluid samples. As a result of the study, it is recommended there is a need for improvement in the manufacturing of materials and in the development of

analytical methodology.

The National Laboratory Certification Program also performed a pilot Performance Testing program with hair samples. Samples were taken from known users and drug-free donors, and some hair samples were fortified with drugs of abuse. The fortified samples had concentration levels between .5 and 2 times greater than the SAMHSA proposed cut-off levels.

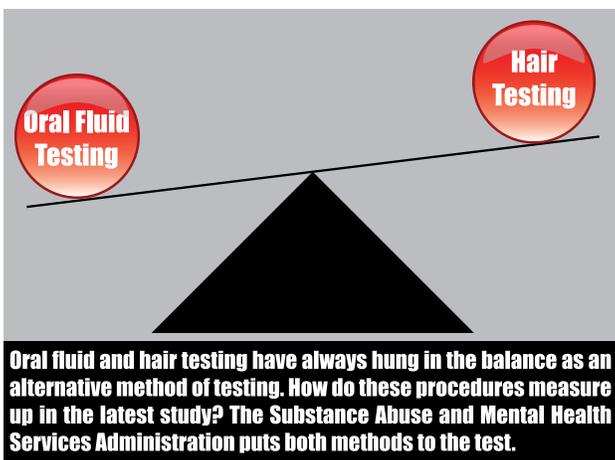
The results of the PT program showed the results had a high variable of regression. None of the analytes demonstrated mean values within 30 percent of the target concentrations. The procedures for washing and extracting hair samples has not yet been established. Further development in these areas are necessary before hair testing is considered for the Federal Workplace.

To conclude the hair PT program, the recommended improvements include laboratory analytical performance and the NLCP ability to prepare appropriate hair PT samples. In the meantime, there are no recommendations of using alternative testing matrices for Federal Drug-Free Workplace programs. For more information, search the Substance Abuse and Mental Health Services Administration's website for the Oral Fluid and Hair Pilot PT

Programs at [www.samhsa.gov](http://www.samhsa.gov).

The Society of Forensic Toxicologists was formed in 1970 to provide an organization for professional toxicologists. The organization focuses on establishing uniform qualifications, research and development, and promoting continuing education in the field of forensic toxicology. For more information visit, [www.soft-tox.org](http://www.soft-tox.org).

<sup>1</sup>The drugs used in these studies do not represent the Department of Transportation Regulated 5-panel test.



## Update: from Dallas Morning News

Dallas has seen an increase in the number of student admissions to drug treatment centers for "cheese," a mixture of heroin and Tylenol PM. Individuals have been reported as young as 11. Treatment centers have reported overcrowding at a majority of the facilities.

Students abusing the drug mixture are known to snort it through hollowed out pens. Some of the treatment centers report treating one to two youths a week for abusing "cheese."

Of the mixture, about 8 percent is heroin and the rest is crushed Tylenol PM tablets and it is often sold for about \$2 a hit. For more information about drug abuse, visit [www.dallasnews.com](http://www.dallasnews.com).