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NATIONAL TRAFFIC LAW CENTER

Between the Lines

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Click It or Ticket
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Oral Fluid in DUID Cases

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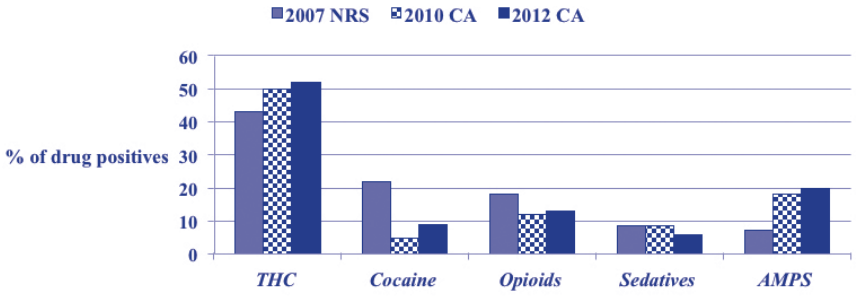
Prosecutors may soon see results from oral fluid testing for controlled substances in driving under the influence of drugs cases. More jurisdictions have legalized marijuana and collection of oral fluid is fast, easy, and not as invasive as blood collection. As a result, suspects may more readily consent to an oral fluid swab than a blood draw and law enforcement may not have to revert to forced blood draws or warrants. Moreover, oral fluid testing can be performed closer in time to the suspect's driving. The question is whether oral fluid testing is valid. This article demonstrates that positive results for certain drugs when tested in oral fluid are well correlated with positive results for the same drugs when tested in blood. Meaning if oral fluid testing detects that a drug is present in the suspect's oral fluid, it is highly likely that a blood test will reveal that the drug is also present in the suspect's blood or urine. This conclusion from the data described below may be able to aid the prosecutor in convincing the court that oral fluid testing is valid or at least that the officer's suspicion of drug use is confirmed.

Background: Data produced in the NHTSA sponsored National Roadside Surveys (NRS 2007; 2013/2014) have shown the prevalence of drugs in blood and oral fluid collected voluntarily from drivers increased from 16.3 % to 20%, with marijuana detection rates rising from 8.6% to 12%. After smoking marijuana, the active component, tetrahydrocannabinol (THC) is rapidly metabolized in the body, so collection of a blood sample (considered the "gold standard" for drug analysis in DUID cases) is time sensitive to prove the presence of active drug in the driver. The simultaneous collection of an oral fluid (saliva) sample in the two major surveys allowed researchers to determine whether oral fluid provided similar data to blood; overall the comparison of drug positives was well correlated between the two matrices [1]. It is important to note that the oral fluid specimens collected in these surveys were sent to a laboratory for analysis; rapid test devices were not included.

Why Oral Fluid?

- *Drugs accumulate in oral fluid by diffusion from the blood*
- *Easy, rapid collection*
- *Non-invasive, observed*
- *Taken proximate to traffic stop*
- *Identification of active compound provide s information on recent drug intake*
- *Strong correlation between drug profiles in blood and oral fluid*

Test profile: The number of drugs and metabolites analyzed in the 2007 NRS as well as California Studies in 2010 and 2012 was extensive [2], but in all 3 surveys the majority of the positive results covered five drug classes; THC was detected in approximately 50% of the tested drivers. The "Opioids" category included some prescription pain medications; the "Sedatives" included benzodiazepines and barbiturates.



Law Enforcement and Oral Fluid Studies: Over the past few years various Police Departments in conjunction with state offices of traffic safety have collaborated on projects involving testing oral fluid at the roadside, thereby accounting for drug loss from the body over time prior to specimen collection. Aspects to consider in selection of an oral fluid rapid test device include: speed of sample collection and analysis; drug classes in the test panel; instrumented detection (as opposed to visual reads); and a mechanism for retention of the result.

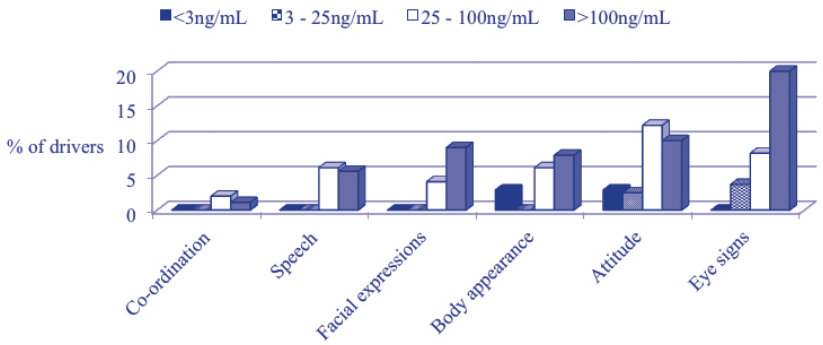
The performance of some oral fluid rapid testing devices, specifically the DDS2 (Alere), Drug Test 5000 (Draeger) and DrugWipe (Affiniton) have been challenged in DUID projects all over the country, often in conjunction with Drug Recognition Experts (DRE's), including Tulsa Police Department in Oklahoma, Fullerton, Sacramento, Los Angeles and Kern County Police Departments in California and Miami Dade PD in Florida [3]. All have concluded that the devices provide good information to Law Enforcement Officers regarding the presence of active drugs in the oral fluid of the drivers.

FAQ: In the area of oral fluid analysis there are two predominant and relevant questions:
1. What concentration of THC in oral fluid is equivalent to the THC level in blood?
2. What concentration of THC in oral fluid correlates with impairment?

While research aimed at answering these questions is still nascent there are some recent publications addressing the issues.

Q1. In 2014, Gjerde et al. [4] compared the blood and oral fluid drug concentrations in 182 drivers for several drug classes. For THC measured at 1ng/mL in blood, the equivalent oral fluid concentration was 44ng/mL (range 27 -99ng/mL). In a study carried out in a European "coffee shop", THC concentrations in oral fluid as high as 17ng/mL were reported following passive exposure to marijuana smoke [5].

Q2. A Spanish research group compared police officer observations of 31 different physical symptoms in drivers stopped for traffic offenses, with the concentration of THC in their oral fluid [6]. As would be expected, the number and severity of impairment symptoms increased with increasing THC levels.



Recommendations & Planning a Project: In 2013, a group of forensic toxicologists published recommendations for laboratory testing of drugs in oral fluid from DUID situations, consisting of drug test panels and cut-off concentrations [7]. In 2014 the Oral Fluid Subcommittee of the AAFS-SOFT DUID committee wrote a series of guidelines for planning research studies. The document is intended for use by groups interested in collecting data on drug prevalence in drivers from their own jurisdictions by testing oral fluid and rapid test devices in the field (available from the AAFS-SOFT DUID committee).

Summary

- *North American roadside surveys have established the validity and viability of oral fluid testing in DUID cases*
- *Majority of drugs detected fall into 5 categories*
- *Drug concentrations for laboratory testing of DUID samples have been recommended for oral fluid*
- *Data from roadside/mobile oral fluid drug testing systems is increasingly widespread; preliminary results are encouraging*
- *Guidelines for the implementation of data collection projects are available*
- *Interest in the use of oral fluid roadside tests in conjunction with DRE's is growing, in light of expanding marijuana legalization and concerns about drugged driving*

Oral fluid testing may become more prevalent in driving under the influence of drugs cases because of the expanding availability of marijuana, ease of use, and its less invasive procedure when compared to blood draws. Prosecutors can rest assured that oral fluid testing for controlled substances yield positive results which are generally consistent with positive results from blood testing. That means that law enforcement may be able to confirm their suspicion of the suspect's drug use closer in time to when the driving occurred. In addition, a prosecutor may be able to elicit this information in court and strengthen the government's case.

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Disclosures

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