Use of Oral Fluid to Detect Drugged Drivers

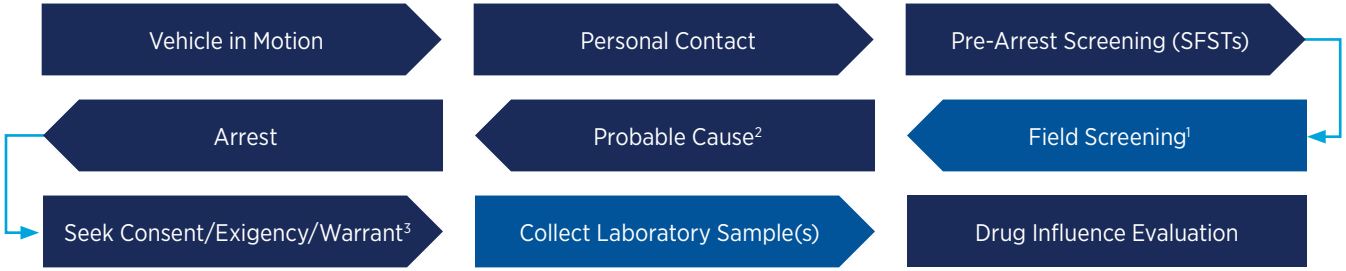
ORAL FLUID FIELD SCREENING (OFFS)

- Portable & handheld options available
- Easy & fast collection
- Minimally invasive, similar to breath test
- Gender neutral collections
- Rapid results (≤ 10 minutes)
- Demonstrated accuracy, sensitivity & specificity
- Used in conjunction with other evidence to build probable cause for arrest decision
- Quickly identifies potential polydrug impaired drivers (regardless of BAC level)
- Results may support search warrant requests for additional biological samples
- Follow manufacturer instructions/guidelines
- Admissible in hearings like those on probable cause

LABORATORY TESTING

- Easy & fast collection
- Less invasive compared to blood & urine collection
- Collection close to the time of driving (e.g., at roadside)
- Gender neutral collections
- Less expensive to collect than blood
- Likely represents recent drug use
- Often increased detectability of drugs with rapid elimination from blood
- Difficult to adulterate
- Detects pharmacologically active, or impairing drugs (e.g., THC, cocaine)
- Laboratories use validated and accepted analytical techniques and instruments
- Admissible in all court proceedings; evidentiary

WHEN TO COLLECT ORAL FLUID DURING AN INVESTIGATION



ORAL FLUID AUTHORIZED TO DETECT DRUGS?

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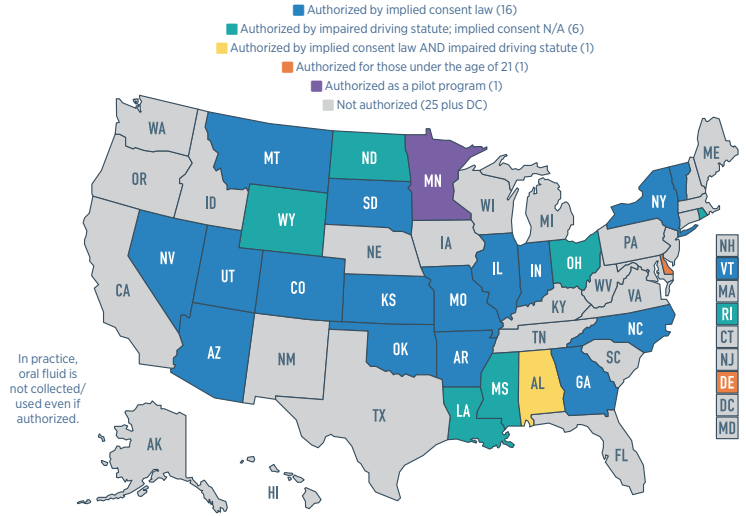

In practice, oral fluid is not collected/ used even if authorized.

Interested in starting a program in your state?

Stakeholders to consult:

- Law Enforcement
- Toxicology Personnel
- Traffic Safety Resource Prosecutor(s)
- SFST & DRE State Coordinators
- Judiciary Representatives
- Device Manufacturers
- Local Impaired Driving Groups
- Researchers and/or Data Analysts
- State Highway Safety Office
- Probation Personnel
- State Public Health Agency
- Driver Licensing Officials

Pilot Project guidelines:
soft-tox.org/files/2014_OF_Pilot.pdf

ADDITIONAL RESOURCES

- AAA Foundation for Traffic Safety | www.aaafoundation.org
- Alabama Department of Forensic Sciences | www.adfs.alabama.gov/services/tox/toxicology-oral-testing-program
- DRE Program | www.theiacp.org/projects/the-international-drug-evaluation-classification-program
- National Safety Council | www.nsc.org/work-safety/get-involved/divisions/alcohol-drugs-and-impairment
- Traffic Safety Resource Prosecutor List | ndaa.org/programs/ntlc/commercial-drivers-license/traffic-safety-resource-prosecutor-list
- Society of Forensic Toxicology FAQs | www.soft-tox.org/files/2018%20OF_FAQ_FINAL.pdf

Use of Oral Fluid to Detect Drugged Drivers
1st Edition

[1] Oral fluid field screening (OFFS) and preliminary breath test, if applicable.
[2] Based on totality of investigation.
[3] First seek consent.If no consent, are there exigent circumstances? If none, can you apply for a warrant?

IMPORTANT TERMS

Approved Training: Training by the manufacturer of a device and or an authorized agency.

Confirmatory Testing: A test resulting in a definitive result that verifies the presence of a specific drug; typically using mass spectrometry techniques.

Drug: Any substance that, when taken into the human body, can impair the ability of the person to operate a vehicle safely.

Limit of Detection (LOD): Lowest quantity of a drug in a sample that can be identified.

Metabolite: Any substance produced during metabolism (synthesized or broken down from a parent drug).

Method: An orderly and systematic approach to analyze a biological sample for the presence of drugs.

Observation Period: The operator of a device must watch the subject for at least ten minutes prior to the administration of the screening device in accordance with manufacturer's guidelines.

Oral Fluid: A clear, tasteless fluid comprised of saliva produced by multiple salivary glands, and other constituents inside the mouth.

Parent Drug: A drug administered in its original form that is typically pharmacologically active (e.g., Delta-9-THC, cocaine).

Per Se Law: Statutory assignment of a specific concentration of a drug in a biological sample at or above which is an offense to drive.

Pharmacodynamics: How the drug affects the body.

Pharmacokinetics: What the body does to a drug.

Presumptive Positive Result: A qualitative result that indicates the presence of the drug, its metabolite, or a cross-reacting substance but does not indicate level of intoxication, route of administration, or concentration.

Quantitative: A result reported as a concentration (e.g., 1000 ng/mL) indicating how much of a drug is present.

Screening: A qualitative analysis to determine the presence of a drug or drug class typically by immunoassay-based techniques. All positive findings are presumptive until confirmed by a more specific technique (e.g. mass spectrometry).

Uncertainty of Measurement: Inherent variation associated with any analytical measurement denoting a best estimate of how far a quantity might be from true value.

IMPORTANT STUDIES TO KNOW

Reviews

Desrosiers NA, Huestis MA. Oral fluid drug testing: Analytical approaches, issues and interpretation of results. J Anal Toxicol. 2019 Jul 24;43(6):415-443. doi: 10.1093/jat/bkz048.

Evaluation of roadside oral fluid test devices

Logan BK, Mohr AL, Talpins SK. Detection and prevalence of drug use in arrested drivers using the Dräger Drug Test 5000 and Affiniton DrugWipe oral fluid drug screening devices. J Anal Toxicol. 2014 Sep;38(7):444-50. doi: 10.1093/jat/bku050.

Edwards LD, Smith KL, Savage T. Drugged driving in Wisconsin: Oral fluid versus blood. J Anal Toxicol. 2017 Jul 1;41(6):523-529. doi: 10.1093/jat/bkx051.

Newmeyer MN, Swortwood MJ, Andersson M, et al. Cannabis edibles: Blood and oral fluid cannabinoid pharmacokinetics and evaluation of oral fluid screening devices for predicting Δ9-Tetrahydrocannabinol in blood and oral fluid following cannabis brownie administration. Clin Chem. 2017 Mar;63(3):647-662. doi: 10.1373/clinchem.2016.265371.

Rohrig TP, Moore CM, Stephens K, et al. Roadside drug testing: An evaluation of the Alere DDS® 2 mobile test system. Drug Test Anal. 2018 Apr;10(4):663-670. doi: 10.1002/dta.2297.

Veitenheimer AM, Wagner JR. Evaluation of oral fluid as a specimen for DUID. J Anal Toxicol. 2017;41(6):517-522. doi: 10.1093/jat/bkx036.

Effect of drugs on driving

Bogstrand ST, Gjerde H. Which drugs are associated with highest risk for being arrested for driving under the influence? A case-control study. Forensic Sci Int. 2014 Jul;240:21-8. doi: 10.1016/j.forsciint.2014.03.027.

Society of Forensic Toxicologists, Inc. Drugs and Driving Literature. www.soft-tox.org/duid_literature

Support of oral fluid for DUID testing

Truver MT, Palmquist KB, Swortwood MJ. Oral fluid and drug impairment: Pairing toxicology with drug recognition expert observations. J Anal Toxicol. 2019 Sep 10;43(8):637-643. doi: 0.1093/jat/bkz075.

Arroyo A, Marrón MT, Leal MJ, Vidal C. Oral fluid and driving under the influence of drugs (Duid): A Brief Review. Int J Forensic Sci Pathol. 2015 Jun;3(5):127-135.

Logan BKL, D'Orazio AL, Mohr ALA, et al. Recommendations for Toxicological Investigation of Drug-Impaired Driving and Motor Vehicle Fatalities—2017 Update. J Anal Tox. 2017; 2017;1–6 doi: 10.1093/jat/bkx082

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1st Edition

To access this resource online, visit https://tinyurl.com/AAAOralFluidHandout
To access the entire toolkit, visit https://tinyurl.com/AAAOralFluidReport