

ORAL FLUID SUB-COMMITTEE DUID SOFT-AAFS

FREQUENTLY ASKED QUESTIONS (FAQ)

- 1. What are the advantages of using oral fluid for driving under the influence of drugs (DUID)?**
 - Rapid, simple, non-invasive collection
 - Specimen can be taken proximal to traffic stop
 - No requirement for medical personnel
 - No gender collection issues
 - Presence of parent drug and/or metabolites likely reflects recent drug use
 - Difficult to adulterate
 - Potential for on-site screening at time of traffic stop

- 2. Is oral fluid testing reliable and valid?**
 - Yes. There are multiple published studies regarding the utility of oral fluid for drug testing at roadside as well as in drug treatment, pain management and workplace programs
 - Utilizes well validated and accepted analytical procedures

- 3. How long does it take until drugs appear in oral fluid?**
 - The time it takes to appear is dependent on the route of administration:
 - Drugs which are smoked, inhaled or taken orally as edibles appear rapidly in oral fluid because of buccal cavity contamination
 - Drugs that are administered orally in capsules (e.g. dronabinol) do not contaminate the oral mucosa
 - Drugs administered intravenously (e.g. cocaine) are detected in oral fluid approximately 10 min after injection

- 4. What is the window of detection?**
 - This is dependent on the route of administration, drug dose, sensitivity of the analytical test method and cut-off concentration.

- 5. What concentration of drug in oral fluid is indicative of impairment?**
 - At this time, it is not possible to correlate a quantitative drug concentration in oral fluid, blood or urine directly to degree of impairment

- 6. Are oral fluid and blood THC concentrations equivalent?**
 - Oral fluid THC concentrations are not highly correlated with blood levels until approximately 3 hours after intake. Initial oral fluid concentrations are elevated because of oromucosal contamination, depending on the route of administration.
 - Drug findings in oral fluid should not be used to estimate the corresponding concentrations in whole blood or vice versa.

- 7. Is passive exposure to cannabis an issue?**
 - Possibly; several studies have shown THC to be present in the oral fluid of individuals not using cannabis who were exposed to cannabis smoke. Detection of 11-nor-9-carboxy-THC (THC-COOH) in oral fluid rules out passive cannabis exposure.

- 8. After an oral fluid roadside or rapid test, does a second evidential specimen need to be collected?**
- Oral fluid roadside drug screening devices can help establish probable cause in DUID cases. The collection of a second evidentiary specimen is required, preferably an oral fluid specimen because of the rapid decline in drug blood concentrations and the time required to collect a blood specimen.
 - Confirmation specimens should be collected in appropriate tubes/devices.
 - Specimens should not be left at extreme temperature (e.g. outdoors) for an extended period of time.
- 9. Which is better specimen for DUID: blood, urine and oral fluid?**
- Urine is not preferred for DUID cases because it can be associated with a long window of detection and generally the parent drug is not detected. Blood and oral fluid are preferable as both offer the possibility of documenting drug intake proximal to the incident.
 - Oral fluid offers non-invasive rapid observed sampling at the time of the traffic stop.
- 10. Is there a deprivation period before I collect the specimen?**
- Yes, 10 min is generally recommended in other areas of drug testing, however the important aspect prior to oral fluid collection is to ensure there is nothing in the oral cavity (food, drink, gum etc.)
- 11. What is the stability of drugs in oral fluid?**
- This depends on the collection device and storage conditions. Oral fluid collection device manufacturers should provide specific storage instructions.

References

- a. Langel K, Gjerde H, Favretto D, et al. Comparison of drug concentrations between whole blood and oral fluid. *Drug Test Anal.* 2014;6(5):461-71.
- b. Moore C, Coulter C, Uges D, et al. Cannabinoids in oral fluid following passive exposure to marijuana smoke. *Forens Sci Int.* 2011;212(1-3):227-230.
- c. Cone EJ, Bigelow GE, Herrmann ES, et al. Nonsmoker exposure to secondhand cannabis smoke. III. Oral fluid and blood drug concentrations and corresponding subjective effects. *J Anal Toxicol.* 2015;39(7):497-509.
- d. Logan BK, Lowrie KJ, Turri JL, et al. Recommendations for toxicological investigation of drug-impaired driving and motor vehicle fatalities. *J Anal Toxicol.* 2013;37(8):552-8.
- e. 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 Δ^9 -tetrahydrocannabinol in blood and oral fluid following cannabis brownie administration. *Clinical Chemistry* in press.
- f. Swortwood MJ, Newmeyer MN, Abulseoud OA, et al. On-site oral fluid Δ^9 -tetrahydrocannabinol (THC) screening after controlled smoked, vaporized, and oral cannabis administration. *Forensic Toxicology* in press.
- g. Swortwood MJ, Newmeyer MN, Abulseoud OA, et al. Cannabinoid disposition in oral fluid after controlled smoked, vaporized and oral cannabis administration. *Drug Test Anal* 2016 Sep 19.
- h. Hartman RL, Brown TL, Milavetz G, et al. Controlled vaporized cannabis, with and without alcohol: Subjective effects and oral fluid-blood cannabinoid relationships. *Drug Test Anal.* 2016;8(7):690-701.