What is Oral Fluid?
Oral Fluid is a mix of saliva from different glands in the mouth. It may also contain electrolytes, debris, food particles, enzymes and bacteria. Human oral fluid is a plasma ultra filtrate consisting of 98% water.

Is there a difference between oral fluid and saliva?
In the arena of drug testing the terms are used interchangeably.

How do drugs get into oral fluid?
Drugs move from the blood in the capillaries in the oral surfaces into the oral fluid that is secreted into the mouth. Since oral fluid is slightly acidic, basic drugs tend to partition more into oral fluid where they are more soluble than acidic drugs. Residual drug from chewing a tablet or smoking a drug like marijuana or K2 will persist in the mouth for some period of time after ingestion.

What are some of the advantages of oral fluid testing over blood or urine?
- Oral fluid is easy to collect and can be collected in the field, close to the time of the subject’s driving. This avoids the problem of the body eliminating the drug before a sample can be collected.
- It is difficult for someone to tamper with or adulterate the sample since the collection is observed.
- Oral fluid samples can be collected at very limited cost compared to blood.
- Oral fluid collection is done conveniently and hygienically with a special collection device like a sucker.

Is it a problem that oral contamination occurs after marijuana smoking?
The oral fluid test is a test of drug exposure, so although there can be residual THC in the mouth following smoking, this doesn’t represent a limitation to the test. The oral fluid residue typically persists for 2-4 hours after smoking, which coincides with the time window for marijuana’s major effects.

Do all drugs move into oral fluid from the blood?
Most basic drugs do, which includes things like opiates, amphetamines, cocaine, PCP, methadone, as well as some prescription and over the counter medications. More acidic drugs don’t transfer so well into oral fluid, like benzodiazepines (xanax, valium, etc), or barbiturates.

Should you test for drugs or their metabolites in oral fluid?
It varies from drug to drug. Drug metabolites that are more acidic, like the marijuana metabolite Carboxy-THC don’t transfer into oral fluid very well. The cocaine metabolite benzoylecgonine is another example. To demonstrate marijuana exposure, testing the oral fluid for THC is the most widely accepted practice. For cocaine use we test for the parent cocaine itself, rather than its metabolite.

Can oral fluid be contaminated with drugs as a result of chewing or smoking them?
Yes it can. Data available for marijuana suggest that the oral contamination persists for about 2-4 hours, just as long as the effects of marijuana typically last, so the THC test demonstrates use or exposure within the window of time when a person is likely to be most affected. For other drugs that has not been studied.
Are the concentrations of drugs in the oral fluid correlated to blood concentrations?
No. Since the rate of transfer depends to some degree on oral fluid pH, the variability from person to person introduces some variability that makes it inadvisable to estimate blood concentrations based on an oral fluid measurement.

Does an oral fluid drug concentration correlate to a person’s level of impairment?
Neither blood nor oral fluid correlate directly to a person’s level of impairment. The impairment is caused by the presence of drugs in the brain, and both blood and oral fluid are an indirect method of measuring that. Oral fluid and blood however typically are tested for the active drug rather than the inactive metabolite as is done in urine, and with oral fluid or blood, the window for positivity is more closely related to the time when the person is most likely to be affected.

How long can drugs be detected in oral fluid?
It varies from drug to drug, but typically the oral fluid will test positive as long as the blood would. The exceptions to this are marijuana and acidic drugs like benzodiazepines and barbiturates. For cocaine, amphetamines, and THC, this would be a few hours, for tricyclic antidepressants and some other drugs this could be for a few days.

Is oral fluid an acceptable sample for DUI testing?
Since it demonstrates drug exposure, oral fluid drug testing is an ideal means of corroborating the potential cause of a subject’s impairment as determined through field sobriety testing or the DRE assessment. Additionally, in per se states, on-site testing, followed by a laboratory confirmation gives evidence of the subject's use of the drug, and in most cases there will be probable cause evidence that leads to the sample collection that supports impairment.

Can the roadside tests be admitted in court?
It may depend on your jurisdiction. Right now 14 states specifically allow oral fluid testing in their DUI statutes. Oral Fluid is covered either explicitly as saliva or oral fluid, by the “other bodily substance” provision of the statute. In other states, individual courts have accepted the results even if oral fluid is not specifically approved.

Aren’t all roadside tests pretty much all the same?
No, there is a wide variation in both the range of drugs tested for on the devices, and their sensitivity. Ask for specific details. Field testing devices that don’t use an electronic reader will not have adequate sensitivity for some important drugs.

Are there on-site tests available for drugs in oral fluid?
Yes, several vendors have tests they claim will detect drug use in oral fluid samples, however not all tests are equal. It is certainly an arena where you get what you pay for. Cheaper tests typically have poorer quality control in manufacture, are more susceptible to operator error, require a subjective yes/no call by the officer, and lack the sensitivity needed to detect some important impairing drugs. Ask vendors to see publications or independent assessments that show the sensitivity and error rate of their product before buying.

Isn’t the roadside test just as good as a lab test?
Roadside tests or on-site are presumptive tests, even those that are read by an instrument and which produce a printout. In most jurisdictions in criminal cases, the courts have set the precedent that presumptive or screening tests need to be confirmed by an independent method. Usually this is gas chromatography/mass spectrometry (GCMS), or liquid chromatography mass spectrometry (LCMS).
Does the field test need to be confirmed?
Yes, see above.

Do you need to do a blood test if the field test is positive, or can you send the oral fluid to the lab?
The oral fluid on-site test can serve as either probable cause for a blood draw, or for collection of an evidential oral fluid sample collection. Blood may give more information about recency and degree of use, but is more expensive and more time consuming to collect, and adds another person to the chain of custody in the form of the phlebotomist. It also introduces a delay during which short acting drugs may be eliminated from the body. Discuss this with your local district attorney or prosecutor.

What methods are used for oral fluid testing in the lab?
NMS Labs uses liquid chromatography/time of flight mass spectrometry (LC-TOF) to confirm field test positive results in oral fluid. This state of the art technique uniquely identifies drugs by their molecular formula, and retention time, and gives a forensically defensible analytical result.

Is anybody else using this in their state right now?
Several states have pilot programs to assess oral fluid. Internationally several countries are leading the way on this and have adopted oral fluid as the principal toxicology evidence in DUI cases. This includes Australia, Belgium, and Germany.

What states allow the use of oral fluid in their statutes?
Alabama, Arizona, Colorado, Indiana, Kansas, Louisiana, Missouri, New York, North Carolina, North Dakota, Ohio, Oregon, South Dakota, and Utah.