

**Oral Fluid Testing**  
lab-based analysis  
swab collection device

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**Oral Fluid Testing Panels**

Panel Name	Number of Analytes
Standard Panel	12
Expanded Panel	18
Comprehensive Panel	24
Specialty Panel	30

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**Oral Fluid Testing**

**Important Points:**

- Same approach as laboratory urine testing – immunoassay initial test followed by confirmation using mass spectrometric procedures
- Chain of Custody and QC protocols similar to urine testing
- Collection of specimen done with swab collection kit; specimen placed in vial with buffer solution for shipment to laboratory
- Detection times for most drugs similar to UDS
- Accuracy and precision of drug detection comparable to UDS laboratory analysis

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**Oral Fluid:  
Pharmacology**

- Three glands – parotid, submandibular and sublingual
- Two types of secretion – serous (water containing electrolytes and amylase) and mucous (mucins)
- Oral fluid flow – 0.5 to 1.5 L/day – can be stimulated to 10 ml/min
- Wide pH range – 6.0 to 7.8

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**Oral Fluid:  
Pharmacology**

- Incorporation into oral fluid:
  - Passive diffusion from plasma – dependent upon oral fluid pH (ionized/unionized at oral fluid pH), solubility in lipid membranes and degree of plasma protein binding
  - Only free non-protein bound and non-ionized drug can cross membranes into oral fluid
  - From the buccal cavity – oral use, smoking, inhalation and insufflation

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**Urine and Oral  
Fluid  
Comparison**

- Comparison of urine and oral fluid drug test results on paired specimens
- 164 paired sets of specimens—21% were positive and 69% were negative for both specimens for an overall agreement of 90%.
- 2.9% were positive in oral fluid and negative in urine; and 7% were negative in oral fluid and positive in urine, for an overall disagreement of 10 percent.
  - Morphine was found more often in urine than in oral fluid, whereas 6-AM (heroin) was found more often in oral fluid than in urine.
  - Amphetamine and methamphetamine were found slightly more often in oral fluid than in urine. Benzodiazepines and cannabis were found more frequently in urine.

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**Oral Fluid Specimen Collection**

- Uses swab device; placed in vial with buffer solution and shipped to laboratory for analysis
- Custody and control form used to document collection; vials sealed and initialed
- OF specimens can be self-collected using video or other authentication of collection



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