

# Hair and Fingernail Testing - Alcohol & Drugs

## Hair and Fingernail Drug Panels

Panels:

	17	16	15	14	12	10	9	7	5
<b>Amphetamines</b> amphetamine, MDA, MDEA, MDMA, methamphetamine	●	●	●	●	●	●	●	●	●
<b>Cannabinoids</b> carboxy-THC	●	●	●	●	●	●	●	●	●
<b>Cocaine</b> benzoylecgonine, cocaethylene, cocaine, norcocaine	●	●	●	●	●	●	●	●	●
<b>Opiates</b> 6-MAM, codeine, hydrocodone, hydromorphone, morphine, norhydrocodone	●	●	●	●	●	●	●	●	●
<b>Phencyclidine</b> phencyclidine (PCP)	●	●	●	●	●	●	●	●	●
<b>Benzodiazepines</b> alprazolam, diazepam, midazolam, nordiazepam, oxazepam, temazepam	●	●	●	●	●	●	●	●	
<b>Barbiturates</b> amobarbital, butalbital, pentobarbital, phenobarbital, secobarbital	●	●	●	●	●	●	●	●	
<b>Methadone</b> EDDP, methadone	●	●	●	●	●	●	●		
<b>Propoxyphene</b> propoxyphene, norpropoxyphene	●	●	●	●	●	●	●		
<b>Oxycodone</b> oxycodone, oxymorphone, noroxycodone	●	●	●	●	●	●			
<b>Meperidine</b> normeperidine	●	●	●	●	●				
<b>Tramadol</b> tramadol	●	●	●	●	●				
<b>Fentanyl</b> norfentanyl	●	●	●	●					
<b>Sufentanil</b> norsufentanil	●	●	●	●					
<b>Ketamine</b> ketamine, norketamine	●	●	●						
<b>Buprenorphine</b> buprenorphine, norbuprenorphine	●	●							
<b>Zolpidem</b> zolpidem (e.g. Ambien®)	●								

# Window of Detection: Up to 3 Months

## Additional Add Ons and Available Options For Hair and Fingernail

Additional Add Ons and Available Options	Add On	Stand Alone
<b>Diphenhydramine</b> diphenhydramine	✓	✓
<b>High-Potency Opioids (HPOs)</b> 6-β-Naltrexol (naltrexone metabolite), butorphanol (e.g. Stadol®), nalbuphine (e.g. Nubain®), naloxone (e.g. Narcan®), naltrexone (e.g. Revia®)	✓	✓
<b>EtG (Direct Ethanol Biomarker)</b> ethyl glucuronide	✓	✓
<b>Propofol Glucuronide</b> propofol glucuronide (e.g. Diprivan®)	✓	✓

**Drug and alcohol biomarkers may show up in keratin specimens within hours of ingestion, depending on the dosage, with concentration levels maximizing 2 weeks after ingestion. Environmental exposure may be detected immediately.**

## Fingernail

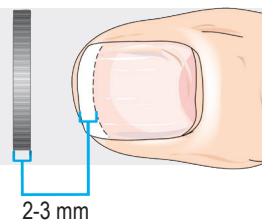
Fingernails provide a test specimen that is at the cutting edge of drug and alcohol testing. Composed of keratin, the same material as hair, fingernails are simple to collect and easy to ship and store.

As the nail grows, substances can pass from the blood vessels below the nail into the keratin fibers where they become trapped. Biomarkers become locked in keratin fibers along the entire length of the nail. Nail keratin is 4 times thicker than hair keratin, more stable, and extremely difficult to adulterate, resulting in a longer window of detection for fingernail testing than for hair testing, up to 3 months for alcohol, and up to 6 months for substances of abuse.



USDTL provided hair and nail collection materials. Collection instructions can be found at [www.USDTL.com](http://www.USDTL.com).

Fingernail specimens are clipped and collected by the donor in front of a trained collection staff member. A clipping of 2-3 mm long (about the width of a quarter) from all 10 fingernails will provide about 100 mg of specimen. For EtG, add-ons and/or tests above 10-panel, 150 mg of specimen is required.



## Hair

Hair testing is a powerful tool for the detection of drug and alcohol abuse. Hair provides a long-term history of drug and alcohol abuse by trapping biomarkers in the keratin fibers of the growing hair strand.

When collected close to the scalp, hair can provide up to a 3 month history of drug and alcohol abuse. Hair offers a specimen that is simple to collect, somewhat difficult to adulterate, and easy to ship.

A 1.5 inch specimen of about 200 strands of hair (about 1/4 inch in diameter, the size of a #2 pencil) closest to the scalp will give 100 mg of hair. For EtG, add-ons and/or tests above 10-panel, 150 mg of specimen is required.

