



Hair Alcohol Abuse Test (HAT)

What is Alcohol?



Alcohol (**aka: ethyl alcohol or ethanol**) is an intoxicating ingredient found in beer, wine, and liquor.

In the US, a standard drink is equal to 13.7 grams (0.6 ounces) of pure alcohol. This is equivalent to:

- **12-ounces of beer.**
- **8-ounces of malt liquor.**
- **5-ounces of wine.**
- **1.5-ounces or a “shot” of 80-proof distilled spirits or liquor (e.g., gin, rum, vodka, or whiskey).**

Patterns of Alcohol Consumption

Moderate Drinking

No more than 1 drink per day for women and 2 drinks per day for men.

Heavy Drinking

More than 1 drink per day for women and more than 2 drinks per day for men.

Binge Drinking

5 or more drinks on a single occasion for men or 4 or more drinks on a single occasion for women, generally within about 2 hours.

Alcohol Abuse

Consistent consumption of alcohol to the point that it is harming one's health, relationships, or work.

Alcoholism

Alcoholism or alcohol dependence is a diagnosable disease characterized by alcohol addiction and abuse.

Alcohol Abuse Statistics

- **79,000 deaths** attributable to “excessive alcohol use” in the U.S. each year.
 - *3rd leading lifestyle-related cause of death.*
- **In 2005, alcohol resulted in...**
 - *1.6 million hospitalizations*
 - *4 million+ emergency visits*
- **In the workplace**
 - *Research indicates that between 10 and 20 percent of the nation's workers who die on the job test positive for alcohol or other drugs.*
 - *The economic costs of alcohol abuse are estimated to have been \$184.6 billion (2000)*

Immediate Risks of Alcohol

- Unintentional injuries (falls, drowning, burns, etc.)
- Traffic accidents
- Unintentional firearm injuries
- Violence and child maltreatment.
 - *About 35% of victims report that offenders are under the influence of alcohol. Alcohol use is also associated with 2 out of 3 incidents of intimate partner violence.*
 - *Studies have also shown that alcohol is a leading factor in child maltreatment and neglect cases, and is the most frequent substance abused among these parents.*
- Risky sexual behaviors and increased risk of sexual assault
- Miscarriage and stillbirth and birth defects
- Alcohol poisoning



Long-Term Effects of Alcohol

- **Neurological problems (e.g. dementia, stroke , neuropathy)**
- **Cardiovascular problems**
- **Psychiatric problems**
- **Social problems**
- **Cancer of the mouth, throat, esophagus, liver, colon, and breast.**
- **Liver diseases**
- **Gastrointestinal problems**
- **Violence, including intimate partner violence and child maltreatment**



Current Alcohol Testing Methods

- **Urine**
- **Blood alcohol**
- **Breathalyzer**
- **Saliva alcohol**
- **Hair alcohol**





The Hair Alcohol Abuse Test

Product Review



Hair Alcohol Abuse Test (HAT)

➤ Retail Price: **\$650**

- *Chain of Custody*

Benefits:

- Establish a client's average alcohol consumption over a period of time.
 - *Provides definitive timeline of alcohol consumption from months to years.*
 - *Enables segmental analysis*
- Allows for longer detection time.
 - *Identifies individuals with recent histories of alcohol abuse.*

Other HAT Benefits

Other Benefits:

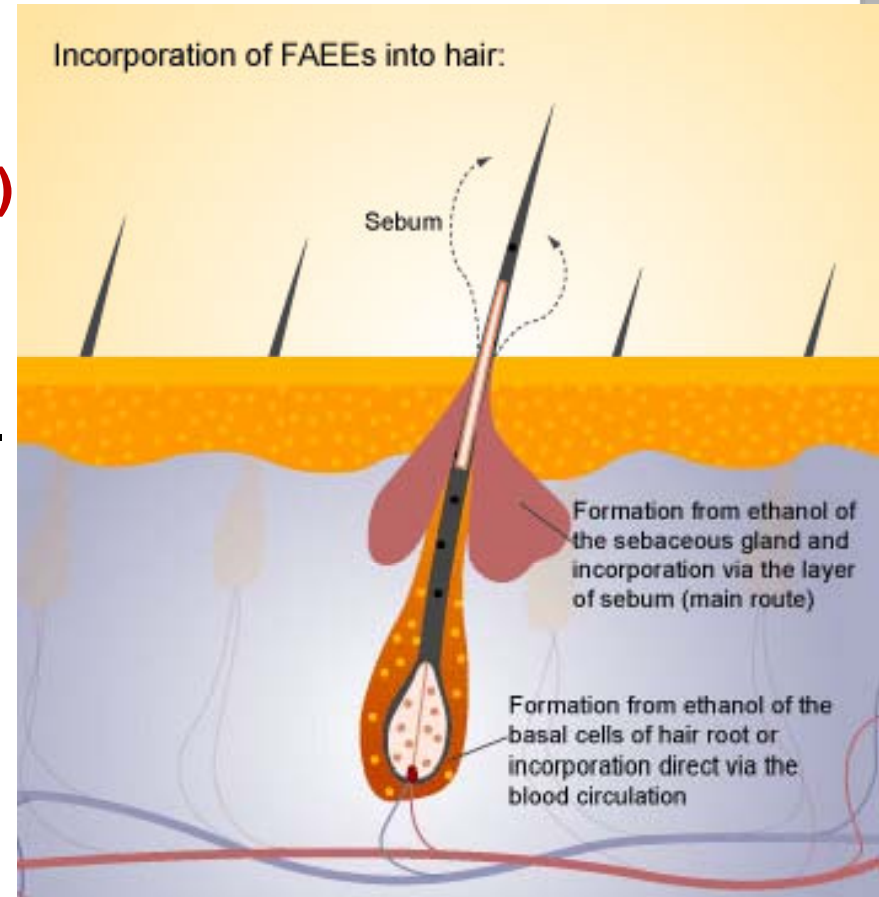
- **Consumer Genetics is the exclusive provider of this patented test. (*Only ones in the United States!*)**
 - *ALTN is the main distributor.*
- **Nonintrusive and simple**
- **Highly reliable and accurate**
 - *Because alcohol is normally only ingested, it does not come in any other form (i.e. gas) that would cause ambiguities or false positive results.*
- **Samples can be collected at anytime**
- **No adulterants**
 - *No topical solutions affect the ability to detect FAEs.*
- **Accredited and certified to ISO 9001**
 - *Accepted laboratory procedures and techniques*

**ISO
9001**
**QUALITY
ASSURANCE**

ANYLABTEST!
NOW!

How it Works

- **Growing hair absorbs markers:**
 - **Fatty acid ethyl esters (FAEE's)**
 - *Remain in hair indefinitely.*
- **These markers are only produced when alcohol is in the bloodstream.**
- **The more FAEE's, the more alcohol has been consumed.**



HAT Summary

- The 4 FAEE's used in the Hair Alcohol Abuse Test appear **in greatest concentrations amongst heavy drinkers.**
- FAEEs do not degrade
 - *A correlation between alcohol level intake and FAEE concentrations can be measured over a period of weeks and months.*
- FAEE's must be in the right concentrations and in correct quantitative ratios to each other to be a positive result

Suggested Indication of Detected Levels of FAEE in Hair*

| | | |
|-------------|---|-------------------|
| <0.2 | = | Non-Drinker. |
| 0.21 – 0.39 | = | Light Drinker. |
| 0.40 – 0.79 | = | Moderate Drinker. |
| 0.80 – 0.99 | = | Heavy Drinker. |
| >1.0 | = | Abusive Drinker. |

*Concentration measured in nanograms, ng



CERTIFICATE OF ANALYSIS
Hair Alcohol Abuse Test

LAN#: 070218F0001
Specimen ID: 0303004
Date Collected: 14/02/2007 00:00:00
Date Reported: 23/02/2007 00:00:00
Length of Hair Tested (cm): 6
Period covered: up to 6 months
Approx. weight of donor: 8 1/2 st.

Donor ID: _____

Test(s) performed:

Alcohol markers from determination of fatty acid ethyl esters (FAEE's)

Hair Confirmation Cutoff 1ng/mg

| | |
|-----------------------------|-----------------|
| Ethyl myristate | 0.1ng/mg |
| Ethyl palmitate | 0.4ng/mg |
| Ethyl oleate | 0.5ng/mg |
| Ethyl stearate | 0.2ng/mg |
| Concentration (FAEE) | 1.2ng/mg |

Hair Test Result(s)

Section for alcohol history **POSITIVE**

The sample shows evidence of frequent excessive alcohol consumption in the fatty acid ethyl esters

Certified By: _____

Laboratory Director



➤ **Sample Results Report**

Concentration (FAEE)

1.2ng/mg

= Abusive Drinker

Hair Test Result(s)

Section for alcohol history **POSITIVE**

The sample shows evidence of frequent excessive alcohol consumption in the fatty acid ethyl esters

A negative or positive result is provided dependant on whether the result falls below or above the cutoff level set by Consumer Genetics laboratory.

FAEE vs. EtG

➤ HAT (FAEE)

- **Retail: \$650**
- **Results: 10 days**
- **Detection Window: Up to 12 months****
 - *Never been a test like this before. Only one to have it in U.S.*

➤ Hair Alcohol Test (EtG)

- **Retail: \$149**
- **Results: 5-7 days after receipt.**
- **Detection Window: 60-90 days.**

*****Depends on type and length of hair being analyzed. Every .5" of head hair = ~30 day history. Also applicable to body hair.**

FAEE vs. Traditional Methods

| FAEE Hair Alcohol Testing vs. Traditional Methods | | |
|---|----------------------------|---|
| | AbuseCheck™ | Traditional Methods |
| Window of detection | Up to 12 months | < 4 weeks |
| Regularity | One-off testing | Regular testing (costly) |
| Results | False positives eliminated | Risk of false positives |
| Re-testing | Possible | Not possible due to short window of detection |
| Collection | Non-invasive | Invasive |
| Samples and Storage | Tamper Proof | Risk of tampering |



Urine.



ID's abuse over a longer period of time.



More accurate.



More convenient and non-invasive.

ANYLABTEST!
NOW!

Competition

➤ Competition

- **\$249: Alcohol Sobriety Hair Test (U.S. Health Tests.com).**
 - *Tests only for 'consistent abusive drinking,' not absolute levels.*
- **\$650 (\$500+\$150): AbuseCheck.com (COC) – from Consumer Genetics.**
- **\$650 (\$500+\$150): Consumer Genetics (COC)**

Frequently Asked Questions

- ***Will an individual who is strictly abstinent have a “zero” result?***
 - **Ethanol is present in all hair including those that abstain from alcohol; however these traces amounts are products of the environment. These traces of environmental ethanol do not correlate to alcohol which has been consumed and are considered “baseline” for the test.**
- ***Can you determine how much alcohol a person has had monthly?***
 - **No. Although we will give a value in our report, we can only say that the value exceeds our interpretation of the cutoff level we have set, which is 60 grams of alcohol per day over a protracted period. We cannot interpret how much alcohol was actually consumed. To do so would be scientifically unsound because alcohol is metabolized in slightly different ways by different people.**

Adulterants

➤ Adulterants

- ***No known topical solutions, cosmetics, or shampoo affect the ability to detect FAEs in the hair . Recent alcohol application to the scalp for head lice will also not affect the results.***



Product like these don't work!

Key Points

- **Local ALTN is a main provider (CG is the exclusive distributor in the U.S.)**
 - ***Only test of its kind.***
- **Definitive and accurate results.**
 - ***Make better hiring decisions, etc.***
- **Longer time window of abuse.**
- **Affordable**
 - ***Only a one-off test (no regular testing needed).***
- **Non-Invasive.**
- **Reliable results in 10 days.**
- **Anonymous and confidential.**
- **Convenient**
 - ***Fast Procedure, Long Opening Hours and Local***