

## Frequently Asked Questions

### GENERAL

#### **What is hair testing?**

Hair testing analyzes for drugs within the hair shaft, rather than body fluids like urine or saliva, to determine whether drugs of abuse are present. Compared to analysis of body fluids, hair testing is highly resistant to evasion by adulterating or substituting samples, or by simply abstaining from drug use for a few days. Psychemedics' proprietary method for detecting drugs in hair uses radioimmunoassay and state-of-the-art GC/MS/MS or LC/MS/MS confirmation to measure the drug molecules and metabolites permanently entrapped in hair which were incorporated following ingestion. This technology offers significantly greater detection ability than other methods of analyzing hair or body fluids.

#### **Who is using hair testing?**

Thousands of corporations use Psychemedics' test to screen applicants and perform random drug tests on their employees. Schools have been using the Psychemedics test since 1997 to help their students stay drug-free. Courts routinely use Psychemedics' test in their probation, parole, and diversionary programs. The use of hair is well established, and Psychemedics has been conducting hair tests since 1987.

#### **What drugs are included in a standard test?**

Cocaine, Marijuana, Opiates (including Heroin, Codeine, Morphine, Oxycodone, Hydrocodone and Hydromorphone), Methamphetamine, Ecstasy (MDMA), Eve (MDEA) and Phencyclidine (PCP).

#### **What time period does a standard test cover?**

A standard test of one-and-one-half inches of head hair cut close to the scalp can provide a several month window to detect drug ingestion.

#### **How fast does head hair grow?**

Studies indicate that hair collected at the crown of the head grows on the average approximately 1.3 cm (or ½ inch) per month. This growth rate may vary among people; consequently the same 3.9cm length of hair may represent slightly different time periods.

#### **How does hair analysis compare to urinalysis?**

The primary difference is the wider window of detection with hair. Cocaine, methamphetamine, opiates and PCP are rapidly excreted and usually undetectable in urine 72 hours after use. Rather than the hours or days covered by a body fluid test, a hair test covers a period of months, ensuring that a drug user cannot evade the test by simply abstaining for a few days. Additional advantages include: non-intrusive collection procedures, virtual elimination of test evasion through substitution or adulteration, and greater accuracy through test repetition capability. The combination of an increased window of detection and resistance to evasion makes hair testing far more effective than urinalysis in correctly identifying drug users.

#### **How soon after use can a drug be detected in hair?**

It takes approximately 5-7 days from the time of drug use for the portion of the hair containing that drug to grow above the scalp.

#### **What is the shortest time period that can accurately be evaluated?**

In most situations the minimum time period is approximately one month. A hair test does not determine drugs used on a particular day or week.

### **How sensitive is hair testing in detecting drug users?**

Comparison studies have proven that Psychemedics' testing is up to 5-10 times more effective in identifying drug users than urinalysis. In other words, 85% of the drug users identified by a Psychemedics test could get through a urine screen and enter the workforce.

### **Is all hair testing the same?**

Psychemedics uses its proprietary digestion method to liquefy the hair, thereby effectively releasing essentially all the drugs present for analysis, and increasing detection capabilities. Other laboratories may leach drug from the hair, leaving behind or destroying some of the drug in the process. Psychemedics also employs an extensive wash procedure on test samples, and analyzes the wash to ensure that any potential contamination has been removed or taken into account. Other labs may use a less effective wash and/or do not analyze the wash, putting their clients at risk for making employment decisions based on a result that may be reflective of external contamination.

### **How does Psychemedics establish its cut-off levels?**

These levels are based on field studies that establish the presence of the drugs following ingestion. These levels are included in Psychemedics' FDA submissions, and are similar to the cut-off levels mandated in several state hair testing regulations and contained in the 2004 proposed SAMHSA mandatory guidelines.

## **COLLECTIONS**

### **How much hair is needed?**

Psychemedics' standard screen, along with GC/MS/MS or LC/MS/MS confirmation, usually requires a cosmetically undetectable lock of hair preferably snipped from the back of the head, just below the crown. In general, the amount needed is the thickness of a shoelace tip. Hair analysis methods used by some other laboratories have required significantly more hair.

### **Can tests be run on people with little or no hair?**

Yes. Hair can be collected from several locations on the head and combined to obtain the required amount of hair. If head hair is not available, certain body hair can be used as an alternative.

### **Can hair collected from a brush be used?**

No. For workplace testing Psychemedics requires a hair sample to be collected using the proper chain-of-custody protocols that will withstand a legal challenge. Psychemedics requires that the sample be submitted with Psychemedics Sample Acquisition Materials. The test subject must initial the sample container to certify the authenticity of the sample at the time of collection.

### **How are collections performed on candidates that use artificial hairpieces or attachments to their own hair?**

The collection process requires the collector only to take the candidate's natural hair. Natural head hair or nape hair can be taken. Body hair can also be taken when hair from those two sources is not available.

### **What collection help can I get?**

Psychemedics provides detailed instruction through a written training manual and video. Both are available in English and Spanish. Additional help is available through Client Service Managers dedicated to each client, and from Psychemedics' professional trainers.

## **SAMPLE CHARACTERISTICS**

### **Does chemical treatment of the hair affect the test results?**

Commonly used hair procedures (e.g., shampoos, conditioners, sprays, mousses and gels) have no significant effect on results. In fact, normal hair washing helps to remove external contamination. Normal hair treatments such as bleaching, perming and dyeing generally will not significantly lower the quantitative results. If the protein matrix of the hair has been damaged to the point of

breaking (cortex damage) the level of drug can be significantly affected. However, severely treated or damaged hair can be readily identified from the wash ratios and/or staining procedure.

#### **Is there a risk that the results of a hair test can be affected by environmental contamination?**

Psychemedics utilizes several independent approaches which, in various combinations, rule out the possibility of a positive result from external contamination. The first method involves extensive chemical washing of the hair specimen prior to screening, followed by analysis of the content of the wash and application of certain wash criteria. This wash analysis is a critical step to ensure that any contamination is effectively accounted for. Additionally, Psychemedics measures the presence of metabolites. If drugs were in the air or on a person's hands and thereby got on a person's hair from outside, the drug would be normally present as the drug substance itself, and not as certain metabolites or with metabolite/parent drug ratios which are usually produced by ingestion. Psychemedics' wash criteria along with its ability to distinguish and measure metabolites with its highly sensitive GC/MS/MS or LC/MS/MS equipment is critical to eliminate the possibility of false positives from external contamination. In addition, any positive inadvertent ingestion (e.g., from passive inhalation or even poppy seed consumption) is distinguished from deliberate drug use by setting GC/MS/MS or LC/MS/MS cut-off levels above those which can be produced by passive internal exposure. Studies have shown that the combination of extensive washing, metabolite analysis, and proper cut-off levels are necessary to avoid false positives due to external contamination or passive ingestion.

### **LABORATORY PROCEDURES**

#### **Does Psychemedics perform confirmation of all positive results?**

Psychemedics provides automatic confirmation for samples which screen positive. Psychemedics uses state of the art GC/MS/MS or LC/MS/MS.

#### **What is done with the excess hair that is not tested?**

All remaining hair is stored in the chain-of-custody sample acquisition pouch. Negative hair is stored for approximately 1 month. Positive hair is stored for five years.

#### **How long are positive test result reports kept on file?**

Laboratory records and test results are kept for a five-year period.

### **LEGAL AND REGULATORY**

#### **Has Psychemedics' testing been admitted in court?**

Yes. The use of Psychemedics' hair testing for drugs of abuse has been routinely admitted in both state and federal courts, as well as arbitrations and agency hearings. The test results are routinely upheld. Some court systems use hair analysis as part of their probation, parole, and diversionary programs. Psychemedics' legal track record with hair analysis far surpasses any other laboratory. Other labs have tried to point to Psychemedics' successful legal cases to support their testing methodology.

#### **Is hair testing included in SAMHSA/NIDA guidelines?**

Under SAMHSA/NIDA's current guidelines for federally-mandated testing, urine is the only specimen included for testing certain government employees and that segment of private sector testing that falls under the Department of Transportation or other agency guidelines. The majority of drug testing in this country (approximately 82%) does not fall under SAMHSA or DOT mandates. In a November 2008 press release, SAMHSA states that HHS will continue to pursue substance abuse testing using alternative matrices, including hair specimens, and anticipates issuing further revisions to the Mandatory Guidelines addressing the use of hair specimens.

#### **Are Psychemedics' tests regulated by the Food and Drug Administration?**

The FDA sets minimum standards for drug tests used in a workplace setting, requiring that they be performed with screening tests that have been approved, cleared, or otherwise recognized by the Food and Drug Administration as "accurate and reliable". All of Psychemedics' screening tests have been evaluated and cleared by the FDA.