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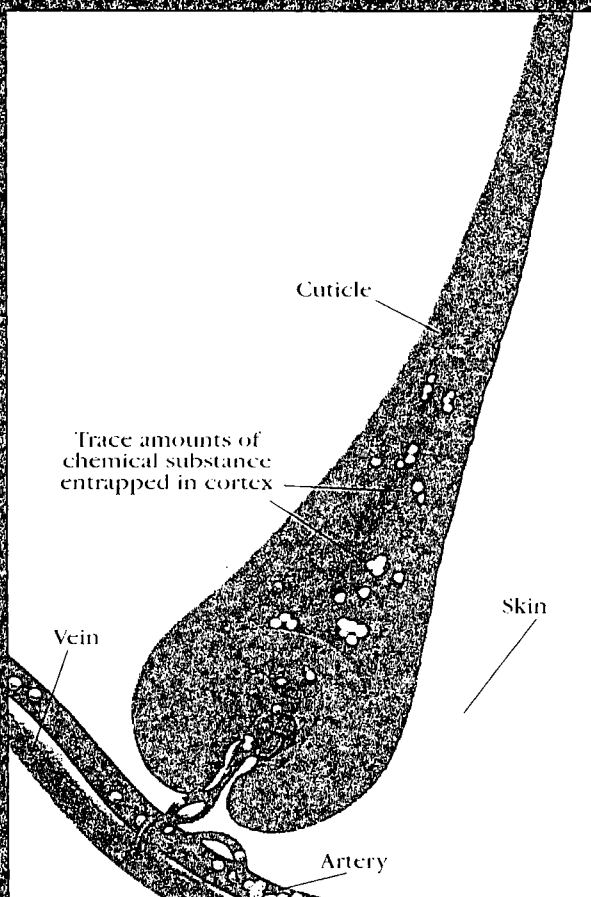
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PSYCHEMEDICS[®]

C O R P O R A T I O N

Superior Detection
of Drug Abuse



The Patented Hair Analysis Method

PSYCHEMEDICS®
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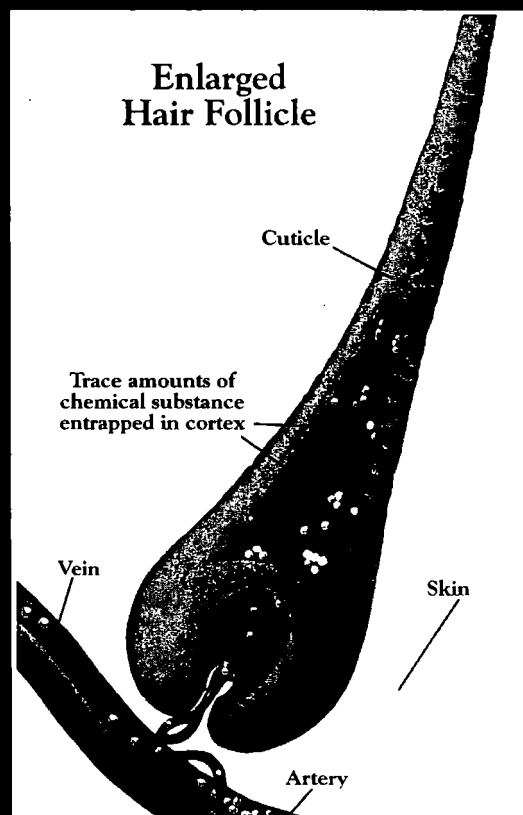
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A SIMPLE SCIENTIFIC FACT

RIAH is based on a simple scientific fact. Drugs which are ingested circulate in a person's bloodstream which nourishes the developing hair follicle. Trace amounts of the drugs become entrapped in the core of the hair shaft in amounts roughly proportional to those ingested. These traces remain in the hair as it grows out from the head at a rate of approximately one-half inch per month. The drugs cannot be washed or flushed out and do not diminish with time, but are released upon destruction of the hair fiber. Thus, a drug history can be obtained from the hair of any individual. Drug use can be detected from months, even years past, depending on the length of the sample. Psychomedics' standard test currently provides a 90-day history of drug use.



RIAH® provides a no-nonsense approach to drug testing and a powerful up front deterrent to drug use because employees and applicants know they can't "beat the test".

Psychomedics has regional offices
in the following areas:
CHICAGO • LOS ANGELES • BOSTON • DALLAS
ATLANTA • SAN FRANCISCO • FORT LAUDERDALE.

Customer Service
1-800-522-7424

PSYCHEMEDICS
CORPORATION

PSYCHEMEDICS®

RIAH®

**Detection of Drug
Abuse**

By Analysis of Hair

PSYCHEMEDICS
CORPORATION

Psychomedics' RIAH

Radioimmunoassay of Hair

Radioimmunoassay of hair using the Psychomedics' RIAH test is a proven drug testing procedure which not only detects if drugs of abuse have been used, but also provides information in the quantity of drugs consumed by an individual and the historic pattern of drug use. This type of information is not available from any other drug-screening procedure. RIAH is also more accurate because it measures drug use over a significantly longer period of time and cannot be evaded. The collection of a hair sample is easy and less embarrassing than a urine sample.

Increased Detection Efficiency & Cost Effectiveness

RIAH hair analysis has consistently proven to be more effective than urinalysis in correctly identifying drug abusers. In fact, when hair and urine results are compared in a "side-by-side" evaluation, **5 to 10 times as many drug abusers are accurately identified with the RIAH hair test.**

This superior detection rate makes RIAH the most cost effective and efficient method of drug testing.

The RIAH History

The RIAH hair testing process was pioneered in 1977 by Annette Baumgartner and Dr. Werner Baumgartner. Over ten years of research funded by the United States Navy, the Veteran's Administration, the American Society for Industrial Security and the National Institute of Justice on thousands of subjects has proven that drugs deposited in the hair can be measured by radioimmunoassay and ultrasensitive gas chromatography/ mass spectrometry procedures. The effectiveness of hair analysis for drugs of abuse has been documented in over 75 scientific publications worldwide, including reports from the Federal Bureau of Investigation, and U.S. Navy.

In 1987, Psychomedics became the world's first laboratory to offer a cost-effective method for testing hair rather than body fluids for the detection of drugs of abuse. Dr. Baumgartner developed a proprietary method for the efficient extraction and measurement of drugs from hair. The RIAH hair testing process (patent pending) places Psychomedics on the leading edge of drug testing technology.

Laboratory Procedures/Personnel

Psychomedics is licensed as a Clinical Laboratory by the State of California (No. 02571), and is licensed under the terms of the Clinical Laboratories Improvement Act (CLIA) of 1967 to engage in interstate commerce (No. 05DO642561).

Psychomedics' laboratory is under the medical direction of a licensed, board-certified pathologist; technical operations are supervised by a licensed Toxicologist; and daily management of laboratory testing and training of laboratory personnel is conducted by a Chief Medical Technologist. Research at the Company continues under the direction of Psychomedics' Founder and Scientific Director.

In addition to an extensive in-house quality control program utilizing College of American Pathologists proficiency specimens, Psychomedics has implemented a blind quality control program designed to monitor the accuracy and reliability of the laboratory operation.

Psychomedics' Scientific Advisory Board includes Dr. Robert DuPont, Dr. Arthur McBay and Dr. Thomas Cairns.

ADVANTAGES OF RIAH HAIR ANALYSIS OVER URINALYSIS

● Wider Window of Detection

While urine tests can only determine if drugs have been used in the past 2-4 days, hair provides a **90-day** history of information.

● Resistance to Evasion

Hair analysis cannot be evaded as in urinalysis where drug users can substitute clean samples, tamper with specimens, or merely abstain for three days and pass the test. Drug residues remain permanently embedded in hair—they cannot be washed or bleached out.

● Quantitative and Historical Information

Because hair records drug use chronologically and in amounts proportional to those consumed, the pattern and quantity of drug abuse is also provided.

● Non-Intrusive Sample Collection

A cosmetically undetectable snip of hair is easily collected under close supervision without causing the embarrassment of providing a urine sample.

● Safety-Net Testing

If the results of the first test are challenged, a second, newly collected sample can be analyzed as a Safety-Net. This is not possible with urine since the original three-day surveillance window will have passed and the subject can merely abstain from drug use in the few days prior to submitting a new sample.

● Cost-Effectiveness

Government studies reveal that each drug abuser costs an employer \$7,000 annually and is 1/3 less productive. With 1 out of 6 workers having a drug problem, it is easy to see how the superior detection rate and accuracy of RIAH provides significant cost savings and make it the most cost effective, as well as efficient method for drug testing.

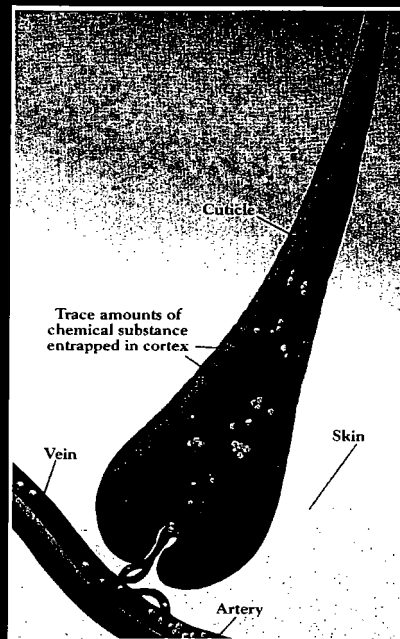
THE BASIS FOR PSYCHEMEDICS' TECHNOLOGY:

A SIMPLE SCIENTIFIC FACT

The presence of drugs in hair is based on a simple scientific fact. Drugs which are ingested circulate in a person's bloodstream which nourishes the developing hair follicle. Trace amounts of the drugs become entrapped in the core of the hair shaft in amounts roughly proportional to those ingested.

These traces remain in the hair as it grows out from the head at a rate of approximately one-half inch per month. These drug residues cannot be washed or flushed out and are stable over time, but are released upon destruction of the hair fiber. Thus, a drug history can be obtained from the hair of any individual.

Drug use can be detected for months, and even years past depending on the length of the hair sample. Psychomedics' standard test currently provides a 90-day history of drug use. Psychomedics' patented technology allows the information trapped in the hair to be measured with radioimmunoassay techniques. All initial positives are confirmed using state-of-the-art gas chromatography/mass spectrometry.



Psychomedics' patented technology provides a no-nonsense approach to drug testing and a powerful up front deterrent to drug use because applicants and employees know they can't "beat the test."

If you're serious about keeping drug abusers out of your workplace, we would be pleased to discuss the facts with you.

1-800-522-7424

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ATLANTA • LAS VEGAS • FORT LAUDERDALE

PSYCHEMEDICS
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C O R P O R A T I O N

SUPERIOR DETECTION OF DRUG ABUSE

The Patented Hair Analysis Method

COMPANY OVERVIEW

Psychemedics Corporation is the nation's leading drug testing company using hair for the detection of drugs of abuse. Over 500 corporations currently rely on Psychemedics' patented hair analysis technology for their pre-employment and employee drug screening. The Company is the only firm to hold U.S. patents and allowed foreign patents to detect the presence of drugs in hair. These drugs include marijuana, cocaine (including crack), opiates (including heroin), methamphetamine, and PCP (angel dust).

Psychemedics Corporation (PMD) is a publicly held company, trading on the American Stock Exchange.

PSYCHEMEDICS' PATENTED TECHNOLOGY

Psychemedics' patented technology is a proven drug testing technology which not only detects if drugs of abuse have been used, but also provides information on the quantity and historic pattern of individual drug use. This type of information is not available from any other drug screening procedure. Psychemedics' test detects drugs of abuse for the previous 90 days, while urinalysis will detect use for only the previous 2-3 days for most drugs. Psychemedics' significantly longer testing window results in superior detection rates over urinalysis. In addition, the collection of a hair sample is easier and less embarrassing than a urine sample.

All initial positives are confirmed using gas chromatography/mass spectrometry (GC/MS). Test results have been upheld in the court system; in fact, some court systems currently rely on Psychemedics' technology in their probationary programs.

INCREASED DETECTION EFFICIENCY

Psychemedics' hair analysis has consistently proven to be more effective than urinalysis and other methods in correctly identifying drug abusers. In fact, when hair and urine results are compared in "side-by-side" evaluation, **5 to 10 times as many drug abusers are accurately identified with the Psychemedics hair test.**

This superior detection ability makes Psychemedics' method the most cost effective and efficient method of drug testing.

THE HISTORY OF PSYCHEMEDICS' TECHNOLOGY

Psychemedics' patented technology was pioneered in 1977 by Annette Baumgartner and Dr. Werner Baumgartner. Over ten years of research funded by the National Institute of Justice, the Veteran's Administration, the United States Navy, and the American Society for Industrial Security on thousands of subjects had proven that drugs deposited in the hair can be measured by radioimmunoassay and ultrasensitive gas chromatography/mass spectrometry procedures.

The effectiveness of hair analysis for drugs of abuse has been documented in more than 290 scientific publications worldwide.

In 1987, Psychemedics became the world's first laboratory to offer a cost effective method for testing hair rather than body fluids for the detection of drugs of abuse.

PSYCHEMEDICS' PATENTS

Psychemedics has been awarded the only two U.S. patents ever granted for the detection of drugs in hair. The first patent covers the universal drug extraction procedure for the detection of drugs in hair specimens.

The second patent covers the removal of substances which interfere with the immunochemical screening assay for marijuana. The marijuana screening assay is the most challenging scientific problem of hair analysis. Psychemedics' patented test is currently the only scientifically validated hair analysis for the effective identification of marijuana users.

These two patents enable Psychemedics to conduct testing far more effectively than other laboratories that may claim the ability to detect drugs through hair analysis.

LABORATORY OVERVIEW

Psychemedics' centralized laboratory, located in Culver City, California, is a state-of-the-art facility specifically designed and equipped for hair analysis drug testing.

Psychemedics is licensed as a clinical laboratory under the terms of the federal Clinical Laboratories Improvement Act (CLIA) of 1988 to engage in interstate commerce for the purpose of performing clinical chemistry (toxicology/drugs of abuse) on human specimens.

SCIENTIFIC STAFF AND ADVISORS

Psychemedics' laboratory is staffed with some of the most prominent and well respected experts within the scientific community. Key staff members include Dr. Werner Baumgartner, Dr. Donald Kippenberger, and Dr. Thomas Cairns. Dr. Baumgartner is the Company's founder and the pioneer of Psychemedics' patented technology. Dr. Kippenberger, a forensic toxicology expert and NIDA inspector, served as Forensic Toxicology Consultant to the U.S. Army Surgeon General where he directed the U.S. Army's toxicology drug testing labs. Dr. Cairns, an authority in the field of mass spectrometry, served as a senior research scientist with the Food and Drug Administration during his 21-year tenure with that agency.

Psychemedics also maintains a Scientific Advisory Board comprised of leaders in the drug testing field, chaired by Dr. Robert DuPont, the first director of NIDA and President of the Institute for Behavior and Health, Inc.

ADVANTAGES AND BENEFITS

• 90-Day Detection Period

While urine tests generally detect drug use only for the previous 2-3 days for most drugs, Psychemedics' hair analysis can detect drug use for the previous 90 days.

• Resistance to Evasion

Psychemedics' test cannot be evaded as in urinalysis where drug users can substitute clean samples, tamper with specimens, or simply abstain for three days and pass the test. Drug residues remain permanently entrapped in the hair. They cannot be washed or bleached out.

• Non-Intrusive Sample Collection

A cosmetically undetectable snip of hair is easily collected under close supervision without causing the embarrassment of providing a urine sample.

• Quantitative and Historical Information

Because hair records drug use chronologically and in amounts proportional to those consumed for most drugs, Psychemedics' test can also provide the pattern and quantity of drug use.

• Safety-Net Testing

If the results of the first test are challenged, Psychemedics can collect and analyze a second, newly collected sample as a Safety-Net. This is not possible with urine, since the original three-day surveillance window will have passed, and the subject can merely abstain from drug use in the few days prior to submitting a new sample.

• Cost-Effectiveness

Government studies reveal that each drug user costs a company between \$7,000-\$10,000 annually. Therefore, every additional drug user that Psychemedics detects over other methods can result in substantial and quantifiable savings of at least \$7,000 per additional user detected. By routinely detecting as many as five times more drug users than urinalysis, Psychemedics' superior technology offers the most cost-effective and efficient method for drug testing.

PSYCHEMEDICS CORPORATION

REPRESENTATIVE CLIENT LIST

~~CONFIDENTIAL~~

Alcatel Network Systems	Kent County Sheriff's Department
American Savings Bank	Kessel Food Markets, Inc.
Anderson News Company	The Lincoln Electric Company
Anheuser-Busch Companies	Lincoln Property
Astra Pharmaceuticals, U.S.A.	Lufkin, Texas Police Department
Automobile Club of Southern California (AAA)	MGM Grand Hotel, Inc.
AVI Food Systems, Inc.	Marshalls, Inc.
BancTec, Inc.	Michigan Consolidated Gas Company
Battle Mountain Gold, Inc.	Michigan National Bank Corporation
BHP Minerals (Magma Copper)	Morgan Services
Blockbuster Entertainment Corporation	New United Motor Manufacturing (joint venture between GM & Toyota)
BMW Manufacturing Corporation	Nucor Steel
Brookshires Grocery Company	Oneida Indian Nation of New York - Turning Stone Casino
Budgetel Inns, Inc.	Orleans Parish, District Attorney's Office
Caesars Hotels and Casinos	PFS -- Division of PepsiCo, Inc.
Champion International Corporation	The Promus Companies <i>Embassy Suites, Hampton Inns, etc.</i>
Chaparral Steel	Raley's Supermarkets, Inc.
Detroit Diesel Corporation	Republic Industries
Discovery Zone	Ross Stores, Inc.
Dresser Industries	Rubbermaid, Inc.
Echo Bay Minerals	Saunders Hotels Company, Inc.
EDS (Electronic Data Systems Corp.)	Security Capital Group
Essex Group, Inc.	Siemens Power Corporation
Federal Mogul Corporation	Spartan Stores
Federal Reserve Banks - <i>Atlanta, Birmingham, Detroit, Jacksonville, Miami, Nashville</i>	The Sports Authority
General Cable Corporation	Steelcase, Inc.
General Motors Corporation	Sunbeam-Oster Household Products
Gordon Food Service	Sysco Food Services
Grand Rapids Press, Inc.	Tandycrafts, Inc.
Guaranty Federal Banks	Temple-Inland Corporation
Hardee's Food Systems	Texas Eastman Company
Harrah's Hotels and Casinos	Toyota Motor Manufacturing, U.S.A., Inc.
Harvard University Medical School	Trust Company Bank of Georgia
Health Net	Valero Energy Corporation
Justin Boot Company	Volvo-GM Heavy Truck Corporation
Kennecott Copper	

DETERMINED TO BE AN ADMINISTRATIVE

MARKING INITIALS: RLK DATE: 09/13/97

STEELCASE CORPORATION

RESULTS FROM URINE VS. RIAH® COMPARISON (Sample Size = 774)

	<u>Percentage Positive</u>	
	<u>URINE</u>	<u>HAIR</u>
COCAINE	0.5%	8.4%
MARIJUANA	0.5%	3.5%
<u>OTHER DRUGS</u>	<u>1.7%</u>	<u>6.1%</u>
<u>OVERALL POSITIVE</u>	<u>2.7%</u>	<u>18.0%</u>

SUMMARY

Steelcase administered both urine and Psychemedics' hair analysis tests to 774 applicants in order to provide an effective side-by-side comparison. Hair and urine samples were collected on the same day from each individual. Steelcase has provided the results of this comparison to Psychemedics with their permission to reproduce them.

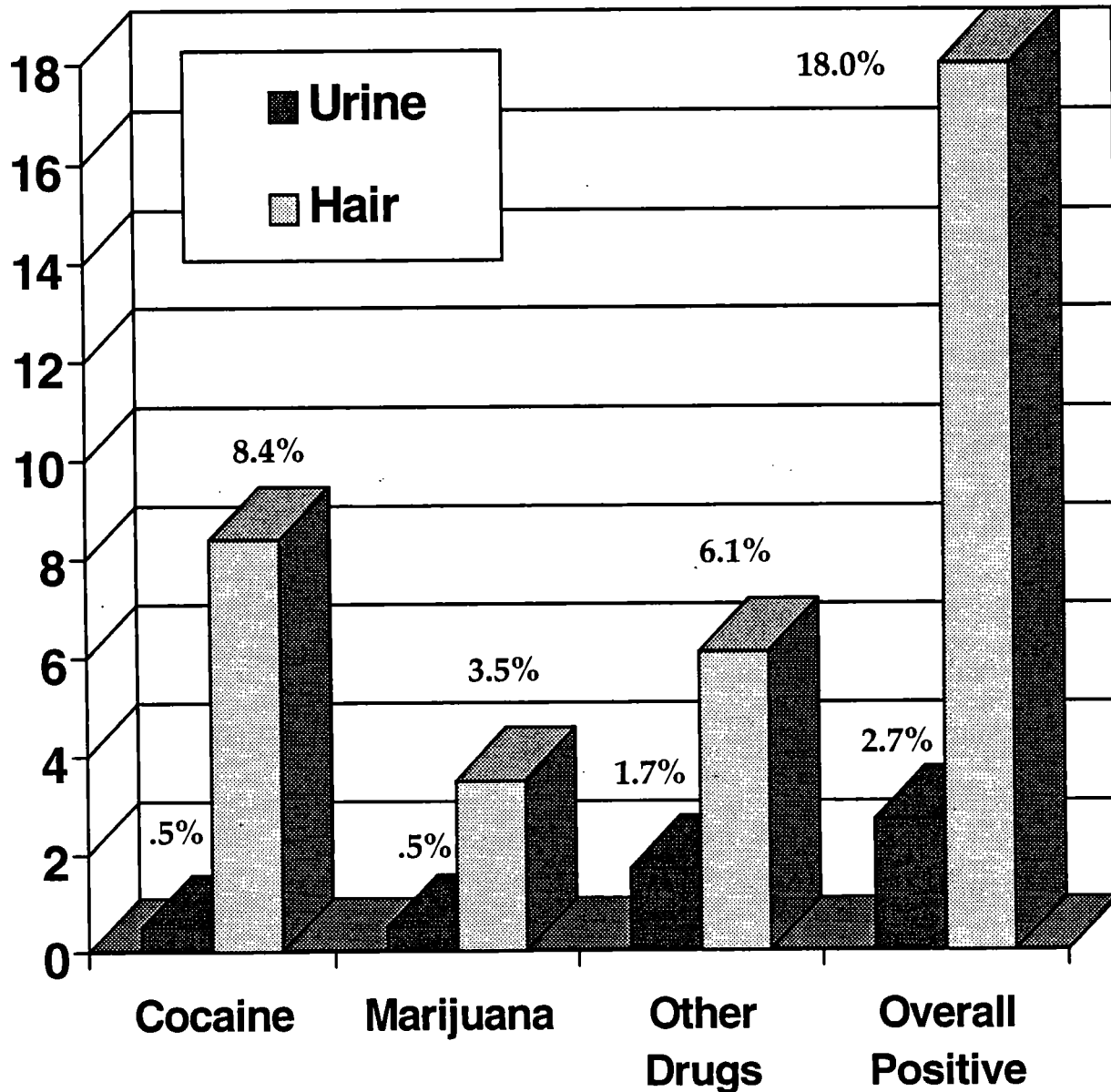
1. For all drugs tested, **Psychemedics was substantially more effective** in identifying drug use, yielding an **18.0%** positive rate in comparison to a rate of **2.7%** for urine.
2. Because of the rapid excretion of cocaine in urine, Psychemedics was overwhelmingly more effective than urinalysis in identifying cocaine users. **Sixteen times as many cocaine users were accurately identified** using Psychemedics' patented technology.

CONCLUSIONS

If Steelcase were to rely on urinalysis to screen applicants, **for every 100 employees hired, approximately 15 would be drug users.**

The National Institute of Health estimates that **each drug abuser costs an employer approximately \$7,000 annually**. Therefore, a company like Steelcase would **save \$105,000 per year for every 100 employees hired by pre-screening applicants with Psychemedics' hair analysis test.**

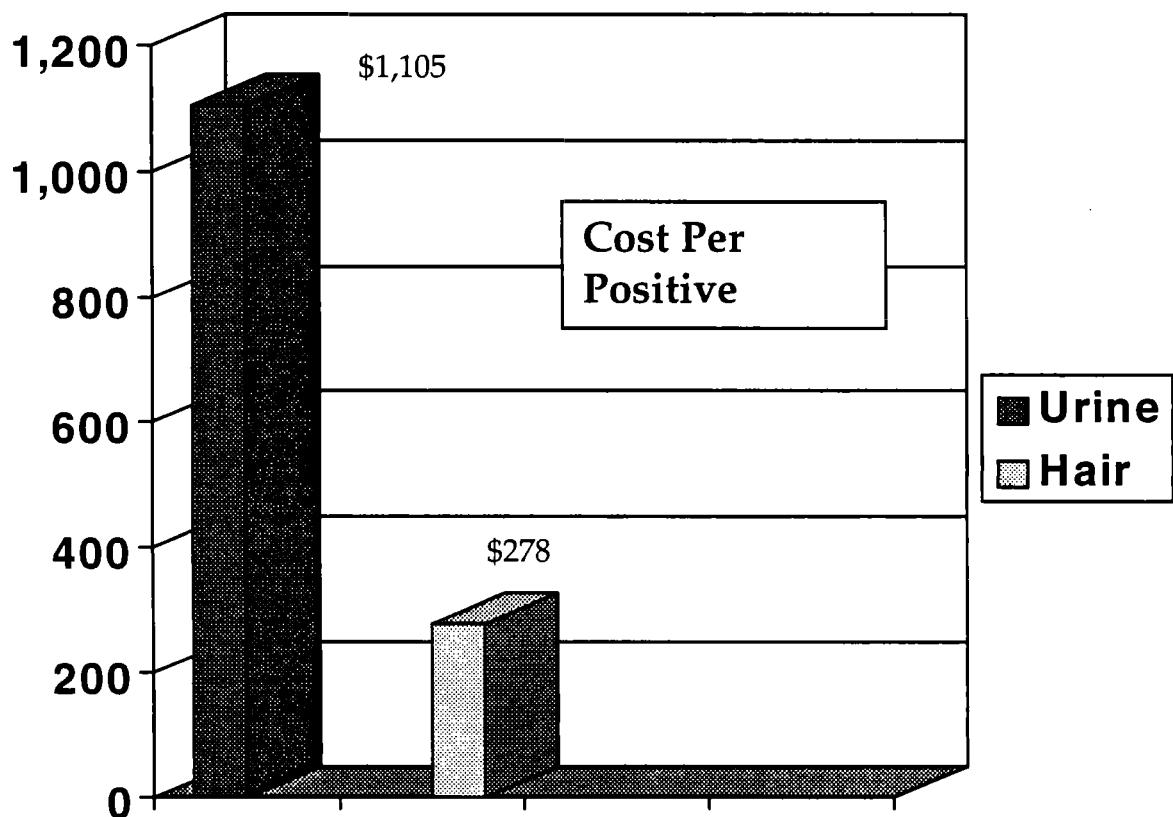
STEELCASE CORPORATION: A GRAPHICAL REPRESENTATION OF POSITIVE RATE RESULTS



STEELCASE CORPORATION COST PER POSITIVE TEST RESULT URINE VS. HAIR

A further example of Psychomedics' cost effectiveness:

If Steelcase had paid \$50 per test using Psychomedics' hair testing and \$30 per test for urine testing, the cost per positive for Steelcase would still be over \$800 LESS using Psychomedics' technology.



NATIONAL INSTITUTE OF JUSTICE

FIELD STUDY

National Institute of Justice (NIJ) In an investigation of drug use in over 200 parolees and probationers, the RIAH® hair analysis test proved significantly more effective than urine testing in detecting cocaine, PCP and opiate users. Hair, urine and self-reported drug use information was collected at intake and at three-month intervals during a one-year sampling period. Positive results of urinalysis and hair analysis (using one month-long section) at intake are presented below.

Subjects Positive By Urine And Hair At Intake

	<u>URINE</u>	<u>HAIR</u>	<u>INCREASE IN DETECTION WITH HAIR (%)</u>
<u>COCAINE</u>	17	88	<u>420%</u>
<u>PCP</u>	3	11	<u>270%</u>
<u>OPIATES</u>	10	28	<u>180%</u>

These data show the advantage of using the RIAH hair analysis test as an assessment tool when subjects are admitted to a program. The chart below presents the hair/urine comparison during the one-year surveillance period. Subjects were monitored by random urine collection (as many as eight samples per month) and a hair specimen taken every three months.

Subjects Positive By Urine And Hair: One Year Surveillance

	<u>URINE</u>	<u>HAIR</u>	<u>INCREASE IN DETECTION WITH HAIR (%)</u>
<u>COCAINE</u>	6	32	<u>430%</u>
<u>PCP</u>	1	6	<u>500%</u>
<u>OPIATES</u>	10	15	<u>50%</u>

These data show that even frequent, random urine testing was less reliable than the RIAH hair analysis test for detecting cocaine, PCP and opiate use.

Additional analyses were conducted to determine the patterns of drug use during the three months prior to intake. The RIAH hair analysis test data were used to identify chronic abusers whose addiction put them at risk for the commission of additional crimes. In cases where the RIAH hair analysis test data were negative for the three months prior to intake, intensive supervision and inclusion in the comprehensive urine testing program appeared unwarranted. This information could be used to significantly reduce costs and increase productivity.

These analyses demonstrate that in all phases, the drug testing program used by the criminal justice system could be significantly streamlined and more cost effective by using the RIAH hair analysis test rather than urine testing.

DUNN REBER GLENN MARZ

Advertising & Public Relations

FOR IMMEDIATE RELEASE

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702-736-0065

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Ray Kubacki
President/CEO
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TASK FORCE STUDY SHOWS HAIR ANALYSIS SEVEN TIMES MORE ACCURATE FOR TESTING DRUG USAGE

Study Shows Drug Use Among Juvenile Offenders Underreported Significant Implications for Business & Industry

CAMBRIDGE, MA - Feb. 7 - Hair analysis is five to ten times more accurate than urinalysis in the detection of cocaine use according to the results of a study conducted by the Cleveland Task Force on Violent Crime. The study, which utilized the patented Psychomedics Corp. (NASDAQ:PCMC) RIAH method for hair analysis, was conducted under the auspices of the National Institute of Justice Drug Use Forecasting program with the objective of examining the relationship between drug use and criminal activity among juvenile offenders.

Of the 88 juvenile arrestees tested, hair analysis revealed that 50 offenders or 56.8 percent showed moderate to high levels of cocaine use. In contrast, 8 percent tested positive for cocaine by urinalysis. For the five major drug categories tested, comparative results demonstrated an overall higher accuracy rate by hair analysis. The Cleveland Task Force results confirm earlier side-by-side comparisons completed within the criminal justice system and the private work force.

"The Cleveland Task Force study suggests that when urinalysis is the sole method utilized to detect drugs of abuse, patterns of drug use go undetected," says Michael Walker, executive director, Cleveland Task Force on Violent Crime. "Hair analysis gives us a better understanding of the requirements for intervention and treatment thus serving as a deterrent to crime. Additionally, when determining funding needs, it is imperative that we base our projections on solid statistical evidence. If the results of urine testing alone were used to determine treatment needs, funding would be severely inadequate.

-more-

PSYCHEMEDICS

-ADD ONE-

"Hair analysis is providing us with a more precise barometer when examining the relationship between drug use and criminal activity."

RIAH (Radioimmunoassay of Hair), for which Psychomedics holds the U.S. patent, provides a significantly longer window of detection, 90 days versus three to four days with urinalysis; virtually eliminates test evasion; provides greater accuracy and allows for same period re-testing, an application not possible with urinalysis.

"Because of its longer detection period, which clearly eliminates the drug users well known short term abstinence method of 'beating the drug test' and high accuracy rate, including the avoidance of false positives, hair analysis is proving itself to be an invaluable tool for the criminal justice system, law enforcement agencies and private industry," says Raymond C. Kubacki, president and CEO, Psychomedics Corp.

ACCURACY RATE HAS SIGNIFICANT IMPLICATIONS FOR EMPLOYERS

"Our corporate clients find the Psychomedics RIAH method to be their very best defense against hiring illegal drug users and maintaining a drug free work place," adds Kubacki.

For example, Steelcase Corp., a Michigan-based office furniture manufacturer, compared the results of urine testing and hair analysis on 774 job applicants.

The company's report said urine test results showed 2.7 percent of the applicants testing positive for drug use. Hair analysis for these same applicants demonstrated a 18.0 percent drug use.

The study continued, "for all drugs tested, RIAH was substantially more effective in identifying drug use in pre-employment screening," the study said. It concluded, that if the company continued to use urinalysis to detect drug use, "for every 100 employees hired, approximately 15 would be drug users."

-more-

PSYCHEMEDICS
-ADD TWO-

Further providing evidence that employment applicants had "beaten" the urine test, the study states that in follow-up interviews "more than 90 percent of all applicants who tested positive for drug use by RIAH but negative by urinalysis admitted to drug use when confronted with the results of the RIAH results."

Another Midwest manufacturing company found similar results. When comparing side-by-side results of hair analysis and urine testing on 108 job applicants, 14.8 percent of applicants tested positive for drug use by hair analysis while only 1.7 percent of this same group tested drug positive by urine analysis.

The hotel industry is seeing similar results from hair testing. Sheraton-Gunter Hotel of San Antonio, Texas, recently compared the results of urine testing and hair analysis on 150 job applicants. Seven percent of the applicants tested positive for drug use by urinalysis while, in contrast, 18.0 percent showed positive results by hair analysis.

According to the American Management Association, 87 percent of major U.S. firms now test employees, job applicants or both for drug use.

National Institutes of Health statistics state that each drug abuser costs an employer \$7,000 annually for items such as absenteeism, health care expenditures and workers' compensation claims.

"Recognizing employee drug abuse not only has a positive monetary impact for the employer, but is beneficial to the worker as well. Early drug detection and intervention can have a significant bearing on the long-term emotional and physical well being of individuals utilizing drugs," said Kubacki. "The sooner a drug-related problem is identified, the quicker companies can assist that individual in seeking help. With assistance, employees can return to their jobs as productive members of the work force. For pre-employment screenings, drug use recognition enables employers to avoid the short and long-term risks associated with unknowingly hiring an individual who utilizes drugs."

-more-

PSYCHEMEDICS
-ADD THREE-

PROPRIETARY METHOD AND QUALITY CONTROL MAKES HAIR TESTING
COST EFFECTIVE AND RELIABLE

Psychemedics' proprietary method has made hair testing cost efficient and quality control driven. Psychemedics' stringent quality assurance program monitors the accuracy and reliability of its Culver City, California laboratory operations. All specimens testing positive when subjected to Psychemedics' patented RIAH analysis automatically undergo gas chromatography/mass spectrometry (GC/MS) testing for further verification of positive outcomes. In addition to an extensive in-house quality control program, Psychemedics also uses independent blind quality control programs conducted by an outside firm.

The patented Psychemedics' hair process is the only hair testing method that effectively screens for all five groups considered to be drugs of abuse, which includes marijuana, cocaine, opiates, methamphetamine and PCP.

The Psychemedics Corp. hair testing method for drugs of abuse is now in use by more than 400 corporations including Federal Reserve Banks and police and parole departments. Clients span such diverse industries as banking, mining, manufacturing, retail, service, lodging and gaming. "In addition, Psychemedics is involved in more than 75 medical and research studies addressing drug abuse as it relates to AIDs, crack cocaine infants and mothers, the homeless and other medical issues affecting society," says Kubacki.

Psychemedics Corporation is a biotechnology company whose first commercial product, the proprietary test for drugs of abuse, serves the fast growing drug testing market. The test offered by Psychemedics is unique in that it uses as the test substance a 1 1/2 inch hair sample instead of urine. Measuring drug molecules permanently entrapped in hair, the Psychemedics' testing method is less invasive, and affords dramatically higher detection rates. Side-by-side tests have demonstrated that up to 10 times more drug abusers were detected with the Psychemedics' hair test than with urinalysis. One reason is the wider window of detection; a urine test typically reveals drug use during the previous three to four days while Psychemedics' hair test detects usage for the previous 90 days.

-more-

PSYCHEMEDICS
-ADD FOUR-

Additionally, there are several well-publicized and readily available means of eluding positive urine test results including simple short-term abstinence. These common methods of beating a urine test are not available to drug users subjected to the Psychomedics' hair test.

Psychomedics Corp. is headquartered in Cambridge, Massachusetts with offices in Chicago, Los Angeles, Boston, Dallas, Atlanta, Las Vegas and Fort Lauderdale. The Company's testing laboratory is located in Culver City, California. Psychomedics trades on NASDAQ.

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NEWS RELEASE

Contract: Raymond C. Kubacki, Psychemedics Corporation
617-868-7455

PSYCHEMEDICS CORPORATION

PATENTED DRUG TEST UPHELD BY NEVADA SUPREME COURT

Cambridge, Massachusetts, April 9, 1996 -- Psychemedics Corporation (AMEX:PMD). The Supreme Court of Nevada ruled that failure to pass a Psychemedics' hair analysis drug test was a valid basis to deny unemployment benefits to a fired casino employee. The Supreme Court noted its decision in Nevada Employment Security Department et. al. v. Cynthia Holmes is in keeping with several recent cases decided in other state and federal courts regarding the veracity of hair analysis.

The court found that Psychemedics' hair analysis procedure utilizing radioimmunoassay screening followed by GC/MS confirmation is "... an accepted and reliable scientific methodology for detecting illicit drug use" and that "... employers have compelling reasons, both economic and social, to test their employees for drugs." The court concluded that the ingestion of drugs, in this case cocaine, was proved by Psychemedics' hair analysis and that such ingestion was misconduct which would bar unemployment claims.

Raymond C. Kubacki, President and CEO of Psychemedics stated, "We are pleased with this decision, which is a reaffirmation of our drug testing technology and the important role it is playing in the war against drug abuse. This also provides additional confidence to employers in incorporating Psychemedics' hair analysis in their policies and programs to eliminate drug abuse from the workplace."

Psychemedics' patented technology detects drugs of abuse for the previous 90 days compared to 2-3 days for most drugs utilizing urinalysis.

Over 500 corporate clients nationwide rely on Psychemedics' patented hair analysis technology as their drug testing method of choice for pre-employment and employee screenings. Clients represent a cross-section of American business and industry including banking, mining, manufacturing, health care, retail, hospitality, gaming and merchandising. Additionally, Psychemedics' technology is in use by Federal Reserve Banks, law enforcement agencies, court systems, and over 80 government and medical research programs.

Judge Admits Hair Analysis Test Results

BY DANIEL WISE

A NOVEL RULING in U.S. District Court in Brooklyn has approved the use of a hair analysis technique to determine whether a suspect has used illegal drugs.

After reviewing the scientific literature on the question, Judge Jack B. Weinstein concluded that the new test passes muster since it has been accepted as "reliable" in the scientific community.

The hair-analysis test allows law enforcement officials to ascertain whether a suspect has used drugs much further back in time than can widely used tests performed on blood and urine samples.

The body purges blood and urine of traces of narcotics within several days, while traces absorbed in hair tissue remain capable of detection for months after ingestion.

The case arose in the context of a federal convict who was accused of violating the conditions of his probation through cocaine use.

The convict, Anthony Medina, when confronted with the results of the hair-analysis test, admitted having used cocaine. His attorney, David Ely, said he did not object to the introduction of the test results because he had worked out an agreement with the Probation Department restoring Mr. Medina's probation status as long as he submitted to urine tests when required to do so by the department.

Legal experts said yesterday that no other court is known to have ruled directly on the question of the admissibility of RIA results, though two courts have at least signaled some inclination to accept the test.

Nonetheless, Judge Weinstein, recognizing that the test is "a relatively new form of forensic evidence not yet recognized by the courts," conducted a review of the scientific literature to determine if the test meets the standard for reliability set forth in the Federal Rules of Evidence Section 702.

The opinion referred to seven scientific studies that all concluded that the new technique, called radioimmunoassay (RIA) hair analysis, was reliable. One study, conducted by the National Institute of Justice, concluded that the hair-sampling test was more accurate than procedures performed on blood and urine samples.

Continued on page 3, column 4

Hair Test Admitted

Continued from page 1, column 5

Judge Weinstein, who is the author of a treatise on evidence and teaches the subject at Columbia University Law School, concluded that "accepted principles" establish RIA as "effective and accurate."

Legal experts said yesterday that no other court is known to have ruled directly on the question of the admissibility of RIA results, though two courts have at least signaled some inclination to accept the test.

The Appellate Division, Second Department, without reaching the question of admissibility, approved the use of the test during the discovery phase of a custody dispute (*Burgel v. Burgel*, 141 A.D. 215). Similarly, prosecutors in the drug case against Washington, D.C. Mayor Marion Berry won an order requiring him to submit to the test, but never sought to introduce the results in evidence.

In addition, Judge Weinstein had previously suggested in dicta while sitting by designation on the U.S. Court of Appeals for the Second Circuit that hair could be analyzed for the use of narcotics, (*U.S. v. Riley*, 906 F. 2d 841).

On the other side, a federal magistrate in Missouri described the test as unreliable in refusing to order a police officer to undergo the test at the request of a suspect. The magistrate's opinion was referred to in an opinion by the U.S. Court of Appeals for the Eighth Circuit upholding the suspect's conviction, *U.S. v. Foot*, 898 F2d 569.

FINAL DRAFT

PSYCHEMEDICS CORPORATION

NEWS RELEASE

FOR IMMEDIATE RELEASE

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PSYCHEMEDICS HAIR ANALYSIS TEST
WINS AWARD FROM QUINCY (MASS.) COURT

CAMBRIDGE, Mass. (August 16, 1994) -- Psychemedics Corporation (PCMC: NASDAQ) has received an award from the Quincy (Mass.) District Court for the role of the Psychemedics hair analysis test in the court's drug-free probation program, the Company's CEO, Raymond C. Kubacki, Jr., announced today.

In honoring Psychemedics as the Quincy District Court's Outstanding Program of the Year for 1994, the award paid tribute to the Company's "pioneering efforts in harnessing new technology to combat illicit drug use" and "to insure a drug free probation caseload for the protection of the public and the rehabilitation of the drug offender."

The Psychemedics drug test is a proprietary drug-screening process, called RIAH (radioimmunoassay of hair), which uses a small sample of human hair, instead of urine, to detect whether an individual has used drugs of abuse.

The Quincy Court, in 1989, became the first criminal justice system to use the Psychemedics hair test regularly to evaluate and monitor drug use among offenders. Andrew R. Klein, Chief Probation

(more)

Officer, said the court began using the Psychemedics hair test "because both urinalysis and self-reporting methods do not adequately confirm whether an individual is meeting our probation requirement to be drug-free." Studies have found that when hair and urine results are compared in a "side-by-side" evaluation, five to 10 times as many drug abusers are accurately identified with the Psychemedics hair test.

"We are the second busiest court in Massachusetts, and the Psychemedics test has been a powerful tool," Mr. Klein said. "I can't conceive how programs such as ours would not use hair testing because the quantitative test results are not only more accurate than other tests in evaluating prior drug use, but the testing is cheaper overall."

Mr. Klein cited two reasons that hair testing is cheaper than urinalysis. On-site urine tests must be administered selectively for each drug of abuse. Only one hair test, however, is necessary because it provides information simultaneously on all drugs. Secondly, hair analysis can be performed less frequently because the procedure produces a 90-day window of detection, which is significantly longer than the 3- to 4-day time span of the urine test. In addition to the cost factor, Mr. Klein said, the relatively long detection time rules out simple short-term abstention as a way to beat the test and, consequently, acts as a major deterrent.

Mr. Klein also noted that the Psychemedics test meets criminal law criteria requiring both on-site collection, as well as a visible chain of evidence that can withstand legal challenge. The Psychemedics hair testing method has been approved by every court and administrative agency which has ruled on the issue of legal admissibility, including a ruling in 1990 by Judge Jack B. Weinstein in U.S. District Court (Brooklyn, N.Y.). Judge Weinstein, the author of a treatise on evidence, upheld the use of hair analysis

(more)

in the case of a federal convict accused of violating his probation by using cocaine.

"We are extremely pleased to have received this distinction and honor from such an innovative court system. This award also attests to the accuracy of our testing method and its acceptance by the criminal justice system," said Mr. Kubacki.

In June, Psychemedics was issued a patent from the U.S. Patent Office for its proprietary hair analysis process which was pioneered by Dr. Werner C. Baumgartner, the Company's founder. The procedure has been the subject of over 250 scientific papers published internationally.

Psychemedics' RIAH test is based on a simple scientific fact. Drugs which are ingested circulate in a person's bloodstream which nourishes the developing hair follicle. Trace amounts of the drugs become entrapped in the core of the hair shaft in amounts roughly proportional to those ingested. These traces remain in the hair and cannot be washed or bleached out. In effect, a drug history can be obtained from the hair of any individual. Besides being less intrusive, the Psychemedics standard test currently provides a 90-day record of drug abuse, compared with the much shorter time frame of the urine test.

In addition to clients in the criminal justice system, Psychemedics currently provides drug screening for more than 370 corporate clients from a broad cross-section of U.S. businesses, including the banking, mining, manufacturing, retail, gaming, lodging and service sectors.

(end)

Quincy Court Annual Award

OUTSTANDING PROGRAM AWARD

PRESENTED TO

PSYCHEMEDICS CORPORATION

An outstanding program serving the Quincy District Court and the Trial Court of the Commonwealth.

For its pioneering efforts in harnessing new technology to combat illicit drug use.

In recognition of the commitment to law enforcement in partnership with Quincy District Court to insure a drug free probation caseload for the protection of the public and the rehabilitation of the drug offender.

This award is presented to Psychemedics Corporation for its dedication, commitment, and contribution to the Quincy District Court.

Respectfully presented on Law Day
MAY 3, 1994



Charles E. Black, Presiding Justice

Air Controller Charged in Va. Drug Case

*Suspect Told Police He
Tricked Federal Testers*

By Robert O'Harrow Jr.
Washington Post Staff Writer

An air-traffic controller at the regional center in Leesburg has been charged with possession of cocaine and heroin, and has told police that he kept bottles of drug-free urine to skirt random tests at his job, Loudoun County authorities say.

James Robert Odom, 43, is now in an administrative job at the Leesburg center, which is one of 20 such facilities in the country and controls some of the nation's busiest airspace.

Authorities say he was charged after being stopped in December by Loudoun patrol officers who suspected he had stolen cartons of cigarettes from a convenience store. Police said they found 31 cartons of cigarettes, several bags of drugs and syringes and bottles of urine in Odom's 1981 Oldsmobile.

Odom was charged with possession of a controlled substance and grand larceny. He told police he used the urine samples "to keep the narcotics from showing up" in tests conducted by the federal Department of Transportation to detect substance abusers, said Lt. Terry McCracken, a spokesman for the Loudoun sheriff's office.

Details about the incident emerged in a court hearing last week, in which a General District Court judge sent the case to a grand jury. If Odom is indicted and then convicted, he could face 10 years in prison on the drug charge and 20 years on the grand larceny charge, officials said.

Odom did not return telephone calls to his office, and his attorney, John Cherry, declined to comment. Robert Fulton, a spokesman for the Federal Aviation Administration, said the agency has begun an internal investigation of the allegations.

The case offers a glimpse of the challenges federal officials face in operating massive random drug-testing programs, which cover more than 4 million public and private transportation workers.

In the Transportation Department alone, there are 32,000 employees in safety or high-security jobs who are subject to testing, including air-traffic controllers, railroad and highway safety inspectors, mechanics

See CONTROLLER, B4, Col. 5

THE WASHINGTON POST

April 27, 1993

Air Controller Told Police He Cheated on Drug Tests

CONTROLLER, From B1

and others. The Transportation Department spends about \$4 million a year to test its employees.

Under a department proposal released in December, the nation's truck and bus drivers, train operators, airline pilots and other transportation workers also would face random alcohol testing. More than 3 million additional people would be covered by the new program.

Under the federal drug-testing program, an employee who has tested positive may be removed from a safety or high-security job and allowed to seek rehabilitation, according to federal rules.

Air-traffic controllers must agree to random drug testing as a condition of employment, but most view the tests as an unnecessary intrusion, said James Morin, general counsel for the National Air Traffic Controllers Association.

Few controllers would consider using drugs that might impair their thinking, Morin said. "Air-traffic controllers, as well as the other people whose jobs are critical to aviation safety, are very much aware of their obligations and responsibilities."

Odom is an air-traffic control specialist at the FAA facilities in Leesburg, where several hundred traffic controllers helped to guide about 3 million commercial and private flights through the Washington region last year, Fulton said.

The primary responsibility of such centers is to keep airplanes spaced safely apart. Their work begins when aircraft leave the areas covered by control towers at local airports.

Loudoun prosecutors would not discuss details of Odom's case, but said the idea of an air-traffic controller involved with drugs was unsettling.

"Of course this office is concerned," said Assistant Commonwealth's Attorney Owen Basham. "We're concerned about any drug use by air-traffic controllers."

Fulton, the FAA spokesman, said Odom is currently working in an administrative job, but he declined to release other details about Odom's work record. Because Odom has not been convicted, Fulton said, his work history is protected by federal privacy laws.

Odom, of Leesburg, was arrested on Dec. 13 after two men went into a store in the northern Loudoun town of Lucketts, walked out without paying for several cartons of cigarettes and left in an Oldsmobile, police said.

A Loudoun sheriff's deputy chased the men, stopping them in Leesburg with the help of at least one other police cruiser, police said.

The driver was identified as Odom; the passenger as Carlton Bruce Allen, 42, of the District. Allen also was charged with possession of a controlled substance and grand larceny. He pleaded guilty to larceny, officials said.

NEW YORK POST

MONDAY, MARCH 11, 1996

17 probationary cops fail drug test by a hair

By LARRY CELONA

Seventeen probationary cops tested positive for drugs — a big increase linked to better testing, police officials said yesterday.

Chief of Personnel Michael Markman said the cops — sworn in in February 1994 — were tested just before their two-year probationary period ended last month.

All have been dismissed.

"This sends out a strong message that drug use will not be tolerated," Markman said. "It also sends a message to the public that we will not tolerate our police officers using drugs."

Markman explained a new hair-follicle test was used on 2,037 probationary cops in the place of the usual urine test — and provided more positives.

That's because the hair test can show drug use going back three

NEW YORK POST
EXCLUSIVE

months, while the urine test is good for a month at most for marijuana, and for only three days for cocaine, he said.

For example, Markman said, of 8,500 probationary cops given the normal urine test from 1992 to 1995, only two tested positive for drugs.

"It's possible we missed some," he said. "If you're a user of drugs, the hair test will catch you. From now on, we're using the hair follicle test [for probationary cops] and we'll catch all drug users."

Of those who had positive results in the most recent tests and were subsequently dismissed, 15 were for cocaine use and two for marijuana use, Markman said.

In addition, six people tested positive for drugs among the 1,800 scheduled to graduate from the Police Academy next week.

About one-fifth of the force — from beat cops to superchiefs — are tested randomly every year, but probationary cops are tested at least three times: before they enter the academy, once while there and at least once before the probation period ends.

Urine tests are still used in the random sampling of veteran cops, but Markman said:

"Eventually, there is a chance that all drug testing in the NYPD will be hair-follicle.

He said the hair test costs a few dollars more, but is really more cost-effective because cops don't have to take time off work to provide a sample.

The Newspaper with a Difference

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Corporate America splitting hairs to test for drug use

By Michael P. Mayko
Staff writer

The suit is cleaned and pressed. The shoes are polished to a spit shine. The resume is updated. All set for that job interview.

But wait. You forgot to shave every inch of hair off your body.

That's the only conceivable way for a drug user to beat a test conducted by the Psychemedics Corp. in Cambridge, Mass. The company, which checks hair follicles rather than urine samples for illegal substances, is being used by a small, but growing number of Connecticut companies screening job applicants.

And, starting last year, Psychemedics began offering services to parents who send \$75 and a sample of junior's locks.

The company maintains that its procedure can determine what drugs were used, in what quantity, and can trace the history of drug use back for months, depending on the length of the hair sample.

"Hair grows at the rate of about a half-inch a month," said Raymond C. Kubacki, the company's president. So the half-inch closest to the scalp would reveal any drug use during the past 30 days.

"Our standard test involves an inch-and-a-half of hair — a 90-day history," said Kubacki. "We

don't want to discriminate against long-haired and short-haired persons."

Psychemedics has more than 500 corporate customers, including the Bic Corp. in Milford, Dresser Industries in Stratford and Remington Products in Bridgeport.

Carol Fitzgerald, human

resources manager at Remington, said Psychemedics has performed about 50 pre-employment drug tests for her company.

"It's been not quite a year since we've been using them," she said.

Continued on back

Test sets drug users apart

"The cost is quite a bit more than a urinalysis." In fact, hair analysis costs companies about twice the cost of urinalysis.

But Fitzgerald and others say the higher cost is worth paying.

A federal study estimates that each worker who abuses drugs costs his or her employer \$7,000 to \$10,000 a year in absenteeism, medical expenses and job turn-over costs. Drug abusers are five times more likely to be involved in a workplace accident or file a worker's compensation claim, the study said.

"We have a strong policy against hiring drug users," said William Ridolfi, Dresser's manager of industrial relations. For 15 years, Dresser has been using urinalysis to weed out drug-users.

Last year, Ridolfi investigated Psychomedics' claim of increased accuracy. He ordered both types of tests on some 70 applicants. The hair test indicated drug usage in 13 candidates while the urinalysis came back positive in only three.

Ridolfi figures that by turning away those 10 extra applicants during a four-month period, Dresser saved at least \$70,000. "That's enough to convince me," he said.

Bic has been using the hair test since August, said spokeswoman Linda Kwong. "We find it very accurate and more sensitive than urinalysis because it gives a 90-day history," she said.

The hair testing procedure was developed over a 10-year period beginning in 1977 by Dr. Werner Baumgartner, who received grants from the National Institute of Justice, the Veteran's Administration, the U.S. Navy and the American Society for Industrial Security.

The test is based on the fact that ingested drugs travel through the bloodstream. Because blood nourishes hair follicles, trace sub-

How the hair test for drug use works



- About 50 follicles are clipped from near the crown of the job applicant's head by the company interviewing the person or by an accredited clinic.
- The hair is sealed in a special plastic bag and sent by overnight mail to Psychomedics.
- Upon arrival, the hair is cut to an inch-and-a-half. Because hair grows a half inch a month, the company can tell if drugs have been used in the past three months.
- The hair is washed and buffed to clean away external contaminants. This way, a person who was only in a room where marijuana was smoked will not test positive.
- Some of the hair is then liquefied and tested in a chemical solution.
- If the sample tests positive for drugs, the remaining hair is subjected to an even more sophisticated test, called a gas chromatography/mass spectrometry.

stances of drugs, called metabolites, are trapped inside each strand of hair.

But what if a person is totally bald or shaves his head?

"We can use any body hair," said Kubacki, the Psychomedics president. "We might take it from under the arm, the chest or the legs."

Said Ridolfi, of Dresser Industries: "The applicant sees the hair being cut, watches it being placed into a special envelope and signs off on it. The only way you can open the envelope is by cutting it, and at that point Psychomedics won't accept it."

Anyone who tests positive is

offered a complete re-test two weeks later. "But 99 percent don't take it," Kubacki said.

Ridolfi said two people challenged Dresser's results but failed again. One came back with dyed hair. "It didn't make a difference," he said. "You can't dye or bleach the drugs out."

Another brought a note from a doctor claiming the positive reaction resulted from a codeine-laced cough medicine. "I replied we were testing for cocaine not codeine," Ridolfi said.

If it's nearly impossible to fool the hair test, the same cannot be said of the urinalysis.

Some law enforcement agents believe drug users can defeat a urinalysis by abstaining from drugs for a time before the test. Cocaine and heroin typically remain in the system for about three days. Traces of marijuana can remain for several weeks.

Given that the hair test can trace drug use over a longer time period and the concerns about communicable disease, why do probation officers use urinalysis?

"A three-month history is not as important to us as much as whether or not the person is using drugs now," said Minor.

State and federal probation officers currently use a new system called On Trac that gives immediate results. The subject urinates into a cup that contains drug-detecting chemicals.

One concern is cost. The state has about 54,000 people on probation and requires roughly 15,000 urinalysis tests a year. Such large numbers make hair testing too expensive, said Terry M. Borjeson, a probation officer deputy director.

But, he said, "if I'm a business looking for long-term employees, then it's a different story."

Psychomedics Corp. in Cambridge, Mass., can be reached at 1-800-997-3890

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HARVARD

MAGAZINE

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Right Now

UPWARD TREND: "DOWNSHIFTING": Chilling out.

A LEGAL PLAYING FIELD: Sports is teeming with lawyers.

SEXY WORDS, RAUNCHY PICTURES, 1200 A.D.: Obscenity and "family values" in the Middle Ages.

HAIR OF THE DRUG THAT BIT YOU: A drug test analyzes the ticker tape coming out of your head.

DRAMA AND DRINK: A play about AA's founding.

AIRBORNE ASSASSINS: Fine particles in air can kill.

DRUGS IN THE WORKPLACE

Firms Find Effective Way
To Detect Drug Use: Hair

By Shelley Donald Coolidge

Staff writer of The Christian Science Monitor

BOSTON

MANY people visit their barber or hairdresser before showing up for an important job interview. Now some job applicants are getting an extra trim during the application process.

As United States companies attempt to keep drug users off their payrolls, a relatively new screening process that uses hair samples is becoming increasingly popular. It is considered more accurate and less intrusive than urinalysis.

That's good news for Boston-based Psychemedics Corporation, the only company that commercially markets a drug-testing method using hair called RIAH, or radioimmunoassay of hair. The company, founded in 1987 by Werner Baumgartner, turned its first profit last year. The company has more than 325 corporate clients, including banks, manufacturers, retailers, mining operations, hotels, and casinos.

According to some government studies, two-thirds of drug users are cur-

(about the thickness of a pencil point).

RIAH tests for five standard drugs: cocaine, marijuana, opiates, methamphetamine, and phencyclidine (PCP). The process liquefies the hair and then chemically analyzes the sample, much like urinalysis. The company says it retests all positive samples.

Although hair analysis has only captured about 1 percent of the drug-testing market so far, it has numerous advantages over the far more common urinalysis, Kubacki says. Hair analysis provides a wider window of detection. While urine tests typically detect drug use within a two to four day period, Psychemedics' method provides a 90-day drug history.

Drug users "can't beat the system," Kubacki says. With urinalysis, users can tamper with or substitute the sample or simply abstain from using drugs several days before the test. Since drugs remain in the hair shaft roughly in proportion to the amount ingested, hair analysis also provides information on the quantity of drugs consumed and the historic pattern of drug use, Kubacki says.

If an employee contests the test results, the company will do a second test using another hair sample.

Steelcase Corporation, a manufacturer of office furniture based in Grand Rapids, Mich. — and a Psychemedics client — compared the results of urine tests and hair tests for 774 job applicants over a period of several years. The study showed that hair analysis detected an 18 percent rate of drug use, compared with 2.7 percent uncovered by urinalysis.

The FBI has used hair testing to detect drug use for several years and each test costs about \$1,500, Kubacki says. RIAH tests cost about \$65 or less, depending on the number of people tested, he adds. That compares with \$25 to \$35 for urinalysis.

But the long-term economics are a clear advantage, Kubacki says. The National Institute of Drug Abuse estimates that each drug user costs an employer about \$7,000 annually. If a company can screen out more drug users with hair analysis than with urinalysis, that firm will save money, Kubacki says.

SOME researchers contend that someone walking through a marijuana smoke-filled room could collect the active ingredients from the drug in his or her hair, resulting in skewed test results. But Kubacki says Psychemedics' detection process looks for metabolites — evidence of the drug that can only enter the system through ingestion.

"It certainly looks like [hair analysis] will have a number of advantages in the future for long-term group-testing purposes," says Ian Tebbett, a forensic toxicologist at the University of Florida in Gainesville.



RAYMOND KUBACKI JR.: The president of Psychemedics says drug testing using hair has advantages over the more common urinalysis.

rently employed, and 44 percent admit selling drugs to coworkers. "The real key to beating the drug problem in the United States and in the world is really not going to be supply reduction ... it's really going to be demand reduction," says Raymond Kubacki Jr., president of Psychemedics.

As drugs are ingested, the deposits are absorbed into the bloodstream and become entrapped in the core of the hair. These ingested drugs remain in the hair and cannot be washed or bleached out and do not diminish with time. Because hair grows at a rate of about one-half inch a month, the hair closest to the head holds information on a person's drug use for the past month. Psychemedics' process, which Mr. Kubacki says works on all hair types, uses a 1 1/2 inch hair sample containing 50 to 60 strands

Herald Tribune
BUSINESS/FINANCE

THURSDAY, JANUARY 30, 1992

INTERNATIONAL MANAGER

**Companies Try Hair Test
To Snare Drug Abusers**

By Jack Lesar

United Press International

CHICAGO — Some American companies seeking to keep drug abusers off their payrolls have turned to hair analysis as a screening tool. The Federal Bureau of Investigation has used hair testing to detect drug use for several years, and government studies show it to be five times as effective as urine testing. The big advantage is that hair testing detects drug use over a period of months while urine tests cover only a few days.

Catching drug abusers can boost profitability. The National Institute of Drug Abuse has estimated that each abuser on its payroll costs an employer \$7,000 a year for items such as medical expenses, accidents and theft.

One drawback for corporate use of hair tests is that the process employed by the FBI costs \$1,000 to \$1,500 per test — far too much to make it feasible as a screening tool for businesses.

But a Chicago-based company, Psychomedics Corp., has developed a method for analyzing hair using a chemical process. Called RIAH — a trademarked acronym for radio immunoassay of hair — it is similar to the process used to test urine samples for drug use.

When a sample tests positive, Psychomedics does a second test, using the same process employed by the FBI to confirm the initial finding. But Psychomedics has a new method of preparing samples that makes its confirmation process far less costly than the FBI system.

RIAH testing, including confirmation of positives, costs clients only \$40-\$65 per test, depending on volume. That compares with \$25 to \$30 for urinalysis.

Steelcase Corp., a Michigan-based manufacturer of office furniture, compared the results of urine tests and hair tests for 774 job applicants. The company said urine-test results showed 0.5 percent of the applicants tested positive for cocaine. Another 0.5 percent tested positive for marijuana and 1.7 percent tested positive for other drugs, including opiates. Overall, urinalysis showed 2.7 percent used drugs.

BUT THE STUDY SHOWED that using Psychomedic's process 8.4 percent of the applicants tested positive for cocaine, 3.5 percent for marijuana and 6.1 percent for other drugs — an overall drug-use rate of 18 percent.

"For all drugs tested, RIAH was substantially more effective in identifying drug use in pre-employment screening, yielding an 18 percent positive rate in comparison with an overall rate of 2.7 percent for urine," the Steelcase study concluded.

It also showed RIAH to be accurate in determining drug use.

"In a follow-up interview," the study said, "over 90 percent of all applicants who tested positive for cocaine or marijuana by RIAH but negative by urinalysis admitted [drug] use when confronted with the RIAH results — providing clear evidence that these individuals had 'beaten' the urine screen."

It concluded that if Steelcase continued to use urinalysis to detect drug use, "for every 100 employees, approximately 15 would be drug users."

"The big difference with using hair is that we are looking at a significantly longer period of time than urine tests," said Ray Kubacki, president of Psychomedics. "Urine tests only determine if drugs have been used in the past two to four days. When we do our test, we use a short hair sample, and that provides a 90-day history."

He said the RIAH process, on which Psychomedics has a patent pending, can determine the frequency of drug use and whether use is heavy, light or moderate, while urinalysis cannot tell if a person who tested positive "took a lot of drugs three days ago or just a little bit each of those three days."

Mr. Kubacki noted it also is less embarrassing to job applicants undergoing screening to have a hair sample taken — cut from the crown of the head — than having to provide a urine sample while being watched to make sure the sample is not tampered with.

**A new process has
lowered the cost of
hair testing, which
is more reliable than
urinalysis.**