Report | Psychemedics Corporation



2024 Insights Report | Education

Revealing Drug Trends through Hair Testing



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Introduction

In our inaugural report tailored for the education industry, Psychemedics is excited to present a detailed analysis of trends in drug use among students and staff. As a pioneer in hair testing, Psychemedics has played a pivotal role in providing educational institutions with invaluable insights into drug use.

In 2023, Psychemedics collected and analyzed tens of thousands of hair samples from students and individuals working in education across different roles and locations. These samples underwent rigorous testing using cutting-edge analytical techniques to detect a wide spectrum of drugs and their metabolites. The findings derived from this extensive data set serve as the foundation of our report, offering enlightening insights into the prevailing trends in drug use within the education sector.

Through meticulous analysis of this vast dataset, Psychemedics has identified significant trends and patterns in drug use among students and educators. These insights encompass the prevalence of specific drugs, shifts over time, and variations across different regions. Our report delves into these trends comprehensively, providing institutions with crucial information regarding hair drug screening and its role in promoting safety.

Psychemedics remains dedicated to pushing the boundaries of drug testing and delivering innovative solutions to foster safer and more productive educational environments. Hair testing stands out as a distinctive and efficient approach to drug screening, and we take immense pride in leading the charge in this vital field.

Methodology



Psychemedics employs a cutting-edge hair testing method that detects use over a longer period compared to traditional methods like urine or oral fluid testing. This methodology allows us to provide a more comprehensive view of an individual's drug history, offering schools a reliable tool for screening students and staff.

- I. Introduction
- II. Methodology
- III. Key Findings
- IV. Current Drug Trends
- V. Legalization Landscape
- VI. Positive Rate Analysis
- VII. Lookback: Trends and Patterns
- VIII. Hair Testing: Benefits and Advantages
- IX. Conclusion
- X. About Psychemedics

Psychemedics' hair testing methodology is grounded in the science of drug incorporation into hair and the analytical techniques used to detect these substances. Here's an in-depth look at the science and methodology behind hair drug testing:

1. INGEST. The process of drug testing via hair analysis begins with the ingestion of drugs by an individual. When drugs are consumed, they get metabolized, and both drugs and metabolites are present in the bloodstream.

2. DEPOSIT. As drugs and their metabolites circulate in the bloodstream, they are deposited into the growing hair follicle. The drugs and metabolites are incorporated into the hair shaft during the hair's growth phase, known as the anagen phase.

3. REMAIN. Once deposited in the hair follicle, the drugs and metabolites become trapped in the hair shaft's cortex as the hair continues to grow, creating a historical record of drug use. Unlike other traditional methods, such as urine testing, which only detects recent use, hair testing can detect drug use over a longer period, typically 90 days or more.

4. COLLECT. To conduct a hair drug test, a sample of hair is collected from the individual. The hair is typically taken from the scalp or other parts of the body like the arm or leg, using non-invasive methods. The sample is cut close to the scalp to ensure it contains the most recent growth, which

provides the most recent drug exposure information. The collected hair sample is then sent to a laboratory for analysis.



Laboratory Analysis: Once the sample arrives at the laboratory, a portion of it is analyzed using our FDA cleared immunoassay screens to quickly identify negative samples. Psychemedics is one of the only labs to have FDA clearances for all five drug classes for both head and body hair. Presumptive positive samples from the screen then undergo a series of extended washes to remove external contamination. The drugs and metabolites are then extracted from the washed hair and purified through a series of laboratory processes before being analyzed by mass spectrometry. Mass spectrometry is a highly sensitive and specific technique that can detect and quantify a wide range of drugs and metabolites in the hair sample.

Interpretation of Results: The hair drug test results are interpreted based on the presence and concentration of drugs and their metabolites in the hair sample. The concentration of drugs detected can provide information about the frequency and amount of drug use.

Key Findings



Increasing Positivity Rate: The positivity rate for drug testing in the education sector has increased by 25% over the past five years, rising from 3.9% to 4.9%. This suggests a gradual but notable uptick in drug use among students and staff in educational settings during this period.



Overall Trends: While there has been some variation in the number of samples tested each year, the overall trend indicates a consistent level of drug testing activity within the education sector. This suggests that drug testing is a standard safe practice in many educational institutions, aimed at maintaining a safe and drug-free environment.

Delta-8 Use: The first-ever national estimates of teen Delta-8 use, as reported by the Monitoring the Future study, indicated that 11% of 12th grade students across the United States used it in the past year. This emerging trend highlights the need for continued monitoring and prevention efforts to address the use of new and less understood substances among students.

Challenges Ahead: The legalization landscape of drugs, particularly regarding marijuana, presents new challenges for educational institutions. Although legalization will not directly impact middle and high school students due to age limits, it does provide incredible and unfortunate access. Older friends and relatives can easily obtain marijuana for those underage, making health and wellness-focused testing programs even more vital. However, hair testing offers a reliable and accurate method for detecting drug use, regardless of the legal status of drugs in a particular state.

Overall, these key findings highlight the importance of ongoing monitoring and prevention efforts to address substance abuse effectively in educational settings. By leveraging the benefits of hair testing and understanding the latest trends in drug use, schools can help create safer and healthier environments for all students and staff.

Current Drug Trends

Understanding current drug trends in educational settings is crucial for ensuring the safety, well-being, and academic success of students and educators alike. The prevalence and types of drugs used in schools and colleges can have profound effects on the learning environment, student behavior, and overall campus culture. By staying informed about these trends, educational institutions can implement targeted prevention and intervention strategies to address drug use effectively.

According to the National Institute of Drug Abuse (NIDA), drug use among adolescents and young adults can have serious consequences, including impaired cognitive function, mental health issues, and addiction. The Monitoring the Future (MTF) survey conducted by the University of Michigan found that while overall drug use among students has declined in recent years, certain substances remain prevalent, and new trends continue to emerge.

For example, the legalization of marijuana in several states has led to increased availability and use among young people. Additionally, the emergence of synthetic cannabinoids and other novel psychoactive substances presents new challenges for educators and policymakers. Understanding these trends is essential for developing evidence-based prevention and intervention programs that effectively address the evolving landscape of drug use in educational settings.

In this section, we will explore the current drug trends in the educational sector, including the prevalence of commonly abused substances and emerging trends such as Delta-8 and Delta-9 THC. By shedding light on these trends, we hope to equip educators, administrators, and policymakers with the knowledge and tools needed to create safe and drug-free learning environments for all students.

Overall Drug Use Trends

Drug use among students in educational settings is a significant concern, as it can have detrimental effects on the developing brain, academic performance, mental health, and overall well-being.

In 2020, the Monitoring the Futures (MTF) survey reported that 35.3% of 12th graders, 28.8% of 10th graders, and 15.5% of 8th graders had used illicit drugs in the past year. These figures highlight the ongoing need for prevention and intervention efforts in educational settings.

When compared to national averages, drug use among students tends to mirror trends in the general population. For example, the Substance Abuse and Mental Health Services Administration (SAMHSA) reported that in 2020, approximately 13% of individuals ages 12 or older had used illicit drugs in the past month. While this represents a slight decrease from previous years, it underscores the continued prevalence of drug use in society at large.

Over the past few years, there have been fluctuations in drug use trends among students. For example, while the use of certain substances like marijuana has remained relatively stable, the abuse of prescription drugs has shown both increases and decreases. Understanding these trends and their implications is essential for developing targeted interventions and support services for students struggling with substance abuse issues.

Overall, while there has been progress in reducing drug use among students, there is still work to be done to create drug-free learning environments. By staying informed about current drug trends and implementing evidence-based strategies, educational institutions can help prevent drug use and promote the health and well-being of students.

Commonly Abused Substances

In educational settings, a variety of substances are commonly abused by students and educators alike. These substances range from illegal drugs to prescription medications and are often chosen for their perceived effects and accessibility. Some of the most commonly abused substances include:

- Marijuana: Marijuana is one of the most widely used drugs among students. Its popularity is due in part to changing attitudes and laws regarding its use, as well as its perceived low risk compared to other drugs. However, marijuana use can still have negative effects on cognitive function and academic performance.
- Delta-8 and Delta-9 THC: Delta-8 and Delta-9 THC are psychoactive compounds found in cannabis. Delta-9 THC is the main psychoactive component of the marijuna plant, while Delta-8 THC is found in only trace amounts in the plant material. Delta-8 THC prepared in sufficient quantities for consumption is made synthetically from cannabidiol (CBD). Delta-8 THC is reported as having approximately two-thirds the potency of Delta-9 THC. Both compounds can produce euphoria and relaxation, making them popular choices among students seeking a recreational high.
- > Opioids: Opiates, including prescription painkillers like oxycodone and hydrocodone, are commonly abused by students seeking to relieve stress or escape from emotional issues. These drugs are also considered party drugs and are often used for the purpose of getting high. The accessibility of these drugs, both through legitimate prescriptions and illicit sources, contribute to their popularity.
- Stimulants: Stimulants like Adderall is often abused by students looking to improve their focus and academic performance. These drugs can produce feelings of increased energy and alertness, but they can also have serious side effects and lead to dependence.

The popularity of these substances in educational settings can be attributed to a variety of factors. Peer pressure, stress, curiosity, and the desire for experimentation are common reasons why students may choose to use drugs. Additionally, the perceived benefits of these substances, such as improved mood or academic performance, can make them appealing to students seeking a quick fix for their problems. Accessibility also plays a role in the prevalence of drug abuse in educational settings. Prescription medications can easily be obtained from friends or family members, and drugs like marijuana are often readily available on or near school campuses. Educators and administrators must be vigilant in identifying and addressing substance abuse issues to ensure the health and safety of all students.

Emerging Trends

In recent years, there has been a rise in the use of new or less understood substances among students, posing new challenges for educators and policymakers. Alongside the well-known substances like marijuana and prescription drugs, several emerging trends are worth noting:

Delta 8 and Delta-9 THC: Delta-8 and Delta-9 THC are psychoactive compounds found in cannabis. Delta-9 THC is the main psychoactive component of marijuana, while Delta-8 THC is the less potent variant. Both compounds can produce euphoria and relaxation, making them appealing to students seeking a recreational high.

Delta-8 THC, in particular, has gained popularity due to its legal status in some states where Delta-9 THC is prohibited. However, the legality of Delta-8 THC is still a grey area in many places, leading to confusion among consumers. In most states, you can legally buy Delta-8 THC if you're 21 or older. Varying state laws require all adult buyers to be conscious of local laws before purchasing. On the other hand, the legal age for purchasing Delta-9 THC products varies depending on the jurisdiction, with many regions setting it at 21 years or older. These age restrictions are implemented to mitigate the potential harms associated with cannabis use, and the blanket restriction includes hemp-based products.

The side effects of Delta-8 and Delta-9 THC can include impaired coordination, increased heart rate, and memory loss. Prolonged use can also lead to addiction and negative effects on mental health. Despite these risks, the accessibility and perceived low risk of these substances contribute to their prevalence among students.

¹Delta-8-THC use reported by 11% of 12th graders. University of Michigan News. (2024, March 14). https://news.umich.edu/delta-8-thc-use-reported-by-11-of-12th-graders/

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A survey by the Monitoring the Future study, which annually surveys adolescents across the US, reported the first-ever national estimates of teen Delta-8 use, indicating that 11% of 12th-grade students across the United States used it in the past year.¹

Fentanyl: Fentanyl is a powerful synthetic opioid that is significantly more potent than other opioids like heroin and morphine. It is often used medically to treat severe pain, but it is also produced illicitly and sold on the black market.

The use of fentanyl among students is particularly concerning due to its high potency and potential for overdose. Even a small amount of fentanyl can be deadly, making it a serious threat to student health and safety. Additionally, fentanyl is often mixed with other drugs like heroin, increasing the risk of accidental overdose.

- Vaping and E-Cigarettes: Vaping, or the use of cigarettes (e-cigarettes), has become increasingly popular among students in recent years. Many students are attracted to vaping because of the wide variety of flavors available and the perception that it is less harmful than traditional cigarettes. However, vaping can still have serious consequences, including lung damage and nicotine addiction.
- Online Drug Markets: The internet has made it easier than ever for students to access drugs. Online drug markets, often referred to as "darknet markets," allow individuals to purchase drugs anonymously using cryptocurrencies. These online markets present new challenges for educators and law enforcement in addressing drug use among students.

The emergence of these substances underscores the importance of ongoing monitoring and prevention efforts. Educators and administrators must stay informed about the latest drug trends and work collaboratively with students, parents, and community organizations to address substance abuse issues effectively. By raising awareness and promoting healthy behaviors, we can help ensure the well-being of students and create a safer learning environment for all.

Prevention and Intervention

Preventing and addressing drug use among students and staff is crucial for creating a safe and supportive educational environment. Educational institutions can implement several strategies to achieve this goal:



Education: Educating students, staff, and parents about the risks and consequences of drug use is essential. Schools can incorporate drug education into their curriculum, hold informational sessions, and provide resources for further learning. By promoting awareness and understanding, schools can help prevent drug use before it starts.



Early Intervention: Early identification and intervention are key to addressing drug use among students. Schools can train staff to recognize the signs of drug use and provide support services for students who may be struggling. Counseling, support groups, and referral to treatment programs can all be effective interventions.



Support Services: Providing support services for students and staff who are struggling with drug use is critical. Schools can offer counseling, substance abuse treatment programs, and access to community resources. Creating a supportive and non-judgmental environment can encourage those in need to seek help.

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Policy Development: Establishing clear and consistent policies regarding drug use is important. Schools can develop policies that outline expectations for student behavior, consequences for drug use, and procedures for addressing drug-related incidents. By enforcing these policies consistently, schools can create a culture that does not tolerate drug use.



Drug Testing: Implementing drug testing within schools can serve as a deterrent and detection measure for drug use. Student testing provides students a great reason to say no and it will identify individuals in need of intervention and support. However, it's essential to ensure that drug testing policies are fair, respectful of privacy, and accompanied by appropriate counseling and support services.



Collaboration: Collaboration between schools, community organizations, law enforcement, and healthcare providers is essential for addressing drug use effectively. By working together, these stakeholders can provide resources, coordinate efforts, and provide comprehensive support for students and staff.

Overall, prevention and intervention strategies should focus on education, accountability provided by drug testing, early identification, and support services, as part of a comprehensive approach to addressing drug use and substance abuse within schools.

Emerging trends in drug use among students present new challenges for educators and policymakers.² The rise of substances like synthetic cannabinoids, vaping, and psychedelics, as well as the accessibility of online drug markets, underscore the importance of ongoing prevention and intervention efforts in educational settings. By staying informed about these trends and implementing strategies that focus on education, accountability, early intervention, and support services, schools can help prevent drug use and create a safer and healthier environment for all students and staff.

2023 Positive Rate for Drugs Tested



Marijuana. Also known as cannabis, is a psychoactive drug derived from the cannabis plant. It contains various psychoactive compounds, with delta-9-tetrahydrocannabinol (THC) being the most well-known and studied. Marijuana is typically consumed by smoking, vaporizing, or ingesting it.

Cocaine. A powerful stimulant drug derived from the coca plant. It is commonly found in the form of white powder, which is usually snorted, rubbed into the gums, or dissolved and injected. Cocaine is known for its short-lived but intense euphoric effects.

² The National Institute on Drug Abuse at The National Institutes of Health. (2020). 2020 overview key findings on adolescent drug use. Monitoring Future National Survey Results on Drug Use. https://monitoringthefuture.org/wp-content/uploads/2022/08/mtf-overview2020.pdf

³Substance Abuse and Mental Health Services Administration. (2020). Results from the 2020 National Survey on Drug Use and Health. Key Substance Use and Mental Health Indicators in the United States. https://www.samhsa.gov/data/sites/ default/files/reports/rpt35325/NSDUHFFRPDFWHTMLFiles2020/2020NSDUHFFRIPDFW102121.pdf

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Opioids. A class of drugs derived from the opium poppy plant or synthetically produced. They include drugs such as morphine, heroin, and codeine. Opiates are known for their pain-relieving properties and are often used medically for pain management.

Amphetamines. Stimulant drugs that increase activity in the central nervous system, are widely recognized for their legitimate use in treating conditions like attention deficit hyperactivity disorder (ADHD) and narcolepsy. However, these drugs are also commonly abused for their euphoric effects and ability to increase alertness and energy, making them popular as party drugs. Students often misuse amphetamines to enhance their social experiences, stay awake longer, and boost confidence in social settings. The appeal of amphetamines as party drugs lies in their perceived ability to heighten mood and facilitate prolonged social interactions, often leading to a cycle of abuse and dependency.

Phencyclidine (PCP). A dissociative drug originally developed as an anesthetic. It is no longer used medically but is abused for its hallucinogenic effects. PCP can induce hallucinations, distorted perceptions of reality, and feelings of detachment from oneself and one's surroundings.

Fentanyl. A powerful synthetic opioid similar to but more potent than morphine. It is used medically for pain relief, especially for severe pain such as that experienced by cancer patients. Fentanyl is also used illicitly and is a major contributor to the opioid epidemic due to its potency and high risk of overdose and high level of addiction.

Analytes Present and Detected For Opioids Screen

Excluding Fentanyl



Benzodiazepines. A class of psychoactive drugs used to treat anxiety, insomnia, and seizures. They work by enhancing the effects of the neurotransmitter gamma-aminobutyric acid (GABA) in the brain, leading to sedative and calming effects. Benzodiazepines are prescribed medically but can also be abused for their sedative effects.

Nicotine. A stimulant drug found in tobacco products. It is commonly consumed by smoking cigarettes or vaping. Nicotine is known for its stimulating effects, which can increase alertness, improve mood, and reduce appetite. It is highly addictive, and long-term use can lead to dependence.

5-Year Lookback | By Drug Type



5-Year Lookback: Trends & Patterns

The "y" axis on these charts represents % Positive Results (Total Number of Positives / Total Processed Volume). The trend line spanning all bars in the chart to the left represents overall percentage of positive results year-over-year.



Hair Testing: Benefits and Advantages

Hair testing for drug use offers several key benefits and advantages over other testing methods such as urine or blood tests. In this section, we will delve into the details of these benefits and explain why hair testing is considered a superior method for detecting drug use in the education sector.



Longer Detection Window: One of the most significant advantages of hair testing is its longer detection window compared to other methods. While urine tests can typically detect drug use within the past few days, hair testing can detect drug use over a much longer period, typically 90 days. This longer detection window provides a more comprehensive view of an individual's drug use history, making it more difficult for individuals to conceal recent drug use.



Accuracy: Hair testing is known for its high level of accuracy. The process of drug incorporation into the hair is well understood, and the testing methods are highly sensitive and specific.



Non-Invasive: Unlike blood tests, which require a needle stick, or urine tests, which require the collection of a urine sample, hair testing is non-invasive and easy to administer. A small sample of hair, typically taken from the scalp, is all that is needed for the test. This makes hair testing a more comfortable and convenient option for both employees and employees, schools, faculty/staff, parents and students.



Deterrent Effect: The knowledge that hair testing can detect drug use over a long period can acts as a powerful deterrent for students considering using drugs. Knowing that drug use could be detected months after the fact may discourage students from engaging in drug use in the first place, leading to a safer and more productive campus.



Difficult to Cheat: Hair testing is difficult to cheat. While it is possible to adulterate urine samples or use masking agents to try to hide drug use, these methods are much less effective against hair testing. The structure of hair makes it difficult to tamper with, and attempts to do so are usually easily detected by the testing lab.



Comprehensive Testing: Hair testing can detect a wide range of drugs, including marijuana, cocaine, amphetamines, opiates, and more. This comprehensive testing capability makes hair testing a versatile tool for employers looking to screen for multiple drugs simultaneously.



Cost-Effective: While hair testing may initially seem more expensive than other testing methods, such as urine testing, it can actually be more cost-effective in the long run. Because hair testing has a longer detection window, educational institutions may be able to conduct fewer tests over time, saving money on testing costs.

Hair testing offers a range of benefits and advantages that make it the superior method for detecting drug use in educational institutions. Its longer detection window, high level of accuracy, non-invasiveness, and deterrent effect make it an attractive option for schools seeking to maintain a safe and drug free environment.

Why Psychemedics?



Full FDA Clearance

Full FDA Clearance: We are one of the only labs to have FDA clearances for all five drug classes for both head and body hair.



Difficult to Cheat

Our test cannot be circumvented by common tactics that might compromise other tests.



Accurate & Reliable Results

In side-by-side evaluations, **5-10 times** as many drug users were accurately identified with the Psychemedics hair test vs urinalysis.



Rapid Results

Our hair drug testing offers the fastest turnaround time in the industry. Over 93% of results are returned in one day.



Environmental Contamination

We have the most extensive/effective wash procedure to remove external contaminants from the hair.



Smallest Hair Sample Required

Psychemedics needs the least hair in the industry, with other labs needing 2-3 times more for collection.

Conclusion

As the pioneer in hair testing, Psychemedics is proud to present our inaugural education report, offering a comprehensive analysis of drug trends in educational institutions. Our commitment to advancing drug testing methodologies has enabled us to provide educational partners with invaluable insights into drug use, highlighting the efficacy and advantages of hair testing as the superior method of drug screening in educational settings.

Through the meticulous analysis of tens of thousands of hair samples in 2023, Psychemedics has identified key trends and patterns in educational sector drug use, including the prevalence of certain drugs and changes over time. This report provides a detailed analysis of these trends, offering schools and colleges valuable information about hair drug screening and maintaining a drug-free environment.

The insights provided in this report underscore the need for comprehensive strategies to address drug use and substance abuse effectively in educational settings. By leveraging the benefits of hair testing and understanding the latest trends in drug use, schools, parents, and communities can work together to reduce the impact of substance use disorders and promote overall health and well-being in schools.

About Psychemedics

Psychemedics Corporation (NASDAQ: PMD) is a leading global provider of innovative hair testing for drugs of abuse. With over 30 years of experience, Psychemedics has pioneered the science of hair testing and provides clients with the most accurate and reliable hair drug test results in the industry. The company's patented technology is used by thousands of companies and schools worldwide to screen applicants, employees, and students for drug use, helping to create a safer and more productive environment.

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