



ANALYSIS PAPER

Truckers Prefer Cocaine:
Study or Marketing Material?

1/18/2022



Table of Contents

Truckers Prefer Cocaine: Study or Marketing Material?	3
Limitations	3
The UCA sought to compare two datasets, or cohorts.....	3
Hair and Urine pre-employment drug tests are dissimilar and accuracy of hair testing.....	4
Harder drugs, such as cocaine, are seriously under-reported by DOT’s current urine test.	5
Questionable reporting of positivity rates.....	6
No connection with safety.....	7

Truckers Prefer Cocaine: Study or Marketing Material?

On January 11, 2022, the Alliance for Driver Safety & Security, also known as the Trucking Alliance (TA), a coalition of large freight and logistics companies, in partnership with the University of Central Arkansas (UCA), released a report concerning drug testing methods in the trucking industry. Immediately following the report, Lane Kidd, the managing director of the TA, disseminated a press release making serious accusations against truck drivers. Both the press release and the report claim that the U.S. Department of Transportation (DOT) is seriously under reporting the actual use of hard drugs by truck drivers, such as cocaine and illegal opioids. However, as the Owner-Operator Independent Driver Association Foundation (OOFI), the research and educational arm of OOIDA, describes below, the reliability, validity, and ultimately, the conclusions of TA's non-peer reviewed report are highly questionable. In fact, the research only proves to show that TA member drivers have historically used cocaine more than marijuana.

The study sought to compare pre-employment urine and hair *drug* testing results gathered from the TA with urine drug testing results from the Federal Motor Carrier Safety Administrations (FMCSAs) Drug and Alcohol Clearinghouse (DAC), which went into effect September 2020. The UCA reported the following findings:

- Trucking Alliance drivers are less likely to use illegal drugs than the national truck driver population. They passed their urine drug tests 269% more frequently than drivers in the Clearinghouse
- However, among Trucking Alliance drivers who were disqualified for failing their hair test, cocaine was identified 16.20% more frequently and opioids were identified 14.34% more frequently than the DAC urine test results.
- Researchers found statistical evidence that urine testing is effective at detecting marijuana, while hair testing detects marijuana, but also a higher percentage of harder drugs, like cocaine, heroin, and opioids, than a urine test.
- The severity of this issue is compounded by the finding that an additional 58,910 DAC drivers would likely have been disqualified in 2020, if the drivers had submitted to hair testing.

Limitations

The UCA's study lacks the very basics of a valid and reliable research effort. The study includes no analysis, demographic information, literature review, hypothesis, or even methodology. Peer review is a key component of any good research project in order to properly evaluate and verify the findings. UCA provides limited information and yet expects the reader to accept their conclusions on blind faith. OOFI highlights just a few of the severe limitations and weaknesses of UCA's report.

The UCA sought to compare two datasets, or cohorts.

UCA established their report, and thereby their findings and conclusions, on the comparison between two sets of data. The first dataset contained both hair and urine pre-employment drug test results which collected from nine large motor carriers over the course of four years between 2017 and 2020. The

second dataset was comprised of pre-employment urine drug test results published by FMCSA in their 2021 DAC report, which only included information from one year, 2020.

Due to several unreported confounding factors, such as state regulations legalizing marijuana, scope and type of operations, age, experience, etc., these test results cannot and should not be compared with one another for multiple reasons. For example, hair tests measure for exposure. They do not detect current use nor do they detect if a trucker is under the influence of an illicit drug while driving or in a safety sensitive function. In contrast, urinalysis does test for current use. Thereby, while it is illegal for a driver to use marijuana because their CDL is a federal license, and federal regulations prohibit the use of marijuana, a driver would be able to use such a substance before starting a career in trucking depending upon which state they reside in. Moreover, considering the fact that many states have more recently changed their stance on the legalization of marijuana, the results from the TA dataset may be skewed.

Again, UCA does not include any information concerning the demographics of these two datasets. While they attempt to claim that the two datasets are comparable because they represent large samples, they fail to recognize that TA's data only includes a small subset of carriers who are located in distinct regions of the United States. This in comparison to the entire trucking industry, which includes truckload, less-than-truckload carriers, expedited, etc. Not to mention hundreds of thousands of carriers in contrast to TA's nine carriers. UCA attempts to compare the TA and DAC urine positivity rates in question 1 of the report, but they never establish if these two datasets are even comparable considering the difference in time (four years versus one year) and demographics (nine large carriers versus over 500,000 carriers comprised of mostly small carriers).

Hair and Urine pre-employment drug tests are dissimilar and accuracy of hair testing.

The entirety of the UCA's study is based on two assumptions. We discussed the first above, the second is the assumption that hair drug tests and urine drug tests are comparable. On September 8, 2020, the Department of Health and Human Services (HHS) announced proposed guidelines for the inclusion of hair specimens in the Mandatory Guidelines for Federal Workplace Drug Testing Programs. The HHS proposed that fleets that elect to use hair testing also submit a drug test using at least one other federally approved testing medium – either urine or spit. According to HHS, the double-testing requirement was put into place for multiple reasons:¹

- First, “the alternate specimen is used in the event that a donor is unable to provide a sufficient amount of hair for faith-based or medical reasons, or due to an insufficient amount or length of hair.”
- Second, HHS is concerned that hair testing's accuracy may be limited by “environmental contamination, the impact of natural hair color on drug incorporation, and the effects of hygiene and cosmetic hair treatments.”
- And third, according to HHS, because of the “limitations of hair testing,” any actions taken based on hair testing alone “may be vulnerable to legal challenge.”

¹ <https://www.thetruckersreport.com/hhs-hair-testing-isnt-accurate-enough-hold-court-want/>

The HHS also stated in their proposal, “Hair and urine pre-employment test results have been shown to be somewhat dissimilar because each matrix has a different time window of drug detection. Typically, positivity rates are higher in hair due to hair’s longer window of detection.”²

Generalizing TA’s hair failure rate to the DAC dataset.

As demonstrated in the analysis above, the UCA’s two datasets are vastly different, and yet, in order to reach the conclusion that hair testing would detect an additional 58,910 DAC drivers, the UCA had to generalize TA’s hair testing positivity rate to the DAC dataset. In other words, the UCA applied TA’s hair testing failure rate of 6.11% to the entire DAC sample by subtracting DAC’s positivity rate from TA’s $((1,429,842 \times 6.11\%) - (1,429,842 \times 1.99\%) = 58,910)$. Though the UCA states that there was a high correlation between the positivity rate for the urine drug tests between the two datasets, this does not validate their conclusions.

Confidence levels are meaningless if they do not control for the confounds that are inherent within the datasets. For example, it can be demonstrated that there is a strong correlation between people carrying umbrellas and the occurrence of precipitation. While it would be easy to achieve a 95 percent or greater confidence level demonstrating that this statement is true, we cannot reasonably state that people cause it to rain because they are carrying umbrellas. Thereby it is not possible to claim that 6.11% of all pre-employment tests would result in failure simply based on the fact that TA’s hair testing failure rate was 6.11%.

Reliability and validity are the cornerstones for any scientific research, thus in order for any study, assessment, or methodology to be considered sound, it must be free of bias and distortion. Appropriate scientific methodology requires that there are controls in place to assure that groups or participants are as comparable in all aspects as possible, these are the variables or confounds that allow for comparison. The UCA failed to control for the variables that might have influenced the study’s conclusions as stated above.

Harder drugs, such as cocaine, are seriously under-reported by DOT’s current urine test.

The UCA’s report concluded that because the TA dataset had a lower positivity rate in its urine test results than the DAC dataset, and because cocaine was the most commonly detected substance among drivers in the TA data, that the DAC data seriously under-reported the current use of harder drugs due to its urine testing regimen. This is a gross misinterpretation of current use. Hair testing may indeed indicate the use of other drugs, but it’s important to define “current use”. Hair testing may show drug use from weeks or months previous to the test, but hair testing does not and cannot detect current use indicating that the driver is under the influence at the time of the test. This is the reason that hair testing cannot be used for after accident testing with any accuracy. It takes a period of days or weeks before there is any detectable signs of drug use.

Research has shown that hair tests can lead to false positive results because certain drugs — like cocaine — which are found on common surfaces, including dollar bills, can be absorbed into hair. There is

² *Mandatory Guidelines for Federal Workplace Drug Testing Programs*, SAMHSA, HHS (Sep 2020), pg. 15.

currently no way to fully cleanse hair of these drugs. Furthermore, cocaine binds to African-American hair at greater rates than it does to fine, light-colored hair. Damage to hair caused by treatments like straightening and perming, and certain cosmetic products can further facilitate drug absorption. Hair drug testing methods are currently incapable of distinguishing whether drugs found in the hair come from environmental contamination or from ingestion.³

Most hair testing laboratories, as well as hair testing proponents, state that the hair specimen is washed prior to testing and that there are different washing techniques to cleanse the hair from environmental contaminants. However, drugs and metabolites may also be incorporated into the hair via secretions of the sweat glands and sebaceous glands, which are in close contact with hair as it develops and emerges from the skin. Sweat and sebum, which can deposit drugs and/or metabolites on the hair shaft, are absorbed into the hair during and after its formation and will not be washed away. In addition, this process can spread metabolite across the entire length of the hair, rendering segmental analysis, which is used to determine time of use, unreliable.

While the TA has been highly critical of the Substance Abuse and Mental Health Services Administration for not approving hair testing earlier, they have not considered the legal ramifications for using hair testing as the sole testing procedure for drug use as there is legal precedence, *Jones v. City of Boston*, 752 F.3d 38, 60 (1st Cir. 2014), in which six African-American police officers were terminated from their positions on the basis of hair testing results. These officers were later reinstated after the court determined that hair testing had an unreliable and discriminatory impact on African Americans. Be careful for what you wish for as there are often unintended consequences.

Questionable reporting of positivity rates.

In their attempt to compare the two datasets, the UCA presented the overall positivity rates for both TA's hair tests and urine tests and DAC's urine tests in tables Q1, Q2, and Q3. However, tables Q4, Q5, and Q6 simply present the overall number of tests and the positivity rate for each illicit drug without indicating that these percentages are associated with the total number of positives, not the total number of tests, which would mislead readers into believing that the number of drug users for both datasets was higher than it actually was. For example, table Q4 shows there were 1,429,842 urine tests for the DAC dataset (2020) and 305,337 urine tests for the overall DAC dataset (2017-2020). Yet, table Q4 simply presents percentages for the positivity rates of the six subsequent illicit drugs for which both DOT and TA test for as depicted in **Table 1**.

Table 1: Q4 Comparing Drugs Detected in TA and DAC Urine Tests

Category	DAC (Urine)	Trucking Alliance (Urine)						TOTAL 2017-2020
		2017	2018	2019	2020	2017-2018	2019-2020	
Number of Tests	1,429,842	59,469	92,193	85,650	68,025	151,662	153,675	305,337
Opioids	10.64%	1.75%	16.43%	7.31%	8.58%	11.94%	7.78%	9.78%
Amphetamine & Methamphetamine	18.96%	19.53%	14.38%	11.23%	9.03%	15.95%	10.42%	13.08%

³ <http://thehill.com/opinion/healthcare/352235-hair-drug-testing-is-not-accurate-lets-stop-relying-on-them>

Cocaine	14.85%	19.24%	12.07%	16.58%	11.96%	14.26%	14.89%	14.59%
Marijuana	55.18%	58.60%	55.84%	64.62%	69.98%	56.68%	66.58%	61.82%
MDMA (Ecstasy)	0.12%	0.29%	0.13%	0.00%	0.00%	0.18%	0.00%	0.09%
Phencyclidine (PCP)	0.26%	0.58%	1.16%	0.26%	0.45%	0.98%	0.33%	0.64%

Thus, it appears that 55.18% of all test results tested positive for marijuana in the DAC dataset and that 61.82% of all test results tested positive for marijuana in the TA dataset, which is incorrect. Rather instead, those percentages are merely indicating that of the 1.99% of results which tested positive in the DAC, 55.18% tested positive for marijuana. Likewise, of the 0.74% of results which tested positive in the TA dataset, 61.82% tested positive for marijuana. Without this correction, it appears that there were 152,135 positive tests for marijuana in the DAC dataset, and 29,862 positive tests for marijuana in the TA dataset. When in actuality the figures are 3,028 and 221 respectively as shown in **Table 2**.

Table 2: Comparing Drugs Detected in TA and DAC datasets, corrected

Category	DAC	TA Hair	TA Urine	TA Total
Number of Tests	1,429,842	288,495	305,337	593,832
% Positive	1.99%	6.11%	0.74%	5.37%
Total Positives	28,454	17,627	2,259	31,889
% Opioids	10.64%	24.98%	9.78%	24.98%
Opioids Number	3,027	4,403	221	7,966
% Meth	18.96%	16%	13.08%	15.67%
Meth #	5,395	2,762	296	4,997
% Cocaine	14.85%	31.05%	14.59%	31.05%
Cocaine #	4,225	5,473	330	9,901
% Marijuana	55.18%	27.41%	61.82%	27.41%
Marijuana #	15,701	4,832	1,397	8,741
% Ecstasy	0.12%	0.73%	0.09%	0.73%
Ecstasy #	34	129	2	233
% PCP	0.26%	0.16%	0.64%	0.16%
PCP #	74	28	14	51

No connection with safety.

The UCA presented its findings without so much as a hypothesis or even a reason as to why they conducted their research. Lane Kidd, managing director of the TA, utilized UCA's report in their press release to state, "New research finds that truck drivers abuse cocaine more than marijuana, contrary to reports by the US Department of Transportation (DOT)." And, "Federal law prohibits truck drivers from using illegal drugs, yet thousands are escaping detection... Drug impaired truck drivers are a critical public safety issue, but employing these drivers can be a considerable liability risk."

However, the report neither validates the TA's claim concerning cocaine abuse nor does it substantiate the claim of "considerable liability risk." In fact, the report makes no comparison to drug use and safety or crashes. It does not even try to connect drug use and safety, the report is entirely void of the subject

of safety altogether. If safety is such a serious concern, then where is the data to support that hair testing will reduce crashes. The researchers should instead investigate if the members of the TA have far better crash statistics than the DAC carriers of similar size that do not use hair testing.

In the National Highway Traffic Safety Administration's (NHTSA) most recent data, there were 33,244 fatal motor vehicle crashes in the United States. Of those, the driver a large truck, which is defined as a truck with a gross vehicle weight rating greater than 10,000 pounds, which includes drivers not subject to FMCSA regulations, was recorded for a BAC of 0.08 grams per deciliter or higher in 2% of fatal crashes. This was much lower than the drivers of other vehicle types (29% for motorcycles, 20% for passenger cars, and 19% for light trucks). Moreover, the driver of a large truck was recorded for at least one drug in 299 crashes, or 0.89% of the total number of fatal crashes in 2019. Again, this figure was much lower than the drivers of all vehicles (16.5% for all drivers, or 8,413). While any fatality is too many, the TA needs to show that hair testing has reduced crashes within their fleets and is lower than the DAC carriers.

The TA has yet to demonstrate that they have experienced a reduction in crash rate since their voluntary adoption of hair testing, neither have they presented evidence showing that their hair testing labs meet the rigorous standards of scientific methodology for testing (e.g., specimens, collection, specimen preparation, analytes/cutoffs, specimen validity, and testing methods), or that their hair testing equipment and protocol has been consistent and unbiased.

Lane Kidd also makes a false statement that in 2015, Congress directed the secretary of Transportation to "use hair testing as an acceptable alternative to urine testing" for pre-employment and random testing of commercial truck drivers. He also claims that the federal government has yet to issue guidelines. As stated above in OOFI's analysis, HHS published guidelines concerning the utilization of hair testing for pre-employment and random testing in September 2020.