



MARCH 2022

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THE TRUTH

about marijuana impairment and recent-use drug testing

An accurate understanding of the duration of drug impairment and the truth about marijuana impairment are the tools employers need to select the drug testing method that accurately meets their needs.



“Cognitive impairment can last between three and 10 hours, depending on how much THC is taken, how it’s taken, and the person taking it.”¹

Many factors influence marijuana-induced impairment. Advocates for marijuana typically present data from available studies within a narrow scope that align with their position.

The report also stated: **“Our analysis indicates that impairment may last up to 10 hours if high doses of THC are consumed orally.** A more typical duration of impairment, however, is four hours, when lower doses of THC are consumed via smoking or vaporization and simpler tasks are undertaken (e.g., those using cognitive skills such as reaction time, sustained attention and working memory).”²

“This impairment may extend up to six or seven hours if higher doses of THC are inhaled and complex tasks, such as driving, are assessed.”³

HEAVY USERS VS. OCCASIONAL USERS

“ We found that impairment is much more predictable in occasional cannabis users than regular cannabis users. Heavy users show significant tolerance to the effects of cannabis on driving and cognitive function, while typically displaying some impairment. ”⁴

CONSUMPTION AFFECTS IMPAIRMENT

“Additionally, the length and intensity of intoxication (not impairment) depends not only on the strength of the marijuana product, but also on how the drug is consumed. Inhaling marijuana typically causes onset of intoxication within five minutes, with symptoms of intoxication lasting a couple of hours. On the other hand, ingesting marijuana (e.g., “special brownies”) can delay onset of intoxication between one to four hours, and intoxication can last much longer than that.”⁵

IMPAIRMENT DURATION FACTORS

Other studies conclude that the duration of marijuana impairment depends on a variety of factors. An often-cited report by the National Highway Traffic Safety Administration (NHTSA) provides some clarification, “Effects from smoking cannabis products are felt within minutes and reach their peak in 10-30 minutes. Typical marijuana smokers experience a high that lasts approximately 2 hours.”⁶



What is often not mentioned is:

“ Most behavioral and physiological effects return to baseline levels within 3-5 hours after drug use, although some investigators have demonstrated residual effects in specific behaviors up to 24 hours, such as complex divided attention tasks.”⁷



INTOXICATION (OR FEELING HIGH) IS DIFFERENT FROM IMPAIRMENT

“Psychomotor impairment can persist after the perceived high has dissipated. In long-term users, even after periods of abstinence, selective attention (ability to filter out irrelevant information) has been shown to be adversely affected with increasing duration of use, and speed of information processing has been shown to be impaired with increasing frequency of use.”⁸

The truth is there is no such thing as a “**window of peak impairment**” because, there are many different factors that influence how someone becomes impaired by marijuana use and for how long. While no drug testing method can prove, either legally or scientifically, that a person is impaired, most testing methods can prove that someone has been using marijuana and has marijuana in their system while at work.

Comparison of key attributes of 5 drug testing methods relative to testing for marijuana

	Urine	Oral fluid	Hair	Breath	Blood
Lab-based or rapid-result (also known as POCT - point of care testing)	Both	Both	Lab only	Rapid only	Lab only
Window of detection	3-4 days	Up to 12 hours for marijuana / 24-48 hours for other drugs	Up to 90 days	2-3 hours for marijuana only	2-3 days
Recent-use detection	Lag time of several hours after initial usage	Within several minutes after any drug usage	Lag time of 7-10 days after initial usage	Within several minutes after only marijuana usage	Within several minutes after any drug usage
Legal by states	Lab: 50 states Rapid: where permitted	Lab: 47 states Rapid: where permitted	Lab: most states	Rapid: Only where rapid is permitted and where breath is permitted	Usually not permitted for workplace testing
SAMHSA regs	Yes	Yes	Proposed	No	Only in very limited circumstances
Detection of other drugs	Virtually all drugs + alcohol	Virtually all drugs + alcohol	Virtually all drugs	Only marijuana + alcohol	Virtually all drugs + alcohol

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ORAL FLUID TESTING

The window of detection in oral fluid for marijuana covers the entire window of impairment of 10 hours or longer. A drug testing method with a much shorter window of detection of 2-3 hours (for example, breath) will make it possible for many marijuana-impaired workers to go undetected through drug testing.

Of the three drug testing methods endorsed by the Substance Abuse and Mental Health Services Administration (SAMHSA), as the table shows, only lab-based oral fluid testing is capable of detecting recent use of marijuana and is legal in virtually every state.

A drug testing method with the ability to detect recent use of marijuana (within minutes of usage) with a window of detection of at least 10 hours meets an employer's dual priorities of testing to: 1) keep the workplace safe from the ill-effects of marijuana-impaired workers, and 2) not pry too far back into the private behavior of its employees.

Oral fluid testing will produce positive drug test results for more people who are actually impaired by marijuana on the job, and it will also produce positives for all the other commonly abused and impairing drugs such as opioids, amphetamines, heroin and cocaine.

Figure 1 shows the window of detection for marijuana for urine, oral fluid and breath over a 10-hour window of impairment. (Note: Drugs are not detectable in hair-testing samples for 7-10 days after consumption.)

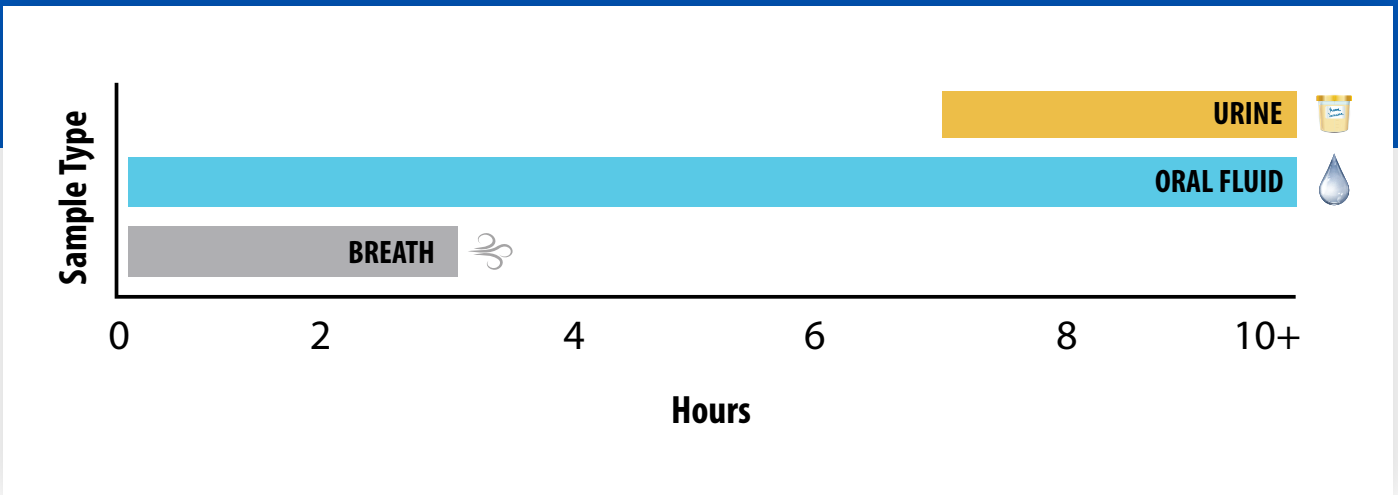


Figure 1. Window of detection time by sample type

As Figure 1 demonstrates, marijuana becomes detectable in oral fluid and breath almost immediately after it is absorbed into the body. Saliva, a fluid that originates from the blood, is the key component of oral fluid. Therefore, oral fluid contains whatever drug/metabolite is present in the bloodstream, making it scientifically possible to refer to oral fluid testing as a true recent-use detection drug testing method. This form of drug testing is ideal for use in states that have legalized marijuana, especially for random, post-accident, reasonable suspicion, fitness-for-duty, and pre-employment drug testing situations.

In contrast, urine tests detect THC metabolite and are generally not positive for metabolites for several hours after use.

The truth about marijuana impairment and an accurate understanding about the duration of such impairment helps employers choose a drug testing method that can truly meet their needs. Oral fluid testing helps employers accomplish the overall objectives of establishing and maintaining a drug-free workplace program, including accurately identifying people who recently used marijuana and who are still impaired several hours later even though the high has worn off and the person does not think they are still impaired.



CONCLUSION

What we know:

- Substance abuse in the United States is up dramatically, thanks in large part to the skyrocketing levels of marijuana use.
- Workplace positive drug test results for marijuana are also up dramatically, especially in states with legalized recreational marijuana use.
- According to the latest Drug Testing Index from Quest Diagnostics, in the U.S. general workforce, marijuana positivity increased 16.1% in urine testing (3.1% in 2019 versus 3.6% in 2020), 35.2% in oral fluid testing (9.1% in 2019 versus 12.3% in 2020) and 22.5% in hair testing (7.1% in 2019 versus 8.7% in 2020).
- While a positive drug test result for marijuana may not prove a person is impaired, it proves they have the drug in their system, and they could be impaired.
- Impairment is affected by several factors, including how much marijuana is consumed, how it is consumed, the potency of the THC, and the frequency of use by the employee. NHTSA reported that “levels of THC do not closely correlate to the degree of impairment – and that often peak impairment occurs when THC levels have already begun to decline.”



- Marijuana-induced impairment can last for many hours after intoxication or the “high” has worn off (in other words, the user may not feel high anymore, but could still be impaired).
- Lab-based oral fluid testing is the only recent-use detection method endorsed by the federal government, thus providing employers with a blueprint for success and the highest possible level of legal defensibility, which is especially important in marijuana-friendly states.

Workplace drug testing is here to stay. Testing applicants and employees for marijuana, especially those in safety-sensitive positions, is generally permitted in all 50 states. Employers still have the right to prohibit workers from using marijuana while on the job, bringing marijuana into the workplace, and being at work impaired by marijuana.

Choosing the right drug testing method is influenced by a company’s drug testing objectives. While there are several good drug testing methods available today, the best advice for employers is to make an educated choice.

1. <https://cosmosmagazine.com/health/body-and-mind/how-long-does-impairment-last-after-cannabis-use/>

2. *Ibid.*

3. *Ibid.*

4. *Ibid.*

5. *Ibid.*

6. [file:///C:/Users/Work%20Computer/AppData/Local/Packages/Microsoft.Office.Desktop_8wekyb3d8bbwe/AC/INetCache/Content.Outlook/REDF8JDJ/Human_Performance_Drug_Fact_Sheets-NHTSA%20\(002\).pdf](file:///C:/Users/Work%20Computer/AppData/Local/Packages/Microsoft.Office.Desktop_8wekyb3d8bbwe/AC/INetCache/Content.Outlook/REDF8JDJ/Human_Performance_Drug_Fact_Sheets-NHTSA%20(002).pdf)

7. *Ibid.*

8. *Ibid.*

9. <https://www.questdiagnostics.com/home/physicians/health-trends/drug-testing/>

10. <https://www.iii.org/article/background-on-marijuana-and-impaired-driving>



IMPAIRMENT

THE NEWEST BUZZWORD IN WORKPLACE DRUG AND ALCOHOL TESTING PROGRAMS

BY SHARON BOTTCHEER

It is important to understand that a positive drug test does not necessarily determine impairment.

Impairment in the workplace can have severe consequences. Workplace drug testing programs are designed to detect the presence of alcohol, illicit drugs and/or certain prescription drugs while also preventing potential on the job impairment. Drug testing is a common practice in workplaces of all industries and sizes, serving as a prevention and deterrent method implemented as part of a comprehensive program.

Impairment can be the result of various situations such as stress, fatigue, medical conditions, alcohol consumption or drug use; although the most common cause of impairment is the use and abuse of alcohol and drugs, whether legal or illegal. Impairment caused by drugs and/or alcohol often creates unfit working conditions and restricts ability to safely perform work functions. It causes impaired judgment, thinking and decision making or decreased motor coordination, reaction time and sensory perception. Employers have a responsibility to address impairment in the workplace, and for a good reason.

Why is impairment being brought into the mix of workplace testing programs?

Until now, impairment has not been a focus in drug and alcohol testing. As states pass medicinal and recreational marijuana laws, some states have put into place stipulations that require employers to prove there is a connection between a positive drug test result and actual impairment before taking adverse employment action. Knowing the signs of drug or alcohol impairment and adequately addressing impairment in your policy may mean the difference between a compliant program vs. program failure and non-compliance.

Additionally, most states have workers' compensation laws that allow denial for either failing a drug test or being impaired or intoxicated when injured.

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Why is documenting signs or symptoms of impairment encouraged prior to drug testing?

It is important to understand that a positive drug test does not necessarily determine impairment. There is varying evidence on how drug levels correlate with impairment, and some sample types (urine and hair, for example) can detect drug use that occurred weeks ago, as opposed to recent drug use that is more likely to impact impairment. On top of that, the effects of drugs and alcohol vary from person-to-person. Some factors that may affect drug levels and impairment include:

- General mood
- General health
- Body fat percentage and weight
- Amount of drug consumed
- Tolerance to drugs and alcohol

Nevertheless, what a positive drug test does prove is that an individual had drugs in their system at the time of testing. Therefore, the safest and most comprehensive way to determine impairment is to complement recent-use drug testing with an investigation into whether an employee exhibited any of the physical and behavioral signs associated with impairment.

Some states require employers to identify signs of impairment before permitting disciplinary action of an employee for marijuana use.

To prove impairment it is important to have sufficient evidence that is well-documented, similar to when an employer performs reasonable cause testing. Documentation of observed behaviors is the evidence applied to justify and merit the request for a drug test. When such behavior is documented, it signals possible impairment from drugs or other factors. The drug test is used to rule out prohibited drugs as a source of a particular behavior. Documenting signs and symptoms of impairment does not necessarily mean that an individual is using drugs and needs a drug test. Rather, a drug test post-documented signs is used as a means to exclude possible impairment as a cause of unusual behavior.

What are common signs and symptoms of impairment, and should it be included in your policy?

To implement a successful drug testing program, it is essential to know what constitutes a sign or symptom of impairment. Observing signs of impairment identifies that an individual is not functioning normally. This red flag allows the observer to pull the individual aside as a safety precaution and for further investigation. Additionally, it may aid in the early identification of an employee who

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I M P A I R M E N T

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might need help. Some states require employers to identify signs of impairment before permitting disciplinary action of an employee for marijuana use.

Identifying and confronting individuals exhibiting signs of impairment can be a difficult and uncomfortable task. Proper training can help provide the confidence and knowledge necessary to take the appropriate steps.

There is not an all-inclusive or complete list of signs and symptoms of impairment however, there are common signs and symptoms of possible impairment to watch for which include but are not limited to the following:

- **PHYSICAL:** poor appearance/hygiene, sweating, headaches, tremors, diarrhea, restlessness, slurred speech, unsteady gait, etc.
- **PSYCHOSOCIAL:** mood fluctuations, inappropriate verbal or emotional responses, irritability, confusion, memory lapses, isolation, lack of focus, lying, etc.
- **PERFORMANCE:** calling in sick frequently or working more overtime, arriving late/leaving early, extended breaks, errors in judgment, deterioration in performance, non-compliance with policies, changes in quality of work, etc.

State laws may require specific items in your policy

Naturally, state laws have varying requirements as to what must be included in the policy such as definitions or procedures that must be observed. For example, Illinois law indicates an employee can be considered to be under the influence or impaired if the employer has 'good faith belief' that the employee manifests at least one of the following articulable symptoms that decreases or lessens the employee's performance of job duties: speech, physical dexterity, agility, coordination, demeanor, irrational or unusual behavior,

negligence or carelessness in operating equipment or machinery, disregard for the safety of employee or others, involvement in any accident that results in serious equipment or property damage, disruption of the production or manufacturing process, or carelessness that results in an injury to the employee or others.

New York, in contrast, indicates that employers can take action if an employee is impaired by cannabis at work. Impairment in New York means that the individual in question manifests specific articulable symptoms of impairment that decrease or lessen job performance or interfere with the employer's obligation to provide a safe and healthy workplace. Employers should look for symptoms that are objectively observable indications that the employee's performance is decreased. Additionally, an employer cannot use a drug test as the basis for their determination that an employee was/is impaired by cannabis. Other states may have laws that require documentation of other signs or symptoms or may leave it up to individual employers to determine what constitutes impairment.

Developing a workplace policy on drug impairment

It is vital to include specific state law requirements in your policy. At a minimum, your policy should include the impact of possible impairment, company definitions of "impairment" and "under the influence" and required employee conduct. The policy should also clearly indicate the employer's position on the use, possession or being under the influence of substances while at work.


While the employer is ultimately responsible for developing a policy that includes the applicable provisions required, the supervisor has a vital role to play in the safety of their teams. Supervisors should be educated regularly on policy changes as regular reviews and updates occur. The success of the supervisor, in part, is determined by an accurate and comprehensive policy.

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COMMON SIGNS TO RECOGNIZE POTENTIAL DRUG USE IN THE WORKPLACE


Some states provide a specific list of signs that *must* be documented or combined with a positive drug test in order to take adverse employment action. However, in many states it is up to the employer to determine what signs indicate drug use, such as the examples listed below.



Inhibited speech, physical dexterity, agility, coordination or demeanor




Irrational or unusual behavior



Production or manufacturing process disruption



Disregard for safety for oneself or others



Involvement in any accident that results in injuries or serious damage to equipment/property



Negligence or carelessness in operating equipment or machinery




Poor job performance



Excessive absenteeism



Extreme hyperactivity



Chronic fatigue, sleepiness or falling asleep on the job

Each state law is different. Make sure to review state laws thoroughly before implementing a drug and alcohol testing policy in your workplace.



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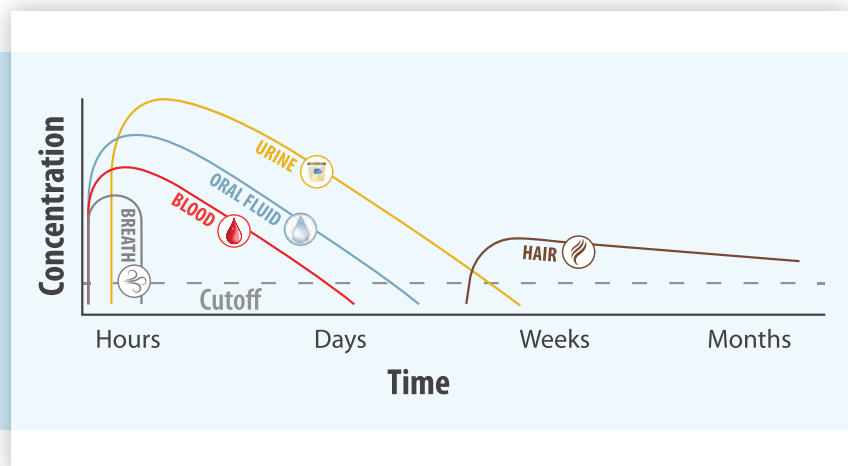
SAMHSA drug panel	Urine analysis	Saliva analysis
Overall positivity rate	5.5%	13.6%
Amphetamine/ Methamphetamine	1.3%	1.24%
Cocaine	0.22%	0.58%
Marijuana	3.6%	12.3%
Oxycodone	0.29%	0.24%
PCP	0.009%	0.04%

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¹ General Workforce based on Quest Drug Testing Index-2021

² Cone, E. A primer on the science of oral fluid testing. Seller's Guide, 2017

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