

# Drug and Alcohol Testing Program Manual for FTA Covered Employees



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## Background and History of Drug and Alcohol Testing

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Although the use of drugs and alcohol has always been a concern in the transportation industry, two fatal accidents brought significant attention to the dangers caused by the use of prohibited substances and the misuse of alcohol by safety-sensitive employees. These two events were the catalysts to today's drug and alcohol testing program:

- On January 4, 1987, just outside Chase, Maryland, an Amtrak train carrying 600 passengers collided with a Conrail freight locomotive. The accident injured 174 and killed 16. Following an extensive accident investigation, it was determined that the actions of the Conrail engineer and brakeman, who had been smoking marijuana and ignored safety procedures, caused the accident. The engineer was sentenced to a five-year prison term on a state charge of manslaughter by locomotive and a three-year federal term for failing to cooperate with the investigation.
- On August 29, 1991, a New York City subway accident killed 5 and injured nearly 200. According to accident investigators, the operator had a .21 blood alcohol level when tested 13 hours after the crash. Police said the operator admitted he had been drinking all day before going to work on the night shift and “passed out” at the throttle when the train hit a switch at four times the normal speed. The operator was given the maximum sentence of 15 years in prison for manslaughter.

As a direct result of the New York City subway accident, President George H. W. Bush signed the U.S. Omnibus Transportation Employee Testing Act in October 1991. This legislation changed the face of alcohol and other drug testing in the U.S. Mass transportation specifically was included in the new drug testing programs to override a previous court decision that the Federal Transit Administration (FTA) lacked specific regulatory authority in this area.

In February 1994, the U.S. Department of Transportation issued final drug and alcohol testing rules that identified which employees are required to submit to drug and alcohol tests, how to conduct those tests, and what procedures to use when testing. The regulations cover all safety-sensitive transportation employees—roughly 12.1 million people.

The FTA regulations are codified as 49 CFR Part 655, ***“Prevention of Alcohol Misuse and Prohibited Drug Use in Transit Operations.”*** The U.S. DOT regulations, which identify the uniform procedures and standards for conducting drug and alcohol testing, are in ***49 CFR Part 40, “Procedures for Transportation Workplace Drug and Alcohol Testing Programs.”***



## **Who is Subject to DOT-Required Drug and Alcohol Tests?**

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FTA regulations define which employees are safety-sensitive and therefore “covered” under the regulations. It is the actual tasks that you perform that determine if you are a safety-sensitive employee, not your job title. For example, if you are a general manager whose tasks are performed primarily in an office setting, but you could be called upon to drive a bus in an emergency evacuation, you are considered a safety-sensitive employee. The following are safety-sensitive duties according to the regulations:

- Operating a revenue service vehicle, including when not in revenue service.
- Operating a non-revenue service vehicle when a Commercial Driver’s License is required.
- Controlling dispatch or movement of a revenue service vehicle.
- Maintaining (including repairing, overhauling, and rebuilding) a revenue service vehicle or equipment used in revenue service.

As a safety-sensitive employee:

- You must not use or possess any illicit drug.
- You must not report for duty or remain on duty if you are under the influence or impaired by alcohol.
- You must not use alcohol within 4 hours of reporting to duty or while on call.
- You must not consume alcohol within 8 hours of an accident in which you were involved or until post-accident testing is completed.
- You must submit to any and all U.S. DOT-required drug and alcohol tests. Refusal to submit to a test is equivalent to a positive result.



## **Definitions of Frequently Used Terms and Acronyms**

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### ***Breath Alcohol Technician (BAT)***

The individual trained to conduct breath alcohol testing for your employer. This person must be trained in administering the testing to be compliant with the regulations governing U.S. DOT breath alcohol testing.

### ***Urine Collector***

The technician trained to “collect” urine samples and complete a Federal drug testing Custody and Control Form for U.S. DOT-required drug testing.

### ***Custody and Control Form (CCF)***

The five-part form that accompanies a urine specimen from the point of collection to the laboratory for analysis. Also referred to as a “chain of custody.” Each party involved in a Federal drug test receives a copy of the form, including the employee, the employer, the sample collector, the laboratory, and the Medical Review Officer.

### ***Designated Employee Representative (DER)***

The individual responsible for handling the drug and alcohol program for your employer. This person receives the drug test results, prepares the random testing schedule, and is responsible for maintaining compliance with FTA regulations in drug and alcohol testing. Also be referred to as the Drug and Alcohol Program Manager.

### ***Evidentiary Breath Testing (EBT) Device***

The device used by a breath alcohol technician to test the quantitative levels of alcohol in the lungs.

### ***Medical Review Officer (MRO)***

A licensed doctor of medicine or osteopathy who has specific knowledge of substance abuse. His/her role is to conduct an interview with an employee whose urine sample tested positive to determine if there is a legitimate medical explanation for the presence of the drug or drug metabolite in the urine sample.

## ***Substance Abuse Professional (SAP)***

The person to whom an employee is referred for evaluation when he/she has been suspended from safety-sensitive duties because of a positive drug test or a breath alcohol test or for refusing to submit to a urine drug or alcohol test. The SAP must meet U.S. DOT guidelines for training and qualifications to act as a referral source for a U.S. DOT employer. Under Federal regulations, your employer must provide you with a referral to an SAP regardless of the disciplinary action.



### **Test Types**

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Following is a description of the circumstances for testing, as required by Federal regulations. Please note that if your employer's substance abuse policy is "zero tolerance," the return to duty and follow-up testing may not be applicable.

#### ***Pre-Employment tests***

Federal regulations require that an FTA-regulated employer must be in receipt of a negative urine drug test before the first performance of a safety-sensitive function by an employee. Additionally, an employee who is on an extended leave for a period of 90 days or more and who has been removed from the random testing pool also must submit to a pre-employment urine drug test prior to performing a safety-sensitive function.

#### ***Random Tests***

Current (2010) Federal regulations require that an FTA-regulated employer annually must test 25% of its average number of safety-sensitive employees annually for prohibited drug usage and 10% of the average number of safety-sensitive employees for alcohol use while performing safety-sensitive duties. In random testing, the names of all employees holding safety-sensitive positions are loaded into a random selection mechanism, such as a special computer program. Each testing period, every safety-sensitive employee has an equal chance of being tested, regardless of whether or not he/she had been selected previously.

#### ***Post-Accident Tests***

Both urine drug testing and breath alcohol testing are required when an accident occurs that meets the threshold for testing, as provided by the FTA regulations. Any safety-sensitive employee whose performance could

have contributed to the accident must be tested. This may include mechanics, dispatchers, and drivers. The testing thresholds are defined as:

- An accident that results in a fatality.
- An accident that results in injuries requiring immediate medical treatment away from the scene.
- An accident that results in one or more vehicles incurring disabling damage that requires towing from a site.

FTA defines disabling damage as “damage that precludes the departure of any vehicle from the scene of an accident in its usual manner in daylight hours after simple repairs.” Disabling damage includes damage to vehicles that could have been operated but would have resulted in further damage if so operated. Disabling damage does not include damage that could be remedied temporarily at the scene of the occurrence without special tools or parts, tire disablement without other damage even if no spare tire is available, or damage to headlights, taillights, turn signals, horn, or windshield wipers that makes them inoperable.

### ***Reasonable Suspicion Tests***

A covered employee must submit to drug and alcohol testing when a trained supervisor observes articulable, specific, contemporaneous, physical, behavioral, or performance indicators of probable drug and/or alcohol abuse.

### ***Return-to-Duty Tests***

When an employee has been suspended from safety-sensitive duties because of a positive drug test or a breath alcohol test or for refusing to submit to a urine drug or alcohol test, he/she must receive an evaluation and treatment from a U.S. DOT-qualified SAP. A negative drug and/or alcohol test result is required before the employee can return to safety-sensitive duties. In accordance with U.S. DOT regulations, return-to-duty urine drug tests must be conducted under direct observation, as required in 49 CFR Part 40, as amended.

### ***Follow-Up Tests***

When an employee is allowed to return to a safety-sensitive position after undergoing treatment for alcohol or substance abuse, unannounced follow-up testing will be conducted to ensure that the employee is alcohol and drug free and remains so. The SAP prescribes the number of follow-up tests to which the employee must submit; a minimum of 6 tests in 12

months is required by FTA regulations. In accordance with U.S. DOT regulations, return-to-duty urine drug tests must be conducted under direct observation, as required in 49 CFR Part 40, as amended.



## Urine Specimen Collections

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Urine collection will be conducted under procedures mandated by the U.S. DOT, which has issued regulations regarding the training and qualifications of urine collection personnel. The U.S. DOT Urine Specimen Collection

Guidelines are available at: <http://transit-safety.volpe.dot.gov/Publications/Default.asp>

These regulations provide for your individual privacy unless there is reason to believe that you may have altered or substituted the urine specimen or you have previously tested positive on a U.S. DOT-required test and are in a return-to-duty/follow-up testing program. In these cases, you must submit to a directly-observed collection or face the consequence of a refusal to test.

The following are the procedures for a routine collection:

1. Present required photo ID to the collector; if you do not have a photo ID, an employer representative will be asked to identify you.
2. If desired, ask the collector to show his/her identification.
3. Remove any unnecessary outer garments, such as a coat, jacket, or hat. All personal belongings (such as a purse or briefcase) must remain with the outer garments. You may retain your wallet. You may ask for a receipt for the items that remain outside of the testing area.
4. When instructed by collector, wash and dry your hands.
5. You will be provided with a sealed specimen bottle or collection container, or the collector may unwrap it in your presence.
6. You may provide the specimen in the privacy of a stall or otherwise partitioned area that allows for individual privacy.
7. Observe the entire collection procedure. The collector will check the specimen for volume, temperature, and color. The collector will divide the specimen into two bottles and seal the bottles as appropriate (specimens "a" and "b").

8. Initial the identification labels on the specimen bottles to certify that it is your specimen after the labels are applied to the containers.
  9. You will be asked to complete the information in step 5 of the Custody and Control Form. You will be given a copy of the completed form after the collector has completed his/her certification. Do NOT list medication or prescriptions on any copy of the form other than the one you are given for your own records.
10. Both the “a” and “b” bottles containing your urine specimen will be shipped to a laboratory that is certified by the U.S. Department of Health and Human Services. The laboratory will analyze the “a” bottle and place the “b” bottle in storage. The result of the analysis of the “a” bottle will be forwarded to your employer’s Medical Review Officer (MRO).



### **Medical Review Process**

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The laboratory can release results only to a U.S. DOT-qualified MRO. If the laboratory results are “negative,” the MRO will notify your employer in writing. If the laboratory results are “positive,” the MRO will contact you at the phone number you provided on the form to give you the opportunity to discuss the test results and to submit documentation that demonstrates authorized use of the drug metabolites present in your specimen. If a legitimate medical explanation exists, the MRO will verify the documentation and then report the result as “negative.” If you are unable to provide a legitimate medical explanation for the drug metabolite in your urine, the MRO will verify the result as “positive” and list the drug(s) detected. Your employer is required to immediately remove you from safety-sensitive duty and provide you with a referral to a U.S. DOT-qualified SAP.

Information discussed during your interview with the MRO is confidential, unless the MRO believes that a risk to public safety exists based on information you have reported to him/her during the interview. For example, a prescription medication you are taking provides a legitimate medical explanation for the laboratory’s “positive” result; however, your use of the prescribed medication while on duty would pose a safety risk, so the MRO would report your result to your employer as a “negative” result but may indicate a “safety concern.”

## ***Employee Protection: Split Specimen Testing***

Following an MRO-verified “positive” result, Federal regulations allow an employee to request an analysis of the “b” bottle at a second certified laboratory; this is commonly referred to as a “split specimen test.”

If an employee chooses to exercise this right, he/she must notify the MRO within 72 hours following the MRO interview. The MRO will initiate the process of having the “b” bottle specimen removed from storage and sent to the second laboratory. The MRO will contact the employee when the results from the second analysis are received.

Employees who request a split specimen test must continue to be removed from safety-sensitive duty while awaiting the results.

The regulations are silent as to who must pay for the cost of the split specimen testing; however, an employer cannot restrict the process from occurring if an employee cannot afford to pay for the cost of the split specimen test. Most employers will seek reimbursement for the cost of the test if the results of the split specimen test reconfirm the initial “positive” result.



## **Breath Alcohol Testing**

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U.S. DOT’s training requirements for Breath Alcohol Technicians (BATs) ensure that the individual is trained to proficiency in the operation of the breath testing device (EBT) he/she is using and in the alcohol testing procedures contained in 49 CFR Part 40. The procedures for breath alcohol testing are as follows:

1. You must provide positive identification, and the BAT must provide identification if upon your request.
2. The BAT will explain the procedure.
3. The BAT will complete Section 1 of the U.S. DOT Alcohol Testing Form; the employee will complete Section 2. Refusal to sign the form constitutes a refusal to test.
4. An individually-sealed mouthpiece is opened in your view and placed on the EBT machine.
5. The BAT will instruct you to blow into the machine for at least six seconds.

6. The technician will show you the displayed results.
7. The EBT will print the results directly onto a form.
8. If test result is less than .02, the BAT will date and sign the form in Step 3. The employee will date and sign the form in Step 4. Results are then transmitted to the employer. If the result is .02 or greater, a confirmation test will be performed.



## **Refusing to Test**

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Submitting to U.S. DOT-required drug and alcohol testing is a condition of your employment as a safety-sensitive employee. Refusing to submit to a test is a violation of your employer's substance abuse policy and U.S. DOT regulations.

If your employer has a "zero tolerance" policy, these actions could result in termination of your employment. In all circumstances, these actions will result in removal from safety-sensitive duty and referral to a Substance Abuse Professional. During a urine drug collection, the following actions are considered a "refusal to test":

- Failure to appear at the collection site when directed to report.
- Failure to remain at the collection site until testing is completed.
- Failure to provide a urine specimen.
- Failure to permit a monitored or observed collection when required.
- Failure to provide a sufficient specimen without medical explanation.
- Failure to submit to additional testing as directed by the employer or collector.
- Failure to undergo a medical evaluation when directed to do so by the employer or MRO.
- Failure to cooperate with any part of the urine collection process.
- Adulteration or substitution of a urine specimen you provided.
- In an observed collection, failure to follow the observer's instructions to raise your clothing above the waist, lower clothing and undergarments, and turn around to permit the observer to

determine if you have any type of device that could be used to interfere with the collection process.

- To possess or wear a prosthetic or other device that could be used to interfere with the collection process
- Admitting to the collector or MRO that you have adulterated or substituted the specimen.

During a U.S. DOT-required breath alcohol test, the following actions are considered a “refusal to test”:

- Failure to appear for a breath alcohol test when directed to do so.
- Failure to remain at the testing location until the test is completed.
- Failure to provide an adequate breath sample without medical explanation.
- Failure to undergo a medical evaluation when directed.
- Failure to sign Step Two of the DOT Alcohol Testing Form.
- Failure to cooperate with any part of the alcohol testing process.



### **Consequences for Positive Results and Refusing to Test**

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When an employer is notified of an employee’s “positive” drug or alcohol test result or a refusal to submit to U.S. DOT-required testing, Federal regulations require that the employee be immediately removed from safety-sensitive duty and referred to an SAP. The regulations do not prohibit the return of a violating employee to safety-sensitive duties provided that the employee is evaluated by an SAP, has completed the course of treatment prescribed by the SAP, and has submitted to a return-to-duty drug or alcohol test with “negative” results before resuming safety-sensitive functions. The violating employee also must adhere to a schedule of follow-up tests as prescribed by the SAP.

Some employers implement a “zero tolerance” policy, terminating employees who violate the substance abuse policy and/or testing program. Other agencies choose to enact a policy that provides for a “second chance,” giving a violating employee the opportunity to receive treatment and

then return to his/her position. Regardless of which policy statement your agency has adopted, it must be implemented fairly and consistently.

U.S. DOT regulations require that you be provided with a copy of your employer's substance abuse policy statement. If you did not receive a copy, you should speak with your employer's drug and alcohol program manager or Designated Employer Representative.



## **Drug and Alcohol Facts**

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### *Alcohol*

An estimated 18 million Americans are reported alcoholics or alcohol abusers, a figure that increases by 4 million each year. Illnesses resulting from alcohol abuse represent the 3rd leading cause of death in the United States.

Other studies indicate that alcohol abuse results in hospitalization more than any drug and that it is a contributing factor in 10% of work-related injuries and in 40% of traffic deaths. Up to 68% of people who drown were under the influence of alcohol, and the rate of suicide among alcoholics is 30 times that of the general population. The productivity of an alcoholic employee is 25% to 50% lower than normal productivity.

While alcoholism (physical and psychological dependence on alcohol) is epidemic in the U.S., high levels of alcohol consumption that fall short of actual alcoholism also are dangerous to the drinker, to his or her family and community, and to safety at work. Excessive drinking ("excessive" varies widely, depending upon body weight, sensitivity to alcohol, and health factors) may result in liver and kidney disease, pancreatitis, chronic gastritis, and cirrhosis.

A standard bar drink is considered a normal dose; it contains 1.5 ounces of 80-proof liquor. A 12-ounce bottle of beer and a 5-ounce glass of wine contain approximately the same amount of alcohol as a standard bar drink.

One to three drinks are considered a moderate dose of alcohol. The first noticeable effects of alcohol ingestion are heightened activity and acting in an uninhibited manner (disinhibition). Individuals react differently;

many drinkers tend to feel happy, gregarious, filled with enthusiasm, relaxed, and more self confident, while others become hostile, withdrawn, and depressed.

As more alcohol reaches the brain, thinking and memory may become moderately impaired, and perceptual and motor functions may be adversely affected. The face and skin may seem warm and flush. After three or more drinks, motor functions become impaired and reaction time is slowed. Emotions tend to become magnified; depression or rage is common. Symptoms include sweating, “double vision” (an inability to focus well), unsteadiness, dehydration, frequent urination, slurred speech, vomiting, and sudden, heavy sleep. With very high doses, stupor or coma may occur. An individual may vomit while asleep and be unable to awake, and die as a result.

The physical and psychological dependence on alcohol becomes increasingly likely with chronic use. The chronic drinker suffers from depression, anxiety, confusion, slurring (even when sober), impairment of perceptual/motor functions, and increasing loss of ability to reason, as well as the wide range of serious diseases stated above.

While the “hangover” experienced after a night of drinking is actually a mild withdrawal syndrome, the symptoms experienced by an alcoholic or long-term chronic drinker are extremely serious. With cases of severe alcoholism, the process of detoxification must be carried out under medical supervision. If not handled correctly, severe symptoms may result, such as delirium tremens (DTs), which can be fatal.



### ***Amphetamines***

This drug class includes Methamphetamines and MDMA (“Ecstasy”). Amphetamines and methamphetamines are stimulants that work directly on the central nervous system, increasing alertness and strength and decreasing hunger. Because of these effects, stimulants tend to be abused by students (to stay awake and focused to study for exams), by long-distance drivers (to stay alert and combat boredom), and by athletes (to improve performance).

In the 1960s, stimulants were widely prescribed to help dieters control their appetites without suffering the fatigue and weakness that stringent dieting causes. However, numerous studies have since proved that while stimulants may result in modest weight loss over two to four weeks, toler-

ance to the hunger-reducing effects is rapidly developed, and higher levels of the drug must be consumed to continue the weight reduction. This cycle of tolerance followed by increasing levels of a substance leads almost inevitably to physical dependence. Individuals who take stimulants to lose weight will quickly regain the lost weight. Today, most physicians feel that the benefits of stimulants are small and short-lived and that the liabilities are so high that prescribing them for weight loss is both inappropriate and, ultimately, ineffective.

Stimulants may be taken by mouth, by nose (“snorted”), or injected. When taken in tablet form, the effects last from 8 to 12 hours, and from 3 to 4 hours when snorted or taken by injection.

To “snort” amphetamines, the user empties a powder-filled capsule (or crushes a tablet) onto a smooth surface, shapes it into short lines, and inhales it using a straw or tube. In the case of “crystal” methamphetamine, a more potent form of amphetamine purchased in crystalline powder form, the mica-like crystals are chopped with a razor blade and then shaped and snorted. A runny nose and nosebleeds are common. Some users lose their sense of smell due to the excessive irritation the drug causes to the nasal passages.

“Shooting” a drug comes with its own risks. Those who inject drugs suffer from skin infections at the needle’s point of entry. These infections manifest themselves as round, swollen, red areas that are tender to the touch. Infections also travel to other areas of the body, especially the lungs and heart valves. Hepatitis is a common result of shared needles, and those who inject drugs are faced with death from a new source, AIDS.

Low-dose effects of amphetamines include increased activity, heart rate, and pulse rate; increased blood pressure; decreased appetite; euphoria; constricted blood vessels; dilated pupils; increased alertness, strength, and initiative; self confidence and ability to concentrate; and scrambled speech. A sensation of crawling skin, especially on the scalp when fingers are run through the hair, is common, as are dry mouth and excessive sweating.

In higher doses, headache, palpitations, dizziness, vasomotor disturbances, agitation, confusion, apprehension, paranoia, delirium, and fatigue occur.

Tolerance develops to some of the central effects of amphetamines (primarily the euphoria and appetite-decreasing effects), leading the user to increase the dose to obtain the same effect. Additional symptoms caused

by chronic use include sleep deprivation and sleep disturbances, paranoid delusions, auditory hallucinations, panic states, and suicidal and homicidal tendencies.

Withdrawal symptoms can include irritability, fatigue, depression, weakness, and increased appetite. These may last for two or three days, or they may last for several weeks, depending upon the length of use, the amount of stimulant used, and the individual's physical variables.

MDMA, commonly called "Ecstasy," is also part of the Amphetamines drug testing class. It is a synthetic, psychoactive drug that is chemically similar to the stimulant methamphetamine and the hallucinogen mescaline. MDMA produces feelings of increased energy, euphoria, emotional warmth, and distortions in time, perception, and tactile experiences.

MDMA can be dangerous to overall health and, on rare occasions, lethal. It can have many of the same physical effects as other stimulants such as cocaine and amphetamines. These include increases in heart rate and blood pressure and other symptoms such as muscle tension, involuntary teeth clenching, nausea, blurred vision, faintness, and chills or sweating.

In high doses, MDMA can interfere with the body's ability to regulate temperature. On rare but unpredictable occasions, this can lead to a sharp increase in body temperature (hyperthermia), which can result in liver, kidney, or cardiovascular system failure or death. MDMA can interfere with its own metabolism (breakdown within the body), so potentially harmful levels can be reached by repeated MDMA administration within short periods of time.



## ***Marijuana***

Marijuana, the dried leaves of the Cannabis Sativa plant, has been used for its intoxicating effects for more than 4000 years by the Chinese; it was not introduced into America until the late 1930s. It became widely used in the 1960s, and in the years since, its popularity has remained fairly constant. Cross-breeding and significant underground research into optimal growing conditions have increased the potency of the drug considerably. Today, marijuana is as much as 10 times more potent than the marijuana used in the early 1970s.

The main psychoactive ingredient in marijuana and hash is a mild hallucinogen called delta 9 tetrahydrocannabinol (THC), but more than 400 oth-

er chemicals also are present in the tropical plant. Although it is classed as a hallucinogen, it differs from the other drugs in this class (such as LSD) because it is much less potent and because it induces much more sedation.

Hashish (hash) is a concentrated form of marijuana that is made by taking the resin from the leaves and flowers of the *Cannabis Sativa* plant and pressing it into cakes. Hashish in this cake form is a brown, sticky, crumbling substance, similar to a crumbled bouillon cube, and can contain as much as 10 times the amount of THC found in the marijuana used to make it. Hash oil can contain as much as 50% THC.

Marijuana usually is smoked, either in a very thin rolled paper like a cigarette or in a water pipe called a "bong." Sometimes other substances, such as PCP or powdered sedatives, are sprinkled on the marijuana prior to smoking it. Hashish is smoked in a small pipe. The smell produced by the smoke of marijuana or hashish is distinctively sweet.

Some low-dose effects of marijuana include mild euphoria, sedation, increased pulse, disturbance in short term memory, dry and bloodshot eyes, mild perceptual and sensory distortions (lights and colors may appear brighter than they really are, or an enormous amount of time may seem to go by between the time that one person speaks and another person answers), spontaneous laughter, sudden hunger, reduced attention span, dry mouth that is not easily alleviated by drinking water, slowed reaction time, and mild impairment of cognitive and motor functions.

Some people have an adverse reaction to marijuana, involving an "acute panic anxiety reaction" (paranoia). This may occur only the first time a person tries the drug, or every time.

In higher doses, a user can experience mental confusion, impaired performance of simple motor tasks, paranoia, and increased desire for sleep. In very large doses, the impaired cognitive and motor abilities, the mental confusion, and the resultant mild depression may last for several weeks after termination of use.

Studies indicate that marijuana smoking, like tobacco, leads to chronic bronchitis, emphysema, and lung cancer. Marijuana users who have cardiovascular disease are at greater risk of developing angina, possibly due to the elevation in heart rate that occurs when smoking the drug. In addition, chronic users of marijuana often develop what is known as "a motivational syndrome," characterized by lethargy or low motivation to engage

in productive work, boredom, mild depression, and difficulty in concentrating and remembering.

While there are no observed withdrawal symptoms from the use of marijuana, there is an effect known as the “marijuana hangover.” This is characterized by cloudy-headedness, slowed reaction time, and lowered concentration, which lasts as long as 24 hours after the use of the drug is discontinued.



## **Cocaine**

Although cocaine was the drug epidemic of the 1980s and 1990s, it is not a new drug of abuse. Spanish explorers in South America 400 years ago described natives who continually chewed the leaves of the coca plant to stay in a state of perpetual intoxication.

From the South American tropics to the boardrooms of corporate America, cocaine has proved to be one of the most highly-addictive drugs known. In recent experiments, animals allowed to choose freely between food, water, or cocaine chose cocaine repeatedly, ignoring food and water until near death.

Cocaine is a white powder typically mixed with various white “cutting” agents. It can be used by inhalation (“snorting”), injection (“shooting up”), “free basing,” or smoking as crack.

To “snort” cocaine, abusers use a razor blade to chop the cocaine/cutting agent mixture on a smooth surface and shape the finely-chopped powder into a line. The amount of the dose is roughly judged by the size of the line, and a small straw or tube is held to the nose and the line of powder inhaled.

Cocaine snorters often develop nose and throat trouble due to the irritation caused to these passages when snorted. Bloody nasal discharge, runny nose, infections of the sinuses, and frequent coughing are common. Some users lose all sense of smell as a result of this practice.

“Shooting up” is often the method of choice for cocaine addicts, as the onset of the drug is almost instantaneous and the initial euphoria more intense. A small amount of cocaine is put in a spoon or small container, enough water is added to dissolve the drug, and a needle is placed into the liquid and sucked up into the syringe. The liquid is then injected, usually into the vein on the inside of the elbow or the leg or some other eas-

ily-accessible vein. The drug takes effect so quickly that, in the case of an overdose, a person may have a heart attack or seizure while the needle is still in his/her arm. In addition to these dangers, a user who injects any drug risks hepatitis, infections of the skin that can travel to the lungs and heart valves, and AIDS.

A “speedball” is an injection of cocaine and heroin combined. As the name implies, such a combination produces an extremely intense reaction and is even more dangerous than cocaine alone.

At low doses, users can experience a euphoria lasting approximately 20 minutes when snorted and less long when “free based” or smoked, constricted blood vessels, increased pulse and blood pressure, increased energy, strength and alertness, decreased appetite, and lowering of inhibitions.

Some reactions to higher doses include confusion, paranoia, hallucinations, impulsive behavior (mental effects identical to the symptoms of paranoid schizophrenia), seizures due to stimulation of the nervous system, irregular heartbeat, heart attack, inflammation of the heart muscle, cardiovascular collapse, cardiac arrest, and sudden death.

Cocaine use produces an extremely high risk of addiction. The time from first use to full-blown addiction can be very short, a matter of weeks or months. Tolerance to the euphoric effects occurs very quickly.

A person withdrawing from cocaine will experience irritability, weakness, marked reduction in energy, increased desire for sleep, depression, loss of concentration, and increased appetite.



### ***Opiates***

Opiates are narcotic drugs derived from opium, a black, sticky substance that is produced when the pod of the poppy plant is slashed at a certain time of the year. All opiates act in a similar manner, but the intensity of the effects (and, therefore, the abuse potential) differs from drug to drug.

Opiates are prescribed for their painkilling abilities. Codeine is the least strong of the opiates and often is found in cough syrups and mild analgesics (such as the prescription Tylenol/Codeine combination). Morphine, on the other hand, may be used to combat pain following surgery.

Studies have shown that approximately 4% of the young adult population (ages 18-34) use heroin at least once a month. This figure has stayed fairly constant over several decades, suggesting that a certain number of people will always be drawn and addicted to the drug. A dose of heroin lasts two to six hours when injected, and injection is the primary method of use (bringing with it all the dangers of hepatitis and AIDS).

In low doses, suppression of pain, feelings of well being, relaxation in some people and activity in others, mental cloudiness, euphoria, possible decreased appetite, nausea, and vomiting can be experienced.

Higher doses of opiates can result in decreased sensitivity and emotional response to pain, impaired concentration, deep sleep, stupor, coma, and death due to suppression of respiratory functions. Tolerance and addiction are likely in most users.

Withdrawal can begin eight hours after the last dose of the drug. The symptoms include uneasiness, restlessness and anxiety, watery eyes, runny nose, loss of appetite, sweating, nausea, tremors, stomach cramps, vomiting, diarrhea, and panic. Another symptom of withdrawal is “goose-flesh,” which makes the skin of the individual resemble a plucked turkey or chicken. (It is this phenomenon that gave rise to the expression “cold turkey” as a way of describing a sudden and difficult withdrawal from a substance.)

Withdrawal can last days or weeks, depending upon the level of abuse. While withdrawing from narcotics can be extremely uncomfortable and temporarily debilitating, it is rarely fatal unless the individual had a pre-existing serious medical problem, such as heart disease.

Because of the rapid onset of withdrawal symptoms, an addicted employee may, and probably will, experience these symptoms on the job. To try to avoid this, many addicts will inject themselves just prior to reporting for work or will bring a small quantity of the drug with them. An employee experiencing the effects of narcotics while at work is a safety hazard due to the sedative effects of the drug.



### ***Phencyclidine (PCP)***

PCP was developed in the 1950s as a surgical anesthetic. However, when patients began to report hallucinations while under the drug, its use in human medicine was discontinued.

PCP is still used as a tranquilizer in veterinary medicine, which is why it is sometimes referred to as “animal tranquilizer.” In medicine, PCP is classed as a hallucinogen because of the hallucinations that are so frequently reported with its use. It differs, however, from other hallucinogens in that it also acts as a stimulant, a depressant, and an analgesic.

PCP is a powder and usually is taken orally, snorted, injected, or sprinkled on tobacco, marijuana, or parsley and smoked in cigarette form. When smoked in this way, the drug is called “angel dust” and users are referred to as “dusters.”

The acute drug reactions usually last four to six hours, but the effects of PCP have a unique pattern: they “come and go.” The hallucination may suddenly become very strong, and then fade away, and then reoccur. The reason for this is that the drug is absorbed by a person’s body fat, then released into the blood stream, then metabolized and released again, prolonging its effects.

Low-dose effects include euphoria, delusions, hallucinations (especially visual), impaired short-term memory and judgment, staggering walk, numbness of hands and feet, slurred speech, confused thinking patterns, and apathy. Aggressive, hostile, and even psychotic behaviors are not unusual.

In higher doses, increased heart rate and blood pressure, drooling, fever, sweating, and muscular rigidity may be experienced. Other reactions may be anxiety, depression, paranoia that is schizophrenic in intensity, homicidal and suicidal behavior, stupor, coma (although the eyes remain open), and convulsions.

Half of PCP users claim to use it once a week or less. “Runs” can occur in which the user takes the drug constantly for two or three days with little sleep or food. Abrupt withdrawal after chronic use results in fearfulness, tremors, and facial twitches. PCP may be the most toxic drug ever abused.



### **Prescription and Over-the-Counter Medication Use**

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Federal regulations do not address the use of prescribed or over-the-counter (OTC) medications. However, most employers are adopting policies and procedures that in-

clude a requirement of employees to notify a supervisor of medication use and, in some cases, the requirement of a physician's release form for medication use by safety-sensitive employees. If you are not aware of your employer's policy regarding prescription and OTC medication use, you should ask your supervisor for further information.

The following are suggested "common sense" practices to follow:

- Inform your physician of your safety-sensitive position and explain your job duties (do not assume that your physician will recall your occupation, even if it is a doctor that you see regularly). Be sure to let your physician know about any medications that you are already taking, as this will help to avoid complications from drug interactions.
- Solicit information from your pharmacist, who can provide you with a list of side effects, potential drug interactions, dosage requirements, and suggested dosage times.
- Read and follow the warning labels on all prescription and OTC medication bottles, and read the literature that accompanies prescribed medications.
- Follow the medication dosage instructions. Never increase the amount or frequency with which you take a medication without consulting your physician. Over-medicating is a form of prescription drug abuse.
- After taking a medication, monitor your reaction and note any side effects or impairment, such as dizziness or disorientation. If possible, take a newly-prescribed medication at home for a day or two before reporting to duty.
- If you experience side effects or impairment, immediately call your physician, explain your concerns, and ask for an alternative medication. If the side effects are caused by an OTC medication, consult your pharmacist for a substitute.
- Some employer policies require you to report your medication use to your supervisor. Even if your employer does not require this, it is highly recommended.
- Never perform a safety-sensitive job function while impaired. It is your responsibility to determine your own fitness for duty. Report any impairment to your supervisor immediately.



## Substance Abuse Assistance Resources

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- National Institute on Alcohol Abuse and Alcoholism  
*<http://www.niaaa.nih.gov>*
- Alcoholics Anonymous  
*<http://www.alcoholics-anonymous.org/>*
- Families coping with an alcoholic loved one  
*<http://www.al-anon.org/>*
- Cocaine Anonymous  
*<http://www.ca.org/>*
- Marijuana Anonymous  
*<http://www.marijuana-anonymous.org/>*
- Cope Line (crisis assistance, information and referral services for substance abuse treatment)  
1-888-285-5665
- C.A.R.E.—24/7 addiction help in Florida  
*<http://www.careflorida.com/index.html>*  
1-866-494-0866

Printable copies of the U.S. DOT Urine Specimen Collection Guidelines, FTA Regulations 49 CFR Part 655, and U.S. DOT Regulations 49 CFR Part 40, can be found at *<http://sam.cutr.usf.edu>*.