



## ***Information Concerning the Effects of Alcohol and Controlled Substances.***

*In compliance with 49 CFR 382.601*

### ***Understanding Narcotics: Impacts on Health, Safety, and the Workplace***

Narcotics, more accurately known as opioids, trace their origins to the Greek term for 'stupor'. These substances, including both natural and synthetic variants, are primarily derived from the poppy plant *Papaver somniferum* or synthesized in labs. Familiar examples encompass:

- Heroin
- OxyContin®
- Vicodin®
- Fentanyl

Often accessed from various sources like medicine cabinets and online platforms, they present significant risks.

Narcotics come in diverse forms - tablets, syrups, powders, and even lollipops, used through swallowing, smoking, sniffing, or injection. Street names like 'Smack', 'Horse', and 'Hillbilly Heroin' often cloak their identity. Medically, they are prescribed for pain relief, cough suppression, and to induce sleep. However, their effects extend beyond therapeutic benefits, inducing a sense of well-being while reducing anxiety. This dual nature contributes to their abuse.

Fentanyl, a synthetic opioid significantly stronger than heroin and morphine, has become a central figure in the current epidemic of drug abuse and overdose deaths. In 2022, fentanyl was implicated in a staggering 73,654 overdose deaths in the United States, more than double the number from three years earlier in 2019. This marked a continuation of a decade-long trend of increasing fentanyl-related fatalities, although the year-over-year growth rate was the smallest observed during this period. Fentanyl's potency is so high that even two milligrams can be lethal, contributing to its dangerous profile, especially when users are unaware of its presence in the drugs they consume.

The consequences of narcotic use are profound, affecting both the mind and body. Psychological dependence is a critical concern, with users often fixated on the drug long after physical need diminishes. This fixation can hinder daily functioning and spur relapses, especially without environmental and behavioral changes. Physically, while they slow bodily functions and relieve pain, higher doses escalate both therapeutic and harmful effects, potentially leading to lethal consequences for new users.

Physical dependence and withdrawal are pivotal issues. Withdrawal symptoms range from mild discomforts like watery eyes and runny nose to severe depression and increased heart rate. Although these symptoms generally subside over time, the process can be challenging.

In the workplace, the impact of narcotics is multifaceted. Reduced concentration, apathy, and drowsiness can impair performance and safety, posing risks not only to the user but also to colleagues and the work environment. Behavioral cues like fluctuating moods, irregular work attendance, and diminished productivity can indicate substance abuse. Overdoses, characterized by symptoms like constricted pupils and confusion, are serious risks and can be fatal.



The United States Drug Enforcement Administration classifies narcotics as controlled substances, into numbered Schedules ranging from I to V based on factors like medical utility and abuse potential. Drugs like heroin fall under Schedule I, indicating no accepted medical use and high abuse potential.

In conclusion, narcotics, despite their medical applications, present significant risks to personal health, safety, and the workplace. Recognizing behavioral cues and understanding their effects are crucial for effective management and intervention in professional settings, particularly in sectors prioritizing safety and security.

### ***The Impact of Stimulants on Health and the Workplace***

Stimulants, substances that accelerate the body's systems, encompass a broad range of drugs including:

- prescription medications like amphetamines (Adderall®, Dexedrine®)
- methylphenidate (Concerta®, Ritalin®)
- various diet aids
- illicit drugs like methamphetamine, cocaine, and synthetic cathinones often disguised as "bath salts"

These stimulants are obtained both through diversion from legitimate sources and clandestine manufacturing.

Stimulants appear in various forms: pills, powders, rocks, and injectable liquids, and are known by street names such as Bennies, Crank, Ice, and Vitamin R. Their abuse includes swallowing, smoking, snorting, or injecting, often leading to a pattern of binge use characterized by the consumption of large doses over a short time. This can escalate to continuous use until exhaustion or psychosis sets in, overshadowing all other interests.

Mentally, stimulants are abused for the exhilaration, enhanced self-esteem, and improved mental and physical performance they induce. However, chronic high-dose use can lead to severe psychological effects such as agitation, hostility, and even suicidal or homicidal tendencies. Paranoia and hallucinations may also occur, alongside a strong psychological dependence. Stopping use abruptly often results in a debilitating 'crash', marked by depression, anxiety, and extreme fatigue.

Physically, while therapeutic doses of stimulants can produce exhilaration and extended wakefulness, high doses or prolonged use can lead to dizziness, tremors, chest pain, and other severe side effects. Overdosing on stimulants can result in life-threatening issues like high fever, convulsions, and cardiovascular collapse. The risk of accidental death is heightened by physical exertion during stimulant use.

In the workplace, stimulants pose significant risks. The temporary enhancement of physical and mental abilities can be misleading, as it often leads to erratic behavior, impaired judgment, and a dramatic crash in energy levels. This can affect safety, productivity, and overall workplace dynamics. Employees showing signs of stimulant abuse, such as fluctuating energy levels, mood swings, and unexplained physical symptoms, might be endangering themselves and others.



Legally in the U.S., stimulants are regulated with varying degrees of control. Some, with no medical use, are classified under Schedule I, while others, like tobacco and caffeine, are less regulated despite known adverse effects. The Combat Methamphetamine Epidemic Act of 2005 imposes restrictions on over-the-counter stimulants like ephedrine and pseudoephedrine, requiring ID verification and sales logging to combat misuse.

In conclusion, the impact of stimulants on individual health and workplace safety is significant. Recognizing the signs of stimulant abuse and understanding its effects are essential for ensuring a safe and productive work environment, particularly in sectors where mental alertness and physical safety are paramount.

### ***Depressants: Their Effects and Implications in Health and the Workplace***

Depressants, a category of drugs known for inducing sleep, relieving anxiety and muscle spasms, and preventing seizures, include a range of substances from barbiturates to benzodiazepines and certain sedative-hypnotics. Barbiturates, like butalbital (Fiorina®) and phenobarbital, carry high risks of dependence and overdose. Benzodiazepines, developed as safer alternatives, still share many risks, including tolerance and dependence. Common examples are Valium®, Xanax®, and Klonopin®. Other notable depressants include sedative-hypnotics like Lunesta® and Ambien®, as well as the illicit drug GHB.

These substances are often diverted from legitimate medical use to the illicit market, accessible through various means like the Internet, family medicine cabinets, and even medical professionals. Street names for depressants include 'Barbs', 'Benzos', and 'Roofies', among others. They commonly appear in pill, syrup, or injectable liquid forms.

The abuse of depressants is typically for the euphoria they induce or to enhance or mitigate the effects of other drugs. Higher-than-therapeutic doses are often used, and some, like GHB and Rohypnol, have been infamously misused in facilitating sexual assault. Therapeutically, depressants are effective in their prescribed roles but can also impair mental functioning, judgment, and cause amnesia.

Physically, while some depressants relax muscles, they can also lead to slurred speech, loss of motor coordination, and slowed breathing. Long-term use, even at medically recommended doses, can result in physical dependence. Withdrawal from depressants, particularly barbiturates, can be life-threatening.

In the workplace, the use of depressants poses significant risks. Impaired judgment and motor coordination, reduced reaction time, and mental confusion can severely impact job performance and safety. Recognizing signs of depressant use, such as altered mental state, coordination problems, and changes in behavior, is crucial in maintaining a safe and productive work environment.

Legally, most depressants in the U.S. are controlled substances, classified from Schedule I to IV based on abuse risk and medical utility. While many depressants have FDA-approved medical uses, drugs like Rohypnol® and Quaaludes® are not legally manufactured or marketed in the U.S. due to their high abuse potential and lack of medical application.



In summary, depressants, despite their medical benefits, carry significant risks of abuse and dependency, impacting personal health and workplace safety. Understanding their effects, legal status, and potential for misuse is essential, especially in environments prioritizing safety, security, and productivity.

### ***Hallucinogens: Impact on Health, Safety, and the Workplace***

Hallucinogens, one of the oldest drug groups, are known for their profound effects on human perception and mood. They can be derived from plants or fungi, or synthetically produced in illicit laboratories. Commonly abused hallucinogens include:

- psilocybin (found in mushrooms)
- LS
- MDMA (ecstasy), known on the streets as Acid, Shrooms, and X, among other names

These substances are often sold in forms like colorful tablets, blotter paper, or powders.

Abused primarily orally or through smoking, hallucinogens' effects on the mind are significant. They cause perceptual distortions, altering time and space perception, and can lead to Hallucinogen Persisting Perception Disorder (HPPD) or 'flashbacks', where users re-experience aspects of the drug's effect without intake. This disorder is unpredictable and potentially more frequent in times of stress or in younger individuals.

Physiologically, hallucinogens elevate heart rate and blood pressure, dilate pupils, and often cause nausea and vomiting. Overdose can lead to severe psychological effects like anxiety, paranoia, and depression. While deaths from hallucinogens alone are rare, they can occur due to suicide, accidents, or dangerous behaviors often amplified by poly-substance use. A severe overdose of substances like PCP or ketamine can lead to respiratory depression, coma, and even death.

In the workplace, the use of hallucinogens can severely impair an individual's ability to perform tasks safely and effectively. The altered perception and cognitive impairment can lead to accidents, decreased productivity, and unpredictable behavior. Behavioral cues indicating hallucinogen use may include noticeable changes in mood, perception, or physical symptoms like dilated pupils and erratic behavior.

Legally, in the United States, many hallucinogens are classified as Schedule I drugs under the Controlled Substances Act. This classification indicates a high potential for abuse, no currently accepted medical use, and a lack of accepted safety for use under medical supervision.

In conclusion, hallucinogens pose significant risks to personal health, safety, and the work environment. Their unpredictable effects on perception and mood can have lasting psychological impacts and impair an individual's ability to function in a professional setting. Understanding these risks and recognizing the signs of hallucinogen use are crucial for maintaining safety and productivity in the workplace.

### ***Marijuana and THC: Comprehensive Analysis of Effects and Legal Status***

**Understanding Marijuana and THC.** Marijuana—a psychoactive drug derived from the *Cannabis sativa* plant—comprises over 480 constituents, with delta9-tetrahydrocannabinol (THC) being the primary compound responsible for its mind-altering effects. Cultivated globally,



including in the United States, Canada, Mexico, and various regions in Africa and Asia, marijuana can thrive in both outdoor and indoor environments.

Known by various street names like Ganja, Mary Jane, and Blunts, marijuana typically appears as a dry, shredded mix of the plant's flowers, stems, seeds, and leaves. It varies in color from green to brown or gray, and its resemblance to tobacco makes it easily disguisable.

**Methods of Abuse and Effects on the Mind.** Marijuana is commonly consumed through smoking – either as a rolled cigarette (joint) or using pipes and bong. It's also found in "blunts" – cigars emptied of tobacco and refilled with marijuana, possibly mixed with other drugs. Besides smoking, it's ingested in foods (edibles) or brewed as tea.

When smoked, THC swiftly moves from the lungs to the bloodstream, reaching the brain and other organs. In the brain, THC binds to cannabinoid receptors, affecting areas linked to pleasure, memory, thinking, concentration, sensory and time perception, and coordinated movement. Short-term effects include memory and learning problems, distorted perception, difficulty in thinking and problem-solving, and loss of coordination. These impairments can significantly affect learning, associative processes, and psychomotor behavior, such as driving abilities. Long-term, regular use can lead to physical dependence, withdrawal symptoms upon discontinuation, and psychological addiction.

Physiological and psychological responses to marijuana vary, with common reactions including:

- dizziness
- nausea
- increased heart rate
- euphoria at high doses
- relaxation
- heightened sensory perception
- creative thinking
- time distortions
- at very high doses, rare occurrences of illusions, delusions, and hallucinations

Inexperienced users or those consuming large doses may experience emotional instability, paranoia, confusion, and panic attacks.

**Physical Effects and Health Implications.** Physically, short-term use can cause sedation, bloodshot eyes, increased appetite, and changes in blood pressure. Marijuana smokers are at risk of bronchitis, emphysema, and bronchial asthma, with extended use potentially suppressing the immune system. Withdrawal from chronic high doses may result in headaches, shakiness, sweating, stomach pains, nausea, restlessness, sleep difficulties, and decreased appetite.

Although marijuana overdose deaths are not reported, there is an increasing number of emergency room visits involving marijuana edibles. Similar drugs, like hashish and hash oil, contain higher concentrations of THC and produce stronger effects.

**Legal Status and Synthetic Variants.** In the United States, marijuana is classified as a Schedule I substance under the Controlled Substances Act, indicating high potential for abuse, no currently accepted medical use, and lack of safety under medical supervision. However, several states have allowed its medicinal use, conflicting with federal law. The FDA has not approved any marijuana product for any clinical indication.



Synthetic THC variants like Marinol and Syndros are used medically and classified under Schedules III and II, respectively. Epidiolex, a CBD-based oral solution with minimal THC, is used to treat epilepsy conditions and is excluded from control under the Controlled Substances Act, following the Agriculture Improvement Act of 2018.

In conclusion, marijuana and THC have complex effects on mental and physical health, with legal status that varies across jurisdictions. The drug's impact on cognitive and motor functions makes it a significant concern in workplaces, especially in roles requiring high levels of attention and coordination. Understanding these nuances is crucial for health professionals, employers, and policymakers in addressing marijuana-related issues effectively.

### ***Designer Drugs: Bath Salts and K2/Spice – Risks and Legal Status***

Designer drugs, including "bath salts" and synthetic cannabinoids like K2/Spice, have re-emerged as a global problem. These substances are clandestinely synthesized to mimic the pharmacological effects of controlled drugs while slightly altering their chemical structures to evade legal restrictions.

**Bath Salts:** The Hidden Stimulant Bath salts, part of the synthetic cathinone class, are synthetic stimulants designed to replicate the effects of cocaine, methamphetamine, and MDMA. Originating in East Asia, they are distributed worldwide, misleadingly marketed as innocuous products like plant food or glass cleaner, and labeled "not for human consumption" to avoid legal scrutiny.

Commonly known as Bliss, Ivory Wave, or Vanilla Sky, these substances appear in powdered form, often packaged in gelatin capsules. They are primarily ingested by sniffing/snorting, and can also be smoked, swallowed, or injected. Their psychological effects range from euphoria and alertness to confusion, psychosis, and violent behavior. Physically, they can cause rapid heartbeat, hypertension, hyperthermia, and muscle breakdown, leading to serious health risks. Overdoses are particularly dangerous, with reports of deaths highlighting the risks associated with their abuse.

In the United States, the Synthetic Drug Abuse Prevention Act of 2012 classified many synthetic cathinones under Schedule I of the Controlled Substances Act, making them illegal. However, new variants continually emerge, challenging regulatory efforts.

**K2/Spice:** Synthetic Cannabinoids K2 and Spice represent the many synthetic cannabinoids intended to mimic THC, the active component of marijuana. Manufactured mainly in Asia without quality control, these substances are applied to plant material and sold as "herbal incense" or "potpourri," often in small stores or online. Deceptively marketed and lacking safety information, they pose significant health risks.

These substances, found in names like Skunk and Crazy Clown, are usually smoked, though liquid forms used in vaping devices have also emerged. Their abuse can lead to severe health effects, including nausea, seizures, and even death from heart attack or organ failure. Psychologically, they can cause acute psychosis, severe agitation, and disorganized thinking.



In the U.S., many synthetic cannabinoids are listed as Schedule I substances, indicating high abuse potential and no medical use. The Controlled Substance Analogue Enforcement Act also allows prosecution of non-controlled drugs similar to controlled substances, which has been used to combat the spread of these designer drugs.

In conclusion, the abuse of designer drugs like bath salts and K2/Spice poses serious health risks and legal consequences. Their unpredictable effects and potency make them dangerous not only to individual users but also to public health and safety. Understanding their risks, effects, and legal status is crucial, especially in environments prioritizing health, safety, and compliance with drug policies.

### ***Alcohol: Impact on Health, Safety, and the Workplace***

In terms of personal health, excessive alcohol consumption can lead to various physical ailments. It can disrupt brain function, affecting mood, behavior, and cognitive abilities, making it harder to think clearly and move with coordination. Heavy drinking can damage the heart, causing cardiomyopathy, arrhythmias, stroke, and high blood pressure. The liver, an organ crucial for metabolizing alcohol, can suffer from conditions like steatosis, alcoholic hepatitis, fibrosis, and cirrhosis due to chronic alcohol abuse. Additionally, alcohol consumption increases the risk of developing certain cancers, including those of the head, neck, esophagus, liver, breast, and colorectum. The immune system can also be compromised, making the body more susceptible to diseases like pneumonia and tuberculosis.

In the workplace, the impact of alcohol consumption is significant. Certain industries, such as mining and construction, hospitality, arts and entertainment, utilities, and wholesale, are at a higher risk of alcohol-related harm due to factors like shift work, stressful or poor working conditions, and prevalent drinking cultures. Alcohol abuse can lead to mental health problems, including stress, anxiety, and depression, often exacerbated by 'self-medicating' behaviors. This not only affects the individual's health but can also impair their work performance, productivity, and safety standards.

Organizations are increasingly recognizing the importance of addressing alcohol use and abuse in the workplace. Training for managers and supervisors to recognize signs of alcohol problems and know how to respond is recommended. Workplaces are also encouraged to develop alcohol policies and promote awareness about the risks associated with alcohol use. The aim is to create an environment that supports employee health and well-being, reduces absenteeism, and enhances productivity.

**Blood Alcohol Concentration.** Blood alcohol concentration (BAC) is the amount of alcohol in the bloodstream. It is measured in percentages. For instance, having a BAC of 0.10 percent means that a person has 1 part alcohol per 1,000 parts blood in the body.

In a review of studies of alcohol-related crashes, reaction time, tracking ability, concentrated attention ability, divided attention performance, information process capability, visual functions, perceptions, and psycho-motor performance, impairment in all these areas was significant at blood alcohol concentrations of 0.05 percent. Impairment first appeared in many of these important areas of performance at blood alcohol concentrations of 0.02 percent, substantially below the legal standard in most States for drunkenness, which is 0.08 percent. Note that Utah has lowered the DUI standard to 0.05 percent.



Approximately half of the traffic injuries involve alcohol. About one-third of fatally injured passengers and pedestrians have elevated blood alcohol levels. For fatal intentional injuries, half of homicides involve alcohol, as do one-quarter to one-third of suicides.

The Centers for Disease Control and Prevention (CDC) estimate that about 30,000 unintentional injury deaths per year are directly attributable to alcohol. Another 15,000 to 20,000 homicides or suicides per year are associated with alcohol.

For non-fatal unintentional injuries, many studies show that 25 to 50 percent involve alcohol. The same rates are found for a wide range of non-fatal intentional injuries involving alcohol, including assaults, spouse abuse, child molestation, sexual assault, rape, and attempted suicide.

BAC can be measured by breath, blood, or urine tests. BAC measurement is especially important for determining the role of alcohol in crashes, falls, fires, crime, family violence, suicide, and other forms of intentional and unintentional injury.

One problem in obtaining accurate BAC data is a lack of testing in hospital emergency rooms. Research indicates that emergency rooms do not test routinely for alcohol in crash victims. A national survey of trauma centers found that although two-thirds of the centers estimated that the majority of patients had consumed alcohol, only 55 percent routinely conducted BAC tests at patient admissions. A review of emergency room studies indicated that up to one-third of patients admitted to emergency rooms are not tested.

**BAC and Impaired Driving.** The public most commonly associates BAC with drunk driving. However, it is more accurate to refer to alcohol-impaired driving because one does not have to be drunk (intoxicated) to be demonstrably impaired. Driving skills, especially judgment, are impaired in most people long before they exhibit visible signs of drunkenness. While most States define legal intoxication for purposes of driving at a BAC of 0.08 percent or higher, alcohol may cause deterioration in driving skills at 0.05 percent or even lower. Deterioration progresses rapidly with rising BAC.

In recognition of impairment at lower BAC levels, the National Highway Traffic Safety Administration (NHTSA) refers to traffic crashes as “alcohol-involved” or “alcohol-related” when a participant (driver, pedestrian, or bicyclist) has a measured or estimated BAC of 0.01 or above. NHTSA defines a “high-level alcohol crash” as one where an active participant has a BAC of 0.10 or higher.

*The Technology of Breath-Alcohol Analysis (1992) PH312*  
*Prevention Resource Guide: Impaired Driving (1991) MS434*  
*Safer Streets Ahead (1990) PH292*





**BLOOD ALCOHOL PERCENTAGE APPROXIMATIONS**

		Body Weight in Pounds							
		100	120	140	160	180	200	220	240
Number of Drinks Per Hour	1	.04	.03	.03	.02	.02	.02	.02	.02
	2	.08	.06	.05	.05	.04	.04	.03	.03
	3	.11	.09	.08	.07	.06	.06	.05	.05
	4	.15	.12	.11	.09	.08	.08	.07	.06
	5	.19	.16	.13	.12	.11	.09	.09	.08
	6	.23	.19	.16	.14	.13	.11	.19	.09
	7	.26	.22	.19	.16	.15	.13	.12	.11
	8	.30	.25	.21	.19	.17	.15	.14	.13
	9	.34	.28	.24	.21	.19	.17	.15	.14
	10	.38	.31	.27	.23	.21	.19	.17	.16

**Source: Drug Free Business, a non-profit 501(c)(3) corporation and Certified Third-Party Administrator by the Substance Abuse Program Administrators Association (SAPAA).**

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Additional information is available from the following:

- U. S. Department of Transportation, Office of the Secretary, Office of Drug & Alcohol Policy & Compliance
- Federal Transit Administration