

**Substance Abuse in Foster Children:  
Alcohol, Marijuana and Legal Synthetic Drugs**

*Information for the CASA Volunteer*

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The use of illicit drugs among American youth is approaching epidemic proportions. The 2010 National Survey on Drug Use and Health (NSDUH) prepared by the Substance Abuse and Mental Health Services Administration reports that 8.9% of adolescents and adults age 12 years or older use illicit drugs. The most disturbing trend, however, is the number of children in foster care who abuse alcohol or drugs. The February 2005 report of the NSDUH compared the rate of drug abuse among a random sample of high school students not in foster care and high school students in foster care. There was a much higher percentage of adolescents in foster care than in the general population who abused drugs, 31.6% v. 21.7% respectively. These rates have been increasing since 2005.

**RISK FACTORS FOR ADDICTION IN FOSTER CHILDREN**

***Behavioral factors***

The factors that predispose adolescents to abuse drugs have been vigorously debated. In 1996 the Adverse Childhood Event (ACE) study was initiated to investigate the interrelation of childhood abuse and household dysfunction to drug and alcohol abuse and addiction in adolescents.

The results reveal that the compulsive use of alcohol and illicit drugs increases proportionally to the frequency of adverse childhood experiences. These adverse events are often concealed and unrecognized, are surprisingly common, and dramatically increase the risk of drug addiction. These events are very common among children in foster care and include:

1. Recurrent physical abuse
2. Recurrent emotional abuse
3. Contact sexual abuse
4. An alcohol and/or drug abuser in the household
5. An incarcerated household member
6. Someone in the family who is chronically depressed, mentally ill, institutionalized, or suicidal
7. Mother is treated violently
8. One or no parents
9. Emotional or physical neglect

The ACE Study uses a simple scoring method to determine the extent of exposure to childhood trauma. Exposure to one ACE category, and not just an isolated ACE incident, qualifies as one point.

The ACE Score is a sum of all points. An ACE Score of 0 would mean that the person reported no exposure to any of the categories of childhood trauma listed above. An ACE Score of 9 would mean that the person reported exposure to all of the categories of trauma listed above. A score of 4 or more is associated with a 500% increase in the risk of becoming an alcoholic and a 4000% increase in the risk of drug addiction. Children and adolescents in foster care typically have a significantly higher ACE score than children in the general population.

### ***Physiologic factors***

Both natural rewards (such as good food, pleasurable family events, playing sports) and addictive drugs stimulate the release of the neurotransmitter, dopamine, in the reward-centers of the brain. Dopamine release results in euphoria and the desire to repeat the behavior. Foster children who may have been deprived of many “natural rewards” and who experience this dopamine-induced euphoria after experimenting with drugs may repeat drug use to again experience this reward-euphoria. This sequence leads to compulsive drug seeking, to behaviors that have serious consequences, and to addiction.

### ***Societal factors***

There is a societal trend to treat behavioral problems in children, especially children in foster care, with medications instead of trying to learn more about the unwanted behaviors. A 2010 report published by Medco Health Solutions revealed that 42 % of all kids in the foster system are prescribed drugs to alter or modify their moods and many have prescriptions for 3 or more medications, including anti-anxiety drugs and anti-depressants. This practice sets the stage for drug abuse in this high-risk population.

### **ALCOHOL ABUSE IN ADOLESCENTS**

In 2011 the CDC estimated there were 9.7 million underage drinkers (aged 12-20) including 6.1 million binge drinkers. In 2007 the Surgeon General reported that approximately 10% of 9-10 year-old children drink and nearly 1/3 of high school students starting drinking before the age of 13. In 2011 the proportions of 8<sup>th</sup>, 10<sup>th</sup> and 12<sup>th</sup> graders who reported drinking alcoholic beverages in the 30 day period prior to the survey were 13%, 27%, and 40% respectively.

Most teen drinkers are “binge drinkers” and drink 5 or more drinks in a row. The National Institute on Alcohol Abuse and Alcoholism defines binge drinking as a pattern of drinking that brings a person’s blood alcohol concentration (BAC) to 0.08 mg/dl or above. Binge drinking is also the most dangerous pattern of alcohol consumption and leads to all sorts of problems for the individual and society. The CDC reported that in 2011 one in five high school girls was a binge drinker, amounting to half the high school girls who consumed alcohol.

The rate of binge drinking in young adults age 18-25 (39.8%) exceeds the rate of chronic heavy drinking (12.1%). Binge drinking among high school and college-age students is associated with a wide range of health risk behaviors beyond intoxication. Intoxicated adolescents are more likely to be victims of violence, to be involved in accidents and to have issues with depression, substance abuse, and suicide.

### ***New trends in alcohol consumption***

#### *Alcohol-containing candy*

A trick popular with teens is to soak Gummy Bears or Worms in alcohol. Vodka has less alcohol odor than other alcohols and is favored. The Bears or Worms are placed in a dish and covered with alcohol. They absorb all the liquid. The candies are initially sticky but dry out and look the same as untreated candy. They are then eaten as ordinary candy - only with a buzz!

#### *Tampon dipping and “butt-chugging”*

A new craze at high school and college campus parties is “butt-chugging”, which requires a device for giving an alcohol enema. The mucosal absorption of ethanol leads to rapid intoxication without producing a significant breath-odor of alcohol. This craze is popularized in movies, on YouTube, and in

songs about “Party Enemas”. “Tampon dipping” (tampons soaked in vodka) is another craze with similar results, and is used by both men (rectal insertion) and women (vaginal insertion).

### Vaporization

A new device, Alcohol Without Liquid (AWOL), is now available in the US. The device vaporizes alcohol so that it may be inhaled. The AWOL device consists of two components: an oxygen generator and a hand-held vaporizer. Tubes from the generator attach to the vaporizer. Alcohol (typically vodka) is poured into the vaporizer, mixes with oxygen producing an alcohol-mist. The mist is inhaled resulting in rapid absorption of alcohol from the lungs and immediate intoxication.

Teens may make their own AWOL device using a plastic bottle, plastic or rubber tubing and a hand held air pump. A 1-2 liter plastic bottle is fitted with a stopper. An inflation-pin typically used for inflating basketballs is inserted through the stopper. A tire pump is connected to the pin and air is pumped into the bottle until the bottle is firm. The stopper is pulled and vaporized alcohol, typically vodka, flowing from the opened bottle is inhaled. The user quickly becomes intoxicated.

### Hand Sanitizers

Drinking hand sanitizers is popular among youth. The gelling agents are “salted out” by adding a pinch of table salt to the bottle of hand sanitizer. The gelling agent precipitates and the clear liquid, almost pure alcohol is then decanted and consumed.

The ethanol in hand sanitizers is typically chemically denatured resulting in a bitter taste. However, the ethanol may be adulterated with isopropyl alcohol or methyl alcohol, both of which may pose significant medical hazards if ingested. The label on the hand sanitizer may not indicate if these other forms of alcohol have been added.

## **Alcohol combined with other substances**

### Alcohol and caffeine

Combination drinks containing alcohol and caffeine, such as Four Loco, have been banned but still available. These drinks typically contain 12% alcohol and up to 800 mg of caffeine and are marketed to young people. Alcohol and caffeine have opposite effects and the caffeine may mask the effects of alcohol, allowing for prolonged “partying” but increasing the risk of severe intoxication.

The same effects are achieved by combining alcohol with caffeine-containing energy drinks or with Aero-Shots. Aero Shots are caffeine inhalers that deliver approximately 100 mg of caffeine per inhalation and each inhaler provides 4-6 doses. These combinations are replacing commercially available alcohol-caffeine drinks.

It is important to point out that large doses of caffeine, without alcohol, can also be dangerous. Harmful effects include high blood pressure, irregular heartbeat, irritability, anxiety-disorders and dehydration. Adolescent deaths from consuming “5 Hour Energy” and Monster drinks have been reported.

### Alcohol combined with ADHD medications (Alcohol and ADDY’s)

A more dangerous combination, “Alcohol and Addy’s”, is very popular on college campuses. Addy’s or Adderall® (mixed salts of amphetamine) is prescribed to treat attention deficit disorders. Combined with alcohol, Adderall delays the sleepy, drunk-feeling and produces euphoria, excitation and increased alertness. Unfortunately users tend to drink more alcohol than they can tolerate increasing the risk of seizures, stupor and coma.

### ***Effects on infants and children: Fetal Alcohol Syndrome (FAS)***

Fetal alcohol syndrome is a cluster of related problems and birth defects that result from a women's use of alcohol during pregnancy. In the US, it is one of the leading causes of birth defects and the most common cause of preventable mental retardation. Each year 5,000 to 12,000 babies are born with this condition.

Signs of FAS may include:

- distinctive facial features
- heart defects
- deformities of joints, limbs and fingers
- slow growth before and after birth, small head size
- vision and hearing problems
- mental retardation and delayed development,
- hyperactivity, poor impulse control, short attention span

Because there is no known safe amount of alcohol, consumption during pregnancy women should not drink if they are pregnant or trying to get pregnant. Women who drink 4-5 alcoholic drinks/day greatly increase the risk of FAS. A woman who drinks only lightly or occasionally before she realizes she is pregnant might or might not harm the developing baby. There is no cure or specific treatment for FAS.

### **MARIJUANA**

#### ***Recreational use of marijuana***

Marijuana is one of the most underestimated drugs of abuse. It is used for its mildly tranquilizing mood and perception altering effects. The active ingredient in marijuana is THC (delta-9-tetrahydrocannabinol). The marijuana on the streets today is unlike the marijuana in the 60's, 70's, 80's, 90's, or early 2000's - it is a dangerous and addictive drug cultivated to maximize its psychoactive effect and THC concentration. Prior to 2003 THC content in marijuana ranged from 2-7%. Today it is around 23-28%, however, in some places the THC content is 50% and higher.

Marijuana joints can be laced with other drugs such as PCP, cocaine, ecstasy, meth, heroin, or embalming fluid. The street names describing marijuana often indicate what has been added to the marijuana i.e.; black ice = meth; wet sticks or "sherm" = embalming fluid.

#### ***Indicators of marijuana use***

- Uncharacteristically relaxed inhibitions
- Increased appetite
- Distinct odor of Marijuana
- Irritated mucous membranes
- Lack of motor coordination
- Lack of motivation and flattening of emotions
- Difficulty concentrating
- Errors in judgment
- Reddened eyes – LOC present (can't cross eyes)
- Impaired memory and attention
- Distorted perception of time

### ***Complications***

Marijuana use may cause panic attacks, psychosis, and elevated blood triglycerides with subsequent heart disease. Users who have an abnormal COMT gene (1:4000 live births) have a significantly increased risk of developing chronic depression or schizophrenia. Teens who are chronic users have reduced problem-solving skills, exhibit “cognitive inflexibility”, and have impaired long-term memory.

### ***Withdrawal***

Marijuana is a fat-soluble drug and therefore stays in the brain and other organs much longer than other drugs. It takes about 7-10 days for THC to become depleted in the brain fat and then withdrawal begins. Withdrawal symptoms include anxiety, tremor, aches and pains, sleep problems and craving of the drug. Restlessness, irritability and insomnia can occur in heavy users.

### ***Effects on newborns and infants exposed in-utero***

Pre-natal exposure to marijuana has been associated with numerous problems in the infant. Infants may have a “high pitched cry” of the type potentially associated with developmental delay. Some research suggests that infants may also have a T-cell immune defect. Children who have been prenatally exposed also have problems with inattention, impulsivity, memory and learning.

### ***Medicinal marijuana***

Marijuana sold for medicinal purposes is available in 17 states and the District of Columbia. However, it is still illegal by Federal Law. There are numerous reports in the medical literature regarding the pro’s and con’s of medical marijuana. Either point of view can be supported by the results of “studies”. However most of these “studies” and reports are not scientifically sound and the results are questionable. Yet, even the results of many well-designed and carefully performed studies are inconclusive or conflicting. The results of these scientifically sound studies may be conflicting because the chemical composition of marijuana is not consistent. The contents and concentration of THC and other cannabinoids in marijuana varies from plant to plant and is affected by the time at which the plant is harvested. As the cannabis plant matures, its chemical composition changes. In addition, female varieties have higher levels of THC than male varieties.

In view of the conflicting data and inconclusive study results, should inhaled marijuana be prescribed to treat health problems or should treatment be withheld until it is proven to be effective? There are two sides to this argument: (1) marijuana is “safe”, treatment is harmless and therefore should not be withheld, v. (2) marijuana is not safe to use and should not be prescribed until more scientific data is available. The answer is influenced by understanding the individual and societal risks of using inhaled marijuana.

### ***Risks***

The potential medicinal properties of marijuana have been the subject of significant research and heated social/political debate. Scientists have confirmed that the cannabis plant contains active ingredients with therapeutic potential for relieving pain, controlling nausea, stimulating appetite, and decreasing ocular pressure in people with glaucoma.

The chemistry of marijuana (cannabis) is quite complex. There are over 400 chemicals in marijuana and 80 of them, called cannabinoids, are unique to the cannabis plant. Marijuana smoke also contains 50 -70 % more carcinogenic hydrocarbons than does tobacco smoke, has the potential to injure the respiratory tract, and to cause cancer of the lungs. Marijuana smoke is commonly inhaled deeper and

held longer than is tobacco smoke, increasing the lungs' exposure to carcinogens. In addition to these problems, the following risks are clear and supported by epidemiological research:

- States with medical marijuana programs had an increase in marijuana use not seen in other States
- Increased access and availability lead to decreased perceptions of harm and increased use
- More than 6,000 companies nationwide and scores of industries and professions require a pre-employment drug test. Because 6% of high school seniors smoke marijuana everyday, they are virtually unemployable
- Marijuana is the most prevalent illegal drug detected in impaired drivers, fatally injured drivers, and crash victims

## **SYNTHETIC MARIJUANA**

Synthetic cannabinoids are chemicals that are structurally and functionally similar to THC. They bind to cannabinoid receptors in the brain and are more potent than natural THC. More than 200 synthetic cannabinoids have been identified.

The final product sold in stores and online is produced by adding raw synthetic cannabinoids to various types of dried plant material. These products are advertised as “herbal incense” or “potpourri” and generally sold in adult book and novelty stores, independently owned convenience stores/gas stations, discount beer and tobacco stores, head shops (smoke shops) and online. They are typically advertised as “not for human consumption” in order to evade regulatory scrutiny. Abusers smoke or ingest the products to experience effects similar to those induced by marijuana. However, the high is short lived followed by headache.

These products are generally sold in 1, 3, 5, and 10-gram packages. Three-gram package prices range from \$5 to \$50. Internet retailers offer discounts for bulk purchases. Many of the suspected synthetic cannabinoid packages display marijuana nomenclatures on the labeling such as “420,” “Cush,” “Hydro,” and “Chronic” which are commonly known to and readily identified by drug users. These products are often displayed inside glass cases that also contain drug paraphernalia such as pipes, dugouts, grinders, bongs, and hookahs. Synthetic Pot is sold as “K2,” “Spice,” “Aroma,” “Mr. Smiley,” “Zohai,” “Eclipse,” “Spike Max,” “Mr. Nice Guy,” “Black Mamba,” “Red X Dawn,” “Blaze,” “Dream,” “Colorado Chronic,” “Blueberry Mamba,” and others.

### ***Effects on the adolescent***

Small doses have an intense effect. Because the composition of these drugs varies, the side effects are unpredictable and may include severe psychiatric problems. Other reported effects include; sweating, headaches, nausea, dizziness, increased heart rate, agitation, irritability, aggressiveness, difficulty in articulating words caused by impairment of the muscles used in speech, eyes open and awake yet unresponsive, twitching and muscle jerks, paranoia, anxiety, and seizures. No antidote is available. Fortunately the effects are short acting and self-limited.

Recently, acute kidney injury has been reported to occur in adolescents. In some cases treatment with short-term dialysis is required. All cases have resolved without evidence of chronic kidney damage. The kidney damage is due to a toxin present in some types of synthetic marijuana as a result of the manufacturing process.

## **BATH SALTS (Synthetic psychotropic drugs sold as “research chemicals” or “designer drugs”)**

The illegal status of the classical street drugs such as marijuana, alcohol, cocaine, opioids, and methamphetamine has encouraged users to seek newer “designer” drugs that offer the advantages of being legal, less expensive, and having more desirable pharmacological effects. There are a wide variety of synthetic drugs available in convenience stores, head shops/smoke shops, and on the internet. All are legal and available without a prescription. These drugs are typically labeled “not for human consumption” and are sold as some sort of plant fertilizer, plant food, “bath salts,” or incense. The FDA and DEA ban these drugs as they become aware of them. However, with a slight alteration of the chemical structure, that does not affect the drugs activity; a “new” drug (not banned) is created and sold until the federal agencies can prohibit their sale.

The major change in the pattern of recreational drug abuse has been the introduction of synthetic cathinones and methcathinones, called “bath salts”, that are very similar to amphetamine/methamphetamine and Ecstasy. Cathinones typically have little or no odor and are sold as a white, off-white, or yellowish powder in tablet form, capsules or in crystal form. These drugs sell for \$5 to \$60 a package and each package contains 300-500 mg of the powdered chemical. Most users assume that 300-500 mg is a normal dose, but in fact 10 mg or less is an effective dose. This unintentional overdose may result in severe hallucinations and serious side effects. According to the American Association of Poison Control Centers, calls to poison control centers because of exposure to “bath salts” increased from 303 cases in 2010 to 4,137 in 2011 (1,300 % increase).

These drugs are available under a wide variety of names: Ivory Wave, White Lightning, Cloud 9, Bliss, MDPV, Scarface, 2 C-E, Bubbles, Bromodragonfly, Smiles, and Tootsie. Some of these brands have chemicals in them that have a half-life of four days (half of the chemical is removed from the body in four days) thus causing effects lasting multiple days. All are dangerous and deaths have been reported following the use of some of these agents. They have a variety of effects, ranging from euphoria to hallucinations. Abusers may ingest, inhale, inject, smoke, or snort the drugs to experience stimulant effects similar to those induced by amphetamines or cocaine. These drugs may be dissolved in water, atomized and inhaled, placed as drops in the eyes or sprayed in the nose to achieve a rapid onset of effects. Effects usually occur within 15–45 minutes after ingestion and last approximately 2–5 hours. These are dangerous drugs and have been reported to cause users to commit suicide. Bath salts may contain a variety of compounds that cause hallucinations, agitation, and paranoia. The result is a “very bad trip.” Users can have psychotic episodes that result in death.

"Bath salts" have been linked to an alarming increase in the number of ER visits across the country. Ingesting or snorting "bath salts" can cause chest pains, increased blood pressure, increased heart rate, agitation, hallucinations, extreme paranoia, and delusions. The mechanism of action is unknown, which makes these very dangerous drugs. There are multiple reports of deaths accompanying the use of this drug, both in the user and in people who are near the user because of the violent uncontrolled rage induced by the drug.

The three most common types of Bath Salts being seen on the street are:

#### Mephedrone

The drug is cheap, available on line and delivered right to your door. Its effects are described as a “weird hybrid of Ecstasy (MDMA) and cocaine.” Street names for Mephedrone include M-CAT, Meow Meow, 4 MMC, or Drone. This synthetic drug is extremely potent and should only be used in very small quantities.

### Phenethylamines

Phenethylamines are related to methamphetamine and Ecstasy. These drugs are psychedelic stimulants, which cause hallucinations (like LSD) and fire up the body like stimulants (cocaine and meth). These synthetic drugs are extremely potent and should only be used in very small quantities. Consuming too much causes overstimulation of the heart (and heart attacks), paranoia, acute anxiety, sweating, psychotic episodes, memory loss, confusion, and seizures. Mixing these drugs with alcohol can be very dangerous.

They are sold as 2C-E, 2C-B, 2C-I, 2C-T, Tootsie, 2C-B Fly (Bromo-Dragon Fly), Red Rocket and Smiles. These drugs have never been tested on humans and packets are labeled “not for human consumption”. One dose can cause overdose and have long lasting mental affects.

### Non-Phenethylamine Bath Salts

Due to the increased awareness by law enforcement officials, new types of “bath Salts” are being synthesized and are readily available. The primary ingredient in these new substances is alpha – pyrrolidinopentiophenone ( $\alpha$ -PVP). The compound is related to MDPV and mephedrone and has hallucinogenic effects. The mechanism of action is unknown. Street names include Cloud 9, MDPK, Magic, Black Rob and Super Coke.

### Resources:

Urban Dictionary is a nice resource that you can get as an APP on phones or access on your desktop. When you hear terminology you think may be drug related (i.e. Molly = 100% pure MDMA Ecstasy) put it in Urban Dictionary. If it is a drug it will pop up within the top 3 responses and give all details about the term.

National Registry of Evidence-Based Programs and Practices - a searchable online registry of more than 160 interventions supporting mental health promotion, substance abuse prevention, and mental health and substance abuse treatment <http://nrepp.samhsa.gov/>

Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a comprehensive, integrated, public health approach to the delivery of early intervention and treatment services for persons with substance use disorders, as well as those who are at risk of developing these disorders. Primary care centers, hospital emergency rooms, trauma centers, and other community settings provide opportunities for early intervention with at-risk substance users before more severe consequences occur. <http://www.samhsa.gov/prevention/sbirt/>

The National Suicide Prevention Lifeline - 1.800.273.TALK (8255) - a free, 24-hour hotline available to anyone in suicidal crisis or emotional distress. <http://www.suicidepreventionlifeline.org/>

National Institute on Alcohol Abuse and Alcoholism/National Institute Health  
[www.niaaa.nih.gov](http://www.niaaa.nih.gov)

Includes reports on research being done in the field.