Drugs, Kids and Community and CASA

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THE DRUG ADDICT

Drug addiction is a chronic, relapsing disorder in which compulsive drug-seeking and drug-taking behavior persists despite serious negative consequences. Continued use results in changes in the body that lead to tolerance, physical dependence, craving and relapse. Compulsive drug-seeking and drug-taking behavior is facilitated by poor decision-making and the inability to judge one's own responses.

I. Why do adolescents and young adults become addicts?

The risk of addiction increases with increasing exposure to these "Adverse Childhood Events".

- Recurrent physical abuse
- Recurrent emotional abuse
- Sexual abuse
- Growing up in a household with a family member who is:
    - Alcoholic or drug user
    - Imprisoned
    - Mentally ill, depressed or institutionalized member
- Mother being treated violently
- "1 or none" biological parents present

Exposure to 4 events increases the risk of addiction by 4000%. These traumatic events disrupt the developing brain and affect the brain messaging system (neurotransmitters) including dopamine and serotonin. These neurotransmitters are involved in the addiction response and in PTSD. The prevalence of PTSD in addicted teens is 30% versus 6% in non-addicted teens.

The teen's current environment also plays a role in addiction. Factors such as neglect, domestic violence, sexual abuse, and exposure to prescribed medications also play a role. However addiction to methamphetamine may be independent of all these risk factors.

II. The physiologic (biologic) basis of drug addiction

Nearly every addictive drug, directly or indirectly, targets the brain's reward system by flooding the circuit with dopamine. As the "reward circuit" continues to be over-stimulated, the brain adapts to the overwhelming surges in dopamine by producing less of the hormones or by reducing the number of receptors in the reward circuit. As a result, the chemical's impact on the reward circuit is lessened, reducing the abuser's ability to enjoy the things that previously brought pleasure. This decrease compels those addicted to dopamine to increase their drug consumption in order to attempt to bring their "feel-good" hormone level back to normal,

an effect known as tolerance. Development of dopamine tolerance can eventually lead to profound changes in brain cells and brain circuits, with the potential to severely compromise the long-term health of the brain.

III. Signs of addiction

Changes in behavior, appearance, speech and performance are critical indicators of addiction. Changes in behavior include: exaggerated mood swings, boisterous or argumentative behavior, becoming withdrawn and avoiding friends. Physical changes are common: breath or body odor, lack of coordination, unsteady gait, sweating and dry mouth. Speech and cognitive performance deteriorate and the following may be present: slurred or slow speech, nonsensical patterns to speech, confusion, inability to concentrate, fatigue and lack of motivation and slowed reactions

IV. Drug testing

Alcohol is best detected by a blood test or breath test. Alcohol is absorbed and eliminated more quickly than other drugs making blood tests more reliable and urine tests less reliable. Most other drugs are detected in the urine. There are certain "detection windows" for finding drugs in the urine, meaning there is a limited amount of time after ingestion that the drug can be detected. Drugs are eliminated from the body at different rates and thus detectable for different periods of time, often long after the drug's effect has worn off. The following are estimates of the length of time that certain drugs are detectable:

Alcohol – 1 oz. for 1.5 hours
Amphetamines – 48 hours
Barbiturates – 2-10 days
Benzodiazepines – 2-3 weeks
Cocaine – 2-10 days
Heroin Metabolite – less than 1 day
Morphine – 2-3 days
LSD – 8 hours
Marijuana – casual use, 3-4 days; chronic use, several weeks to over a month
Methamphetamine – 48 hours
Methadone – 2-3 days
Phencyclidine (PCP) – 1 week
*OxyContin will not show up in a regular urine tox! You need to request the urine be quantified.

THE DRUGS

This presentation will focus on drugs prevalent in your community. These drugs may be classified into two groups: legal (non-illicit) or illegal (illicit). Abuse of drugs listed in either group is dangerous and may be deadly.

Legal drugs	*Illegal drugs*
Alcohol	Marijuana
Dextromethorphan (cough medication)	Heroin
Inhalants	Prescription drugs

Synthetic cannabinoids	GHB/Ecstasy (Club Drugs)
Synthetic "research chemicals"	Hallucinogens
Hallucinogenic plants	Cocaine
	Methamphetamine

I. Alcohol (ethanol)

Alcohol is by far the worst drug and a very big problem in society. Alcohol kills more people in the course of a day than all the other drugs combined. Alcohol is our number one health care cost world wide. It is also a gateway drug, meaning the first drug often used by teens and they get it from their own home. Its use drops one's inhibition, thus opening up a host of problems; domestic violence, tendency to experiment with drugs, sex assaults, unprotected sex and STD's, child abuse, and neglect. According to the CDC, about 90% of all teen alcohol consumption occurs in the form of binge drinking. Studies have shown that children as young as 10 have reported drinking alcohol at least once in their life. There are a number of reliable studies on teens and drug and alcohol abuse, Monitoring the Future, Partnership Attitude Tracking Study, and SAMSHA's National Survey on Drug Use and Health to name a few.

Alcohol is a depressant that affects vision, judgment, reaction time and memory. The effects of alcohol vary from person to person, some become quiet or depressed while others become aggressive and argumentative. Long-term users can develop tolerance and the physical signs of misuse may not be easily identified. Alcohol in the blood rapidly enters every organ and every cell. It directly affects the brain and is probably more toxic in the developing brain of the adolescent. It increases the inhibitory neurotransmitter, GABA. The toxic metabolic byproduct of ethanol, acetaldehyde, can be found in the brain. Acetaldehyde, and its metabolic end-product acetate, damages protein and fat in brain cells, compromising the function of and development of these cells. The brain of the adolescent may be more susceptible to this damage resulting in long-term complications.

Alcohol is the primary contributor to motor vehicle accidents, the leading cause of adolescent death, and is associated with suicide attempts, depression, anxiety, mood disorders, and ADHD. Alcohol use at an early age is a strong predictor of future alcohol-related problems. For those age 12 years or younger at first use, the prevalence of lifetime alcohol dependence is 41%, 17% for those who start at age 18 and 5% for those who start at age 21. Early age use of alcohol is also associated with greater sexual risk taking, academic problems, other substance abuse and delinquent behavior.

A commercially available combination of alcohol and energy drinks (caffeine) are specifically marketed to young adults and teens. They are sold as Four Loko, Joost, and Jilt. Although these commercial drinks have been "banned", they are still available or can easily be made by combining energy drinks with alcohol. Ingestion of one can of the commercial drink (12% alcohol) may result in a blood alcohol level in the toxic range.

Indicators of alcohol abuse include:

Difficulty in recalling instructions	Uncoordinated & unsteady gait
Shortened attention span	Faulty judgment
Thick, slurred speech	Lack of coordination
Sluggish, sleepy	Greatly impaired driving ability
Slowed reactions	

Alcohol may have a devastating effect on the fetus. There is no known "safe" amount of alcohol that may be consumed during pregnancy, especially during the first trimester (3 months). Excessive alcohol intake (4 or more drinks/day) will likely cause the Fetal Alcohol Spectrum Disorder. The most serious consequence is Fetal Alcohol Syndrome (FAS). FAS is a leading cause of birth defects and the most common cause of preventable developmental impairment (mental retardation).

II. Dextromethorphan (Robo-Tripping*)*

Dextromethorphan is a commercially available over-the-counter cough suppressant which acts as a hallucinogen when taken in large doses. Users will consume 2-3 bottles of liquid cold medication or 8-24 pills at a time. High doses causes nausea, vomiting, a dissociative state like PCP, impaired judgment and mental functioning, and a "horrible feeling" in users. The effects may last for up to 12 hours.

III. Inhalants

Inhalants are most commonly used by teens and are a gateway to more dangerous drugs. Inhalants may be "huffed" (soaking a rag), "sniffed" or "dusted (directly from the container), or by "bagging" (vapors inhaled from a bag). Inhalants are used to achieve a euphoric state. Eighty-five percent (85%) of the time a single substance is inhaled. The most common inhalants are computer and electronic dust sprays (16%), gasoline (13%) and spray paint (11%).

The effects vary widely, depending on the dose and the type of solvent, and may include general impairment similar to alcohol intoxication, distortion of the perception of time and space, and hallucinations. Most users will have headache, nausea, vomiting, slurred speech and loss of motor coordination. Often the odor of the inhalant used is present as it can be in their hair and on their skin or clothing. A characteristic "glue sniffers rash" may occur around the nose and mouth. Prolonged use may cause hypoxia (low oxygen concentration) and asphyxia, pneumonia, heart failure, liver damage and kidney failure. Death may occur from over sedation or as a result of vomiting and aspiration of vomit.

The effects of the inhalant are related to the type of propellant or solvent inhaled. Asphyxiation may occur from inhaling nitrous oxide, found in cans of whipped cream, while lung and brain damage may be more common following the inhalation of volatile hydrocarbons, especially toluene.

Toluene inhalation affects the fetus and a Fetal Toluene Syndrome, very similar to FAS, has been described. Delayed development, spontaneous abortion, prematurity and cerebellar dysfunction (poor coordination and movement disorders) may occur.

IV. Synthetic cannabinoids

Synthetic cannabinoids are mixed with acetone, sprayed on plant material and sold as incense. These packages are labeled "not for human consumption" because they have never been tested on humans. The material is smoked or ingested and has effects similar to marijuana, but with a much shorter duration. Aggressive and agitated behavior is reported with the use of these synthetic cannabinoids. In November 2010 the DEA halted the sale of these products, however the manufacturers by-pass the regulation by making a simple chemical change in the formula. These substances are sold under the brand names of Spice, K2, Herbal Smoke Blend and others. Many states have banned these chemicals and compounds.

Melatonin imbedded cakes (Lazy Cakes) have more recently become available. A large dose of melatonin ingested on dessert cakes has the same effect as eating a "hash brownie".

V. Synthetic "Research Chemicals" sold for street use

The use of these substances has recently become more wide spread. They are available in truck stops and smoke shops or head shops across the country. The ingredients in these drugs vary and may not be known to the seller or the consumer. Most of the "research chemicals" have never been tested on humans so effects vary dramatically amongst users. For example, "Red Rocket", sold as a "premium fertilizer supplement" and smoked, may have meth-like effects (hallucinogen), "Bath salts" may have cocaine-like and meth-like effects, and 2 C-E is hallucinogenic. Many of these "research chemicals" cause psychotic type episodes with fear and paranoia. Ingestion of bath salts is particularly dangerous and has been associated with teen suicide. **These drugs just keep coming!**

VI. Hallucinogenic garden plants

These plants, which include Morning Glory, Jimsonweed, Angels trumpet, Horned poppy, and Salvia, may be growing in your garden. They are easily smoked or ingested as a tea. The use of Salvia Divinorum is very common and the leaves or a liquid concentrate are available for purchase in smoke shops or on the internet. These plants contain chemicals that are hallucinogenic, and have been know to cause "bad trips" by triggering the fear part of the brain. When teas are made out of these plants, other plant compounds are often extracted and when ingested can cause extreme vomiting and dehydration.

Blue Lotus, a plant from Egypt, is gaining in popularity as a substitute for Xanax, which is the most widely abused benzodiazepine in the US. Blue Lotus has a sedative effect and also acts as an opiate. These pills are often a 50:1 concentrate and look just like Xanax pills.

VII. Marijuana (THC)

Marijuana is one of the most underestimated drugs of abuse and its addictive properties are similar to other illicit drugs. The active ingredient in marijuana is THC (Tetrahydrocannabinol), but marijuana contains hundreds of chemicals called "cannabinoids". The marijuana on the streets today is unlike the marijuana in the 60's and is several times more potent. It is a cultivated to maximize its psychoactive effect. Marijuana joints can be laced with other drugs such as PCP, cocaine, ecstasy, meth, heroin or embalming fluid.

Marijuana is a fat-soluble drug and therefore stays in the brain and other organs much longer than other drugs. Most people do not immediately go through withdrawal after quitting. It takes about 10-14 days for THC quantities to become depleted and before withdrawal begins. Withdrawal symptoms include anxiety, tremor, aches and pains, sleep problems and craving of the drug.

Taking marijuana results in:

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

There are significant long term complications associated with the use of marijuana. Hypertension and increased blood lipids (triglycerides) raise the risk of heart disease. There is evidence that long-term use impairs memory and certain users (those with the variant COMT gene, which is very common) are at risk of severe psychosis. Long term teen users typically develop "cognitive inflexibility" resulting in repetitive mistakes which impairs their ability to learn.

Prenatal exposure to marijuana clearly affects the fetus/newborn. There is a modest effect on prenatal growth and infants born to mothers using the drug often have a "high-pitched" cry, which may be a sign of neuro-developmental delay. Children exposed before birth are often burdened with poor learning abilities, impaired problem-solving skills and poor memory.

VIII. Heroin abuse and prescription opiate abuse

Natural occurring opiates, from the opium poppy, include heroin, morphine, and codeine. There are several semi-synthetic and synthetic opiates available by prescription for the relief of severe pain. These drugs are also depressants and when taken with other drugs, particularly alcohol, can result in death.

Heroin

Numerous reports have suggested a recent rise in heroin use in the US, attributed to young people who are snorting and sniffing rather than injecting the drug. Moderate doses of heroin cause euphoria, a warm "rush" sensation, constricted pupils, and nausea. Higher doses result in restlessness, constipation, droopy eyelids, slow breathing, depressed cough reflux, sweatiness, lethargy, slow heart rate, and sedation. Overdose results in respiratory failure and death. The drug is highly addictive and withdrawal symptoms may begin within 6 to 24 hours of discontinuation of the drug. However, the time frame can fluctuate with the degree of tolerance as well as the amount of the last dose. Withdrawal symptoms may include sweating, malaise, anxiety, depression, priapism, extra sensitivity of the genitals in females, general feeling of heaviness, cramp-like pains in the limbs, excessive yawning or sneezing, tears, runny nose, sleep difficulties (insomnia), cold sweats, chills, severe muscle and bone aches, nausea and vomiting, diarrhea, cramps, and fever. Addicts may exhibit any of the following:

Constricted pupils	Drowsiness and
Decreased physical activity	excessive yawning
Skin cool to touch	Itching of face, arms and body
Ptosis - "on the nod"	Lack of coordination
Slowed raspy speech	Inability to concentrate
Slowed breathing	Depression and apathy
Slowed reaction time	Impaired mental function and alertness

Addiction to heroin complicates pregnancy and may cause premature delivery, premature rupture of membranes (breaking of water) leading to infection in the baby, poor fetal growth and death of the newborn. Exposed newborns may exhibit withdrawal symptoms and they have an increased risk of SIDS. Behavior problems, poor organizational and perception skills, and motor skill problems are common in children born to addicts.

Prescription opiates

Addiction to prescription opiates is the leading cause of accidental death in the US. The sharpest increase in abuse has occurred in the 12-25 year old age group, although the drugs are most commonly prescribed to seniors. Women are 2-3 times more likely to be prescribed these drugs and are about 2 times more likely to become addicted. Seniors take more prescription drugs than the rest of the population, increasing their odds of becoming addicted.

Prescription opiates include oxycodone (OxyContin and Percocet), hydrocodone (Vicodin), hydromorphone (Dilaudid), Demerol, Methadone, Fentanyl and Tramadol (commonly prescribed by veterinarians).

Risk factors for addiction include: a medical condition that requires pain medication, family history of addiction, excess alcohol consumption, fatigue or overwork, poverty, depression, dependency, poor self-concept, and obesity. The signs of addiction to prescription drugs include:

- Complaining of vague symptoms to get more medication
- Lack of interest in treatment options other than medications
- Mood swings
- Seeing several doctors and/or pharmacies to get more pills
- Using more than the recommended amount of the medication
- Using prescription pills prescribed for others

Short-term effects of opiate prescription drugs are euphoria, sedation and a feeling of tranquility. Repeated doses rapidly produce tolerance (increasing the dose, reducing intervals between doses or both) and intense physical dependence. Overdose causes respiratory depression.

The most important long-term problem is drug interactions. If the physician or pharmacist is not aware of everything the addict is taking they may prescribe a medication that will interact with the drug resulting in serious side effects. Vitamins and herbal remedies fall into this category as well. The combination of alcohol and prescription drugs can affect the central nervous system, leading to respiratory distress or failure, or even death. Prescription opiates have subtle deleterious effects on cognition and motor skills. The effects on the developing brain are not known.

About 4% of pregnant women abuse opiates every month. The newborn exposed to opiates during pregnancy can develop withdrawal symptoms after birth (newborn abstinence syndrome). Symptoms may include tremors, irritability, sleep problems, seizures, yawning, stuffy nose, sneezing, unstable temperature, poor feeding, vomiting and diarrhea. Naloxone (an opiate blocker) is given immediately after birth to any infant born to a mother who is known to be using heroin, methadone or prescription opiates. However, the mother's drug history may not be known until infants develop symptoms after birth. Symptoms may start as early as 1-2 days or as late as 5-7 days after birth. Treatment includes keeping the infant swaddled and in a quiet, dark room. However most babies require treatment with medications. Morphine elixir and Phenobarbital are the most commonly used drugs. Treatment may be required for 1-2 weeks or longer thereby prolonging hospitalization

IX. "Club Drugs": GHB, LSD, Ecstasy

GHB (Gamma Hydroxy Butyrate)

GHB is a popular "club drug" and a "date rape drug". The drug is illegal, but its pro-drugs, gamma butytolactone and 1,4 butanediol, are still easy to purchase on the internet. GHB acts as both an excitatory and inhibitory neurotransmitter and causes euphoria, a "dreamy" sense, disinhibition, amnesia and heightened sexual awareness. It is popular at raves and circuit parties. GHB withdrawal has been reported in chronic users, with symptoms of severe agitation, psychosis and profuse sweating beginning 1-6 hour after the last dose and lasting 5-15 days.

GHB can easily be slipped in a drink and is a problem on college campuses and in bars or clubs. GHB has a salty taste to it so it can be detected if people are paying attention. The affects can result in symptoms very similar to someone under the influence of alcohol – drunken appearance, slurred speech, unsteady gait, and vomiting. GHB will cause short term amnesia for 3-5 hours, thus known as the date rape drug, where victims do not know what has gone on. This drug also leaves the system within 7-9 hours of ingestion so getting to a hospital for testing is very important if one thinks they have been exposed to GHB.

Ecstasy

Ecstasy (MDMA) is a psychedelic drug with both hallucinogenic and stimulant properties. It is a combination of methamphetamine and a hallucinogen and is unique in that it causes hallucinogens as well as feeling of exhilaration and excitement. Ecstasy is usually in tablet form; however it can be in powder form. The tablets come in all colors and have various logos or images on them. The color and the logo have meaning as to what is in the pill and the intensity of the reaction. Many pills contain other drugs with MDMA such as; cocaine, heroin, LSD, Ketamine, BZP, and methamphetamine. Users need to know the lingo or jargon that goes along with Ecstasy so they know what they are getting. Indicators of use include:

Reduced inhibitions	Heightening of senses
Sweating (crave water)	Nausea & vomiting
Elevated Vitals	Blurred Vision
Happy and Friendly	Confusion
Continuous Speech	Paranoia
Tremors	Grinding Teeth (Bruxism)

Side effects are common and include poor concentration, jaw clenching, lack of appetite and dry mouth/thirst. Hyperthermia (elevated body temperature) may occur along with dehydration. In the long term the drug may cause insomnia, aches and pains, anxiety and paranoia, impaired long-term memory, depression and irritability, and chronic fatigue. These problems may continue even after stopping the drug.

Long-term use can deplete serotonin (a neurotransmitter) and result in mood swings, sleep disorders, altered thought processes, sexual dysfunction and loss of sensitivity to pain. There are a small number of reports of fetal problems, including club foot in females, possible increase in the rate of congenital heart disease, and major defects of the abdominal wall results in babies being born with their intestines outside the abdomen.

LSD (Lysergic Acid Diethylamide) *"Turn on, tune in, drop out" ……Timothy Leary*

LSD is the most mind-altering substance known to man. LSD is usually in liquid form and is typically added to absorbent materials such as blotter paper, paper tattoos, sugar cubes and paper. This makes it easier to transport, consume and hide. The liquid is colorless, odorless and tasteless. The effects of LSD can be unpredictable depending on the amount taken, the user's mood, personality and expectations. Sensations and feelings are dramatically affected. Some users say it can switch the senses and report seeing sounds and hearing colors. Indictors of LSD use include:

Dilated pupils	Anxiety
Increased body temperature & heart rate	Depression
Impaired judgment	Flashbacks
Mood swings	

LSD is not addictive, but can cause long term health problems including intense and frightening "flashbacks", panic attacks, and persistent visual hallucinations (Hallucinogenic Persisting Perception Disorder) leading to chronic stress and depression. LSD absorbs into spinal fluid and can cause flashbacks years after the user has stopped ingesting this drug. There are isolated reports of birth defects but no clear evidence of adverse effects on the newborn. However, uterine contractions and premature birth have frequently been reported.

X. Hallucinogenic Mushrooms

“Magic” mushrooms contain psilocybin, a mildly active psychoactive compound. Users are very educated as there are 190 species of mushroom, some are safe to eat, some are hallucinogenic and others are poisonous. Psilocybin is non-addictive and rarely abused and is mostly used in religious or spiritual ceremonies. Short-term tolerance of the drug is common, therefore the more ingested, the weaker the influence. The effects are subjective, vary among users and may last for 3-8 hours.

XI. Cocaine

Cocaine is a powerfully addictive drug. Once having tried cocaine, an individual may have difficulty controlling the extent to which he or she will continue to use the drug. Cocaine is a strong central nervous system stimulant and its effects are immediate, extremely pleasurable and brief. Cocaine produces intense euphoria and can make users feel more energetic. Users become talkative and mentally alert, especially to the sensations of sight, sound, and touch. Cocaine temporarily decreases the need for food and sleep. Some users find that the drug helps them to perform simple physical and intellectual tasks more quickly, while others experience the opposite effect. Like caffeine, cocaine produces wakefulness and reduces hunger. Psychological effects include feelings of well-being and a grandiose sense of power and ability mixed with anxiety and restlessness.

The duration of cocaine's immediate euphoric effects depends upon the route of administration. The faster the rate of absorption the more intense the high, however the duration of action is shorter. The high from snorting is relatively slow in onset, but may last 15 to 30 minutes, while that from smoking may only last 5 to 10 minutes. As the drug wears off these sensations are replaced by intense depression.

Use of cocaine in a binge, during which the drug is taken repeatedly and at increasingly high doses, leads to a state of increasing irritability, restlessness, and paranoia. This may result in a full-blown paranoid psychosis, in which the user loses touch with reality and experiences auditory hallucinations. Tolerance to cocaine's high may develop. Many addicts report that they fail to achieve as much pleasure as they did from their first experience and some users will frequently increase their doses to intensify and prolong the euphoric effects. Users can also become “sensitized” to cocaine and have seizures and coma after taking there regular dose. This increased sensitivity may explain why some deaths occur after apparently low doses of cocaine.

The short-term effects of cocaine include increased heart rate, blood pressure and temperature with dilated pupils and visual impairment. Immediate adverse effects include bloody nose (perforated nasal septum), chest pain and heart attack, convulsions and coma. Cocaine use significantly increases the risk of sudden heart attack and may also trigger stroke, even in users who otherwise are not at risk for these potentially fatal events. The risk is related to narrowing of blood vessels, increases in blood pressure and heart rate and increased risk of blood clots forming in the arteries. The risk of heart attack is increased by a factor of 24 during the 60 minutes after the use of cocaine and is unrelated to the amount ingested. About 14-25% of patients seen in urban Emergency Rooms for evaluation of chest pain have detectable amounts of cocaine in the urine.

Different routes of cocaine administration can produce different long-term adverse effects. Regularly snorting cocaine can lead to loss of sense of smell, nosebleeds, problems with swallowing, hoarseness, and perforation of the nasal septum. Ingested cocaine can cause severe bowel gangrene due to reduced blood flow to the intestine. Persons who inject cocaine have puncture marks and "tracks" most commonly in their forearms and run the risk of acquiring hepatitis B and C and HIV/Aids. The long-term effects of cocaine also include mood disturbances, restlessness, paranoia and auditory hallucinations

There is a potentially dangerous interaction between cocaine and alcohol. Taken in combination the two drugs produce a sense of increased and prolonged euphoria. However, they are metabolized to a third toxic

drug, cocaethylene. Cocaethylene has a longer duration of action and is more toxic than either drug alone. The mixture of cocaine and alcohol is the most common two-drug combination that results in long-term, drug-related anxiety, heart problems and liver problems. On the east coast of the US, cocaine is being adulterated with Lavamisole to allegedly increase its euphoric effect. Lavamisole is an animal anti-worm medication and causes allergic reactions and vascular obstruction, often affecting the skin.

Cocaine use may result in fetal growth retardation and premature labor/delivery, placental abruption and uterine rupture. Newborns may have several congenital anomalies effecting the brain and skull, limbs and urogenital tract. Bleeding into the brain and intestinal perforation are also reported. Cocaine enters the breast milk of nursing mothers in quantities that intoxicate the infant.

XII. Methamphetamines

Meth is the fastest growing drug threat and the most prevalent synthetic drug in the USA. Meth is unique in that someone has to make this drug, you can not grow it like Marijuana or extract it like Cocaine or Heroin. Users can easily obtain the chemicals needed to manufacture this drug themselves. Its manufacturing spawns toxic waste and deadly vapors causing serious problems to society or those that come in contact with the labs or its remnants. Methamphetamine affects all aspects of society and everyone ends up paying for it someway or somehow.

Methamphetamine is a very strong central nervous system stimulant that affects dopamine release in the brain. Its use fires up the central nervous system, constricts blood vessels, dilates the pupils and increases body temperature, heart rate and blood pressure. The user is put in a state of constant fight or flight. Dealing with someone high on meth can be very dangerous. One hit of meth can keep the user high for 12 to 24 hours.

Methamphetamines may be smoked, snorted, injected or ingested. An intense rush (flash) appears immediately after smoking or injecting the drug. The flash is extremely pleasurable but lasts only a few minutes. Snorting or ingesting the drug results in euphoria without a flash, starting 3-5 minutes after taking the drug and lasting 15-20 minutes.

Initial indicators of methamphetamine use:

Dry Mouth	Exaggerated reflexes and tremors
Dilated pupils	Increased alertness and self-esteem
Profuse sweating	Hyper-excitability, restlessness
Excited and talkative	Panic and anxiety
Rapid respiration	Agitation and combativeness
Loss of appetite	Paranoia, hallucinations and depression
Inability to concentrate	Difficulty focusing eyes
Inability to sleep	

The short-term adverse effects of the drug are increased wakefulness and physical activity, decreased appetite, increased libido, rapid heart rate, increased blood pressure and hyperthermia (elevated body temperature). Death may occur as a result of hyperthermia, convulsions or cardiac arrest.

Long-term effects are psychosis, paranoia, hallucinations, repetitive motor activity, loss of memory, aggressive or violent behavior, severe dental problems and weight loss. Methamphetamine has become highly associated with risky sexual behavior, increasing the risk for contracting hepatitis B or C and HIV. Meth addiction is associated with an increased risk of heart attach in young people and is reported to triple the risk of aortic dissection which can result in stroke.

Meth or the meth life-style affects the fetus and impairs fetal growth, results in prematurity and placental abruption. There is clear evidence that fetal meth exposure causes structural abnormalities of the brain. There are no known newborn-withdrawal problems, but newborns may have liver damage and jaundice. Children exposed to meth as a fetus typically exhibit aggressive behavior and decreased language skills. These problems may be related to alterations in dopamine metabolism.

DRUG PARAPHERNALIA: INDICATORS OF DRUG ADDICTION

Most people consider drug paraphernalia to be pipes, bongs and syringes, but it can be many things. It can be ordinary items used to disguise or hide the drug or things used to consume the drug. Aluminum foil, small ziplock baggies, pill bottles, spoons, film canisters, cigarette packs, hide-a-cans, makeup kits, gum wrappers, mint tins, liquid breath mint containers or small glass vials are types of paraphernalia. Parents need to be aware that these kinds of things are either used to conceal the drug or a way of using the drug.

Paraphernalia means drug user. To identify drug paraphernalia, look for common products that are out of place and pay attention to teen jargon! The following are paraphernalia associated with the use of specific drugs:

Ecstasy:

- pacifiers, lollipops, mouth guards for grinding of the teeth
- glow sticks, surgical masks and mentholated rubs to over stimulate the senses
- water bottles used to bring in alcohol or liquid drugs like GHB, LSD

Cocaine:

- glass pipes for smoking crack
- small mirrors and razorblades, rolled dollar bills or cut straws for snorting
- spoons and lighters, syringes, turnicate, cotton pieces

Marijuana:

- rolling papers, small baggies, stash cans, film canisters, tins and roach clips
- deodorizers, incents, potpourri to disguise or mask the odor of marijuana
- pipes –metal, colored blown glass, ceramic large bongs

Methamphetamine:

- small plastic baggies
- small cosmetics bags (to keep paraphernalia in)
- pocket knives
- Q-tips
- Cut straws
- Pocket torches
- Glass pipes
- Razor blades
- Mirrors

Inhalants:

- tubes of modeling glue or super glue
- empty spray cans, small CO2 cartridges
- plastic & paper bags, balloons, tops cut off of liter bottles
- bottle or cans with pens or tubing punctured in the sides

Things used to cover up the use of drugs:

- mouth washes, breathe sprays, mints
- eye drops to conceal bloodshot eyes
- wearing sunglasses at inappropriate times

THE EFECTS OF DRUGS ON KIDS: THE REAL VICTIMS

Long term behavioral problems are common in infants and children exposed to pre-natal drugs. These problems may be due to organic brain damage and/or environmental instability and poor parental attachment. Yet, not all drug-affected children are alike and treatment must be individualized.

Children living in a drug-environment are at risk for abuse/neglect, especially if there is a history of maltreatment in the family or if one (or both) parent(s) was abused as a child. If so, the child should be removed from the house.