

# The Role of the Dentist in Reducing The Drug Abuse Epidemic

University of Kentucky College of Dentistry

Friday, April 14, 2017 9:00 a.m. - noon

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**Attendees will learn:**

- Current prescription drug abuse issues and Prescription Drug Monitoring updates.
- How to recognize signs and symptoms and oral health problems associated with the use of synthetic drugs of abuse.
- Screening techniques for effectively identifying drug abusing patients.
- Brief intervention strategies and how to apply these in your practice.

**The Surgeon General's Report on Alcohol, Drugs & Health Dec. 2016:**



**Prescription Monitoring Programs:**

**Impact Evaluation:** *Freeman P.R., Goodwin A., Troske S., and Talbert J.*

- Decreased inappropriate prescribing behavior
- Decreased patient doctor-shopping behavior
- Increased use by pharmacists; info sharing
- Significant impact on “pill mills”
- Concern about a “chilling effect”... *but* chronic pain patients still getting medicine
- *Problem:* Heroin use has increased

**Electronic Prescription Monitoring: eKASPER Reports**


**KASPER: Kentucky All Schedule Prescription Electronic Reporting**

**[Dave.Hopkins@ky.gov](mailto:Dave.Hopkins@ky.gov); KASPER Program Manager**

**KASPER Web Site: <https://ekasper.chfs.ky.gov>; 502-564-2815 ext. 3333**

Controlled Substance Dispensing Comparison			
Drug	July 2011 - June 2012	July 2015 - June 2016	Percent Change
Hydrocodone	3,303,453	2,590,661	- 21.6%
Oxycodone	977,256	1,058,655	+ 8.3%
Oxymorphone	24,485	19,655	- 19.7%
Tramadol	431,455	594,309	+ 37.7%
Alprazolam	947,672	786,267	- 17.0%
Diazepam	413,983	360,905	- 12.8%
C-II Stimulants	838,170	1,021,748	+ 21.9%
Buprenorphine/ Naloxone	269,488	647,029	+ 240.1%
All Controlled Substances	10,943,722	10,681,811	- 2.4%

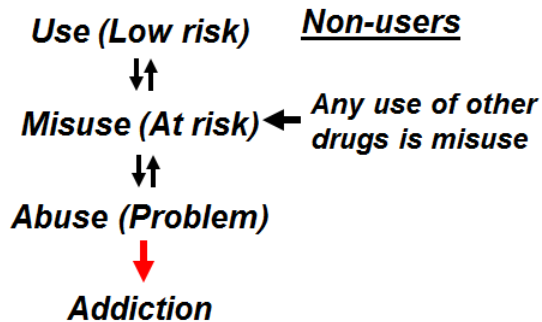
Number of prescriptions dispensed as reported to KASPER



# The Science of Addiction: Drugs, Brains and Behavior

## From Use to Misuse to Abuse to Addiction:

### Identify Patients as:



**Substance misuse** is use of a drug that varies from a socially or medically accepted use.

**Substance abuse** - any use of drugs that cause physical, psychological, economic, legal or social harm to the individual user or to others affected by the drug use's behavior.

**Addiction** - a behavioral pattern of drug use, characterized by overwhelming involvement with the use of a drug (compulsive use), the securing of its supply, and a high tendency to relapse after withdrawal.

**Institute of Medicine: *Broadening the Base of Treatment for Alcohol Problems - The Continuum Model***

SBIRT - Screening, Brief Intervention and Referral - A Clinical Guide: <https://www.sbir-diba.ca/>

## What happens in the brain when someone misuses or abuses drugs?

### Brain Reward Pathway - Mesolimbic Dopamine Pathway & Mesocortical System

**Limbic system** contains the brains reward circuit, regulates our ability to feel pleasure; also regulates emotions and motivations, particularly those related to survival, such as fear, anger, and is involved in early learning and memory processing,...

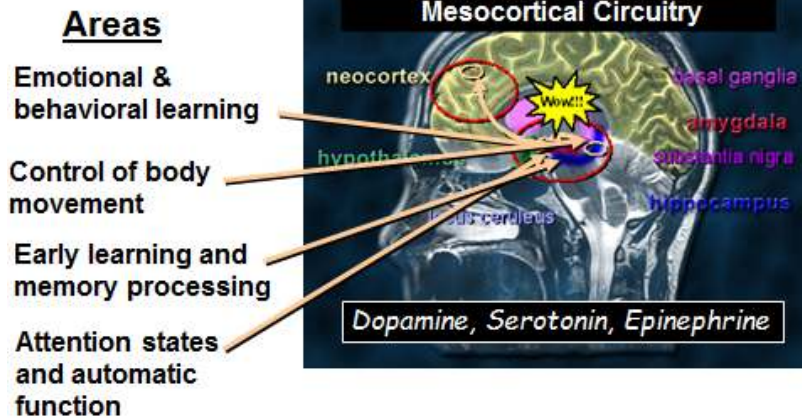
**Nucleus Accumbens (NAc)** is the "Pleasure Center" and is activated by pleasurable behavior.

**Prefrontal Cortex** seat of judgment, reasoning, problem solving; enables us to assess situations, make decisions, plan for the future and keeps our emotions and desires under control (governs impulsivity, aggression)



*The "Wow!!!" is a big reason people take drugs but other things happen...*

Psychoactive addictive drugs increase the release of dopamine and other neurotransmitters affecting multiple areas in the brain & other organ systems:



“Science has generated a lot of evidence showing that: Prolonged drug use changes the brain in fundamental and long-lasting ways and evidence shows that these changes can be both functional and structural” Alan Leshner, PhD & Glen Hansen PhD, DMD

What happens with continued use; increased quantity/frequency of use?



Chronic drug use disrupts the Mesocortical Pathway and it becomes hyperactive to drug use and drug related cues, such as, associated stimuli (people, places, and things).

Brain cells become damaged

*“The Prefrontal Cortex gets hijacked”*

The “Stop-Go Switch” breaks:  
*Once you start using you can’t stop  
 “Obsession of the mind”*

### Addiction or Chemical Dependency

A disease characterized by continued use and abuse of a drug despite recurring negative consequences in a person's life

#### Loss of control over taking a substance or doing a process

A behavioral pattern of drug use, characterized by overwhelming involvement with the use of a drug (compulsive use), the securing of its supply, and a high tendency to relapse after withdrawal

### American Society of Addiction Medicine Definition

Addiction is a primary, chronic disease of brain reward, motivation, memory and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social and spiritual manifestations. This is reflected in an individual pathologically pursuing reward and/or relief by substance use and other behaviors.

Addiction is characterized by the inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems with one's behaviors and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.

## Dangers of Synthetic Drugs: *Spice, Marijuana, Designer Drugs, Performance Enhancing Drugs: Amphetamines, Meth, Crank, Party Drugs, MDMA, Molly, Bath Salts ...*

**“Spice”: Incense and Herbal Smoking Blends** - incense and herbal smoking blends, popped up on the internet and in head shops under a variety of trade names: Spice, Spice Silver<sup>®</sup>, K2<sup>®</sup>, Buddha Melt, Yucatan Fire, Genie, & Fire ‘n Ice...

Sell for \$30-40 for 3 gm bags

Manufactures spray herbs with these synthetic marijuana analogues

### Synthetic Cannabinoids

Poison control centers and hospitals have reported multiple cases of people becoming ill after smoking these products

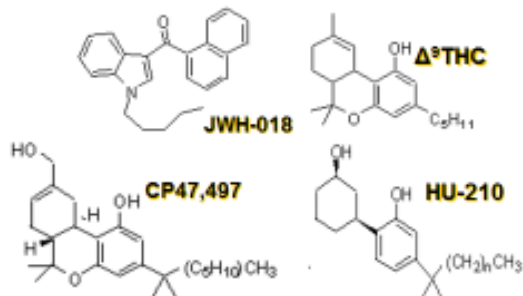
**Much more dangerous than marijuana itself:**

Significantly greater potency than  $\Delta^9$  THC

Greater binding affinity for CB receptors

Effects last 6-8 hours

Drug Screening Tests are now available for some Designer Cannabinoids



### Signs & symptoms of Synthetic Cannabinoids:

Users say they act more like crack or meth

Racing heart rate, elevated blood pressure, agitation, anxiety, paranoia, vomiting, confusion, hallucinations, seizures, psychosis, loss of consciousness

Really don't know what you're getting

“Couch lock” term used to describe inability to move despite being conscious

### Synthetic Drug Abuse Prevention Act

Several synthetic cannabinoids have been placed in their respective Controlled Drugs and Substances Acts:

- No currently accepted medical use
- Illegal to manufacture, distribute, import, export, dispense, or possess

**Despite restrictions spice manufacturers continually change recipe to skirt the laws; K3, Scooby Snax, Mad Hatter, Head Trip ...**

## Marijuana: Highly charged emotional and political issues:

### “War over Weed”

The “Legalization” Issue

The Medical Marijuana Debate

The “Soft” vs. “Hard” Drug Issue

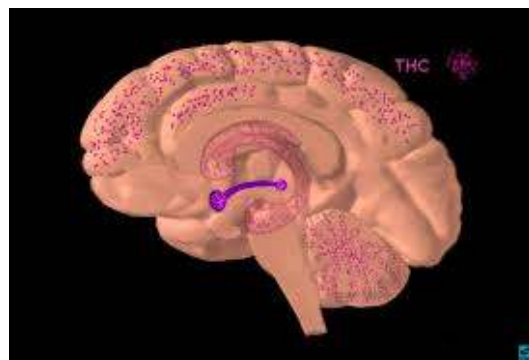
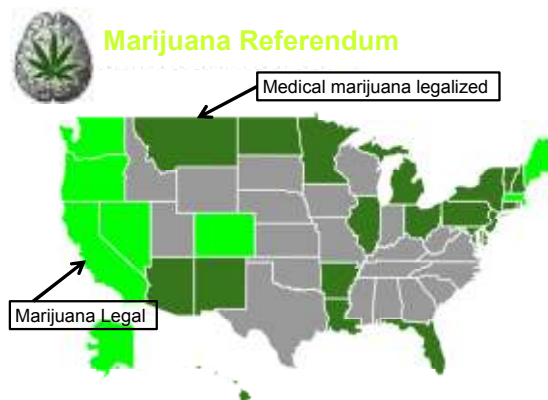
Many states have decriminalized marijuana possession laws, legalized medical marijuana and/or legalized marijuana use.

Problems with legalized medical or recreational marijuana:

Large scale grow operations, cover for other illegal drugs, violence, diversion to other states, drugged driving, employee use; med conditions, lawsuits, calls to poison control centers

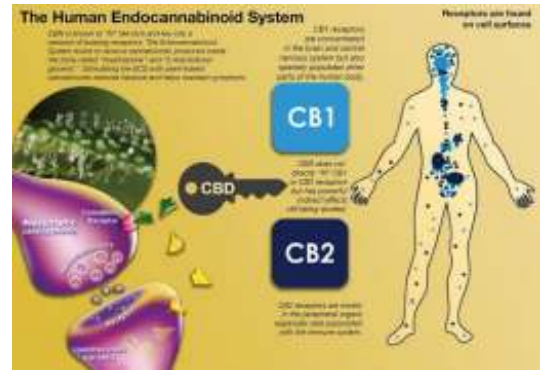
### Milestones in Cannabinoid Research

- Cannabinoid receptor sites found: CB1 and CB2
- Brain receptors located in the reward pathway, hippocampus, amygdala, cerebellum, basal ganglia, and neocortex





- Identified endogenous cannabinoids: **Anandamide**
- **The Endocannabinoid System** was discovered:
  - Involved in memory and learning, motor coordination, eating behavior, immune and inflammatory responses, pain sensations, reproduction...
  - This system is thought to play a role in: relaxation, eating, sleeping, forgetting, and protecting from stress and more...



**Early & chronic use of marijuana is a problem:**  
 $\Delta^9$  THC,  $\Delta^9$  - tetrahydrocannabinol, slows things down too much, it is stronger and longer acting than anandamide

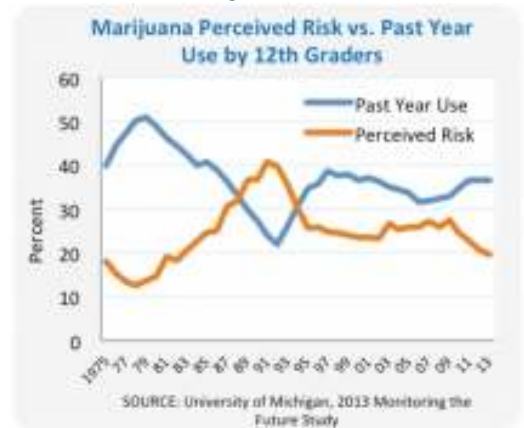
**Marijuana use linked to brain abnormalities:**

MRI studies show the more joints smoked the more abnormal the shape, volume and density in amygdala and nucleus accumbens  
 Structural differences in key regions involved in emotion, motivation and also associated with addiction

**Thinking, memory, movement, functions are all impaired:**

Disrupts focus, working memory, decision making & motivation leading to difficulties in school  
 Impair motor control, coordination and judgment leading to:

- Increased risk for accidents
- Delayed reaction times in sports
- Long term effects - psychological problems



**Monitoring of the Future Survey 2016:**  
**Past 30 day use of marijuana by grade:**

8 <sup>th</sup>	5.4%
10 <sup>th</sup>	14%
12 <sup>th</sup>	23%

**American Academy of Pediatrics:**

**“The campaigns to legalize marijuana can have the effect of persuading adolescents that marijuana is not dangerous, which can have a devastating impact on their lifelong health and development” AAP Policy Statement 2015**

**Marijuana is Addictive**

18% of patients entering treatment reported marijuana as their primary drug of choice  
 17% will become addicted if they start using in their teens  
 25-50% of daily users become addicted  
 Early use predicts other drug use and drug problems

**“Health Professionals in particular can play a role in conveying to families that early marijuana use can interfere with crucial social and developmental milestones and can impair cognitive development.”**

Norn Volkow, MD, NIDA Director NEJM, 370:2219-2227 June 5, 2014

**Is smoked marijuana a good medicine?**

$\Delta^9$  THC is the primary psychoactive ingredient  
 High octane marijuana available: up to 20%  
 More than 85+ cannabinoids in the plant, 400 chemicals:  
 - Uncertain composition; dangerous to smoke  
 Smoking is a poor drug delivery method, shot gun treatment

**Contraindications:** psychoactive effects, memory impairment (huge issue with patients), Immunosuppressive effect can be a problem

**There is support in the literature that THC & CBD may reduce pain and inflammation...**

**There are other drug forms available:**

**Marijuana Extracts**

Cannabidiol (CBD)

CBD and children with epilepsy: *Charlotte's web*

**Marijuana Edibles**

Advertised to attract children

High doses pose several health risks

Overdosing – smoking vs. digestion

Regulate packaging/warning labels

Educational campaigns to use and dangers

**There may also be better drug forms available now and in the pipeline:**

**Dronabinol/Marinol** - Treatment of nausea and vomiting for patients in cancer treatment; Appetite stimulant for AIDS patients; Analgesic to ease neuropathic pain in multiple sclerosis patients

**Nabilone/Cesamet** - Treatment of nausea and vomiting in patients undergoing cancer treatment

**Sativex (nabiximols)** - Treatment of neuropathic pain and spasticity in patients with Multiple Sclerosis (MS); Analgesic treatment in adult

**Epidiolex (CBD)** for children's epilepsy/seizures

Oral or spray administration known purity, precise dosages, slower onset and sustained duration of action

Less likely to induce anxiety, panic and negative mood states of marijuana but does have other similar side effects

***"We need to improve our understanding of how to harness the potential medical benefits of the marijuana plant without exposing people who are sick to intrinsic risks."***

Norn Volkow, MD, NIDA Director NEJM, 370:2219-2227 June 5, 2014



**Medical Marijuana: Is the Cart Before the Horse?**

D'Souza & Ranganathan, JAMA: 313,24 2431, 2015

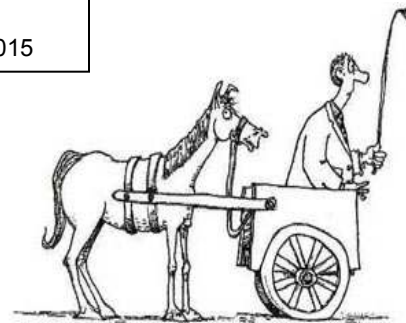
- 1. **Some evidence to support** nausea and vomiting related to chemo, specific pain syndromes and spasticity related to MS

*Medical Marijuana for Treatment of Chronic Pain and Other Medical and Psychiatric Problems. JAMA:313,24 2474, 2015*

- 2. **Poor evidence to support other conditions that state laws are currently permitting: i.e. hepatitis C, Crohn's disease, Parkinson's disease, Tourette's syndrome...**

*Many problems have not been addressed: Dosing, drug interactions, acute adverse effects, effect on EC system, brain development, addiction... controlled clinical trials to test the short and long term safety & efficacy*

*Cannabinoids for Medical Use: A Systematic Review and Meta-analysis. JAMA: 313, 24 2456, 2015*



**Prescription Stimulants - Amphetamine Type Substances (ATS); CNS Stimulants**

**Medical Uses - limited but legitimate medical uses today**

Attention Deficit Disorder (ADD or ADHD)

Narcolepsy

Depression – that does not respond to other treatments

Obesity - short-term treatment

### **How they work...**

These drugs enhance brain activity by increasing the release norepinephrine, dopamine and serotonin  
Increased alertness, attention and energy  
Increases in blood pressure, heart rate, respiration and blood glucose

### **Adderall or Ritalin – CII Drugs**

Well known drugs to treat ADHD:

- Increases attention, alertness (helps focusing)
- But also abused: A.k.a. “*Vitamin R*”, “*Vitamin A*”, “*the cramming drug*”

### **Abused by Students**

Used to help them cram for exams, as appetite suppressants

Others use it to keeps awake at all night parties

Also abused for its high

Users obtain drug from prescription users, steal, sell or trade it for other drugs

### **“Risky Rise of the Good-Grade Pill”**

High use in academically competitive high schools, colleges, graduate schools

Use and abuse can lead to health risks from cardio to depression & psychosis

Diversion of CII drugs → serious crime

Gateway to sleep aids and painkillers

Prefrontal cortex and changing brain chemistry

Cheating issue

### **Adverse Effects of Ritalin Abuse**

Abuse comes with serious side effects: Seizure potential, serious cardiac problems, pulmonary granulomas from snorting crushed pills

## **Methamphetamine – A powerful CNS stimulant**

Easy to make it

Increased purity - from 12% to 90<sup>+</sup>% in the last several years

Cheap and long-lasting effects

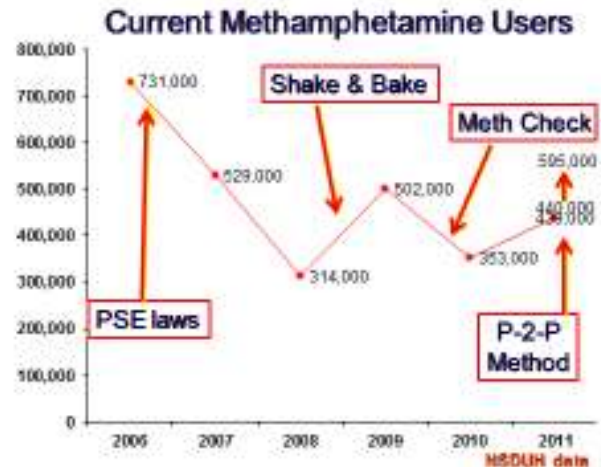
A.k.a. “*meth, crank, crystal, ice, glass*”

### **Meth: Illicit manufacturing**

*Precursor materials and chemicals:*

OTC diet pills or decongestants:  
Pseudoephedrine, Lithium batteries, solvents (acetone, ether, etc.), ammonia, battery acid (sulfuric acid), hydrochloric acid gas

All these materials can cause serious health risks and the solvents are extremely flammable; cost of cleanups is enormous  
“Shake and Bake” – 2 liter method



### **Progression of Effects:**

#### **Short Term Effects:**

Euphoria, enhanced sense of self-esteem & self-confidence, increased alertness, performance, energy, talkativeness, enhanced libido, decreased appetite  
Light/sound sensitivity, shakes/tremors, elevated pulse and blood pressure, increased respiratory rate, elevated body temperature, sweating, jaw clenching, teeth grinding, insomnia, and hyperactive behavior

#### **Long Term Effects:**

Nervousness/Irritability, anxiety, depression, mood swings, weight loss, hallucinations, paranoia, hyperthermia, body burnout, “*Meth Psychosis*”

### **Behavior Warning Signs:**

Erratic behavior, constantly misplacing things, lying, absenteeism, isolation, paranoia, weird eating & sleeping patterns

### **Danger signs, things to look for at home:**

Burns on thumb, red or irritated nostrils, butane lighters, cards for crushing, hollowed out pens, straws, gum wrappers

### **Additional Signs and Symptoms of Methamphetamine Abuse**

*“Meth mouth”*: Distinctive pattern of decay on buccal smooth surfaces and interproximal surfaces of anterior teeth

Xerostomia may contribute to increased occurrence of caries due to lack of buffering capacity of saliva:

- Acidic foods and plaque buildup and can wreak havoc with teeth/gums

Drug induced dehydration gives perception of dry mouth and users crave sugar-containing carbonated beverages

Exposure of caustic ingredients causes damages oral soft and hard tissues

Stimulants increase muscle tension which can cause clenching and grinding wear and fractures; bruxism and trismus

Drug induced nervousness and anxiety may also cause clench/grind teeth

Smoking or snorting meth exposes the oral cavity to caustic ingredients

Neglect in oral health care in drug users also plays a big problem

### **Clinical Treatment & Drug Abuse Intervention:**

Oral exam & medical & drug history:

- Initiate dental treatment if patient is in recovery
- If patient not interested in recovery, express genuine concern about dental findings & problems with continued use
- *If addiction is not addressed patient will most likely continue to use*

Provide dentistry as needed if patient is clean and sober

Develop partnership with patient:

- Patient must consent to meticulous oral care and continued sobriety
- Encourage proper nutrition, good dental hygiene...
- Monitor patient's compliance: Success is determined by patients commitment to oral health care and their continued commitment to recovery
- Document all findings, may prove useful in detecting relapse

## **Party Drugs - a big part of Dance Parties, Music Festivals and Raves but more often closer to home**

### ***“Ecstasy” (MDMA) is the Party Drug***

A stimulant and psychedelic drug - enhances energy, endurance, sociability, sexual arousal, and postpones fatigue

Ecstasy also has hallucinogenic effects, altering perceptions and feelings

Many users also claim increased feelings of emotional closeness to one another

- An *“increased empathy for others”*

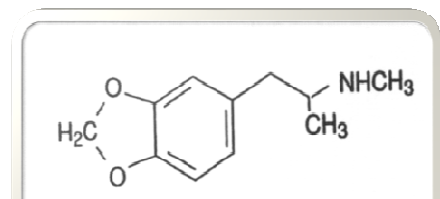
Ecstasy has been dubbed the *“Hug Drug”*

It's more about a loving feeling than increased sexual activity

It may not be about sex, but the drug scene certainly opens the door to problems, and to exploitation by sexual predators

### ***“Extreme Ecstasy” - Ecstasy laced with Meth***

Increased availability, more lucrative for dealers, but also much more dangerous  
**Severe health and neurological dangers**



3,4-methylenedioxyamphetamine  
MDMA



**Use of these type drugs has spread to a wide variety of age groups and settings:**

Commonly seeing these drugs at sports bars, private parties, college parties, in dorm rooms, on campus...

High schools students are also using them at social gatherings, even at school

**Molly – “Poppin Molly at the Dance Scene”**

Surge of interest in last few years by Clubbers

Originally pure MDMA

Then MDMA with lots of caffeine, meth, assorted drugs...

And now MDMC (3,4-methylenedioxymethcathinone) or What?

Reports of desired effects of euphoria, but also paranoia, agitated delirium, hallucinations, psychotic episodes and even self-destructive behaviors

**Adulterants**

No quality control, impurities, substitute drugs, dose unknown

Severe health and neurological dangers

Laboratory analysis of “party” pills contained: MDMA, MDA or MDEA

Others contained:

Dextromethorphan (DXM), caffeine, ephedrine, pseudoephedrine

Still others contain highly toxic amphetamine type analogues

**“You don’t know what you’re getting”**

**Bath Salts**

Appeared on the market in 2009, “The New Craze”, glamorized as “legal cocaine”

Sold as bath salts, fertilizer, insect repellent ...on Internet and in Gas Stations & Convenient Stores

A.k.a.: “White Lightning, Red Dove, Ivory Wave, Vanilla Sky, White Dove...”

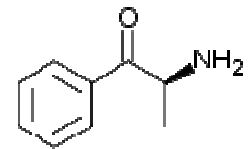
Contain: Mephedrone and MDPV (methylenedioxypropylvalerone)

Dose 3-20mg., cost \$20-50 - high risk for overdose

Peak effect 1-2 hrs.; drug effects may last 6-8 hrs.

**Physical effects:** hypertension and rapid heart rate, hyperthermia, seizures

**Psychological effects:** psychotic episodes, paranoia, hallucinations, suicidal thoughts



Cathinone’s – beta ketone amphetamine derivatives

**Party Drugs are not “Fun Drugs”**

There are a multiple of physical and psychological side effects that point out the extreme dangers of their use!

Neurotransmitters release produces feelings of well-being and euphoria, along with stimulation: Dopamine, adrenalin, serotonin...

Users claim:

- Drugs produce feelings of well-being and euphoria
- Heightened awareness and desire to dance
- Sustains them through long sessions of partying
- “Rolling” - spaced out on synthetics

Many users also claim sensory enhancement:

- Fascinated by light shows, strobe lights, glow sticks
- Touch and smell sensations enhanced



### Signs and Symptoms continued...

Increased heart rate and blood pressure, irregular heart rate (palpitations)  
- Increased potential for cardiovascular problems; crisis, seizure, failure  
Faintness, sweating, chills, dehydration, exhaustion  
Hyperthermia  
Headache, nausea, loss of appetite  
Generalized muscle tension and spasms:  
- Neck and lower-back aches and pains  
- Bruxism, trismus, (teeth grinding, clenching)  
- Jaw muscle spasm/locking; use pacifiers to alleviate the clenching  
Hyperactivity, weight loss, insomnia  
Pupil dilation, eyelid twitches, blurred vision  
Watch for track marks  
Progression of social and occupational problems

### Psychological Signs and Symptoms

Disorientation and confusion  
Agitation, anxiety, irritability, and mood swings, insomnia  
Depression – may last several days  
Mild hallucinations, depersonalization  
Panic attacks and delirium, even psychotic episodes have occurred

### Warning Signs of Stimulant Abuse – What to look for:

Possession of hollowed out pens, pacifiers, lollipops, glow sticks  
Red irritated nostrils, increased heart rate and blood pressure  
Dilated pupils, blurred vision, rapid eye movement, headaches, dizziness  
Dry mouth, muscle aches, clenching of the jaw, grinding teeth  
Nausea, vomiting, weight loss  
Change in sleep pattern; awake for extended periods of time  
Chills or sweating, high body temperature, dehydrated  
Faintness, confusion, trance-like state  
Depression, anxiety, panic attacks and paranoia

## Alcohol Impairment & Health Issues:

Alcohol – Most widely abused OTC drug

### 2016 National Survey on Drug Use and Health – Alcohol Use

66.7 million Americans ages 12 and older binge drank in the last 30 days  
17.3 million Americans are heavy drinkers (binge drinking 5 or more days in past month)

### Alcohol Misuse and Abuse:



**By 12th grade, 55.6% of students have used alcohol in the past year and 15.5% are binge drinkers**

**Binge drinkers - 4/5 drinks in a row within past two weeks**

## Binge Drinking by Teens

- Binge drinkers are 5X more likely to have sex
- 18X to smoke cigarettes
- 4X to smoke marijuana
- 4X to get into physical fights w other teens
- Have a higher rate of suicide
- Causes them to make rash and dangerous decisions; loss of internal control
- Alcohol leading cause of accidents, murder and rape among teens
- Alcohol causes 150,000 ED visits by teens

**“MOST DANGEROUS DRUG OF ALL”**



**Over 75% of college students have used alcohol in the past year  
 63% are current drinkers and  
 35% binge drank in the last two weeks**

## U.S. Dietary Guidelines on Alcohol Consumption:

### Low Risk Drinking Limits

**MEN:** Not over 2 drinks/day or 14/week  
 Not over 4 on any single occasion  
 (Not to exceed 1 drink an hour)

**WOMEN\*:** Not over 1 drink/day or 7/week  
 Not over 3 on any single occasion  
 (Not to exceed 1 drink an hour)

\* Healthy men >65

U.S. Dietary Guidelines 2010  
 NIH & NIAAA recommendations

### Heavy or at-Risk Drinking by Gender

Gender	Per day	Per week
Men	> 4 drinks	> 14 drinks
Women	> 3 drinks	> 7 drinks

*(exceeding one drink/hour)*

U.S. Dietary Guidelines 2010  
 NIH & NIAAA recommendations

## Identify/Screening Patients



Continuum Model – Alcohol & Other Drugs

### Dental Professionals Have an Excellent Opportunity To:

- Identify/screen for alcohol and other drug use in patients
- Give drug use prevention messages to patients
- Do brief interventions on patients who are misusing and abusing drugs
- Refer addicted patients for assessment and/or treatment
- Support/monitor addicted patients during their recovery
- Minimize relapse in recovering patient

## Drug Use Health History

Screening Questionnaires: [www.goo.gl/G1TTNx](http://www.goo.gl/G1TTNx) or  
<http://www.uky.edu/~pjsamm1/index>

Name \_\_\_\_\_

1. List all medications, drugs, pills you are taking (or suppose to be taking) and the dosage of each:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ Yes   No
2. Do you use tobacco products?      
If yes, how many packs, or cans per day? \_\_\_\_\_  
If yes, how many years have you used tobacco products? \_\_\_\_\_
3. Do you drink alcohol?      
*If no, skip to question 7.*
4. **If yes**, how many drinks of alcohol do you have on a typical day? \_\_\_\_\_  
A drink is defined as 12 oz. of regular beer or 5 oz. of wine (12% alcohol) or 1.5 oz. 80 proof distilled spirits.
5. On average, how many days a week do you drink alcohol? \_\_\_\_\_
6. On any day in the past year, have you had:
  - For **men** more than 4 drinks in a few hours?
  - For **women** more than 3 drinks in a few hours?
7. In the past year have you used prescription or over-the-counter drugs for non-medical reasons, on your own, without a doctor's prescription, or in greater amounts or more often than prescribed?
8. Have you felt you ought to cut down on your drinking or drug use?
9. Have people annoyed you by criticizing your drinking or drug use?
10. Have you felt bad or guilty about your drinking or drug use?
11. Have you ever had a drink or used drugs first thing in the morning to steady your nerves, get rid of a hangover, or get the day started?
12. Have you used stimulant drugs (methamphetamine, cocaine, etc.) in the last 24 hours?
13. Are you recovering from alcohol or other drug addiction?
14. Is there any member of your family with a history of problem drinking, alcoholism, or other drug problems?
15. Have you used marijuana, cocaine, methamphetamine or any other drug for recreation more than 5 times in your lifetime?      
If yes, when was the last time? \_\_\_\_\_



## Adolescents Drug Use Health History

Name \_\_\_\_\_

- |     |  |                          |                          |
|-----|--|--------------------------|--------------------------|
| 1.  | List all medications, drugs, pills you are taking (or suppose to be taking) and the dosage of each:<br>_____<br>_____<br>_____   | <u>Yes</u>               | <u>No</u>                |
| 2.  | Do you use tobacco products? <input type="checkbox"/><br>If yes, how many packs, or cans per day? _____<br>If yes, how many years have you used tobacco products? _____  | <input type="checkbox"/> | <input type="checkbox"/> |
| 3.  | Do you drink alcohol? <input type="checkbox"/><br><i>If no, skip to question 7.</i>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 4.  | <i>If yes</i> , about how old were you the <b>first time</b> you had alcoholic beverages to drink, more than just a few sips? _____  |                          |                          |
| 5.  | Have you had any alcoholic beverages in the past month? <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 6.  | On any day in the past year, have you had more than 4 drinks?<br>A drink is defined as 12 oz. of regular beer or 5 oz. of wine (12% alcohol) or 1.5 oz. 80 proof distilled spirits. <input type="checkbox"/>               | <input type="checkbox"/> | <input type="checkbox"/> |
| 7.  | In the past year have you used prescription or over-the-counter drugs for non-medical reasons, on your own, without a doctor's prescription, or in greater amounts or more often than prescribed? <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8.  | Have you ever ridden in a car driven by someone (including yourself) who was "high" or had been using alcohol or drugs? <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 9.  | Do you ever use alcohol or drugs to relax, feel better about yourself, or fit in? <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. | Do you ever use alcohol or drugs while you are by yourself, alone? <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. | Do you ever forget things you did while you were using alcohol or on your drinking or drug use? <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 12. | Do your family or friends ever tell you that you should cut down <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 13. | Have you gotten into trouble while you were using alcohol or drugs? <input type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> |
| 14. | Have you used stimulant drugs (methamphetamine, cocaine, etc.) in the last 24 hours? <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. | Are you recovering from alcohol or other drug addiction? <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. | Is there any member of your family with a history of problem drinking, alcoholism, or other drug problems? <input type="checkbox"/>  | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. | Have you used marijuana, cocaine, methamphetamine or any other drug for recreation more than 5 times in your lifetime? <input type="checkbox"/><br>If yes, when was the last time? _____                                   | <input type="checkbox"/> | <input type="checkbox"/> |

# How to Prevent Alcohol and Other Drug Health and Impairment Problems

## What can we do?

- **Know the Risk Factors**
- **Look for Early Signs and Symptoms**
- **Adopt a Risk/Resiliency Approach**
- **Give Prevention Messages**

## Risk Factors for Alcohol/Drug Use

### Individual/Family/School/Community/Environmental

Favorable attitude toward alcohol and other drugs

Family history of drug abuse

Availability and cost of alcohol and other drugs

Early onset of use

Family conflict or stress, chaotic home and abuse

Poor parent-child relationship:

- Lack of caring and support
- Lack of monitoring and supervision
- Inconsistent or excessive discipline

Parental attitudes about drug use

Association with drug-using peers

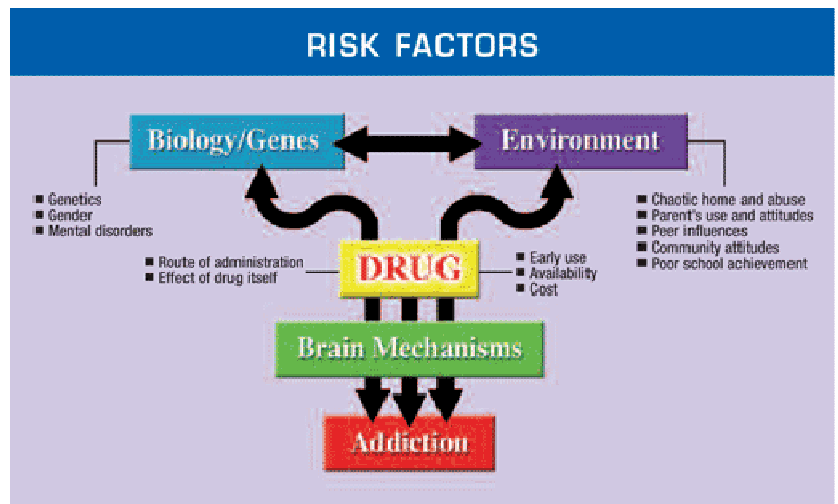
Lack of involvement in school/community

Little commitment to academic achievement

Portrayal of ATOD on T.V. and in the movies

Poor enforcement of laws concerning alcohol and illegal drug use

Advertising impact on norms and behavior



www.drugabuse.org  
 Drugs, Brains and Behavior:  
 The Science of Addiction, 2010

## Early Signs and Symptoms of Teen Use/Abuse

Behavioral changes – erratic behavior

Pay attention to child's attitude

- Argumentative, hostile

Disregard for household rules, curfews

Isolating and withdrawing from family and friends

Change in friends, deteriorating relationships

Evidence of lying or secrecy

Decline in academic performance

Decreased interest in sports, activities

Changes in weight, eating/sleeping patterns

Depression and fatigue

Missing household money, medication or alcohol

Bloodshot eyes or consistently runny nose, coughing, bronchitis

- Use of incense or deodorizers, eye drops, odors on clothing, hair or in bedroom

Dizzy and trouble walking

Difficulty in remembering recent events

Carelessness with grooming

Drug paraphernalia

- Clothing, posters, jewelry,... promoting drug use

**We need to be aware of the signs and symptoms of misuse and abuse and take positive action when there is a problem.**

### **Resiliency/Protective Factors\*:**

A sense of purpose and future  
Healthy expectations and a positive outlook  
- Spiritual foundations and relationships  
Having an opportunity to contribute and be seen as a resource  
- A sense of belonging, spiritual connectedness  
Effectiveness in work, play and relationships  
- “Playing together”, having fun together  
Self-esteem and an internal locus of control  
- Caring, support, acceptance, respect, openness, honesty, trust, inter-independence  
Problem solving/critical thinking skills  
Self-discipline - reinforce healthy behavior  
A relationship with a caring adult role model  
- Positive role models affect emotional growth - “Big Brothers Big Sisters”  
Supportive networks and social bonds  
A sense of humor  
Norms and public policies that support non-use

### **Give Prevention Messages to:**

Parents  
Adolescents  
Women  
Pregnant women  
Adults/ Older Adults

<p>* Adapted from ATOD Problem Prevention Curriculum, Medical Specialists CSAP Training System</p>
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### **General Approach to Prevention Messages\*:**

- Support healthy lifestyle choices for the individual and the family: doing well in school, getting a job, and being productive.
- Encourage good health habits (e.g., eating a healthy low fat diet, exercising, stress reduction, getting enough sleep, relaxing, bonding activities with family and friends.
- Incorporate age and gender-appropriate prevention activities wherever possible.
- Express concern about health problems and life consequences related to alcohol, tobacco and other drug (**ATOD**) misuse and abuse.
- Allow patient to describe his/her understanding and/or concerns about problems related to **ATOD** misuse and abuse.
- Correct misunderstandings (non-judgmental) and establish a partnership of trust

### **For Parents:**

- Talk to parents about the **resiliency factors** and encourage them to support their adolescents in school performance, setting goals, positive expectations, structuring free time, evaluating peer groups, build self-esteem, become involved in community service and church, enhance social skills, and decision-making ability.
- Educate parents about the risks of ATOD misuse and abuse in their children: impairment risks – judgment problems, drinking/driving, increased risks for accidents, risky sexual practices; health risks and life consequences.
- Educate parents regarding their own use as a risk factor for future ATOD use in their children. This could be an opportunity to present the Guidelines on Alcohol Consumption.

## Talk to your child about the dangers of drug use:

### High potency:

- Altered state – no longer in control
- Disinhibitory effect

### Adulterant;

- Unpredictable effects

### Problems in sporting activities:

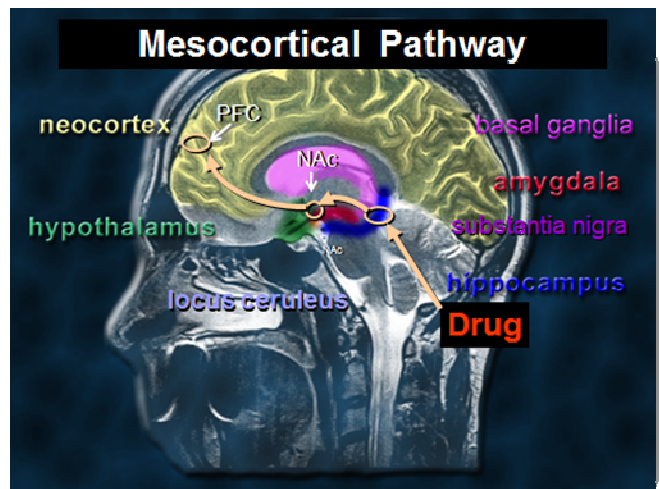
- Decreased coordination and performance ability
- Reduced exercise tolerance

### High risks for:

- Impairment and accidents
- Health problems

### Addiction:

- Effects on the mind and emotions



## Tips for Parents

- Be a good listener
- Give clear no-use messages about alcohol and other drugs
- Help your child deal with peer pressure to use drugs
- Get to know your child's friends and parents
- Monitor your child's whereabouts
- Supervise teen activities
- Maintain an open and honest dialogue with your child

## Past Month Use vs. Parents' Feelings About Substance Abuse

Past Month Substance Use	Strongly Disapprove	Somewhat Disapprove or Neither Approve nor Disapprove
Marijuana	4.9%	26.9%
Cigarettes	8.3%	45.3%
Alcohol	13.0%	40.0%

SAMHSA data

## Educational campaigns that stress personal responsibility and immediate health and impairment dangers of alcohol and other drugs use are effective prevention tools

### For Adolescents

- Talk to adolescents about their intentions and attitudes, their friends and peer pressure: "Do any of your friends use alcohol or other drugs?" "Have you ever been tempted to try alcohol or drugs with your friends?" (Role-play situations of refusing to use ATOD.) *Take the time with parents to discuss the importance of role-playing drug refusal situation with their adolescents.*
- Educate adolescents about the risks of ATOD use such as:
  - Drinking and drug use affects your judgment and is associated with serious incidents (e.g. motor vehicle, drowning, boating accidents), illegal acts (e.g. shoplifting) and high-risk sexual behavior (e.g. sexually transmitted diseases and AIDS).
  - The number one cause of death in teens is alcohol-related crashes. Teens should not ride in an automobile with a driver who has been drinking or using drugs. (Contingency plans should be made for transportation home.)
  - If you have a family member who has an ATOD problem, you may be at greater risk yourself and should consider not using alcohol or drugs.
  - There is no safe limit for tobacco use. Even chewing tobacco and snuff can cause serious health problems including cancer of the mouth, throat, esophagus...



- Not everyone drinks and does drugs. Many young people do not use mood-altering substances. Many youth take pride in personal responsibility.  
**"Everyone isn't doing it."**
- Many misleading and deceptive advertisements make smoking and drinking look glamorous, macho, successful, or athletic.

#### **For Women:**

- Support healthy lifestyle choices.
- Present information about sensible limits. Present the Guidelines for Alcohol Consumption.
- Educate regarding increased risk. Counsel about the effect of ATOD use on fertility, (e.g. fetal alcohol syndrome and effects), risk of osteoporosis, breast cancer, and liver failure at lower doses than men. Counsel about slower rates of alcohol metabolism than men, higher peak blood alcohol levels during the menstrual cycle and greater risk for impairment.
- Women may be more susceptible to high-risk sexual behaviors when they are under the influence of alcohol and other drugs, which may result in an unwanted pregnancy or a sexually transmitted disease including AIDS.

#### **For All Adults:**

- Support healthy lifestyle choices. Encourage good health habits and achieving stress reduction through exercise and other creative activities.
- Reinforce sensible limits. Present the Guidelines for Alcohol Consumption.
- Educate about health and impairment risks associated with increased use or use in high risk situations (e.g. driving, operating machinery,...).
- If the patient is an adult child of an alcoholic tell them that they are at greater risk for alcohol problems.
- Inform patient about medication interactions between alcohol and other drugs and to avoid concurrent use.
- Warn about the high risk of hepatitis and HIV/AIDS, with use of IV drugs.
- Educate that the use of alcohol and other drugs reduces people's ability to use safe sexual practices.
- If a patient is concerned about his/her spouse's (or other family member's) alcohol or drug use offer to make a referral for help.

#### **For Older Adults:**

- Support healthy lifestyle choices. Stress positive choices.
- Inform patient about changes in physiology with aging (e.g. decrease in water content of the body, slower metabolism) that can result in increased health consequences associated with mild to moderate regular use of alcohol (e.g., falls, confusion, memory problems, insomnia, depression, etc.).
- Inform patient about medication interactions between alcohol, OTC or prescription drugs and to avoid concurrent use.
- There are benefits to smoking cessation for all patients regardless of their age or number of years they have been smoking.

### **References and Additional Reading**

#### **Drug Information Web Sites:**

**Screening Questionnaires:** [www.goo.gl/G1TTNx](http://www.goo.gl/G1TTNx) or <http://www.uky.edu/~pjsamm1/index>  
**PowerPoint Presentation: Prevention of Alcohol and Other Drug Problems What We Can Do! A Program for Parents:** <http://www.uky.edu/~pjsamm1/PtPrevProg> or [goo.gl/G1TTNx](http://goo.gl/G1TTNx)  
[www.ccsa.ca](http://www.ccsa.ca) – Canadian Center on Substance Abuse; excellent resource for information  
[www.theantidrug.com](http://www.theantidrug.com) – Parents, the Anti-Drug; drug information, parenting advice, signs and symptoms for teen use/abuse, and resources for parents and other caring adults

[www.teens.drugabuse.gov](http://www.teens.drugabuse.gov) – NIDA for Teens: the Science behind Drug Abuse; Geared for teens, another interactive site that will engage youth in learning activities

[www.casacolumbia.org](http://www.casacolumbia.org) The National Center on Addiction and Substance Abuse at Columbia University has a lot of excellent information. This report may be of interest: “*Family Matters: Substance Abuse and The American Family*”

Hall, W. What research over the past two decades revealed about the adverse health effects of recreational cannabis use? *Addiction*:110;19-35, 2014

Seely, K, Moran, J. et.al. Marijuana-based Drugs: Innovative Therapeutics or Designer Drugs of Abuse? *Molecular Interventions*, (Review) 11(1) 36-51, Feb. 2011.

Fattore, L and W. Fratta, Beyond THC: The New Generation of Cannabinoid Designer Drugs, (Review) *Frontiers in Behavioral Neuroscience*, 5(60) 1-12, Sept. 2011.

Seely, K. et. al. Spice drugs are more than harmless herbal blends: A review of the pharmacology and toxicology of synthetic cannabinoids, *Progress In Neuro-Psychopharmacology and Biological Psychiatry in press 2014*.

Meier, M. et. al. Persistent cannabis users show neuropsychological decline from childhood to midlife, *Proc. of Natl. Acad. of Sci.* 109(40) 15980-15988, Oct. 2012.

National Institute of Drug Abuse: *Marijuana Abuse: NIDA Research Report 2010*;

Pierre, J. Cannabis, Synthetic cannabinoids, and psychosis risk: What the evidence says. *Current Psychiatry*; 10(9) 49-57, 2011.

[www.drugabuse.gov/ResearchReports/Prescription/Marijuana](http://www.drugabuse.gov/ResearchReports/Prescription/Marijuana)

Schwartz, R.H. *Marijuana: a Decade and a Half Later, Still a Crude Drug with Underestimated Toxicity*, *Pediatrics*, 109: 284-289, 2006.

Breiter H., et.al. *Cannabis Use Is Quantitatively Associated with Nucleus Accumbens and Amygdala Abnormalities in Young Adult Recreational Users*, *Journal of Neuroscience*, 34(16):5529, 2014.

Volkow N.D. *Adverse Health Effects of Marijuana Use* *New England Journal of Medicine*, 370:2219-2227 June 5, 2014.

Schatman, M.E. *Medical Marijuana: State of the Science*, Feb. 6, 2015.

<http://www.medscape.com/viewarticle/839155>

Bell, H. *Medicine or Menace?*, *Minnesota Medicine*, p20-27 April 2014.

Saraghi, H. \* E.V. Hersh, Potential diversion of local anesthetics from dental offices for use as cocaine adulterants *JADA*, 145(3):256-259, 2014.

National Institute of Drug Abuse: *Methamphetamine: Abuse and Addiction: NIDA Research Report 2006*; [www.drugabuse.gov/ResearchReports/Methamph/Methamph](http://www.drugabuse.gov/ResearchReports/Methamph/Methamph)

Colfax, G.N. Methamphetamine: Important Clinical Guidance for Healthcare Providers, *Medscape WebMD 2005* [www.medscape.com/viewarticle/514193](http://www.medscape.com/viewarticle/514193).

Romanelli, F., Smith K. M., and Jennings P. R. Club Drugs: The Latest Rave; *Advance for Physician Assistants* 11(1-2) 24-32, 2003.

National Institute of Drug Abuse Web site: <http://www.drugabuse.gov/drugs-abuse/club-drugs>. Excellent information on Club Drugs including: Alcohol, LSD (Acid), MDMA (Ecstasy), GHB, GBL, Ketamine (Special-K), Fentanyl, Rohypnol, amphetamines and methamphetamine.

Ross, Watson, Goldberger; “Bath Salts” Intoxication: *NEJM* 365:967-968, 2011.

Prosser, JM; The Toxicology of Bath Salts: A Review of Synthetic Cathinones; *J. Med. Toxicol.* 8(1):33-42, Mar. 2012.

Gunderson, E., et.al. Review: Substituted Cathinone Products: A New Trend in “Bath Salts” and Other Designer Stimulant Drug Use; *J. Addict. Med.* 7(3)153-162, 2013

Miller, J. W., et.al. *Binge Drinking and Associated Health Risk Behaviors Among High School Students*. *Pediatrics*. 119: #1; 76-85, 2007.

*Policy Statement - Alcohol Use by Youth and Adolescents: A Pediatric Concern*. *Pediatrics*. 125: #5; 1078-1087, 2010.

Miller, J. W., et.al. *Binge Drinking and Associated Health Risk Behaviors among High School Students*. *Pediatrics*. 119: #1; 76-85, 2007.

Inaba, D. and Cohen, W., Uppers, Downers, All Rounders: Physical and Mental Effects of Psychedelic drugs, 8<sup>th</sup> edition, <http://www.cnsproductions.com>.