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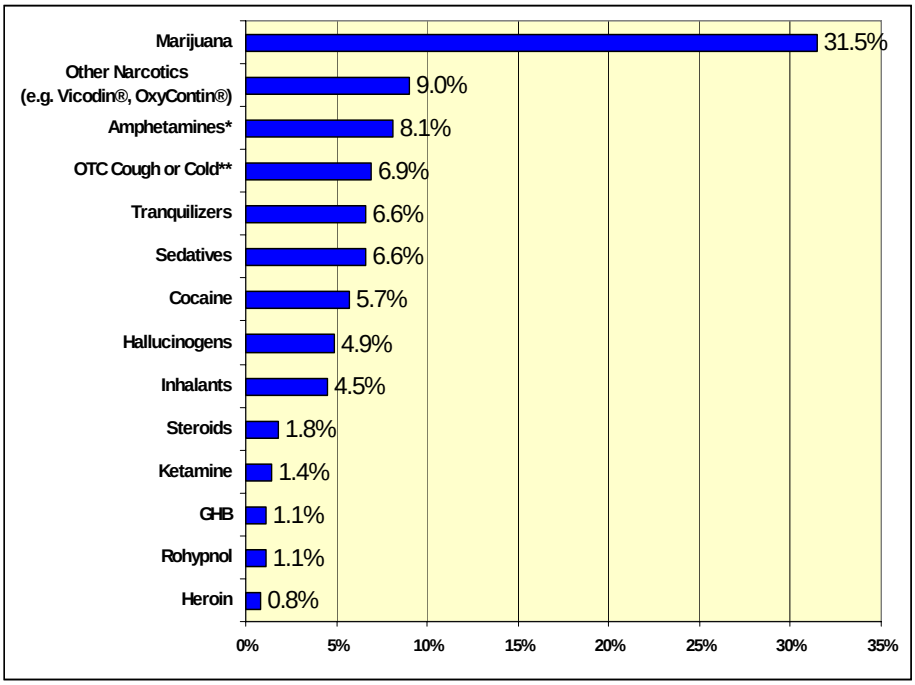
INSIDE

NONMEDICAL USE OF NARCOTIC DRUGS SUCH AS VICODIN® AND OXYCONTIN® MORE PREVALENT AMONG U.S. HIGH SCHOOL SENIORS THAN ANY ILLICITLY USED DRUG EXCEPT MARIJUANA

While marijuana continues to be the most prevalent illicit drug used among U.S. high school seniors, the nonmedical use of narcotic drugs is the second most prevalent drug used among this population, according to data from the national 2006 Monitoring the Future study. Nearly one in ten twelfth grade students reported using prescription-type narcotic drugs, such as Vicodin® (9.7%) and OxyContin® (4.3%), in the past year without a doctor's order. Other drugs used by more than 5% of 12th graders include amphetamines* (8.1%), over the counter cough or cold medicines (6.9%), tranquilizers (6.6%), sedatives (6.6%), and cocaine (5.7%). The nonmedical use of prescription pain relievers is also the second most prevalent illicitly used drug among the U.S. household population ages 12 and older.**

Percentage of U.S. 12th Grade Students Reporting Past Year Use of Drugs (Other Than Alcohol and Tobacco), 2006



Percentage of U.S. 12th Grade Students

***Amphetamines include Ritalin® (4.4%) and methamphetamine 2.5%).**
****Used for the explicit purpose of getting high.**

Information obtained from CESAR FAX
January 15, 2007, Vol. 16, Issue 2

TOXICOLOGY TID-BITS

By Kenn Meneely, almost retired
Oregon State Police Springfield Lab

"All substances are poisons; there is none which is not a poison. The right dose differentiates a poison from a remedy" from Paracelsus 1400's

1. Administration of a drug by intramuscular or subcutaneous routes involves passive diffusion. The rate of absorption is limited by the capillary bed at the injection site and solubility of the drug. If blood pressure is decreased, absorption will be prolonged. If blood flow is increased, absorption will be increased.

2. The excretion of amphetamine/methamphetamine is pH dependent. Under acidic conditions, the excretion rate (amount eliminated from the body) can be increased by 5% and under basic conditions, reduced to 1%.

3. The metabolism of meth:
amphetamine > hydroxymethamphetamine > norephedrine > hydroxy norephedrine

The intensity of the psychosis is more closely related to norephedrine and hydroxy norephedrine and <u>not</u> to the parent compound (meth)

4. You are already familiar with the increased effect of cocaine and alcohol;
NEW >>>.... When MDMA was co-administered with alcohol, there was a 13% INCREASE in MDMA levels as compared when MDMA was administered alone.

5. Factors that can effect the drug response are drug formulation, route of administration, gender, age weight, disease, other drug interactions:

a. Genetic: the action of the liver enzymes or deficiency of the hepatic cytochrome P450 - ~60% of the population are "slow metabolizers" due to enzyme imbalance. Drugs that are effected by this action can be more "toxic" due to an accumulation of the drug. Some hepatic enzymes in females are more active causing some drugs like oxazepam to be eliminated 1 ½ times faster than in males. (reducing the drug's effects)
Individuals are classified by their genetic CYP2D6 enzyme activity as;
Extensive Metabolizers (EM)
Intermediate Metabolizers (IM)
Poor Metabolizers (PM)
"Poor Metabolizers" occur in 8% of the white population, 10% in African/Asian population.
The "activity" of the CYP2D6 enzyme for poor metabolizers has been shown to have a higher risk of toxicity>>
>>>translation: In a "poor metabolizer - methamphetamine /amphetamine levels can accumulate leading to a greater driving risk

b. Increased age changes the rate of absorption due to gastric secretions, blood flow

c. The elimination of drugs in the body decreases in those with hepatic diseases resulting in an accumulation of the drug

6. The barbiturates are considered an antianxiety, sedating drug. They exert their effects on excitatory and inhibitory synaptic neurotransmission. They decrease the excitatory amino acid release and post-synaptic response by blocking the excitatory glutamate response.

7. Diazepam (Valium) is rapidly absorbed into the body (lipophilic or fat-loving compound). Lorazepam is less lipophilic resulting in a slower absorption into the body. One would conclude that lorazepam would have a longer duration than diazepam. **Contradiction: diazepam's half-life is 30 hrs vs lorazepam's half-life is 12 hrs.** One would think that diazepam would be the longer lasting drug....not so:

CONCLUSION: a long elimination half-life does not necessarily imply long duration of action

8. Benzodiazepines (Valium, Librium etc) are metabolized by the hepatic enzymes P450. Ironically, in combination with other benzodiazepines (eg midazolam) a potential inhibition of the metabolism occurs causing an **<u>INCREASE</u>** in blood-drug level.

9. Cocaine inhibits the **<u>presynaptic reuptake</u>** of the neurotransmitter norepinephrine (NE), serotonin (SE) and dopamine (DO) at synaptic junctions. This increased concentration of NE, SE and DO at the synaptic cleft results in the stimulation effect.

10. When cocaine is coadministered with alcohol, cocaethylene (CE) is formed by the liver by trans esterfication. Unlike some compounds that produce non-impairing metabolites, this lipophilic compound crosses the blood-brain barrier and contributes (adds to) and **<u>pro-longs</u>** the psychological effects of cocaine.

11. Marijuana attacks specific receptor sites. CB1 is found in the brain while CB2 is found in the immune tissues. This results in the "extended impairment" of Marijuana.
In a controlled study, blood-serum THC levels declined after ingestion from 44 micrograms (5 min), 11 micrograms (30 min), 5 micrograms (90 min), and **<u>UNDETECTABLE AT 150 MINUTES. More than 60% of the study group still FAILED performance testing at 150 minutes. Conclusion: Impairing effects can be present long after blood-drug levels have disappeared.</u> (R. Baselt)**

12. The bioavailability of Marijuana is greater by smoking than oral ingestion (24% vs 4%).

13. Food products containing Marijuana can produce low values of THC in the urine, but typically not high enough to create positive results.

14. Marijuana produces more than 20 metabolites. Two are psychoactive metabolites: 11-hydroxy and 8-hydroxy THC.

(Continued from Page 2 – Toxicology Tid-Bits)

15. Performance impairment from THC was the equivalent of a .07% alcohol level. (R. Baselt)

16. Morphine's half-life is 1.7 hrs but the conjugated metabolite is also active, extending the drug's effectiveness.

Codeine is about 20% less effective than morphine. To be effective as an analgesic, it must be metabolized to morphine. The hepatic (liver) enzymes P450 causes this conversion, **however**……10% of Caucasians are deficient of this enzyme (poor metabolizers) causing the codeine to be relatively ineffective!

17. Methadone's long half-life (35 hrs) typically works well for the heroin maintenance program (similar to the time release pill). Reported deaths have occurred due to the individual going off (or reducing) dosing, then continuing back to "therapeutic" levels.

18. Should quantitation (concentration) of drugs become an issue: Many drugs are **UNSTABLE** in biological specimens. Even with chemical preservatives, cocaine will enzymatically break down to benzoylecgonine (BE) and methylecgonine (ME). This is why the "toxicity" of cocaine correlates poorly with blood levels. Individuals have attempted to obtain vitreous (eye fluid) specimens to avoid deterioration, but have learned that cocaine will actually INCREASE in the eye fluid. Please note: attempts to obtain vitreous fluid for DUII's is not encouraged!

19. Hospital BA's should be used with CAUTION!
Latest research shows that the hospital BA (serum) can be as much as 22% higher than the crime lab BA (whole blood). Regretfully, this same research pointed out that many hospitals only test the sample ONE TIME vs the crime lab as duplicate testing. Also, certain diseases (hyperlipidemia) that only interfere with the hospital BA can create **false positives**.

20. "Field Test" urine kits have been explored however the accuracy rate varies from 37-92% with the major failures being with the amphetamines, THC and opiates.

DUSTING

By Lieutenant John Diehl
DPSST

"Dusting" seems to be cropping up in the news again with the January 7th death of a 16 year old girl who was found in the family hot tub. It was apparent that, while in the hot tub, she had taken a couple of hits of "Dust Off". "Dust Off" is an aerosol electronics cleaner. She ultimately passed out, slipped under the water and drowned. In this instance, this young lady was using this inhalant to induce vomiting in an effort to stay thin. All too often, though, this form of huffing is used in an attempt to become light-headed or "high". With the advent of news coverage of this tragic death, it would be of no surprise to see it happen again and again.

The word "Dusting" comes from the actual electronics cleaning product, Dust Off. Kids seem to think that it's nothing more than canned air. They seem oblivious to the fact that "Dust-Off" contains a deadly chemical called 'difluoroethane', a fluorinated hydrocarbon which is a Freon type gas. Inhaling "Dust Off" can and does cause what has been termed as "sudden sniffing death". Typically this describes the process of inhaled hydrocarbons provoking irregular heart rhythms in the victim, which leads to sudden fatal cardiac arrest. It also replaces oxygen in the breath which can cause unconsciousness and eventually death. The high from the gas paralyzes the user for several minutes and gives a feeling of euphoria but death can come without warning. With all the dangers, this has become a cheap and easily accessible high for young people typically between the ages of 9 and 16 although there have been recorded usages by children as young as 7 or 8 years of age. Peak age of abuses appears to be 14 to 16.

The high seems to last somewhere around 10 seconds. The user may complain of a frozen tongue, mouth or throat. This is due in large part to the Freon type effects. Other typical effects can include short-term memory loss, emotional instability, cognitive impairment, slurred speech, gait ataxia, staggering or stumbling, nystagmus, tremors, unilateral or bilateral hearing loss and/or loss of sense of smell. Additional signs can be spots or sores around the mouth, red or runny eyes or nose, chemical breath odor, drunk, dazed or dizzy appearance, nausea, loss of appetite, anxiety, excitability and/or irritability. Users can get high several times over a short period because the inhalant is short-acting with a rapid onset.

Death can come after the first use, the 10th use or even the 100th use. There is no predictability as to how little or how much it takes to cause death. Death can come from induced heart arrhythmia, lack of oxygen to the brain or even asphyxia due to vomiting while losing consciousness.

It's again evident that we need to pay additional attention to the signs of use. Cans of "Dust Off" or other aerosols in the vehicles, rooms, lockers of young people are obvious signs of use that are often overlook due common use in society. In a world where we are attentive to the common drugs of abuse (meth, cannabis, etc), our attention needs to be expanded to even the most innocuous substances.

PUT A SPIKE THROUGH SPYKES: TAKE NEW PRODUCT OFF STORE SHELVES!

Put a Spike through Spykes: Take new product off store shelves! Packaged in tiny 2-ounce, multi-colored bottles and containing 12 percent alcohol, Spykes is a new malt beverage product by Anheuser-Busch that shouldn't be sold in Oregon or anywhere else. Spykes mixes malt liquor with ginseng, caffeine and guarana extracts. It comes in four sweet flavors: Spicy Lime, Spicy Mango, Hot Melons and even Hot Chocolate.

Because they are small and easily hidden in a pocket or backpack – and inexpensive at $.99 a bottle - we are asking that if you see them in stores, request that they be taken off the shelves. We are asking our local prevention partners to forward this on to parents and school officials. These products are not recognizable as alcohol and they can easily be hidden in pockets when attending school functions or other youth activities.

Information obtained from Oregon Partnership

HIGH SCHOOL SENIORS MORE LIKELY TO USE ILLICIT DRUGS THAN ALCOHOL IN CARS

High school seniors are more likely to use illicit drugs than alcohol in a car, according to finding from the 2006 national Pride Survey. Ten percent of 12th graders reported that the usual place they drink alcohol is in a car, while 13% said they usually use marijuana and 14% said they use illicit drugs in a car. Similar results were found for 10th and 11th grade students, while 9th graders were about equally likely to use alcohol or illicit drugs in a car. While the survey question did not ask if the student was driving, the findings suggest that "illicit drugs may be more prevalent than alcohol in teenage impaired driving."

Information obtained from CESAR FAX
February 19, 2007, Vol. 16, Issue 7

DUI: THE $10,000 RIDE HOME

If you need any more reasons not to drink and drive, consider this: A driving-under-the-influence conviction is a financial wrecking ball. A typical DUI costs about $10,000 by the time you pay bail, fines, fees and insurance, even if you didn't hit anything or hurt anybody.

The penalties are intended to be discouraging. Alcohol played a role in nearly 40% of U.S. automobile fatalities in 2005. That's 16,885 deaths, a figure nearly unchanged over the past decade, according to the National Highway Traffic Safety Administration.

But states are cracking down. The last of the 50 states have lowered their thresholds for DUI to 0.08% blood-alcohol content. Police arrested 1.37 million people last year for driving under alcohol's grip, about one in every 140 licensed drivers, the FBI says.

But forget the humiliation and hassle for now. Forget the toll on lives. Just look at what a DUI does to your wallet:

Bail. You'll have to shell out bail to get released after your arrest. **Cost: $150-$2,500.**

(Costs shown in this article are for first-time DUI offenders. Costs and penalties are often more severe if you're a repeat offender or your blood-alcohol content is above 0.15%.)

Towing. When you're arrested, your car gets towed. In some places, retrieving it costs only $100 or so. But Chicago, sensing a moneymaking opportunity, ensures it really hurts: The city charges about $1,200 for the first 24 hours and $50 for each additional day of storage, says Chicago DUI defense attorney Harold Wallin. If you can't afford to get your car after 30 days, the city auctions it and then comes after you with a civil judgment for the impoundment bill, if the car's sale didn't cover the fees. Some cities around Chicago are doing the same, Wallin says. **Cost: $100-$1,200.**

Insurance. One of the biggest hits a drunken driver takes is in his insurance premiums.

"If you get a DUI conviction, it will likely affect your insurance rates for (at least) the next three to five years," says Carole Walker, the executive director of the Rocky Mountain Insurance Information Association.

How much? "They could double, triple, even quadruple," Walker says. Some companies such as State Farm Insurance will move you to a portion of the company that handles higher-risk policies.

But "many insurance companies will drop you even upon arrest, regardless of conviction," says Steven Oberman, a Knoxville, Tenn., DUI attorney. Either way, you'll pay for it. For example: Illinois estimates that the high-risk insurance costs an additional $1,500 a year for three years, on average.

(Continued from Page 4 – DUI: The $10,000 Ride Home)

But the financial impact of that DUI doesn't end after three years: You'll likely have to go as many as five more years, incident-free, to get back to the "preferred" status with the lowest premiums that you perhaps once enjoyed. In short, "it can be up to eight years afterward" that the DUI can affect you, Walker says. Ouch. **Cost: $4,500 or more.**

Legal fees. Attorneys might charge as little as $500 to enter a quick plea. But with so much at stake, many people accused of DUI fight the charge. That's when things start to add up.

Attorney Oberman says legal representation can cost anywhere from $2,500 to $25,000, depending on the rigor and complexity of the defense. But that's not the only fee. Oberman says a vigorous defense sometimes requires hiring an investigator ($1,000 to $3,000) to examine the arrest scene to poke holes in the arresting officer's story. There may be a need for expert witnesses who can testify about the accuracy, or lack thereof, of field sobriety tests ($3,000 and up). **Cost: $2,000-$25,000.**

Fines. Fines and court fees for breaking the law range from state to state, from a minimum of $300 in Colorado and $685 in Washington to as much as $1,200 in Illinois.
Cost: $300-$1,200.

Alcohol evaluation. An evaluation is usually required of anyone who is sentenced by the court for drunken driving.
Cost: $181 in Colorado, for example.

Alcohol education and treatment. If you're convicted, you usually have to undergo an education or treatment program, especially if you want to get your license again. Treatment can vary hugely in scope and extent. **Cost: $350-$2,000 for basic treatment.**

License reinstatement fees. Once a driver has shown, by completing courses and treatment, that he deserves his license back, the state charges him for the reissue.
Cost: $60-$250.

Additional fees. Colorado, for example, will slap you with myriad other fees:

- $10 jail filing fee.
- $78 Victim Assistance Fund payment.
- $25 Victim Compensation Fund payment.
- $90 for the Law Enforcement Assistance Fund.
- $15 Brain Injury surcharge.
- $25 Victim Impact Panel assessment.

If you had been particularly drunk, a judge might order that an ignition lock be placed on your car to test your breath and prevent your car from starting if you're intoxicated. In Tennessee, for example, this costs $65-$70 a month.
Cost: $308 and up.

The unexpected and sometimes unquantifiable costs
Finally, there are several other costs that you need to remember:

Life-insurance-premium increases. With a DUI arrest or conviction, you could see an increase in your life-insurance bills because insurers may ask if your license has ever been suspended.

Lost time = lost money. People who've gotten DUIs report missing a lot of work (and therefore losing a lot of income) dealing with their mistake, as a result of court dates, community service and sometimes a jail sentence. That doesn't even count the lost free time.

Lose the license? Lose the job. For many people who need to drive to and from their jobs – much less those who drive for their jobs – losing a license can be devastating. And here's a shocker: In several states, including Washington, your license may be suspended for 90 days simply upon your arrest for DUI, regardless of whether you end up being convicted. If you're convicted, your license can be revoked for a year, or longer in other states, until you complete all the court's requirements and pay all fines.

No drunks in the cockpit or the ER. If you're a doctor, stockbroker, airline pilot, lawyer or nurse, a DUI conviction could affect the status of your professional license, Oberman said.

It's not good for the résumé. A DUI lingers on your criminal record for employers to see if they do a background check, harming your future job prospects. In Washington state, a DUI conviction also stays on your driving record for 14 years, and an employer can ask for and receive that information.

Adding it up
So in the end, how much does a DUI cost?

The STOP-DWI Office in Erie County, N.Y., estimates that a drunken-driving conviction there costs $9,500 – if no one is injured and there's no accident. Colorado estimates about the same thing.

Illinois' secretary of state pegs the amount closer to $10,600 but says the figure would be nearly $15,000, on average, if people counted the lost income from all the hassles.

Any way you slice it, it's a pricey mistake.

But the biggest thing that's lost isn't money, Oberman says. The biggest thing here is the stigma that you get. And the stigma doesn't have a financial cost. But the stigma does have both a social cost and an employment cost."

Information obtained from MSN Money by Christopher Solomon

The DRE School is scheduled for May 1-11, 2007, at the Oregon Military Academy in Monmouth.

Certification Training is scheduled for May 30-June 2, 2007, and June 6-9, 2007, at the ODOT Building in Portland.

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13TH ANNUAL IACP
"Drugs, Alcohol, & Impaired Driving Conference"

July 31 – Aug 2, 2007
Las Vegas, Nevada
For more information, visit the conference website at www.decp.org