

**WELCOME!**

**Prescription, Over-the-Counter,  
and “Other” Drugs**



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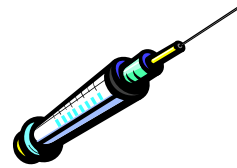
**Purpose**

To improve your ability to recognize employees/customers who may be under the influence of drugs and/or alcohol and appropriate action to take when you encounter that person.

## Goal

To identify employees/customers who are impaired by alcohol and/or drugs in order to make the workplace safer.

## DRUGS IN SOCIETY



## Minnesota Student Survey

(High School Senior Survey)

DRUG	PAST YEAR
Marijuana*	20%
Inhalants	3%
Prescription Drugs	8%
Amphetamines	5%
Methamphetamine	3%
Cocaine/'crack'	4%
MDMA/'ecstasy'	2%
LSD/PCP	4%
Heroin/Opiates	3%
Barbiturates/Tranquilizers	3%

\* 12% reported use in last 30 days

## U.S. Statistics

- 21% of 16-20 year olds reported driving under the influence in the last 12 months
- 11,651 Deaths in 40 Metropolitan areas
- 15.1 million abuse prescription drugs (up from 7.8 million in last decade)
- 70% of adult drug users are employed
- 1 in 6 high school seniors reported driving after using alcohol or drugs (Minnesota Student Survey)

## **University of Tennessee Study:**

**40% of drivers receiving emergency treatment had used drugs prior to their crashes**



**A study of young male drivers fatally injured in California crashes found that 51% had used drugs other than alcohol.**



## **Partnership for a Drug-Free America**

- **20% of teenagers has abused a prescription painkiller to get high**
- **10% of teenagers has abused an OTC product (cough medicine)**

**The number of young people who abused over-the-counter cold medicines is comparable to use of LSD and much greater than that for methamphetamine among the age group.**

**Substance Abuse and Mental Health Services Administration (SAMHSA)**

## The Cost

- Employees who abuse drugs suffer from income reductions of up to 18.7%
- Absenteeism among drug users is 16 times greater than non users
- Employees that use drugs take 3 times as many sick benefits as other workers.
- 43% of CEOs surveyed estimated that drug and alcohol use cost them up to 10% of their payroll.

## What is a “drug”?



## Definition

Any substance which, when taken into the human body, can impair the ability of the person to perform designated tasks safely.



## From the Pharmacy....

- **Over-the-counter** -- do not require a prescription and are readily available in a variety of stores.
- **Legend drugs** – regulated substances that require a prescription.
- **Controlled substances** -- require a prescription from a licensed prescriber who hold a registration with the U.S. Drug Enforcement Administration.

### **Examples of Commonly Abused Over-The-Counter Medications**

- Allerest Maximum Strength - (Pseudoephedrine and Chlorpheniramine)
- Actifed - (Diphenhydramine and Pseudoephedrine)
- Vicks Formula 44 - (Dextromethorphan)
- Benadryl - (Diphenhydramine)

### **Examples of Commonly Abused Over-The-Counter Medications**

- Contac Cough Liquid - (Guaifenesin and Dextromethorphan)
- Dayquil (Vicks) - (Phenylpropanolamine and Brompheniramine)
- Dexatrim - (Phenylpropanolamine)
- Dimetapp - (Brompheniramine)
- Dramamine - (Meclizine)
- Motrin - (Ibuprophen)
- ChlorTrimeton - (Chlorpheniramine)

### **Examples of Commonly Abused Over-The-Counter Medications**

- Nyquil (Vicks) - (Doxylamine Succinate, Dextromethorphan, Acetaminophen, Pseudoephedrine)
- Robitussin-DM - (Guaifenesin and Dextromethorphan)
- Sudafed - (Pseudoephedrine)
- Tylenol Flu Maximum Strength - (Acetaminophen, Dextromethorphan, and Pseudoephedrine)
- No-Doz - (Caffeine)

### **Examples of Most Often Prescribed Drugs**

- |            |            |
|------------|------------|
| • Paxil    | • Ambien   |
| • Dilantin | • Xanax    |
| • Ritalin  | • Darvocet |
| • Vicodin  | • Klonopin |
| • Prozac   | • Zoloft   |

## Central Nervous System Depressants



Alcohol  
Barbiturates  
GHB

Anti-anxiety Tranquilizers

Paxil  
Ambien  
Many Others



## General Indicators of CNS Depressants

- Drowsiness
- Thick, slurred speech
- Uncoordinated
- Fumbling
- Slow, sluggish reactions

## DIPHENHYDRAMINE



## DIPHENHYDRAMINE HCL

(Benadryl, Nytol, Unisom)

- An OTC antihistamine, sedative and hypnotic, also used for the treatment of side effects of typical antipsychotics.
- Diphenhydramine blocks the effect of histamines, making it a popular choice for treatment for allergy symptoms
- Rhinitis
- Hives
- Motion sickness
- Insect bites and stings.

### **DIPHENHYDRAMINE HCL**

- It is frequently used when an allergic reaction requires fast, effective reversal of the often dangerous effects of a massive histamine release.
- Diphenhydramine has sedative properties. The drug is an ingredient in many sleep aids (Unisom gelscaps.)
- Several generic and store brands of antihistamines and sleep aids also contain solely diphenhydramine.

### **DIPHENHYDRAMINE HCL**

- Topical formulations of diphenhydramine are available, including creams, lotions, gels, and sprays.
- They are used to relieve itching, and have the advantage of causing much less systemic effect (i.e. drowsiness) than oral forms.

### **Diphenhydramine Intoxication**

- |   |  |
|---|--|
| <ul style="list-style-type: none"><li>• Profound drowsiness</li><li>• Possibilities of motor impairment (ataxia)</li><li>• Dry mouth and throat</li><li>• Flushed skin</li><li>• Rapid or irregular heartbeat (tachycardia)</li><li>• Blurred vision at nearpoint due to lack of accommodation (cycloplegia)</li><li>• Abnormal sensitivity to bright light (photophobia)</li></ul> | <ul style="list-style-type: none"><li>• Constipation</li><li>• Pupil dilation (mydriasis)</li><li>• Urinary retention (ischuria)</li><li>• Difficulty concentrating</li><li>• Visual disturbances</li><li>• Hallucinations</li><li>• Confusion</li><li>• Erectile dysfunction, and</li><li>• Delirium</li><li>• Twitching; Severe, prolonged twitching and muscle spasm have also been experienced</li></ul> |
|---|--|

### **DIPHENHYDRAMINE HCL**

- Diphenhydramine is a component of the recreational form of heroin known as "cheese" or "chiva".
- Described by many as "dreaming while awake" involving visual and auditory hallucinations which often cannot be readily distinguished from reality.
- High dose can cause hallucinations. Inexperienced users of hallucinogens are liable to panic.
- Other CNS effects include confusion and temporary amnesia.

## Xanax (alprazolam)



## Xanax (alprazolam)

Xanax is in a group of drugs called benzodiazepines.

Xanax affects chemicals in the brain that may become unbalanced and cause anxiety.

Xanax is used to treat anxiety disorders, panic disorders, and anxiety caused by depression.

## Klonopin (clonazepam)



## Klonopin (clonazepam)

Clonazepam is in a class of drugs called benzodiazepines.

Clonazepam affects chemicals in your brain that may become unbalanced and cause seizures or symptoms of panic disorder.

Clonazepam is used to treat seizures and panic disorder.



## Central Nervous System Stimulants



Cocaine

Ritalin

Amphetamines

Khat

Methamphetamine

Adderall



**“You swallow Adderall to study and snort it for fun”**

*Teenage Girl  
New York Magazine*

## General Indicators of CNS Stimulants

- Restlessness
- Anxiety
- Euphoria
- Talkativeness
- Excitation
- Bruxism
- Body tremors
- Exaggerated reflexes
- Loss of appetite



## Dissociative Anesthetics

PCP (Phencyclidine) and its Analogs



Ketamine

Dextromethorphan

Ketaject

Vetalar



## General Indicators of Dissociative Anesthetics

- Blank stare
- Loss of memory
- Perspiring heavily
- Warm to touch
- Incomplete, slurred verbal responses
- Cyclic behavior
- Agitated
- Rigid muscle tone
- Disoriented
- Nonresponsive
- Chemical odor



## DEXTROMETHORPHAN



**The cough suppressant DXM is found in more than 140 cough and cold medications available without a prescription.**

**When taken in large amounts, DXM can cause disorientation, blurred vision, slurred speech and vomiting.**

## DEXTROMETHORPHAN

**DXM is rapidly absorbed and metabolizes in 15–60 minutes.**

**Administration of DXM can trigger a histamine release (an allergic reaction).**

## DEXTROMETHORPHAN

Side-effects of DXM use can include

- Body rash/itching
- Disassociation
- Nausea
- Drowsiness
- Dizziness
- Excitation
- Vomiting
- Blurred vision
- Dilated pupils
- Sweating, fever
- Hypertension
- Shallow respiration
- Diarrhea
- Urinary retention
- Increases in pulse, blood pressure, body temp

## DEXTROMETHORPHAN

**DXM, when consumed in low recreational doses (under 200 mg), is described as having a euphoric effect.**

**With higher doses (400 mg), intense euphoria (or dysphoria), vivid imagination, and closed-eye hallucinations may occur.**

**With very high doses (600 mg and over), profound alterations in consciousness, often out-of-body experiences or temporary psychosis.**

## Narcotic Analgesics



- Heroin
- Oxycontin
- Morphine
- Codeine
- Vicodin
- Demerol
- Methadone
- Darvon



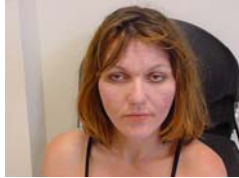
## Potency of Opiates Relative to Morphine

- Heroin 2x
- Codeine 1/8x
- Demerol 1/10x
- Percodan =
- Fentanyl 8x
- Alpha-Methyl Fentanyl (China White) 80x
- Methadone 1/2x (Long Acting)



## General Indicators of Narcotic Analgesics

- “Track marks”
- “On the nod”
- Slowed reflexes
- Low, slow, raspy speech
- Facial itching
- Dry mouth
- Euphoria
- Flaccid muscle tone



## METHADONE

- Methadone HCl is a narcotic agonist used to treat opiate addiction either through maintenance or withdrawal.
- It can also be used to treat pain



## Inhalants



Gasoline  
Glues  
Paint (Toluene)  
Hair Spray

Anesthetic Gases



## General Indicators of Inhalants

- Odor of the inhaled substance
- Dizziness, numbness
- Possible traces of the substance around the face and nose
- Bloodshot, watery eyes
- Distorted perception of time and distance
- Confused, disoriented appearance
- Light headedness
- Flushed face, possible sweating
- Intense headaches
- Slow, thick, slurred speech
- Nausea
- Non communicative
- Floating sensation

## Cannabis



- Marijuana
- Hashish
- Hashish Oil
- **Marinol**



## Cannabis

The primary psychoactive ingredient in Cannabis is:

**Delta-9 Tetrahydrocannabinol (THC)**

## General Indicators of Cannabis

- Odor of marijuana
- Impaired perception of time and distance
- Marked reddening of whites of eyes
- Body tremors
- Disorientation
- Impairs attention
- Relaxed inhibitions



## **“WATER DRUNK”**

- Normal hydration is 30 ml/kg body weight per day
- Huge water intake creates insufficient electrolyte concentration
- Hypertension, V-Fib, MI
- Can appear as alcohol intoxication

## **“Energy” Drinks**

## **High Fructose Corn Syrup and Caffeine**



## **HIGH FRUCTOSE CORN SYRUP**

- Tooth decay
- Mood swings
- Hypertension
- Hyperacidity
- Hyperactivity
- Causes breakthrough diabetes (Type I and/or II)

## CAFFEINE

- Caffeine is a stimulant in humans.
- Caffeine is also called guaranine (guarana), mateine (mate), and theine (tea).
- It is found in the leaves and beans of the coffee plant, in tea, yerba mate, and guarana berries, and in small quantities in cocoa.
- Overall, caffeine is found in the beans, leaves, and fruit of over 60 plants, where it acts as a natural pesticide that paralyzes and kills insects feeding upon them.

## CAFFEINE

**Caffeine is the world's most widely consumed psychoactive substance.**

**In North America, 90% of adults consume caffeine daily.**

## CAFFEINE

Milk Chocolate (6 oz. bar)	25 mg
Espresso, 1 oz shot	40 mg
Brewed tea, 8 oz	50 mg
Coca-cola, 20 oz bottle	57 mg
Red Bull, 8.3 oz can	80 mg
Brewed coffee, 12 oz cup	200 mg
Mountain dew 64 oz "Big Gulp"	294 mg

-National Geographic, Jan '05

**Guarana, a prime ingredient of energy drinks, contains large amounts of caffeine**

## CAFFEINE

- Caffeine makes pain relievers 40% more effective in relieving headaches and helps the body absorb headache medications more quickly.
- It is also used in the treatment of migraine and cluster headaches as well as to overcome the drowsiness caused by antihistamines.

## CAFFEINE

- Caffeine in large amounts, especially over an extended period of time, can lead to caffeine abuse or dependency. Combining physical addiction and mental conditions.
- Because caffeine increases the production of stomach acid, high usage over time can lead to peptic ulcers, erosive esophagitis, and gastroesophageal reflux disease.

## CAFFEINE INTOXICATION

### Can result in a state of CNS overstimulation

- |                                       |                            |
|---------------------------------------|----------------------------|
| Restlessness                          | Hyperreflexia              |
| Nervousness                           | Irregular/rapid heart beat |
| Excitement                            | Psychomotor agitation      |
| Insomnia                              | Muscle twitching           |
| Flushing of the face                  | Increased urination        |
| Gastrointestinal disturbance          |                            |
| A rambling flow of thought and speech |                            |

## GINSENG

- **Ginseng is promoted as a product that increases the body's resistance to stress, a anti-carcinogenic and antioxidant (although animal experiments to determine whether longevity and health were increased in the presence of stress gave negative results).**

## GINSENG

- Ginseng's most common side effects are nervousness and excitability. The ability to concentrate may be decreased, and blood sugar may decrease to abnormally low levels (hypoglycemia).
- Occasionally, there have been reports of more serious side effects, such as asthma attacks, increased blood pressure, palpitations, and, in postmenopausal women, uterine bleeding. To many people, ginseng tastes unpleasant.
- Ginseng may cause an increased sensitivity to pain.
- Ginseng has been shown to be a stimulus to the body and has been forbidden in some athletic competitions.



## Minnesota BCA Lab Study



**235 Urine Samples Screened**

## Results by Schedule

43% of drivers found to be positive for other substances

- Schedule I – 20%
- Schedule II – 14%
- Schedule III – 0%
- Schedule IV – 1%
- Schedule V – 0%
- Unscheduled – 30%

## Schedule II

14% of the cases/33% of the positive results

- Methamphetamine 3%/8%
- Opiates 6%/13%
- Cocaine 4%/9%
- Propoxyphene, Amphetamine Each 1%/2%

## Schedule IV

1% of cases/3% of positive results

- Two benzodiazepines
- One case of Zolpidem (Ambien)

## Unscheduled Drugs

30% of cases/70% of positive results

- Diphenhydramine 6%/13%
- Doxylamine 3%/6%
- Trazodone, Chlorpheniramine, Venlafaxine  
– Each 2%/4%
- Tramadol, Orphenadrine, Dextromethorphan,  
Fluoxetine, Diltiazem Each 1%/3%

## Unscheduled Compounds

Pseudoephedrine, Amitriptyline, Propranolol

Each 1%/2%

- One case each of
  - Pheniramine
  - Metoprolol
  - Atenolol
  - Clonidine
  - Tetrahydrozoline
  - Desloratadine
  - Bupropion
  - Nortriptyline
  - Cyclobenzaprine
  - Mepivacaine
  - Loperamide
  - Sertraline
  - Ephedrine

## Tolerance

- **May exhibit relatively little evidence of physical impairment.**
- **Even tolerant drug users, when impaired, usually exhibit clinical evidence (i.e. vital signs, eye signs, muscles, bruxism, etc.).**

## Under The Counter: The Diversion and Abuse of Controlled Prescription Drugs in the U.S.

[http://www.casacolumbia.org/Absolutenm/  
articlefiles/380-final\\_report.pdf](http://www.casacolumbia.org/Absolutenm/articlefiles/380-final_report.pdf)

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**THANK YOU!**