INTRODUCTION TO DRUGGED DRIVING

PARTICIPANT'S MANUAL

INTRODUCTION TO DRUGGED DRIVING

Upon successfully completing this module of instruction, the participant will be able to:

o   define the term "drug" in the context of DWI enforcement.

o   describe in approximate, quantitative terms the incidence of drug involvement in motor vehicle crashes and in DWI enforcement.

o   name the major categories of drugs.

o   describe the observable signs generally associated with the major drug categories.

o   describe medical conditions and other situations than can produce similar signs.

o   describe appropriate procedures for dealing with drug-impaired or medically-impaired suspects.

Content Segments   Learning Activities

A. Overview   o   Instructor-Led Presentations

B. Eye Examinations: Detecting
    Signs of Drug Influence   o   Participant Practice

C. Drug Categories and Their
    Observable Effects   o   Video Presentations

D. Combinations of Drugs

E. Demonstrations of Drug Influence (Video/DVD)

F. Dealing with Suspected Drug
    Influence or Medical Impairment

A.   OVERVIEW

The purpose of this module is to acquaint you with the information now becoming available on the recognition of individuals who may be medically impaired or under the influence of drugs other than alcohol, and to assist you in preparing to prosecute such cases.

It is clear that police officers responsible for traffic law enforcement will encounter drug-impaired drivers. The best available data suggest that tens of millions of Americans routinely use drugs other than alcohol. And, some of these people at least sometimes drive when they are under the influence of those drugs.

Some drug-impaired drivers look and act very much like alcohol-impaired drivers. Others look and act very differently. All of them are dangerous, to themselves and to everyone else on the road.

1.   <u>What is a "drug"</u>

The word "drug" means many things to many people. The word is used in a number of different ways, by different people, to convey some very different ideas.

Some sample definitions from dictionaries:

"A drug is a substance used as a medicine or in making medicines." (Webster's <u>Seventh New Collegiate Dictionary</u>, 1971)

This definition seems to exclude any substance that has no medicinal value. But there are many non-medicinal substances that regularly are abused. Model airplane glue is one such substance.

"A drug is a narcotic substance or preparation." (Also from Webster's).

Webster's further defines a <u>narcotic</u> as something that "soothes, relieves or lulls". Clearly, not all drugs that are of concern to police officers are narcotics. Cocaine, for example, is very different from a narcotic.

"A drug is a chemical substance administered to a person or animal to prevent or cure disease or otherwise to enhance physical or mental welfare." (From Random House's <u>College Dictionary</u>, 1982)

Here again, anything that has no medicinal value apparently does not fit the dictionary notion of a "drug".

From the perspective of traffic law enforcement, a non-medicinal concept of "drug" is needed. The definition we will use is adapted from the California Vehicle Code, Section 312:

A drug is any substance, which when taken into the human body, can impair the ability of the person to operate a vehicle safely.

2. Categories of drugs

Within the simple, enforcement-oriented definition of "drug" that we have adopted, there are seven broad categories. The categories differ from one to another in terms of how they affect people and in terms of the observable signs of impairment they produce.

Central Nervous System Depressants This category includes a large number of different drugs, all of which slow down the operation of the brain and other parts of the central nervous system (CNS). The most familiar drug of all--alcohol--is a central nervous system depressant.

Central Nervous System Stimulants This category also includes a large number of drugs, all of which act quite differently from the depressants. Central nervous system stimulants impair by "speeding up", or over-stimulating the brain. Cocaine is an example of a CNS stimulant.

Hallucinogens This category includes some natural, organic substances, and some synthetic chemicals. All hallucinogens impair the user's ability to perceive the world as it really is. Peyote (which comes from a particular variety of cactus) is a naturally-occurring hallucinogen. LSD is an example of a synthetic hallucinogen.

Dissociative Anesthetics This category consists of the drug PCP and its various analogs (or "chemical cousins") and Dextromethorphan (DXM). Originally developed for use as an anesthetic, PCP is a powerful drug that in some ways acts like a depressant, in other ways like a stimulant, and in still other ways like an hallucinogen. Ketamine is an analog of PCP.

Narcotic Analgesics This category includes the natural derivatives of opium, such as morphine, heroin, codeine and many others. The category also includes many synthetic drugs, such as demerol, methadone and others. All narcotic analgesics relieve pain (that is what "analgesic" means) and produce addiction.

Inhalants This category includes many familiar household materials such as paint, model airplane glue, aerosol sprays, etc. None of these substances is manufactured for use as a drug. However, they produce volatile fumes that can produce significant impairment, and they are abused by some people.

Cannabis This is the category that includes marijuana hashish, as well as synthetic compounds.

Each category of drugs produces a distinct set of observable effects. No two categories affect people in exactly the same way.

3. Frequency of drug use

No one knows with any appreciable degree of certainty how many Americans use drugs, or how frequently the various drugs are used. Estimates of drug use vary widely, and the estimates apparently depend on the kinds of people who were surveyed, where they were surveyed and the methods used. But all estimates agree that an appreciable segment of this country's population do use drugs.

All available information shows that drug use and abuse are widespread among large segments of the American public.

A 2002 survey (National Survey on Drug Use and Health) revealed that one in seven Americans aged 12 years or older (14.2 percent or 33.5 million people) admitted driving under the influence of alcohol at least once in the past year. The same survey also revealed that in 2003, an estimated 19.5 million Americans, or 8.2 percent of the population aged 12 years or older, were current illicit drug users, and that marijuana was the most commonly used illicit drug, with a rate of 6.2 percent (14.6 million) in 2003.

In 2003, an estimated 11 million people reported driving under the influence of an illicit drug during the past year. As many as 18 percent of 21 year-olds reported having driven under the influence of drugs at least once during the past year. (NSDUH Report: Drugged Driving, 2003 Update)

B.   EYE EXAMINATIONS: IMPORTANT CLUES OF DRUG INFLUENCE

A suspect's eyes often disclose some very important, and easy-to-observe indicators of drug influence or medical impairment. Five eye examinations are especially helpful:

o   Resting Nystagmus
o   Tracking Ability
o   Pupil Size
o   Horizontal Gaze Nystagmus
o   Vertical Nystagmus

Resting Nystagmus is referred to as jerking as the eyes look straight ahead. This condition is not frequently seen. Its presence usually indicates a pathology or high doses of a drug such as PCP.

NOTE: Resting Nystagmus may also be a medical problem.

Although this observation is an important medical assessment, it is NOT an HGN administrative procedure step.

Tracking ability refers to the ability of the eyes to track together when the subject attempts to follow an object moving side-to-side. The test of tracking ability is conducted in exactly the same fashion as the check for "lack of smooth pursuit" in the horizontal gaze nystagmus test. If the two eyes do not track together, i.e., if one moves smoothly but the other moves only slightly, or in a very jerky fashion, or not at all, the possibility of a medical condition or injury exists.

Pupil size is an important indicator of certain categories of drugs. Of course, the size of a person's pupils changes naturally, in response to changing light conditions. Usually, the diameter of the pupils constricts in bright light, and dilates in dark conditions.

If the two pupils are noticeably different in size, the suspect may have a glass eye, or be suffering from an injury or medical condition.

Subjects under the influence of narcotic analgesics generally have constricted pupils. Subjects under the influence of CNS stimulants or hallucinogens generally have dilated pupils. Cannabis generally causes pupil dilation. Most CNS Depressants, Dissociative Anesthetics and Inhalants generally leave pupil size within the normal range.

It is not necessary that a precise estimate of pupil size be obtained. It is enough to estimate whether the pupils are of equal size, and whether they look noticeably small, about normal, or noticeably large.

Horizontal Gaze Nystagmus generally occurs with subjects under the influence of three categories of drugs (DID):

o   CNS depressants (including alcohol)
o   Inhalants
o   Dissociative Anesthetics

The nystagmus generally will be present with a very early angle of onset. Resting nystagmus may be evident especially with high doses. That is a distinct jerking of the eyes even as the suspect stares straight ahead.

Vertical Nystagmus is another easy-to-administer test. Position the object horizontally, approximately 12-15 inches in front of the subject's nose. Instruct the subject to hold the head steady and follow the stimulus with the eyes only. Then, slowly and steadily raise the stimulus until the eyes are elevated as far as possible. If the eyes can be observed to jerk noticeably, vertical nystagmus is present.

Vertical nystagmus usually occurs with Dissociative Anesthetics, and may occur with relatively high doses of CNS depressants or inhalants.

C.   SUMMARIES OF DRUG CATEGORIES AND THEIR OBSERVABLE EFFECTS

   1.   CNS Depressants

      Action
      CNS depressants slow down the operations of the brain. They usually depress the heartbeat, blood pressure, respiration and many other processes controlled by the brain.

      Examples
      Alcohol
      Rohypnol
      Anti-Anxiety Tranquilizers (e.g., Valium, Xanax)
      Barbiturates
      Muscle Relaxants
      Many Others

General Indicators
"Drunken" behavior   Sluggish
Uncoordinated   Disoriented
Drowsy   Thick, Slurred Speech

Eye Indicators
Horizontal Gaze Nystagmus generally present.
Vertical Nystagmus possibly present.
Pupil size usually normal (except that the drug Methaqualone and Soma usually cause pupils to dilate).

2.   CNS Stimulants

Action
CNS stimulants accelerate the heart rate and respiration, elevate the blood pressure, and "speed up" or over-stimulate many other processes of the body.

Examples
Cocaine
The Amphetamines (e.g.,dextroamphetamine, amphetamine sulfate, etc.)
Methamphetamine

General Indicators
Restlessness   Grinding Teeth (Bruxism)
Talkative   Redness to Nasal Area (if "snorting")
Excitation   Runny Nose (if "snorting")
Euphoria   Body Tremors
Exaggerated Reflexes   Loss of Appetite

Eye Indicators
Nystagmus generally will not be present.
Pupils generally will be dilated.

3.   Hallucinogens

Action
Hallucinogens may cause hallucinations, i.e., they cause the user to perceive things differently from the way they really are.

Examples
Peyote (derives from cactus)
Psilocybin (derives from mushrooms)
LSD
MDA
MDMA (Ecstasy)
Many Others

General Indicators

Hallucinations	Disorientation
Dazed Appearance	Paranoia
Body Tremors	Difficulty in Speech
Uncoordinated	Nausea
Perspiring	Piloerection (goose bumps)

Eye Indicators
Nystagmus generally will not be present.
Pupils generally will be dilated.

4. Dissociative Anesthetics

Action
Dissociative Anesthetics are powerful anesthetics. However, they also cause bizarre and sometimes violent behavior.

General Indicators

Perspiring	Blank Stare
Repetitive Speech	Incomplete Verbal Responses
Confused	Muscle Rigidity
Possibly Violent and Combative	

Eye Indicators
Horizontal gaze nystagmus generally will be present, often with early onset.
Vertical nystagmus generally will be present.
Pupil size generally normal.

5.   Narcotic Analgesics

Action
All narcotic analgesics share three important characteristics: they relieve pain; they produce withdrawal signs and symptoms when the drug is stopped after chronic administration; and, they suppress the withdrawal signs and symptoms of chronic morphine administration.

Examples

Morphine	Fentanyls
Heroin	Demerol
Codeine	Methadone
	OxyContin
Many Other	Many Other
Opium Derivatives	Synthetic Opiates

General Indicators

"On the Nod"	Facial Itching
Droopy Eyelids	Low, Raspy Speech
Depressed Reflexes	Fresh Puncture Marks May Be
Dry Mouth	Evident

NOTE: A tolerant user who has taken their "normal" dose of narcotic analgesic may not exhibit these general indicators.

Eye Indicators
Nystagmus generally will not be present.
Pupils generally will be constricted.

6.   Inhalants

Action
Some inhalants include psychoactive chemicals that produce a variety of effects. Others exert their major effect by blocking the passage of oxygen to the brain.

Examples
Volatile Substances (glue (toluene), paint, gasoline, many others)
Aerosols (hair sprays, insecticides, many others)
Anesthetics (nitrous oxide, ether, chloroform, etc.)

<u>General Indicators</u>

Disorientation	Slurred Speech
Confusion	Possible Nausea

Possible residue of substance on face, hands, clothing.

<u>Eye Indicators</u>
Horizontal gaze nystagmus generally present.
Vertical nystagmus possibly present.
Pupil size generally normal.

7. Cannabis

<u>Action</u>
Marijuana and other Cannabis products impair the attention process. Ability to perform divided attention tasks diminishes under the influence of Cannabis.

<u>Examples</u>

Marijuana	Marinol
Hashish	Dronabinol
Hash Oil	

<u>General Indicators</u>

Reddening of Conjunctiva	Disoriented
Body Tremors	Relaxed inhibitions
Odor of Marijuana	Difficulty in Dividing Attention

<u>Eye Indicators</u>
Nystagmus generally will not be present.
Pupil size will generally be dilated, but sometimes can be normal.

D. DRUG COMBINATIONS

Many substance abusers apparently routinely use more than one drug at a time. For example, some like to drink alcohol while smoking marijuana. Others prefer to use PCP by sprinkling it on marijuana cigarettes, or "joints". Some prefer their heroin mixed with cocaine.

Polydrug use is defined as ingesting drugs from two or more drug categories. The prefix "poly" derives from the Greek word for "many". People who routinely use two or more drugs in combination are polydrug users.

Polydrug use appears to be very common, at least among people involved in impaired driving incidents. For example, the National Highway Traffic Safety Administration and the Los Angeles Police Department (LAPD) conducted a careful study of blood samples drawn from nearly 200 suspected drug-impaired drivers arrested in Los Angeles. Nearly three-quarters of those arrestees had two or more drugs in their systems.

It is actually more common for an officer to encounter polydrug users than single drug users. In 1985, during the Los Angeles field validation study of the DRE program, 72% of the suspects had two or more drugs in them. Alcohol was often found in combination with one or more other drugs. But, if we discount alcohol, nearly half (45%) of the field study suspects had two or more other drugs in them.

In 1989, during DRE certification training in New York City, two thirds (67%) of the suspects evaluated had two or more drugs other than alcohol in their urine.

Because polydrug use is so common, it is highly likely that police will encounter suspects who are impaired by a combination of drugs, and who use alcoholic beverages to mask drug use.

When police come in contact with a polydrug user, a <u>combination of effects</u> may be observed in the suspect. The effects may vary widely, depending on exactly which combination of drugs is involved, how much of each drug was ingested, and when they were ingested.

In general, any combination of drugs may act together in four general ways.

1. <u>Null</u> - Neither drug has an effect on the indicator.

    Null Effect: The combination of no action plus no action equals no action.

    <u>EXAMPLE OF NULL EFFECTS</u>: CNS Stimulant and Narcotic Analgesic. Neither drug causes nystagmus, there-fore you will <u>not</u> see nystagmus with this combination.

2. <u>Overlapping</u> - Each drug may affect the suspect in some different way. In combination, <u>both</u> effects may appear.

    Overlapping Effect: Action plus no action equals action.

EXAMPLE OF OVERLAPPING EFFECTS: Dissociative Anesthetic and Narcotic Analgesic. Dissociative Anesthetic will enhance nystagmus, while a Narcotic Analgesic does not cause nystagmus. There-fore, you will see nystagmus.

3. Additive - The two drugs may independently produce some similar effects. In combination, these effects may be enhanced.

   Additive Effect: Action plus the same action reinforces the action.

   EXAMPLE OF ADDITIVE EFFECTS: Stimulants and Hallucinogens both cause pupil dilation. Pupils would be dilated.

4. Antagonistic - The two drugs may produce some effects that are exactly opposite. In combination, these effects may mask each other.

   Antagonistic Effect: Action versus opposite action can't predict the outcome.

   EXAMPLE OF ANTAGONIS-TIC EFFECTS: A CNS Stimulant usually causes pupil dilation, a narcotic usually causes constriction. It is possible that someone who is simultaneously under the influence of a stimulant and a narcotic may have pupils that are nearly normal in size. It is also possible that the suspect's pupils may be dilated at one time, and then become constricted, as the effects of one drug diminish while the effects of the other increase.

E. DEALING WITH SUSPECTED DRUG INFLUENCE OR MEDICAL IMPAIRMENT

Participants should become familiar with their agency's policies and procedures for handling drug- or medically-impaired subjects.

F.   TOPICS FOR STUDY

Test your knowledge of the subject matter covered in this module by trying to answer the following questions. Answers are given on the next page.

1.   What is a "drug" as the term is used in this course?

2.   What are the seven major categories of drugs?

3.   What kind (category) of drug is alcohol? What about cocaine? What about heroin?

4.   Name the four eye examinations that provide important indicators of drug influence or medical impairment.

5.   What kind (category) of drug is PCP? What about marijuana? What about Valium?

6.   What category (or categories) of drug usually causes (or cause) the pupils to <u>constrict</u>?

7.   What category (or categories) of drug causes (or cause) the pupils to <u>dilate</u>?

8.   What categories of drugs usually will <u>not</u> induce horizontal gaze nystagmus?

9.   What kind (category) of drug is methamphetamine? What about LSD? What about Peyote?

10. What does the term "polydrug use" mean?

Answers To Review Questions

1. For purposes of this training, "a drug is any substance, which when taken into the human body, can impair the ability of the person to operate a vehicle safely."

2. The seven categories are:
    Central Nervous System Depressants
    Central Nervous System Stimulants
    Hallucinogens
    Dissociative Anesthetics
    Narcotic Analgesics
    Inhalants
    Cannabis

3. Alcohol is a CNS depressant. Cocaine is a CNS stimulant. Heroin is a narcotic analgesic.

4. The four key eye examinations include:
    Tracking Ability
    Pupil Size
    Horizontal Gaze Nystagmus
    Vertical Nystagmus

5. PCP is a Dissociative Anesthetic; that category consists only of PCP and its various analogs. Marijuana is Cannabis. Valium is a CNS depressant.

6. Narcotic Analgesics usually cause the pupils to constrict.

7. CNS Stimulants, Hallucinogens, and Cannabis usually cause the pupils to dilate. Sometimes Cannabis can leave pupils normal.

8. CNS Stimulants, Hallucinogens, Narcotic Analgesics and Cannabis do not cause horizontal gaze nystagmus.

9. Methamphetamine is a CNS stimulant. LSD and Peyote are Hallucinogens.

10. "Polydrug use" is the practice of ingesting drugs from two or more drug categories, i.e., combing drugs.

CATEGORY

Signs/ Symptoms	CNS Depressants	CNS Stimulants	Hallucinogens	Dissociative Anesthetic
ACTION	Slow down the operations of the brain. Depress the heartbeat, blood pressure, respiration and many other processes controlled by the brain.	Accelerate the heartrate and respiration, elevate the blood pressure and "speed up" or over-stimulate many other processes of the body.	They cause the user to perceive things differently from what they really are and they may cause hallucinations.	Powerful anesthetic. It also causes bizarre and sometimes violent behavior.
GENERAL INDICATORS	"Drunken" behavior, Uncoordinated, Drowsy, Sluggish, Disoriented, Thick, Slurred Speech	Restlessness, Talkative, Excitation, Euphoria, Exaggerated Reflexes, Loss of Appetite, Grinding Teeth (Bruxism), Redness to Nasal Area (if "snorting"), Body Tremors	Hallucinations, Dazed Appearance, Body Tremors, Uncoordinated, Perspiring, Disorientation, Paranoia, Difficulty in Speech, Nausea	Perspiring, Repetitive Speech, Confused, Possibly Violent and Combative, Blank Stare, Incomplete Verbal Responses, Muscle Rigidity
EYE INDICATORS Nystagmus -Horizontal	Present	Not present	Not present	Present, with early onset and very distinct jerking
Nystagmus -Vertical	May be present	Not present	Not present	Present
Pupil Size	Normal (except that the drug Methaqualine Soma causes pupils to dilate)	Will be dilated	Will be dilated	Is normal

CATEGORY

Signs/Symptoms	Narcotic Analgesics	Inhalants	Cannabis
ACTION	All narcotic analgesics share three important characteristics: they will relieve pain, they will produce withdrawal signs and symptoms when the drug is stopped after chronic administration; and, they will suppress the withdrawal signs and symptoms of chronic morphine administration.	Some inhalants include psychoactive chemicals that produce a variety of effects. Others exert their major effect by blocking the passage of oxygen to the brain.	Marijuana and other Cannabis products apparently impair the attention process. Ability to perform divided attention tasks diminishes under the influence of Cannabis.
GENERAL INDICATORS	"On the Nod", Droopy Eyelids, Depressed Reflexes, Dry Mouth, Facial Itching, Low, Raspy Speech, Fresh Puncture Marks May be Evident	Disorientation, Confusion, Slurred Speech, Possible Nausea, Possible residue of substance on face, hands, clothing	Reddening of Conjunctiva, Body Tremors, odor of Marijuana, Disoriented, Relaxed Inhibitions, Difficulty in Dividing Attention
EYE INDICATORS Nystagmus - Horizontal	Not present	Will be present	Not present
Nystagmus - Vertical	Not present	May be present	Not present
Pupil Size	Will be constricted	Is normal	Will be dilated, but may be normal