Approved by the Technical Advisory Panel, October 2, 2009

The Drug Recognition Expert course is a series of three training phases that, collectively, prepare police officers and other qualified persons to serve as drug recognition experts (DRE). Throughout this manual, the terms “drug recognition expert” and “DRE” are used to designate an individual who is specially trained and has continued training to conduct examinations of drug-impaired drivers. This training, developed as part of the Drug Evaluation and Classification Program (DECP) under the auspices and direction of the International Association of Chiefs of Police (IACP) and the National Highway Traffic Safety Administration (NHTSA) has experienced remarkable success since its inception in the 1980s.

As in any educational training program, an instruction manual is considered a “living document” that is subject to updates and changes based on advances in technology and science. A thorough review is made of information by the DECP Technical Advisory Panel (TAP) of the Highway Safety Committee of the IACP with contributions from many sources in health care science, toxicology, jurisprudence, and law enforcement. Based on this information, any appropriate revisions and modifications in background theory, facts, examination and decision making methods are made to improve the quality of the instruction as well as the standardization of guidelines for the implementation of the Drug Recognition Expert Training Curriculum. The reorganized manuals are then prepared and disseminated, both domestically and internationally, to the DECP state coordinators.

Changes will take effect 90 days after approval by the TAP, unless otherwise specified or when so designated by a state coordinator.

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SESSION I

INTRODUCTION AND OVERVIEW

SESSION I INTRODUCTION AND OVERVIEW

Upon successfully completing this session, the student will be able to:

- State the goals and objectives of the course.
- Outline the major course content.
- Outline the schedule of major course activities.
- Outline the contents and arrangements of the student manual.

During this session, the student will demonstrate their current knowledge of basic concepts and terminology relevant to the Drug Evaluation and Classification process.

NOTE: Throughout this manual, the term "DRE" is used to designate an individual who is specially trained to conduct evaluations of suspected drug-impaired subjects. In some participating agencies, the term stands for "drug recognition expert"; in others, it means "drug recognition examiners"; and in others "drug recognition evaluator". In addition, some agencies use the terms "DRT" (for drug recognition technician) or "DRS" (drug recognition specialists). All of these are acceptable and synonymous. But for this training program, the standard term is DRE.

A. Introduction to The Second Stage of Training: The DRE School

The Drug Evaluation and Classification (DEC) training program focuses on a set of examination procedures, or steps that make up the DRE drug influence evaluation. They include the following:

- a breath test to determine blood alcohol concentration (BAC);
- preliminary assessments of the subject's speech, breath, appearance, demeanor, behavior, etc;
- examinations of the subject's eyes (for nystagmus, tracking ability, ability to converge, pupil size and pupil reaction to light);
- psychophysical evaluations of the subject, based on divided attention tests;
- examinations of the subject's vital signs (e.g. blood pressure, pulse rate and temperature);
- inspections of the subject's arms, neck, nasal area, oral cavity, etc. for signs of drug ingestion.

Based on these examinations, and on other articulable evidence that may emerge during contact with the subject, a trained DRE can reach reasonably accurate conclusions concerning the category or categories of drugs, or medical conditions, causing the impairment observed in the subject. Based on these informed conclusions, the DRE can request the collection and analysis of an appropriate chemical sample (blood or urine) to obtain corroborative, scientific evidence of the subject's drug use.

The DRE School provides detailed explanations of the evaluation procedures; careful demonstrations of these procedures, both "live" and via video; and ample opportunities for the students to practice administering the evaluations. By the completion of this course of instruction, students should be fully proficient in checking vital signs, conducting careful examinations of the eyes, administering divided attention tests and, in general, carrying out the procedural steps of the DRE's job.

However, there is one essential learning experience that this classroom training cannot provide. It cannot afford students an opportunity to practice examining subjects who are under the influence of drugs other than alcohol. For this reason, this classroom training only constitutes Phase II in the process of developing DRE skills. Phase III of the training (which commences upon the successful completion of this course) involves hands-on practice in an actual enforcement context, i.e. examining persons who are under the influence of drugs.

Although this DRE School will not conclude with the student's immediate certification as a

DRE, successful completion of this classroom training is nevertheless highly important. No one can advance to Certification Training until they demonstrate a mastery of basic knowledge of drug categories and their effects on the human mind and body, and of the basic skills in administering and interpreting the examinations involved in the Drug Evaluation and Classification process. All students must pass the knowledge exam with a score of 80 percent or greater.

Mastering the necessary knowledge and skills is not difficult if students apply themselves diligently to study and practice. There is no reason why a student who possesses solid skills in detecting and investigating persons under the influence of alcohol cannot achieve proficiency as a DRE.

B. Goals and Objectives of the Training

The ultimate goal of the Drug Evaluation and Classification (DEC) program, and of this course of instruction, is to "help you prevent crashes, deaths and injuries caused by drug-impaired drivers".

No one knows precisely how many people operate motor vehicles while under the influence of drugs, or how many crashes, deaths and injuries these people cause. But even the most conservative estimates suggest that America's drug-impaired drivers kill thousands of people each year, and seriously injure tens of thousands of others. There are numerous studies that illustrate these facts. They include:

- Maryland (1986) - 32 percent of crash-injured drivers had evidence of marijuana in their blood.

- University of Tennessee (1988) - 40 percent of crash-involved drivers treated at the University's Trauma Center had drugs other than alcohol in their urine.

- NHTSA (Terhune, Ippolito, Hendricks et al., 1992) - 1,882 operators involved in fatal crashes from 13 locations from eight states were tested for alcohol and 43 other drugs. Alcohol was the most prevalent drug detected in 51.5 percent of the crashes, while other drugs were involved in 17.8 percent of the crashes.

- Washington State (Schwilke, et al 2006) - The results of tests of blood and/or urine from 370 fatally injured drivers revealed that marijuana was the most encountered drug (12 percent), followed by benzodiazepines (5.1 percent), cocaine (4.8 percent) and amphetamines (4.8 percent).

How about people who drive under the influence of alcohol and other drugs that are not involved in crashes? 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.

Monitoring the Future, a national survey of high school students conducted in 2003 by the University of Michigan and the White House anti-drug czar's office concluded that one in six high school seniors admitted to having driven while they were high on drugs.

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)

It should be noted that traffic crash reduction is not the only benefit that should result from an effective Drug Evaluation and Classification program. Improved investigative skills should increase society's effectiveness in combating the drug threat in general, and result in significant economic and human savings.

The goals of this classroom training, from the viewpoint of the law enforcement agencies participating in it, are three-fold:

1. To help police officers acquire the knowledge and skills needed to distinguish individuals under the influence of alcohol only from individuals who are under the influence of other drugs, or of combinations of alcohol and other drugs, or who are suffering from an injury or illness.

2. To enable police officers to identify the broad category or categories of drugs inducing the observable signs of impairment manifested by an individual.

3. To qualify police officers to progress to Certification Training.

The objectives of this course, from the viewpoint of the individual students who enroll in it, are as follows:

- to be able to describe the involvement of drugs in impaired driving incidents.
- to be able to name the seven broad categories of drugs, and recognize their effects.
- to be able to describe, and administer properly, the psychophysical and physiological examinations included in the drug influence evaluation.
- to be able to document the results of DRE evaluations.
- to interpret the results of these evaluations accurately.

- to be able to prepare a narrative Drug Influence Report based on the results of the complete evaluation.

- to be able to testify properly in typical drug evaluation cases.

- to develop and maintain an up-to-date, relevant Curriculum Vitae (CV) to document their qualifications as DREs.

Throughout this classroom training, and especially at its conclusion, students will be tested to assess their ability to do these things.

C. Overview of Content And Schedule

During this classroom training some of the major content topics will be:

- the incidence of drugs in society and in vehicle operation,

- the development and effectiveness of the DEC program,

- the DRE procedures,

- eye examinations,

- physiology and drugs,

- vital signs examination,

- Physicians Desk Reference and other resources

- interviewing subjects,

- curriculum vitae (C.V.), case preparation and testimony,

- interpreting and documenting the results of the examination.

Since hands-on practice is the principle learning activity, time will be spent on conducting the eye examinations, psychophysical tests, interpreting the examination results, administering vital signs examinations, practicing the examination procedures and simulating the drug influence examinations.

D. Overview of Student Manual

The student manual is be used as a reference and is a summary of material presented. You are <u>required</u> to attend every session of the DRE School in order to proceed to the certification training phase.

THE DRE SCHOOL
PRE-TEST

NAME _____ AGENCY _____

SCHOOL LOCATION _____ DATE _____

Circle the letter(s) corresponding to the correct answer(s) for each question. **Note: Some questions have more than one correct answer.**

1. The Autonomic Nervous Sub-system has **sympathetic** nerves and ____ nerves.

    A. Parasympathetic
    B. Hypersympathetic
    C. Hyposympathetic
    D. Metasympathetic
    E. Transsympathetic

2. The technical term for **constricted pupils** is _____.

    A. Mydriasis
    B. Mithosis
    C. Ptosis
    D. Ptarsis
    E. Miosis

3. You examine a subject that you <u>know</u> is under the combined influence of PCP and Cocaine, and you observe that he or she exhibits Horizontal Gaze Nystagmus. This is an example of _____.

    A. A Synergistic Effect
    B. An Additive Effect
    C. An Antagonistic Effect
    D. The Null Effect
    E. An Overlapping Effect

4. Which of the following ordinarily <u>will</u> cause Horizontal Gaze Nystagmus? (Circle **all** that usually cause HGN)

    A. Methamphetamine
    B. Valium
    C. Peyote
    D. Cannabis
    E. Cocaine

5. **Ritalin** is an example of _____.

   A. A CNS Stimulant
   B. A Narcotic Analgesic
   C. An Hallucinogen
   D. A CNS Depressant
   E. An analog of Phencyclidine

6. Which of the following usually <u>will be true</u> in a subject who is under the influence of LSD? (Circle **all** that usually would be true)

   A. Blood pressure will be lowered
   B. Eyes will not be able to converge
   C. Horizontal Gaze Nystagmus will be present
   D. Pulse rate will be slowed
   E. Pupils will be dilated

7. Unless it is physically impossible to do so, a DRE will always use the _____ pulse point to measure a subject's pulse rate.

   A. Right Brachial
   B. Right Carotid
   C. Right Radial
   D. Left Radial
   E. Left Brachial

8. Which of the following is <u>not</u> classified as an Hallucinogen? (Circle **all** that are not Hallucinogens)

   A. MDMA
   B. DOM
   C. MDA
   D. STP
   E. MPPP

9. Amphetamines produce the same effects as Cocaine with the exception of _____.

   A. Pupil dilation
   B. Pulse rate elevation
   C. Anesthesia
   D. Blood pressure elevation
   E. <u>No exception</u>: both Cocaine and Amphetamines produce all four effects listed above

10. The gap between two nerve cells is called the _____.

    A. Axon
    B. Dendrite
    C. Neuron
    D. Synapse
    E. Vesicle

11. How many distinct, validated clues have been established for the Romberg test?

    A. Eight
    B. Six
    C. Four
    D. Three
    E. No validated clues have been established for that test.

12. How many distinct, validated clues have been established for the Walk and Turn test?

    A. Eight
    B. Six
    C. Four
    D. Three
    E. No validated clues have been established for that test.

13. The normal range of pupil size in "room light" is _____.

    A. 2.5 mm to 5.0 mm
    B. 3.0 mm to 6.0 mm
    C. 3.0 mm to 6.5 mm
    D. 3.5 mm to 6.5 mm
    E. We do not attempt to specify "normal ranges" in the DEC program.

14. The drug _____ is an example of a synthetic Narcotic Analgesic. (Circle **all** that are synthetic Narcotic Analgesics)

    A. Dilaudid
    B. Percodan
    C. Demerol
    D. Codeine
    E. Oxycodone

15. The drug _____ is an example of an anti-anxiety tranquilizer. (Circle **all** that are anti-anxiety tranquilizers)

    A. Xanax
    B. Thorazine
    C. Elavil
    D. Amobarbital
    E. Chloral Hydrate

16. In a blood pressure measurement, the **lower** number is called the _____ pressure.

    A. Pulmonary
    B. Atrial
    C. Diastolic
    D. Arterial
    E. Systolic

17. Which of the following is a Dissociative Anesthetic?

    A. Heroin
    B. Thorazine
    C. PCP
    D. Methadone
    E. Cocaine

18. Which of the following usually <u>will not</u> cause the pupils to dilate? (Circle **all** that usually <u>don't</u> cause dilation).

    A. MDMA
    B. Methaqualone
    C. Methamphetamine
    D. Peyote
    E. PCP

19. You examine a subject that you <u>know</u> is under the combined influence of PCP and Marijuana, and you find that his or her pulse rate is 102. This is an example of _____.

    A. A Synergistic Effect
    B. An Overlapping Effect
    C. The Null Effect
    D. An Antagonistic Effect
    E. An Additive Effect

20. Which sub-category of Narcotic Analgesics usually causes elevated body temperature?

    A. The Synthetics
    B. The Alkaloids
    C. The Opium Derivatives
    D. **All** Narcotic Analgesics cause elevated body temperature
    E. **No** Narcotic Analgesics cause elevated body temperature

21. The normal range of pulse rate is_____.

    A. 60 to 90
    B. 60 to 100
    C. 70 to 90
    D. 70 to 100
    E. We do not attempt to specify **"normal ranges"** in the DEC program

22. The technical term for an abnormally rapid heart rate is _____.

    A. Myocardia
    B. Hypercardia
    C. Tachycardia
    D. Hypocardia
    E. Bradycardia

23. In the 2007 National Roadside Survey of Alcohol and Drug Use by Drivers Study, using both blood tests and oral fluids, what percentage of drivers tested positive for drugs?

    A. 14.1%
    B. 16.3%
    C. 17.0%
    D. 17.3%
    E. 18.0%

24. "Crank" is a street name for _____.

    A. Heroin
    B. Cocaine
    C. PCP
    D. Methamphetamine
    E. Methaqualone

25. Which of the following is not a validated clue for the One Leg Stand test? (Circle **all** that are **not** validated clues)

A. Hopping
B. Raising the Arms
C. Putting the Foot Down
D. Failing to Count Out Loud
E. Swaying

DRUG EVALUATION AND CLASSIFICATION PROGRAM

GLOSSARY OF TERMS

ACCOMMODATION REFLEX

The adjustment of the eyes at various distances. Meaning the pupils will automatically constrict as objects move closer.

ADDICTION

Habitual, psychological, and physiological dependence on a substance beyond one's voluntary control.

ADDITIVE EFFECT

One mechanism of polydrug interaction. For a particular indicator of impairment, two drugs produce an additive effect if they both affect the indicator in the same way. For example, cocaine elevates pulse rate and PCP also elevates pulse rate. The combination of cocaine and PCP produces an additive effect on pulse rate.

AFFERENT NERVES

See "Sensory Nerves."

ALKALOID

A chemical that is found in, and can be physically extracted from, some substance. For example, morphine is a natural alkaloid of opium. It does not require a chemical reaction to produce morphine from opium.

ANALGESIC

A drug that relieves or allays pain.

ANALOG (of a drug)

An analog of a drug is a chemical that is very similar to the drug, both in terms of molecular structure and in terms of psychoactive effects. For example, the drug Ketamine is an analog of PCP.

ANESTHETIC

A drug that produces a general or local insensibility to pain and other sensation.

ANTAGONISTIC EFFECT

One mechanism of polydrug interaction. For a particular indicator of impairment, two drugs produce an antagonistic effect if they affect the indicator in opposite ways. For example, heroin constricts pupils while cocaine dilates pupils. The combination of heroin and cocaine produces an antagonistic effect on pupil size. Depending on how much of each drug was taken, and on when they were taken, the subject's pupils could be constricted, or dilated, or within the normal range of size.

ARRHYTHMIA
An abnormal heart rhythm.

ARTERY
The strong, elastic blood vessel that carries blood away from the heart.

ATAXIA
A blocked ability to coordinate movements. A staggering walk and poor balance may be caused by damage to the brain or spinal cord. This can be the result of trauma, birth defect, infection, tumor, or drug use.

AUTONOMIC NERVE
A motor nerve that carries messages to the muscles and organs that we do not consciously control. There are two kinds of autonomic nerves, the sympathetic nerves and parasympathetic nerves.

AXON
The part of a neuron (nerve cell) that sends out a neurotransmitter.

BAC
(Blood Alcohol Concentration) - The percentage of alcohol in a person's blood.

BrAC
(Breath Alcohol Concentration) - The percentage of alcohol in a person's blood as measured by a breath testing device.

BLOOD PRESSURE
The force exerted by blood on the walls of the arteries. Blood pressure changes continuously, as the heart cycles between contraction and expansion.

BRADYCARDIA
Abnormally slow heart rate; pulse rate below the normal range.

BRADYPNEA
Abnormally slow rate of breathing.

BRUXISM
Grinding the teeth. This behavior is often seen in persons who are under the influence of Cocaine or other CNS Stimulants.

CANNABIS
This is the drug category that includes marijuana. Marijuana comes primarily from the leaves of certain species of Cannabis plants that grow readily over the temperate zones of the earth. Hashish is another drug in this category, and consists of the compressed leaves

from female Cannabis plants. The active ingredient in both Marijuana and Hashish is a chemical called delta-9 tetrahydrocannabinol, usually abbreviated THC.

CARBOXY THC
A metabolite of THC (tetrahydrocannabinol).

CHEYNE-STOKES RESPIRATION
Abnormal pattern of breathing. Marked by breathlessness and deep, fast breathing.

CNS (Central Nervous System)
A system within the body consisting of the brain, the brain stem and the spinal cord.

CNS DEPRESSANTS
One of the seven drug categories. CNS depressants include alcohol, barbiturates, anti-anxiety tranquilizers and numerous other drugs.

CNS STIMULANTS
One of the seven drug categories. CNS Stimulants include cocaine, the amphetamines, ritalin, preludin and numerous other drugs.

CONJUNCTIVITIS
An inflammation of the mucous membrane that lines the inner surface of the eyelids caused by infection, allergy, or outside factors. May be bacterial or viral. Persons suffering from conjunctivitis may show symptoms in one eye only. This condition is commonly referred to as "pink eye", a condition that could be mistaken for the bloodshot eyes produced by alcohol or Cannabis.

CONVERGENCE
The "crossing" of the eyes that occurs when a person is able to focus on a stimulus as it is pushed slowly toward the bridge of their nose. (See also "Lack of Convergence".)

CRACK/ROCK
Cocaine base, appears as a hard solid form resembling pebbles or small rocks. It produces a very intense, but relatively short duration "high".

CURRICULUM VITAE
A written summary of a person's education, training, experience, noteworthy achievements and other relevant information about a particular topic.

CYCLIC BEHAVIOR
A manifestation of impairment due to certain drugs, in which the subject alternates between periods (or cycles) of intense agitation and relative calm. Cyclic behavior, for example, sometimes will be observed in persons under the influence of PCP.

DELIRIUM
A brief state characterized by incoherent excitement, confused speech, restlessness and possible hallucinations.

DENDRITE
The part of a neuron (nerve cell) that receives a neurotransmitter.

DIACETYL MORPHINE
The chemical name for Heroin.

DIASTOLIC
The lowest value of blood pressure. The blood pressure reaches its diastolic value when the heart is fully expanded or relaxed (Diastole).

DIPLOPIA
Double vision.

DISSOCIATIVE ANESTHETIC
One of the seven drug categories. Includes drugs that inhibits pain by cutting off or "disassociating" the brain's perception of pain. PCP and it's analogs are considered dissociative anesthetics.

DIVIDED ATTENTION
Concentrating on more than one task at a time. The four psychophysical tests used by DREs require the subject to divide attention.

DOWNSIDE EFFECT
An effect that may occur when the body reacts to the presence of a drug by releasing hormones or neurotransmitters to counteract the effects of the drug consumed.

DRUG
Any substance that, when taken into the human body, can impair the ability of the person to operate a vehicle safely.

DYSARTHIA
Slurred speech. Difficult, poorly articulated speech.

DYSPNEA et. al.
Shortness of breath.

DYSMETRIA
An abnormal condition that prevents the affected person from properly estimating distances linked to muscular movements.

DYSPHORIA

A mood disorder. Feelings of depression and anguish.

EFFERENT NERVES

See "Motor Nerves".

ENDOCRINE SYSTEM

The network of glands that do not have ducts and other structures. They secrete hormones into the blood stream to affect a number of functions in the body.

EXPERT WITNESS

A person skilled in some art, trade, science or profession, having knowledge of matters not within the knowledge of persons of average education, learning and experience, may assist a jury in arriving at a verdict by expressing an opinion on a state of facts shown by the evidence and based upon his or her special knowledge. (NOTE: Only the court can determine whether a witness is qualified to testify as an expert.)

FLASHBACK

A vivid recollection of a portion of an hallucinogenic experience. Essentially, it is a very intense daydream. There are three types: (1) emotional -- feelings of panic, fear, etc.; (2) somatic -- altered body sensations, tremors, dizziness, etc.; and (3) perceptual -- distortions of vision, hearing, smell, etc.

GARRULITY

Chatter, rambling or pointless speech. Talkative.

HALLUCINATION

A sensory experience of something that does not exist outside the mind, e.g. seeing, hearing, smelling or feeling something that isn't really there. Also, having a distorted sensory perception, so that things appear differently than they are.

HALLUCINOGENS

One of the seven drug categories. Hallucinogens include LSD, MDMA, peyote, psilocybin and numerous other drugs.

HASHISH

A form of cannabis made from the dried and pressed resin of a marijuana plant.

HASH OIL

Sometimes referred to as “marijuana oil” it is a highly concentrated syrup-like oil extracted from marijuana. It is normally produced by soaking marijuana in a container of solvent, such as acetone or alcohol for several hours and after the solvent has evaporated, a thick syrup-like oil is produced with a THC content generally ranging from 8 to 20 percent.

HEROIN

A powerful and widely-abused narcotic analgesic that is chemically derived from morphine. The chemical, or generic name of heroin is "diacetyl morphine".

HIPPUS

A rhythmic change in the pupil size of the eyes, as they dilate and constrict observed only in darkness independent of changes in light intensity, accommodation (focusing) or other forms of sensory stimulation. Normally only observed with specialized equipment.

HOMEOSTASIS

The dynamic balance, or steady state, involving levels of salts, water, sugars, and other materials in the body's fluids.

HORIZONTAL GAZE NYSTAGMUS (HGN)

Involuntary jerking of the eyes occurring as the eyes gaze to the side.

HORMONES

Chemicals produced by the body's endocrine system that are carried through the blood stream to the target organ. They exert great influence on the growth and development of the individual, and that aid in the regulation of numerous body processes.

HYDROXY THC

A metabolite of THC (tetrahydrocannabinol).

HYPERFLEXIA

Exaggerated or over extended motions.

HYPERGLYCEMIA

Excess sugar in the blood.

HYPERPNEA

A deep, rapid or labored breathing.

HYPERPYREXIA

Extremely high body temperature.

HYPERREFLEXIA

A neurological condition marked by increased reflex reactions.

HYPERTENSION

Abnormally high blood pressure. Do not confuse this with hypotension.

HYPOGLYCEMIA

An abnormal decrease of blood sugar levels.

HYPOPNEA
Shallow or slow breathing.

HYPOTENSION
Abnormally low blood pressure. Do not confuse this with hypertension.

HYPOTHERMIA
Decreased body temperature.

ICE
A crystalline form of methamphetamine that produces a very intense and fairly long-lasting "high".

INHALANTS
One of the seven drug categories. The inhalants include volatile solvents (such as glue and gasoline), aerosols (such as hair spray and insecticides) and anesthetic gases (such as nitrous oxide).

INSUFFLATION
See "snorting".

INTEGUMENTARY SYSTEM
The skin and accessory structures, hair and nails. Functions include protection, maintenance of body temperature, excretion of waste and sensory perceptions.

INTRAOCULAR
"Within the eyeball".

KOROTKOFF SOUNDS
A series of distinct sounds produced by blood passing through an artery, as the external pressure on the artery drops from the systolic value to the diastolic value.

LACK OF CONVERGENCE
The inability of a person's eyes to converge, or "cross" as the person attempts to focus on a stimulus as it is pushed slowly toward the bridge of his or her nose.

MARIJUANA
Common term for the Cannabis Sativa plant. Usually refers to the dried leaves of the plant. This is the most common form of the cannabis category.

MARINOL
A drug containing a synthetic form of THC (tetrahydrocannabinol). Marinol belongs to the cannabis category of drugs, but it is not produced from any species of cannabis plant.

METABOLISM

The sum of all chemical processes that take place in the body as they relate to the movements of nutrients in the blood after digestion, resulting in growth, energy, release of wastes and other body functions. The process by which the body, using oxygen, enzymes and other internal chemicals, breaks down ingested substances such as food and drugs so they may be consumed and eliminated. Metabolism takes place in two phases. The first step is the constructive phase (anabolism) where smaller molecules are converted to larger molecules. The second step is the destructive phase (catabolism) where large molecules are broken down into smaller molecules.

METABOLITE

A chemical product formed by the reaction of a drug with oxygen and/or other substances in the body.

MIOSIS

Abnormally constricted pupils.

MOTOR NERVES

Nerves that carry messages away from the brain, to the body's muscles, tissues, and organs. Motor nerves are also known as efferent nerves.

MUSCULAR HYPERTONICITY

Rigid muscle tone.

MYDRIASIS

Abnormally dilated pupils.

NARCOTIC ANALGESICS

One of the seven drug categories. Narcotic analgesics include opium, the natural alkaloids of opium (such as morphine, codeine and thebaine), the derivatives of opium (such as heroin, dilaudid, oxycodone and percodan), and the synthetic narcotics (such as demerol and numorphan).

NERVE

A cord-like fiber that carries messages either to or from the brain. For drug evaluation and classification purposes, a nerve can be pictured as a series of "wire-like" segments, with small spaces or gaps between the segments.

NEURON

A nerve cell. The basic functional unit of a nerve. It contains a nucleus within a cell body with one or more axons and dendrites.

NEUROTRANSMITTER

Chemicals that pass from the axon of one nerve cell to the dendrite of the next cell, and that carry messages across the gap between the two nerve cells.

NULL EFFECT

One mechanism of polydrug interaction. For a particular indicator of impairment, two drugs produce a null effect if neither of them affects that indicator. For example, PCP does not affect pupil size and alcohol does not affect pupil size. The combination of PCP and alcohol produces a null effect on pupil size.

NYSTAGMUS

An involuntary jerking of the eyes.

"ON THE NOD"

A semi-conscious state of deep relaxation. Typically induced by impairment due to heroin or other narcotic analgesic. The subject's eyelids droop and chin rests on the chest. Subject may appear to be asleep, but can be easily aroused and will respond to questions.

OVERLAPPING EFFECT

One mechanism of polydrug interaction. For a particular indicator of impairment, two drugs produce an overlapping effect if one of them affects the indicator but the other doesn't. For example, cocaine dilates pupils while alcohol doesn't affect pupil size. The combination of cocaine and alcohol produces an overlapping effect on pupil size: the combination will cause the pupils to dilate.

PALLOR

An abnormal paleness or lack of color in the skin.

PARANOIA

Mental disorder characterized by delusions and the projection of personal conflicts, that are ascribed to the supposed hostility of others.

PARAPHERNALIA

Drug paraphernalia are the various kinds of tools and other equipment used to store, transport or ingest a drug. Hypodermic needles, small pipes, bent spoons, etc. are examples of drug paraphernalia. The singular form of the word is "paraphernalium". For example, one hypodermic needle would be called a "drug paraphernalium".

PARASYMPATHETIC NERVE

An autonomic nerve that commands the body to relax and to carry out tranquil activities. The brain uses parasympathetic nerves to send "at ease" commands to the muscles, tissues and organs.

PARASYMPATHOMIMETIC DRUGS

Drugs that mimic neurotransmitters associated with the parasympathetic nerves. These drugs artificially cause the transmission of messages that produce lower blood pressure, drowsiness, etc.

PDR (Physician's Desk Reference)

A basic reference source for drug recognition experts. The PDR provides detailed information on the physical appearance and psychoactive effects of licitly-manufactured drugs.

PHENCYCLIDINE

A contraction of PHENYL CYCLOHEXYL PIPERIDINE, or PCP. Formerly used as a surgical anesthetic, however, it has no current legitimate medical use for humans.

PHENYL CYCLOHEXYL PIPERIDINE (PCP)

Often called “phencyclidine” or “PCP”, it is a specific drug belonging to the Dissociative Anesthetics category.

PHYSIOLOGY

Physiology is the branch of biology dealing with the functions and activities of life or living matter and the physical and chemical phenomena involved.

PILOERECTION

Literally "hair standing up" or goose bumps. This condition of the skin is often observed in persons who are under the influence of LSD.

POLYDRUG USE

Ingesting drugs from two or more drug categories.

PSYCHEDELIC

A mental state characterized by a profound sense of intensified or altered sensory perception sometimes accompanied by hallucinations.

PSYCHOPHYSICAL TESTS

Methods of investigating the mental (psycho-) and physical characteristics of a person suspected of alcohol or drug impairment. Most psychophysical tests employ the concept of divided attention to assess a subject's impairment.

PSYCHOTOGENIC

Literally "creating psychosis" or "giving birth to insanity". A drug is considered to be psychotogenic if persons who are under the influence of the drug become insane and remain so after the drug wears off.

PSYCHOTOMIMETIC

Literally "mimicking psychosis" or "impersonating insanity". A drug is considered to be psychotomimetic if persons who are under the influence of the drug look and act insane while they are under the influence.

PTOSIS

Droopy eyelids.

PULSE

The expansion and relaxation of the walls of an artery, caused by the surging flow of blood.

PULSE RATE

The number of expansions of an artery per minute.

PUPILLARY LIGHT

The pupils of the eyes will constrict and dilate on changes in lighting.

PUPILLARY UNREST

The continuous, irregular change in the size of the pupils that may be observed under room or steady light conditions.

REBOUND DILATION

A period of pupillary constriction followed by pupillary dilation where the pupil steadily increases in size and does not return to its original constricted size.

RESTING NYSTAGMUS

Jerking of the eyes as they look straight ahead.

SCLERA

A dense white fibrous membrane that, with the cornea, forms the external covering of the eyeball (i.e. the white part of the eye).

SENSORY NERVES

Nerves that carry messages to the brain from the various parts of the body, including notably the sense organs (eyes, ears, etc.). Sensory nerves are also known as afferent nerves.

SINSEMILLA

The unpollenated female cannabis plant, having a relatively high concentration of THC.

SFST

Standardized Field Sobriety Testing. There are three SFSTs, namely Horizontal Gaze Nystagmus (HGN), Walk and Turn and One Leg Stand. Based on a series of controlled laboratory studies, scientifically validated clues of alcohol impairment have been identified for each of these three tests. They are the only Standardized Field Sobriety Tests for which validated clues have been identified.

SNORTING

One method of ingesting certain drugs. Snorting requires that the drug be in powder form. The user rapidly draws the drug up into the nostril, usually via a paper or glass tube. Snorting is also known as insufflation.

SPHYGMOMANOMETER

A medical device used to measure blood pressure. It consists of an arm or leg cuff with an air bag attached to a tube and a bulb for pumping air into the bag, and a gauge for showing the amount of air pressure being pressed against the artery.

STETHOSCOPE

A medical instrument used for drug evaluation and classification purposes in order to listen to the sounds produced by blood passing through an artery.

SYMPATHETIC NERVE

An autonomic nerve that commands the body to react in response to excitement, stress, fear, etc. The brain uses sympathetic nerves to send "wake up calls" and "fire alarms" to the muscles, tissues and organs.

SYMPATHOMIMETIC DRUGS

Drugs that mimic the neurotransmitter associated with the sympathetic nerves. These drugs artificially cause the transmission of messages that produce elevated blood pressure, dilated pupils, etc.

SYNAPSE (or Synaptic Gap)

The gap or space between two neurons (nerve cells).

SYNESTHESIA

A sensory perception disorder, in which an input via one sense is perceived by the brain as an input via another sense. An example of this would be a person “hearing” a phone ring and “seeing” the sound as a flash of light. Synesthesia sometimes occurs with persons under the influence of hallucinogens.

SYSTOLIC

The highest value of blood pressure. The blood pressure reaches its systolic value when the heart is fully contracted (systole), and blood is sent surging into the arteries.

TACHYCARDIA

Abnormally rapid heart rate; pulse rate above the normal range.

TACHYPNEA

Abnormally rapid rate of breathing.

THC (Tetrahydrocannabinol)

The principal psychoactive ingredient in drugs belonging to the cannabis category.

TOLERANCE

An adjustment of the drug user's body and brain to the repeated presence of the drug. As tolerance develops, the user will experience diminishing psychoactive effects from the same dose of the drug. As a result, the user typically will steadily increase the dose he or she takes, in an effort to achieve the same psychoactive effect.

TRACKS

Scar tissue usually produced by repeated injection of drugs, via hypodermic needle, along a segment of a vein.

VERTICAL GAZE NYSTAGMUS

An involuntary jerking of the eyes (up and down) which occurs as the eyes are held at maximum elevation. The jerking should be distinct and sustained.

VOIR DIRE

A French expression literally meaning "to see, to say". Loosely, this would be rendered in English as "to seek the truth", or "to call it as you see it". In a law or court context, one application of voir dire is to question a witness to assess their qualifications to be considered an expert in some matter pending before the court.

VOLUNTARY NERVE

A motor nerve that carries messages to a muscle that we consciously control.

WITHDRAWAL

This occurs in someone who is physically addicted to a drug when he or she is deprived of the drug. If the craving is sufficiently intense, the person may become extremely agitated and even physically ill.

SESSION II

DRUGS IN SOCIETY AND IN VEHICLE OPERATION

SESSION II DRUGS IN SOCIETY AND IN VEHICLE OPERATION

Upon successfully completing this session the student will be able to:

- Define the term "drug" in the context of this course.
- Name the seven major categories of drugs that are relevant to the Drug Evaluation and Classification program.
- State in approximate, quantitative terms the incidence of drug use among various segments of the American public.
- State in approximate, quantitative terms the incidence of drug involvement in motor vehicle crashes and other driving incidents.
- Correctly answer the "topics for study" questions at the end of this session.

A. Definition and Categories of Drugs

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.

For purposes of this training, a simple, enforcement-oriented definition is needed:

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

This definition is adapted from the California Vehicle Code, and reflects the traffic safety orientation of this training program.

It is worth noting that this definition excludes many substances that physicians and others would not consider "drugs". For example, nicotine (cigarettes) and acetyl salicylic acid (aspirin) would not be considered "drugs" for purposes of this training. Similarly, this definition includes as "drugs" many substances that physicians wouldn't ordinarily think of when they hear the word. Model airplane glue, for example, is a "drug" for purposes of this training.

Under this definition, there are seven broad categories of drugs.

Central Nervous System Depressants

Examples

- Alcohol
- Barbiturates
- Anti-Depressants
- Anti-Anxiety Tranquilizers

Central Nervous System Stimulants

Examples

- Cocaine
- Amphetamines
- Methamphetamine
- Ritalin

Hallucinogens

Examples

- LSD
- MDMA (Ecstasy)
- Psilocybin
- Peyote

Dissociative Anesthetics

Examples

- Phencyclidine (PCP)
- Ketamine
- Dextromethorphan

Narcotic Analgesics

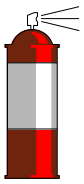
Examples

- Heroin
- Codeine
- Demerol
- Methadone
- OxyContin

Inhalants

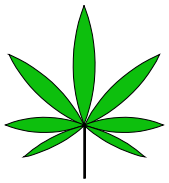
Examples

- Glue
- Gasoline
- Aerosols
- Nitrous Oxide
- Amyl Nitrate



Cannabis

This category includes the various forms and products of Cannabis plants (e.g. marijuana, hashish, Marinol, etc.)



Each category produces a different set of effects on the human mind and body. Each category exhibits different signs of drug influence, signs which come to light in the Drug Evaluation and Classification examinations. Each category also includes drugs that are widely abused.

One fact that is abundantly clear is that many drug users don't stick with only one substance, but instead routinely ingest more than one drug category. This behavior is called "polydrug" use (the prefix "poly" derives from the Greek word for "many"). Some commonly abused combinations of drugs include:

- Alcohol and virtually any other drug (for example, out of 173 drivers arrested by LAPD on suspicion of being under the influence of drugs, 81 (or 47%) had consumed alcohol and some other drug).

- Marijuana and PCP (A common way of ingesting PCP is to sprinkle it on a marijuana cigarette and smoke it. The user then automatically ingests both PCP and Cannabis.)

- Cocaine and Heroin (This combination has its own "street name". It is commonly called a "speedball".)

- Heroin and Amphetamine (This combination is sometimes called a "poor man's speedball".)
- Heroin and PCP (Sometimes called a "fireball".)
- "Crack" Cocaine and PCP (Sometimes called "space base".)
- "Crack" cocaine and marijuana (Sometimes called "primo".)
- "Crack" and Methamphetamine (Sometimes called "croak".)

The practice of polydrug use is so common that a DRE should expect to encounter many subjects who are under the influence of more than one category of drugs. Indeed, at some times and places, polydrug use may be more common than single drug use.

B. Incidence and Characteristics of Drug Use in America

Estimates of the number of American drug users vary widely and are difficult to pinpoint with any accuracy. It is known that one drug, alcohol, is occasionally used by at least a majority of adults in this country. Despite the fact that almost all of the alcohol consumed in this country is legally manufactured (and taxed) under fairly close governmental scrutiny, experts disagree as to how many people abuse alcohol, how much they consume, how frequently, etc. Knowledge of consumption patterns of other drugs is even less exact, since these drugs often are produced and sold illegally.

Nevertheless, virtually all experts agree that millions of Americans use drugs other than alcohol. The 2002 National Survey on Drug Use and Health (NSDUH) reported by the Substance Abuse of Mental Health Services Administration (SAMHSA) obtained survey information on numerous categories of drugs; marijuana, cocaine, heroin, hallucinogens, inhalants and non-medical use of prescription drugs. The results confirmed that a large percentage of the American population use drugs other than alcohol. In 2004, an estimated 19.1 million Americans (7.9% of the population) aged 12 years or older were current illicit drug users. Marijuana was the most commonly used illicit drug in 2004 with 14.6 million current users (6.2 percent of the population).

In 2004, 6 million people were users of psychotherapeutic drugs taken non-medically.

The NSDUH survey also reported that an estimated two (2) million persons were current Cocaine users and 567,000 people used “Crack” during the same time period.

Hallucinogens were used by 1.2 million persons, including 676,000 users of Ecstasy. In 2004, there were an estimated 166,000 current users of Heroin. Of the non-medical prescription drug users, an estimated 4.7 million abused pain relievers, 1.8 million abused tranquilizers, 1.2 million abused stimulants and 300,000 abused sedative medications.

C. Incidence of Drug Impaired Driving

Accurate data on the frequency with which people drive while under the influence of drugs is very hard to come by. First of all, many impaired drivers are never detected. Secondly, since many drug users also drink alcohol, when they are stopped for impaired driving they may be arrested (and tabulated in statistics) as alcohol impaired drivers only. Thirdly, when they are involved in crashes, they may not be tested for drugs other than alcohol.

Nevertheless, some limited studies have been conducted that suggest drug impaired driving is a problem of significant proportions.

(1) A study was conducted in California of young (15-34 years old) male drivers killed in crashes during 1982 and 1983. This study covered 440 such drivers. More than half were found to have some drug or drugs other than alcohol in them. The most prevalent drug other than alcohol was cannabis, which was found in 37% of these young dead drivers. Nearly one-third of these 440 deceased drivers (30%) had alcohol and cannabis in them.

(2) In what is probably one of the most comprehensive studies of this kind conducted by the University of Tennessee Medical Center who analyzed the urine samples of crash-injured drivers for a broad spectrum of drugs, and found that 40 percent had evidence of drugs other than alcohol.

(3) Research completed in 2000 at the Department of Community and Preventative Medicine - University of Rochester, Rochester, NY examined blood samples from 880 drivers brought to the emergency room with injuries received in a motor vehicle crash. Of these samples 33% were positive for at least one substance. The most commonly found substances were THC, Benzodiazepines, and Cocaine.

(4) The U.S. Department of Transportation, National Highway Traffic Safety Administration (NHTSA) reported that a study of fatally injured drivers from seven states showed that alcohol was present in more than 50% of the drivers and other drugs were present in 18% of the drivers.

(5) The Monitoring the Future National Survey (2003) concluded that one out of six high school seniors admitted driving under the influence of drugs in the previous year.

(6) The NSDUH study reported that an estimated 11 million persons admitted driving under the influence of an illicit drug in 2003.

(7) The NHTSA 2007 National Roadside Survey of Alcohol and Drug Use by Drivers indicated that 16.3% of nighttime drivers tested positive for drugs.

Topics for Study

1. What does the term "drug" mean, as used in this course?

2. What are the seven categories of drugs? To which category does alcohol belong? To which category does cocaine belong?

3. What does "polydrug use" mean?

4. What is a "Speedball"? What is "Space Base"?

5. In the 2007 National Roadside Survey of Alcohol and Drug Use by Drivers Study, using both blood tests and oral fluids, what percentage of nighttime drivers tested positive for drugs?

SESSION III

DEVELOPMENT AND EFFECTIVENESS OF THE DRUG EVALUATION AND CLASSIFICATION PROCESS

SESSION III DEVELOPMENT AND EFFECTIVENESS OF THE DRUG EVALUATION AND CLASSIFICATION PROCESS

Upon successfully completing this session the student will be able to:

- State the origin and evolution of the Drug Evaluation and Classification program.
- Describe research and demonstration project results that validate the effectiveness of the program.
- State the impact of legal precedents established by case law.
- Correctly answer the "topics for study" questions at the end of this session.

A. Origin and Evolution of the Program

The Drug Evaluation and Classification program was developed by personnel of the Los Angeles Police Department (LAPD). The initial impetus for the program stemmed from the frequent encounters, by experienced traffic enforcement officers, with drivers who were clearly impaired but whose blood alcohol concentrations were very low or zero. The logical suspicion was that these drivers were under the influence of drugs other than alcohol. But obtaining convincing evidence to back up that suspicion was not easy. Occasionally, officers succeeded in having physicians examine their low BAC subjects, sometimes resulting in a medical diagnosis of drug influence. But medical personnel typically receive little or no training in the recognition of specific signs of drug impairment, particularly at street level doses; therefore, they often were unable or reluctant to offer a judgment about a subject's condition. As a result, many drivers who almost certainly were under the influence were not prosecuted or convicted.

Two LAPD sergeants were instrumental in organizing a program to help police officers develop the skills needed to perform their own assessments of drug-impaired drivers. One was Dick Studdard, a traffic officer, the other was Len Leeds, a narcotics officer. They undertook independent research by consulting with physicians, enrolling in relevant courses, studying text books and technical articles, etc. Also, they secured management level support within LAPD to continue and accelerate the research and development effort. With the assistance of many others, Sergeants Studdard and Leeds ultimately succeeded in developing a drug recognition program based on a three-step process:

STEP ONE
Verify that the subject is impaired, and verify that the subject's blood alcohol concentration is not consistent with the degree of impairment that is evident.

STEP TWO
Determine whether the impairment is drug or medically related (i.e. injury or illness).

STEP THREE
Use proven diagnostic procedures to determine the category (or combination of categories) of drugs that is the likely cause of the impairment.

In 1979, the drug recognition program received the official recognition of the LAPD.

Persons unfamiliar with drugs sometimes wonder why it is necessary to use an elaborate set of diagnostic procedures to point toward the likely category of drugs. At first glance, it might seem that the easily observable inconsistency between the subject's impairment and his or her BAC would be sufficient. In other words, if the subject is obviously impaired, and if the alcohol level in the subject's blood is not enough to account for that impairment, why not simply obtain a blood sample and analyze it for drugs? For several reasons, this simplistic approach would not work.

- The request for a blood or urine sample should be based on (at least) the strongest articulable evidence of drugs that is available. The mere inconsistency between BAC and observable impairment might not be deemed (by courts or by motor vehicle licensing agencies) as sufficient to justify the subsequent chemical

test. For example, it could be argued that the subject is ill or injured, or is simply very susceptible to the effects of even low doses of alcohol. It is preferable if the officer who initiates the chemical test for drugs can articulate a credible basis for believing that those drugs are present.

- The subject may simply refuse to submit to the test. Although that action might put the subject's driver's license in jeopardy of suspension or revocation, it also will deny the prosecution access to the scientific evidence of drug involvement. Conviction or acquittal in such a case may hinge on the officer's ability to submit detailed and convincing testimony concerning the signs pointing toward a specific category or categories of drugs.

- Chemical tests of blood or urine usually disclose only whether or not a particular drug was recently used. The chemical test cannot be relied upon to determine whether the drug was psychoactive in the subject at that time (i.e. whether the subject was "under the influence" of the drug, within the meaning of the law). The DRE is needed to establish the fact that the drug was indeed causing impairment.

- Analysis of blood (or urine) samples for "drugs" can be very expensive, and may require a large volume. Practical constraints require that the officer requesting the chemical analysis be able to point the laboratory technician toward the type of drugs most likely to be found in the sample.

- Several new and innovative methods for drug toxicological analysis are currently being researched. These include, but are not limited to, saliva and hair sampling. As these methods are accepted in the scientific community, they will be evaluated for incorporation into the DEC program.

- There is always the possibility that a person suspected of drug impairment is actually suffering from an illness or injury requiring medical attention. If the subject's sample is simply drawn for subsequent analysis, and they are not examined by someone qualified to recognize the presence -- or absence -- of symptoms of drug impairment, the medical problem may not be discovered until it is too late. DRE's take justifiable pride in the numerous instances where they have secured prompt medical care for persons initially suspected of drug abuse.

B. Evidence of Program Effectiveness

Proof of the effectiveness of the DEC program began to be accumulated from the very outset of the program. LAPD personnel demonstrated that they could conduct examinations that led directly to the conviction of drug impaired drivers and other drug law violators. They also demonstrated that they could train others to conduct these examinations successfully.

Scientific evidence that the examinations provide accurate indicators of drug categories began to be accumulated in the early 1980's. The National Highway Traffic Safety Administration sponsored a controlled, laboratory evaluation of the LAPD drug recognition procedures. The evaluation was conducted by researchers from Johns Hopkins University, assisted by senior

drug recognition experts from LAPD. The researchers recruited volunteers who agreed to consume a variety of drugs, and other substances, under the researchers' supervision. During each experimental session, each volunteer swallowed a "pill" and smoked a "cigarette". Subsequently, each volunteer was examined independently by four LAPD DREs.

The "pills" given to volunteers contained one of the following:

- a placebo (i.e. no drug at all)
- Secobarbital (a CNS Depressant)
- Valium (i.e. Diazepam -- another CNS Depressant)
- d-amphetamine (a CNS Stimulant)

The "cigarette" contained marijuana or a placebo (i.e. no drug) marijuana that either actually contained THC or from which the THC had been removed (i.e., a placebo).

No combinations of drug categories were administered to any volunteer on any session. That is, if a volunteer received a marijuana cigarette, then that volunteer received a placebo pill. If the volunteer received a "loaded" pill (i.e. with a drug), then his or her cigarette was a placebo. Some volunteers on some sessions received no drug at all i.e. both the "pill" and the "cigarette" were placebos.

Two different dose levels of marijuana, diazepam and d-amphetamine were used. That is, some of the marijuana cigarettes were "weak" and some were "strong". Similarly, some of the diazepam and d-amphetamine pills were "weak" and some "were strong". All of the secobarbital pills were "strong". Note: The "strong" dose levels were significantly weaker than the drugs typically abused by impaired drivers encountered by police officers.

A most important condition of this laboratory experiment was that neither the volunteers nor the LAPD officers knew what drugs the volunteers had received. Also, the DRE's were not allowed to "compare notes" concerning their examinations of the subjects. Each DRE conducted his or her examinations in a separate room, and each had to reach an independent judgment as to what category (if any) of drug was present.

The DREs' performance in the laboratory experiment was excellent. They correctly classified 95% of the placebos only subjects as "not impaired". Conversely, they correctly classified 98.7% of the subjects who received "strong" drug doses as "impaired". Furthermore they correctly identified the category of drugs for 91.7% of those "strong" dose subjects.

The DREs were less successful in identifying the volunteers who received "weak" drug doses. For example, they classified as "impaired" about one-third of the subjects who received "weak" marijuana cigarettes, and about one-sixth of those who received "weak" d-amphetamine pills. However, it is unlikely that those "weak" dose subjects would have been stopped by officers, if they actually had been driving.

NHTSA followed up the laboratory experiment by sponsoring a Field Validation Study, in Los Angeles. Arrangements were made to have an independent laboratory analyze blood samples drawn from persons actually arrested on suspicion of drug impaired driving. Any subject who was involved in a crash was excluded from the study, since injuries could have confounded the drug examination. Similarly, any subject who refused to submit to the blood test was excluded, since there would have been no way to substantiate or refute the DRE's conclusions.

Ultimately 173 suspected drug impaired drivers were included in the Field Validation Study. Each was examined by a DRE and subsequently provided a blood sample for analysis by the independent laboratory.

A number of important facts emerged from the Field Validation Study:

1. When a trained drug recognition expert concludes that a subject is under the influence of drugs, chances are very good that the subject actually has drugs in his or her body. Only one of the 173 subjects were found to have no alcohol or other drug. Only ten others were found to have alcohol only. Thus, 93.6% of the subjects were confirmed to have drugs other than alcohol in their bodies. Of the 173 subjects, 125, or 72%, had ingested two or more drugs other than alcohol.

2. Polydrug use is very common. Only 21% of the subjects had consumed one drug other than alcohol. The study found 47% had two drugs in their system other than alcohol. Also 25% had three or more drugs other than alcohol in their system. Among the more common combinations were the following:

    - Alcohol and PCP (23 subjects)
    - Alcohol and Cannabis (19 subjects)
    - Alcohol, PCP and Cannabis (18 subjects)
    - Cannabis and PCP (20 subjects)

3. The independent blood analyses confirmed the DREs' opinions in most cases. Overall, for more than nine out of ten subjects (92.5%), the blood test confirmed the presence of at least one drug category "predicted" by the DREs.

4. Confirmation rates varied among the categories, as follows:

Category	Percent Confirmed by Blood
PCP	92%
Narcotic Analgesics	85%
Cannabis	78%
Depressants (other than alcohol)	50%
CNS Stimulants	33%

5. The relatively low confirmation rates for CNS Depressants and CNS Stimulants may have been due to limitations in the laboratory rather than because of misjudgments by the DREs. For example, the laboratory analyzed the blood only for the subcategories of Depressants known as the Barbiturates and the Benzodiazepines; there are many Depressant drugs that do not belong to those two groupings. In addition, the blood samples were not frozen prior to their shipment to the laboratory. Unfortunately, Cocaine continues to metabolize in unfrozen blood samples. Therefore, it is possible that in some samples obtained from Stimulant abusers, the Cocaine simply disappeared before the samples were analyzed.

In a study conducted in 1990, the Arizona Department of Public Safety's Central Regional Crime Laboratory compiled records of the toxicologic analyses corresponding to DREs' opinions from 1987 to 1990. A total of 526 cases were analyzed showing that a laboratory confirmation rate of 86.5% had been achieved.

Numerous other states have conducted comparisons of laboratory analysis and DRE opinions, with the correlation rates generally exceeding 80%.

The overall conclusion of both the laboratory and field studies is that the Drug Evaluation and Classification program is a worthwhile tool for enforcement of drug-impaired driving. The tool is not 100% accurate, especially in a climate of polydrug use. However, it will furnish reliable evidence of the link between a particular subject and a particular category of drugs in more than a majority of cases.

C. Case Law Review

American courts employ either the *Frye* or *Daubert* Standard for determining the admissibility of scientific evidence. The Frye Standard is the traditional test for determining the admissibility of scientific evidence. The standard derives from *Frye v. United States*, 293 F. 1013 (D.C. Cir. 1923), a case involving the admissibility of the systolic blood pressure deception test (the precursor to today's polygraph test). Essentially, *Frye* courts admit new or novel scientific evidence only if the evidence is "generally accepted" in the "relevant scientific communities." The "general acceptance" standard does not require "unanimity of view." The Frye Standard does not apply to evidence that has passed from the stage of experimentation to reasonable demonstrability. This distinction makes sense because the purpose of requiring general acceptance is to ensure that a party cannot gain an unfair advantage by finding an obscure witness who will attest to obscure techniques or "junk science" without being subject to any kind of real scrutiny. The *Frye* general acceptance standard applies to methods and techniques only; it does not apply to pure expert opinion testimony based on training and experience. In other words, an expert's opinion itself need not be generally accepted. If the evidence is not new or novel, the evidence is admissible if it is sufficiently reliable to be relevant.

The DEC Program is receiving increasingly favorable attention in court. Courts in various states have ruled favorably on the program the DRE process. Some judges have held that the DRE examination procedures meet the Frye Standard for admissibility of "new" scientific evidence, while others have ruled that the Frye Standard need not apply. The Frye Standard is set by the U.S. Supreme Court to govern the admissibility of "new" scientific evidence. In effect, these courts took judicial notice of the DEC Program, so that it is no longer necessary -- within the jurisdictions of those specific courts -- to introduce expert scientific testimony to secure the admissibility of the results of a drug influence examination.

Some of the courts which have rendered decisions are (1) the Municipal Court of the City of Tucson, County of Pima, State of Arizona (acting in "State of Arizona vs. Dayton Johnson and Samuel Rodriguez, et al.", numbers 90056865 and 90035883). The court ruled that the Frye Standard was met. This decision was appealed to the Arizona Supreme court which ruled that the Frye standard did not apply to the DEC Program. (2) the Municipal Court of Minneapolis,

State of Minnesota (acting in State of Minnesota, City of Minneapolis vs. Larry Michael Klawitter, 518 N.W. 2nd 577), ruled that outside of nystagmus, the DEC Program is not subject to the Frye Standard. (3) the County Court of Boulder, State of Colorado (State of Colorado vs. Daniel Hernandez, 92M181) also ruled that the procedures utilized by DRE's are not new or novel and that the Frye Standard did not apply. (4) Washington v. Baity, 991 P. 2d 1151, 140 Wn. 2d 1 (Washington 2000), the court determined that Frye applies to the protocol because the process has "scientific elements." These are examples of decisions illustrating the acceptance the DEC Program in many courts across the nation.

One key element of the drug influence evaluation namely, Horizontal Gaze Nystagmus (HGN) has been found to meet the Frye Standard by several State Supreme Courts. The first case that led to statewide judicial notice of HGN is commonly known as "State vs. Blake" (718 P.2d 171; Arizona, 1986). See also "State vs, Superior Court of County of Cochise, 149 Ariz 269, 718 P.2d 171, 60 ALR 4th, 1103). In this landmark ruling, the Arizona Supreme Court also set standards governing the training of officers who would be qualified to testify about HGN. The court also explicitly ruled that HGN cannot be used to establish BAC quantitatively in the absence of a chemical test.

To Summarize:

The prevailing trend in court is to accept HGN as evidence of impairment, provided the proper scientific foundation is laid. However, courts consistently reject any attempt to derive a quantitative estimate of BAC from nystagmus. Keep in mind that neither nystagmus nor any other elements of the drug influence evaluation are intended to substitute for chemical testing. It is true that there is an approximate, statistical relationship between BAC and angle of onset, but this approximate relationship is not sufficiently reliable to permit BAC "prediction" in any individual case.

Topics for Study

1. State four reasons why it is important not to rely simply on a chemical test to establish a subject's drug impairment.

2. What categories of drugs were included in the Johns Hopkins Laboratory Study

3. In what percentage of cases in the Los Angeles Field Validation Study did blood tests confirm the DREs' opinion that PCP was present?

4. What percentage of subjects were found to be polydrug users in the LAPD Field Validation Study?

5. What was the landmark State Supreme Court case that upheld the use of HGN as evidence of impairment?

6. What do we call the standards for admissibility of scientific evidence, set by the U.S. Supreme Court?

7. Which State first found the Drug Evaluation and Classification procedures met the standards of scientific evidence?

ATTACHMENT A

"Frye" Decisions Regarding Admissibility of Drug Recognition Expert Testimony

"Frye" refers to a United States Federal Court opinion dealing with the admissibility of scientific evidence. The court established that new or novel scientific evidence, or the novel application of scientific principles, must be shown to have met with general acceptance in the relevant scientific community before it can be admitted.

1990
State of Arizona v. Dayton Johnson and Samuel Rodriguez, et al. Defendants Nos 90056865 & 90035883 (Unpublished Opinion).
The Municipal Court of the City of Tucson, County of Pima, State of Arizona

"Virtually all the witnesses agreed that the scientific procedures utilized by trained drug recognition experts are reliable and are generally accepted in the scientific community. The methodology in place, used by trained law enforcement personnel in the field, has been shown to produce reasonably reliable and uniform results that will contribute materially to the ascertainment of the truth."

On May 7, 1992, the Arizona Supreme Court heard oral arguments in a special proceeding regarding this case. The Justices uniformly rejected the application of "Frye" to the DRE procedures. The Chief Justice observed that the component examination procedures had been established for fifty years.

The prosecutors in this case were Tom Rankin (Tucson) and Cliff Vanell (Phoenix).
Expert witnesses for the prosecution included: Sgt. Richard Studdard, LAPD, Marcelline Burns, Ph.D., Sgt. Thomas Page, LAPD, Zenon Zuk, M.D., and Eugene Adler, toxicologist.

1992
County Court, Boulder, Colorado
Case No. 92M181 (Unpublished Opinion)
People of the State of Colorado v. Daniel Hernandez

"The DRE methods are accepted within the scientific community because they have found to be reliable."

"The Court finds that the expert does have sufficient specialized knowledge to assist the jurors in better deciding whether the defendant drove his car when under the influence of a specific drug. The DRE testimony can be used at trial provided a sufficient foundation is laid." Overall, this court ruled that the procedures used by DRE's are not new or novel scientific techniques that must meet the "Frye" standard.

The prosecutor in this case was David Archeluta (Boulder County). Expert witnesses for the prosecution include: Sergeant Thomas Page, LAPD, Zenon Zuk, M.D., Marcelline Burns, Ph.D., Rick Abbott, M.D., and Laurel Farrell (chemist).

1993
State of Minnesota in Supreme Court, C6-93-2092, filed June 30, 1994. (Unpublished Opinion)
State of Minnesota, City of Minneapolis vs. Larry Michael Klawitter, 518 N.W.2d 577 (1994)

"Given proper foundation and subject to other qualifications, opinion testimony by experienced police officers trained in use of so-called drug recognition protocol is generally admissible in evidence in a trial of a defendant for driving while under the influence of a controlled substance."

The Court determined that the gaze nystagmus test satisfies the requirements of "Frye".

"We agree with the trial court that the officer should be allowed to give an opinion based on the officer's training and experience and his or her observations following the 12-step drug recognition protocol, as long as (a) there is sufficient foundation for the specific opinion expressed, (b) the state does not attempt to exaggerate the officer's credentials by referring to the officer as a "Drug Recognition Expert" or to unfairly suggest that the officer's opinion is entitled to greater weight than it deserves, and..." "We add only that it should be obvious that the mere fact that such opinion testimony by itself will be sufficient to support a guilty verdict."

The court also determined that, outside of nystagmus, the components of a DRE examination are not scientifically new and are not subject to the "Frye" test.

The trial court stated, "...there is nothing scientifically new, novel, or controversial about any component of the DRE protocol itself. The symptomatology matrix used by DRE's to reach their conclusions is not new and is generally accepted in the medical community as an accurate compilation of signs and symptoms or impairment by the various drug categories."

The prosecutor in this case was Karen Herland (City of Minneapolis). Expert witnesses for the prosecution included: Sergeant Thomas Page, LAPD, Dr. Marcelline Burns (psychologist), Dr. David Peed (optometrist), Dr. Zenon Zuk (medical doctor), Eugene Adler (criminalist), Dr. S.J. Jejurikar (Minnesota Bureau of Criminal Apprehension), and Robert Meyer (toxicologist).

1994
11th Judicial Circuit in and for Dade County, Florida
Case No. 256998,9-I (Unpublished Opinion)
State of Florida v. Frederick Williams
Judge Maxine Cohen Lando
Original filed January 19, 1995

"Given proper foundation and subject to other qualifications, opinion testimony by an experienced police officer trained in the use of the drug recognition protocol is generally admissible in evidence in a trial of a defendant charged with driving under the influence of a controlled or chemical substance. Furthermore, Horizontal Gaze Nystagmus (HGN) test results are generally admissible to establish (1) that the defendant was impaired; and/or (2) that the defendant was over the legal limit; and/or (3) the defendant's specific breath or blood alcohol level at the time he performed the test."

This court found that the "Frye" standard is inapplicable to the DRE Protocol because neither the protocol nor any of its subsets (including HGN, VGN, and Lack of Convergence) are "scientific".

Further, these tests are neither new nor novel. The Court also state that "Frye" is inapplicable to HGN, VGN, and LOC because none of them are new or novel. "None of these tests or the theories and procedures they encompass, are new, novel, or emerging scientific techniques. The medical and psychological professions have acknowledged the tests' underlying theories and procedures for decades."

The Court concluded:

"Drug recognition training is not designed to qualify police officers as scientists, but to train them as observers. The training is intended to refine and enhance the skill of acute observation...and to focus that power...in a particular situation."

This court followed the Klawitter (Minnesota) decision, that it requires the state to "lay a proper predicate before referring to a DRE as anything other than a DRE or Drug Recognition Evaluator or Examiner."

"The real issue is not the admissibility of the evidence, but the weight it should receive. That is a matter for the jury to decide."

The prosecutor in this case was Steve Talpins (Dade County). Expert witnesses for the prosecution in this case included: Marcelline Burns, Ph.D., Zenon Zuk, M.D., Robert Dobie, M.D., Sergeant Thomas Page, LAPD, and others.

2000
Case No. 66876-1
State of Washington vs. Michael Baity
Judge J. Talmadge, WA Supreme Court
Original filed 2000

In this case, the court was asked to determine if a drug recognition protocol, used by trained drug recognition officers to determine if a suspect's driving is impaired by a drug other than alcohol, meets the requirements of *Frye v. United States*, 293 F. 1013,34 A.L.R. 145 (1923), for novel scientific evidence.

The issue brought before the court was; Is a drug recognition program novel scientific evidence generally accepted in the scientific community, thus satisfying the *Frye* test for admissibility?

The facts in this case were:
The state charged Baity with one count of DUI, in violation of RCW 46.61.502 (l) (b) (c), and one count of driving while license suspended in the third degree, in violation of RCW 46.20.342(l)(c), after he failed roadside SFST's and showed signs of drug impairments.
In a pretrial motion in Baity's case, the State sought to qualify the DREs as experts and to obtain a ruling on the admissibility of DRE evidence with respect to the defendant's drug impairment and the evaluation process used to determine that impairment. Specifically, the State sought to admit testimony that Baity's impairment was consistent with the symptoms associated with one of seven categories of drugs. Additionally, the state moved to admit testimony regarding the use of the horizontal gaze nystagmus (HGN) test, both for the detection of alcohol and for the detection of drugs. Baity moved to suppress all DRE evidence, including the HGN test, on the basis that the DRE program and protocol constitute novel scientific evidence subject to the Frye test for admissibility.

On May 19, 1998, the Pierce County District Court judges issued their opinion titled, *"Opinion Regarding Admissibility of HGN and DRE."* In that opinion, they denied the defendants' motions to suppress the field sobriety tests (SFSTs) as to their alcohol impairment, holding those tests are "reasonably understandable to the ordinary person" and therefore not subject to *Frye*. Clerk's Papers at 56. The court also noted some features of the DRE protocol were either not of a scientific nature or were scientific, but not novel.

The court ruled that after analyzing the DRE protocol and the approach of other courts to its admissibility, that the DRE protocol and the chart used to classify the behavioral patterns associated with seven categories of drugs have scientific elements meriting evaluation under *Frye*. They also found that the protocol to be accepted in the relevant scientific communities. However, the court ruled that there is confined situations where all 12-steps of the protocol have been undertaken. Moreover, an officer may not testify in a fashion that casts an aura of scientific certainty to the testimony. The officer also may not predict the specific level of drugs present in a suspect. The DRE officer, properly qualified, may express an opinion that a suspect's behavior and physical attributes are or are not consistent with the behavioral and physical signs associated with certain categories of drugs.

The court also held that the protocol meets the mandate of Frye. An officer may testify

concerning such drug impairment, subject to the limitations set forth in this opinion, upon meeting the requirements of ER 702 and 703 for the admission of expert opinion testimony. The court reversed the suppression orders of the Pierce County District Court and remanded the cases for further proceedings consistent with this opinion.

2003
Case No. CR-2003-00025
State of New Mexico vs. Miriam Aleman
State of New Mexico, County of Dona Ana
Third Judicial District
Judge Silvia E. Cano-Garica

Defendant made a motion *In Limme* to exclude the testimony of the DRE officer. They heard the testimony of various witnesses and reviewed the State's Brief in support of the DRE testing. Testimony and other applicable documents found that:

The DRE officer was recognized as an expert of DRE testing based upon his specialized knowledge and experience, the DRE evaluation method is generally accepted in the particular scientific field of forensic toxicology, the DRE evaluation provides critical information which assists the toxicologist in forming an opinion as to whether the driver was impaired by the use of drugs at or near the time the driver was driving the motor vehicle.

The DRE protocols are the application or incorporation of traditional techniques in the biology, physiology, anatomy, chemistry, pharmacology and toxicology fields, and the ultimate decision as to the driver's alleged impairment, based on all of the testimony received, rests with the jury.

2004
Case No. CR 03-8203
State of Nebraska vs. Timothy J. Cubrich
Judge Todd J. Hutton, Sarpy Co. Court

The court was asked to determine the admissibility of the law enforcement officer's opinion that the defendant was under the influence of a drug, other than alcohol, to the extent that his abilities to safely operate the vehicle were appreciable impaired.

To this end the court applied the standards set forth in Schafersman v. Agland Coop, 262 Neb. 215, 631 N.W. 2d 862 (2001), having adopted Daubert v. Merrel Dow Pharmaceuticals, Inc., 509 U.S.579 (1993), as the controlling authority in determining the admissibility of expert opinion testimony.

The court concluded: Since Daubert, the court now serves in the "gatekeeping" role in which it is called upon to determine the reliability and relevance of expert testimony. There is no Case Law in Nebraska which has specifically addressed the issue of expert testimony relating to impaired drivers suspected of using drugs. Nor is there a statutory procedure by which Drug Recognition Examinations or the opinions derived there from have been codified.

Application of the Daubert standard provided a number of considerations the court used in determining the admissibility of evidence through the testimony of an expert, which included:

The 12-step protocol which relies on determining if a person is drug impaired has been recognized in the scientific community, including physicians, ophthalmologists, and forensic toxicologists, as a dependable methodology by which an officer, properly trained, can identify impairment and the category of drug(s) which are impairing the suspect's cognitive and physical capabilities.

The methodology is reliable because it is dependent on a fixed set of assessments which are verified by a toxicology test. The evaluation process includes HGN testing which has been found to meet the Frye standard of admissibility. Additionally, the HGN and VGN tests have been subject to peer review and publication. The remaining tests serve to screen the suspect's mental and physical condition documenting clues explaining why the person may or may not be impaired and if so the source(s) involved.

The drug recognition assessment is a tool by which a specially trained officer can conclude "based on the totality of results" whether or not a person is impaired by a drug other than alcohol.

The court found that the DREs opinion was correct in that the Defendant showed signs of impairment from a drug, other than alcohol, which caused him to seek a toxicological examination. The category of drug is admissible for the limited purpose of establishing foundation for drug screen conducted by the toxicologists.

ATTACHMENT B

American Prosecutors Research Institute
National Traffic Law Center

HORIZONTAL GAZE NYSTAGMUS
STATE CASE LAW SUMMARY

INTRODUCTION

The following state case law summary contains the seminal cases for each state, the District of Columbia and the Federal courts on the admissibility of HGN. Three main issues regarding the admissibility of the HGN test are set out under each state: evidentiary admissibility, police officer testimony, and purpose and limits of the HGN test results. The case or cases that address each issue are then briefly summarized and cited.

Alabama

I. Evidentiary Admissibility

HGN is a scientific test that must satisfy the *Frye* standard of admissibility. The Supreme Court of Alabama found that the State had not presented "sufficient evidence regarding the HGN test's reliability or its acceptance by the scientific community to determine if the Court of Criminal Appeals correctly determined that the test meets the Frye standards." *Malone v. City of Silverhill*, 575 So.2d 106 (Ala. 1990).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

Alaska

I. Evidentiary Admissibility

HGN is a scientific test. It is generally accepted within the relevant scientific community. *Ballard v. Alaska,* 955 P.2d 931, 939 (Alaska Ct. App. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer may testify to the results of HGN testing as long as the government establishes a foundation that the officer has been adequately trained in the test. *Ballard,* 955 P.2d at 941.

III. Purpose and Limits of HGN

HGN testing is "a reliable indicator of a person's alcohol consumption and, to that extent, HGN results are relevant." The court cautioned that the HGN test could not be used to correlate the results with any particular blood-alcohol level, range of blood-alcohol levels, or level of impairment. *Ballard,* 955 P.2d at 940.

Arizona

I. Evidentiary Admissibility

HGN is a scientific test that needs to satisfy the *Frye* standard of admissibility. State has shown that HGN satisfies the *Frye* standard. *State v. Superior Court* (*Blake*), 718 P.2d 171, 181 (Ariz. 1986) (seminal case on the admissibility of HGN).

II. Police Officer Testimony Needed to Admit HGN Test Result

"The proper foundation for [admitting HGN test results] . . . includes a description of the officer's training, education, and experience in administering the test and showing that proper procedures were followed."
Arizona ex. rel. Hamilton v. City Court of Mesa, 799 P.2d 855, 860 (Ariz. 1990).
See also Arizona ex. Rel. McDougall v. Ricke, 778 P.2d 1358, 1361 (Ariz. Ct. App. 1989).

III. Purpose and Limits of HGN

HGN test results are admissible to establish probable cause to arrest in a criminal hearing. *State v. Superior Court* (*Blake*), 718 P.2d at 182.

"Where a chemical analysis has been conducted, the parties may introduce HGN test results in the form of estimates of BAC over .10% to challenge or corroborate that chemical analysis." *Ricke*, 778 P.2d at 1361.

When no chemical analysis is conducted, the use of HGN test results "is to be limited to showing a symptom or clue of impairment." *Hamilton*, 799 P.2d at 858.

Arkansas

I. Evidentiary Admissibility

Novel scientific evidence must meet the *Prater* (relevancy) standard for admissibility. Because law enforcement has used HGN for over thirty-five years, a *Prater* inquiry is not necessary as the test is not "novel" scientific evidence. *Whitson v. Arkansas*, 863 S.W.2d 794, 798 (Ark. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

HGN may be admitted as evidence of impairment, but is not admissible to prove a specific BAC. *Whitson*, 863 S.W.2d at 798.

California

I. Evidentiary Admissibility

HGN is a scientific test and the *Kelly/Frye* "general acceptance" standard must be applied. *California v. Leahy*, 882 P.2d 321 (Cal. 1994). *California v. Joehnk*, 35 Cal. App. 4th 1488, 1493, 42 Cal. Rptr. 2d 6, 8 (Cal. Ct. App. 1995).

"…A consensus drawn from a typical cross-section of the relevant, qualified scientific community accepts the HGN testing procedures…."
Joehnk, 35 Cal. App. 4th at 1507, 42 Cal. Rptr. 2d at 17.

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer testimony is insufficient to establish "general acceptance in the relevant scientific community." *Leahy*, 882 P2d. at 609. Also see *People v. Williams*, 3 Cal. App. 4th 1326 (Cal. Ct. App. 1992).

Police officer can give opinion, based on HGN and other test results, that defendant was intoxicated. Furthermore, police officer must testify as to the administration and result of the test. *Joehnk*, 35 Cal. App. 4th at 1508, 42 Cal. Rptr. 2d at 18.

III. Purpose and Limits of HGN

HGN may be used, along with other scientific tests, as some evidence that defendant was impaired. *Joehnk*, 35 Cal. App. 4th at 1508, 42 Cal. Rptr. 2d at 17.

HGN test results may not be used to quantify the BAC level of the defendant. *California v. Loomis*, 156 Cal. App. 3d Supp. 1, 5-6, 203 Cal. Rptr. 767, 769-70 (1984).

Connecticut

I. Evidentiary Admissibility

Proper foundation must be established in accordance with *Daubert* prior to the introduction of HGN test results. *State v. Russo*, 773 A. 2d 965 (Conn. App. Ct. 2001).

Also see, *Connecticut v. Merritt*, 647 A.2d 1021, 1028 (Conn. App. Ct. 1994). HGN must meet the *Frye* test of admissibility. In this case, the state presented no evidence to meet its burden under the *Frye* test.

HGN satisfies the *Porter* standards and is admissible. (In *State v. Porter,* 698 A.2d 739 (1997), the Connecticut Supreme Court held the *Daubert* approach should govern the admissibility of scientific evidence and expressed factors to be considered in assessing evidence.) *Connecticut v. Carlson*, 720 A.2d 886 (Conn. Super. Ct. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

Must lay a proper foundation with a showing that the officer administering the test had the necessary qualifications and followed proper procedures. *Connecticut v. Merritt,* 647 A.2d 1021, 1028 (Conn. App. Ct. 1994).

III. Purpose and Limits of HGN

HGN test results can be used to establish probable cause to arrest in a criminal hearing. *Connecticut v. Royce*, 616 A.2d 284, 287 (Conn. App. Ct. 1992).

Delaware

I. Evidentiary Admissibility

HGN evidence is scientific and must satisfy the Delaware Rules of Evidence standard. *Delaware v. Ruthardt*, 680 A.2d 349, 356 (Del. Super. Ct. 1996).

HGN evidence is acceptable scientific testimony under the Delaware Rules of Evidence. *Ruthardt*, 680 A.2d at 362.

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer may be qualified as an expert to testify about the underlying scientific principles that correlate HGN and alcohol. Delaware police receiving three-day (twenty-four hour) instruction on HGN test administration are not qualified to do this.
Ruthardt, 680 A.2d at 361-62.

Police officer testimony about training and experience alone, without expert testimony, is not enough foundation to admit HGN test results.
Zimmerman v. Delaware, 693 A.2d 311, 314 (Del. 1997).

III. Purpose and Limits of HGN

HGN test results admissible to show probable cause in a criminal hearing.
Ruthardt, 680 A.2d at 355.

HGN test results admissible to show probable cause in a civil hearing.
Cantrell v. Division of Motor Vehicles, 1996 Del. Super. LEXIS 265 (Del. Super. Ct. Apr. 9, 1996).

HGN test results cannot be used to quantify the defendant's BAC. However, they can be used as substantive evidence that the defendant was "under the influence of intoxicating liquor." *Ruthardt*, 680 A.2d at 361-62.

District of Columbia

I. Evidentiary Admissibility

The Court does not address this issue.

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court used the case law of other jurisdictions to come to the conclusion that the Officer in the case could testify as an expert on the administration and the results of the HGN test. Therefore, in this case, the evidence was properly admitted using the Officer as the expert. See Karamychev v. District of Columbia, 772 A. 2d 806 (D.C. App. 2001).

III. Purpose and Limits of HGN

The Court has not yet addressed this issue.

Florida

I. Evidentiary Admissibility

The 3rd District Court found HGN to be a "quasi-scientific" test. Its application is dependent on a scientific proposition and requires a particular expertise outside the realm of common knowledge of the average person. It does not have to meet the *Frye* standard because HGN has been established and generally accepted in the relevant scientific community, and has been *Frye* tested in the legal community. The court took judicial notice that HGN is reliable based on supportive case law from other jurisdictions, numerous testifying witnesses and studies submitted. It is "no longer 'new or novel' and there is simply no need to reapply a *Frye* analysis." *Williams v. Florida,* 710 So. 2d 24 (Fla. Dist. Ct. App. 1998).

The 4th District Court found HGN to be a scientific test. However, because it is not novel, the *Frye* standard is not applicable. However, "[e]ven if not involving a new scientific technique, evidence of scientific tests is admissible only after demonstration of the

traditional predicates for scientific evidence including the test's general reliability, the qualifications of test administrators and technicians, and the meaning of the results." Without this predicate, "the danger of unfair prejudice, confusion of issues or misleading the jury from admitting HGN test results outweighs any probative value." The state did not establish the appropriate foundation for the admissibility of HGN test results.
Florida v. Meador, 674 So. 2d 826, 835 (Fla. Dist. Ct. App. 1996), *review denied*, 686 So. 2d 580 (Fla. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

"We take judicial notice that HGN test results are generally accepted as reliable and thus are admissible into evidence once a proper foundation has been laid that the test was correctly administered by a qualified DRE [Drug Recognition Expert]."
Williams, 710 So. 2d at 32.

Also see *Bown v. Florida*, 745 So. 2d 1108 (Fl. Dist. Ct. App. 1999) which expands *Williams.* Allows trooper to explain HGN, but district requires confirmatory blood, breath or urine test before admitting HGN into evidence.

No evidence presented as to the police officer's qualifications nor administration of the HGN test in this case. *Meador*, 674 So. 2d at 835.

III. Purpose and Limits of HGN

The HGN test results alone, in the absence of a chemical analysis of blood, breath, or urine, are inadmissible to trigger the presumption provided by the DUI statute, and may not be used to establish a BAC of .08 percent or more. *Williams,* 710 So. 2d at 36.

Georgia

I. Evidentiary Admissibility

The HGN test is admissible as a "scientifically reliable field sobriety evaluation" under the *Harper* "verifiable certainty" standard. *Manley v. Georgia*, 424 S.E.2d 818, 819-20 (Ga. Ct. App. 1992).

HGN testing is judicially noticed as a scientifically reliable test and therefore expert testimony is no longer required before the test results can be admitted.
Hawkins v. Georgia, 476 S.E.2d 803, 808-09 (Ga. Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer, who received specialized training in DUI detection and worked with a DUI task force for two years, was permitted to testify that, in his opinion, defendant was under the influence. *Sieveking v. Georgia*, 469 S.E.2d 235, 219-20 (Ga. Ct. App. 1996).

A police officer who testifies to the results, administration, and procedure of HGN may be cross-examined about those areas even if the state only offers him as a POST-certified officer. This is because the analysis and expertise needed for HGN go far beyond those needed by a lay person who observes the walk and turn or one leg stance tests. *James v. State,* 2003 WL 1540235 (Ga. App.).

III. Purpose and Limits of HGN

HGN test can be admitted to show that the defendant "was under the influence of alcohol to the extent that it was less safe for him to drive." *Sieveking*, 469 S.E.2d at 219.

Hawaii

I. Evidentiary Admissibility

HGN is a scientific test. The HGN test is reliable under the Hawaii Rules of Evidence and admissible as "evidence that police had probable cause to believe that a defendant was DUI." Judicial notice of the "validity of the principles underlying HGN testing and the reliability of HGN test results" is appropriate. HGN test results can be admitted into evidence if the officer administering the test was duly qualified to conduct the test and the test was performed properly. *Hawaii v. Ito*, 978 P.2d 191 (Haw. Ct. App. 1999).

II. Police Officer Testimony Needed to Admit HGN Test Result

Before HGN test results can be admitted into evidence in a particular case, however, it must be shown that (1) the officer administering the test was duly qualified to conduct and grade the test; and (2) the test was performed properly in the instant case. *Hawaii v. Ito*, 978 P.2d 191 (Haw. Ct. App. 1999), *See also Hawaii v. Toyomura*, 904 P.2d 893, 911 (Haw. 1992) and *Hawaii v. Montalbo,* 828 P2d. 1274, 1281 (Haw. 1992).

III. Purpose and Limits of HGN

HGN test can be admitted as "evidence that police had probable cause to believe that a defendant was DUI." *Hawaii v. Ito*, 978 P.2d 191 (Haw. Ct. App. 1999).

Idaho

I. Evidentiary Admissibility

HGN test results admitted under the Idaho Rules of Evidence. Rule 702 is the correct test in determining the admissibility of HGN. *State v. Gleason*, 844 P.2d 691, 694 (Idaho 1992).

II. Police Officer Testimony Needed to Admit HGN Test Result

Officer may testify as to administration of HGN test, but not correlation of HGN and BAC. *State v. Garrett*, 811 P.2d 488, 493 (Idaho 1991).

III. Purpose and Limits of HGN

"HGN test results may not be used at trial to establish the defendant's blood alcohol level. Although we note that in conjunction with other field sobriety tests, a positive HGN test result does supply probable cause for arrest, standing alone that result does not provide proof positive of DUI…." *Garrett*, 811 P.2d at 493.

HGN may be "admitted for the same purpose as other field sobriety test evidence -- a physical act on the part of [defendant] observed by the officer contributing to the cumulative portrait of [defendant] intimating intoxication in the officer's opinion."
Gleason, 844 P.2d at 695.

Illinois

I. Evidentiary Admissibility

HGN meets *Frye* standard of admissibility.
People v. Buening, 592 N.E.2d 1222, 1227 (Ill. App. Ct. 1992).
Despite the ruling of the *Buening* appellate court, the Fourth District Court of Appeals declined to recognize HGN's general acceptance without a *Frye* hearing. The court criticized the *Buening* court for taking judicial notice of HGN's reliability based on the decisions of other jurisdictions. *People v. Kirk*, 681 N.E.2d 1073, 1077 (Ill. App. Ct. 1997).

The state supreme court held that the state was no longer required to show than an HGN test satisfied the Frye standard before introducing the results of the test into evidence. Absent proof by the defense that the HGN test was unsound, the State only had to show that the officer who gave the test was trained in the procedure and that the test was properly administered. *The People of the State of Illinois v. Linda Basler,* 740 N.E.2d 1 (Ill. 2000), 2000 Ill. LEXIS 1698 (Ill. 2000). (Plurality Opinion) According to Fourth Circuit, a Frye hearing must be held for HGN to be admitted. *People v. Herring*, 762 N.E.2d 1186.

II. Police Officer Testimony Needed to Admit HGN Test Result

"A proper foundation should consist of describing the officer's education and experience in administering the test and showing that the procedure was properly administered."
Buening, 592 N.E.2d at 1227.

III. Purpose and Limits of HGN

HGN test results may be used to establish probable cause in a criminal hearing.
People v. Furness, 526 N.E.2d 947, 949 (Ill. App. Ct. 1988).

HGN test results admissible to show probable cause in a civil hearing.
People v. Hood, 638 N.E.2d 264, 274 (Ill. App. Ct. 1994).

HGN test results may be used "to prove that the defendant is under the influence of alcohol." *Buening*, 592 N.E.2d at 1228.

Indiana

I. Evidentiary Admissibility

Results of properly administered HGN test are admissible to show impairment which may be caused by alcohol and, when accompanied by other evidence, will be sufficient to establish probable cause to believe a person may be intoxicated. *Cooper v. Indiana*, 751 N.E.2d 900, 903 (Ind. Ct. App. Feb. 2002)

II. Police Officer Testimony Needed to Admit HGN Test Result

The proper foundation for admitting HGN evidence should consist of describing the officer's education and experience in administering the test and showing that the procedure was properly administered. *Cooper*, 751 N.E.2d at 903.

The question of whether a trained officer might express an opinion that defendant was intoxicated based upon the results of field sobriety tests was not before the court, and thus, the court expressed no opinion concerning the admissibility of such testimony. *Cooper,* 751 N.E. 2d at 902, n. 1.

III. Purpose and Limits of HGN

HGN test results, when accompanied by other evidence, will be sufficient to establish probable cause that the person may be intoxicated. *Cooper*, 751 N.E.2d at 903.

Iowa

I. Evidentiary Admissibility

HGN admissible as a field test under the Iowa Rules of Evidence. "[T]estimony by a properly trained police officer with respect to the administration and results of the horizontal gaze nystagmus test are admissible without need for further scientific evidence."
State v. Murphy, 451 N.W.2d 154, 158 (Iowa 1990).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer may testify about HGN test results under Rule 702 if the officer is properly trained to administer the test and objectively records the results.
Murphy, 451 N.W.2d at 158.

III. Purpose and Limits of HGN

HGN test results may be used as an indicator of intoxication. *Murphy*, 451 N.W.2d at 158.

Kansas

I. Evidentiary Admissibility

HGN must meet *Frye* standard of admissibility and a *Frye* hearing is required at the trial level. There was no *Frye* hearing conducted and the appellate court refused to make a determination based on the record it had. *State v. Witte*, 836 P.2d 1110, 1121 (Kan. 1992).

HGN test has not achieved general acceptance within the relevant scientific community and its exclusion was appropriate. *State v. Chastain*, 960 P.2d 756 (Kan. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

Kentucky

I. Evidentiary Admissibility

HGN test results admitted due to defendant's failure to object.
Commonwealth v. Rhodes, 949 S.W.2d 621, 623 (Ky. Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

Louisiana

I. Evidentiary Admissibility

HGN meets *Frye* standard of admissibility and with proper foundation my be admitted as evidence of intoxication.

State v. Breitung, 623 So. 2d 23, 25-6 (La. Ct. App. 1993).
State v. Regan, 601 So. 2d 5, 8 (La. Ct. App. 1992).
State v. Armstrong, 561 So. 2d 883, 887 (La. Ct. App. 1990).

The standard of admissibility for scientific evidence is currently the Louisiana Rules of Evidence. *State v. Foret*, 628 So. 2d 1116 (La. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer may testify as to training in HGN procedure, certification in the administration of HGN test and that the HGN test was properly administered.
Armstrong, 561 So. 2d at 887.

III. Purpose and Limits of HGN

The HGN test may be used by the officer "to determine whether or not he [needs] to 'go any further' and proceed with other field tests." *Breitung*, 623 So. 2d at 25.
HGN test results may be admitted as evidence of intoxication.
Armstrong, 561 So. 2d at 887.

Maine

I. Evidentiary Admissibility

Because the HGN test relies on greater scientific principles than other field sobriety tests, the reliability of the test must first be established. Either *Daubert* or *Frye* standard must be met. *State v. Taylor*, 694 A.2d 907, 912 (Me. 1997).

The Maine Supreme Court took judicial notice of the reliability of the HGN test to detect impaired drivers. *Taylor*, 694 A.2d at 910.

II. Police Officer Testimony Needed to Admit HGN Test Result

"A proper foundation shall consist of evidence that the officer or administrator of the HGN test is trained in the procedure and the [HGN] test was properly administered."
Taylor, 694 A.2d at 912.

III. Purpose and Limits of HGN

HGN test results may only be used as "evidence of probable cause to arrest without a warrant or as circumstantial evidence of intoxication. The HGN test may not be used by an officer to quantify a particular blood alcohol level in an individual case."
Taylor, 694 A.2d at 912.

Maryland

I. Evidentiary Admissibility

HGN is scientific and must satisfy the *Frye*/*Reed* standard of admissibility. The Court of Appeals took judicial notice of HGN's reliability and its acceptance in the relevant scientific communities. *Schultz v. State*, 664 A.2d 60, 74 (Md. Ct. Spec. App. 1995).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer must be properly trained or certified to administer the HGN test. [NOTE: In *Schultz*, the police officer failed to articulate the training he received in HGN testing and the evidence was excluded.] *Schultz*, 664 A.2d at 77.

III. Purpose and Limits of HGN

HGN testing may not be used to establish a specific blood alcohol level.
Wilson v. State, 723 A.2d 494 (Md. Ct. Spec. App. 1999).

Massachusetts

I. Evidentiary Admissibility

HGN is scientific and is admissible on a showing of either general acceptance in the scientific community or reliability of the scientific theory. *See Commonwealth v. Lanigan*, 641 N.E.2d 1342 (Mass. 1994). HGN test results are inadmissible until the Commonwealth introduces expert testimony to establish that the HGN test satisfies one of these two standards. *Commonwealth v. Sands*, 675 N.E.2d 370, 373 (Mass. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

"There must be a determination as to the qualification of the individual administering the HGN test and the appropriate procedure to be followed." In this case there was no testimony as to these facts, thus denying the defendant the opportunity to challenge the officer's qualifications and administration of the test. *Sands*, 675 N.E.2d at 373.

III. Purpose and Limits of HGN

The Court did not address this issue.

Michigan

I. Evidentiary Admissibility

Court found that HGN test is scientific evidence and is admissible under the *Frye* standard of admissibility. *State v. Berger*, 551 N.W.2d 421, 424 (Mich. Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

Only foundation necessary for the introduction of HGN test results is evidence that the police officer properly performed the test and that the officer administering the test was qualified to perform it. *Berger*, 551 N.W.2d at 424.

III. Purpose and Limits of HGN

HGN test results are admissible to indicate the presence of alcohol.
Berger, 551 N.W.2d at 424 n.1.

Minnesota

I. Evidentiary Admissibility

Court found that HGN meets the *Frye* standard of admissibility.
State v. Klawitter, 518 N.W.2d 577, 585 (Minn. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officers must testify about their training in and experience with the HGN test.
See generally Klawitter, 518 N.W.2d at 585-86.

III. Purpose and Limits of HGN

HGN admissible as evidence of impairment as part of a Drug Evaluation Examination in the prosecution of a person charged with driving while under the influence of drugs.
See generally Klawitter, 518 N.W.2d at 585.

Mississippi

I. Evidentiary Admissibility

HGN is a scientific test. However, it is not generally accepted within the relevant scientific community and is inadmissible at trial in the State of Mississippi.
Young v. City of Brookhaven, 693 So.2d 1355, 1360-61 (Miss. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officers cannot testify about the correlation between the HGN test and precise blood alcohol content. *Young*, 693 So.2d at 1361.

III. Purpose and Limits of HGN

HGN test results are admissible only to prove probable cause to arrest.
Young, 693 So.2d at 1361.

HGN test results cannot be used as scientific evidence to prove intoxication or as a mere showing of impairment. *Young*, 693 So.2d at 1361.

Missouri

I. Evidentiary Admissibility

Court found that HGN test meets the *Frye* standard of admissibility. *State v. Hill*, 865 S.W.2d 702, 704 (Mo. Ct. App. 1993), *rev'd on other grounds*, *State v. Carson*, 941 S.W.2d 518, 520 (Mo. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer must be adequately trained and able to properly administer the test. *Hill*, 865 S.W.2d at 704.

See also, *Duffy v. Director of Revenue*, 966 S.W. 2d 372 (Mo. Ct. App. 1998). HGN not admitted at trial because the administering officer was not aware of hot to properly score the test and interpret its results.

III. Purpose and Limits of HGN

HGN can be admitted as evidence of intoxication. *Hill*, 865 S.W.2d at 704.

Montana

I. Evidentiary Admissibility

Court found that HGN is neither new nor novel; thus, *Daubert* does not apply. Court still finds that HGN must meet the state's rules of evidence that are identical to the Federal Rules of Evidence. *Hulse v. DOJ, Motor Vehicle Div.,* 961 P.2d 75, 88 (Mont. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

The court held that before an arresting officer may testify as to HGN results, a proper foundation must show that the officer was properly trained to administer the HGN test and that he administered the test in accordance with this training. Before the officer can testify as to the correlation between alcohol and nystagmus, a foundation must be established that the officer has special training in the underlying scientific basis of the HGN test. *Hulse*, 961 P.2d 75 (Mont. 1998).

See Also, *State v. Crawford*, 315 Mont. 480, 68 P.3d 848 (2003), in which the court ruled that the officer's credentials were sufficient to establish his expertise, along with evidence that he was previously qualified as an expert. They relied on *Russette* (2002 MT 200), stating that to establish an expert's qualifications, the proponent of the testimony must show that the expert has special training or education and adequate knowledge on which to base an opinion.

III. Purpose and Limits of HGN

HGN test results admissible as evidence of impairment.
State v. Clark, 762 P.2d 853, 856 (Mont. 1988).

Nebraska

I. Evidentiary Admissibility

HGN meets the *Frye* standard for acceptance in the relevant scientific communities, and when the test is given in conjunction with other field sobriety tests, the results are admissible for the limited purpose of establishing impairment that may be caused by alcohol. *State v. Baue*, 607 N.W.2d 191 (Neb. 2000)

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer may testify to the results of **HGN** testing if it is shown that the officer has been adequately trained in the administration and assessment of the **HGN** test and has conducted the testing and assessment in accordance with that training.
State v. Baue, 607 N.W.2d 191 (Neb. 2000)

III. Purpose and Limits of HGN

"Testimony concerning **HGN** is admissible on the issue of impairment, provided that the prosecution claims no greater reliability or weight for the **HGN** evidence than it does for evidence of the defendant's performance on any of the other standard field sobriety tests, and provided further that the prosecution makes no attempt to correlate the **HGN** test result with any particular blood-alcohol level, range of blood-alcohol levels, or level of impairment." *State v. Baue*, 607 N.W.2d 191 (Neb. 2000) (quoting *Ballard v. State*, 955 P.2d 931, 940 (Alaska App. 1998))

New Hampshire

I. Evidentiary Admissibility

In *State v. Dahoo* (Dec. 20, 2002), the N.H. Supreme Court ruled that the HGN test is admissible under N.H. Rule of Evidence 702 and *Daubert* for the limited purpose of providing circumstantial evidence of intoxication. HGN test is a scientifically reliable and valid test.

N.H. Supreme Court ruled their findings binding in *Dahoo* and that courts "will not be required to establish the scientific reliability of the HGN."

II. Police Officer Testimony Needed to Admit HGN Test Result

"Since we have already determined that the scientific principles underlying the HGN test are reliable, a properly trained and qualified police officer may introduce the HGN test results at trial." *State v. Dahoo,* 2002 N.H. LEXIS 179.

III. Purpose and Limits of HGN

"HGN results cannot be introduced at trial for the purpose of establishing a defendant's BAC level….[T]he results are not sufficient alone to establish intoxication."
State v. Dahoo, Id.

New Jersey

I. Evidentiary Admissibility

In New Jersey, the party offering the results of a scientific procedure into evidence must comply with Frye and show that the procedure is generally accepted in the relevant scientific communities. A party may prove this general acceptance via "(1) testimony of knowledgeable experts[,] (2) authoritative scientific literature[, or] (3) [p]ersuasive judicial decision." Based on the testimony of Dr. Marcelline Burns and Dr. Jack Richman, the Court found the HGN test to be generally accepted and the results thus admissible. The Court also noted the "significant number" of jurisdictions that have accepted the HGN test as admissible scientific evidence. *State v. Maida*, 2000 N.J. Super. LEXIS 276 (N.J. Super. Ct. Law Div. 2000).

***But See**, *State v. Doriguzzi*, 760 A.2d 336 (N.J. Super. 2000), which held that HGN is scientific evidence that must meet Frye Standard. However, in each trial, sufficient foundation evidence must be laid by expert testimony to assure defendants that a conviction for DUI, when based in part on HGN testing, is grounded in reliable scientific data. In this case, the appellate court reversed defendant's conviction because at trial no such foundation was presented. The court found that because HGN testing has not achieved general acceptance in the community, it is not a matter of which a court can take judicial notice.

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court found the HGN test admissible "as a reliable scientific indicator of likely intoxication."

New Mexico

I. Evidentiary Admissibility

HGN is a scientific test. New Mexico follows the *Daubert* standard, which requires a showing of reliability before scientific evidence can be admitted. The court held that a scientific expert must testify to the underlying scientific reliability of HGN and that a police officer cannot qualify as a scientific expert. Because the State failed to present sufficient evidence regarding the HGN test's reliability, the court remanded the case stating it would be appropriate for the trial court, on remand, to make the initial determination of whether HGN testing satisfies *Daubert*. In addition, the court found HGN to be "beyond common and general knowledge" and declined to take judicial notice of HGN reliability.
State v. Torres, 976 P.2d 20 (N.M. 1999).

State v. Lasworth, 42 P.3d 844 (Ct. App. N.M. 2001), cert. denied (2002). Results of HGN test were inadmissible at trial (State v. Torres, 976 P.2d 20 (N.M. 1999). The State needed to prove that HGN was both valid and reliable.

State called Dr. Marceline Burns as a witness (reliability) but did not call an expert in a discipline such as biology or medicine to explain how the amount of alcohol a person consumes correlates with HGN (validity).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officers can qualify as non-scientific experts based on their training and experience. Non-scientific experts may testify about the administration of the test and specific results of the test provided another scientific expert first establishes the reliability of the scientific principles underlying the test. In order to establish the "technical or specialized knowledge" required to qualify as an expert in the administration of the HGN test, "there must be a showing: (1) that the expert has the ability and training to administer the HGN test properly, and (2) that the expert did, in fact, administer the HGN test properly at the time and upon the person in question." *State v. Torres*, 976 P.2d 20 (N.M. 1999).

State v. Lasworth, 42 P.3d 844 (Ct. App. N.M. 2001), cert. denied (2002). Court believed that state had to show that presence of HGN (BAC above .08) correlates with diminishment of driver's mental or physical driving skills (which it failed to do) & a correlation between presence of HGN and BAC above or below .08 (which it did through testimony of Dr. Burns). Court did not preclude use of results of HGN to establish probable cause for arrest or to establish grounds for administering a chemical BAC test.

III. Purpose and Limits of HGN

The Court did not address this issue.

New York

I. Evidentiary Admissibility

Prue holds that HGN test results are admissible under *Frye* standard of "general acceptance." *People v. Prue*, Indictment No. I-5-2001, Franklin County Court (November 2001).

In *Gallup*, the court said that it was only necessary to conduct a foundational inquiry into the techniques and the tester's qualifications for admissibility.
People v. Gallup, Memorandum and order #13094, 302 A.D.2d 681 (3rd Dept)(2003).

The Court allowed the introduction of HGN and the results because it was properly administered and the burden of establishing that HGN is a reliable indicator of intoxication is generally accepted in the relevant scientific community was satisfied.
People v. William Miley, NYLJ 12/6/02 p.30 col. 6 (Nassau Co. Ct 2002).

II. Police Officer Testimony Needed to Admit HGN Test Result

The People must lay a proper evidentiary foundation in order for HGN results to be admissible at trial.

III. Purpose and Limits of HGN

The Court held that HGN is generally accepted in the relevant scientific community as a reliable indicator of intoxication.

North Carolina

I. Evidentiary Admissibility

HGN is a scientific test. It "does not measure behavior a lay person would commonly associate with intoxication but rather represents specialized knowledge that must be presented to the jury by a qualified expert." As a result, "until there is sufficient scientifically reliable evidence as to the correlation between intoxication and nystagmus, it is improper to permit a lay person to testify as to the meaning of HGN test results."
State v. Helms, 504 S.E.2d 293 (N.C. 1998).

II. Police Officer Testimony Needed to Admit HGN Test Result

Testimony of one police officer, whose training consisted of a "forty hour training class dealing with the HGN test", was inadequate foundation for admission of HGN test results.
Helms, 504 S.E.2d 293 (N.C. 1998).

III. Purpose and Limits of HGN

HGN test results are evidence of impairment. *Helms*, 504 S.E.2d 293 (N.C. 1998).

North Dakota

I. Evidentiary Admissibility

Court found that HGN test is admissible as a standard field sobriety test.
City of Fargo v. McLaughin, 512 N.W.2d 700, 706 (N.D. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer must testify as to training and experience and that the test was properly administered. *City of Fargo*, 512 N.W.2d at 708.

III. Purpose and Limits of HGN

" . . . HGN test results admissible only as circumstantial evidence of intoxication, and the officer may not attempt to quantify a specific BAC based upon the HGN test."
City of Fargo, 512 N.W.2d at 708.

Ohio

I. Evidentiary Admissibility

HGN test is objective in nature and does not require an expert interpretation.
State v. Nagel, 506 N.E.2d 285, 286 (Ohio Ct. App. 1986).

Court determined that HGN was a reliable indicator of intoxication without specifically ruling on whether HGN meets *Frye* or some other standard of admissibility.
State v. Bresson, 554 N.E.2d 1330, 1334 (Ohio 1990).

Court held that SFSTs, including HGN, must be administered in *strict compliance* with NHTSA's directives in order for the test results to be admissible.
State v. Homan, 732 N.E.2d 952 (Ohio 2000).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer need only testify to training in HGN procedure, knowledge of the test and ability to interpret results. *Bresson*, 554 N.E.2d at 1336.

III. Purpose and Limits of HGN

HGN can be used to establish probable cause to arrest and as substantive evidence of a defendant's guilt or innocence in a trial for DUI, but not to determine defendant's BAC.
Bresson, 554 N.E.2d at 1336.

Oklahoma

I. Evidentiary Admissibility

HGN test results excluded because state failed to lay adequate foundation regarding HGN's scientific admissibility under the *Frye* standard of admissibility. Police officer's testimony alone was insufficient. *Yell v. State*, 856 P.2d 996, 996-97 (Okla. Crim. App. 1993).

The *Daubert* rationale replaces the *Frye* standard as the admissibility standard for scientific evidence. *Taylor v. State*, 889 P.2d 319, 328-29 (Okla. Crim. App. 1995).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer testified to training on how to administer HGN test and how the test was administered in this case. Officer also testified as to his training in analyzing HGN test results. *Yell*, 856 P.2d at 997.

III. Purpose and Limits of HGN

If HGN testing was found to satisfy the *Frye* standard of admissibility, HGN test results would be considered in the same manner as other field sobriety test results. HGN test results are inadmissible as scientific evidence creating a presumption of intoxication. *Yell*, 856 P.2d at 997.

Oregon

I. Evidentiary Admissibility

HGN test results are admissible under the Oregon Rules of Evidence. HGN test results are scientific in nature, are relevant in a DUI trial, and are not unfairly prejudicial to the defendant. *State v. O'Key*, 899 P.2d 663, 687 (Or. 1995).

II. Police Officer Testimony Needed to Admit HGN Test Result

"Admissibility is subject to a foundational showing that the officer who administered the test was properly qualified, that the test was administered properly, and that the test results were recorded accurately." *O'Key*, 899 P.2d at 670.

III. Purpose and Limits of HGN

"… HGN test results are admissible to establish that a person was under the influence of intoxicating liquor, but is not admissible…to establish a person's BAC…."
O'Key, 899 P.2d at 689-90.

Officer may not testify that, based on HGN test results, the defendant's BAC was over .10. *State v. Fisken*, 909 P.2d 206, 207 (Or. Ct. App. 1996).

Pennsylvania

I. Evidentiary Admissibility

The state laid an inadequate foundation for the admissibility of HGN under the *Frye*/*Topa* standard.
Commonwealth v. Moore, 635 A.2d 625, 629 (Pa. Super. Ct. 1993).
Commonwealth v. Apollo, 603 A.2d 1023, 1028 (Pa. Super. Ct. 1992).
Commonwealth v. Miller, 532 A.2d 1186, 1189-90 (Pa. Super. Ct. 1987).

Testimony of police officer is insufficient to establish scientific reliability of HGN test.
Moore, 635 A.2d at 692.
Miller, 532 A.2d at 1189-90.

Testimony of behavioral optometrist did not establish general acceptance of HGN test.
Apollo, 603 A.2d at 1027-28.

II. Police Officer Testimony Needed to Admit HGN Test Result

County detective certified as HGN instructor. Court did not comment on whether this would be enough foundation to allow the detective to testify about HGN test results.
Moore, 635 A.2d 629.

Police officer had one-day course on HGN. Court did not comment on whether this would be enough foundation to allow the officer to testify about HGN test results.
Miller, 603 A.2d at 1189.

III. Purpose and Limits of HGN

Not addressed by court.

South Carolina

I. Evidentiary Admissibility

HGN admissible in conjunction with other field sobriety tests. By implication, HGN is not regarded as a scientific test. *State v. Sullivan*, 426 S.E.2d 766, 769 (S.C. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer given twenty hours of HGN training. *Sullivan*, 426 S.E.2d at 769.

III. Purpose and Limits of HGN

HGN test results admissible "to elicit objective manifestations of soberness or insobriety . . . Evidence from HGN tests is not conclusive proof of DUI. A positive HGN test result is to be regarded as merely circumstantial evidence of DUI. Furthermore, HGN test shall not constitute evidence to establish a specific degree of blood alcohol content."
Sullivan, 426 S.E.2d at 769.

South Dakota

I. Evidentiary Admissibility

If it can be shown that a horizontal gaze nystagmus test was properly administered by a trained officer, such evidence should be admitted for a jury to consider at trial along with evidence of the other accepted field sobriety tests administered in South Dakota.
STATE v. HULLINGER, 2002 SD 83; 649 N.W.2d 253 (S.D.S.Ct. 2002); 2002 S.D. LEXIS 99

II. Police Officer Testimony Needed to Admit HGN Test Result

Officer may testify if properly trained and test properly administered. At the pretrial hearing, the State presented three witnesses: 1) Monte Farnsworth, training director for the Office of Highway Safety at the Division of Criminal Investigation Law Enforcement Training Academy; 2) Deputy Ludwig; and 3) Dr. Larry Menning, optometrist and expert witness. South Dakota follows a *Daubert* standard in use of expert witnesses.

III. Purpose and Limits of HGN

The Court did not address this issue.

Tennessee

I. Evidentiary Admissibility

HGN is a scientific test. To be admissible at trial, such evidence must satisfy the requirements of Tenn. Rules of Evidence 702 and 703. State provided an inadequate amount of evidence to allow the court to conclude that HGN evidence meets this standard.
State v. Murphy, 953 S.W.2d 200 (Tenn. 1997).

II. Police Officer Testimony Needed to Admit HGN Test Result

HGN must be offered through an expert witness. To qualify as an expert, a police officer must establish that he is qualified by his "knowledge, skill, experience, training or education" to provide expert testimony to "substantially assist the trier of fact to understand the evidence or determine a fact in issue." Although the court did not rule out the possibility that the officer can be considered an expert, the court set a high level of proof. In this case, the court felt that although the officer had attended law enforcement training in DUI

offender apprehension and the HGN test, this training was not enough to establish him as an expert. *State v. Grindstaff,* 1998 Tenn. Crim. App. Lexis 339 (March 23, 1998).

III. Purpose and Limits of HGN

The Court did not address this issue.

Texas

I. Evidentiary Admissibility

HGN admissible under the Texas Rules of Evidence.
Emerson v. State, 880 S.W.2d 759, 769 (Tex. Crim. App. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer must qualify as an expert on the HGN test, specifically concerning its administration and technique, before testifying about a defendant's performance on the test. Proof that the police officer is certified in the administration of the HGN test by the Texas Commission on Law Enforcement Officer Standards and Education satisfies this requirement. *Emerson*, 880 S.W.2d at 769.

III. Purpose and Limits of HGN

HGN admissible to prove intoxication, but not accurate enough to prove precise BAC. *Emerson*, 880 S.W.2d at 769.

Utah

I. Evidentiary Admissibility

HGN test admissible as other field sobriety test. Court reserved judgment as to the scientific reliability of HGN. *Salt Lake City v. Garcia*, 912 P.2d 997, 1001 (Utah Ct. App. 1996).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer need only testify as to training, experience and observations when HGN admitted as a field test. *Garcia*, 912 P.2d at 1001.

III. Purpose and Limits of HGN

Admissible as any other field sobriety test. *Garcia*, 912 P.2d at 1000-01.

Washington

I. Evidentiary Admissibility

It is "undisputed" in the relevant scientific communities that "an intoxicated person will exhibit nystagmus". HGN testing is not novel and has been used as a field sobriety test for "decades" and is administered the same whether investigating alcohol impairment or drug impairment. Thus, the use of HGN in drug and alcohol impaired driving cases is acceptable. *State v. Baity*, 140 Wn.2d 1, 991 P.2d 1151 (Wash. 2000).

"[T]he *Frye* standard applies to the admission of evidence based on HGN testing, unless . . . the State is able to prove that it rests on scientific principles and uses techniques which are not 'novel' and are readily understandable by ordinary persons." The state failed to present any evidence to this fact and the court declined to take judicial notice of HGN.
State v. Cissne, 865 P.2d 564, 569 (Wash. Ct. App. 1994).

II. Police Officer Testimony Needed to Admit HGN Test Result

The Court did not address this issue.

III. Purpose and Limits of HGN

The Court did not address this issue.

West Virginia

I. Evidentiary Admissibility

The state did not present evidence for the court to reach "the question of whether the HGN test is sufficiently reliable to be admissible." However, the court did conclude "that even if the reliability of the HGN test is demonstrated, an expert's testimony as to a driver's performance on the test is admissible only as evidence that the driver was under the influence. Estimates of blood alcohol content based on the HGN test are inadmissible."
State v. Barker, 366 S.E.2d 642, 646 (W. Va. 1988).

The West Virginia Supreme Court modified *State v. Barker* to the extent that the *Daubert* analysis of FRE 702 is applicable to the question of admissibility of expert testimony under the West Virginia Rules of Evidence Rule 702.
Wilt v. Buracker, 443 S.E. 2d 196 (W.Va. 1993).

II. Police Officer Testimony Needed to Admit HGN Test Result

Police officer's training consisted of a one-day, eight-hour training session conducted by the state police. Officer testified to giving the HGN test about 100 times. Court did not reach question of whether this would be enough to allow the officer to testify about the HGN test results. *Barker*, 366 S.E.2d at 644.

III. Purpose and Limits of HGN

HGN test results admissible to show probable cause in a civil hearing.
Muscatell v. Cline, 474 S.E.2d 518, 525 (W. Va. 1996).
Boley v. Cline, 456 S.E.2d 38, 41 (W. Va. 1995).

"If the reliability of the HGN test is demonstrated, an expert's testimony as to a driver's performance on the test is admissible only as evidence that the driver was under the influence," the same as other field sobriety tests. *Barker*, 366 S.E.2d at 646.

Wisconsin

I. Evidentiary Admissibility

The court held that the HGN test results are admissible in this case because the test results were not the only evidence. The results were accompanied by the expert testimony of the officer. *State v. Zivcic*, 598 N.W.2d 565 (Wisc. Ct. App. 1999).
See also*, State v. Maxon*, 633 N.W. 2d 278 (Wisc. Ct. App. 2001)

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer who is properly trained to administer and evaluate the HGN test can testify to the test results. A second expert witness is not needed. *State v. Zivcic*, 598 N.W.2d 565 (Wisc. Ct. App. 1999).

III. Purpose and Limits of HGN

The Court did not address this issue.

Wyoming

I. Evidentiary Admissibility

SFSTs, including HGN, are admissible to establish probable cause when administered in *substantial compliance* with NHTSA guidelines. Strict compliance is not necessary. The court took judicial notice of the number of states that allow HGN evidence on the basis of the "officer's training, experience and ability to administer the test". *Smith v. Wyoming*, 2000 Wyo. LEXIS 202 (Wyo. October 4, 2000).

II. Police Officer Testimony Needed to Admit HGN Test Result

A police officer that is properly trained to administer and evaluate the HGN test can testify to HGN results. *Smith v. Wyoming*, 2000 Wyo. LEXIS 202 (Wyo. October 4, 2000).

III. Purpose and Limits of HGN

HGN test results are admissible to show probable cause.
Smith v. Wyoming, 2000 Wyo. LEXIS 202 (Wyo. October 4, 2000).

United States

I. Evidentiary Admissibility

U.S. V. Eric D. Horn, 185 F. Supp. 2d 530 (D. Maryland 2002) In this case, U.S. District Court in Maryland made the first application of the newly revised FRE 702 to the HGN and other SFSTs.

Results of properly administered WAT, OLS and HGN, SFSTs may be admitted into evidence in a DWI/DUI case only as circumstantial evidence of intoxication or impairment but not as direct evidence of specific BAC.

Officer must first establish his qualifications to administer the test - training and experience, not opinion about accuracy rate of test or causal connection between alcohol consumption and exaggerated HGN.

Government may prove causal connection by: judicial notice, expert testimony, or learned treatise. Horn may prove other causes by: judicial notice, cross-examination of state's expert, defense expert, or learned treatise.

U.S. V. Daras, 1998 WL 726748 (4th Cir. 1998)(Unpublished opinion). WAT and OLS were not scientific so no expert needed. Court would have applied *Daubert* to HGN test, but there was no need to because breathalyzer, WAT and OLS were sufficient.

HGN test was admitted as part of series of field tests. Its admission was not challenged on appeal. *U.S. v. Van Griffin*, 874 F.2d 634 (9th Cir. 1989).

II. Police Officer Testimony Needed to Admit HGN Test Result

Foundation for HGN must address validity & reliability under FRE 702. In *Horn*, prosecution had a medical doctor and a police officer, but defense used behavioral psychologist to attack HGN literature of Dr. Marceline Burns and others.

III. Purpose and Limits of HGN

SFSTs may be admitted into evidence in a DWI/DUI case only as circumstantial evidence of intoxication or impairment but not as direct evidence of specific BAC. *Horn*.

Properly qualified, Officer may give opinion of intoxication or impairment by alcohol. *Horn*.

Note: The following states were not listed above due to a lack of case law discussion on HGN:
Colorado
Nevada
Rhode Island
Vermont(HGN was mentioned in the context of a refusal being admissible as evidence of probative guilt. State v. Blouin, 168 Vt. 119 (Vt. 1998)
Virginia

Last Update: Jan. 2004

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Or
Visit their website www.ndaa-apri.org.

ATTACHMENT C

SCIENTIFIC PUBLICATIONS AND RESEARCH REPORTS ADDRESSING NYSTAGMUS

1. Anderson, Schweitz & Snyder, Field Evaluation of Behavioral Test Battery for DWI, U.S. Dept. of Transportation Rep. No. DOT-HS-806-475 (1983) (field evaluation of the Standardized Field Sobriety Test battery (HGN, one-leg stand, and walk and turn) conducted by police officers from four jurisdictions indicated that the battery was approximately 80% effective in determining BAC above and below .10 percent).

2. Aschan, Different Types of Alcohol Nystagmus, 140 ACTA OTOLARYNGOL SUPP. 69 (Sweden 1958) ("From a medico-legal viewpoint, simultaneous recording of AGN (Alcohol Gaze Nystagmus) and PAN (positional alcoholic nystagmus) should be of value, since it will show in which phase the patient's blood alcohol curve is...").

3. Aschan & Bergstedt, Positional Alcoholic Nystagmus in Man Following Repeated Alcohol Doses, 80 ACTA OTOLARYNGOL SUPP. 330 (Sweden 1975) (abstract available on DIALOG, file 173: Embase 1975-79) (degree of intoxication influences both PAN I and PAN II).

4. Aschan, Bergstedt, Goldberg & Laurell, Positional Nystagmus in Man During and After Alcohol Intoxication, 17 Q.J. OF STUD. ON ALCOHOL, Sept. 1956, at 381. Study distinguishing two types of alcohol-induced nystagmus, PAN (positional alcoholic nystagmus) I and PAN II, found intensity of PAN I, with onset about one-half hour after alcohol ingestion, was proportional to amount of alcohol taken.

5. Baloh, Sharma, Moskowitz & Griffith, Effect of Alcohol and Marijuana on Eye Movements, 50 AVIAT. SPACE ENVIRON. MED., Jan 1979, at 18 (abstract available on DIALOG, file 153: Medline 1979-79) (smooth pursuit eye movement effects of alcohol overshadowed those of marijuana).

6. Barnes, The Effects of Ethyl Alcohol on Visual Pursuit and Suppression of the Vestibulo-Ocular Reflex, 406 ACTA OTOLARYNGOL SUPP. 161 (Sweden 1984) (ethyl alcohol disrupted visual pursuit eye movement by increasing number of nystagmic "catch-up saccades").

7. Burns & Moskowitz, Psychophysical Tests for DWI Arrest, U.S. Dept. of Transportation Rep. No. DOT-HS-802-424 (1977) (recommended the three-test battery developed by SCRI (one-leg stand, walk and turn, and HGN) to aid officers in discriminating BAC level).

8. Burns, The Robustness of the Horizontal Gaze Nystagmus (HGN) Test, U.S. Dept. of Transportation 2004. Concludes that HGN as used by law enforcement is a robust procedure and the data obtained in this report does not support changes or revisions to the current testing or procedure

9. Church & Williams, Dose- and Time-Dependent Effects of Ethanol, 54 ELECTROENCEPHALOGRAPHY & CLIN. NEUROPHYSIOL., Aug. 1982, at 161 (abstract available on DIALOG, file 11: Psychinfo 1967-85 or file 72: Embase 1982-85) (positional alcohol nystagmus increased with dose levels of ethanol).

10. Citek, Ball and Rutledge, Nystagmus Testing in Intoxicated Individuals, Vol. 74, No. 11, Nov. 2003, Optometry, established that the HGN test administered in the standing, seated, and supine postures is able to discriminate impairment at criterion BAC's of 0.08% and 0.10%.

11. Compton, Use of the Gaze Nystagmus Test to Screen Drivers at DWI Sobriety Checkpoints, U.S. Dept. of Transportation (1984) (field evaluation of HGN test administered to drivers through car window in approximately 40 seconds: "the nystagmus test scored identified 95% of the impaired drivers" at 2; 15% false positive for sober drivers, id.).

12. Fregly, Bergstedt & Graybiel, Relationships Between Blood Alcohol, Positional Alcohol Nystagmus and Postural Equilibrium, 28 Q.J. OF STUD. ON ALCOHOL, March 1967, at 11, 17 (declines from baseline performance levels correlated with peak PAN I responses and peak blood alcohol levels).

13. Goldberg, Effects and After-Effects of Alcohol, Tranquilizers and Fatigue on Ocular Phenomena, ALCOHOL AND ROAD TRAFFIC 123 (1963) (of different types of nystagmus, alcohol gaze nystagmus is the most easily observed).

14. Helzer, Detection DUIs Through the Use of Nystagmus, LAW AND ORDER, Oct. 1984, at 93 (nystagmus is "a powerful tool for officers to use at roadside to determine BAC of stopped drivers...(O)fficers can learn to estimate BACs to within an average of 0.02 percent of chemical test readings." Id. at 94).

15. L.R. Erwin, DEFENSE OF DRUNK DRIVING CASES (3d ed. 1985) ("A strong correlation exists between the BAC and the angle of onset of (gaze) nystagmus." Id. at 8.15A(3).

16. Lehti, The Effect of Blood Alcohol Concentration on the Onset of Gaze Nystagmus, 136 BLUTALKOHOL 414 (West Germany 1976) (abstract available on DIALOG, file 173: Embase 1975-79) (noted a statistically highly significant correlation between BAC and the angle of onset of nystagmus with respect to the midpoint of the field of vision).

17. Misoi, Hishida & Maeba, Diagnosis of Alcohol Intoxication by the Optokinetic Test, 30 Q.J. OF STUD. ON ALCOHOL 1 (March-June 1969) (optokinetic nystagmus, ocular adaptation to movement of object before eyes, can also be used to detect central nervous system impairment caused by alcohol. Optokinetic nystagmus is inhibited at BAC of only .051 percent and can be detected by optokinetic nystagmus test. Before dosage subjects could follow a speed of 90 degrees per second; after, less than 70 degrees per second).

18. Murphree, Price & Greenberg, Effect of Congeners in Alcohol Beverages on the Incidence of Nystagmus, 27 Q.J. OF STUD. ON ALCOHOL, June 1966, at 201 (positional nystagmus is a consistent, sensitive indicator of alcohol intoxication).

19. Nathan, Zare, Ferneau & Lowenstein, Effects of Congener Differences in Alcohol Beverages on the Behavior of Alcoholics, 5 Q.J. OF STUD. ON ALCOHOL SUPP., may 1970, at 87 (abstract available on DIALOG, file 11: Psychinfo 1967-85) (incidence of nystagmus and other nystagmoid movements increased with duration of drinking).

20. Norris, The Correlation of Angle of Onset of Nystagmus With Blood Alcohol Level: Report of a Field Trial, CALIF. ASS'N CRIMINALISTICS NEWSLETTER, June 1985, at 21 (The relationship between the ingestion of alcohol and the inset of various kinds of nystagmus "appears to be well documented." Id. "While nystagmus appears to be useful as a roadside sobriety test, at this time, its use to predict a person's blood alcohol level does not appear to be warranted." Id. at 22).

21. Nuotto, Palva & Seppala, Naloxone Ethanol Interaction in Experimental and Clinical Situations, 54 ACTA PHARMACOL. TOXICOL. 278 (1984) (abstract available on DIALOG, file 5: Biosis Previews 1981-86) (ethanol alone dose-dependently induced nystagmus).

22. Oosterveld, Meineri & Paolucci, Quantitative Effect of Linear Acceleration on Positional Alcohol Nystagmus, 45 AEROSPACE MEDICINE, July 1974, at 695 (G-loading brings about PAN even when subject has not ingested alcohol; however when subjects ingested alcohol, no PAN was found when subjects were in supine position, even with G-force at 3).

23. Penttila, Lehti & Lonnqvist, Nystagmus and Disturbances in Psychomotor Functions Induced by Psychotropic Drug Therapy, 1974 PSYCHIAT. FENN. 315 (abstract available on DIALOG, file 173: Embase 1975-79) (psychotropic drugs induce nystagmus).

24. Rashbass, The Relationship Between Saccadic and Smooth Tracking Eye Movements, 159 J. PHYSIOL. 326 (1961) (barbiturate drugs interfere with smooth tracking eye movement).

25. Richman, McAndrew, Decker and Mullaney, An Evaluation of Pupil Size Standards Used By Police Officers for Detecting Drug Impairment, Vol. 75, No. 3, March 2004, Opportunity, determined normative values and potential ranges for pupillary responses using the specific DEC program protocols for pupil testing in non-impaired persons.

26. Savolainen, Riihimaki, Vaheri & Linnoila, Effects of Xylene and Alcohol on Vestibular and Visual Functions in Man, SCAND. J. WORK ENVIRON. HEALTH 94 (Sweden 1980) (abstract available on DIALOG, file 172: Embase 1980-81 on file 5: Biosis Previews 1981-86) (the effects of alcohol on vestibular functions (e.g., positional nystagmus) were dose-dependent).

27. Seelmeyer, Nystagmus, A Valid DUI Test, LAW AND ORDER, July 1985, at 29 (Horizontal Gaze Nystagmus test is used in "at least one law enforcement agency in each of the 50 states" and is "a legitimate method of establishing probable cause." Id.).

28. Smith, Hayes, Yolton, Rutledge and Citek, Drug Recognition Expert Evaluations Made Using Limited Data, Forensic Science International 130 (2002), p. 167-173, demonstrated that DRE officers can make a correct positive identification of drug intoxication with limited information.

29. Tharp, Burns & Moskowitz, Circadian Effects on Alcohol Gaze Nystagmus (paper presented at 20th annual meeting of Society for Psychophysiological Research), abstract in 18 PSYCHOPHYSIOLOGY, March 1981 (highly significant correlation between angle of onset of AGN and BAC).

30. Tharp, Burns & Moskowitz, Development and Field Test of Psychophysical Tests for DWI Arrests, U.S. Dept. of Transportation Rep. No. DOT-HS-805-864 (1981) (standardized procedures for administering and scoring the SCRI three-test battery; participating officers able to classify 81% of volunteers above or below .10).

31. Umeda & Sakata, Alcohol and the Oculomotor System, 87 ANNALS OF OTOLOGY, RHINOLOGY & LARYNGOLOGY, May-June 1978, at 392 (in volunteers whose "caloric eye tracking pattern" (CETP) was normal before alcohol intake, influence of alcohol on oculomotor system appeared consistently in the following order: (1) abnormality of CETP, (2) positional alcohol nystagmus, (3) abnormality of eye tracking pattern, (4) alcohol gaze nystagmus).

32. Wilkinson, Kime & Purnell, Alcohol and Human Eye Movement, 97 BRAIN 785 (1974) (oral dose of ethyl alcohol impaired smooth pursuit eye movement of all human subjects).

33. Zyo, Medico-legal and Psychiatric Studies on the Alcohol Intoxicated Offender, 30 JAPANESE J. OF LEGAL MED., No. 3, 1976, at 169 (abstract available on DIALOG, file 21: National Criminal Justice Reference Service 1972-85) (recommends use of nystagmus test to determine somatic and mental symptoms of alcohol intoxication as well as BAC).

SESSION IV

OVERVIEW OF DRUG EVALUATION AND CLASSIFICATION PROCEDURES

SESSION IV OVERVIEW OF DRUG EVALUATION AND CLASSIFICATION PROCEDURES

Upon successfully completing this session the student will be able to:

- Name the components of the Drug Evaluation and Classification program drug influence evaluation.
- State the purposes of each component.
- Describe the activities performed during each component.
- Correctly answer the "topics for study" questions at the end of this session.

A. Components of the Drug Evaluation and Classification (DEC) Procedure

The DEC procedure is a systematic and standardized method of examining a subject to determine:

(1) Whether the subject is impaired; and if so,

(2) Whether the impairment is caused by drugs or a medical condition; and if drugs,

(3) The category or combination of categories of drugs that are the likely cause of the subject's impairment.

It is a systematic process because it is based on a complete set of observable signs and symptoms that are known to be reliable indicators of drug impairment. A DRE never reaches a conclusion based on any one element of the evaluation, but instead on the totality of facts that emerge. These facts are obtained from careful observations of the subject's:

- appearance
- behavior
- performance of psychophysical tests
- eyes
- vital signs
- any other evidence

The evaluation is standardized because DRE officers perform it the same way every time. By conducting a systematic and standardized evaluation, you will help avoid mistakes and help promote and maintain professionalism and consistency among DREs. Perhaps most importantly, you will help secure the court's acceptance of your testimony.

The systematic and standardized evaluation is broken down into twelve major components or steps. The checklist on the next page lists the steps in the sequence in which they are performed. DREs refer to the checklist every time they conduct an evaluation.

Note: There may be cases in which the DRE is unable to complete each step of the evaluation due to circumstances beyond his or her control such as injury to the subject, uncooperativeness of the subject, or equipment failure. In such cases, the DRE may still be able to form an opinion based on the evidence that he/she is able to observe and document. (See State v. Cammack, 1997 WL 104913 (Minn. Ct, App. 1997) (DRE need not complete entire 12-step evaluation for opinion to be admissible so long as there is sufficient admissible evidence which supports the DRE's opinion.)

INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE
DRUG EVALUATION AND CLASSIFICATION PROGRAM
DRUG INFLUENCE EVALUATION CHECKLIST

_____ 1. Breath alcohol test

_____ 2. Interview of arresting officer

_____ 3. Preliminary examination and first pulse
(Note: Gloves must be worn from this point on.)

_____ 4. Eye examinations

_____ 5. Divided attention tests:

_____ Romberg balance

_____ Walk and turn

_____ One leg stand

_____ Finger to nose

_____ 6. Vital signs and second pulse

_____ 7. Dark room examinations and ingestion examination

_____ 8. Check for muscle tone

_____ 9. Check for injection sites and third pulse

_____ 10. Interrogation, statements, and other observations

_____ 11. Opinion of evaluator

_____ 12. Toxicological examination

The 12-step drug influence evaluation procedure includes the following:

1. Breath Alcohol Test, to determine the subject's blood alcohol concentration (BAC).

   By obtaining an accurate and immediate measurement of BAC, the DRE can determine whether alcohol may be contributing to the subject's observable impairment, and whether the concentration of alcohol is sufficient to be the sole cause of that impairment.

   It is always possible that a person suspected of being under the influence of drugs other than alcohol may actually have consumed only alcohol. However, it is also very common to find that a subject has consumed alcohol and other drugs.

2. Interview of the Arresting Officer, to take advantage of the things that he or she may have seen or heard during earlier contact with the subject.

   Most arresting officers are not as knowledgeable about drugs as are DREs. The arresting officers may have uncovered some drug paraphernalia, or overheard the subject using drug related "street" terms, without recognizing their significance. A few minutes spent in a careful discussion with the arresting officer can alert the DRE to the most promising areas of investigation to be explored with the subject.

3. Preliminary Examination, which is a structured series of questions, specific observations and simple tests that provides the first opportunity to examine the subject closely and directly. **NOTE: to avoid infection, the DRE must wear gloves from this portion of the evaluation on.**

   One major purpose of the preliminary examination is to determine if the subject may be suffering from an injury or some other condition not necessarily related to drugs. Another major purpose is to begin systematically assessing the subject's appearance, behavior, etc. for signs of possible drug influence.

4. Examinations of the Eyes, which include Horizontal Gaze Nystagmus, Vertical Gaze Nystagmus and a check for Lack of Convergence.

   Nystagmus is caused by certain categories of drugs. Nystagmus is an involuntary jerking of the eyes as the eyes gaze to the side or as they are elevated. The presence of nystagmus, and the point at which it becomes observable, can shed light on the possible presence of those categories and the extent to which they may be affecting the subject.

The inability of the eyes to converge toward the bridge of the nose also gives evidence of the possible presence of certain categories of drugs.

5. Divided Attention Psychophysical Tests, which include the Romberg Balance; the Walk and Turn; One Leg Stand; and the Finger to Nose.

   The subject's performance of these tests produces articulable evidence of their psychophysical impairment. The specific errors of omission or commission may point toward the categories of drugs that are behind that impairment.

6. Vital Signs Examinations, which include systematic checks of the subject's blood pressure; pulse rate; and temperature.

   Certain categories of drugs may elevate blood pressure, pulse rate and raise the body temperature. Other drugs would have precisely the opposite effects. Vital signs as well as physical observations thus provide much valuable evidence of the presence and influence of a variety of drug categories.

7. Dark Room Examinations, which include systematic checks of the size of the pupils of the subject's eyes; the reaction of the pupils to light; and evidence of ingestion of drugs by nose or mouth.

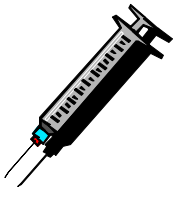
   Certain categories of drugs affect the eyes, and especially the pupils, in predictable ways. By examining the eyes under carefully controlled lighting conditions, important evidence of those drug categories may be obtained.

8. Examination for Muscle Tone

   Certain categories of drugs will cause the muscles to become rigid, while others may cause the muscles to become flaccid.

   Examination of a subject's muscle tone is done by checking their left arm, firmly grasping the upper arm and slowly moving down to determine whether the muscle tone is flaccid, near normal or rigid.

9. Examination for Injection Sites, e.g. via hypodermic needles.

   Users of certain categories of drugs routinely or occasionally ingest their drugs via injection. Evidence of needle use (scars, "tracks", etc.) may be found on veins along the neck, arms, legs, etc.

10. Subject's Statements and Other Observations.

    Based on the nine previous components of the drug influence evaluation, the DRE should have formed at least an articulable suspicion as to the category or categories of drugs that may be present. The DRE then can proceed, in full conformance with the subject's Miranda rights, to attempt to interview the subject concerning the drug or drugs involved.

11. Opinion of the Evaluator

    Based on all of the evidence and observations obtained during the preceding ten steps, the DRE should be able to reach an informed opinion concerning:

    - Whether the subject is under the influence of a drug or drugs; and if so,

    - The category or combination of categories of drugs that is the probable cause of the subject's impairment.

    These conclusions must be documented, along with a narrative summary of the observed facts that led to the conclusions.

12. Toxicological Examination, which is a chemical test or tests that can provide scientific, admissible evidence to substantiate the DRE conclusions.

B. General Guidelines For Interviewing The Arresting Officer

In most cases, the people you examine on suspicion of drug impairment will not be people whom you arrested. Some other officer usually will have had the first contact with the subject and will have made the arrest. The charge or charges of arrest may vary widely and may or may not involve a traffic related offense. In any event, the situation usually will be that the arresting officer (or someone else) recognizes that the subject may be impaired, has some reason to believe that drugs other than alcohol may be contributing to the impairment, and summons you to conduct an evaluation of the subject.

In a particular case, the arresting officer may happen to be quite knowledgeable about drugs and may have some very well informed suspicions as to what types of drugs the subject may be using. In another case, the arresting officer may not have the knowledge as to the kinds of drugs that may be involved. But in all cases there is the possibility that the arresting officer may have seen, heard, smelled or uncovered something that could be a significant clue of drug influence to a trained DRE. A few minutes spent in a careful, systematic interview of the arresting officer may supply the DRE with some very important insights as to the categories of drugs most likely to be found in the particular case at hand.

The key concept here is that the interview be systematic. The DRE shouldn't simply ask the arresting officer an open-ended question such as "What do we have here?" The arresting officer may not be sufficiently knowledgeable about drugs to recognize what is relevant and what is not. Instead, the DRE should inquire in a logical sequence as to the subject's behavior, statements and any physical evidence that may have been uncovered.

Inquiries concerning the subject's behavior

(1) Was the subject operating a vehicle?
(This may help to establish whether the implied consent law applies to this particular case, and also serve to identify whether potential traffic law violations may be relevant.)

(2) What vehicle/operator actions, maneuvers, etc. were observed?
(This may disclose evidence of impaired divided attention ability, relaxed inhibitions, etc.)

(3) Was there a crash?
(This can indicate whether the subject may have suffered injuries that could confound the drug evaluation.)

(4) Was the subject observed smoking, drinking or eating?
(All of these are common means of ingesting various drugs.)

(5) Was the subject inhaling any substance?
(Another common method of ingesting certain drugs.)

(6) How did the subject respond to the arresting officer's stop?
(Actions during the stopping sequence may also disclose indicators of impairment.)

(7) Did the subject attempt to conceal or throw away any items or materials?
(Such materials may have been drugs or drug-related paraphernalia.)

(8) What has been the subject's attitude and demeanor during contact with the arresting officer and have there been any changes?

(This information can be relevant to the DRE's own safety, and can also shed light on the kinds of impairment the subject may be experiencing.)

Inquiries concerning the subject's statements

(9) Has the subject complained of an illness or injury?
(An illness or injury could confound the drug evaluation, but could also suggest the effects of certain types of drugs.)

(10) Has the subject used any "street terms" or slang associated with drugs or drug paraphernalia? (Persons who use such terms are likely to be users of the

drugs to which the terms relate.) NOTE: The arresting officer might not recognize "street terms" for what they are. It may be useful to follow up this question by asking the officer whether the subject used any unusual or unfamiliar words or phrases.

(11) How has the subject responded to the arresting officer's questions? (Impairment may be evident, in a variety of ways, from the manner of the subject's responses.)

(12) Was the subject's speech slurred, slow, rapid, thick, mumbled, incoherent, etc? (Various types of drugs may affect speech in various ways.)

(13) What, specifically, has the subject said to the arresting officer? (Numerous utterances may shed light on the kinds of drug-related effects that the subject is experiencing.)

Inquiries Concerning Physical Evidence

(14) What items or materials were uncovered during the search of the subject and/or vehicle? (Even seemingly innocuous or familiar items may be recognized by trained DREs as being associated with possible drug use.)

(15) Were any smoking paraphernalia uncovered? (Even routine smoking items, such as commercially produced cigarettes, pipes, etc. may disclose evidence of drugs.)

(16) Was there any injection related material? (For example, such material could include needles, syringes, leather straps or rubber tubes used as tourniquets to help expose veins, bent spoons or bottle caps used in heating and dissolving drugs, etc.)

(17) Were there any balloons, plastic bags, small metal foil wrappings or any similar items? (These kinds of items frequently are used as drug containers.)

(18) What was the subject's blood alcohol concentration? (If an attempt to administer a breath test has not yet been made, the DRE should do so now.)

C. Overview of The Preliminary Examination

The preliminary examination of the subject consists of a series of questions; observations of the subject's face, breath and speech; an initial series of checks of the subject's eyes; and the first of three checks of the subject's pulse rate that will be made during the drug influence evaluation. As a safety precaution, officers should secure their weapons prior to beginning the evaluation.

The questions are a set of formal inquiries about any injuries or medical problems from which the subject may be suffering. Courts generally hold that these questions do not conflict with the subject's Miranda rights. However, you should be guided by your department's policy and procedure concerning the possible need to admonish the subject of those rights prior to posing these questions. The questions include:

- Are you sick or injured?
- Do you have any physical defects?
- Are you diabetic or epileptic?
- Do you take insulin?
- Are you under a doctor's or dentist's care?
- Are you taking medication?

Answers to these questions may disclose circumstances that could impede or confound the subsequent steps in the drug evaluation. The subject's answers, and the manner in which he or she answers, could also give evidence of the possible presence of certain types of drugs. If any affirmative responses are given, the DRE should ask appropriate follow up questions.

The observations of the subject's face, breath and speech are straight forward. Make note, for example, if the face appears flushed or pale, and if the subject appears to be perspiring. Any noteworthy odors of the breath should be recorded, such as alcoholic beverages; marijuana; or a chemical odor. If the subject's speech is in any way distorted, this too should be recorded.

The initial checks of the subject's eyes include some very important steps. One of these is the visual check for equal pupil size. Look at the subject's eyes to determine whether the pupils appear to be equal. If the pupils appear to be unequal, a further check will be necessary. This check is made by using a device called a "pupillometer", which has a series of small circles or semi-circles of various diameters. The diameter is measured and indicated in millimeters ("mm"). By holding the pupillometer alongside the subject's eye, you can determine which circle/semi-circle is approximately the same size as the pupil. You must check both pupils.

A second important check of the eyes is an assessment of the eyes' tracking ability. You should hold a pencil, penlight or similar object about 12 - 15 inches in front of the subject's nose, and move it smoothly to the subjects extreme left, and smoothly back to the extreme right, instructing the subject to follow the stimulus with their eyes only. Always make at least two complete passes in front of the subject's eyes. If the two eyes do not exhibit the same tracking ability, this too may indicate a possible head injury or medical problem.

After assessing the subject's tracking ability, you can also perform a preliminary assessment of whether Horizontal Gaze Nystagmus is present in the subject's eyes. In particular, if the nystagmus or "jerking" is observed, an initial estimation of the angle of onset can be made. The approximate angle of onset may help to determine whether the subject has consumed some drug other than alcohol.

If there is a significant disparity between the nystagmus angle of onset, and what would be expected from the known BAC, the DRE should be alert to the possible presence of some other nystagmus causing drug.

The nystagmus angle of onset is one clue to consider in assessing whether drugs other than alcohol may be present. But it certainly is not the only clue to consider, and it is far from being the most important.

One final thing to be examined in the initial checks of the subject's eyes is the condition of the eyelids. Many drugs will cause the eyelids to droop, as the user exhibits a sleepy appearance. A drooping of one eyelid, but not the other, possibly signifies an injury or other medical problem. The medical, or technical, term for droopy eyelids is Ptosis.

The final element in the preliminary examination is the first check of the subject's pulse rate. Pulse rate is one of the vital signs that serve as very reliable indicators of the possible presence of certain categories of drugs. Pulse rate can also be affected by anxiety, and it is common for an arrested subject to experience anxiety while being examined by a police officer. Pulse rate is measured near the beginning of the drug influence evaluation, again during the middle, and finally near the end to allow the subject's anxiety to "settle down" before the last measurement.

D. Overview of the Examinations of the Eyes

Prior to administration of HGN, the eyes are checked for equal tracking (can they follow an object together) and equal pupil size. If the eyes do not track together, or if the pupils are noticeably unequal in size, the chance of medical disorders or injury may be present.

If the subject is wearing eyeglasses have them removed. Position the stimulus approximately 12-15 inches from the subject's nose and slightly above eye level. You may observe Resting Nystagmus at this time. Check the subject's eyes for the ability to track together. Move the stimulus smoothly across the subject's entire field of vision. Check to see if the eyes track the stimulus together or if one lags behind the other. If the eyes don't track together it could indicate a possible medical disorder, injury or blindness.

Next, check to see that both pupils are equal in size. If they are not, this may indicate a head injury, or some other complication.

DREs obtain important evidence of the presence of certain drug categories from three examinations of the subject's eyes:

- **Horizontal Gaze Nystagmus**
- **Vertical Gaze Nystagmus**
- **Lack of Convergence**

HORIZONTAL GAZE NYSTAGMUS (HGN) should already be familiar to you as a highly reliable Standardized Field Sobriety Test for alcohol impairment. In fact, HGN not only is a powerful indicator of alcohol impairment, but it will also disclose impairment by CNS Depressants, Dissociative Anesthetics, and by most Inhalants. These three categories of drugs usually will cause HGN.

You should check for the following three clues of HGN in each eye:

Clue #1: Lack of Smooth Pursuit

Start with a stimulus (pencil, pen, penlight, etc.) held vertically in front of the subject's face, above eye level and approximately 12 to 15 inches away from the subject's nose. Tell the subject to keep his/her eyes focused on the stimulus, to hold their head still and to follow the movement of the stimulus with their eyes only.

Check the subject's left eye by moving the stimulus smoothly to the subject's extreme left, then smoothly all the way to his/her extreme right, then smoothly back to the extreme left and then back to the extreme right. The stimulus should be moved at a speed that requires approximately 2 seconds (between 1.5 and 2.5 seconds) to bring it from the center to the subjects extreme left, and approximately 4 seconds (between 3 and 5 seconds) to bring it from one side to the other. Two complete passes should be made in front of the eye: that is, from the center to left the side, back to the right side, back to the left side again, back to the right side, and finally back to the center.

While the eye is moving, you should examine it closely for signs of "a lack of smooth pursuit". If a person is not under the influence of a CNS Depressant, Inhalant, or a Dissociative Anesthetic (D.I.D. drugs), their eyes should glide smoothly in the sockets, in much the same way that windshield wipers slide smoothly across the windshield when it is raining steadily. But if the person is under the influence of one of those

three categories of drugs, their eyes will usually jerk noticeably as they move, similar to a windshield wiper dragging across a dry windshield.

 Clue #2: Distinct and Sustained Nystagmus at Maximum Deviation

Continue with the stimulus about 12 - 15 inches in front of the subject's face, with the tip of the stimulus above eye level. Instruct the subject to keep his/her head still and follow the stimulus with their eyes. Move the stimulus all the way to the subject's left side, until the eye is turned to its maximum deviation. Hold the stimulus in that position for at least four seconds, and carefully observe the eye. Then, repeat the process with the stimulus at the subject's extreme right side. Persons under the influence of alcohol or other nystagmus causing drugs usually will exhibit a distinct, sustained, pulsating, very pronounced jerking when the eye is at maximum deviation. In order to consider this clue as "present", you must observe a clear, sustained and unmistakable jerking. A slight, barely visible tremor **does not** constitute "distinct jerking".

 Clue #3: Angle of Onset

When you use HGN as a Standardized Field Sobriety Test of alcohol impairment, you are used to determining whether the jerking of the eye begins prior to 45 degrees. As a DRE, you are going to have to be a bit more precise than that. Within certain limits, it is important for the DRE to estimate the actual angle at which the jerking first begins. We need to do this because it gives us a clue as to whether the subject is impaired by alcohol alone, or by some combination of alcohol with another Depressant, an Inhalant, or a Dissociative Anesthetic.

From the original research that led to the development and validation of HGN as a Standardized Field Sobriety Test for alcohol, we know that there is an approximate statistical relationship between blood alcohol concentration (BAC) and the angle of onset of nystagmus. The relationship is expressed by this formula:

BAC = 50 - Angle of Onset

According to the formula, if the angle of onset were 40 degrees, then the "BAC" would approximately equal 50 minus 40 or 10; that corresponds to a BAC of 0.10. Similarly, if the angle of onset were 35-degrees, "BAC" would be approximately 15, for a BAC of 0.15.

It is important to keep in mind that this formula expresses an average, approximate statistical relationship, **not a precise mathematical relationship**. Humans (and their eyes) do not all react to alcohol or other drugs in exactly the same way. The formula may be reasonably accurate for some people, but much less accurate for others.

The formula is **not** sufficiently accurate for us to use HGN to produce evidence of a specific BAC, and courts routinely reject any attempt to do so. But the formula is of value to us as DREs because it can help us detect an evident gross disparity between the subject's BAC and the nystagmus that is observed.

For example, you are called in to examine a subject who has a BAC of 0.07. Based on that alone, you'd expect to find the onset of HGN close to 40 to 45 degrees. But you discover that the subject's HGN begins at approximately 30 degrees. That would be inconsistent with the BAC, and you would begin to think that this subject might also have taken some other Depressant, an Inhalant, or a Dissociative Anesthetic.

For DRE purposes, you will be expected to be able to estimate an angle of onset to the nearest 5 degree increment, over the range from 30 degrees to 45 degrees. If the subject's eyes begin to jerk before they have moved to the 30 degree angle, you will not attempt to estimate the angle precisely, but will simply record that the subject exhibits "immediate onset". But from 30 degrees on out, you will record a numeric estimate of onset, i.e. 30 degrees, 35 degrees, 40 degrees or 45 degrees.

To determine the angle of onset, again position the stimulus approximately 12-15 inches from the subject's nose and slowly move the stimulus toward your right. NOTE: It is important to use the four full seconds to determine the onset of nystagmus. Watch the left eye ball closely for the first sign of jerking. When you think that you first see the eye jerk, stop moving the stimulus and hold it steady. Verify that the eye really is jerking: if it is not, start moving it again to your right until you see the jerking begin. Once you find the point of onset of nystagmus, estimate the angle, to the nearest 5 degrees, then, repeat this procedure for the subject's right eye. One final point about the nystagmus onset angle is don't forget that there are many drugs that **do not cause HGN**. For example, CNS Stimulants do not cause HGN; neither do Hallucinogens, Cannabis or Narcotic Analgesics. Therefore, a subject might be under the influence of, for example a combination of alcohol and cocaine, and their nystagmus angle of onset would be consistent with the alcohol level alone.

VERTICAL GAZE NYSTAGMUS

Vertical Gaze Nystagmus, like HGN, is a jerking of the eyes. Vertical Gaze Nystagmus is an involuntary jerking of the eyes (up and down) which occurs when the eyes gaze upward at maximum elevation.

Vertical Gaze Nystagmus is associated with the very same drugs that cause Horizontal Gaze Nystagmus. In other words, Vertical Gaze Nystagmus may be exhibited by someone who is under the influence of any CNS Depressant (including alcohol), an Inhalant or a Dissociative Anesthetic such as PCP and its analogs. By the same token, Vertical Gaze Nystagmus, like HGN, is not produced by CNS Stimulants, Hallucinogens, Cannabis or Narcotic Analgesics. High doses for that individual of Depressants, Inhalants or a Dissociative Anesthetic usually cause Vertical Gaze Nystagmus. Therefore, it is not uncommon to encounter subjects who exhibit HGN, but do not exhibit Vertical Gaze Nystagmus.

To check for Vertical Gaze Nystagmus, hold a stimulus horizontally in front of the subject, approximately 12-15 inches in front of the subject's nose. Direct the subject to focus his/her eyes at a specific point on the stimulus. Instruct the subject to hold his/her head steady and to follow the stimulus with their eyes only. Elevate the stimulus until the eyes are raised as far as possible and hold them at that position for a minimum of four seconds. Observe the eyes closely to see whether any up and down jerking occurs. With Vertical Gaze Nystagmus, we do not attempt to identify an angle of onset. Vertical Nystagmus is either present or not present. There is no drug that will cause Vertical Gaze Nystagmus that will not cause Horizontal Gaze Nystagmus.

Remember, the mere fact that Vertical Gaze Nystagmus is present does not guarantee that the subject is under the influence of some drug other than alcohol. Alcohol itself will cause Vertical Gaze Nystagmus, if the BAC is high for that individual. Remember that there are many drugs that do not cause Vertical Gaze Nystagmus.

LACK OF CONVERGENCE

In simplest terms, **Lack of Convergence** means an inability to cross the eyes. We start to check for Lack of Convergence by positioning the stimulus approximately 12 to 15 inches in front of the subject's nose in the same position we use for the HGN test. Inform the subject that you are going to move the stimulus around in a circle, then move it toward their face, and that you will bring it in close to the bridge of the nose. <u>You will not actually touch the subject's nose with the stimulus</u>. Make sure that the subject knows this in advance, so that they do not become frightened during the test and jerk their head away.

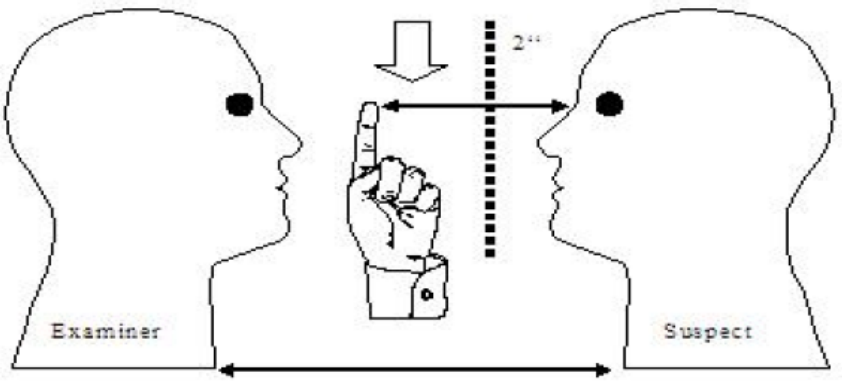
Instruct the subject to keep their head steady and to follow the movement of the stimulus with the eyes only.

Start moving the stimulus in a circle in front of the subject's face either clockwise or counterclockwise, and observe the eyes to verify that the subject is tracking the stimulus. Then move the stimulus to within approximately two inches of the bridge of the nose. Carefully observe the subject's eyes to determine whether both eyes converge on the stimulus.

Note: You should not touch the subject's nose nor come any closer than approximately two (2) inches from the bridge of the nose. Also, you should keep the stimulus high enough so that you can observe the eye movements, making sure the subject does not close his/her eyes to a point where you cannot observe them.

If the eyes are able to cross (converge) i.e. if they come together at a minimum of two inches (2") from the bridge of the nose, Lack of Convergence is "not present", But if one eye drifts away or outward toward the side instead of converging to the bridge of the nose or to the point of convergence (approximately 2 inches from the bridge of the nose), Lack of Convergence is "present". (Refer to the diagram on the next page).

Normal convergence response is a distance approximately two inches (2") from the bridge of the nose.



If the subject cannot converge one or both eyes on the stimulus at approximately two inches from the bridge of the nose, then Lack of Convergence is "**present**"

We record the results of this test by diagramming the movement of the eyes as they come together and then at their final position when the stimulus is moved in to approximately two inches from the bridge of the nose.

Lack of Convergence usually occurs with people who are under the influence of any drug that causes HGN. CNS Depressants, Inhalants and Dissociative Anesthetics usually will cause Lack of Convergence. Cannabis also will usually cause Lack of Convergence, even though it doesn't cause HGN. Other kinds of drugs, i.e. CNS Stimulants, Hallucinogens and Narcotic Analgesics usually do not prevent the eyes from converging. You should be aware that many people have difficulty crossing their eyes even when they are totally drug free, and it is not uncommon to find unimpaired individuals who exhibit Lack of Convergence.

E. Review of the Divided Attention Psychophysical Tests

Four divided attention tests are administered to subjects during a drug influence evaluation.

Romberg Balance

The Romberg Balance test used by DRE's is a modified version of the original Romberg Balance test developed in the 19th Century.

This test requires the subject to stand with his/her feet together, head tilted slightly back, eyes closed and estimate the passage of thirty seconds. When the subject believes that the thirty seconds have passed, he or she is to tilt the head forward, open the eyes and say "Stop".

Administrative Procedures

- Tell the subject to stand straight with his/her feet together and his/her arms down at their sides.
- Tell the subject to maintain that position while you give the instructions. Emphasize that he or she must not start the test until you say "begin".
- Ask the subject if he or she understands so far.
- Tell the subject that, when you tell them to, they must tilt their head back and close their eyes. DEMONSTRATE how the head should be tilted, but DO NOT CLOSE YOUR EYES while demonstrating.
- Tell the subject that when you say "Start", they must keep their head tilted back with their eyes closed until they think that 30 seconds have gone by. DO NOT tell the subject to "count to thirty seconds" or to use any other specific procedure to keep track of time. But on the other hand, DO NOT tell the subject that they are not allowed to count to thirty seconds. SIMPLY SAY, "keep your head tilted back with your eyes closed until you think that thirty seconds have gone by".
- Tell the subject that, when they think the 30 seconds have gone by, they must bring their head forward, open their eyes and say "Stop".
- Ask the subject if they understand.
- Look at your watch and pick a convenient time to start the test.
- Tell the subject to tilt their head back and close their eyes.
- Tell the subject to begin.
- Keep track of time while the subject performs the test.
- When the subject opens his/her eyes, ask them "how much time was that?"
- If 90 seconds elapses before the subject opens his/her eyes, stop the test.

Documenting the test

At the ends of the "arrows" above the "stick figures", record the number of inches of sway exhibited by the subject. The "stick figure" that has only one arm and one leg is used to record front to back sway. The two armed and two legged figure is used for side to side sway.

Under "internal clock", record the actual number of seconds the subject stood with their eyes closed.

Look and listen for the following:

- subject unable to stand still or steady with the feet together
- body tremors
- eyelid tremors
- muscle tone (either more rigid or more flaccid than normal)
- any statements or unusual sounds made by the subject when performing the test.

Document any of the above, or any other noteworthy observations, across the chest areas of the "stick figures", and elaborate as necessary on the reverse side of the drug influence evaluation face sheet.

Walk and Turn

This test should already be very familiar to you from your previous SFST and DRE Pre-School training. The test requires the subject to stand in a heel to toe fashion with his/her arms at his/her sides while a series of instructions are given. Then, the subject must take nine heel to toe steps along a straight line, turn in a prescribed manner, and take another nine heel to toe steps along the line. All of this must be done while counting the steps aloud and keeping their arms at their sides. The subject must not stop walking until the test is completed.

For the DEC evaluation, this test requires a straight line long enough to allow the subject to take 12-15 heel-to-toe steps.

Procedures for Walk-and-Turn Testing

1. Instructions Stage: Initial Positioning and Verbal Instructions

   For standardization in the performance of this test, have the subject assume the heel-to-toe stance by giving the following verbal instructions, accompanied by demonstrations:

   - "Place your left foot on the line". Demonstrate.

- "Place your right foot on the line ahead of the left foot, with the heel of your right foot against the toe of left foot." Demonstrate.
- "Place your arms down at your sides." Demonstrate.
- "Maintain this position until I have completed the instructions. Do not start to walk until told to do so."
- "Do you understand the instructions so far?" (Make sure subject indicates understanding.)

2. Demonstrations and Instructions for the Walking Stage

Explain the test requirements, using the following verbal instructions, accompanied by demonstrations:

- "When I tell you to start, take nine heel-to-toe steps on the line, turn, and take nine heel-to-toe steps on the line back." (Demonstrate 3 heel-to-toe steps.)
- "When you turn, keep the front foot on the line, and turn by taking a series of small steps with the other foot, like this." (Demonstrate).
- "While you are walking, keep your arms at your sides, watch your feet at all times and count your steps out loud."
- "Once you start walking, don't stop until you have completed the test."
- "Do you understand the instructions?" (Make sure subject indicates understanding.)
- "You may begin."

NOTE: If the subject fails to either look at his/her feet or count their steps out loud, remind them to do so and note the occurrence on the evaluation form.

Note: There may be times when the subject will have to be reminded that step "one" is the first step taken from heel-to-toe position.

Documenting the test

Using the "footprints" you will record every instance where the subject stopped walking or stepped off the line. For a **stop** draw a vertical line across the "toe" of the step at which the stop occurred and mark the line with an "S". For a **step off**, draw a line from the appropriate footprint at an angle in the direction in which the foot stepped. If the subject fails to touch heel to toe, draw a

vertical line across the “toe” where this clue was noted and mark the line with an “M”.

Eight validated clues of impairment have been identified for the Walk and Turn test. Two of them apply while the subject is standing in the heel to toe position and listening to the instructions:

- Cannot keep balance. (i.e. feet break away from the heel to toe stance);
- Starts too soon (i.e. subject starts walking before told to do so).

At the top of the checklist portion of the Walk and Turn segment of the drug influence evaluation face sheet, you will record the numbers of times these two clues were observed while you were giving the instructions. For example, if the subject breaks away from the heel to toe stance twice, put two check marks on the "Cannot keep balance" line.

The other six validated clues apply during the walking stage of the test. They are:

- Stops while walking
- Does not touch heel to toe (by more than ½ inch)
- Steps off the line
- Uses arms to balance
- Improper turn
- Incorrect number of steps

In the checklist area you will record the first five of those, separately for the first nine steps and the second nine. Beneath the footprint area you will describe how the subject turned. If they turned in the appropriate fashion, simply write "proper" in that space. But if the subject "staggered to the left" or executed an "about face" turn or any turn other than a proper turn, write that description in the space.

If the subject was unable to begin or complete the test, explain why. Usually this will be due either to a physical infirmity that precludes the test entirely (e.g. "subject has an artificial left leg") or to your decision to stop the test (e.g. "subject nearly fell twice while attempting to stand for the instructions"). Whatever the case might be, some reason must be documented for a test that wasn't given or completed.

<u>One Leg Stand</u>

This test obviously requires the subject to stand on one leg. The other leg is to be extended in front of the subject in a stiff leg manner, with the foot held approximately six inches above the ground. The subject is to look at the elevated foot and count out loud in the following manner: "one thousand one, one thousand two, one thousand three, ..." until told to stop. You will time the subject as this test is performed and will tell the subject to stop when the thirty seconds has elapsed. The subject will be required to perform this test **twice**, first standing on the left leg, then on the right.

Procedures for One-Leg Stand Testing

1. Instructions Stage: Initial Positioning and Verbal Instructions

   Initiate the test by giving the following verbal instructions, accompanied by demonstrations.

   - "Please stand with your feet together and your arms down at the sides, like this." (Demonstrate)
   - "Do not start to perform the test until I tell you to do so."
   - "Do you understand the instructions so far?" (Make sure subject indicates understanding.)

2. Demonstrations and Instructions for the Balance and Counting Stage

   Explain the test requirements using the following verbal instructions, accompanied by demonstrations:

   - "When I tell you to start, raise your (right/left) leg, approximately six inches off the ground, foot parallel to the ground." (Demonstrate one leg stance.)
   - "You must keep both legs straight and your arms at your side."
   - "While holding that position, count out loud in the following manner: "one thousand one, one thousand two, one thousand three, until told to stop." (Demonstrate a count, as follows: "one thousand one, one thousand two, one thousand three, etc." Officer should not look at his foot when conducting the demonstration - OFFICER SAFETY.)
   - "Keep your arms at your sides at all times and keep watching the raised foot."
   - "Do you understand?" (Make sure subject indicates understanding.)
   - "You may begin."

NOTE: It is important that this test lasts for thirty seconds and you must keep track of time. If the subject counts slowly, you will tell them to stop when thirty seconds have gone by, even if for example, the subject has only counted to "one thousand and twenty". On the other hand, if the subject is counting rapidly, they may count to "one thousand forty before the thirty seconds has gone by and you say to stop.

Make sure you record the subjects' actual count in the thirty seconds.

AFTER the subject completes the test while standing on the left leg, have him/her

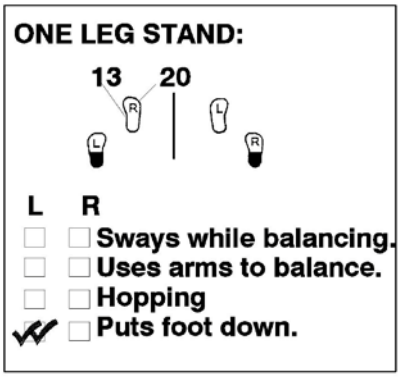
put their feet together with their arms down at their side. Repeat the instructions and ask the subject if they understand. Have him/her perform the test while standing on the right leg.

Documenting the test

Four validated clues of impairment have been identified for the One Leg Stand:

- Sways while balancing
- Uses arms to balance
- Hopping
- Puts foot down

You will place check marks in or near the small boxes to indicate how many times you observed each of the clues. You will do this separately for the test on the left leg (L) and the test on the right (R). In addition, if the subject puts their foot down during the test, you will record when it happened. To do this, write the count number at which the foot came down. For example, if the subject when standing on their left leg, lowered their right foot at a count of "one thousand thirteen", and again at "one thousand twenty" your diagram should look like the example to the right. The subject's actual count during the thirty seconds should be documented in the top area of the box above the foot the subject was standing on.



You must also pay attention to the subject's general appearance and behavior while he or she is performing this test. Take note of any body tremors or muscle tension that may be apparent. Listen for any unusual or "interesting" sounds or statements the subject might make while the test is in progress. Make sure that any such information is documented on the face sheet or in your narrative report.

Finger to Nose

The Finger to Nose test means just that: the subject is required to bring the tip of his/her index finger up to touch the tip of their nose. They will perform this test with their eyes closed and their head tilted slightly back, standing in a manner identical to that required for Romberg Balance (feet together and arms at their sides). The subject will attempt this six times, three with each hand. You will instruct the subject as to which hand to use for each attempt. You will **always** use this sequence when administering this test: "left...right...left...right...right...left".

Administrative Procedures

- Tell the subject to place his/her feet together and to stand straight.

- Tell the subject to place his/her arms down at their sides, close their hands with the index finger extended and rotate the palms forward.

- Tell the subject that, when you say to "begin", he/she will tilt their head back slightly and close their eyes. DEMONSTRATE how the head should be titled back, but DO NOT CLOSE YOUR EYES.

- Inform the subject that you will instruct them to bring the tip of an index finger up to touch the tip of their nose. DEMONSTRATE how the subject is supposed to move the arm and how he/she is supposed to touch the tip of their nose.

  NOTE: The arm is brought directly from the subject's side in front of the body touching the tip of their nose with the tip of their index finger.

- Tell the subject that, as soon as they touch their finger to their nose, they must return the arm to their side.

- Tell the subject that, when you say "right", they must move the right hand index finger to their nose; when you say "left", the subject must move the left hand finger to their nose.

- Ask the subject if they understand.

- Tell the subject to "begin". MAKE SURE he/she tilts his/her head back and closes their eyes. EMPHASIZE to the subject that he/she must keep their eyes closed until you say to open them.

- Give the commands in EXACTLY this sequence:

  "left...right...left...right...right...left".

  MAKE SURE the subject returns their arm to their side immediately after each attempt. PAUSE about two or three seconds between commands.

- After the sixth attempt, tell the subject to open their eyes.

Documenting the test

Although the Finger to Nose test has not been scientifically validated, experience shows that persons who are impaired by alcohol or other drugs sometimes miss the tip of the nose and sometimes fail to use the proper finger. On the diagram, you will draw a line to indicate where the finger tip "landed" on each attempt, and you will indicate which finger was actually used. In addition, be alert for body sway, body tremors, eyelid tremors, muscle tension, unusual or "interesting" sounds or statements and anything else noteworthy. Document all such observations on the face sheet and in your narrative report.

F. Overview of the Vital Signs Examinations

The three vital signs examined during the drug influence evaluation are pulse rate; blood pressure; and body temperature. They are covered in some detail in Session VII of this training program. For the time being, some simple definitions are sufficient:

Pulse rate is the number of expansions that occur in an artery in one minute. Each time the heart "beats" (or contracts) it sends a surge of blood through the arteries. These surges can easily be felt if you place your finger tips over an artery and apply slight pressure. All you have to do to measure pulse rate is to feel the surges while looking at a wristwatch, and count the number of surges that occur in thirty seconds, then multiply by two.

Blood pressure is the force exerted by blood on the walls of the arteries. A person's blood pressure constantly changes from instant to instant. When the heart contracts, and sends the blood surging through the arteries, the blood pressure reaches its highest value. This is called the **systolic** pressure. As the heart expands, the surge of blood slows, and the pressure drops.

When the heart is fully expanded, the blood pressure falls to its lowest level. This is called the **diastolic** pressure. Then, the heart starts to contract and the pressure rises again. The blood pressure continuously rises and falls, cycling between the systolic and diastolic values, as the heart beats.

Measurement of blood pressure requires a special instrument called a sphygmomanometer. A stethoscope is also needed.

Body temperature is measured by using an oral thermometer.

G. Overview of the Dark Room Examinations

Estimating Pupil Size

The pupils of our eyes continually adjust in size to accommodate different lighting conditions. When we are in a darkened environment, the pupils expand or “dilate”, to allow the eyes to capture as much light as possible. When the lighting conditions are

very bright, the pupils shrink, or "constrict", to keep the eyes from being overloaded. This process of constriction and dilation normally occurs within limits.

We use a device called a **pupillometer** to estimate the size of the subject's pupils. The DRE pupillometer has a series of circles or semi-circles, with diameters ranging from 1.0 mm to 10.5 mm, in half-millimeter increments. We hold the pupillometer alongside the subject's eye, and move the pupillometer up or down until we locate the circle or semi-circle closest in size to the pupil.

Pupil size estimations are recorded as the numeric value that corresponds to the diameter of the circle or semi-circle that is closest in size to the subject's pupil in each lighting condition.

We estimate pupil size under three different lighting conditions:

- **Room Light**
- **Near Total Darkness**
- **Direct Light**

1. Estimation of Pupil Size Under Room Light

The pupils are examined in room light prior to darkening the room. Since room lighting conditions can vary considerably and often cannot be controlled, the range of pupil sizes may vary.

Have the subject look straight ahead at a point or location behind the DRE and slightly above the subject's eye level. Care should be taken to ensure the subject is not staring at a light source. Position the pupillometer along side the eye to ensure an accurate estimation.

After checking both the left and right eye, turn off the lights and wait 90 seconds to allow your eyes and the subject's eyes to adapt to the dark.

2. Estimation of Pupil Size Under Near Total Darkness

Completely cover the tip of the penlight with your finger or thumb, so that only a reddish glow and no white light emerges. Bring the glowing red tip up toward the subject's left eye until you can distinguish the pupil from the colored portion of the eye (iris). Continue to hold the glowing red tip in that position and bring the pupillometer up alongside the subject's left eye and locate the circle/semi-circle that is closest in size to the pupil. Then repeat this procedure for the subject's right eye.

3. Estimation of Pupil Size Under Direct Light

Leave the tip of the penlight uncovered and bring the light from the side of the subject's face and shine it directly into their left eye. Position the penlight so that it

illuminates and approximately fills the subject's eye socket. Hold the penlight in that position for 15 seconds with the pupillometer up alongside the left eye, and find the circle/semi-circle that is closest in size to the pupil. Then repeat this procedure for the subject's right eye. While observing the eye for the 15 seconds with the pupillometer in position, you should also check for rebound dilation.
The definition for rebound dilation is available in the glossary and will be covered in depth later in this school.

While checking the pupil size under direct light, you must evaluate the pupil's reaction to light. If a person is not under the influence of any drug, his or her pupils should constrict within one second when the penlight's beam strikes the eye directly. But certain categories of drugs may cause the constriction to occur more slowly, or perhaps not to occur at all.

Two other activities conducted in the darkroom are the examination of the nasal area and the examination of the oral cavity. In both cases, you must look closely for signs of drug use, or even for traces of a drug or concealed quantities of drugs.

Tell the subject to tilt their head back. Shine the penlight directly into the nostrils. Look for traces of drugs or other materials in the nasal passages. Also check for redness and scarring or abrasions that might indicate repeated "snorting" of certain drugs.

Tell the subject to open their mouth wide. Shine the penlight directly into the mouth. Shine the beam around the inside of the mouth to illuminate all areas.

Look for residual quantities of drugs and for unusual coloring of the inside surfaces of the mouth (e.g. green or reddish coloring). Look near the gums for small balloons, bags, tissue or foil wrappings, or other small containers of drugs. Tell the subject to elevate their tongue, and look under the tongue for debris, or other evidence of ingestion.

Three important things should be kept in mind about the dark room examinations. First, a second officer should always accompany you and the subject into the dark room, as a safety precaution. Second, no weapons should be taken into the darkroom. Third, after entering the dark room, no examination should begin for 90 seconds, to allow your eyes, and the subject's to adjust to the darkness.

H. Examination of Muscle Tone

To begin the examination of the muscle tone start with the subject's left arm, firmly grasping the upper arm and slowly moving down. The muscle will appear flaccid, normal or rigid to the touch. Then check the right arm in the same manner.

I. Examination for Injection Sites

Persons who frequently inject drugs often develop lengthy scars, called "tracks", from repeated injections into the same vein. Fresh injection sites often can be found at the end of a "track". Many times, a fresh injection site will not be easily visible to the naked eye. Therefore, a DRE should search for injection sites by touch, running the fingers along such places as the neck, forearms, wrists, back of hands, or other subjected areas of injection. When a possible injection site is located, a ski light can be used to provide a magnified and illuminated visual inspection. The third pulse is taken by the DRE in this step.

Hypodermic needles are sized according to gauge. The gauge of a needle is a measurement of its inside diameter. The gauge number represents how many needles of that size would be needed to equal one inch. For example, a 24 gauge needle has an inside diameter of 1/24th of an inch; a 10 gauge needle has an inside diameter of 1/10th of an inch. Therefore, the higher gauge, the smaller the diameter of the needle.

J. Subject Statements

The DRE should be aware that often during the evaluation process, subject's may make numerous spontaneous, incriminating statements. These statements should be documented. DRE's should check to make sure that the subject has been appropriately advised of his/her Miranda rights. DRE's should ask additional probing questions as appropriate.

K. Opinion of DRE

By this point in the evaluation, the DRE should have formed an opinion of the category or categories of drugs responsible for any observed impairment. This opinion is based on the totality of the evaluation.

L. Obtaining a Toxicological Sample

The process of obtaining toxicological samples will vary depending upon individual state implied consent statutes. The laws of your state will dictate what samples can be taken, i.e. urine, blood, saliva and/or breath. The containers for these samples will also vary depending on the type of test used and the laboratory that will do the analysis. A department or agency policy should delineate how each sample should be taken. You will need to become familiar with and follow your department's policies and procedures governing toxicological sample collection, handling, shipment, be taken. You will need to become familiar with and follow your department's policies and procedures governing toxicological sample collection, handling, shipment, etc. Consideration should be given to witnessing the sample being obtained, chain of custody for the evidence, preservation and the return of the analysis by the laboratory.

M. A Brief Overview of Toxicology

1. Introduction

The information in this section is intended to provide a basic understanding of chemical testing for drugs that a DRE needs to have to appreciate fully the role of toxicology in this program. As much as possible, the information has been kept non-technical. It will not be covered in depth in class, but you are expected to be familiar with what is given in this manual.

2. Some Key Concepts

DEFINITION: Toxicology is the study of poisons and their effects on living organisms. For DRE purposes, the "poisons" in question are drugs, and in some cases the metabolites of drugs. A toxicologist analyzes physical specimens such as blood and urine for drugs and drug metabolites.

A metabolite, for DRE purposes, is a chemical substance derived from a drug, and that is formed by the action of the body upon that drug. It is important to be aware that some metabolites are themselves psychoactive. That is to say, some metabolites cause impairment: Therefore, a metabolite may also be a drug. It is also important to know that it may be the metabolite, and not the original or "parent" drug that is detected in the laboratory. In some instances, finding a particular metabolite allows the chemist to conclude with certainty that a specific drug was ingested, even though the methods and equipment available to the lab can't detect that drug itself. Finding the metabolite is good, scientific evidence that the drug was there.

3. Limitations of Toxicology

Toxicology has some important limitations. One limitation is that, with the exception of alcohol, toxicology cannot produce "per se" proof of drug impairment. That is, the chemist can't analyze the blood or urine and come up with a number that "proves" the person was or wasn't impaired. For alcohol alone, the chemist can do that, or at least come very close to doing it.

But alcohol is a special drug. Chemically speaking, the alcohol molecule is very simple compared to the molecules of other drugs. Alcohol's metabolites don't impair. Scientists have had many opportunities to study alcohol's effects under carefully controlled experimental conditions. The scientific community has a relatively clear understanding of how alcohol works on the body and brain.

These statements generally can't be made about other drugs. Drugs are metabolized in complex ways, and sometimes the metabolites are also drugs. Some drugs can be stored in the body's tissues, so that even after the drug has cleared from the blood, it's still in the body and brain and still causing

impairment. Apart from post-mortem studies of lethal levels, there haven't been routine opportunities to correlate drug concentrations with degrees of impairment. Ethical concerns limit our ability to study illegal drugs, especially at "street" dosages. It is difficult to replicate in the laboratory the drug combinations, methods of ingestion and drug purities characteristic of "street" use. Even if it were possible to study individual drug concentrations and their relationships to impairment in depth, the practice of polydrug use and the myriad of different combinations seen on the street would make that information of little practical use. Finally, many laboratories simply don't perform quantitative analyses to determine the drug concentrations, but only determine qualitatively the presence of the drugs. The reasons for avoiding quantitative analysis include the facts that it is costly, time consuming, and may be beyond the capability of the equipment available to the lab. Also, if urine is the specimen preferred by or submitted to the lab, quantitative analysis is less important, because it doesn't lend itself to clear interpretation. In short, chemistry basically cannot supply the "magic number" of impairment for drugs.

Another limitation of toxicology is that it doesn't provide evidence of the time at which the drug was ingested. Therefore, they will not be able to provide direct evidence of the subject's condition at the time of arrest. In some instances, it is possible that a "positive" chemical test reflects drugs that the subject took long before being arrested, and that were metabolized and no longer causing impairment prior to his or her arrest.

4. Toxicology's Roles in this Program

Exactly what are the roles that toxicology plays in this program? First and foremost, toxicology is **the twelfth step in the drug influence evaluation**.

A DRE doesn't complete the evaluation until they either obtain a specimen from the subject, or formally document the fact that the subject refused to submit to the toxicological test. It is important that the court be aware that toxicology is the final step of the evaluation. It follows the formation of the DRE's opinion; the opinion is not based on the results of the toxicological analysis. Similarly, the arrest, booking and charging of the subject are not based on the toxicological analysis, and must be supported by other, solid evidence. The DRE expects that toxicology will **support or corroborate the opinion** that they have formed. A toxicological analysis supports the opinion by confirming the presence of a particular drug that is consistent with the DRE's opinion. The concentration at which the drug is present shouldn't be an issue, because it isn't possible to relate concentration to "impairment" with any degree of reliability.

DREs also need to understand that sometimes the toxicological analysis will <u>not</u> confirm the DRE's opinion. The DRE needs to be honest enough to admit

that, when that happens, it may be because their opinion is incorrect. The drug influence evaluation isn't an exact science. Drugs affect different people in different ways. In this program, we "never say never", and we "always avoid saying always".

But sometimes, the toxicology doesn't corroborate a DRE's opinion even though the opinion is correct. The lab's instruments, personnel and analytical methods are not infallible. There are certain drugs that a particular laboratory simply may not test for, and there are others that can't be "seen" unless they are present at fairly high concentrations.

To corroborate DREs' opinions, toxicology performs two kinds of analyses: **screening and confirmation.** Screening tests are easier, cheaper and faster than confirmatory tests. Confirmatory tests are more sensitive and more specific than screening tests. In loose terms we can say that a positive screening test means "it looks like this sort of drug is there". A positive confirmatory test means "this particular drug is definitely there".

Confirmatory tests employ methods different from those of the screening tests. The confirmatory test is designed to provide absolute proof of a drug's presence, or at least as close to absolute as science can come. Confirmatory tests usually are required if the case goes to trial. DREs should be aware that, to cut down on costs, some labs do not conduct the confirmatory tests unless the case is going to go to trial. If this is the policy of your laboratory, you must provide the toxicologist with as much advanced notice of the trial date as possible, so he or she can perform the confirmatory analysis in a timely manner.

Suppose the screening test is positive, but the confirmatory test is not positive; what does that mean? Here again, DREs need to admit that it may mean that the drug isn't there. Some "screens" will react to substances other than psychoactive drugs. The screening tests are not absolutely indicative of drug presence; if they were, there would be no need for a confirmatory test.

Failure to confirm a drug does not necessarily mean that the "screen" was inaccurate. Every analytical procedure has a "detection" threshold; that is the lowest quantity or concentration of the drug that the instrument can possibly detect. Above that is the "quantification" threshold; that is the lowest concentration that can be numerically determined by the instrument. Standard laboratory procedure calls for establishing a third level, called the "cut-off" level, which usually is set slightly **above** the "quantification" threshold. Typically, the laboratory's report for the confirmatory test will read "not detected" unless the drug is found at a concentration greater than or equal to the "cut-off" level. But in fact, the drug could be present, at a somewhat lower concentration.

Then why don't laboratories simply lower their "cut-off" levels, if they really want to support their DREs? The reason is that the laboratory needs to preserve its scientific validity. If it loses that, the testimony of its toxicologists will be worthless. There are definite limits to the accuracy of chemical equipment and procedures. If the cut-offs are set too low, "false positives" will result (i.e. reports of "drug found" when it isn't really there). The lab won't be able to defend its reports scientifically, so it won't be able to support the DREs at all. Still, it is important for DREs and State and agency DRE coordinators to consult with their toxicologists to try to reach agreement concerning optimum cut-offs, that do not compromise scientific integrity but at the same time provide adequate support to this program.

Fundamentally, toxicology's role in this program is **corroborative**. The observations of the arresting officer, and the observations, measurements and estimates of the DRE provide the best proof of the subject's impairment.

Toxicological analysis provides scientific corroboration that the subject actually ingested a drug. In some cases, the analysis may also provide scientific support for the allegation that the subject was impaired. In addition toxicologists can provide expert witness testimony on the analytical procedures used and the results of that testing, the prevalence of the drug in epidemiological studies, and information from peer reviewed and published scientific literature. This may include case reports, laboratory studies of controlled drug dosing, driving simulator studies or actual on-the-road driving studies. All of this information can be used together to support the observations made by the DRE and subsequently their opinions of impairment. Toxicology also plays an important role in on-going studies to document the validity of this program, in monitoring the work of individual DREs and in assessing the progress students are making during their certification training.

5. Blood or Urine: Which is Better?

Blood and urine are the most common specimens used for toxicology analysis. If we have a choice, which should we pick?

The answer is, it depends. The laws of your State, the policies and procedures of your department, the particular condition of your subject, the equipment and procedures available to your laboratory and possibly the drug categories you believe are causing the subject's impairment will all have a bearing on the choice. **There is no single perfect or "best" specimen.** It is not possible to say that blood is better or that urine is better. Each has advantages and disadvantages.

Some advantages of blood:

- The presence of a drug in blood more reliably indicates recent use than does the presence of the drug in urine. Urine tests may produce "positive" results weeks after the drugs were used. This is much less likely to happen with blood tests. Thus a positive blood test is more contemporaneous with drug impairment.

- The collection of a blood specimen usually occurs under a greater degree of supervision. When providing a urine specimen, a subject may have an opportunity to dilute or contaminate the specimen, or even substitute some other fluid for it.

- Quantitative analysis of urine specimens provides information of essentially no value. Quantitative analysis of drugs in blood **may** help to corroborate impairment.

Some advantages of urine:

- Urine is usually easier to obtain. Subjects often are more willing to supply urine, and medical personnel need not be present to collect it.

- Urine analysis is less expensive than blood analysis.

- Drug concentrations usually are higher and thus easier to detect in urine than in blood.

- Some drugs clear very quickly from the blood. The time delay from the initial traffic stop to the collection of the blood sample may impede the laboratory's ability to corroborate the DREs opinion. But drugs usually remain detectable in the urine for longer periods of time.

6. What DREs Can Do To Optimize Laboratory Corroboration

DREs can help the lab help them by following a few simple reporting procedures. First, make sure that you **advise the lab what drug category(s) you believe are present** when you submit the urine or blood specimen.

Many labs request a copy the DRE report along with the specimen. The report assists in ensuring that targeted and appropriate testing is performed. All labs need to know the kinds of drugs that may be present, because that information can help the toxicologist determine if he or she needs to extend testing beyond the standard "menu" of screening procedures. Also make sure you **tell the lab**

what drugs the subject admitted taking, and also let them know **what drugs you found in the subject's possession**.

Probably the most important advice for a DRE who wants maximum support from the lab is to **talk to the toxicologists**. Find out what kind of specimen (blood or urine) they prefer to receive. This will vary from lab to lab, and possibly from case to case. Ask the toxicologists for instruction and find out if they would like to receive a copy of your report along with the specimen. Make sure you understand what the laboratory report means. Establishing a regular dialogue with the lab is essential for maintaining the support system this program demands.

Finally, DREs need to be aware of and sympathetic to the laboratory's limitations. DREs are not infallible, and neither are laboratories. All labs have "chemical blind spots", i.e. drugs for which no routine detection procedures or suitable instruments are available. Many labs, for example, find it very difficult to detect or confirm THC in blood specimens, or to find LSD in either urine or blood. In addition, most laboratories are not well equipped to screen for certain anti-psychotic drugs or for some of the narcotic analgesics. DREs need to know that these limitations are a fact of life. They should not be a cause for disagreement between the DRE and the lab.

DRUG INFLUENCE EVALUATION

Evaluator	DRE No.	Rolling Log No.	
Recorder/Witness	Crash: ☐ None ☐ Fatal ☐ Injury ☐ Property		Case #
Arrestee's Name (Last, First MI)	DOB	Sex / Race	Arresting Officer (Name, ID No.)
Date Examined/Time/Location	Breath Results: ☐ Refused Instrument # %		Chemical Test ☐ Refused ☐ Urine ☐ Blood
Miranda Warning Given: ☐ Yes ☐ No By:	What have you eaten today? When?	What have you been drinking? How much?	Time of last drink?
Time now?	When did you last sleep? How long?	Are you sick or injured? ☐ Yes ☐ No	Are you diabetic or epileptic? ☐ Yes ☐ No
Do you take insulin? ☐ Yes ☐ No	Do you have any physical defects? ☐ Yes ☐ No	Are you under the care of a doctor or dentist? ☐ Yes ☐ No	
Are you taking any medication or drugs? ☐ Yes ☐ No	Attitude:	Coordination:	
	Breath:	Face:	
Speech:	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☐ Watery	Blindness: ☐ None ☐ Left Eye ☐ Right Eye	Tracking: ☐ Equal ☐ Unequal
Corrective lens: ☐ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Pupil size: ☐ Equal ☐ Unequal, (explain)	Able to follow stimulus: ☐ Yes ☐ No	Eyelids: ☐ Normal ☐ Droopy

Pulse and time 1. ____/____ 2. ____/____ 3. ____/____	HGN Lack of smooth pursuit Maximum deviation Angle of onset	Left Eye / Right Eye ____ / ____ ____ / ____ ____ / ____	Vertical Nystagmus ☐ Yes ☐ No Convergence Right eye Left eye
One Leg Stand			

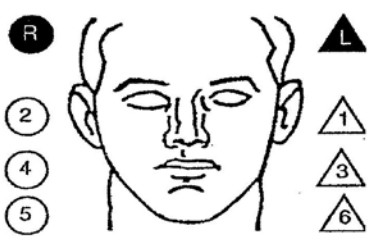
Romberg Balance	Walk and Turn test	Cannot keep balance Starts too soon:	L R ☐ ☐ Sways while balancing ☐ ☐ Uses arms to balance ☐ ☐ Hopping ☐ ☐ Puts foot down

	1st Nine	2nd Nine
Stops walking		
Misses heel to toe		
Steps off line		
Raises arms		
Actual # steps		

Type of footwear:

Internal clock ____ Est. as 30 seconds	Describe Turn	Cannot do test (explain)
Nasal area:		

Draw lines to spots touched



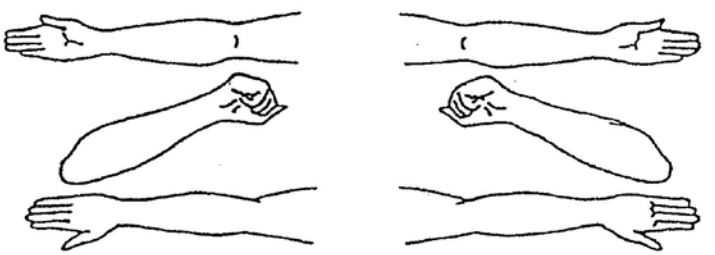
Pupil Size	Room Light	Darkness	Direct
Left			
Right			

Rebound dilation ☐ Yes ☐ No

Oral cavity:

Reaction to Light:

RIGHT ARM **LEFT ARM**



Blood pressure ____/____	Temperature ____ °f

Muscle tone: ☐ Near normal ☐ Flaccid ☐ Rigid

Comments:

What medication or drug have you been using? How much?		Time of use?	Where were the drugs used? (location)
Date/Time of Arrest	Time DRE Notified	Evaluation Start Time	Time Completed
DRE signature (Include rank)	ID #	Reviewed by:	

Opinion of evaluator: ☐ Rule Out ☐ Medical ☐ Alcohol ☐ CNS Depressant ☐ CNS Stimulant ☐ Hallucinogen ☐ Dissociative Anesthetic ☐ Narcotic Analgesic ☐ Inhalant ☐ Cannabis

Topics for Study

1. Give three important reasons for conducting drug evaluation and classification evaluations in a standardized fashion.

2. What are the twelve major components of the drug evaluation process?

3. How many times is pulse rate measured during the drug evaluation and classification evaluation?

4. Are the diameters of a pupillometer's circles/semi-circles indicated in centimeters, millimeters or micrometers?

5. What formula expresses the approximate statistical relationship between blood alcohol concentration and nystagmus onset angle?

6. Which of the seven categories of drugs ordinarily do not cause nystagmus?

7. How many heel-to-toe steps is the subject instructed to take, in each direction, on the Walk and Turn test?

8. What period of time is the subject required to estimate during the Romberg Balance test?

9. What is systolic pressure?

10. What is the name of the instrument used to measure blood pressure?

11. Name the four validated clues of the One Leg Stand test.

12. Name the eight validated clues of the Walk and Turn test.

13. Suppose you have two hypodermic needles, one is 14 gauge, the other is 20 gauge. Which needle has the smaller inside diameter?

SESSION V

EYE EXAMINATIONS: NYSTAGMUS, CONVERGENCE, PUPIL SIZE AND REACTION TO LIGHT

SESSION V EYE EXAMINATIONS: NYSTAGMUS, CONVERGENCE, PUPIL SIZE AND REACTION TO LIGHT

Upon successfully completing this session the student will be able to:

- State the purposes of various eye examinations in the DEC drug influence evaluation procedure.
- Describe the administrative procedures for the eye examinations.
- Describe the clues of each eye examination.
- Conduct the eye examinations and note the clues observed.
- Prepare complete, clear and accurate records of the eye examinations.

In this session, you will have an opportunity to observe demonstrations of the various eye examinations of the drug influence evaluation process. You will also have opportunities to practice administering those examinations.

The eye examinations include:

- Horizontal Gaze Nystagmus
- Vertical Gaze Nystagmus
- Lack of Convergence
- Pupil Size Estimation
- Pupil Reaction to Light

Horizontal Gaze Nystagmus (HGN).

As a review, we already know that HGN is an excellent indicator of alcohol impairment and will also disclose impairment by any CNS Depressant other than alcohol, Dissociative Anesthetics, such as PCP and its analogs and by most Inhalants. These three categories of drugs usually will cause HGN.

We check for three clues of HGN in each eye:


Check #1: Does the eye track smoothly?

As a reminder, we start with a stimulus (pencil, pen, penlight, etc.) held vertically in front of the subject's face, above eye level and about 12 to 15 inches away from the subject's nose. Tell the subject to keep his/her eyes focused on the stimulus, to hold his/her head steady, and to follow the movement of the stimulus with their eyes only.

Check the subject's left eye by moving the stimulus to your right. Move the stimulus smoothly, at a speed that requires approximately two seconds to bring the subject's eye as far to the side as it can go. While moving the stimulus look at the subject's eye and determine whether it is <u>able to pursue smoothly</u>. Then move the stimulus all the way to the left, back across subject's face checking if the right eye pursues smoothly. Movement of the stimulus should take approximately two seconds out and two seconds back for each eye. Make at least two complete passes in front of the eyes to check for this clue.

While the eye is moving you should examine it closely for signs of "a lack of smooth pursuit". If a person is not under the influence of a CNS Depressant, Inhalant or a Dissociative Anesthetic their eyes should glide smoothly in the sockets, in much the same way that windshield wipers slide smoothly across the windshield when it is raining steadily. But if the person is under the influence of a CNS Depressant, an Inhalant or a Dissociative Anesthetic their eyes will usually jerk noticeably as they move, similar to a windshield wiper dragging across a dry windshield.


Check #2: Does the eye exhibit distinct and sustained nystagmus when it is held at maximum deviation for a minimum of four seconds?

After you have checked both eyes for lack of smooth pursuit, check the eyes for <u>distinct and</u>

sustained nystagmus at maximum deviation beginning with the subject's left eye. This is done by moving the stimulus to the subject's left side until the eye has gone as far to the side as possible. Usually no white will be showing in the corner of the eye at maximum deviation. Hold the eye at that position for a minimum of four seconds and observe the eye for distinct and sustained nystagmus. Move the stimulus all the way across the subject's face to check the right eye holding that position for a minimum of four seconds. Repeat the procedure. Someone under the influence of Depressants, Inhalants or a Dissociative Anesthetic usually will exhibit distinct and sustained nystagmus at maximum deviation. A slight, barely visible tremor of the eye **does not** constitute "distinct jerking" for our purposes.


Check #3: What is the angle of onset of the nystagmus?

When using HGN as a Standardized Field Sobriety Test of alcohol impairment, you determine whether the jerking of the eye begins prior to 45-degrees. As a DRE, you are going to have to be more precise than that. Within certain limits, it is important for the DRE to estimate the actual angle at which the jerking first begins. We need to do this because it gives us a clue as to whether the subject is impaired by alcohol alone, or by some combination of alcohol with another Depressant, an Inhalant or a Dissociative Anesthetic.

You should remember from your earlier training that some original research led to the development and validation of HGN as a Standardized Field Sobriety test for alcohol, and that we know that there is an approximate statistical relationship between blood alcohol concentration (BAC) and the angle of onset of nystagmus. The relationship is expressed by this formula:

BAC = 50 – Angle of Onset

According to the formula, if the angle of onset were 40 degrees, then the "BAC" would approximately equal 50 minus 40 or 10; that corresponds to a BAC of 0.10. If the onset angle were 35 degrees, the "BAC" would be approximately 15, for a BAC of 0.15.

It is important to always keep in mind that this formula expresses an average, approximate statistical relationship, **not a precise mathematical relationship**. Humans, and their eyes, do not all react to alcohol or other drugs in exactly the same way. The formula may be reasonably accurate for some people but much less accurate for others. The formula is **not** sufficiently accurate for us to use HGN to produce evidence of a specific BAC and courts routinely reject any attempt to do so. But the formula is of value to us as DREs because it can help us detect an evident gross disparity between the subject's BAC and the nystagmus observed.

For example, you are called in to evaluate a subject who has a BAC of 0.07. Based on that alone, you would expect to find the onset of HGN close to 40 to 45 degrees. But suppose you discover that the subject's HGN begins at about 30 degrees. That would be inconsistent with the BAC, and you would begin to think that this subject might also have taken some other Depressant, an Inhalant, or possibly a Dissociative Anesthetic.

Remember for DRE purposes, you will be expected to be able to estimate angle of onset to the nearest 5 degree increment, over the range from 30 degrees to 45 degrees. If the subject's eyes begin to jerk before they have moved to the 30 degree angle, you will not attempt to estimate the angle precisely and will record that the subject exhibits "immediate onset". But from 30 degrees on out, you will record a numeric estimate of onset, i.e. 30 degrees, 35 degrees, 40 degrees, or 45 degrees.

To determine the angle of onset, position the stimulus about 12-15 inches from the subject's nose and slowly move the stimulus toward your right. NOTE: It is important to use the full four seconds to determine the onset of nystagmus. Watch the left eye closely for the first sign of jerking. When you think that you first see the eye jerk, stop moving the stimulus and hold it steady. Verify that the eye is jerking. If it is not, start moving it again to your right until you see the jerking begin. Once you find the point of onset of nystagmus estimate the angle to the nearest five (5) degrees. Repeat this procedure for the subject's right eye. One final point about the nystagmus onset angle, don't forget that there are many drugs that **do not cause HGN**.

Vertical Gaze Nystagmus (VGN)

From your earlier training you learned that Vertical Gaze Nystagmus, like HGN, is a jerking of the eyes. Vertical Gaze Nystagmus is an involuntary jerking of the eyes (up and down) which occurs as the eyes are held at maximum elevation.

Vertical Gaze Nystagmus is associated with the same drugs that cause Horizontal Gaze Nystagmus. High doses, for that individual, of Depressants, Inhalants or a Dissociative Anesthetic cause Vertical Gaze Nystagmus. Therefore, it is not uncommon to encounter subjects who exhibit HGN but do not exhibit Vertical Gaze Nystagmus.

To check for Vertical Gaze Nystagmus, hold a stimulus horizontally in front of the subject, about 12-15 inches in front of the subject's nose. Direct the subject to focus their eyes at a specific point on the stimulus. Instruct the subject to hold their head steady and to follow the stimulus with their eyes only. Elevate the stimulus until the eyes are raised as far as possible and hold them at that position for a minimum of four seconds. Observe the eyes closely to see whether any up and down jerking occurs. With Vertical Gaze Nystagmus, we do not attempt to identify an angle of onset: we simply record that Vertical Gaze Nystagmus is either "present" or "not present". There is no drug that will cause VGN that will not cause HGN.

Remember, the mere fact that Vertical Gaze Nystagmus is present does not guarantee that the subject is under the influence of some drug other than alcohol. Alcohol itself will cause Vertical Gaze Nystagmus, if the BAC is high for that individual. Also remember that there are many drugs that do not cause Vertical Gaze Nystagmus.

Lack of Convergence

You should recall from your earlier training that **Lack of Convergence** means an inability to cross the eyes. To check for Lack of Convergence, we first determine if the subject routinely wears eyeglasses during reading and near visual tasks. If so, ensure that the

eyeglasses are worn by the subject for the check for Lack of Convergence, if they are available. The role of clear vision and focusing can have a significant effect on the convergence of the eyes. In the clinical setting, the Lack of Convergence check is routinely conducted with the eyeglasses on if normally worn by the subject. To conduct the Lack of Convergence check, we position the stimulus approximately 12 to 15 inches in front of the subject's face in the same position we use for the HGN test. Inform the subject that you are going to move the stimulus around in a circle, then you are going to move it toward their face and that you will bring it in close to the nose. You will not touch the subject's nose with the stimulus. Make sure that the subject knows this in advance so that he/she does not become frightened during the test and jerk their head away. Instruct the subject to keep their head steady, and to follow the movement of the stimulus with the eyes only.

Start moving the stimulus in a circle in front of the subject's face either clockwise or counterclockwise, and observe their eyes to verify that the subject is tracking the stimulus. Then, slowly move the stimulus in toward the bridge of the nose.

The eyes should come together and cross (converge) as they track and stay aligned on the stimulus. Continue moving the stimulus and have the subject's eyes converge toward the bridge of the nose. If the subject cannot converge towards the bridge of the nose, (the minimum distance for a normal convergence response is approximately two inches (2") from the bridge of the nose) hold the stimulus at the convergence point for approximately one (1) second then remove the stimulus while observing the eyes.

Remember that you should not actually touch the subject's nose and should not come in any closer than approximately two (2) inches from the bridge of the nose. Also, you should keep the stimulus high enough so that you can observe the eye movements, making sure the subject does not close the eyes to a point where you cannot observe them.

Lack of Convergence usually occurs with people who are under the influence of any drug that causes HGN. Thus, Depressants, Inhalants, and Dissociative Anesthetics usually will cause Lack of Convergence. Cannabis also will usually cause Lack of Convergence, even though it doesn't cause HGN. Other kinds of drugs, i.e. CNS Stimulants, Hallucinogens and Narcotic Analgesics usually do not prevent the eyes from converging. But you should be aware that many people have difficulty crossing their eyes even when they are totally drug free. So it is not uncommon to find unimpaired individuals who exhibit Lack of Convergence.

Estimating Pupil Size

The pupils of our eyes continually adjust in size to accommodate different lighting conditions. When we are in a darkened environment, the pupils expand, or "dilate", to allow the eyes to capture as much light as possible. When the lighting conditions are very bright, the pupils shrink, or "constrict", to keep the eyes from being overloaded. This process of constriction and dilation normally occurs within limits.

We use a device called a **pupillometer** to estimate the size of the subject's pupils. The DRE pupillometer has a series of circles or semi-circles, with diameters in half-millimeter increments. The pupillometer is held alongside the subject's eye and moved up or down

until the circle or semi-circle closest in size to the pupil is located.

We record the pupil size estimations that corresponds to the diameter of the circle/semi-circle closest in size to the subject's pupil in each lighting condition.

The three pupil size estimations conducted by the DRE are:

1. Estimation of Pupil Size Under Room Light

Here the pupils are examined in room light prior to darkening the room. Since room lighting conditions can vary considerably and often cannot be controlled, the range of pupil sizes may also vary.

The final two pupil size estimations are made with the use of a penlight in a near totally darkened room. After darkening the room, we wait 90 seconds to allow the subject's eyes and our own eyes to adapt to the dark. Once we have done that, we proceed with the estimations.

2. Estimation of Pupil Size Under Near Total Darkness

For this examination, we completely cover the tip of the penlight with our finger or thumb, so that only a reddish glow and no white light emerges. Bring the glowing red tip up toward the subject's left eye until you can distinguish the pupil from the colored portion of the eye (Iris). Continue to hold the glowing red tip in that position and bring the pupillometer up alongside the subject's left eye and locate the circle/semi-circle that is closest in size to the pupil. This is then repeated for the subject's right eye.

3. Estimation of Pupil Size Under Direct Light

During this examination we bring the penlight from the side of the subject's face and shine the beam directly into their left eye. Position the penlight so that it illuminates and approximately fills the subject's eye socket. Hold the penlight in that position for 15 seconds with the pupillometer up alongside the left eye, and find the circle/semi-circle that is closest in size to the pupil. Then repeat this procedure for the subject's right eye. While observing the eye for the 15 seconds with the pupillometer in position, you should also check for rebound dilation. Rebound dilation has been reported with persons under the influence of cannabis, CNS Stimulants, and/or hallucinogens. If rebound dilation is observed, it should be recorded by indicating the smallest or constricted size and the largest or dilated size, e.g. 3.0 – 4.5mm.

Normal Sizes for the Pupil

We estimate pupil size under three different lighting conditions; Room Light, Near Total Darkness and Direct Light, and remember that the range of pupil sizes will vary. For most non-impaired people, even under very bright light the pupils won't constrict much below a diameter of 2.0 millimeters (mm); and even under near total dark conditions, the pupils usually will only dilate to a diameter of not more than 8.5 mm. For a normal non-impaired person, the average pupil size and range for:

- **Room Light** is approximately **4.0 mm** with an average range of normal pupil sizes ranging from **2.5 to 5.0 mm.**
- **Near Total Darkness** is approximately **6.5 mm** with an average range of normal pupil sizes ranging from **5.0 to 8.5 mm.**
- **Direct Light** is approximately **3.0 mm** with an average range of normal pupil sizes ranging from **2.0 to 4.5 mm.**

Reaction of the Pupils to Light

During the direct light estimation of the pupil size, we also look for another clue of possible drug influence; reaction of the pupils to light. With a non-impaired person, the pupils will constrict within one second after the penlight is shined directly into the eye. Some drugs however, may affect the pupil's reaction to light. No category of drugs will speed up the reaction of the pupils, but some will slow it down. CNS Depressants and CNS Stimulants for example, will both slow the pupil's reaction. It may seem strange that CNS Stimulants will do this, since we think of those type of drugs as "speeding things up", nevertheless they do slow the reaction. With someone under the influence of Narcotic Analgesics, you may observe little or no visible reaction of the pupils to direct light. This may be due to the fact that the drug constricts the pupils to the point where any further constriction isn't noticeable to your naked eye. Hallucinogens, Dissociative Anesthetics, and Cannabis usually don't affect the reaction of the pupils. Some Inhalants will usually slow pupillary reaction.

Expected Results

The following summarizes the results that generally can be expected when these eye examinations are administered to persons under the influence of the various categories of drugs.

	CNS Depressants	CNS Stimulants	Hallucinogens	Dissoc. Anesthetics	Narcotic Analgesics	Inhalants	Cannabis
Horizontal Gaze Nystagmus	Present	None	None	Present	None	Present	None
Vertical Gaze Nystagmus	Present (High Dose)*	None	None	Present	None	Present (High Dose)*	None
Lack of Convergence	Present	None	None	Present	None	Present	Present
Pupil Size	Normal (**)	Dilated	Dilated	Normal	Constricted	Normal (****)	Dilated (*****)
Reaction to Light	Slow	Slow	Normal (***)	Normal	Little or none visible	Slow	Normal

* High dose for that particular individual.
** Soma, Quaaludes and some anti-depressants usually dilate pupils.
*** Certain psychedelic amphetamines may cause slowing.
**** Normal, but may be dilated.
***** Pupil size possibly normal.

BEAR IN MIND that there is a great deal of difference among humans and their individual reactions to drugs. The chart lists what we can generally expect to find when we examine subjects, but no one can guarantee that we will always find precisely these responses.

SOME KEY TECHNICAL TERMS
REGARDING THE EYES

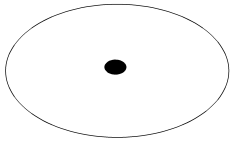
Rebound Dilation is defined as a period of pupillary constriction followed by a period of pupillary dilation where the pupil steadily increases in size and does not return to its original constricted size. Rebound dilation is observed only with the estimation of pupil size under the Direct Light procedure.

Pupillary Unrest is defined as the continuous, irregular change in the size of the pupils that may be observed under room or steady light conditions.

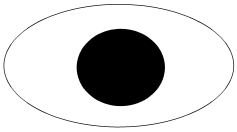
Accommodation Reflex is an adjustment of the eyes for viewing objects at various distances. Meaning the pupils will automatically constrict as objects move closer and dilate as objects move further away.

Pupillary Light Reflex means the pupils of the eyes will constrict and dilate depending on changes in lighting.

Miosis means an abnormally small pupil, i.e. constricted.



Mydriasis means an abnormally large pupil, i.e. dilated.



Ptosis is the technical term for "droopy eyelids".

SESSION VI

PHYSIOLOGY AND DRUGS: AN OVERVIEW

SESSION VI PHYSIOLOGY AND DRUGS: AN OVERVIEW

Upon successfully completing this session, the student will be able to:

- Explain in layman's terms the general concept of human physiology.
- Explain in layman's terms the purpose and functions of major systems in the body (nervous system, circulatory system, respiratory system, etc.).
- Explain in layman's terms how drugs work in the body.
- Explain in general terms how the drug evaluation is used to detect signs or symptoms indicative of drug impairment.
- Correctly answer the "topics for study" questions at the end of this session.

Physiology and Drugs: An Overview

The purpose of this session is to provide a brief overview of how the human body functions in a "normal" state and thus lay a foundation for comparison when drugs are introduced into the body. At best, you will acquire a general working knowledge and will by no means become a qualified medical specialist.

The DRE can be compared to the operator of an evidential chemical test device...while it is beneficial to understand the general principles involved in the operation of the device, it is not necessary for each operator to be able to explain every detail of its operation. Rather, if the operator follows the operational instructions the device will produce accurate and reliable results. The same is true of the Drug Evaluation and Classification procedure...if each DRE conducts the evaluation as instructed, and accurately records the test results and other observations, then the totality of information gathered during the evaluation will enable the DRE to predict the cause of impairment with a high degree of accuracy. The DRE's opinions of the cause of impairment will be limited to the seven categories of drugs, or some combination thereof, and/or a known or unknown medical or other condition that may produce similar signs or symptoms. It is not necessary to become a medical specialist or technician in human physiology. However, a general working knowledge of how the body functions is very helpful.

Physiology is the branch of biology dealing with the functions and activities of life or living matter and the physical and chemical phenomena involved.[1] For purposes of this course, physiology is the study of the functions of living organisms and their parts. In this session, we will focus on the chief functions of the body systems. This approach should provide a general overview of the intricate workings of the body and its larger parts.

A. Body Systems

Our simple concept of human physiology focus on ten major systems of the body. We can help remember their names by using the somewhat gruesome, but easy to recall phrase "MURDERS, INC.". Each of those letters stands for the name of a body system:

M is for the Muscular System
U is for the Urinary System
R (the 1st R) is for the Respiratory System
D is for the Digestive System
E is for the Endocrine System
R (the 2nd R) is for the Reproductive System
S is for the Skeletal System
I is for the Integumentary System
N is for the Nervous System
C is for the Circulatory System

The last two (Nervous and Circulatory) are the most important systems to a DRE, but several of the others also come at least indirectly into play when we conduct a drug influence evaluation. Each of the ten systems is briefly discussed below.

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[1] Merriam-Webster's Medical Dictionary (2008).

Muscular System: The body has three kinds of muscles: (1) the heart; (2) the smooth muscles (which control involuntary movements); and (3) the striated muscles (which control voluntary movements). The brain controls the operation of all these muscles through the nervous system.

Urinary System: The urinary apparatus consists of two kidneys connected by long tubes (ureters) to a storage device, the bladder, plus a third tube, the urethra, which leads from the bladder to the outside. Many of the waste products are filtered out of the blood as it passes through the kidneys and these wastes are then removed from the body in the urine.

Since drugs are removed from the blood in the kidneys and passed out of the body in the urine, the urinary system plays a key role in producing evidence of drug use.

Respiratory System: The chief organs of the respiratory system are the diaphragm and the lungs. The diaphragm is a muscular sheet that separates the thoracic cavity from the abdominal cavity, and draws fresh air into the lungs and forces used air out. The transfer of oxygen from the air to the blood and of carbon dioxide from the blood to the atmosphere occurs in the lungs. Oxygen must be supplied to all the body cells, and carbon dioxide must be removed from them in order for life to exist. The voice and, therefore all verbal communication is largely the responsibility of the respiratory system. The respiratory system forces air through the voice box, which in turn allows for speech to be accomplished.

Digestive System: The digestive system consists chiefly of the tongue and teeth, esophagus (food tube), stomach, intestines, liver and pancreas. The digestive system is responsible for reducing large food particles to a size and chemical nature that can be absorbed (taken from the digestive system into the blood) and thereby utilized by the body cells for energy, growth and tissue repair.

The digestive system plays a key role in introducing drugs that are swallowed (pills, alcohol, etc.) into the blood. It also plays a role in determining onset of effects, depending upon the contents of the stomach and the type(s) of drug involved.

Endocrine System: The endocrine system consists of the thyroid, parathyroid, pituitary, and adrenal glands, plus portions of the pancreas, testes, and ovaries, in conjunction with certain other hormone producing tissues. The endocrine system produces powerful chemical substances, called hormones, that exert great influence on the growth and development of the individual, and aid the nervous system in the regulation of numerous body processes. The hormones released by the endocrine system travel through the bloodstream, and reach other tissues and organs that they help to control.

Reproductive System: The functions of the reproductive system fall into two categories: cell producing (cytogenic) and hormone producing (endocrinic). We are primarily concerned with hormone production since the hormones produced by the reproductive system aid the nervous system in its regulatory role.

Skeletal System: The skeletal system consists of bones, cartilage and the ligaments that hold bones together. The skeletal system gives the body support and protection, permits movement, provides for muscle attachment, forms blood cells, stores minerals, and removes

certain poisons from the blood.

While the drug evaluation does not directly examine the skeletal system, we must be aware that injuries or other conditions can affect performance of psychomotor tests.

Integumentary System: The integumentary systems consist of the skin and its accessory structure, hair and nails. The skin is well supplied with blood vessels, nerves, sweat and oil glands. The chief functions of the skin include protection of the body, helping to maintain a constant body temperature and water content, excretion of wastes and perception of changes in the environment (sensation).

The skin can provide several clues during the drug evaluation. For example, pale or flushed appearance, skin temperature, presence or absence of sweat, lack of sensation, etc.

Nervous System: The nervous system consists of the brain, spinal cord, and nerves, each of which is made up of nerve cells (neurons) and supporting tissues. The nervous system keeps the body apprised of changes in the environment by enabling sight, hearing, smell, taste and through sensations of temperature, touch, pressure and pain. The nervous system also enables reasoning, memory and emotions.

It sends impulses that cause muscles to contract and glands to secrete, and it works with all body systems to integrate all physiological processes so that normal functions can be maintained. Much of the activity of the nervous system is reflex in character; that is, it is carried out below the level of consciousness.

Circulatory System: The circulatory system consists of the heart, blood vessels, arteries, veins, capillaries and blood. The heart pumps blood throughout the body, transporting food, water, hormones, antibodies, oxygen, carbon dioxide, and many other substances to or from the body cells as required. Body temperature regulation is a partial responsibility of the circulatory system, since warm blood is constantly moved throughout the body.

The circulatory system plays a key role in transporting drugs to the brain, where most of the drugs' effects are exerted. The circulatory system also transports the drugs to the liver and other organs, where the drugs are metabolized.

B. The Concept of Homeostasis

Homeostasis: The internal environment of the body consists of those fluids that bathe the body cells (intercellular or tissue fluid, blood and lymph). Many years ago it was discovered that although oxygen, foods, water and other substances are constantly leaving the body fluids to enter cells, and carbon dioxide and other wastes are constantly leaving cells and entering these fluids, the chemical composition of the fluids remains within remarkably narrow limits. This phenomenon was given the name "homeostasis". ("Homeo" meaning elements and "stasis" meaning balance).

By definition, homeostasis is **the dynamic balance or steady state involving levels of salts, water, sugars and other materials in the body's fluids**. Homeostasis is a dynamic, rather than a static, or stationary equilibrium because the composition of body

fluids is in a state of flux. No matter what we eat, how much or how little we exercise, or what daily stresses and strains the body is subjected to, it retains homeostatic equilibrium of the body fluids. The rhythm of the heart and that of breathing, the constancy of body temperature, and the steady level of blood pressure under specific circumstances or conditions are all manifestations of homeostatic mechanisms at work within the body.

Every organ system plays some role in the maintenance of homeostasis. The circulatory system keeps the body fluids well mixed; the respiratory system constantly brings in oxygen and eliminates carbon dioxide; the digestive system takes in food and water and eliminates solid wastes; the skin and kidneys eliminate watery wastes; the skeletal system forms blood cells; the nervous system integrates the functioning of the other systems; and so on.

When drugs are introduced into the body the resultant interactions can cause the body to speed up, to slow down, or to become confused. During the drug evaluation we examine bodily functions and attempt to determine the cause of the impairment that is observed.

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C. A Simple View of the Heart and the Circulatory System

You have often heard that the heart is a pump, and that it works in pretty much the same way as an old fashioned, hand operated pump used to draw water from a well. That remains an accurate picture for our purposes.

The heart, of course, pumps **blood**. The heart has chambers that fill with blood. Then, the heart constricts strongly in response to signals received along the Autonomic Motor Nerves. That constriction sends the blood surging out of the heart. The blood surges out into a group of strong, elastic "tubes" called **arteries**. The arteries carry the blood away from the heart. The arteries divide into smaller and smaller branches, and finally into a network of tiny blood vessels called **capillaries**, which pervade the body's tissues and organs.

After the heart completes its strong contraction, it relaxes and begins to expand again. This expansion is also in response to signals received along Autonomic Motor Nerves. As the heart's chambers expand, blood pours into them. This returning blood is carried by another network of "tubes" called **veins**. The veins collect the blood seeping back from the tissues and organs, and carry it back to the heart.

There are two separate circulation systems: 1) the systemic system involves the whole body and is driven by the left side of the heart; 2) the pulmonary system deals with the passage of blood through the lungs and is driven by the right side of the heart.

The left side pumps blood through the aorta and arteries to the tissues. The right side pumps blood through the pulmonary artery to the lungs and returns it to the left side of the heart via the pulmonary vein.

One very special artery is connected to the right side of the heart. This is the Pulmonary Artery. This is the artery that the heart uses to send blood to the lungs. The blood that surges into the Pulmonary Artery has little or no oxygen in it. But when the blood reaches the lungs it picks up a fresh supply of oxygen. The newly oxygenated blood then returns to the left side of the heart, via the four Pulmonary Veins. On the next contraction of the heart, the newly oxygenated blood is sent surging into the network of arteries that connect to the left side of the heart; through those arteries the blood is carried to all other organs and tissues.

The blood deposits its oxygen in the organs and tissues and then seeps back from those organs and tissues through a network of veins that connect to the right side of the heart. On the next contraction, this oxygen-depleted blood is sent surging into the Pulmonary Artery and over to the lungs, and the process continues.

Every time the heart contracts, blood rich in oxygen rushes out of the left side of the heart, into a network of arteries. At the same time, blood depleted of oxygen surges out of the right side of the heart, through the one special artery called the Pulmonary Artery. Every time the heart expands, blood that has just received a fresh supply of oxygen from the lungs pours back into the left side of the heart via the Pulmonary Veins. At the same time, blood that has given up its oxygen to the tissues and organs pours back into the right side via the many other veins.

The special nature of the Pulmonary Artery is now clear: **it is the only artery that carries blood depleted of oxygen**. All other arteries connect to the left side of the heart, and carry blood rich in oxygen. By the same token, the Pulmonary Veins are special, too. They are the only veins that carry oxygenated blood.

The normal heart beats regularly, and keeps on beating, and beating, and beating...never resting for more than a small fraction of a second. The rate of heartbeat, or heart rate, is the number of beats per minute and is regulated by the Autonomic Motor Nerves. Sympathetic Nerve fibers insure that the heart beats fast enough to maintain circulation during any activity. Parasympathetic Nerve fibers send signals to slow the heart. This coordination of nerve signals insures that the heart beats neither too fast nor too slowly. And the coordination works, unless something...such as drugs...interferes with the signals.

In the DEC program, heart rate is measured by taking a subject's pulse. Some people may exhibit an irregular or arrhythmic heart beat, i.e., where the interval between pulses varies. The normal range of pulse rate for the DEC program is 60-90 beats per minute.

The force exerted by the blood circulating in the arteries is called **blood pressure**.

There are two components of blood pressure; systolic pressure, and diastolic pressure. Systolic pressure occurs when the heart contracts and the maximum force is exerted on the arteries by the blood. Diastolic pressure occurs when the heart relaxes and the minimum force is exerted on the arteries by the blood. In the DEC program, the normal range for blood pressure is 120-140 systolic and 70-90 diastolic.

Additional information on pulse and blood pressure is available in Session VII - Vital Signs.

D. A Simplified Concept of the Nervous System

The Nervous System is one of the body's major control mechanisms. The other major control mechanism is the endocrine system. The endocrine system uses "chemical messengers", called hormones, to control the various tissues and organs. The Nervous System uses a combination of electrical and chemical "messengers" to transmit its signals.

Nerves are sometimes depicted as wires, similar to telephone or telegraph wires, that carry electric signals from the brain to the muscles and from the eyes, ears, etc. back to the brain. That is not a very accurate representation, and it is not suitable for our purposes.

A better model is one that imagines that a nerve consists of a series of broken wire segments, where the segments are separated by short spaces, or gaps. In this model, each segment of "wire" is a nerve cell, also known as a **neuron**. The space between two cells is called a **synapse**, or synaptic gap.

We can imagine a message running along a "wire segment" in much the same manner that electrical signals travel along telephone lines. When the message reaches the end of a segment, it must somehow "jump across the synapse" to reach the next piece of wire. Nerves use chemical messengers to jump the gap. When the signal reaches the end of the neuron, it triggers the release of a special chemical called a **neurotransmitter**. The neurotransmitter flows across the synapse and contacts the next neuron, where it is received. The reception of the chemical triggers an "electrical impulse" in that neuron, causing the signal to travel along the neuron until it reaches the next gap, where the release of the chemical is once again triggered. In this way, the signal moves along the entire nerve, in a series of electrical impulses and chemical transfers.

Neurons, or nerve cells, contain a number of different neurotransmitters, or chemical messengers. Each neurotransmitter carries a particular message.

The neuron has three main parts:

- The **cell body**.
- The **Axon** is the part of the neuron that sends out the neurotransmitter.
- The **Dendrite** is the part that **receives** the neurotransmitter.

Using a baseball analogy, the Axon is the “pitcher” of neurotransmitter, and the Dendrite is the “catcher” of the neurotransmitter.

The gap between two neurons is called synapse or synaptic gap. The neurotransmitters carry a message across the synaptic gap from the axon of one cell to the dendrite of the next cell.

Types of Nerves

Some nerves carry messages **away from the brain**, for example, commands from the brain to the heart, telling it to beat faster or more slowly; or, commands from the brain to the eyes, telling them to dilate or constrict the pupils; or, from the brain to the muscles in the arm, telling them to raise or lower the hand; or, many other commands of this type. These nerves that carry messages away from the brain are called the **Motor Nerves**, or the Efferent Nerves. If something interferes with the messages that the brain sends out along the Motor Nerves, the brain's control over the body's organs and muscles will be disturbed. As a result, the heart might beat faster than it should, the pupils might constrict when they shouldn't, the arms and legs might not move exactly as the brain intends.

Other nerves carry messages **to the brain**, for example, signals from the eyes, the ears, the body's pain sensors, the inner ear, etc. The brain decodes the signals that come to it along these nerves, and forms "pictures" of the outside world and of the body's internal condition. These nerves that carry messages to the brain are called the **Sensory Nerves**, or the Afferent Nerves. If something interferes with the messages that the brain receives through the Sensory Nerves, the brain's perception of what is happening to the body and to the outside world will be distorted. As a result, the brain might "smell an odor" when it ought to hear a sound, or might "see an object" that doesn't really exist, or might feel no pain despite a severe injury.

This, very basically, is how drugs work: they interfere with the messages that the brain transmits along the Motor (Efferent) Nerves, and they interfere with the messages that the brain receives along the Sensory (Afferent) Nerves.

The Motor Nerves divide into two subsystems:

(1) One subsystem is made up of the **Voluntary Motor Nerves**; they carry messages from the brain to the striated muscles, i.e., the muscles that we consciously control. The Voluntary Motor nerves carry the commands that cause us to move our arms and legs, smile or frown, turn our heads, etc.

(2) The other subsystem is made up of the **Autonomic Motor Nerves**; they carry messages from the brain to the heart and to the smooth muscles. The Autonomic Motor Nerves carry the commands that cause our pupils to dilate, our lungs to inhale and exhale, our heartbeat to slow, etc. In other words, the Autonomic Motor Nerves send commands to the muscles and organs we do not consciously control.

The Autonomic Motor Nerves are further divided into two groups, the **Sympathetic Nerves** and the **Parasympathetic Nerves**. The Sympathetic Nerves command the body's automatic responses in reaction to fear, stress, excitement, etc.

Through the Sympathetic Nerves, the brain sends "wake up calls" and "fire alarms" to the heart and the smooth muscles. The Sympathetic Nerves carry the messages that cause the pupils to dilate; the blood pressure and pulse rate to rise; the sweat glands to activate; the hair to stand on end; the blood vessels of the skin to constrict; etc. In short, the messages transmitted along the Sympathetic Nerves excite or stimulate the body. The Sympathetic Nerves act as the body's "gas pedal" and make the body go faster.

The Parasympathetic Nerves have exactly the opposite function. They carry messages that produce a relaxed state in the body, and that promote tranquil activities. The brain sends its "at ease" and "all clear" messages along the Parasympathetic Nerves. Those messages cause the pupils to constrict; heartbeat to slow; blood pressure to drop; peripheral blood vessels to dilate; digestion to proceed; etc. The Parasympathetic Nerves act as the body's "brake pedal" and slows the body down.

Naturally, neurotransmitters, or chemical messengers, are involved in carrying signals along both the Sympathetic and Parasympathetic nerves. Some drugs mimic the action of certain neurotransmitter. When taken into the body, these drugs come into contact with dendrites (receptor ports) of nerves and cause messages to be transmitted along Sympathetic or Parasympathetic Nerves.

Drugs that mimic neurotransmitter that are associated with Sympathetic Nerves are called **Sympathomimetic** drugs. They artificially cause the excitement and stimulation associated with the brain's natural "wake up calls". CNS Stimulants and Hallucinogens are considered to be sympathomimetic drugs.

Cannabis and PCP also have sympathomimetic characteristics, to some degree.

Drugs that mimic neurotransmitter associated with the Parasympathetic Nerves are called **Parasympathomimetic**. They induce the transmission of messages that cause lowered blood pressure, drowsiness, muscle relaxation, etc; Narcotic Analgesics and CNS Depressants are considered to be parasympathomimetic.

Although there are more than 100 chemicals in the brain, only about two dozen probably are true neurotransmitters. The primary neurotransmitters in the brain are norepinephrine (noradrenaline), acetylcholine, dopamine, serotonin, gamma amino butric acid (GABA), endorphins and enkephalins. Norepinephrine, also called noradrenaline, produces effects in the body that are similar to the effects produced by adrenaline. Acetylcholine plays a role in muscle control and effects neuromuscular or myoneural junctions. Dopamine plays a role in mood control and is used in treating Parkinson's Disease. Serotonin is a vasoconstrictor, thought to be involved in sleep, wakefulness, and sensory perception. GABA inhibits various neurotransmitters and also causes a release of growth hormones. Endorphins and enkephalins are the bodies natural pain relievers.

E. How Drugs Work

In simple terms, drugs work by artificially creating natural body reactions that are generally associated with the work of neurotransmitters and hormones. Therapeutic doses of legitimate prescription drugs and over the counter medications are designed to produce carefully controlled simulations of natural action of hormones or neurotransmitters, to make up for a deficiency in the body's natural supply. A common example of this is the first-thing-in-the-morning cup of coffee that is a ritual for many people. When the alarm clock forces us to awake, against our will, our Parasympathetic Nerves are operating in high gear and we are flooded with hormones that induce sleep and relaxation. We use the stimulant caffeine to overcome the body's natural chemicals, so that we can get started on the day's work. An entirely different, but also common example, occurs when we find ourselves worried and anxious at the end of the day, because of problems on the job, at home or wherever. This is stress, and our brains react to stress by activating the Sympathetic Nerves: we're too "keyed up" to sleep. That is when many people reach for the glass of wine, or the Xanax or Valium tablet, to overcome the body's natural stimulation.

But we pay a price when we do these things. When we introduce these chemicals, we disrupt the body's natural balance. The body is going to react, because it must preserve homeostasis. And the body's reaction will try to alter its own supply of natural chemicals to accommodate the ones we have introduced.

One way in which the body may react to the presence of a drug is by producing hormones and neurotransmitters that tend to **counteract** the effects of the drug. For example, if a person snorts cocaine, their brain might react to the resulting stimulation by sending commands along the Parasympathetic Nerves to depress bodily functions, and by commanding the endocrine system to release hormones that also will produce depression. This can lead to an interesting situation: the drug may metabolize, i.e., react with oxygen and other chemicals in the body, and dissipate so that its effects no longer are present; but in the mean time, the brain has caused the body to be flooded with natural hormones and neurotransmitters designed to counteract the drug, and **they** may still be exerting their effects.

We call this situation the “downside of a drug” or the **“downside effect”.** When a person is experiencing the downside of a drug or the downside effect they may not be under the active influence of the drug. The person may be exhibiting the opposite effects of the drug because of the body’s attempt to counteract the effects produced by the drug they consumed.

Two common examples occur with cocaine and methamphetamine. Both of these drugs stimulate the body. The body attempts to counter these stimulant effects by releasing certain hormones and neurotransmitters. As the effects of cocaine or methamphetamine diminish, the hormones and neurotransmitters the brain dispatched to counteract the drug take over and in some cases, cause the body to go below the homeostasis level producing an opposite effect or “downside effect”. Many times the person’s signs and symptoms will also mirror a narcotic analgesic or depressant, i.e., constricted pupils, depressed pulse and blood pressure. Persons on the downside of a drug or exhibiting the downside effect may be unable to operate a vehicle safely.

It is not uncommon for a DRE to encounter someone on the downside of a drug. When the arresting officer apprehends a subject, the effects of a particular drug might be very evident. But by the time the DRE is summoned and arrives to conduct the evaluation, the effects may have worn off. As a DRE, you are called upon to give your best professional opinion concerning what is affecting the subject at the time of your evaluation. You must never attempt to infer or estimate what the subject's state or nature of impairment may have been at the time prior to your contact with them.

There is another way in which the body may react to drugs, especially when the drug is routinely used over a period of time. Because the drug is artificially simulating the actions of certain hormones and neurotransmitters, the body may come to rely on the drug to supply those actions, and may simply cease producing those natural chemicals. We call this phenomenon **Negative Feedback**. It simply means that the brain accommodates the routine presence of a drug by turning off the supply of natural chemicals that correspond to the drug. Evidence suggests that this Negative Feedback clearly occurs in users of heroin and cocaine, to cite just two examples. The bodies of cocaine and heroin users apparently cease producing the hormones and neurotransmitters needed for proper pain relief, stress reduction, mental stability and motivation. Very quickly, the user simply can't cope without the drug. A similar effect is physical dependence, or **addiction to the drug**; because the natural chemicals are no longer available, the body needs the drug to provide the functions those natural chemicals used to perform.

Another way in which the body may compensate is by developing increased **tolerance** to the drug, meaning that the same dose of the drug will produce diminishing effects. To express this another way, a steadily stronger dose of the drug will be needed to produce the same effects. Habitual users of drugs may develop tolerance to the drug and as a result they may exhibit relatively little evidence of impairment on the psychophysical test. Even tolerant drug users, when impaired, usually exhibit clinical evidence.

The concept of metabolism is important for an understanding of how drugs work in the body. **Metabolism** is defined as the combined chemical and physical processes that take place in the body involving the distribution of nutrients and resulting in growth, energy production, the elimination of wastes, and other body functions.

There are two basic phases of metabolism: anabolism, the constructive phase, during which small molecules resulting from the digestive process are built up into complex compounds that form the tissues and organs of the body; and catabolism, the destructive phase, during which larger molecules are broken down into simpler substances with the release of energy. A metabolite is a product of metabolism, the chemical changes that take place when the drug reacts with enzymes and other substances in the body. The body uses chemical reactions to break down the drug and ultimately to eliminate it. Sometimes, metabolites of the original drug are themselves drugs and cause impairment. An example, the body quickly metabolizes heroin into morphine, and it is the morphine that actually produces the effects the heroin user experiences.

F. Medical Conditions Which Sometimes Mimic Drug Impairment

There are numerous medical conditions and injuries that may cause their victims to appear to be under the influence of alcohol or other drugs. DREs are not expected to be a physician and should not attempt to diagnose a disease or medical condition. As soon as a DRE becomes aware of the fact that he or she is dealing with a medical rule out, appropriate treatment should be sought. The DRE should be suspicious of signs or symptoms that seem inconsistent with the DRE's knowledge and training.

Some common medical conditions that DREs may encounter include:

Bipolar Disorder (Manic-Depression) - a condition characterized by the alteration of manic and depressive states.

Conjunctivitis - This is an inflammation of the mucous membrane that lines the inner surface of the eyelids giving a red, bloodshot appearance of the conjunctiva of the eyes. At first glance, this may appear similar to the bloodshot conditions associated with impairment by alcohol or Cannabis. This condition may occur in one eye only.

Diabetes - A diabetic is most likely to be confused with a person impaired by alcohol or drugs when he or she has taken **too much insulin**, so that the blood sugar level becomes dangerously low. This condition is called **insulin shock**. A diabetic in insulin shock may appear very confused, may be non-responsive, sweat profusely and exhibit elevated pulse rate and blood pressure. If you suspect that you may be dealing with insulin shock, give the subject a glass of orange juice, a bite of candy or simply a spoonful of sugar; that should rapidly produce a noticeable improvement in his or her condition.

Head Trauma - A severe blow or bump to the head may injure the brain and create disorientation, confusion, lack of coordination, slowed responses, speech impairment and other gross indicators of alcohol or drug influence. Because the injury usually affects one side of the brain more than the other, disparities usually will be evident in the subject's eyes. Look at the pupils, and observe whether they are obviously different in size. Check the eyes' tracking ability, and see whether they are dissimilar, e.g., one eye moving smoothly while the other jerks noticeably. Check the eyelids to see if one droops while the other appears normal.

Multiple Sclerosis - Victims of Multiple Sclerosis (MS) and other degenerative muscular disorders may exhibit severe coordination problems, gait ataxia, tremors, slurred or garbled speech and many of the other gross indicators of intoxication. However, they will usually appear alert.

Shock - Shock victims often will appear dazed, uncoordinated and non-responsive. Some conditions that should immediately alert a DRE to possible medical conditions include: droopy facial muscles on one side and unusual body movements on only one side.

Stroke - A stroke will usually produce many of the same effects and indicators associated with head trauma. Stroke victims often will have pupils that are markedly different in size. One pupil may remain fixed and exhibit no visible reaction to light, while the other reacts normally.

Some other medical conditions that may cause signs and symptoms similar to drug impairment include: carbon monoxide poisoning, seizures, endocrine disorders, neurological conditions, psychiatric conditions, and infections. There are also normal conditions which can affect vital signs. Some examples are: exercise, excitement, fear, anxiety and depression.

Topics for Study

1. What is a neurotransmitter? What is a hormone?

2. What is a dendrite? What is an axon? What is a synapse?

3. Do arteries carry blood toward the heart or away from the heart?

4. What is unique about the Pulmonary Artery?

5. What are the two types of nerves that make up the Autonomic Nervous Subsystem?

6. Is Cocaine sympathomimetic or parasympathomimetic? What about Heroin?

7. Explain the concept of the "downside effect". Explain the concept of "Negative Feedback".

8. What do we call the nerves that carry messages away from the brain? What do we call the nerves that carry messages toward the brain?

SESSION VII

EXAMINATION OF VITAL SIGNS

SESSION VII EXAMINATION OF VITAL SIGNS

Upon successfully completing this session the student will be able to:

- Explain the purposes of the various vital signs examinations in the drug influence evaluation procedure.
- Explain the administrative procedures for these examinations.
- Explain the cues obtained from these examinations.
- Document the examinations of vital signs accurately and completely.
- Correctly answer the "topics for study" questions at the end of this session.

A. Concepts and Procedures for Measuring Pulse Rate

Some important definitions:

Pulse is the expansion and relaxation of an artery generated by the pumping action of the heart.

Pulse rate is the number of pulsations in an artery in one minute.

An artery is a strong, elastic blood vessel that carries blood from the heart to the body tissues.

A vein is a blood vessel that carries blood back to the heart.

When the heart contracts, it squeezes blood out of its chambers, and sends the blood surging into the arteries. The surging blood pushes against the walls of the arteries, causing them to expand. If you know where to locate an artery (for example, in the crease of your wrist, just below the base of the thumb) and you press your finger tips onto the skin just above the artery, you will feel the artery expand each time blood surges through it. If you keep your finger tips on the artery and count the pulses that occur in one minute, you will determine your pulse rate.

The Radial Artery provides a convenient pulse point. The Radial Artery can be located in or near the natural crease of the wrist, on the side of the wrist next to the thumb. To use the Radial Artery pulse point, have the subject hold his or her arm straight out, with the palm of their hand facing down. Place the tips of your index and middle fingers into the crease of the subject's wrist, near the base of the thumb, and exert a slight pressure. Allow the subject's hand to droop down from gravity; this will tighten the pressure on your finger tips and aid you to feel the pulse.

The Brachial Artery provides another useful pulse point. It can be located in the crook of the arm, halfway between the center of the arm and the side of the arm closest to the body.

The Carotid Artery can also provide pulse points. The Carotid Artery can be located in the neck, on either side of the "Adam's Apple."

Key points to keep in mind about measuring pulse rate:

- Don't use your thumb to feel someone's pulse because there is an artery in the thumb. If you apply pressure with the thumb, the "beat" you feel may be your own pulse, and not the subject's.

- If you use the Carotid Artery pulse point, don't apply pressure to both sides of the "Adam's Apple." Doing so can cut off the supply of blood to the brain.

- When measuring pulse rate, count the beats for 30 seconds, then multiply by two.

Some technical terms associated with pulse rate:

- Tachycardia: Abnormally rapid heart rate.
- Bradycardia: Abnormally slow heart rate.
- Arrhythmia: Abnormal heart rhythm.

B. Concepts and Procedures for Measuring Blood Pressure

All DREs need to be aware that many females have birth control implants in their upper left arm. The DRE should check for the implants, and if found, the blood pressure should be taken on the subject's right arm.

Some important definitions:

Blood pressure is the force that the circulating blood exerts on the walls of the arteries. The blood pressure changes from instant to instant, as the heart contracts and relaxes.

Systolic pressure is the maximum or highest blood pressure. The blood pressure reaches its systolic value when the heart contracts and sends the blood surging into the arteries.

Diastolic pressure is the minimum or lowest blood pressure. The blood pressure reaches its diastolic value when the heart is fully expanded.

A Sphygmomanometer is a device for measuring blood pressure. The major parts or components of a Sphygmomanometer include:

- The compression cuff, which can be wrapped securely around the arm and which contains a rubber bladder that can be inflated with air. There are different cuffs designed for children, adults and people with extra large arms; these cuffs have different sized bladders.

- The pressure bulb, which can be squeezed to inflate the rubber bladder with air.

- The pressure control valve, which controls the inflation or deflation of the rubber bladder. To inflate the bladder, the pressure control valve must be twisted all the way to the right (clockwise); then, the pressure bulb can be squeezed to pump air into the bladder. To deflate the bladder, the pressure control valve must be twisted to the left (counter-clockwise); the more the valve is twisted to the left, the faster the bladder will deflate.

- The manometer, or pressure gauge, which displays the air pressure in the bladder.

- Tubes, connecting the pressure cuff to the manometer and to the pressure bulb.

Some technical terms associated with blood pressure:

- Hypertension: Abnormally high blood pressure.
- Hypotension: Abnormally low blood pressure.

Blood Pressure is measured in units of millimeters of mercury. Sometimes this is abbreviated as "mmHg", where "mm" represents "millimeters" and "Hg" is the chemical symbol for the element mercury (from "Hydrargyrum", the Latin word for "mercury"). When the manometer or pressure gauge indicates that the pressure in the bladder is 120 mmHg, that means that the air in the bladder, if forced into a glass tube containing liquid mercury, would push the mercury up the tube to a height of 120 millimeters. Some Sphygmomanometers actually have pressure gauges that consist of glass tubes containing mercury, with a ruler alongside the tube marked off in millimeters. Usually, however, aneroid pressure gauges are used. ("Aneroid" means "without fluid".)

When you measure and record blood pressure, it is not necessary to use the symbols "mmHg". Simply record the numbers.

The principles involved in measuring blood pressure are easy to understand. When the pressure cuff is wrapped around the upper arm (e.g. around the bicep) and inflated with air, the air pressure exerts a force on the arm. When the pressure in the bladder gets high enough, the arteries in the arm will be squeezed shut, and no blood will flow through the arteries. In this respect, the pressure cuff works just like a tourniquet.

When the pressure control valve is twisted to the left, air starts to escape from the bladder and the pressure on the arm (and on the artery) starts to drop. However, as long as the air pressure on the artery remains higher than the blood pressure in the artery, the artery will remain squeezed shut and no blood will flow.

Consider this question: What will happen when the air pressure on the artery drops to the point where it just equals the blood pressure in the artery?

At that point, the heart will again be able to push the blood through the artery, so the flow of blood will resume.

But the blood pressure is constantly changing, from instant to instant. At one instant, the pressure will be at its maximum, or Systolic value. Then the blood pressure drops, and a very short time later it will reach its minimum or Diastolic level. Then it climbs again, and repeats the cycle over and over.

When the air pressure in the bladder drops to the point where it equals the Systolic blood pressure, blood will be able to spurt through the artery each time the heart contracts. But an instant later, as the heart starts to expand and the blood pressure drops, the artery will squeeze shut again and the flow will stop.

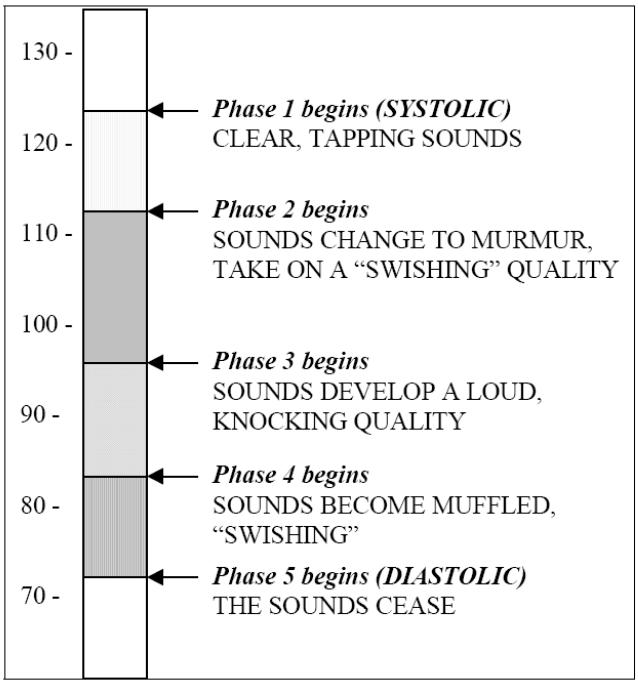
If the air is allowed to continue to escape from the bladder, the air pressure eventually will fall to the point where it reaches the Diastolic level. At that point, the blood pressure in the artery always will be equal to or higher than the air pressure on the artery, so the artery will stay open and blood will flow steadily.
So the basic idea is simple:

- To measure blood pressure, start by pumping up the bladder until the artery is squeezed completely shut and no blood flows.
- Let the air pressure drop slowly until the blood just begins to spurt through the artery. When that happens, the pressure shown on the gauge will be equal to the Systolic pressure.
- Continue to let the air pressure drop until the blood finally flows steadily through the artery. The pressure showing on the gauge at that time will be the Diastolic pressure.

To determine when the blood starts to spurt, and when it starts to flow steadily, a stethoscope is needed.

The stethoscope should be applied to the skin, directly above the artery. For example, with the blood pressure cuff wrapped around the bicep, the stethoscope can be applied to the Brachial artery pulse point.

When no blood is flowing through the artery, you will hear nothing through the stethoscope. But when the air pressure in the cuff falls to the systolic level, you will hear the blood begin to spurt. The sound you will hear starts as a clear tapping. This is the first phase of what are called the Korotkoff Sounds, a distinct series of sounds that are heard as the air pressure in the cuff drops from the systolic to the diastolic level.



As you continue to allow the air to escape from the cuff, the spurts of blood through the artery become steadily longer and the sounds change. They become fainter taking on a swishing quality, and pass through a "knocking" phase, and then suddenly become muffled. Eventually, when the air pressure drops to the diastolic level, the blood flows steadily and all sound ceases.

Step-by-step procedures for measuring blood pressure

(1) Position the cuff on the bicep so that the tubes extend down the middle of the arm.

(2) Wrap the cuff snugly around the bicep.

(3) Clip the manometer to the subject's sleeve, or to some other convenient location, so that you can observe the gauge easily.

(4) Twist the pressure control valve all the way to the right.

(5) Put the stethoscope earpieces in your ears. Make sure the earpieces are turned forward.

(6) Apply the stethoscope to the Brachial Artery pulse point.

(7) Rapidly inflate the bladder to a level high enough to squeeze the artery shut. Usually, a pressure of 180 will be sufficient.

(8) Twist the pressure control valve slightly to the left to allow the air to escape from the bladder slowly (2 mmHg per second).

(9) Keep your eyes on the pressure gauge and listen for the Korotkoff Sounds.

   a. Record the Systolic pressure when the first sound (clear, tapping) is heard.

   b. Record the Diastolic pressure when the sounds cease.

If the DRE is unable to successfully obtain a blood pressure measurement the first time, they should wait a minimum of three minutes before attempting to obtain another measurement.

C. Concepts of Temperature Measurement

Body temperature is measured using an oral thermometer. The thermometer should always be covered with a clean disposable cover prior to taking the subject's temperature.

When measuring temperature with an oral thermometer, it is important to ensure that the thermometer remains under the person's tongue and that the person is not talking during the measurement process. DRE's should also try to refrain from letting the person drink hot or cold fluids immediately prior to measuring temperature.

The following summarizes the results that generally can be expected when the vital signs examinations are administered to persons under the influence of the various categories of drugs.

	CNS Depressants	CNS Stimulants	Hallucinogens	D/A	Narcotic Analgesics	Inhalants	Cannabis
Pulse	Down (*)	Up	Up	Up	Down	Up	Up
Blood Pressure	Down	Up	Up	Up	Down	Up/Down (**)	Up
Temperature	Normal	Up	Up	Up	Down	Up/Down /Normal	Normal

* Quaaludes, ETOH, and some anti-depressants may elevate.

** Down with Anesthetic gases, up with volatile solvents and aerosols.

NOTE: "Normal" systolic blood pressure 120-140
"Normal" diastolic blood pressure 70-90
"Normal" pulse (adult male) 60-90
"Normal" temperature 98.6 plus or minus 1 degree, Fahrenheit

Topics for Study

1. Where is the Radial Artery pulse point?

2. Why should you never attempt to feel a subject's pulse with your thumb?

3. Does an artery carry blood to the heart or from the heart?

4. What does the symbol "Hg" represent?

5. What is Diastolic pressure?

6. When do the Korotkoff Sounds begin?

7. Name and describe the major components of a Sphygmomanometer.

8. Which of the seven categories of drugs generally will cause blood pressure to be elevated?

SESSION VIII

DEMONSTRATIONS OF THE EVALUATION SEQUENCE

SESSION VIII DEMONSTRATIONS OF THE EVALUATION SEQUENCE

Upon successfully completing this session the student will be able to:

- Describe the sequence in which examinations and other activities are performed in the drug influence evaluation procedure.

In this session, you will have an opportunity to observe demonstrations of the entire Drug Evaluation and Classification drug influence evaluation procedure. Your instructors will conduct some of these demonstrations "live", in the classroom. There will also be a video demonstration. The demonstrations will illustrate the systematic and standardized process used for the Drug Evaluation and Classification Program.

Your instructors will make the video available for reviewing, after normal class hours. You should make an effort to view the video at least a second time before the completion of this course to ensure you are able to conduct an evaluation using the systematic and standardized process.

SESSION IX

CENTRAL NERVOUS SYSTEM DEPRESSANTS

SESSION IX CENTRAL NERVOUS SYSTEM DEPRESSANTS

Upon successfully completing this session the student will be able to:

- Explain a brief history of the CNS Depressant category of drugs.
- Identify common drug names and terms associated with this category.
- Identify common methods of administration for this category.
- Describe the symptoms, observable signs and other effects associated with this category.
- Describe the typical time parameters, i.e. onset and duration of effects, associated with this category.
- List the clues that are likely to emerge when the drug influence evaluation is conducted for a person under the influence of this category of drugs.
- Correctly answer the "topics for study" questions at the end of this session.

A. Overview of CNS Depressants

Central Nervous System Depressants slow down the operations of the brain. They first affect those areas of the brain that control a person's conscious, voluntary actions. As dosage increases, depressants begin to affect the parts of the brain controlling the body's automatic, unconscious processes, such as heartbeat and respiration.

Alcohol is the model for the CNS Depressant category of drugs. Alcohol is the most familiar, and most widely abused, depressant. With some exceptions, all depressants affect people in much the same way as does alcohol.

Some major subcategories of CNS Depressants other than alcohol include:

- Barbiturates
  (Derivatives of Barbiturate Acid)

- Non-Barbiturates
  (Synthetic compounds with a variety of chemical structures)

- Anti-Anxiety Tranquilizers
  (Frequently prescribed and frequently abused)

- Anti-Depressants
  (It may seem to be a contradiction in terms to call a subcategory of Depressants the Anti-Depressants; but in this case, we simply mean that these drugs are prescribed to combat psychological depression. For that reason, the Anti-Depressants are sometimes known as the "mood elevators".)

- Anti-Psychotic Tranquilizers
  (Also known as the "major tranquilizers", to distinguish them from the Anti-Anxiety tranquilizers, or "Minor Tranquilizers".)

- Combinations of the other five subcategories.

Some examples of specific drugs included in each subcategory are given in the table on pages IX-4 and IX-5.

Most users of CNS Depressants ingest these drugs orally. However, although the practice is not common, some Barbiturate abusers inject their drugs intravenously. The injection paraphernalia used by Barbiturate abusers are similar to those used by Heroin addicts, although a larger hypodermic needle is used, because the Barbiturate solution is thicker than the Heroin solution. The injection sites on the skin of a Barbiturate abuser exhibit large swellings, and may develop ulcerations. Necrosis may occur, i.e., a decaying of the body's tissue at the injection site.

EXAMPLES OF CNS DEPRESSANTS

BARBITURATES

Amobarbital
Common trade name: "Amytal"
Common street names: "blues"; "blue heavens"

Amosecobarbital
A combination of amobarbital and secobarbital.
Common trade name: "Tuinal"
Common street names: "rainbows"; "Christmas trees"

Pentobarbital
Common trade name: "Nembutal"
Common street names: "yellows"; "yellow jackets"

Phenobarbital
Many trade names
Common street name: "pink ladies"

Secobarbital
Common trade name: "Seconal"
Common street names: "reds"; "red devils"; "RDs"; "fender benders"; "F-40s"

NON-BARBITURATES

Carisoprodol
Trade name: "Soma"

Chloral Hydrate
Common trade names: “Aquachloral”; "Noctec"
Common street names: "Mickey Finn"; "Knock-out Drops"

Diphenhydramine Hydrochloride
Common trade names: "Benadryl"; "Sominex"; “Dramamine”

Diphenylhydantoin Sodium
Trade name: "Dilantin"

Eszopiclone
Trade name: “Lunesta”

Ethchlorvynol
Trade name: "Placidyl"

Gamma-hydroxybutyrate
Street names: “GHB”; “GBL”; “Liquid X”;“1,4 Butanediol”

Methaqualone
(No longer produced in U.S)
Street name:"Ludes"

Paraldehyde
Trade name: "Paral"

Zolpidem
Common trade names: “Ambien”

ANTI-ANXIETY TRANQUILIZERS

Alprazolam
Trade name: "Xanax"

Chlordiazepoxide
Trade name: "Librium"

Clonazepam
Trade name: “Klonopin”

Diazepam
Trade name: "Valium"

Duloxetine
Trade name: “Cymbalta”

Estazolam
Trade name: "ProSom"

Flunitrazepam
Trade Name: “Rohypnopl”
Street names: “Roofies” or “Roches”

Flurazepam
Trade name: "Dalmane"

Lorazepam
Trade name: "Ativan"

Meprobamate
Trade names: “Miltown”; “Probate”

Oxazepam
Trade name: "Serax"

Temazepam
Trade name: "Restoril"

Triazolam
Trade name: "Halcion"

EXAMPLES OF CNS DEPRESSANTS
(CONTINUED)

ANTI-DEPRESSANTS	ANTI-PSYCHOTIC TRANQUILIZERS	COMBINATIONS
Amitriptyline Hydrochloride Common trade names: "Elavil"; "Endep"	Chlorpromazine Trade name: "Thorazine"	Chlordiazepoxide and Amitriptyline Trade name: "Limbitrol"
Bupropion Trade name: "Wellbutrin"	Droperidol Trade name: "Inapsine"	Chlordiazepoxide Hydrochloride and Clidinium Bromide Trade name: "Librax"
Citalopram Trade name: "Celexa"	Lithium Carbonate	Perphenazine and Amitriptyline Common trade names: "Triavil"; "Etrafon"
Desipramine Hydrochloride Common trade names: "Norpramin"; "Pertofrane"	Lithium Citrate	
Doxepin Hydrochloride Common trade names: "Adapin"; "Sinequan"	Haloperidol Trade name: "Haldol"	
Escitalopram Trade name: "Lexapro"		
Fluoxetine Trade names:"Prozac"; "Sarafem"		
Fluvoxamine Trade name: "Luvox"		
Impramine Trade name: "Tofranil"		
Paroxetine Trade name: "Paxil"		
Phenelzine Sulfate Trade name: "Nardil"		
Sertraline Trade name: "Zoloft"		
Trazodone Trade name: "Desyrel"		
Venlafaxine Trade name: "Effexor"		

B. Possible Effects of CNS Depressants

Once again, alcohol is the model here. Other depressants generally affect people in much the same way as does alcohol.

- reduced social inhibitions
- divided attention impairment
- slowed reflexes
- impaired judgment and concentration
- impaired vision and coordination
- slurred, mumbled or incoherent speech
- a wide variety of emotional effects, such as euphoria, depression, suicidal tendencies, laughing or crying for no apparent reason, etc.

In general, a person under the influence of a CNS Depressant will look and act as though they were drunk on alcohol.

C. The Onset and Duration of Depressants' Effects

Some CNS Depressants act very quickly, and begin to affect their users within seconds. Others act more slowly, sometimes taking one-half hour or more to begin to exert an influence. The quick acting depressants also tend to be relatively short acting: in some cases their effects wear off in a matter of minutes. The slow acting depressants, on the other hand, tend to produce longer lasting effects.

Depressants fall into four groups, based on how quickly they take effect and how long their effects last.

The Ultra Short Depressants take effect in a matter of seconds, but their effects dissipate in just a few minutes. They are used medically to provide a momentary sedation of a patient, for example to reduce a psychiatrist's patient's anxieties and inhibitions at the beginning of a counseling session. An example of an Ultra Short Depressant is Thiopental (Pentothal), sometimes call "truth serum". Ultra Short Depressants rarely are the drugs of choice for abusers, because their effects don't last long enough to satisfy most abusers.

The Short Depressants are more attractive to drug abusers. They generally take effect within 10-15 minutes, and their effects last approximately four hours. Medical applications of the Short Depressants include treatment of insomnia and sedation of patients prior to surgery. An example of a short depressant is Secobarbital.

Intermediate Depressants may require up to 30 minutes to take effect, but their effects typically last 6-8 hours. They are popular among drug abusers who desire a longer-lasting state of intoxication. The medical applications of Intermediate Depressants are similar to those of Short Depressants. Amobarbital is an example of an Intermediate Depressant.

The drug Tuinal, i.e. two-in-all, straddles the border between short and intermediate depressants. It combines Amobarbital (an intermediate) with Secobarbital (a short). The

result is a fairly fast acting drug with fairly prolonged effects.

The Long Depressants generally are not the preferred drugs of abusers. This is because they take too long to start producing effects (typically, about one hour). However, their effects usually last 8-14 hours. Long Depressants are used medically to control epilepsy and other conditions that can cause convulsions. Barbital is an example of a Long Depressant.

D. Signs and Symptoms of Depressant Overdose

Overdoses of CNS Depressants produce effects that are essentially identical to those of alcohol overdoses:

- the person becomes extremely drowsy and may pass out;
- the heartbeat slows;
- respiration becomes shallow;
- the skin may feel cold and clammy;
- death may result from respiratory failure.

Combinations of depressants can be especially risky. Unfortunately, many people routinely do combine depressants, usually in the form of alcohol and some other depressant. In some cases, the effects that result may be greater than the sum of the effects that the two drugs would produce independently.

E. Expected Results of the Evaluation

When a person under the influence of CNS Depressants is evaluated by a DRE, the following results can generally be expected:

Horizontal Gaze Nystagmus - present

Vertical Gaze Nystagmus – present, (high dose` for that individual)

Lack of Convergence - present.

Pupil size – normal; however, in the specific cases of Soma, Methaqualone (Quaaludes) and some anti-depressants the pupils will usually be dilated.

Pupil's reaction to light - slow

Pulse rate - will be down; however, with Quaaludes and ETOH the pulse rate may be elevated.

Blood Pressure - down

Temperature - normal.

Muscle tone - flaccid

Injection Sites usually will not be found; however, some Barbiturate abusers do inject. Their injection sites often will be swollen, and may appear ulcerated.

General indicators

- disoriented
- droopy eyelids (ptosis)
- drowsiness
- drunk-like behavior
- gait ataxia (lack of coordination)
- slow, sluggish reactions
- thick, slurred speech
- uncoordinated

Topics for Study

1. Name the six major subcategories of CNS Depressants.

2. Name the four groups of Depressants based on onset and duration time factors.

3. To which subcategory of Depressants does Thorazine belong? To which subcategory does Chloral Hydrate belong? To which subcategory does Xanax belong?

4. Name a CNS Depressant that usually causes the pupils to dilate.

5. What is the generic name for the drug that has the trade name "Prozac"?

6. What is a trade name for the generic drug "Alprazolam"?

7. What is the name of the subcategory of CNS Depressants that is also known as the "Minor Tranquilizers"?

DRUG INFLUENCE EVALUATION

Evaluator: PFC David Pacoe, B.C. P.D.	DRE # 5293	Rolling Log # 2073	**Session IX - #1**
Recorder/Witness: Sgt. Tom Woodward, Maryland S.P.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-100455
Arrestee's Name (Last, First, Middle): Cockroft, Carolyn L.	Date of Birth: 4/21/64	Sex: F	Race: W
Arresting Officer (Name, ID#): Officer Mike Gregor, MTA P.D. #30125			
Date Examined / Time /Location: 08-06-07, 0145 Tunnel Command	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 100324	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐

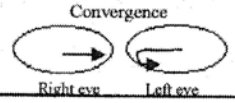
Miranda Warning Given: Given By: Ofc. Gregor	☒ Yes ☐ No	What have you eaten today? When? Chicken Soup 8 pm	What have you been drinking? How much? Nothing N/A	Time of last drink? N/A
Time now/ Actual: Midnight/0215	When did you last sleep? How long: Last night/ 6 hours	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☐ No "None of your business"	Attitude: Sullen, With-drawn, non-responsive at times	Coordination: Poor, Stumbling, Staggering		
Speech: Slurred at times	Breath Odor: Normal	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☒ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy	

Pulse and time

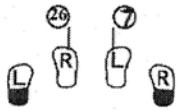
1. 60 / 0222
2. 58 / 0230
3. 58 / 0244

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	Yes	Yes
Angle of Onset	35	35

Convergence

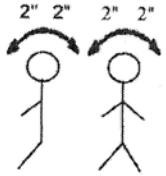


26 ONE LEG STAND 23

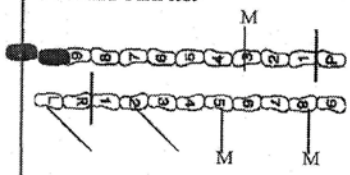


L R
☒ ☒ Sways while balancing (2/2)
☒ ☒ Uses arms to balance (2/1)
☒ ☐ Hopping (1/0)
☒ ☒ Puts foot down (1/1)

Romberg Balance



Walk and Turn test

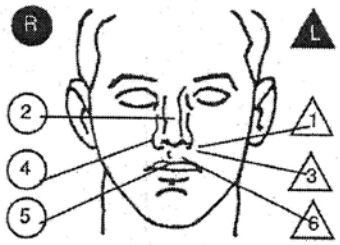


Took two extra steps at end

	1st Nine	2nd Nine
Cannot keep balance	X	
Starts too soon	X	
Stops walking		
Misses heel-toe	XX	X
Steps off line	X	
Raises arms	XX	X
Actual steps taken	9	11

Internal clock: 46 estimated as 30 seconds	Describe Turn: Lost balance	Cannot do test (explain): N/A	Type of footwear: Loafers

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	4.0	6.0	3.5
Right Eye	4.0	6.0	3.5

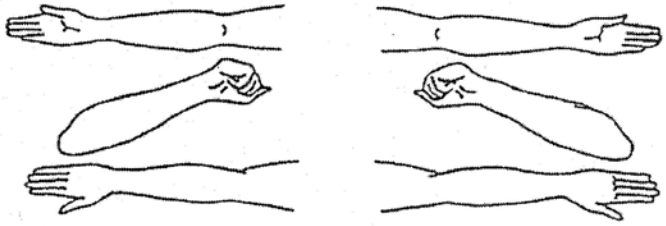
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure: 110/70	Temperature: 95.8			
Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid				
Comments:				
What drugs or medications have you been using? "I told you, it's none of your business"	How much? No response	Time of use? No response	Where were the drugs used? (Location) No response	
Date / Time of arrest: 08/06/07 0115	Time DRE was notified: 0140	Evaluation start time: 0145	Evaluation completion time: 0300	Precinct/Station: Tunnel Station
Officer's Signature:	DRE # 5293	Reviewed/approved by / date:		

Opinion of Evaluator:
☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant
☐ Medical ☒ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect: Cockroft, Carolyn

1. **LOCATION:** The evaluation was conducted at Tunnel Command Processing Room at the Maryland Transportation Authority Police Department.

2. **WITNESSES:** Arresting Officer Mike Gregor of the Maryland Transportation Authority P.D and Sgt. Tom Woodward of the Maryland State Police.

3. **BREATH ALCOHOL TEST:** Cockroft's breath test was 0.00%

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was notified that Officer Gregor had arrested a subject for DUI and was requesting a drug evaluation. Writer contacted Officer Gregor at the M.T.A. Tunnel Command office where it was determined that the suspect had been observed driving at 30 MPH on I-95 near the tunnel. When contacted, the suspect appeared dazed and disoriented. She was unable to perform the roadside SFST's as directed and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the Processing Room. She was quiet, withdrawn and slow to respond to questions. When she would try to walk, she would stumble and several times nearly fell.

6. **MEDICAL PROBLEMS AND TREATMENT:** None observed or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: The suspect exhibited a 2" front to back and side to side sway. She estimated 30 seconds in 46 seconds. Walk and Turn: The suspect lost her balance during the instructions, started too soon, stepped off the line, missed heel to toe, raised her arms for balance, staggered to the right while turning and took two extra steps returning back down the line. One Leg Stand: The suspect swayed, raised her arms for balance, hopped and put her foot down. Finger to Nose: The suspect missed the tip of her nose on five of the six attempts.

8. **CLINICAL INDICATORS:** The suspect exhibited six clues of HGN and a Lack of Convergence. Two of her pulse readings were below the normal range and her Systolic blood pressure was below the normal range.

9. **SIGNS OF INGESTION:** None were evident.

10. **SUSPECT'S STATEMENTS:** The suspect admitted taking "some medicine" her brother gave her. She also stated she did not know what the medicine was.

11. **DRE'S OPINION:** In my opinion Cockroft is under the influence of a CNS Depressant and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample for analysis.

13. **MISCELLANEOUS:**

DRUG INFLUENCE EVALUATION

Evaluator: Officer Jason Craven, California H.P.	DRE # 4480	Rolling Log # 07-28	**Session IX - #2**	
Recorder/Witness: Officer Travis Herbert, CHP	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-445690	
Arrestee's Name (Last, First, Middle): Henry, Michael James	Date of Birth: 3/11/70	Sex: M	Race: W	Arresting Officer (Name, ID#): Sgt. Helena Williams, CHP #113408
Date Examined / Time /Location: 09-06-07 2110 Hours W. Sac Office	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 200548	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐	
Miranda Warning Given: Given By: Sgt. Williams	☒ Yes ☐ No	What have you eaten today? When? Cheeseburger 10 pm	What have you been drinking? Nothing	How much? N/A / Time of last drink? N/A
Time now/ Actual: 10 pm / 2115	When did you last sleep? How long: Last night / 8 hours	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☒ Yes ☐ No Doctor for Stress		
Are you taking any medication or drugs? ☒ Yes ☐ No "Just Xanax"	Attitude: Withdrawn, Cooperative	Coordination: Poor, Slow, Sluggish		
Speech: Slurred, thick at times	Breath Odor: Alcohol Beverage	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy	

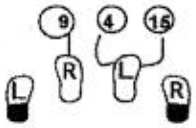
Pulse and time:
1. 62 / 2130
2. 60 / 2142
3. 58 / 2200

HGN

	Left Eye	Right Eye
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	Yes	Yes
Angle of Onset	35	35

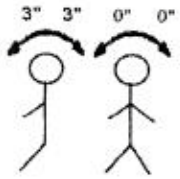
Convergence — Right eye / Left eye

29 ONE LEG STAND 27

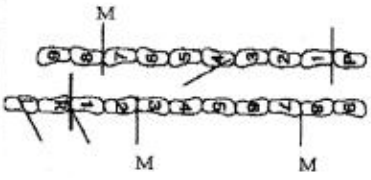


L R
☒ ☒ Sways while balancing (3/2)
☒ ☒ Uses arms to balance (2/2)
☐ ☐ Hopping
☒ ☒ Puts foot down (1/2)

Romberg Balance: 3" 3" 0" 0"



Walk and turn test



Slow, rubber legged walk

	1st Nine	2nd Nine
Cannot keep balance	X X	
Starts too soon		
Stops walking		
Misses heel-toe	XX	X
Steps off line	X	
Raises arms	XXX	XXXX
Actual steps taken	9	9

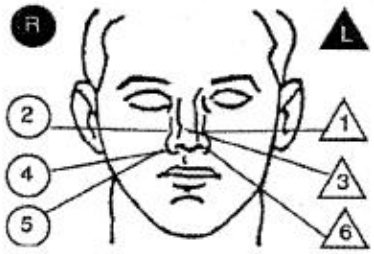
Internal clock: 50 estimated as 30 seconds

Describe Turn: Lost balance

Cannot do test (explain): N/A

Type of footwear: Lace up boots

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	4.5	6.5	3.5
Right Eye	4.5	6.5	3.5

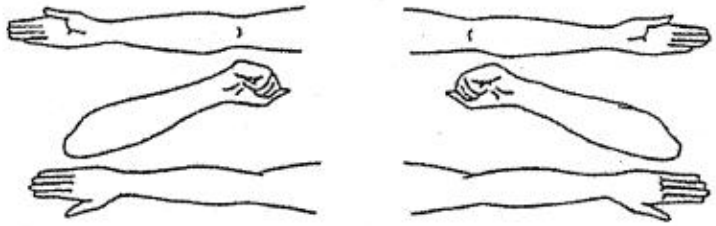
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM / LEFT ARM



Nothing observed

Blood pressure: 106/66

Temperature: 98.6

Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
Xanax	A couple	6 pm	McDonald's

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
09/06/07 2015 Hours	2050	2110	2210	West Sac

Officer's Signature: Jason Craven — DRE # 4480 — Reviewed/approved by / date: CR 9/10/07

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☒ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect: Henry, Michael J.

1. LOCATION: The evaluation took place at the West Sacramento CHP office.

2. WITNESSES: Arresting Officer, Sergeant Helena Williams and Officer Travis Herbert, CHP.

3. BREATH ALCOHOL TEST: Henry's breath test was a 0.00%

4. NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER: Writer was requested to conduct a drug evaluation for Sergeant Williams at the West Sacramento CHP office. Sergeant Williams advised that she had located the suspect slumped over in the driver's seat of a vehicle stopped in the S/B traffic lane of S.R. 99. Sergeant Williams further advised that the suspect appeared to be impaired and performed poorly on the SFST's.

5. INITIAL OBSERVATION OF SUSPECT: Writer first observed the suspect in a slumped position in a chair next to the interview room desk. The suspect was mumbling, had thick, slurred speech and was slow to respond to questions.

6. MEDICAL PROBLEMS AND TREATMENT: The suspect stated he was under the care of a doctor for stress.

7. PSYCHOPHYSICAL TESTS: Romberg Balance: The suspect swayed approximately 3" front to back and estimated 30 seconds in 50 seconds. Walk and Turn: The suspect lost his balance twice during the instructions, stepped off the line, missed heel to toe three times, raised his arms for balance and lost his balance while turning. One Leg Stand: Suspect swayed, raised his arms and put his foot down once while standing on the left foot and twice while standing on the right foot. Finger to Nose: Suspect missed the tip of his nose on each attempt.

8. CLINICAL INDICATORS: Henry exhibited HGN and a Lack of Convergence. One of his pulse rates was below the normal range. His blood pressure was below the normal range.

9. SIGNS OF INGESTION: None observed.

10. SUSPECT'S STATEMENTS: The suspect admitted taking Xanax. He stated he takes the Xanax three times a day for stress.

11. DRE'S OPINION: In my opinion Henry is under the influence of a CNS Depressant and was unable to operate a vehicle safely.

12. TOXICOLOGICAL SAMPLE: The suspect provided a urine sample.

13. MISCELLANEOUS: The suspect voluntarily produced a pill bottle containing his Xanax pills. The prescription for 30 pills had been filled two days earlier. There were only 12 pills remaining in the bottle.

Rev. 03/08

SESSION X

CENTRAL NERVOUS SYSTEM STIMULANTS

SESSION X CENTRAL NERVOUS SYSTEM STIMULANTS

Upon successfully completing this session the student will be able to:

- Explain a brief history of the CNS Stimulant category of drugs.
- Identify common drug names and terms associated with this category.
- Identify common methods of administration for this category.
- Describe the symptoms, observable signs and other effects associated with this category.
- Describe the typical time parameters, i.e. on-set and duration of effects, associated with this category.
- List the clues that are likely to emerge when the drug influence evaluation is conducted for a person under the influence of this category of drugs.
- Correctly answer the "topics for study" questions at the end of this session.

A. Overview of Central Nervous System Stimulants

CNS Stimulants speed up the operation of the brain and spinal cord. It is important to emphasize that "speed up" does not mean "improve" or "enhance". The CNS Stimulants definitely do not make the brain work better. Rather, they cause the brain and the rest of the nervous system to work harder, and often to make more mistakes.

The "speeding up" caused by CNS Stimulants results in significantly increased heartbeat, respiration and blood pressure, all of which can lead to physical harm to the abuser. In addition, the stimulant user experiences nervousness, irritability and an inability to concentrate or think clearly.

There are three major subcategories of CNS Stimulants; Cocaine, the amphetamines and others.

Cocaine derives from the coca plant, an evergreen native to South America. Cocaine is made from the plant's leaves. There is archaeological evidence that natives of Peru chewed coca leaves 5,000 years ago.

Amphetamines are synthetic (i.e. manufactured) drugs. They were first produced near the end of the 19th Century. Amphetamines have a number of legitimate medical applications, including control of narcolepsy; control of certain hyperactive behavioral disorders in children; relief or prevention of fatigue to allow persons to perform essential tasks of long duration; treatment of mild depression; control of appetite; prevention and treatment of surgical shock; treatment of Parkinson's Disease; maintenance of blood pressure during surgery; enhancement of the action of certain analgesic drugs; and, to antagonize the effects of depressant drugs. Numerous pharmaceutical companies manufacture amphetamines that are prescribed for these purposes. But these pharmaceutical amphetamines often are abused, as well.

Examples of common pharmaceutical amphetamines include:

DEXEDRINE
(dextroamphetamine sulfate)
Common street names: "Dexies"; "Hearts"

BENZEDRINE
(amphetamine sulfate)
Common street names: "Bennies"; "Whites"; "Cartwheels"

DESOXYN
(methamphetamine hydrochloride, also known desoxyephedrine)

ADDERALL
(Combination of dextroamphetamine and amphetamine)

Pharmaceutical amphetamines are not the only source of abused amphetamines. Large quantities also are illegally manufactured in clandestine laboratories. The two most

common amphetamines are Methamphetamine and Amphetamine sulfate.

Methamphetamine is also known as methedrine. Some common street names include "speed"; "crank"; "crystal"; "ice"; "meth"; and "water". Methamphetamine hydrochloride is a white to light brown crystalline powder, or clear chunky crystals resembling ice. Methamphetamine base is liquid. The majority of street methamphetamine is produced in clandestine laboratories (e.g. reduction of *l*-ephedrine or *d*-pseudoephedrine over red phosphorus with hydroiodic acid, or reduction with sodium or lithium in condensed liquid ammonia). Medicinally, methamphetamine is used in the treatment of narcolepsy, attention deficit disorder (ADD), and attention deficit hyperactivity disorder (ADHD). Typical doses are 10 mg/day or up to 40 mg daily, and a course of greater than six weeks is not recommended. Methamphetamine is infrequently used in the treatment of obesity, overeating disorders, and weight loss due to its abuse potential. Amphetamine is also used in ADD, narcolepsy and weight control. Recreationally, Methamphetamine is abused to increase alertness, relieve fatigue, control weight, treat mild depression and for its intense euphoric effects.

Methamphetamine abusers often inject or smoke the drug. However, it can also be snorted or taken orally.

The smokeable forms of methamphetamine are known as "Crystal Meth" or "Ice." They contain the same active chemical compound as powdered methamphetamine, but undergo a re-crystallization process in which some impurities are removed. It is abused in much the same way as "Crack", i.e. small bits of "Ice" are placed in the bowl of a pipe and flame from a lighter is applied to vaporize the drug; the smoker then draws the vapor into the lungs.

Other non-Cocaine and non-amphetamine CNS Stimulants include the prescription drugs Ritalin, Preludin, and the non-prescription drug Caffeine. Some CNS Stimulants are legally manufactured and distributed without prescription.

Ephedrine is a legally manufactured stimulant which is commonly used in diet aids and body building supplements. Ephedrine can also be found in some herbal preparations and numerous over the counter (OTC) substances. All have legitimate medical applications, but they also have the potential to be abused.

Other CNS Stimulants that are illicit and have no legitimate uses are Cathine and Cathinone. They are two psychoactive chemicals derived from the Khat plant, which originated from the sub-Sahara regions of Africa. Methcathinone is an illicitly manufactured stimulant made from common household chemicals. Its effects are very similar to methamphetamine.

There are various ways in which CNS stimulant abusers ingest their drugs. Cocaine and methamphetamine are commonly insufflated (snorted), smoked, injected or taken orally. Snorting may still be the most common method of ingesting Cocaine, although smoking has become increasingly popular.

In order to be smoked, a pure form of Cocaine is needed. Various chemical processes can be used to "free" the Cocaine from other elements to which it is chemically bonded. The pure

Cocaine sometimes is called "freebase", and the practice of smoking it sometimes is called "freebasing".

One of the processes used to produce "freebase" produces the pure Cocaine in the form of small, hard chunks. The chunks are often called "Crack" or "Rock Cocaine". The term "Crack" derives from the cracking sound the chunks produce when they are smoked.

The pharmaceutical amphetamines are produced in the form of tablets, capsules and liquid elixirs, and so they are ingested orally. Illicitly manufactured amphetamine sulfate usually is produced in tablet form (the tablets sometimes are called "mini beans"), and ingested orally.

B. Possible Effects of CNS Stimulants

Cocaine, Methamphetamine and the amphetamines produce euphoria, a feeling that there are no problems. A feeling of super strength and absolute self confidence may also be present. With Cocaine, but not with the amphetamines, there is also an anesthetic effect, i.e. a dulling of pain.

Stimulant users tend to become hyperactive, e.g. nervous, extremely talkative and unable to stand still. CNS Stimulants also tend to release the user's inhibitions, and to impair the user's ability to perceive time and distance. Persons under the influence of CNS Stimulants become easily confused and lose the ability to concentrate or to think clearly for any length of time.

C. Onset and Duration of CNS Stimulants' Effects

1. Cocaine

In general, Cocaine is a fairly fast acting, but short duration drug.

When smoked, or "freebased", Cocaine goes very quickly to the brain. The smoker almost immediately feels a "rush", or very intense euphoria. However, the effects continue to be felt for only about 5-10 minutes.

When injected, the effects also begin very quickly, usually within just a few seconds, and the onset of effects is very intense. The effects usually continue to be felt for 45-90 minutes.

When insufflated or snorted, the onset of effects is still fairly rapid, although not so fast as with smoking or injection. The user generally feels the onset within about 30 seconds. A "rush" occurs, although it is not quite as intense as when the Cocaine is smoked or injected. The user generally continues to feel the effects for 30-90 minutes after snorting the Cocaine.

When taken orally, the user generally does not start to feel the effects of the Cocaine for 3-5 minutes, and, the effects are not as intense as they are with other methods of ingestion. For these reasons, oral ingestion is the least preferred method of using

Cocaine. However, the effects of Cocaine taken orally may last 15-30 minutes longer than they do when other methods of ingestion are used.

Because Cocaine's effects are of relatively short duration, a Cocaine user can present some difficulty to a DRE. The suspect may have been markedly impaired when first contacted by the arresting officer, but by the time the subject is brought to the DRE, the effects of Cocaine may have worn off to the point that the indicators of stimulant influence are no longer apparent. The DRE may be understandably frustrated when this occurs, but his or her conclusions as to the probable categories of drugs involved must reflect the observable evidence gleaned from the drug influence evaluation. The DRE should never "force" a conclusion as to an impairment that might have existed 30 minutes or an hour ago when he or she has no personal, credible basis for that conclusion.

Subjects who have ingested both Cocaine and alcohol will produce a metabolite know as “Cocaethylene”. This has a half-life of four hours, that possibly extends the effects of Cocaine longer than norm.

2. Methamphetamine

Methamphetamine also is a fairly fast acting drug, and its effects are very similar to Cocaine's. However, Methamphetamine's effects last a good deal longer.

When injected, Methamphetamine's effects begin to be felt within a very few seconds. The user experiences an intense "rush", which lasts at the high level of intensity for 5-30 seconds. Subsequently, the user stays "high" or "wired' for 4-8 hours, with residual effects lasting up to 12 hours.

When smoked, the "rush" is very rapid and intense, much like the "rush" produced by "Crack". However, the smoker usually will remain impaired for at least several hours.

When Methamphetamine is taken orally, the onset of effects is delayed, the "rush" is much less intense and the effects last longer.

When Methamphetamine is snorted, the onset of effects is not quite as rapid as with smoking or injecting. The onset of effects are within 30 seconds, the rush is not as intense and the effects last between 30 and 90 minutes.

D. Signs and Symptoms of Stimulant Overdose

The euphoria expected by a stimulant user can be replaced by panic if an overdose is taken. The user may become very confused, and suddenly aggressive. They can suffer convulsions, and possibly faint or pass into a coma. Heartbeat will increase, possibly dramatically, and heart arrhythmia (irregular beating) may develop. This may lead to cardiac arrest. Death can also occur from sudden respiratory failure.

Another danger is that users may attempt to counteract a stimulant overdose with barbiturates, possibly leading to an overdose of CNS Depressant.

Overdoses of Cocaine or Amphetamines can cause the pleasurable effects to turn into panic and often violent behavior. If the overdose is caused by Cocaine, it is commonly referred to as, Cocaine Psychosis or Cocaine Delirium. Hallucinations may occur and many overdose victims complain of the feeling that bugs are crawling under their skin. This is commonly known as "coke bugs".

E. Expected Results of the Evaluation

When a person under the influence of CNS Stimulants is evaluated by a DRE, the following results can generally be expected:

Horizontal Gaze Nystagmus - none

Vertical Gaze Nystagmus - none

Lack of Convergence - none

Pupil Size - dilated

Reaction to light - slow

Pulse Rate - up

Blood Pressure - up

Temperature - up

Muscle tone - rigid

Injection Sites might be found, e.g., on the arms, wrists, neck, etc., especially with Methamphetamine users but also with some Cocaine users. Other Cocaine users who routinely snort their drug may exhibit severe redness in the nasal area, and possibly scarring or erosion of the nasal septum.

General indicators:

- anxiety
- body tremors
- bruxism (grinding of the teeth)
- dry mouth
- euphoria
- exaggerated reflexes
- excited
- eyelid and leg tremors
- irritability
- increased alertness
- insomnia

- redness to nasal area
- restlessness
- runny nose
- talkative

Topics for Study

1. Why is it sometimes difficult for a DRE to obtain evidence of CNS Stimulant influence when examining a Cocaine user?

2. What kinds of illicitly manufactured Amphetamines are most commonly abused?

3. Name two CNS Stimulants other than Cocaine or the Amphetamine compounds.

4. How do CNS Stimulants usually affect the blood pressure and pulse rate?

5. True or false: A person under the influence of a CNS Stimulant alone usually will <u>not</u> exhibit Horizontal Gaze Nystagmus?

6. What is "bruxism"?

DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Ross Batson, Arkansas H.P.	DRE #: 7883	Rolling Log #: 07-014	**Session X - #1**
Recorder/Witness: Pam Mays, Arkansas CJI	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-44580
Arrestee's Name (Last, First, Middle): Hedlund, James R.	Date of Birth: 7/10/63	Sex: M	Race: W
Arresting Officer (Name, ID#): TFC Jeff Hust Arkansas H.P. #11340			
Date Examined / Time /Location: 02-08-07 2230 Pulaski Co. Jail	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 600458	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐
Miranda Warning Given: Given By: TFC Hust	☒ Yes ☐ No	What have you eaten today? When?: Candy bar About 6 pm	What have you been drinking? How much?: Nothing
Time of last drink?: N/A			
Time now/ Actual: 8 pm/10:45 pm	When did you last sleep? How long: Last night / 2 - 3 hours	Are you sick or injured?: ☐ Yes ☒ No	Are you diabetic or epileptic?: ☐ Yes ☒ No
Do you take insulin?: ☐ Yes ☒ No	Do you have any physical defects?: ☐ Yes ☒ No	Are you under the care of a doctor or dentist?: ☐ Yes ☒ No	
Are you taking any medication or drugs?: ☐ Yes ☒ No	Attitude: Talkative, Cooperative	Coordination: Poor, Quick, Unsteady	
Speech: Quick, Slurred at times	Breath Odor: Normal	Face: Normal	
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus: ☐ Yes ☒ No	Able to follow stimulus: ☒ Yes ☐ No	Eyelids: ☒ Normal ☐ Droopy

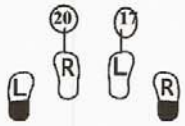
Pulse and time

1. 102 / 2240
2. 100 / 2253
3. 100 / 2305

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence — Right eye / Left eye

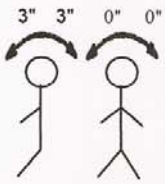
34 ONE LEG STAND 37



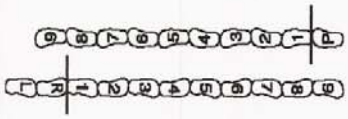
L R
☒ ☒ Sways while balancing (1/1)
☒ ☒ Uses arms to balance (2/2)
☒ ☐ Hopping (2/0)
☒ ☒ Puts foot down (1/1)

Counted quickly

Romberg Balance



Walk and Turn test

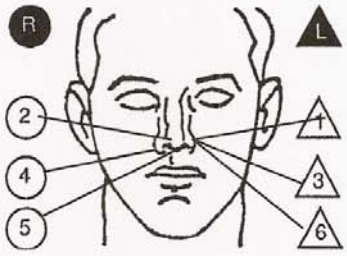


Walked quickly

	1st Nine	2nd Nine
Cannot keep balance	XX	
Starts too soon	X	
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms	xxx	xx
Actual steps taken	9	9

Internal clock: 22 estimated as 30 seconds	Describe Turn: Quick, spun around	Cannot do test (explain): N/A	Type of footwear: Boots

Draw lines to spots touched



Quick movements

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.0	9.0	5.5
Right Eye	6.0	9.0	5.5

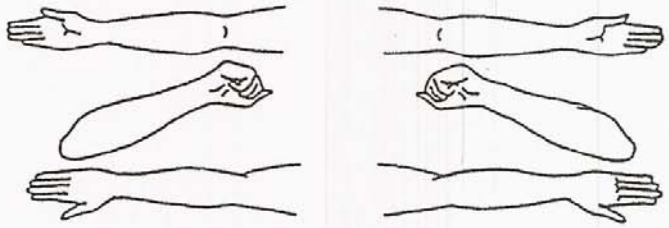
Nasal area: White powder left nostril

Oral cavity: Clear

REBOUND DILATION: ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure: 142/96	Temperature: 99.8		
Muscle tone: ☐ Normal ☐ Flaccid ☒ Rigid	Comments:		
What drugs or medications have you been using?: "Nothing"	How much?: N/A	Time of use?: N/A	Where were the drugs used? (Location): N/A
Date / Time of arrest: 02/08/07 2120	Time DRE was notified: 2205	Evaluation start time: 2230	Evaluation completion time: 2335
Precinct/Station: North Precinct			
Officer's Signature:	DRE #: 7883	Reviewed/approved by / date:	

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☒ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Hedlund, James R.

1. **LOCATION:** The evaluation of James Hedlund was conducted at the Pulaski County Jail.

2. **WITNESSES:** Arresting Officer, TPC Jeff Hust, Arkansas State Police and Pam Mays of the Arkansas Criminal Justice Institute.

3. **BREATH ALCOHOL TEST:** Hedlund's breath test was a 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** The writer was contacted by Trooper Hust requesting a drug evaluation. Writer contacted Trooper Hust at the County Jail where it was determined that he had stopped the suspect for driving 100 mph and for driving without headlights on I-30 East. The suspect was excited, talkative and very restless. He performed poorly on the roadside SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room with Trooper Hust. The suspect was rocking back in forth in his chair and could not remain still. His speech was fast and his reflexes were quick and exaggerated.

6. **MEDICAL PROBLEMS AND TREATMENT:** None observed and none stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" front to back and estimated 30 seconds in 22 seconds. Walk & Turn: Suspect started too soon, lost his balance twice during the instructions, raised his arms for balance and made an abrupt quick turn. One Leg Stand: Suspect swayed, raised his arms, hopped and put his foot down once standing on the left foot and once while standing on the right foot. Finger to Nose: Suspect missed the tip of his nose on four of the six attempts.

8. **CLINICAL INDICATORS:** The suspect's pulse, blood pressure and temperature were above the normal ranges. His pupils were dilated in all three lighting levels and they reacted slowly to light.

9. **SIGNS OF INGESTION:** White powder residue was located in the suspect's left nostril.

10. **SUSPECT'S STATEMENTS:** The suspect denied using any drugs.

11. **DRE'S OPINION:** In my opinion Hedlund is under the influence of a CNS Stimulant and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

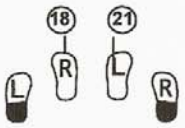
Evaluator: Sgt. Frank Barnes, Oklahoma City P.D.	DRE # 2894	Rolling Log # 07-10	**Session X - #2**
Recorder/Witness: Sgt. Charlie Phillips, Oklahoma City P.D.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-22876
Arrestee's Name (Last, First, Middle): Kohlhepp, Kim J.	Date of Birth: 8/24/73	Sex: F	Race: W
Arresting Officer (Name, ID#): Officer David Steiner, OKC PD #8895			
Date Examined / Time /Location: 08/02/07 2315 Oklahoma Co. Jail	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 150024	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: F. Barnes 2317	☒ Yes ☐ No	What have you eaten today? When? Hot dog 1pm	What have you been drinking? How much? "Nothing"	Time of last drink? N/A
Time now/ Actual: Midnight/2322	When did you last sleep? How long: Yesterday 4 hours	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No "I don't do drugs"	Attitude: Cooperative, restless	Coordination: Poor, jittery, stumbling		
Speech: Very talkative, rapid	Breath Odor: Normal	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

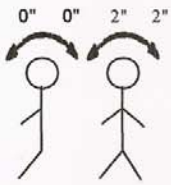
Pulse and time	HGN	Left Eye	Right Eye
1. 100 / 2328	Lack of Smooth Pursuit	No	No
2. 108 / 2341	Maximum Deviation	No	No
3. 104 / 2355	Angle of Onset	None	None

Convergence

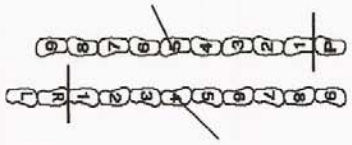
34 ONE LEG STAND 35



Romberg Balance



Walk and Turn test

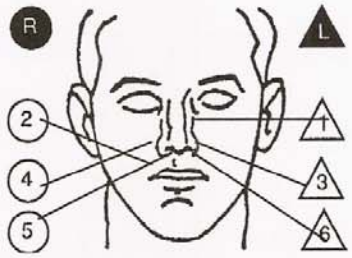


	1st Nine	2nd Nine
Cannot keep balance		
Starts too soon		
Stops walking		
Misses heel-toe		
Steps off line	X	X
Raises arms	XX	X
Actual steps taken	9	9

L	R	
☒	☒	Sways while balancing (2/1)
☒	☒	Uses arms to balance (2/2)
☒	☐	Hopping (1/0)
☒	☒	Puts foot down (1/1)

Internal clock: 20 estimated as 30 seconds	Describe Turn: Swivel turn, one quick motion	Cannot do test (explain): N/A	Type of footwear: Heels (removed)

Draw lines to spots touched



Eyelid tremors

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.5	9.0	6.0
Right Eye	6.5	9.0	6.0

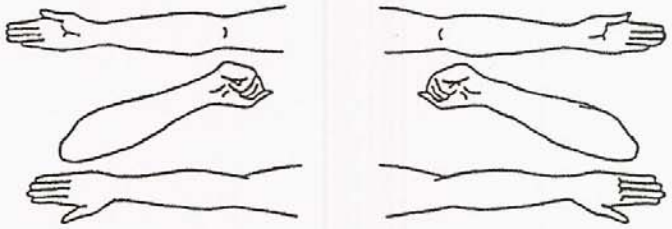
Nasal area: Red, ulcerated

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure	Temperature
144/104	99.8

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"I don't use drugs anymore."		Refused	Refused

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
08/02/07 2240	2305	2315	8/03/07 0035	

Officer's Signature: DRE # 2894 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☒ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Kohlhepp, Kim J.

1. **LOCATION:** The evaluation was conducted at the Oklahoma County Jail.

2. **WITNESSES:** The evaluation was witnessed by the arresting officer; Officer David Steiner and by Sergeant Charlie Phillips of the Oklahoma City P.D.

3. **BREATH ALCOHOL TEST:** Kohlhepp's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** The writer was contacted by Officer Steiner requesting a drug evaluation. After arriving at the County Jail, Officer Steiner reported that he had stopped the suspect for driving 65 mph in a 30 mph zone and for failing to stop at a traffic signal. The suspect was very talkative and restless. She was unable to perform the SFST's as directed and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room standing next to Officer Steiner. She was very fidgety and could not stand still. When told to sit down she would sit for a few seconds and then quickly get back up.

6. **MEDICAL PROBLEMS AND TREATMENT:** None observed and none stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 2" side to side and estimated 30 seconds in 20 seconds. Walk & Turn: Suspect stepped off the line twice, raised her arms for balance and turned using an abrupt swivel-like movement. One Leg Stand: Suspect swayed, raised her arms, hopped once when standing on the left foot, and put her foot down one time while standing on each foot. Finger to Nose: Suspect missed the tip of her nose on each attempt and had eyelid tremors.

8. **CLINICAL INDICATORS:** The suspect's pulse, blood pressure and temperature were above the normal ranges. Her pupils were dilated in all three lighting conditions.

9. **SIGNS OF INGESTION:** The suspect's nostrils were red and ulcerated.

10. **SUSPECT'S STATEMENTS:** She denied using drugs, stating "I don't use drugs anymore."

11. **DRE'S OPINION:** In my opinion, Kohlhepp is under the influence of a CNS Stimulant and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:** There was an outstanding warrant for the suspect for failure to appear on a charge of possession of methamphetamine.

Rev.03/08

SESSION XI

PRACTICE: EYE EXAMINATIONS

SESSION XI PRACTICE: EYE EXAMINATIONS

Upon successfully completing this session the student will be able to:

- Conduct examinations of pupil size and reaction to light under both lighted and darkened room conditions.
- Describe the eye examination procedures.
- Document the results of the eye examinations.

In this session, you will practice estimating pupil size and assessing pupil reaction to light. You will work in a team with fellow students, taking turns examining each other's eyes.

When it is not your turn either to administer the eye exams or serve as the examination subject, you should try to monitor the work of your teammate who is administering the exams and coach him or her as appropriate. In this way you can assist each other in developing skills.

To prepare for this session, make sure you can correctly answer the following questions:

1. How can you produce the faint, reddish light needed for the estimation of pupil size under near-total darkness?

2. How far in front of the subject's eye should the pen light be held during the direct light examination?

3. How long must you shine the light into the subject's eye to evaluate the pupil's reaction to light?

(The information needed to answer these questions can be found in Part “G” of Session IV)

4. What is the technical term meaning "constricted pupils"?

5. What is the technical term meaning "dilated pupils"?

6. What is the technical term meaning "droopy eyelids"?

(The information needed to answer these questions can be found in Session V.)

EYE EXAMINATIONS DATA SHEET

Subject ______________

Under Room Light

	Left	Right
Room Light		
Direct Light		

Reaction:

____

In the Dark Room

	Left	Right
Near Total		
Direct Light		

Reaction:

____

Subject ______________

Under Room Light

	Left	Right
Room Light		
Direct Light		

Reaction:

____

In the Dark Room

	Left	Right
Near Total		
Direct Light		

Reaction:

____

Subject ______________

Under Room Light

	Left	Right
Room Light		
Direct Light		

Reaction:

____

In the Dark Room

	Left	Right
Near Total		
Direct Light		

Reaction:

____

SESSION XII

ALCOHOL WORKSHOP

SESSION XII ALCOHOL WORKSHOP

Upon successfully completing this session the student will be able to:

- Correctly administer the preliminary clinical examinations and psychophysical tests used in the drug influence evaluation procedure.
- Observe and record the subject's performance on the preliminary clinical examinations and psychophysical tests.
- Determine the level of impairment based on the results of the subject's preliminary clinical examinations and psychophysical tests.

In this session, you will have the opportunity to practice administering portions of the Drug Evaluation and Classification drug influence evaluation to persons who are actually under the influence of a drug. The drug involved is Alcohol, which is the most familiar and most frequently abused drug in our society. Alcohol belongs to the category of drugs known as Central Nervous System Depressants. The behaviors, signs and symptoms you observe in the volunteer drinkers participating in this session will, in many respects, be similar to what you will observe when you encounter persons under the influence of Barbiturates, Tranquilizers or other CNS Depressants.

Working in a team with fellow students, you will administer the following tests to each volunteer:

- Pupil Size Estimation (in room light)
- Horizontal Gaze Nystagmus (including estimation of onset angle)
- Vertical Gaze Nystagmus
- Lack of Convergence
- Romberg Balance
- Walk and Turn
- One Leg Stand (each volunteer will take this test twice, once on each leg)
- Finger to Nose
- Pulse Rate

You will record the results of these tests on the appropriate segments of the Drug Influence Evaluation form.

To prepare for this session, make sure that you know how to administer these tests, and that you know what clues to look for and how to recognize them. It will be a good idea to practice administering these tests (e.g. to fellow students, family members, etc.) to sharpen your skills in preparation for this session.

SESSION XIII

PHYSICIAN'S DESK REFERENCE (PDR)
AND OTHER REFERENCE SOURCES

SESSION XIII PHYSICIAN'S DESK REFERENCE (PDR) AND OTHER REFERENCE SOURCES

Upon successfully completing this session the student will be able to:

- Explain how the various sections of the PDR can provide information that will:
  - Aid in the drug influence evaluation;
  - Aid in courtroom testimony.
- Use the PDR in a practical exercise.
- Describe other reference resources available to assist DRE's.

A. The Physician's Desk Reference as a Resource

The Physician's Desk Reference for Prescription Drugs is a useful reference source for a DRE. It provides detailed information, including photographs, on virtually every drug available for prescription in the country. Many of these drugs are either CNS Depressants or CNS Stimulants, and others are Narcotic Analgesics, while others are combinations of these. Numerous trade names exist for certain drugs, since many manufacturers offer competing products.

During the course of an arrest and evaluation of a suspected drug impaired driver, it is not uncommon to discover pills, tablets, etc. on the subject. Reference to the PDR and other resources usually can help to establish the identity and category of these drugs.

The PDR is published annually. Throughout the year, periodic supplements are published as new products come on the market.

B. The Contents of The PDR

The PDR contains the following color coded sections.

(1) An index of all manufacturers who provided information on their prescription drugs.

(2) An index of Product Names (including discontinued products).

(3) An index of Products by Category of Drugs.
In newer PDRs, the product category and generic sections have been combined.

(4) A Generic and Chemical name index.

(5) A Product Identification section, including actual size and full color photographs.

(6) A Product Information section, describing the drug's composition, action and uses, administration and dosage, precautions, side effects and contraindications, the form in which it is supplied, etc.

(7) A Diagnostic Product Information section.

(8) A listing of the locations and emergency telephone numbers of poison control centers.

(9) A guide to the management of drug overdoses.

List of other reference guides and resources:

(1) National Highway Traffic Safety Administration (NHTSA), Enforcement and Justice Services Division

(2) State Drug Evaluation and Classification Program Coordinator

(3) The DRE Newsletter, Phoenix City Prosecutors Office, Phoenix, AZ

(4) American Prosecutors Research Institute (APRI) - The National Traffic Law Center (Drug Evaluation and Classification (DEC) Program Monogram)

(5) Poison Control Centers

(6) Medical Dictionaries

(7) The Drug Identification Bible, Amera-Chem Inc.

(8) Drugs and Human Performance Fact Sheets (NHTSA)

(9) Newspaper and magazine articles (i.e. *High Times*)

(10) Software programs (i.e. *Pharmacists, Body Works, etc.)*

(11) Various websites including the Drug Evaluation and Classification Program website: www.decp.org

(12) The Pill Book, Bantam Books

(13) Others

SESSION XIV

HALLUCINOGENS

SESSION XIV HALLUCINOGENS

Upon successfully completing this session the student will be able to:

- Explain a brief history of the Hallucinogen category of drugs.
- Identify common drug names and terms associated with this category.
- Identify common methods of administration for this category.
- Describe the symptoms, observable signs and other effects associated with this category.
- Describe the typical time parameters, i.e. onset and duration of effects, associated with this category.
- List the clues that are likely to emerge when the drug influence evaluation is conducted for a person under the influence of this category of drugs.
- Correctly answer the "topics for study" questions at the end of this session.

A. Overview of Hallucinogens

Hallucinogens are drugs or substances that affect a person's perceptions, sensations, thinking, self awareness and emotions. They may also cause hallucinations. A hallucination is a sensory experience of something that does not exist outside the mind. It may involve hearing, seeing, smelling, tasting or feeling something that isn't really there. Or, it may involve distorted sensory perceptions, so that things look, sound, smell, taste or feel differently from the way they actually are.

Hallucinogenic drugs usually produce so called pseudo-hallucinations. This means that the user typically knows that what he or she is seeing, hearing, smelling, etc. is not real, but is a product of the drug.

One common type of hallucination produced by these drugs is called synesthesia, a sensory perception disorder, in which an input via one sense is perceived by the brain as an input via another sense. In its simplest terms, it is a transposition of senses. For example, seeing a particular sight may cause the user to perceive a sound. Hearing a sound may cause him or her to perceive an odor. Thus, a person under the influence of an hallucinogen might hear a telephone ring, and "see" a flash of brilliant color. Or, he or she might look at something colored yellow and "smell" the fragrance of roses. Sometimes hallucinogen users will make statements indicating that they are experiencing synesthesia (examples: "That chair sounds beautiful!" "Look at those fantastic odors!"). DREs should be alert for such statements, and be aware that they are significant indicators of this drug category.

Sometimes, the hallucinations can be very frightening to the user. The user may be panic stricken by what he or she is seeing or hearing, and may become uncontrollably excited, or even try to flee from the terror. Hallucinogen users call these kinds of experiences "bad trips". Users of Hallucinogens have been known to be driven into permanent insanity by these experiences.

A terrifying "bad trip" sometimes may be re-experienced as a flashback. Hallucinogen flashbacks apparently do not occur because of a residual quantity of drug in the user's body. Rather, flashbacks apparently are vivid recollections of a portion of a previous hallucinogenic experience. Essentially, flashbacks are very intense, and very frightening, day dreams.

There are three types of flashback; emotional, somatic, and perceptual. The emotional flashback is the most dangerous. It brings back strong feelings of panic, fear and loneliness, and creates an intense and very real recollection of the original "bad trip". A somatic flashback consists of altered bodily sensations, e.g., tremors, weakness, nausea, dizziness, etc. that were part of the original "trip". In a perceptual flashback, the user re-experiences some of the sensory distortions of the original "trip".

Some users experience delusions which are false beliefs (I am an elephant!), others experience illusions which are false perceptions (I see an elephant!), while others may experience both.

Naturally occurring Hallucinogens: some common examples.

Peyote is a small, spineless cactus containing the active hallucinogenic ingredient called mescaline. The crowns, or "buttons", of the cactus can be collected and dried, and eaten. Certain American Indian tribes have used peyote in religious ceremonies for thousands of years. Peyote currently is used legally in religious ceremonies of the Native American church.

Psilocybin is a drug found in a number of different species of mushrooms. An unstable derivative of psilocybin, called psilocin, also has hallucinogenic properties and also is found in these mushrooms. Psilocybin mushrooms also have a long history of use in Indian religious rituals.

Other naturally occurring Hallucinogens include nutmeg, jimson weed, morning glory seeds, salvia divinorum, and Bufotenine. The last of those is an hallucinogenic substance found in the glands of certain toads. Bufotenine is toxic; the toad secretes Bufotenine through its skin as a defensive mechanism, to make it too unpleasant for a predator to eat the toad. But you guessed it: there are people who actually lick toads to get high from Bufotenine.

Salvia divinorum is a perennial herb in the mint family native to certain areas of Mexico. The plant, which can grow to over three feet in height, has large green leaves, hollow square stems and white flowers with purple calyces, can also be grown successfully outside of this region. Salvia divinorum has been used by the Mazatec Indians for its ritual divination and healing. The active constituent of Salvia divinorum has been identified as Salvinorin A. It was not until August 2002 that researchers discovered that Salvia divinorum acts at the kappa opiate receptor (KOR) site, where much of human reception is regulated.

According to a National Survey on Drug Use and Health Report published by SAMHSA in February 2008, it is estimated that 1.8 million persons aged 12 or older used Salvia divinorum in their lifetime.

There are numerous methods of ingesting Salvia with varying durations of hallucinogenic effects. It can be smoked, chewed, vaporized and boiled into a tea.

Effects of Salvia divinorum include: intense hallucinations; feelings of floating through space or flying; twisting and spinning. Physical effects include dizziness; nausea; lack of coordination; slurred speech, and confused sentence patterns; decreased heart rate and chills.

Some common street names for Salvia divinorum include: Salvia, Sally D, Magic Mint, Maria Pastora, and Diviner's Sage.

Salvia is not listed under the Controlled Substance Act (CSA) or approved for medical use.

(Source: DEA Office of National Control Policy Bulletin, November 2008)

Synthetically manufactured hallucinogens: some common examples.

LSD probably is the most famous synthetic Hallucinogen. "LSD" is an abbreviation of Lysergic Acid Diethylamide.
It is a white powder or a clear, colorless liquid. Street names include; acid, animal, barrels, beast, blotter, 'cid, dots, kool aid, LSD-25, lysergide, microdots, panes, sandoz, tabs, trips, window panes.

LSD is manufactured from lysergic acid which occurs naturally in the ergot fungus that grows on wheat and rye. It is a Schedule I controlled substance, available in liquid, powder, tablet (microdots), and capsule form. The liquid is often applied to blotter paper squares (frequently with colorful designs), stickers, sugar cubes, candy, or soda crackers. LSD is also available in dropper bottles or in the form of gelatin sheets/shapes (window panes).

MDA, MDMA, MMDA, TMA, STP, DET, and DMT are other synthetic Hallucinogens. They are sometimes referred to as "Psychedelic amphetamines" or "psychotomimetic amphetamines". Their effects are often similar to those of high doses of CNS Stimulants.

MDA is an abbreviation for 3,4-Methylenedioxyamphetamine. Its users sometimes refer to MDA as the "Mellow Drug of America". It is normally produced as a clear liquid, or as a white powder in capsule or tablet form. MDA often is mixed with amphetamine, cocaine, methamphetamine, LSD or STP, or occasionally with strychnine. MDA probably is the most widely abused of the "Psychedelic amphetamines".

2 CB is an abbreviation for 4-Bromo-2,5-Dimethoxyphenethylamine. 2 CB is also known as "Venus", "Nexxus", and "bromo-mescaline". 2CB was first synthesized in 1974. 2CB is a white powder usually found in pressed tablets or gel caps. It is almost always taken orally.

MDMA is an abbreviation for 3,4-methylenedioxymethamphetamine and is commonly referred to as "Ecstasy". It is an hallucinogen that also acts as a stimulant. It produces an energizing effect, as well as distortions in time and perception and enhanced enjoyment from tactile experiences. Its effects are similar to those of MDA or peyote. MDMA can effect the brain by altering the activity of chemical messengers, or neurotransmitters, which enable nerve cells in many regions of the brain to communicate with one another. MDMA also causes the release of another transmitter, norepinephrine, which is likely what causes an increase in heart rate and blood pressure.

Materials in its illicit manufacture include Isosafrole (Leuckart reaction) and Safrole (Merck patent). MDMA is most commonly found in tablet forms of various colors, carrying distinctive markings on one side such as a dove, E, yin/yang symbol, Mitsubishi symbol, etc. It was developed in Germany in the early 1900's as a parent

compound to be used to synthesize other pharmaceuticals. It was patented as an appetite suppressant and used as a possible adjunct to psychotherapy. However, it was banned by DEA in 1985 and is currently a Schedule I Controlled Substance, with no legitimate medical use.

TMA is an abbreviation for 3,4,5-Trimethoxyamphetamine. Its effects are also similar to those of MDA or peyote.

STP is an abbreviation for "Serenity, Tranquility and Peace". It is also known by the chemical name DOM, or 2, 5-dimethoxy-4-methylamphetamine.

DET is diethyltryptamine.

DMT is dimethyltryptamine. It is sometimes known as the "businessman's trip" because its effects last only about one hour (i.e. short enough to occupy a "businessman's lunch").

An important fact about many Hallucinogens is that they are not addictive. Nevertheless, many Hallucinogen abusers frequently use these drugs, because they enjoy the effects.

The most common method of ingesting Hallucinogens is orally. Psilocybin mushrooms and peyote "buttons" can be eaten "as is". LSD often is placed on bits of paper, or on sugar cubes, and eaten.

Some Hallucinogens can be smoked.

Some MDA users snort that drug.

Some LSD users inject that drug.

B. Possible Effects of Hallucinogens

In general, Hallucinogens intensify whatever mood the user is in when the drug is ingested. If the user is depressed, the drug will deepen the depression. If the user is feeling pleasant, the drug usually will heighten that feeling. If the user expects that the drug will help him or her achieve new insights or an expanded consciousness, the drug will seem to have that effect. However, use of Hallucinogens often uncovers mental or emotional flaws of which the user was unaware. Such flaws can result in the panic and terror of a "bad trip" even though the user was expecting a pleasurable experience.

The most common effect of an Hallucinogen is hallucination. The user's perception of reality is severely distorted, often to the point of synesthesia. This makes it virtually impossible for the Hallucinogen-influenced person to function in the real world.

C. Onset and Duration of Hallucinogens' Effects

1. Peyote's effects generally begin to be felt within one-half hour after eating the cactus "buttons". The initial effects often include nausea, possible vomiting, mild rise in blood pressure, pulse rate and temperature. And, the pupils dilate. After about one hour, sensory changes begin. The user experiences visual distortions, accompanied by rich colors. Objects take on new forms and begin to move. Shapes "come alive". The sensory changes reach their peak in about 3-4 hours, with synesthesia occurring at about that time period. After about 10 hours there will be a gradual decline in effects, with near total recovery in about 12 hours.

2. Psilocybin's effects also start to develop in about one-half hour. The user first experiences dizziness, a light headed feeling, and giddiness. The extremities (hands, feet, etc.) begin to feel very light or very heavy. After about 30-60 minutes, vision blurs. Colors become brighter and leave longer lasting after images. Objects take on sharp visual definition and hearing becomes more acute.

   Sixty to ninety minutes after eating the mushrooms, color patterns and shapes start to develop. The surfaces of objects become wavy. Feelings of euphoria develop. Shortly thereafter, body sensations increase, along with mental perceptions. The user often becomes introspective.

   After 2-3 hours, the effects begin to diminish.

3. Salvia divinorum effects can begin within minutes when smoked and can last up to 15-30 minutes. When the leaves are chewed, effects can last up to one hour.

4. LSD's effects begin to be felt in 30-45 minutes. Pulse rate, blood pressure and temperature rise. The pupils dilate. The hair starts to stand on end (piloerection). Nausea, dizziness and headache develop. The effects reach their peak in about 4-6 hours. After 7-9 hours, the effects diminish. The user generally feels normal after 10-12 hours.

5. MDMA's (Ecstasy) effects usually begin within several minutes to a half hour if taken orally. It often results in severe dehydration and heat stroke in the user. The drug can heat the user's body up to a temperature well over 100 degrees. It causes hyperthermia, muscle breakdown, seizures, stroke, kidney and cardiovascular system failure, as well as permanent brain damage from repetitive use. The psychological effects of Ecstasy include confusion, depression, anxiety, sleeplessness and paranoia. The duration of effects can last from 1-12 hours depending on the dosage.

6. MDA's effects usually begin within 40-60 minutes. The pupils dilate. Pulse rate and blood pressure increase. The effects reach their peak in about 90-120 minutes, and usually have dissipated within 8 hours.

7. 2CB's effects normally begin within 30-45 minutes. At lower doses (5-15 mg), it produces enhanced sensual sensations and feelings of being "in one's body". At higher doses (15-30 mg) it produces intense visual effects. The effects can last for approximately 2 -3 hours.

D. Signs and Symptoms of Hallucinogen Overdose

It is unlikely that Hallucinogens directly are life threatening. However, overdoses have often indirectly resulted in death. For example, one LSD user was killed when he attempted to stop a train, bare handed. The extreme panic and agitation of a "bad trip" have been known to lead to suicide, or to accidental deaths as users have tried to flee from their hallucinations.

The most common danger of an Hallucinogen overdose is an intense "bad trip", which can result in severe and sometimes permanent psychosis.

There is some evidence that prolonged use of LSD may produce organic brain damage, leading to impaired memory, reduced attention span, mental confusion, and impaired ability to deal with abstract concepts.

E. Expected Results of the Evaluation

When a person under the influence of an Hallucinogen is evaluated by a DRE, the following results can generally be expected:

Horizontal Gaze Nystagmus - none

Vertical Gaze Nystagmus - none

Lack of Convergence - none

Pupil size - dilated

Reaction to light - normal. However, certain Psychedelic amphetamines may cause slowing of the pupil's reaction to light.

Pulse rate - up

Blood pressure - up

Temperature - up

Muscle tone – rigid

Injection sites generally will not be found. However, some LSD users do inject the drug.

General Indicators:

- body tremors
- dazed appearance
- difficulty with speech
- disoriented
- flashbacks
- hallucinations
- memory loss
- nausea
- paranoia
- perspiring
- poor perception of time and distance
- synesthesia
- uncoordinated

Topics for Study

1. What does "synesthesia" mean?

2. What is a "flashback"? What are the three types of "flashback"?

3. Name two naturally occurring Hallucinogens.

4. What is a "bad trip"?

5. What does "psychotomimetic" mean?

6. What is an "illusion"? What is a "delusion"?

7. What is the difference between "hallucinations" and "pseudo-hallucinations"?

8. What is "piloerection"?

DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Barry Dixson, Chaves Co.	DRE #: 8744	Rolling Log #: 07-220	**Session XIV #1**
Recorder/Witness: Tpr. Michael Champion	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-15153
Arrestee's Name (Last, First, Middle): Hoeckle, Rebecca S.	Date of Birth: 9/23/62	Sex: F	Race: I
			Arresting Officer (Name, ID#): Tpr. Michael Champion, New Mexico SP #3238
Date Examined / Time /Location: 7/29/07 2030 Chaves Co. Jail	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 13340	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐

Miranda Warning Given: Given By: Tpr. Champion	☒ Yes ☐ No	What have you eaten today? When?: "Nothing, I'm fasting"	What have you been drinking? How much?: "I don't drink"	Time of last drink?: N/A
Time now/ Actual: 7 pm / 2040	When did you last sleep? How long: Last night 6-7 hours	Are you sick or injured?: ☒ Yes ☐ No Upset stomach	Are you diabetic or epileptic?: ☐ Yes ☒ No	
Do you take insulin?: ☐ Yes ☒ No	Do you have any physical defects?: ☐ Yes ☒ No	Are you under the care of a doctor or dentist?: ☐ Yes ☒ No		
Are you taking any medication or drugs?: ☐ Yes ☒ No	Attitude: Withdrawn, distracted	Coordination: Very poor, difficulty standing		
Speech: Rapid, stuttering	Breath Odor: Sour, rancid	Face: Flushed		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 104 / 2040	Lack of Smooth Pursuit	No	No
2. 112 / 2057	Maximum Deviation	No	No
3. 104 / 2112	Angle of Onset	None	None

Convergence: Right eye, Left eye

ONE LEG STAND

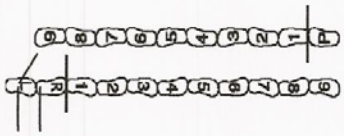
L R
- ☒ ☐ Sways while balancing (1/0)
- ☐ ☐ Uses arms to balance (0/0)
- ☐ ☐ Hopping (0/0)
- ☒ ☐ Puts foot down (3/0)

Test stopped for safety reasons

Romberg Balance

Unable to stand

Walk and Turn test

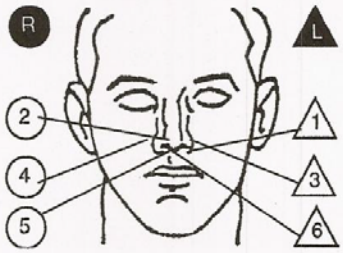


Test stopped

	1st Nine	2nd Nine
Cannot keep balance	XXX	
Starts too soon		
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms		
Actual steps taken		

Internal clock: N/A estimated as 30 seconds	Describe Turn: N/A	Cannot do test (explain): Test stopped for safety reasons	Type of footwear: Leather sandals

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	7.0	8.5	6.5
Right Eye	7.0	8.5	6.5

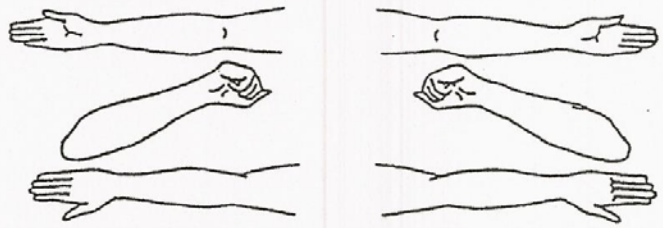
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION: ☐ Yes ☒ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure: 148/104	Temperature: 100.0	
Muscle tone: ☐ Normal ☐ Flaccid ☒ Rigid	Comments: Rigidity in arms	

What drugs or medications have you been using?: "My medium doesn't permit drugs"	How much?: N/A	Time of use?: N/A	Where were the drugs used? (Location): N/A

Date / Time of arrest: 07/29/07 1930	Time DRE was notified: 2010	Evaluation start time: 2030	Evaluation completion time: 2135	Precinct/Station:
Officer's Signature:	DRE #: 8744	Reviewed/approved by / date:		

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☒ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect: Hoeckle, Rebecca S.

1. LOCATION: The evaluation took place at the Chaves County Jail.

2. WITNESSES: The arresting officer, Trooper Michael Champion of the New Mexico State Police witnessed and recorded the evaluation.

3. BREATH ALCOHOL TEST: Hoeckle's breath test was a 0.00%.

4. NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER: Writer was contacted by Trooper Champion and requested to conduct a drug evaluation on Hoeckle. Writer contacted Trooper Champion at the jail where he advised that he had found the suspect stopped at a green light in downtown Roswell. When contacted, the suspect appeared dazed and disoriented. She pointed to the traffic light and told Trooper Champion that "God is light and the light is God." She was unable to perform the roadside SFST's and was arrested for DUI.

5. INITIAL OBSERVATION OF SUSPECT: The suspect was seated next to the Intoxilyzer and was staring straight ahead. She slowly turned and asked "Are you God?" Writer replied by giving her my name and asking for consent to conduct a drug evaluation on her. She replied, "The gods sent you therefore you must be good." Her speech was rapid and she stuttered slightly.

6. MEDICAL PROBLEMS AND TREATMENT: The suspect indicated that she had an upset stomach and was not feeling good.

7. PSYCHOPHYSICAL TESTS: The suspect was unable to stand without assistance. It was necessary to terminate the Romberg Balance, Walk and Turn and One Leg Stand tests for her safety. The Finger to Nose test was conducted while she was seated. She missed the tip of her nose on all six attempts.

8. CLINICAL INDICATORS: The suspect's pupils were dilated in two of the lighting levels. Her pulse, blood pressure and temperature were above the normal ranges.

9. SIGNS OF INGESTION: The suspect's breath was sour smelling and was rancid.

10. SUSPECT'S STATEMENTS: The suspect stated she was fasting for religious reasons and that her medium forbids the use of alcohol and drugs. She further stated that her religious leader is a man "whose body is of fire and air and whose spirit is of light." She also indicated that she had just attended a service conducted by the medium.

11. DRE'S OPINION: In my opinion Hoeckle is under the influence of a Hallucinogen and unable to operate a vehicle safely.

12. TOXICOLOGICAL SAMPLE: The suspect provided a urine sample.

13. MISCELLANEOUS:

Rev. 3/08

DRUG INFLUENCE EVALUATION

Evaluator: Sergeant Allan Kolak, Coral Gables P.D.	DRE #: 007401	Rolling Log #: 05-07-09	**Session XIV #2**
Recorder/Witness: Kyle Clark, IPTM	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 04-DRE-0123
Arrestee's Name (Last, First, Middle): Warburton, Cindy T.	Date of Birth: 7/18/82	Sex: F	Race: W
Arresting Officer (Name, ID#): Deputy Darrel Kehne, Collier Co. S.O.			
Date Examined / Time /Location: 05/10/07 2300 Naples J.C.	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 13465	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Dpty. Kehne	☒ Yes ☐ No	What have you eaten today? When? Spaghetti lunch	What have you been drinking? How much? Nothing	Time of last drink? N/A
Time now/ Actual: 7:00 PM/2310	When did you last sleep? How long: Yesterday 6 hrs.	Are you sick or injured? ☐ Yes ☒ No "I feel hot."	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Distracted, paranoid	Coordination: Poor, staggering		
Speech: Rambling, incoherent at times	Breath Odor: Normal	Face: Perspiring		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

1. 112 / 2314
2. 116 / 2325
3. 116 / 2340

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence

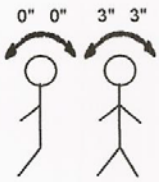
Right eye Left eye

18 ONE LEG STAND 31

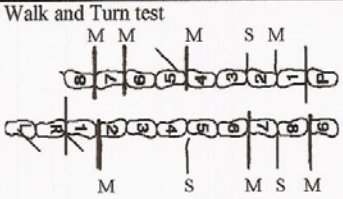
L R
☒ ☒ Sways while balancing (2/3)
☒ ☒ Uses arms to balance (2/2)
☐ ☐ Hopping
☒ ☒ Puts foot down (1/1)

Leg tremors

Romberg Balance



Walk and Turn test



Cannot keep balance: XX

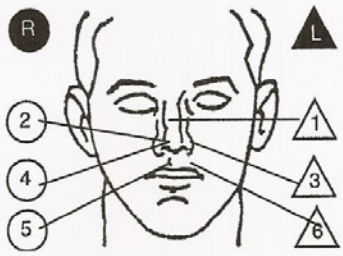
Starts too soon: X

	1st Nine	2nd Nine
Stops walking	XX	X
Misses heel-toe	XXX	XXX
Steps off line		
Raises arms	constant	constant
Actual steps taken	9	8

Leg tremors

Internal clock	Describe Turn	Cannot do test (explain)	Type of footwear:
10 estimated as 30 seconds	Lost balance, stumbled, nearly fell	N/A	Sandals

Draw lines to spots touched



Opened her eyes.

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.0	9.0	5.5
Right Eye	6.0	9.0	5.5

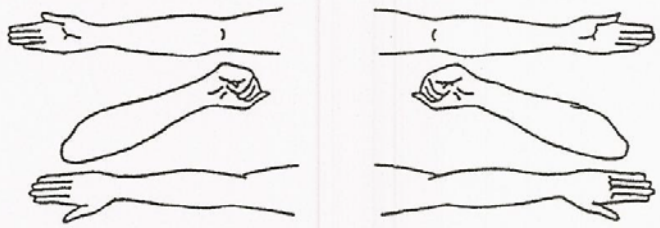
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure	Temperature
150/102	99.8

Muscle tone: ☐ Normal ☐ Flaccid ☒ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
Nothing	N/A	N/A	No answer

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
05/10/07 2230	2240	2300	2355	Traffic

Officer's Signature: DRE # 7401 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant
☐ Medical ☐ CNS Depressant ☒ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Warburton, Cindy T.

1. **LOCATION:** The evaluation was conducted at the Naples Jail Center.

2. **WITNESSES:** DRE State Coordinator, Kyle Clark witnessed and recorded the evaluation.

3. **BREATH ALCOHOL TEST:** Warburton's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** The writer was on-duty when informed by dispatch that Deputy Kehne was requesting a drug evaluation. Writer contacted Deputy Kehne at the Jail Center where he advised the suspect had been arrested after driving along the gravel shoulder of Beach Road passing other vehicles. According to Deputy Kehne, the suspect pointed to his baton and shouted "Look out, there's a big snake hanging from your belt!" She was very paranoid acting and also claimed that the overhead lights on the patrol car were bleeding into her eyes and skin.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect sitting in the interview room. She appeared paranoid and disoriented. At one point she pointed to the clock on the wall and shouted, "Keep that off me, keep it away from me!"

6. **MEDICAL PROBLEMS AND TREATMENT:** None observed and none stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" side to side and estimated 30 seconds in 10 seconds. Walk & Turn: Suspect started walking too soon, lost her balance during the instructions, missed heel to toe, stopped walking, stepped off the line, raised her arms, staggered while turning and only took eight steps on the return. One Leg Stand: Suspect swayed, raised her arms, and put her foot down. Finger to Nose: Suspect missed the tip of her nose on each attempt. She also opened her eyes and shouted, "I can't feel my face!" "My face is missing!"

8. **CLINICAL INDICATORS:** The suspect's pulse, blood pressure and temperature were above the normal ranges. The suspect's pupils were dilated.

9. **SIGNS OF INGESTION:** None observed.

10. **SUSPECT'S STATEMENTS:** The suspect stated that she felt hot and denied drug use.

11. **DRE'S OPINION:** In my opinion Warburton is under the influence of a Hallucinogen and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:** The suspect was wearing an "XTC" tee-shirt.

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Officer David Rencken, Tuscon P.D.	DRE #: 005308	Rolling Log #: 2007-04	**Session XIV #3**
Recorder/Witness: Tim Gaffney, Phoenix P.D.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-001428
Arrestee's Name (Last, First, Middle): Buchanan, Lew B.	Date of Birth: 6/19/76	Sex: M	Race: B
Arresting Officer (Name, ID#): Officer Terry McCarthy, Tucson P.D. #8846			
Date Examined / Time /Location: 01-25-07 0115 Central Testing	Breath Results: Results: 0.02	Test Refused ☐ Instrument #: 10234	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

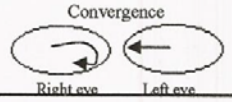
Miranda Warning Given: Given By: D. Gregory	☒ Yes ☐ No	What have you eaten today? When? Pizza about 6pm	What have you been drinking? How much? Beer Two	Time of last drink? 8pm
Time now/ Actual: 10pm/ 0125	When did you last sleep? How long: Last night 3 hrs.	Are you sick or injured? ☒ Yes ☐ No I might throw up	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Withdrawn/cooperative	Coordination: Very poor - staggering		
Speech: Difficulty in speaking, rambling	Breath Odor: Normal	Face: Dazed, perspiring heavily		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☒ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

1. 116 / 0130
2. 112 / 0147
3. 104 / 0200

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence

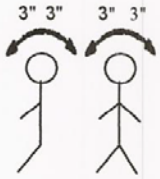


ONE LEG STAND

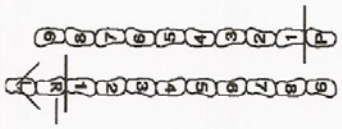
L R
☒ ☐ Sways while balancing (1/0)
☐ ☐ Uses arms to balance (0/0)
☐ ☐ Hopping (0/0)
☒ ☐ Puts foot down (3/0)

Stopped test for safety reasons

Romberg Balance



Walk and Turn test



Test stopped for safety reasons- could not maintain balance

Cannot keep balance XXX

Starts too soon

	1st Nine	2nd Nine
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms		
Actual steps taken		

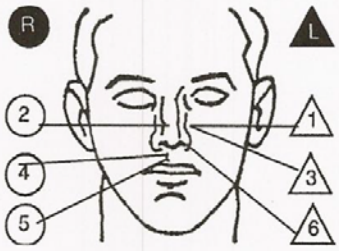
Internal clock
35 estimated as 30 seconds

Describe Turn
N/A

Cannot do test (explain)
Stepped off line 3 times during instruction

Type of footwear:
Running shoes

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.5	9.0	6.0
Right Eye	6.5	9.0	6.0

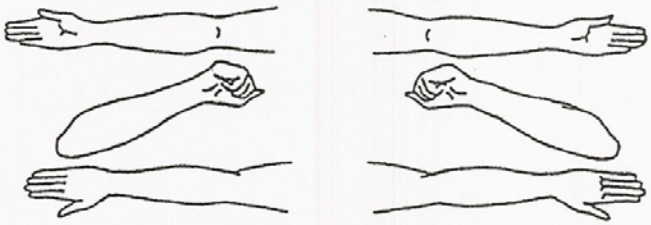
Nasal area:
Clear

Oral cavity:
Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure	Temperature
146/102	100.5

Muscle tone: ☐ Normal ☐ Flaccid ☒ Rigid

Comments: Arms, neck, face rigid

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
Nothing	No answer	No answer	Refused

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
01/25/07 0055	0100	0115	0205	

Officer's Signature: | DRE # 005308 | Reviewed/approved by / date:

Opinion of Evaluator:

☐ Rule Out	☒ Alcohol	☐ CNS Stimulant	☐ Dissociative Anesthetic	☐ Inhalant
☐ Medical	☐ CNS Depressant	☒ Hallucinogen	☐ Narcotic Analgesic	☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Buchanan, Lew B.

1. **LOCATION:** The evaluation was conducted in the Central Testing Room at the Tucson Police Department.

2. **WITNESSES:** The evaluation was witnessed by the arresting officer; Officer Terry McCarthy of the Tucson Police Department and Tim Gaffney of the Phoenix P.D.

3. **BREATH ALCOHOL TEST:** Buchanan's breath test was 0.02%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** The writer was dispatched to Central Testing to conduct a drug evaluation for Officer McCarthy. Officer McCarthy stated that he had observed the suspect driving 20 miles under the posted speed limit on E. Broadway Street. He also observed the suspect's vehicle drifting from lane to lane. The suspect preformed poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the breath testing room. He was swaying slightly as he stood and appeared dazed and disoriented. He responded slowly to my greeting, but was cooperative and responsive to my questions. He was perspiring heavily and had rambling speech.

6. **MEDICAL PROBLEMS AND TREATMENT:** Suspect stated he felt nauseous.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" in a circular motion and estimated 30 seconds in 35 seconds. Walk & Turn and One Leg Stand: Suspect was unable to perform the tests. Both were terminated for safety reasons. Finger to Nose: Suspect missed the tip of his nose on each attempt.

8. **CLINICAL INDICATORS:** The suspect's pupils were dilated in all three lighting levels. The suspect's pulse, blood pressure and temperature were above the normal ranges.

9. **SIGNS OF INGESTION:** None were observed.

10. **SUSPECT'S STATEMENTS:** The suspect admitted drinking "a couple of beers" but denied any other drug use.

11. **DRE'S OPINION:** In my opinion Buchanan is under the influence of Alcohol (ETOH) and a Hallucinogen and was unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:** A small baggy of dried mushrooms were located in the suspect's coat pocket. He denied ownership and said he didn't know what they were.

Rev. 03/08

SESSION XV

PRACTICE: TEST INTERPRETATION

SESSION XV PRACTICE: TEST INTERPRETATION

Upon successfully completing this session the student will be able to:

- Analyze the results of a complete drug influence evaluation and identify the category or categories of drugs affecting the individual examined.

- Articulate the basis for the drug category identification.

In this session, you will have an opportunity to review some drug influence evaluation report forms. These "exemplars" are not based on evaluations of actual subjects, but the "findings" they display are realistic simulations of what you will observe when you evaluate suspected drug impaired drivers in the future.

Your task is to review the forms, consider all of the "evidence" they provide, and decide what category of drug(s), if any is involved in each case. Some information is purposely omitted in the narrative report. Naturally, since we have only covered three categories thus far in our training, the "exemplars" only reflect those categories. Also, to make this practice session relatively easy, no combinations of categories have been included in these "exemplars".

In subsequent practice sessions of this type, you will be exposed to "exemplars" reflecting additional drug categories and combinations of categories.

DRUG INFLUENCE EVALUATION

Evaluator: Deputy Josh Warner, Boulder Co. S.O.	DRE # 007359	Rolling Log # 07-035	**Session XV - #1**
Recorder/Witness: Deputy Mark George, Boulder Co. S.O.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-10025
Arrestee's Name (Last, First, Middle): Adams, Frances A.	Date of Birth: 1/1/65	Sex: M	Race: W
Arresting Officer (Name, ID#): Deputy Mark George, BCSO #225			
Date Examined / Time /Location: 10/06/07 10:30 pm County Jail	Breath Results: Results: 0.00 Test Refused ☐ Instrument #: 1235		Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Dpty. George	☒ Yes ☐ No	What have you eaten today? When? Hamburger Noon	What have you been drinking? How much? Water	Time of last drink? N/A
Time now/ Actual: 10:30 pm/ 10:40 pm	When did you last sleep? How long: Last night 5 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☐ No	Attitude: Cooperative	Coordination: Poor, stumbling, staggering		
Speech: Slow, slurred, thick	Breath Odor: Normal	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 58 / 2235	Lack of Smooth Pursuit	Yes	Yes
2. 56 / 2252	Maximum Deviation	Yes	Yes
3. 58 / 2305	Angle of Onset	35	35

Convergence: Right eye, Left eye

26 ONE LEG STAND 24

22 27

L R L R

Romberg Balance

2" 2" 3" 3"

Walk and Turn test

S M S M

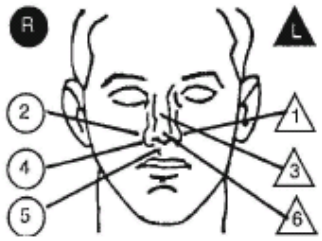
S M M S M

	1st Nine	2nd Nine
Cannot keep balance	✓✓	
Starts too soon		
Stops walking	✓✓	✓
Misses heel-toe	✓✓✓	✓✓
Steps off line	✓	✓
Raises arms	✓✓✓	✓✓✓
Actual steps taken	9	9

L R
☒ ☒ Sways while balancing (3/2)
☒ ☒ Uses arms to balance (2/2)
☐ ☐ Hopping
☒ ☒ Puts foot down (1/1)

Internal clock	Describe Turn	Cannot do test (explain)	Type of footwear:
42 estimated as 30 seconds	Turned backwards	N/A	Work boots

Draw lines to spots touched



Slow hand movements

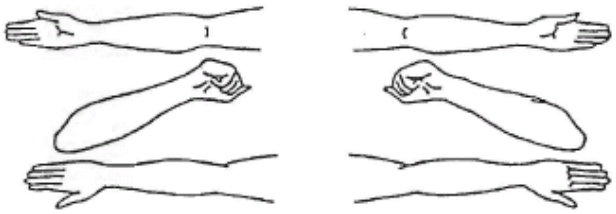
PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	4.0	6.0	3.0
Right Eye	4.0	6.0	3.0

Nasal area: Clear

Oral cavity: Clear

HIPPUS ☐ Yes ☒ No | REBOUND DILATION ☐ Yes ☒ No | REACTION TO LIGHT: Slow

RIGHT ARM **LEFT ARM**



No marks visible

Blood pressure	Temperature
104/64	97.6

Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid

Comments: Very relaxed

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"None"	Refused	Refused	Refused

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
10/06/07 9:50PM	10:15 pm	10:30 pm	11:40 pm	

Officer's Signature: | DRE # 007359 | Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Adams, Frances A.

1. **LOCATION:** The evaluation was conducted at the Boulder County Jail.

2. **WITNESSES:** The evaluation was witnessed and recorded by Deputy Mark George of the Boulder County S.O.

3. **BREATH ALCOHOL TEST:** Adams' breath test was a 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted by radio and advised to contact Deputy George at the Boulder Co. Jail for a drug evaluation. Deputy George advised that he arrested Adams for DUI after observing him commit numerous traffic violations and performing poorly on the SFST's.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the jail. His head was tilted forward, his eyes were closed and his breathing was deep and slow. He responded slowly to questions and his speech was slow, slurred and thick.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** The suspect had difficultly performing the psychophysical tests. Romberg Balance: Suspect had an approximate 3" side to side sway and a 2" front to back sway. He estimated 30 seconds in 42 seconds. Walk & Turn: Suspect lost his balance twice during the instructions, missed heel to toe five times, stopped while walking three times, turned improperly, stepped off the line twice and used his arms for balance. One Leg Stand: Suspect lost his balance, used his arms for balance and put his foot down. Finger to Nose: Suspect missed the tip of his nose on five of the six attempts.

8. **CLINICAL INDICATORS:** Suspect had six clues of HGN and a Lack of Convergence. His pulse and blood pressure were below the normal ranges.

9. **SIGNS OF INGESTION:** Nothing observed.

10. **SUSPECT'S STATEMENTS:** Suspect stated he was very sleepy and denied using drugs.

11. **DRE'S OPINION:** In my opinion Adams is under the influence of a _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Trooper Jim Klock, New York State Police	DRE # 10716	Rolling Log # 7-021	**Session XV - #2**
Recorder/Witness: Sergeant Doug Paquette, New York S.P.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-1128845
Arrestee's Name (Last, First, Middle): Baker, Sam B.	Date of Birth: 10/15/72	Sex: M	Race: B
Arresting Officer (Name, ID#): Trooper Jim Guerriere, NYSP #5525			
Date Examined / Time /Location: 07/04/07, 2230, Cooperstown PD	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 3201	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐

Miranda Warning Given ☒ Yes ☐ No; Given By: Tpr. Guerriere	What have you eaten today? When? Milkshake 3 hrs. ago	What have you been drinking? How much? "No, nothing"		Time of last drink? N/A
Time now/ Actual: 8:30 pm/2242	When did you last sleep? How long: This morning 2 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Cooperative	Coordination: Poor, stumbling		
Speech: Rapid, slurred at times	Breath Odor: Rancid	Face: Normal, sweaty		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 90 / 2235	Lack of Smooth Pursuit	No	No
2. 92 / 2246	Maximum Deviation	No	No
3. 88 / 2253	Angle of Onset	None	None

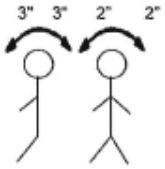
Convergence (Right eye, Left eye)

40 ONE LEG STAND 38

L R
☒ ☒ Sways while balancing (1/2)
☒ ☒ Uses arms to balance (3/2)
☐ ☐ Hopping
☐ ☒ Puts foot down (0/1)

Counted quickly

Romberg Balance



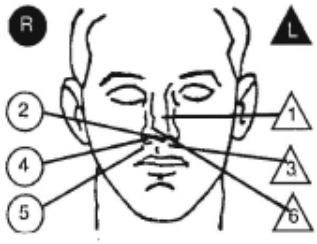
Walk and Turn test

Walked rapidly

	1st Nine	2nd Nine
Cannot keep balance		
Starts too soon		
Stops walking	✓	
Misses heel-toe		
Steps off line		
Raises arms	✓✓✓	✓✓
Actual steps taken	9	9

Internal clock: 21 estimated as 30 seconds	Describe Turn: As instructed	Cannot do test (explain): N/A	Type of footwear: Athletic shoes

Draw lines to spots touched



Quick and jerky movements

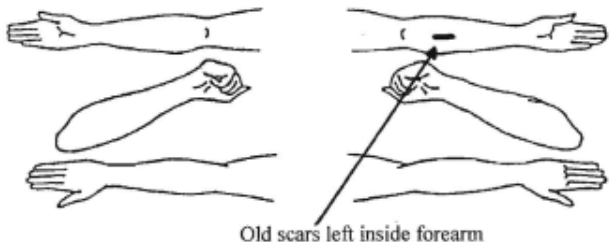
PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.5	8.0	6.0
Right Eye	6.5	8.0	6.0

Nasal area: Redness, runny nose

Oral cavity: Clear

HIPPUS	REBOUND DILATION	REACTION TO LIGHT:
☐ Yes ☒ No	☐ Yes ☒ No	Slow

RIGHT ARM **LEFT ARM**



Old scars left inside forearm

Blood pressure	Temperature
142/102	99.7

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
None	No answer	N/A	No answer

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
07/04/07 2130	2200	2230	2340	Troop C

Officer's Signature: | DRE # 10716 | Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Baker, Sam B.

1. **LOCATION:** The evaluation was conducted at the Cooperstown Police Department.

2. **WITNESSES:** The evaluation was witnessed and recorded by Sergeant Doug Paquette of the New York State Police.

3. **BREATH ALCOHOL TEST:** Baker's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and advised to meet Trooper Guerriere at the Cooperstown Police Department for a drug evaluation. It was determined that Trooper Guerriere arrested Baker for DUI after his vehicle crossed the center line and nearly struck Trooper Guerriere's patrol vehicle.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect standing in the breath testing room with Trooper Guerriere. The suspect was repeatedly shifting his weight from foot to foot. He was scratching his head and was perspiring heavily. He appeared nervous, anxious and was very restless. His speech was fast and slurred at times.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** The suspect had difficultly performing the psychophysical tests. Romberg Balance: Suspect had an approximate 3" front to back and a 2" side to side sway and estimated 30 seconds in 21 seconds. Walk & Turn: Suspect performed the test very quickly, used his arms for balance and stopped while walking. One Leg Stand: Suspect swayed while balancing, used his arms for balance and put his foot down once. He also counted fast during the OLS test. Finger to Nose: Suspect missed the tip of his nose on three of the six attempts and had quick jerky movements.

8. **CLINICAL INDICATORS:** The suspect's pulse, blood pressure and temperature were above the normal ranges. His pupils were dilated in room light and in direct light.

9. **SIGNS OF INGESTION:** The suspect had a reddened nasal area and his nose was runny.

10. **SUSPECT'S STATEMENTS:** Suspect denied using any drugs.

11. **DRE'S OPINION:** In my opinion Baker is under the influence of a _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:** Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Steve Johnson, Washington State Patrol	DRE #: 5598	Rolling Log #: 05-021	**Session XV- #3**
Recorder/Witness: Trooper Harlan Jackson, WSP	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-10127
Arrestee's Name (Last, First, Middle): Charles, Mary C.	Date of Birth: 6/13/72	Sex: F	Race: W
Arresting Officer (Name, ID#): Tpr. H. Jackson, WSP #20084			
Date Examined / Time /Location: 03/17/07 0045 Olympia WSP Office	Breath Results: Results: 0.09	Test Refused ☐ Instrument #: 212005	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Tpr. Jackson	☒ Yes ☐ No	What have you eaten today? When? Pizza, Last night	What have you been drinking? How much? "Couple of beers"	Time of last drink? 9 pm
Time now/ Actual: Midnight/0058	When did you last sleep? How long: Last night 7 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☒ Yes [ ] No Birth control pills	Attitude: Cooperative	Coordination: Poor, staggering		
Speech: Slurred	Breath Odor: Odor of alcoholic beverage	Face: Flushed		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☒ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 68 / 0050	Lack of Smooth Pursuit	Yes	Yes
2. 64 / 0105	Maximum Deviation	Yes	Yes
3. 72 / 0117	Angle of Onset	40	40

Convergence — Right eye, Left eye

31 ONE LEG STAND 30

L R
☒ ☒ Sways while balancing (3/3)
☒ ☒ Uses arms to balance (2/2)
☐ ☐ Hopping
☒ ☒ Puts foot down (1/2)

Romberg Balance: 2" 2" 2" 2" — Circular sway

Walk and Turn test

	1st Nine	2nd Nine
Cannot keep balance	VV	
Starts too soon		
Stops walking	V	
Misses heel-toe	VV	
Steps off line	V	
Raises arms	constant	constant
Actual steps taken	9	9

Internal clock: 40 estimated as 30 seconds	Describe Turn: Lost balance/staggered	Cannot do test (explain): N/A	Type of footwear: Tennis shoes

Draw lines to spots touched

Slow movements

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	4.5	6.5	3.5
Right Eye	4.5	6.5	3.5

Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM / LEFT ARM

No visible marks

Blood pressure: 110/76	Temperature: 98.0		
Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid			
Comments:			
What drugs or medications have you been using? "None, just my pill"	How much? No answer	Time of use? N/A	Where were the drugs used? (Location) No answer
Date / Time of arrest: 03/17/07 0010	Time DRE was notified: 0025	Evaluation start time: 0045	Evaluation completion time: 0125
Officer's Signature:	DRE #: 5598	Reviewed/approved by / date:	Precinct/Station: Olympia District

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Charles, Mary C.

1. **LOCATION:** The evaluation was conducted at the WSP Office in Olympia.

2. **WITNESSES:** The evaluation was recorded and witnessed by the arresting officer, Trooper Harlan Jackson of the Washington State Patrol.

3. **BREATH ALCOHOL TEST:** Charles' breath test was a 0.09%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Trooper Jackson contacted the writer at the Olympia Patrol Office requesting a drug evaluation on suspect Charles. Trooper Jackson advised the suspect had been reported by several motorists as a possible impaired driver. He located the suspect traveling SB on I-5 near MP 108. The suspect was unable to maintain a single lane of travel and had traffic backed up behind her. When contacted, the suspect had slow, sluggish reactions and slurred speech. She performed poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room with Trooper Jackson. She was swaying as she stood and was very unstable on her feet. She repeatedly blinked her eyes and her speech was slow, thick and slurred.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect had an approximate 2" circular sway and estimated 30 seconds in 40 seconds. Walk & Turn: Suspect lost her balance during the instructions, missed heel to toe twice, stepped off the line and used her arms for balance. One Leg Stand: Suspect swayed while balancing, used her arms for balance and put her foot down once while standing on her left foot and twice while standing on right foot. Finger to Nose: Suspect missed the tip of her nose on three of the six attempts.
8. **CLINICAL INDICATORS:** The suspect exhibited six clues of HGN and a Lack of Convergence.

9. **SIGNS OF INGESTION:** The suspect had an odor of an alcoholic beverage on her breath.

10. **SUSPECT'S STATEMENTS:** Suspect admitted drinking a "couple of beers" earlier in the evening. She denied using any drugs other than her birth control pills.

11. **DRE'S OPINION:** In my opinion Charles is under the influence of _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Dave Anderson, NLETC	DRE # 1957	Rolling Log # 07-102	**Session XV - #4**
Recorder/Witness: Darrell Fisher, Nebraska State Patrol	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-3313
Arrestee's Name (Last, First, Middle): Dodge, Fred D.	Date of Birth: 10/13/75	Sex: M	Race: W
Arresting Officer (Name, ID#): Sgt. Dale Hilderbrand, Grand Island P.D. #228			
Date Examined / Time /Location: 02/22/07, 2215 Grand Island P.D.	Breath Results: Results: 0.00 Test Refused ☐ Instrument #: 43121		Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Sgt. Hilderbrand	☒ Yes ☐ No	What have you eaten today? When? 2 tacos 2 hrs. ago	What have you been drinking? How much? Nothing	Time of last drink? N/A
Time now/ Actual: 11:00 pm / 2220	When did you last sleep? How long: Yesterday 4-5 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Carefree, cooperative	Coordination: Poor, jittery, stumbling		
Speech: Rapid	Breath Odor: Normal	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

1. 100 / 2225
2. 104 / 2235
3. 100 / 2250

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence (Right eye, Left eye)

38 ONE LEG STAND 35

15

L R L R

L R
☒ ☒ Sways while balancing (2/2)
☐ ☐ Uses arms to balance
☐ ☐ Hopping
☐ ☒ Puts foot down (0/1)

Romberg Balance

0" 0" 2" 2"

Walk and Turn test

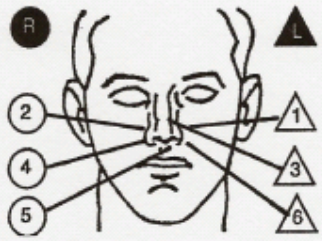
5

Walked rapidly

	1st Nine	2nd Nine
Cannot keep balance	✓	
Starts too soon	✓✓	
Stops walking	✓	
Misses heel-toe		
Steps off line		
Raises arms	✓✓	✓✓
Actual steps taken	9	9

Internal clock: 22 estimated as 30 seconds	Describe Turn: As instructed	Cannot do test (explain): N/A	Type of footwear: Boots

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.0	8.5	5.0
Right Eye	6.0	8.5	5.0

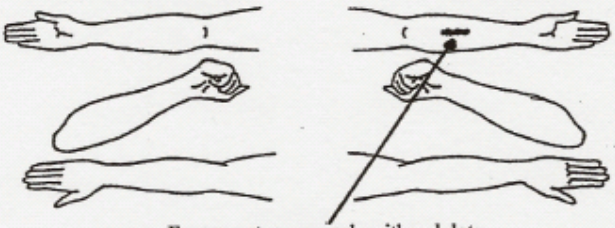
Nasal area: Redness

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM **LEFT ARM**



Four puncture wounds with red dots

Blood pressure: 142/96	Temperature: 99.5

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using? "I'm not answering that man"	How much? No answer	Time of use? No answer	Where were the drugs used? (Location) No answer

Date / Time of arrest: 02/22/07 2135	Time DRE was notified: 2200	Evaluation start time: 2215	Evaluation completion time: 2320	Precinct/Station:
Officer's Signature:	DRE # 1957	Reviewed/approved by / date:		

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Dodge, Fred D.

1. **LOCATION:** The evaluation was conducted at the Grand Island Police Department.

2. **WITNESSES:** The evaluation was recorded by the arresting officer, Sergeant Dale Hilderbrand of the Grand Island Police Department and witnessed by Lt. Colonel Darrell Fisher of the Nebraska State Patrol.

3. **BREATH ALCOHOL TEST:** Dodge's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Sgt. Hilderbrand contacted the writer and requested a drug evaluation on suspect Dodge. Writer contacted Sgt. Hilderbrand at the P.D. where it was determined the suspect had been involved in an attempted elude and was apprehended at E. Bismark Road and S. Oak. The suspect was very restless, animated and unable to stand still. He was also very talkative and his speech was rapid. He performed poorly on SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the P.D. His speech was rapid and loud. He seemed unconcerned about being under arrest. He had quick movements and was unable to stand still.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect had an approximate 2" side to side sway and estimated 30 seconds in 22 seconds. Walk & Turn: Suspect twice started the test too soon, lost his balance once during the instructions, stopped walking on his fifth step, raised his arms for balance and performed the test quickly. One Leg Stand: Suspect swayed while balancing and put his foot down once while standing on his right foot. Finger to Nose: Suspect missed the tip of his nose on all six attempts.

8. **CLINICAL INDICATORS:** The suspect's pulse and blood pressure were above the normal ranges. His pupils were dilated in two of the three lighting levels.

9. **SIGNS OF INGESTION:** The suspect had four fresh puncture marks on the inside of his left forearm.

10. **SUSPECT'S STATEMENTS:** Suspect denied any drug use.

11. **DRE'S OPINION:** In my opinion Dodge is under the influence of a _____and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Hans Lehman, Lakeland P.D.	DRE # 8837	Rolling Log # 07-018	**Session XV- #5**
Recorder/Witness: Amy Fox, Jupiter Police Department	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-001701
Arrestee's Name (Last, First, Middle): Edwards, Joan E.	Date of Birth: 1/16/84	Sex: F	Race: W
Arresting Officer (Name, ID#): Officer R. Floyd, Lakeland P.D. #290			
Date Examined / Time /Location: 06/04/07 2300 Lakeland P.D.	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 41478	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Ofc. Floyd	☒ Yes ☐ No	What have you eaten today? When? Nothing N/A	What have you been drinking? How much? Nothing	Time of last drink? N/A
Time now/ Actual: "Don't know"	When did you last sleep? How long: "I don't remember"	Are you sick or injured? ☒ Yes ☐ No Sick to stomach	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Disoriented, cooperative	Coordination: Poor, unsteady		
Speech: Rambling, slurred	Breath Odor: Normal	Face: Sweaty, dazed appearance		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

1. 100 / 2310
2. 108 / 2325
3. 104 / 2337

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence

Right eye Left eye

ONE LEG STAND

L R

☐ ☐ Sways while balancing

☒ ☒ Uses arms to balance (3/2)

☐ ☐ Hopping

☒ ☒ Puts foot down (3/3)

Test stopped

Romberg Balance

1" 1" 3" 3"

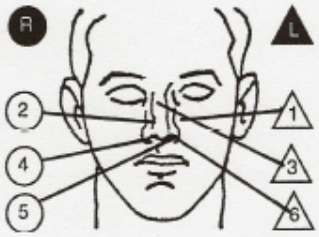
Walk and Turn test

Missed heal to toe on all steps

	1st Nine	2nd Nine
Cannot keep balance	✓✓	
Starts too soon		
Stops walking	✓✓	
Misses heel-toe	all steps	all steps
Steps off line	all steps	all steps
Raises arms	✓✓✓	✓✓✓
Actual steps taken	10	9

Internal clock: 90 estimated as 30 seconds	Describe Turn: Turned wrong direction	Cannot do test (explain): Kept stopping	Type of footwear: Flip-flops

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.5	9.0	6.5
Right Eye	6.5	9.0	6.5

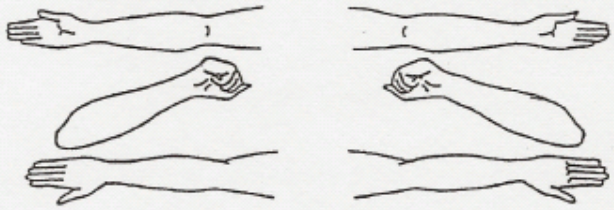
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM LEFT ARM



Nothing observed

Blood pressure: 148/110	Temperature: 100.0		
Muscle tone: ☐ Normal ☐ Flaccid ☒ Rigid	Comments: Very rigid arms		
What drugs or medications have you been using? "Nothing"	How much? No answer	Time of use? No answer	Where were the drugs used? (Location) No answer
Date / Time of arrest: 06/04/07 2235	Time DRE was notified: 2245	Evaluation start time: 2300	Evaluation completion time: 2355
Officer's Signature:	DRE # 8837	Reviewed/approved by / date:	Precinct/Station:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Edwards, Joan E.

1. **LOCATION:** The evaluation was conducted at the Lakeland Police Department.

2. **WITNESSES:** Officer Amy Fox of the Jupiter Police Department.

3. **BREATH ALCOHOL TEST:** Edwards' breath test was a 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was advised to contact Officer Floyd at Lakeland Police Department for a drug evaluation. It was determined that Officer Floyd had found the suspect standing on the hood of her vehicle in the intersection of S. Florida Ave and Alamo Drive. She was waving her arms and screaming at cars as they passed by. It was determined that she had driven her vehicle to the location. After failing the SFST's, the suspect was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room. She appeared dazed, disoriented and had difficultly standing.

6. **MEDICAL PROBLEMS AND TREATMENT:** Suspect stated she felt sick to her stomach and felt like "throwing-up."

7. **PSYCHOPHYSICAL TESTS:** The suspect performed very poorly on the psychophysical tests. Romberg Balance: Suspect had an approximate 3" side to side sway and estimated 30 seconds in 90 seconds. Walk & Turn: Suspect missed heel to toe on each step, stopped walking twice and made an improper turn. One Leg Stand: The suspect put her foot down three times on each foot and the test was stopped for safety reasons. Finger to Nose: Suspect missed the tip of her nose on all six attempts.

8. **CLINICAL INDICATORS:** The suspect's pulse, blood pressure and temperature were above the normal ranges. Her pupils were dilated in all three lighting levels.

9. **SIGNS OF INGESTION:** None were evident.

10. **SUSPECT'S STATEMENTS:** Suspect denied any medicine or drug use.

11. **DRE'S OPINION:** In my opinion Edwards is under the influence of a _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:** After completing the evaluation the suspect was transported to the local psychiatric ward for continued monitoring.

Rev. 3/08

SESSION XVI

DISSOCIATIVE ANESTHETICS

SESSION XVI DISSOCIATIVE ANESTHETICS

Upon successfully completing this session the student will be able to:

- Explain a brief history of Dissociative Anesthetics and specifically PCP and its analogs.
- Identify common drug names and terms associated with this drug category.
- Identify common methods of administration for this drug category.
- Explain the symptoms, observable signs and other effects associated with this drug category.
- Describe the typical time parameters, i.e. onset and duration of effects, associated with this drug category.
- List the clues that are likely to emerge when the drug influence evaluation is conducted for a person under the influence of this drug category.
- Correctly answer the "topics for study" questions at the end of this session.

A. Overview of the Category

Dissociative Anesthetics include drugs that inhibit pain by cutting off or dissociating the brain's perception of pain. The drugs within this category normally will induce a state of sedation, immobility, amnesia, and marked analgesia.

The term Dissociative Anesthesia is derived from the strong feeling of dissociation from the environment that is experienced by the user.

Phencyclidine (PCP) was the first drug used for this purpose, but the frequent occurrence of unpleasant hallucinations and psychological problems soon led to its discontinued legal use. Ketamine and Ketalar, two analogs of PCP, also are considered Dissociative Anesthetics.

Phencyclidine (PCP)

The formal chemical name for this drug is Phenyl Cyclohexyl Piperidine, from which the initials PCP are derived. "Phencyclidine" is simply a contracted form of the actual chemical name.

PCP, or Phencyclidine and its analogs are sometimes referred to as "psychedelic anesthetics" because of the bizarre and varying effects they can cause in the user. In some respects, PCP and its analogs can be similar to a CNS Depressant, and in some respects, they act like a CNS Stimulant. In other respects, they act like an hallucinogen, and they are frequently classed as an Hallucinogen in medical texts and scientific/research reports.

The drug PCP was first developed in the 1950's as an intravenous anesthetic. It was patented and marketed in 1963 under the trade name Sernyl. Within a few years, as evidence of PCP's very undesirable side effects accumulated, its use as an anesthetic for humans was discontinued in 1967. In 1968 it was re-patented as a veterinary anesthetic under the trade name Sernylan.

There are numerous slightly different drugs that are similar to PCP. These drugs are the analogs of PCP. In this case, an analog is a chemical that is similar to the drug in terms of molecular structure or psychoactive effects.

PCP is relatively easy to manufacture, using readily available chemicals. The formula for producing PCP has been widely publicized. However, although easy to make, it is also dangerous to make. A lack of caution in the production process could release the same deadly gas that is used for executions in gas chambers. Also, liquid PCP is especially dangerous because it can be absorbed through the skin.

PCP has numerous "street names". The chart below lists some of the more common "street names" for PCP.

WATER			
ACE	CRYSTAL	MONKEY DUST	ELEPHANT TRANQUILIZER
AMOEBA	KRYSTAL	GREEN	HORSE TRANQUILIZER
TRANK	CRYSTAL JOINT	GREEN LEAVES	ANIMAL TRANQUILIZER
JET FUEL	KJ (or CJ)	KOOLS	SUPER WEED
JUICE	EMBALMING FLUID	SUPER KOOLS	ZOMBIE WEED
DUST	TIC TAC	SHERMS	PEACE WEED
ANGEL DUST	PEACE	SUPER GRASS	MINT WEED
DEVIL DUST	PAZ	KILLER WEED LOVELY	
MAGIC DUST	PEACE PILL		

Methods of Ingestion

Many users ingest PCP by smoking. These drugs can be applied in either liquid or powder form to a variety of vegetable or leafy substances, such as mint leaves, parsley, oregano, tobacco or marijuana. The substances then can be smoked in a pipe or cigarette. PCP smoke is very hot and can irritate the mouth and tongue, so many smokers prefer to use mint leaves and similar material to cool the smoke. For the same reason, PCP smokers who adulterate commercial cigarettes prefer to use mentholated brands, such as "Kools" and "Shermans".

The powdered forms of PCP can also be snorted or taken orally. Liquid PCP and its analogs can be injected, or administered directly to the eyes, via an eyedropper. These drugs can also be ingested transdermally, i.e. through the skin.

Ketamine

A frequently abused analog of PCP is Ketamine. It is chemically related to PCP, and is used to produce rapid general anesthesia for medical procedures of short duration, or as an initial surgical anesthetic. It is available in liquid form for human use (Ketalar), and for veterinary use (Ketaved, Ketaset, Vetamine, and Vetalar). Liquid Ketamine may vary in color from clear to yellow. Ketamine in powdered form is normally a white, crystalline powder. It is commercially available as a veterinary anesthetic. It is a Schedule III controlled substance in the U.S.

Street names for Ketamine include “Vitamin K,” “Special K,”“Kitty,” “Super K,” “Kit Kat,” Jet,”“K,” “Lady K,” “Super acid,” and “Cat Valium.”

Methods of Ingestion

Many users ingest Ketamine by smoking. This drug can also be applied in either liquid or powder form to a variety of vegetable or leafy substances, similar to PCP.

The Ketamine then can be smoked in a pipe or cigarette. Ketamine smoke is also very hot and can irritate the mouth and tongue, so many smokers will try and cool the smoke.

The powdered form of Ketamine can also be snorted or taken orally. Liquid Ketamine can be injected, or administered directly to the eyes, via an eyedropper. Like PCP and other analogs, these drugs can be ingested transdermally.

Dextromethorphan (DXM)

Dextromethorphan, or DXM, is a synthetically produced substance that is chemically related to codeine, although it is not an opiate. DXM is an ingredient found in numerous over-the-counter cough and cold remedies. When ingested at recommended dosage levels, DXM generally is a safe and highly effective cough suppressant; however, when ingested in larger amounts, DXM produces negative physiological effects. Over-the-counter products that contain DXM often contain other ingredients such as acetaminophen, chlorpheniramine, and guaifenesin.

In some respects, DXM's effects can be similar to a CNS Depressant, CNS Stimulant, and Hallucinogens. It has been classified as a CNS Depressant in some medical texts and scientific/research reports.

Dextromethorphan is commonly known as "DXM," "Triple C (CCC)," "Robo," "Robo-tripping,""Skittles," "Robo-dosing," "Robo-fire," "Rojo," "Candy," "Velvet,"and "DM."

Methods of Ingestion

Most DXM abusers ingest the drug orally, although some snort the pure powdered form of the drug. Some abusers ingest 250 to 1,500 milligrams in a single dosage, far more than the recommended therapeutic doses of 10 to 20 milligrams every four hours or 30 milligrams every 6 to 8 hours

B. Possible Effects of Dissociative Anesthetics

Dissociative Anesthetics produce impairment and other observable effects on the human mind and body that are a combination of effects produced by CNS Depressants, CNS Stimulants and Hallucinogens.

PCP is classified as a Dissociative Anesthetic because it cuts off the brain's perceptions of the senses. PCP users often feel that their heads are physically separated from their bodies. They sometimes report feeling they are dead, and that their heads are floating away.

Among these drugs least desirable side effects are:

- Delirium
- Agitation, anxiety
- Rigid muscle tone
- Elevated blood pressure

- Convulsions
- Difficulty in speech
- Hallucinations
- Violent reactions

Some evidence of long term memory disorders and psychological disturbances resembling schizophrenia has also been linked to PCP.

The following are extreme, but not unique, examples:

- One young man methodically pulled out his own teeth, with a pair of pliers.

- A second suffered hallucinations of unbelievably grotesque monsters, and gouged out his own eyes to avoid seeing the monsters.

- Another drank rat poison, hoping to kill the rats that he imagined were infesting his body.

- A 26 year old nude woman in Washington, DC repeatedly plunged a butcher knife into her own eye, chest, groin and abdomen. She then threatened a police officer with the knife and was shot to death. (Washington Post, March 7, 1988)

<u>Dextromethorphan (DXM)</u>

Abusers of Dextromethorphan will also ingest various amounts of DXM depending on their body weight and the effect or plateau that they are attempting to achieve. The levels of DXM plateaus include:

- First Plateau: Mild inebriation.

- Second Plateau: An effect similar to alcohol intoxication and, occasionally, mild hallucinations. The abuser's speech can become slurred, and short-term memory may be temporarily impaired.

- Third Plateau: An altered state of consciousness. The abuser's senses, particularly vision, can become impaired.

- Fourth Plateau: Mind and body dissociation or an "out-of-body" experience. The abuser can lose some or all contact with his or her senses. The effects at this plateau are comparable to PCP and its analogs.

Other effects resulting from acute dosages of DXM (between 250 and 1,500 milligrams) include blurred vision, body itching, rash, sweating, fever, hypertension, shallow respiration, diarrhea, toxic psychosis, and an increased heart rate, blood pressure and body temperature.

C. Onset and Duration of Effects

PCP

When smoked or injected, PCP's effects generally are felt within 1-5 minutes. When snorted, the onset occurs in about 2-3 minutes. The effects reach their peak in about 15-30 minutes. If taken orally, PCP's effects are generally felt in 30-60 minutes. The effects generally last 4-6 hours, but they can last somewhat longer.

Ketamine

The onset of effects of Ketamine is within seconds if smoked, 1-5 minutes if injected, 5-10 minutes if snorted and 15-20 minutes if orally administered. Effects generally last 30-45 minutes if injected, 45-60 minutes if snorted, and 1-2 hours following oral ingestion. It is often re-administered due to its relatively short duration of action.

Dextromethorphan (DXM)

Dextromethorphan is rapidly absorbed from the gastrointestinal tract and peak plasma concentrations are reached in approximately 2.5 hours. It is widely distributed, and is rapidly and extensively metabolized by the liver. Dextromethorphan is demethylated to dextrophan, an active metabolite, and to 3-methoxymorphinan and 3-hydroxymorphinan. It exerts its antitussive effects within 15-30 minutes of oral administration. The duration of action is approximately 3-6 hours with conventional dosage forms.

D. Signs and Symptoms of Dissociative Anesthetic Overdose

In addition to the bizarre, violent, and self-destructive behavior discussed previously, persons severely intoxicated by PCP or DXM may exhibit definite and extreme symptoms signifying a medically dangerous condition. Some examples are:

- A deep coma, lasting for up to 12 hours.
- Seizures and convulsions.
- Respiratory depression.
- Possible cardiac problems. Lower doses of PCP may trigger a heart attack if the user had some pre-existing condition, predisposing them to possible cardiac problems.
- Eyes generally open with a blank stare.

There is also some evidence that prolonged use of PCP and DXM can lead to psychosis, which can be permanent.

E. Expected Results of the Evaluation

When a DRE concludes that a subject is impaired by a Dissociative Anesthetic, such as Phencyclidine or DXM, his or her report should state that "...the subject is under the influence of a Dissociative Anesthetic."

When a person under the influence of Dissociative Anesthetics is evaluated by a DRE, the following results can generally be expected:

Horizontal Gaze Nystagmus – present, with a very early angle of onset.

Vertical Gaze Nystagmus - present

Lack of Convergence - present

Pupil size - normal

Reaction to light - normal

Pulse rate - up

Blood pressure - up

Temperature - up. It is not uncommon for persons under the influence of PCP to remove most or all of their clothing in an effort to cool down.

Muscle tone - rigid

Injection sites usually won't be found, although some PCP users do inject the drug.

General Indicators:

- Blank stare
- Confused
- Chemical odor (of Ether, used in preparation of PCP)
- Cyclic behavior (With PCP)
- Difficulty with speech
- Disorientated
- Early HGN onset
- Hallucinations
- Incomplete verbal responses
- Increased pain threshold (PCP)
- Loss of memory
- "Moon Walking" (PCP)
- Non-communicative
- Perspiring (PCP)
- Possibly violent (PCP)

- Sensory distortions
- Slow, slurred speech

Not all laboratories that perform blood and urine analyses are capable of detecting all of the known analogs of PCP; in fact, some of the analogs can be detected by few if any laboratories. Thus, a DRE should not be surprised if a negative toxicological report comes back for a subject the DRE believed was impaired by Phencyclidine. It is possible that the subject had used an analog that the particular lab couldn't detect.

Topics for Study

1. What was the original purpose for which PCP was first patented and marketed?

2. Why do many PCP smokers prefer to adulterate mentholated cigarettes with PCP?

3. What is Ketamine?

4. What does the term "dissociative anesthetic" mean?

5. "Phencyclidine" is a contraction of what three words?

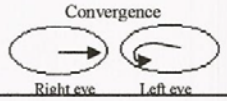
DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Gerry Britt, Yamouth P.D.	DRE #: 007480	Rolling Log #: 07-12-002	**Session XVI- #1**
Recorder/Witness: Dr. Jack Richman	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 388661
Arrestee's Name (Last, First, Middle): Ross, Robert H.	Date of Birth: 9/6/79	Sex: M	Race: W
Arresting Officer (Name, ID#): Sgt. Deb Batista, Middleboro P.D. #4485			
Date Examined / Time /Location: 09/18/07 2145 Middleboro P.D.	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 12838	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

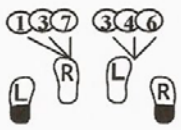
Miranda Warning Given: Given By: Sgt. Batista	☒ Yes ☐ No	What have you eaten today? When? Chicken 6 AM	What have you been drinking? How much? Nothing	Time of last drink? N/A
Time now/ Actual: 8 PM/10 PM	When did you last sleep? How long: Yesterday 6 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Passive, cooperative	Coordination: Poor, staggering		
Speech: Slurred, slow and low	Breath Odor: Chemical odor	Face: Flushed and sweaty		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☒ Yes ☐ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 100 / 2150	Lack of Smooth Pursuit	Yes	Yes
2. 102 / 2204	Maximum Deviation	Yes	Yes
3. 98 / 2217	Angle of Onset	Immediate	Immediate

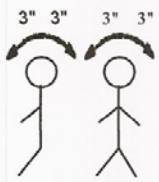
Convergence



ONE LEG STAND

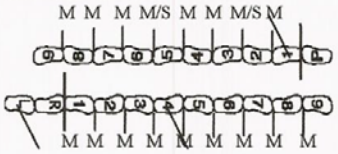


Romberg Balance



Circular sway

Walk and Turn test



Walked stiff legged

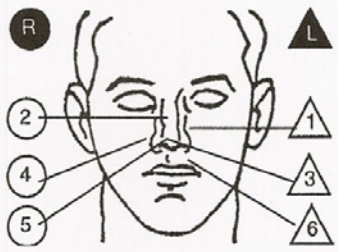
	1st Nine	2nd Nine
Cannot keep balance	X	
Starts too soon	X	
Stops walking	X	X
Misses heel-toe	All Steps	All Steps
Steps off line	X	X
Raises arms	XXX	XX
Actual steps taken	9	9

L R
☒ ☒ Sways while balancing (1/1)
☒ ☒ Uses arms to balance (1/1)
☐ ☐ Hopping
☒ ☒ Puts foot down (3/3)

Test stopped

Internal clock: 45 estimated as 30 seconds	Describe Turn: Spun around	Cannot do test (explain): N/A
		Type of footwear: Boots

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	4.0	6.0	3.5
Right Eye	4.0	6.0	3.5

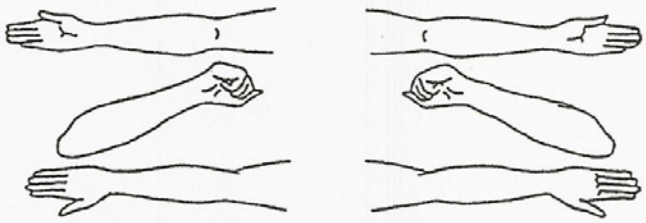
Nasal area: Clear

Oral cavity: Clear, chemical odor

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure	Temperature
146/100	99.8

Muscle tone: ☐ Normal ☐ Flaccid ☒ Rigid

Comments: Very rigid arms

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
Nothing	N/A	No answer	No answer

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
09/18/07 2100	2120	2145	2250	

Officer's Signature:	DRE #: 007480	Reviewed/approved by / date:

Opinion of Evaluator:
☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☒ Dissociative Anesthetic ☐ Inhalant
☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Ross, Robert H.

1. **LOCATION:** The evaluation was conducted at the Middleboro Police Department.

2. **WITNESSES:** Arresting officer; Sergeant Deb Batista of the Middleboro Police Department and Dr. Jack Richman of New England College of Optometry.

3. **BREATH ALCOHOL TEST:** Ross' breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and advised to contact Sergeant Batista at the Middleboro Police Department for a drug evaluation. Sergeant Batista advised that she had observed the suspect driving on N. Main Street at approximately 10 mph drifting within his lane and nearly hitting other vehicles. When stopped, the suspect appeared dazed and did not know where he was or where he was going. He had a blank stare and appeared very confused. He was arrested for DUI after performing poorly on the SFST's.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at M.P.D. He appeared dazed and disoriented, had a fixed stare and responded very slowly to questions. He was perspiring heavily and had rambling speech.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" in a circular motion and estimated 30 seconds in 45 seconds. Walk & Turn: Suspect started walking immediately and lost his balance during the instructions, stepped off the line twice, stopped walking twice, used his arms for balance and missed heel to toe on all steps. One Leg Stand: Suspect was unable to complete the test on either foot. Finger to Nose: Suspect missed the tip of his nose on four of the six attempts. His arm movements were very rigid.

8. **CLINICAL INDICATORS:** Suspect exhibited an immediate onset of HGN. Vertical Gaze Nystagmus and Lack of Convergence were also present. The suspect's pulse, blood pressure and temperature were above the normal ranges.

9. **SIGNS OF INGESTION:** There was a strong chemical odor on the suspect's breath.

10. **SUSPECT'S STATEMENTS:** The suspect stated that he did not use any drugs.

11. **DRE'S OPINION:** In my opinion Ross is under the influence of a Dissociative Anesthetic and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

DRUG INFLUENCE EVALUATION

Evaluator: Officer Steve Dunn, Anchorage P.D.	DRE #: 0011218	Rolling Log #: 07-5-33	**Session XVI- #2**
Recorder/Witness: Officer Chris Ritala, A.P.D.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-18430
Arrestee's Name (Last, First, Middle): Albright, Jeremy J.	Date of Birth: 4/10/86	Sex: M	Race: W
Arresting Officer (Name, ID#): Officer David Pollock, A.P.D. #1374			
Date Examined / Time /Location: 04/30/07, 1420 hrs. 4th Ave. Substation	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 75470	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Ofc. Pollock	☒ Yes ☐ No	What have you eaten today? When? Cheeseburger & fries 11AM	What have you been drinking? How much? Water N/A	Time of last drink? N/A
Time now/ Actual: "1:30PM" (1427)	When did you last sleep? How long: "Night before last" 1-2 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Cooperative	Coordination: Slow and deliberate		
Speech: Slurred	Breath Odor: Normal	Face: Flushed		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☒ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☒ Yes ☐ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 110 / 1430	Lack of Smooth Pursuit	Yes	Yes
2. 112 / 1446	Maximum Deviation	Yes	Yes
3. 110 / 1501	Angle of Onset	Immediate	Immediate

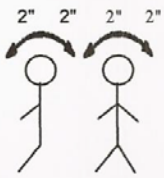
Convergence — Right eye / Left eye

34 ONE LEG STAND 36

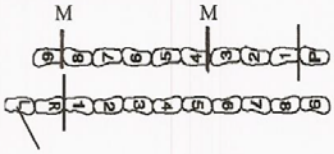
L R
☒ ☒ Sways while balancing (1/1)
☒ ☒ Uses arms to balance (1/1)
☐ ☐ Hopping
☐ ☐ Puts foot down

Leg tremors

Romberg Balance



Walk and Turn test



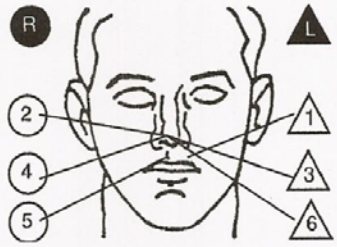
Walked slowly

Cannot keep balance: X
Starts too soon:

	1st Nine	2nd Nine
Stops walking		
Misses heel-toe		XX
Steps off line		
Raises arms		
Actual steps taken	9	9

Internal clock	Describe Turn	Cannot do test (explain)	Type of footwear:
28 estimated as 30 seconds	Shuffled feet	N/A	Tennis shoes

Draw lines to spots touched



Used the first pad of each finger

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	5.0	8.0	4.0
Right Eye	5.0	8.0	4.0

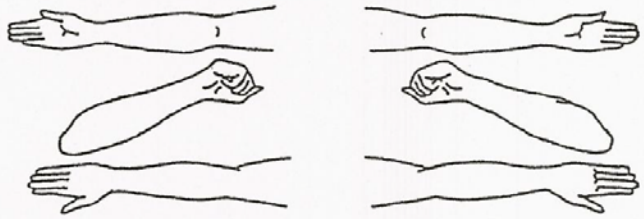
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure	Temperature
152/102	99.7

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
Coricidin	24 pills	Last night	Friend's house

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
04/30/07 1300 hrs	1350	1420	1515	

Officer's Signature: DRE # 0011218 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☒ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Albright, Jeremy J.

1. **LOCATION:** The evaluation was conducted at the 4th Avenue substation of the Anchorage Police Department.

2. **WITNESSES:** Officer Chris Ritala of A.P.D. witnessed the evaluation.

3. **BREATH ALCOHOL TEST:** Albright's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and requested to contact Officer Pollock regarding a drug evaluation. Officer Pollock advised he had stopped the suspect for speeding on Minnesota Ave. The suspect had bloodshot eyes and slurred speech. He appeared impaired, however, there was no odor of alcoholic beverage on his breath. He had six clues of HGN and performed poorly on the SFST's. He admitted taking some "Dex" the night before.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the substation. His face was flushed and his speech slurred. His movements were slow and deliberate. He seemed disoriented and confused.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 2" side to side and approximately 2" front to back. Walk & Turn: Suspect lost his balance during the instructions, turned by shuffling his feet and missed heel to toe twice on the second nine steps. One Leg Stand: Suspect had leg tremors, swayed while balancing and used his arms for balance. Finger to Nose: Suspect missed the tip of his nose on four of the six attempts. He used the pad of his finger on each attempt.

8. **CLINICAL INDICATORS:** HGN was present with an immediate onset. Vertical Gaze Nystagmus and Lack of Convergence were also present. His pulse, blood pressure and temperature were above the normal ranges.

9. **SIGNS OF INGESTION:** None were evident.

10. **SUSPECT'S STATEMENTS:** Suspect admitted taking about 24 Coricidin pills.

11. **DRE'S OPINION:** In my opinion Albright is under the influence of a Dissociative Anesthetic and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:** The suspect stated he had been transported to the hospital several months ago when he overdosed by taking 32 Coricidin pills.

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Officer Jim Pullen, Westminster P.D.	DRE # 010766	Rolling Log # 07-56	**Session XVI- #3**
Recorder/Witness: Officer Jeff Schuster, W.P.D.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 55170-04
Arrestee's Name (Last, First, Middle): George, Debra A.	Date of Birth: 8/24/84	Sex: F	Race: W
Arresting Officer (Name, ID#): Jeff Schuster, WPD #10765			
Date Examined / Time /Location: 5/02/07 2315 Westminster PD	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 74080	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

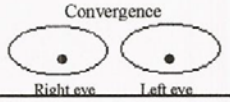
Miranda Warning Given: Given By: Ofc. Schuster	☒ Yes ☐ No	What have you eaten today? When? Pizza 6 PM	What have you been drinking? How much? Nothing N/A	Time of last drink? N/A
Time now/ Actual: 11 PM/11:15 PM	When did you last sleep? How long: Last night 6-7 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Passive, non-responsive	Coordination: Poor, slow, staggering		
Speech: Slow, confused, thick	Breath Odor: Normal	Face: Sweaty, flushed		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☒ Yes ☐ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

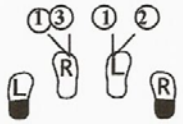
1. 106 / 2325
2. 104 / 2336
3. 104 / 2345

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	Yes	Yes
Angle of Onset	Immediate	Immediate

Convergence



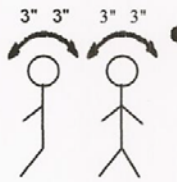
ONE LEG STAND



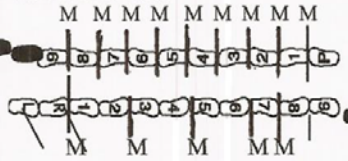
L R
☒ ☒ Sways while balancing (1/1)
☒ ☒ Uses arms to balance (1/1)
☐ ☐ Hopping
☒ ☒ Puts foot down (2/2)

Test stopped for safety reasons

Romberg Balance



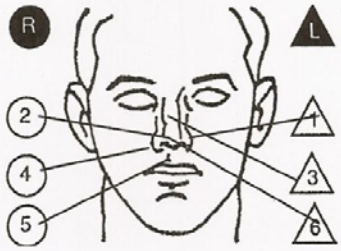
Walk and Turn test



	1st Nine	2nd Nine
Cannot keep balance	XX	
Starts too soon		
Stops walking		
Misses heel-toe	XXXXX	all steps
Steps off line		
Raises arms	constant	constant
Actual steps taken	10	12

Internal clock: 42 estimated as 30 seconds	Describe Turn: Stopped, then made slow turn	Cannot do test (explain): N/A	Type of footwear: Sandals

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	4.0	6.5	3.5
Right Eye	4.0	6.5	3.5

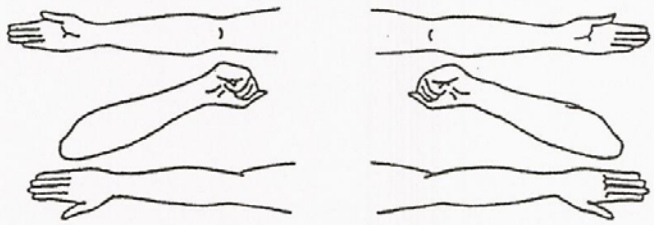
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure: 158/104	Temperature: 100.4		
Muscle tone: ☐ Normal ☐ Flaccid ☒ Rigid	Comments:		
What drugs or medications have you been using? No response	How much? N/A	Time of use? No response	Where were the drugs used? (Location) No response
Date / Time of arrest: 5/2/07 2250	Time DRE was notified: 2300	Evaluation start time: 2315	Evaluation completion time: 2358	Precinct/Station:
Officer's Signature:	DRE # 010766	Reviewed/approved by / date:		

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☒ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** George, Debra A.

1. **LOCATION:** The evaluation was conducted at the Westminster Police Department.

2. **WITNESSES:** Arresting officer; Jeff Schuster of W.P.D. witnessed the evaluation.

3. **BREATH ALCOHOL TEST:** George's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and requested to contact Officer Schuster at W.P.D. for a drug evaluation. Officer Schuster stated he had stopped the suspect after observing her nearly hit several parked cars. Her speech was slow and slurred. She was very confused and not sure of her surroundings. Her coordination was very poor and she nearly fell attempting the SFST's.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the Processing Room at W.P.D. She appeared dazed and disoriented. She had a fixed stare and was responding slowly to Officer Schuster's questions. She was unstable on her feet and several times used the wall to steady herself. Her movements were slow and deliberate.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" in a circular motion and estimated 30 seconds in 42 seconds. Walk & Turn: Suspect missed heel to toe numerous times and nearly fell twice. She repeatedly used her arms for balance and took a wrong number of steps. One Leg Stand: Suspect lost her balance using the wall to steady herself and the test had to be stopped. Finger to Nose: Suspect missed the tip of her nose on five of the six attempts.

8. **CLINICAL INDICATORS:** Suspect had six clues of Nystagmus with an immediate onset. Vertical Gaze Nystagmus was also present. She was unable to convergence her eyes and looked straight ahead. Her pulse, blood pressure and temperature were above the normal ranges.

9. **SIGNS OF INGESTION:** None were evident.

10. **SUSPECT'S STATEMENTS:** The suspect did not respond when questioned about drug. However, she did make several "K-Hole" references.

11. **DRE'S OPINION:** In my opinion George is under the influence of a Dissociative Anesthetic and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

SESSION XVII

NARCOTIC ANALGESICS

SESSION XVII NARCOTIC ANALGESICS

Upon successfully completing this session the student will be able to:

- Explain a brief history of the Narcotic Analgesic category of drugs.
- Identify common drug names and terms associated with the category.
- Identify common methods of administration for this category.
- Describe the symptoms, observable signs and other effects associated with this category.
- Describe the typical time parameters, i.e. onset and duration of effects, associated with this category.
- List the clues that are likely to emerge when the drug influence evaluation is conducted for a person under the influence of this drug category.
- Describe the procedures for examining and determining the ages of injection sites.
- Correctly answer the "topics for study" questions at the end of the session.

A. Overview of Narcotic Analgesics

There are two subcategories of Narcotic Analgesics. The first subcategory consists of the Opiates. The second subcategory is the Synthetics.

The Opiates are drugs that either contain or are derived from opium. There are two basic types of opiates, alkaloids and derivatives. An "alkaloid" is a substance that is found in another substance, and can be isolated from it. For example, Morphine, Codeine and Thebaine are all found in opium and are natural alkaloids. Opium Derivatives are produced by chemically treating the natural alkaloid. Heroin is probably the most famous Opium Derivative, but there are a number of other important drugs that are produced in this manner. The source for both the Natural Alkaloids and the Opium Derivatives is a particular species of poppy plant, called the "opium poppy", or papaver somniferum (Latin for "the poppy that brings sleep"). Opium is the sap from the seed pods of that plant.

The second subcategory of Narcotic Analgesics has nothing to do with the opium poppy. This subcategory consists of the Synthetics, which are produced artificially from a variety of non-opiate substances. One of the best known of these is Methadone, a drug used as a substitute for Heroin in drug treatment programs. The synthetics do not derive from opium at all, but have similar or identical effects.

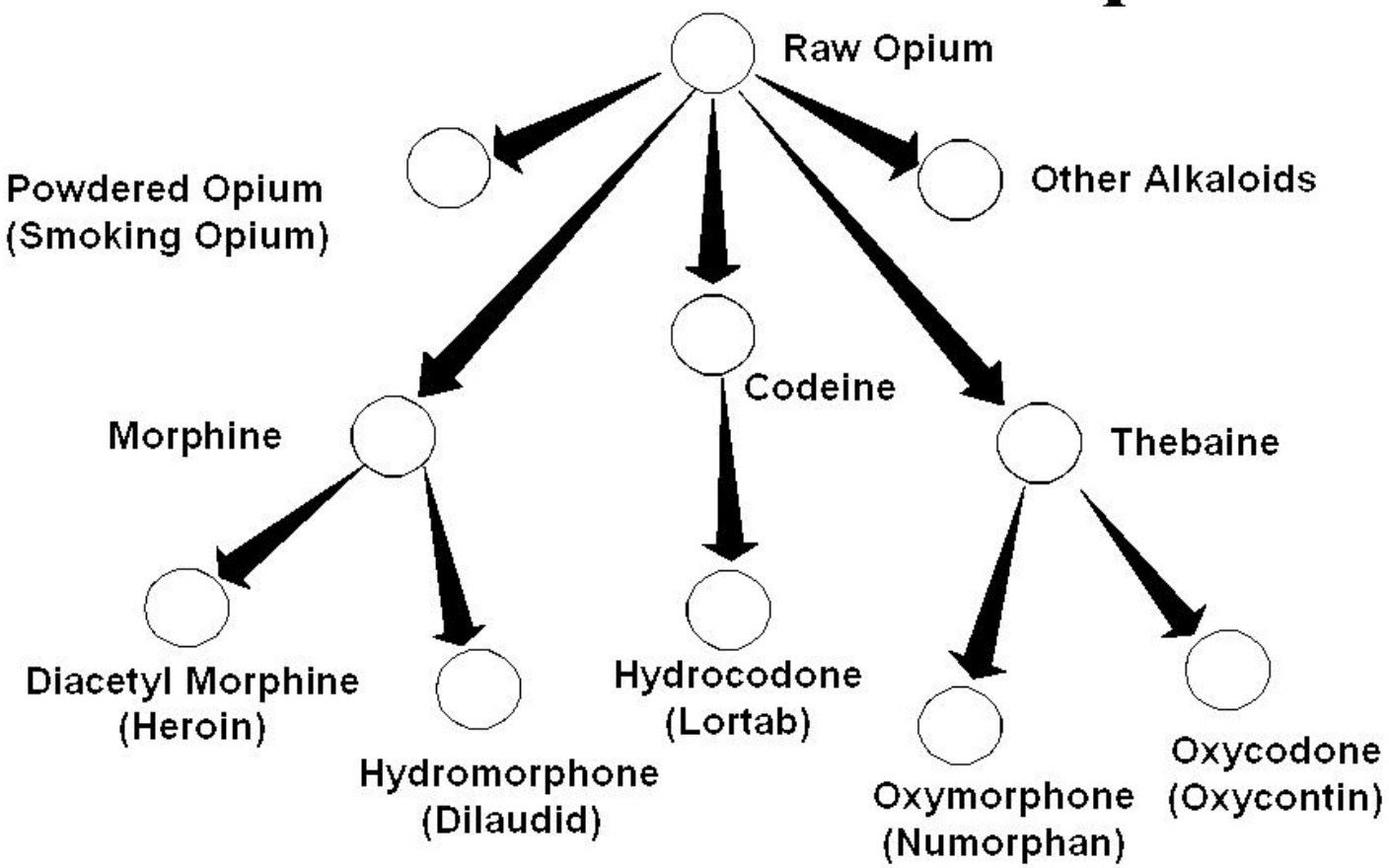
All Narcotic Analgesics share three distinguishing characteristics:

- they will relieve pain (this is what "analgesic" means);
- they will produce withdrawal signs and symptoms, when the drug is stopped after chronic administration;
- their use will suppress the signs and symptoms of chronic morphine withdrawal. (This means that the various Narcotic Analgesics can be substituted for each other to relieve withdrawal symptoms.)

1. The chart on the next page lists the names of some natural alkaloids and Opium Derivatives and shows their derivation from opium.

   Powdered opium, also known as "smoking opium", is not really a derivative, but rather is a simple refinement of raw opium. (In much the same sense, "refined sugar" is still sugar.) Powdered opium is used medically to treat diarrhea. As a medicine, it is taken orally. As a drug of abuse, it is smoked. It remains popular as a drug of abuse among some Asian American communities.

Commonly-abused Opiates and Their Derivation From Opium



Morphine is the principal natural alkaloid of opium. It was first isolated from opium in 1805. Morphine is used medically to suppress severe pain, for example, with terminal cancer patients. It is highly addictive.

Codeine is another natural alkaloid of opium, separate from morphine. Codeine was first isolated in 1832. It is used medically to suppress coughing or minor pain. Although codeine is an analgesic, its pain killing ability is much weaker than morphine's. Codeine definitely is addictive. NOTE: The technical name for Codeine is Methylmorphine.

Heroin is an Opium Derivative that is produced by chemically treating Morphine. Heroin is the most commonly abused illicit Narcotic Analgesic. Heroin was first produced in 1874, in the hope that it would prove to be a

non-addictive substitute for Morphine. Heroin was approved for general use by the American Medical Association in 1906. However, its importation and manufacture have been illegal in this country since 1925. NOTE: The technical, or generic, name for heroin is Diacetyl Morphine.

Dilaudid is another Opium Derivative that also is produced from Morphine. Dilaudid sometimes is called "drug store heroin", because it is commercially available. It is used medically for short term relief of moderate to severe pain, and to suppress severe, persistent coughs. Dilaudid has the same addictive liabilities as does heroin or morphine. NOTE: The technical, or generic, name for Dilaudid is Hydromorphone Hydrochloride.

Hydrocodone is derived from Codeine but is more closely related to Morphine in its pharmacological profile. It is most frequently prescribed in combination with acetaminophen (i.e. Vicodin, Lortab) but is also marketed in products with aspirin (Lortab ASA), ibuprofen (Vicoprofen) and antihistamines (Hycomine). Hydrocodone products are the most frequently prescribed pharmaceutical opiates in the United States with over 111 million prescriptions dispensed in 2003. Hycodan is another trade name of Hydrocodone.

Numorphan is a powerful semi-synthetic analgesic with the same addictive properties as morphine. It is used medically for relief of chronic pain. It is sold in ampules (injection) and in suppositories. NOTE: The technical, or generic, name for Numorphan is Oxymorphone.

Oxycodone is a semi-synthetic narcotic produced by chemically treating Thebaine and prescribed for chronic or long-lasting pain. Oxycodone is the active ingredient of OxyContin and is also the main ingredient for Percodan and Tylox. OxyContin contains between 10 and 160 milligrams of Oxycodone in a timed release tablet. Other pain killers, such as Tylox contain 5 milligrams of Oxycodone. OxyContin has quickly become one of the major drugs of abuse. It is referred to as “Oxy”, “OC” and “killer” on the street. Abusers of the drug either crush the tablet for ingestion, snorting it or dilute it in water and inject it. Crushing or diluting the tablet disarms the timed-release action and causes a quick, powerful high. It is somewhat less addictive than morphine, but more addictive than codeine.

2. Some common synthetic opiates include the following.

Demerol is one of the most widely used synthetic opiates for relief of pain and for sedation. It was first produced in 1939. The technical name for Demerol is Meperidine.

Methadone was developed in Germany during World War II. Methadone's effects are similar to morphine's, although Methadone's effects develop more slowly and last longer. Methadone was developed because of war-time shortages in Germany of morphine. The primary advantage of Methadone is that it cannot be injected, and it has a much longer duration of effects than heroin. Also, Methadone's withdrawal symptoms are slower and milder than are morphine's. It is for these reasons that Methadone is used extensively in "maintenance programs" as a substitute for heroin for addicts undergoing treatment. The technical name is Dolophine.

The Fentanyls include several hundred "designer drug" analogs of morphine. "Sublimaze" is a brand name for Fentanyl. It is a Schedule II drug. It is frequently found in overdose situations. For example, "Tango and Cash" and "Goodfellas," which contained Fentanyl, were sold in New York City in 1990 as Heroin. Many fatal overdoses occurred as a result. Fentanyls were first developed in 1965. The principal abused Fentanyl is "three-methyl Fentanyl". This analog is very powerful, and can be fatal in very small amounts.

MPPP is an illegally manufactured analog of Demerol. MPPP is powerfully addictive, and thus is very dangerous in its own right. What makes it even more dangerous is the fact that the "home chemists" who produce it often make a mistake that causes the MPPP to become contaminated with a substance called MPTP, a chemical that produces a paralysis similar to Parkinson's Disease.

Darvon is a synthetic opiate used to relieve mild to moderate pain. Technical name is Propoxyphene. It is fairly commonly prescribed and has been recently linked to numerous overdoses. Another commonly used drug that contain Propoxyphene is Darvocet.

3. Methods of administration vary from one Narcotic Analgesic to another. Methods of ingestion include: oral, smoking, injection, snorted, suppositories and transdermally. An example is heroin which can be injected, snorted or smoked.

B. Possible Effects of Narcotic Analgesics

However, the effects that a Narcotic Analgesic user will experience and exhibit depend on the tolerance that the user has developed for the drug. As a person develops tolerance for a drug, that person will experience diminishing effects if they continue to take the same dose of the drug. Conversely, if the person wishes to continue to experience the same effects, he or she will have to take steadily larger doses as tolerance develops.

People develop tolerance to Narcotic Analgesics fairly rapidly. A Narcotic Analgesic user who has developed tolerance and who has taken his or her "normal" dose of the drug may exhibit little or no evidence of intellectual or physical impairment. For example, a heroin addict who has injected his or her usual dose may be able to operate a car properly and satisfactorily perform the Standardized Field Sobriety Tests.

The clinical and physical effects of Narcotic Analgesics usually are evident with new users, or with tolerant users who have taken more than their "normal" doses.

One of the most easily observable effects is a condition known as "on the nod." This is a semiconscious state of deep relaxation, brought about by the sedative action of the drug. When a user is "on the nod", their eyelids will become very droopy (ptosis), and the head will slump forward until the chin rests on the chest. But the user usually can be awakened easily and be sufficiently alert to respond to questions.

Other effects may include:

- slowed reflexes
- slow and raspy speech
- slow, deliberate movement
- inability to concentrate
- slow breathing
- skin cool to touch
- possible vomiting
- itching of the face, arms, or body

C. Onset and Duration of Effects of Narcotic Analgesics

Heroin users generally experience certain psychological effects immediately after injection. These include a feeling of pleasure or euphoria; relief from withdrawal symptoms; and, relief from pain. Physical effects, if they are evident at all, typically will become evident after 5-30 minutes. But remember, physical effects may not be evident if the user is tolerant and has taken a normal dose.

The physical effects usually will be observable for up to 4-6 hours with new users.

As the physical effects begin to disappear, withdrawal signs and symptoms start to emerge. These withdrawal signs can become very severe, if the user does not take another dose. However, it is important to keep in mind that when withdrawal signs are evident, the individual is no longer under the active influence of the drug.

As the effects of the Heroin diminish, withdrawal symptoms begin. The addicted user experiences chills, aches of the muscles and joints, nausea and insomnia.

Outward signs of withdrawal typically start to be observable within 8-12 hours. The subject sweats and has goose bumps on the skin. Reflexes become hyperactive. The subject yawns, may vomit, their nose runs and the eyes tear. At this point, the withdrawal signs and symptoms closely resemble those of the common cold or the flu. The withdrawal signs and symptoms intensify from 14-24 hours, and may be accompanied by goose bumps (piloerection), slight tremors, loss of appetite and dilation of the pupils.

Approximately 24-36 hours since the last "fix", the subject experiences insomnia, vomiting, diarrhea, weakness, depression and hot/cold flashes. Withdrawal signs and symptoms generally reach their peak after 2-3 days. At this point, the subject usually experiences muscular and abdominal cramps, elevated temperature and severe tremors and twitching. This twitching, especially of the legs, is referred to as the expression "kicking the habit". The subject is very nauseated at this time, may gag and vomit repeatedly, and may lose 10-15 pounds within 24 hours.

D. Signs And Symptoms of Narcotic Analgesic Overdose

Narcotic Analgesics depress respiration. The subject's breathing becomes slow and shallow, and death can occur from severe respiratory depression. The danger of death from an overdose of Narcotic Analgesic is heightened by the fact that the addicted user may not know the strength of the drug that he or she is taking. The subject's skin becomes clammy, and the subject may experience convulsions, and slip into a coma. The subject's lips may turn blue, and the body may become pale or blue. The subject may have extremely constricted pupils (unless there is brain damage in which pupils may be dilated).

E. Expected Results of the Evaluation

When a person under the influence of a Narcotic Analgesic is evaluated by a DRE, the following results can generally be expected:

Horizontal Gaze Nystagmus - none

Vertical Gaze Nystagmus - none

Lack of Convergence - none

Pupil size - constricted

Reaction to light - little to none visible

Pulse rate - down

Blood pressure - lowered

Temperature - down

Muscle tone - flaccid

Injection sites usually will be found, with heroin users. Injection sites may not be evident with users of other Narcotic Analgesics.

In general, the effects of Narcotic Analgesics include:

- constricted pupils
- depressed reflexes
- drowsiness
- droopy eyelids (ptosis)
- dry mouth
- euphoria
- facial itching
- nausea
- "on the nod"
- puncture marks
- slowed reflexes
- slow, low, raspy speech
- slowed breathing

F. Injection Site Examination

Examination of injection sites can reveal many clues about a subject's drug habit. The sites can reveal if the subject injects their drugs and if the use was current or in the recent past.

Drugs enter the body through three major tissues of the body - intramuscular, just under the skin (subcutaneous) or through a vein.

The primary instrument used to inject drugs is a hypodermic syringe. The syringe consists of a hollow needle, tube and a plunger. The inside diameter of the needle or gauge vary in size. The larger the gauge, the smaller the needle.

The subject's equipment is commonly referred to as a "hype kit" or "works". The kit consists of a cooker, handle, matches or lighter, a tourniquet and "cottons."

As a DRE, you will be asked in court to describe the difference between legal and illegal injection marks. A legal injection utilizes the muscle, usually is only one mark, and sterile needles are used. An illegal injection utilizes veins, will usually be

multiple marks in various stages of healing and since the same needle is usually used over and over again, the mark will have a barbed or jagged appearance.

A user will frequently use the same spot to inject the drugs to reduce the likelihood of detection. This technique is sometimes referred to as "trap dooring."

There is not exact science to classify the age of puncture sites. However, there are some general puncture site classifications:

Classifications:

Fresh - A fresh puncture site is defined as 0 - 12 hours and will be a red dot and have a oozing appearance or blood crater with no scab formation.

Early - An early puncture site is approximately 12 - 96 hours (half day to 4 days) and will have a light scab, light bruise, reddened border and a crater appearance.

Late - A late puncture site is 5 - 14 days and will have a dark scab, dark bruise and the crater will flatten.

Healing - A healing puncture site is over 14 days old and the scab will be flaking and falling off with shriveled, light colored skin.

G. Expected Location of Injection Marks

Injection sites can be located anywhere on the subject's body. The arms are the most frequently used place. The subject may use the ankles, neck, feet or any place where a vein is accessible.

It is necessary to conduct a thorough slow methodical examination of the subject's arms. Using a magnifying light called a schematic light or "ski light," examine the left inner arm as it is extended with the palm facing you. Then ask the subject to contract the arm by grasping their shoulder (this forces the veins to protrude). Beginning at the wrist, examine the arm to the elbow. Examine the outer arm as it is extended palm facing down. Start the exam at the shoulder and move to the wrist. Ask the subject to extend his or her fingers to examine the fingers. Pay particular attention to the areas between the fingers, under watches and rings. Repeat the examination for the right arm.

Ankles are the next most common injection site, especially the back. Extreme caution should be used when examining the shoes and socks for evidence because syringes and needles are commonly hidden there.

H. Conclusion

The examination may reveal evidence of recent use, however, just the presence of injection sites doesn't mean the person is under the influence or impaired.

DRE's may elect to photograph new or recent injection marks for evidential purposes.

Conducting a thorough examination is a skill and requires practice to become proficient.

Topics for Study

1. What are the two subcategories of Narcotic Analgesics?

2. What three distinguishing characteristics do all Narcotic Analgesics share?

3. Consider this situation:

   A heroin addicted user injects what is, for him, a "normal" dose of the drug. One hour later a DRE examines the addicted user and finds that he is not impaired.

   What is the most likely explanation for this?

4. What is another, more common, name for the drug call Diacetyl Morphine?

5. What is Methadone?

6. An analgesic is a drug that _____?

7. What is MPPP?

8. What is Oxycodone?

DRUG INFLUENCE EVALUATION

Evaluator: Karl Nieberlein, Sparks Police Department	DRE #: 6176	Rolling Log #: 07-08-014	**Session XVII-#1**
Recorder/Witness: Sgt. Mac Venzon, Reno PD	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-44575
Arrestee's Name (Last, First, Middle): Vaughn, Gerald T.	Date of Birth: 5/14/80	Sex: M	Race: B
Arresting Officer (Name, ID#): Officer Rich Gamwell, Sparks PD #1844			
Date Examined / Time /Location: 08/24/07 1805 Washoe County Jail	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 15344	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Ofc. Gamwell	☒ Yes ☐ No	What have you eaten today? When? Nothing N/A	What have you been drinking? How much? Dr. Pepper N/A	Time of last drink? N/A
Time now/ Actual: 7:00 PM/1810	When did you last sleep? How long: Last night 4 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☒ Yes ☐ No "Methadone"	Attitude: Cooperative, passive	Coordination: Relaxed, slow, unstable		
Speech: Low, raspy	Breath Odor: Normal	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy	

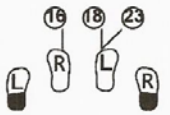
Pulse and time

1. 56 / 1817
2. 58 / 1825
3. 58 / 1832

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

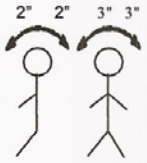
Convergence

24/30 ONE LEG STAND 21/30

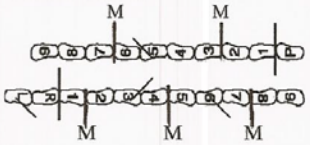


L R
☒ ☒ Sways while balancing (2/2)
☒ ☒ Uses arms to balance (1/1)
☐ ☐ Hopping
☒ ☒ Puts foot down (1/2)

Romberg Balance



Walk and Turn test



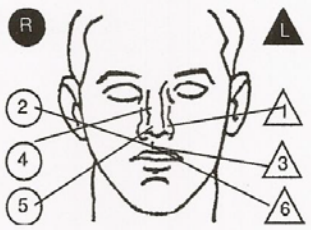
Slow, deliberate steps

Cannot keep balance: X
Starts too soon:

	1st Nine	2nd Nine
Stops walking		
Misses heel-toe	XXX	XX
Steps off line	XX	X
Raises arms	XX	X
Actual steps taken	9	9

Internal clock: 44 estimated as 30 seconds	Describe Turn: Slow, deliberate	Cannot do test (explain): N/A	Type of footwear: Lace-up boots

Draw lines to spots touched



Slow movements

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	2.0	2.0	2.0
Right Eye	2.0	2.0	2.0

Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

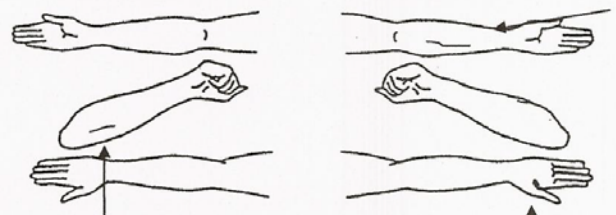
REACTION TO LIGHT: None

Blood pressure: 110/64	Temperature: 98.0

Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid

Comments:

RIGHT ARM **LEFT ARM** Scar tissue



Scar tissue

Red, oozing puncture mark

What drugs or medications have you been using? "Just methadone, man"	How much? "The normal"	Time of use? 3PM	Where were the drugs used? (Location) "The clinic"

Date / Time of arrest: 8/24/07 1720	Time DRE was notified: 1745	Evaluation start time: 1805	Evaluation completion time: 1900	Precinct/Station:
Officer's Signature:	DRE #: 6176	Reviewed/approved by / date:		

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant
☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☒ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Vaughn, Gerald T.

1. **LOCATION:** The evaluation was conducted at the Washoe County Jail.

2. **WITNESSES:** Sergeant Mac Venzon of the Reno P.D witnessed the evaluation.

3. **BREATH ALCOHOL TEST:** Vaughn's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and requested to contact Officer Gamwell at the Washoe County Jail for a drug evaluation. Officer Gamwell advised the suspect was operating a vehicle reported stolen earlier in the day by Reno PD. After stopping the suspect, Officer Gamwell noted that suspect's speech was slow, slurred and raspy. His coordination was poor and he was licking his lips repeatedly. His pupils were constricted and he performed poorly on the SFST's.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the Washoe County Jail. He appeared to be asleep. His eyes were closed, his head kept nodding forward and his breathing was slow. The suspect responded to questions and became more alert as time passed. His voice was raspy and his pupils appeared constricted. He was licking his lips and his movements were slow and deliberate.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 2" front to back and 3" side to side. He estimated 30 seconds in 44 seconds. Walk and Turn: Suspect lost his balance during the instructions, missed heel to toe three times on the first nine steps and twice on the return. He also stepped off the line three times and used his arms for balance. One Leg Stand: Suspect counted slowly, swayed and used his arms for balance. He put his foot down once while standing on the left foot and twice when standing on the right foot. Finger to Nose: Suspect missed the tip of his nose with five of the six attempts.

8. **CLINICAL INDICATORS:** Suspect's pulse and blood pressure were below the normal range. His pupils were constricted with no visible reaction to light. His eyelids were droopy.

9. **SIGNS OF INGESTION:** Subject had scar tissue on both his left and right forearms and a fresh oozing puncture wound on the back his left hand. (Photographed).

10. **SUSPECT'S STATEMENTS:** Suspect admitted using Methadone earlier in the day.

11. **DRE'S OPINION:** In my opinion Vaughn is under the influence of a Narcotic Analgesic and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Sr. Trooper Jim Pierce, Oregon State Police	DRE # 004600	Rolling Log # 07-017	**Session XVII- #2**
Recorder/Witness: Sgt. Jeff Niiya, Portland Police Bureau	Crash: ☐ None ☐ Fatal ☒ Injury ☐ Property		Case # 07-25250
Arrestee's Name (Last, First, Middle): Bursten, David L	Date of Birth: 4/20/80	Sex: M / Race: W	Arresting Officer (Name, ID#): Officer Darke Hull, Portland Police Bureau #12581
Date Examined / Time /Location: 6/01/07 8:40 PM Central Precinct	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 21250	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐

Miranda Warning Given: Given By: Ofc. Hull	☒ Yes ☐ No	What have you eaten today? Nothing	When? N/A	What have you been drinking? Nothing	How much? N/A	Time of last drink? N/A

Time now/ Actual: Don't know	When did you last sleep? How long: Last night "a few hours"	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No	
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Cooperative	Coordination: Poor, sluggish, stumbling	
Speech: Slow and deliberate	Breath Odor: Normal	Face: Normal	
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy

Pulse and time

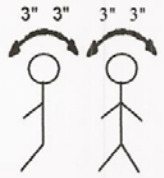
1.	58	8:50
2.	56	9:05
3.	54	9:20

HGN

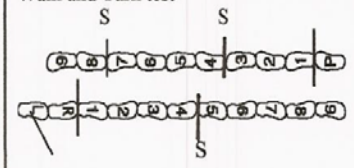
	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence — Right eye / Left eye

Romberg Balance



Walk and Turn test



Walked slowly

Cannot keep balance: X

Starts too soon:

	1st Nine	2nd Nine
Stops walking	X	XX
Misses heel-toe		
Steps off line		
Raises arms	XX	XXX
Actual steps taken	9	9

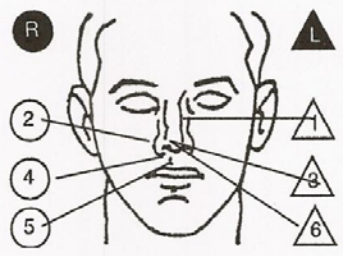
20 ONE LEG STAND 22

L R
☒ ☒ Sways while balancing (2/2)
☒ ☒ Uses arms to balance (1/2)
☐ ☐ Hopping (0/0)
☒ ☒ Puts foot down (2/1)

Counted slowly

Internal clock: 58 estimated as 30 seconds	Describe Turn: Lost balance, staggered to the left	Cannot do test (explain): N/A	Type of footwear: Loafers

Draw lines to spots touched



Slow movements

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	2.0	3.5	2.0
Right Eye	2.0	3.5	2.0

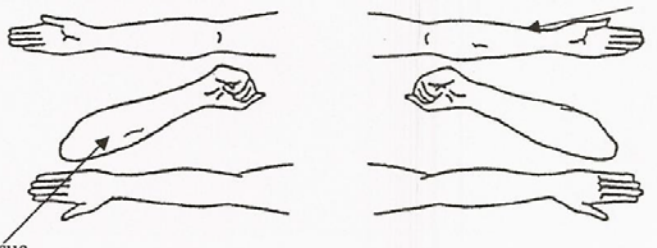
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: None visible

RIGHT ARM **LEFT ARM** 4 puncture wounds



Scar tissue

Blood pressure: 108/60	Temperature: 97.0

Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid

Comments: Arms and neck very relaxed

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
None	Refused	Refused	Refused

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
6/01/07 8:05 pm	8:20 pm	8:40 pm	9:50 pm	Central

Officer's Signature: | DRE # 004600 | Reviewed/approved by / date:

Opinion of Evaluator:

☐ Rule Out	☐ Alcohol	☐ CNS Stimulant	☐ Dissociative Anesthetic	☐ Inhalant
☐ Medical	☐ CNS Depressant	☐ Hallucinogen	☒ Narcotic Analgesic	☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Bursten, David L.

1. **LOCATION:** The evaluation was conducted at the PPB Central Traffic Precinct.

2. **WITNESSES:** Sgt Niiya of the Portland Police Bureau witnessed the evaluation.

3. **BREATH ALCOHOL TEST:** Bursten's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and advised to contact Sgt. Niiya and Officer Darke Hull for a drug evaluation. Officer Hull advised the suspect had failed to stop at a red light on N.E. Burnside and struck a pedestrian in the crosswalk. The pedestrian was transported to the hospital in serious condition. Officer Hull noted that the suspect had slow and deliberate movements and his speech was slow, slurred and raspy. He was unable to perform the SFST's as directed and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the Central Precinct. He was repeatedly scratching his face and neck. His head kept nodding forward and he appeared to be "on the nod." His voice was raspy, his pupils appeared to be constricted and his eyelids were droopy.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" in a circular motion and he estimated 30 seconds in 58 seconds. Walk & Turn: Suspect lost his balance during the instructions, stopped while walking once on the first nine steps and twice on the return. He walked very slowly and used his arms for balance. One Leg Stand: Suspect counted slowly, swayed, used his arms for balance and put his foot down. Finger to Nose: Suspect missed the tip of his nose on four of the six attempts.

8. **CLINICAL INDICATORS:** Suspect's pulse, blood pressure and temperature were below the normal ranges. His pupils were constricted in two of the three lighting levels.

9. **SIGNS OF INGESTION:** Suspect had scars on his right forearm and fresh puncture wounds on the inside of his left arm. The puncture wounds were photographed.

10. **SUSPECT'S STATEMENTS:** The suspect refused to answer questions about drug use.

11. **DRE'S OPINION:** In my opinion Bursten is under the influence of a Narcotic Analgesic and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator	DRE #	Rolling Log #	
Lt. Tim Tomczak, Raleigh P.D.	9139	07-033	**Session XVII - #3**

Recorder/Witness	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property	
Eddie Buffaloe, NC DRE State Coordinator		Case # 07-35125

Arrestee's Name (Last, First, Middle)	Date of Birth	Sex	Race	Arresting Officer (Name, ID#)
Sheehan, Thomas	5/16/76	M	W	Sgt. Brandon Craft, North Carolina H.P. #7745

Date Examined / Time /Location	Breath Results:	Test Refused ☐	Chemical Test: Urine ☒ Blood ☐
03/17/07 2210 Raleigh PD	Results: 0.00	Instrument #: 4200	Test or tests refused ☐

Miranda Warning Given	☒ Yes ☐ No	What have you eaten today? When?	What have you been drinking? How much?	Time of last drink?
Given By: Sgt. Craft		"Nothing" "Don't know"	"I don't drink"	N/A

Time now/ Actual	When did you last sleep? How long	Are you sick or injured?	Are you diabetic or epileptic?
8 PM/2215 hours	This morning 4 hrs.	☐ Yes ☒ No	☐ Yes ☒ No

Do you take insulin?	Do you have any physical defects?	Are you under the care of a doctor or dentist?
☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No

Are you taking any medication or drugs?	Attitude:	Coordination:
☐ Yes ☒ No "I don't take drugs"	Sarcastic	Slow, stumbling, staggering

Speech: Slow, raspy	Breath Odor: Normal	Face: Pale

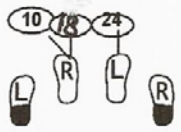
Corrective Lenses: ☐ None (removed glasses) ☒ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal

Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy very

Pulse and time	HGN	Left Eye	Right Eye
1. 60 / 2220	Lack of Smooth Pursuit	No	No
2. 58 / 2235	Maximum Deviation	No	No
3. 58 / 2258	Angle of Onset	None	None

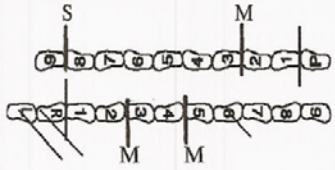
Convergence

24/30 ONE LEG STAND 25/30



Romberg Balance

Walk and Turn test



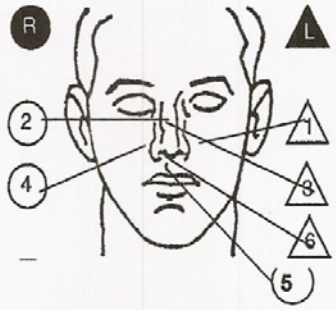
Stopped counting out loud on 3rd step

	1st Nine	2nd Nine
Cannot keep balance	XX	
Starts too soon		
Stops walking		X
Misses heel-toe	XX	X
Steps off line	X	
Raises arms	X	XXX
Actual steps taken	9	9

L	R	
☒	☒	Sways while balancing (2/1)
☒	☒	Uses arms to balance (2/1)
☐	☐	Hopping (0/0)
☒	☒	Puts foot down (2/1)

Internal clock	Describe Turn	Cannot do test (explain)	Type of footwear:
55 estimated as 30 seconds	As instructed, slow	N/A	Dress shoes

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	2.5	3.0	1.5
Right Eye	2.5	3.0	1.5

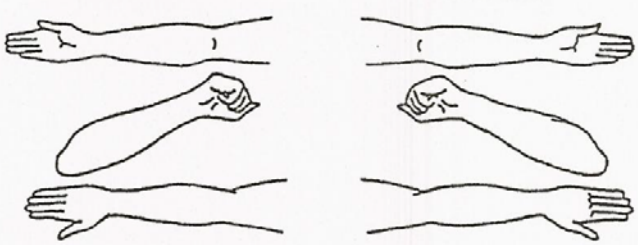
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Little to none visible

RIGHT ARM **LEFT ARM**



None observed

Blood pressure	Temperature
112/64	97.7

Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"Nothing"	"I don't do drugs"	"I didn't"	No answer

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
3/17/07 2105	2130	2210	2315	

Officer's Signature:	DRE #	Reviewed/approved by / date:
	9139	

Opinion of Evaluator:

☐ Rule Out	☐ Alcohol	☐ CNS Stimulant	☐ Dissociative Anesthetic	☐ Inhalant
☐ Medical	☐ CNS Depressant	☐ Hallucinogen	☒ Narcotic Analgesic	☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Sheehan, Thomas

1. **LOCATION:** The evaluation was conducted at the Raleigh Police Department.

2. **WITNESSES:** The A/O; Sgt. Brandon Craft of the North Carolina Highway Patrol recorded the evaluation. Mr. Eddie Buffaloe, the N.C. DRE State Coordinator witnessed.

3. **BREATH ALCOHOL TEST:** Sheehan had a 0.00% breath test result.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was requested to contact Sergeant Craft for a drug evaluation. Sergeant Craft advised the suspect was observed drifting in and out of his traffic lane and driving 20 mph under the posted speed on Highway 64. Sergeant Craft noted the suspect had poor coordination and had slow and deliberate movements. His speech was slow and slurred. His pupils were constricted. He performed poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the Raleigh Police Department. He was sitting at the interview table scratching his face and appeared to be "on the nod." His voice was low, slow and raspy. His pupils were constricted and his eyelids were droopy. He stated he was cold.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 2" front to back and side to side and estimated 30 seconds in 55 seconds. Walk & Turn: Suspect lost his balance during the instructions, missed heel to toe, stopped walking and used his arms for balance. One Leg Stand: Suspect counted slowly, swayed, used his arms for balance and put his foot down. Finger to Nose: Suspect missed the tip of his nose on five of the six attempts and used the incorrect order as directed

8. **CLINICAL INDICATORS:** Two of the suspect's three pulse rates were below the normal range. His blood pressure was below the normal range. His pupils were constricted in two of the three lighting levels. He had little to no visible reaction to light.

9. **SIGNS OF INGESTION:** None evident.

10. **SUSPECT'S STATEMENTS:** The suspect denied drug use.

11. **DRE'S OPINION:** In my opinion Sheehan is under the influence of a Narcotic Analgesic and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:** An empty bottle of Vicodin was located in the suspect's vehicle.

Rev. 03/08

SESSION XVIII

PRACTICE: TEST INTERPRETATION

SESSION XVIII PRACTICE: TEST INTERPRETATION

Upon successfully completing this session the student will be able to:

- Analyze the results of a complete drug influence evaluation and identify the category or categories of drugs affecting the individual examined.

- Articulate the basis for the drug category identification.

The purpose of this session is to give you practice in interpreting the results of the drug influence evaluation. During this session, you will be reviewing exemplars with the entire class and later in small groups. During your analysis of the exemplars, utilize all of the information available, including the preliminary examination, eye examinations, psychophysical tests, vital signs, dark room and other evidence. Remember to base your opinion on the totality of the information provided.

DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Don Marose, Minnesota State Police	DRE #: 5707	Rolling Log #: 07-02-33	**Session XVIII - #1**
Recorder/Witness: Sergeant Bryan Schafer, Minneapolis PD	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-200114
Arrestee's Name (Last, First, Middle): Martinez, Juan M.	Date of Birth: 5/20/80	Sex: M	Race: H
Arresting Officer (Name, ID#): Trooper Derrick Hagen, Minnesota S.P #5568			
Date Examined / Time /Location: 2/22/07 2330 Central Intake	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 3669	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

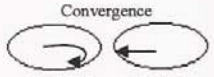
Miranda Warning Given: Given By: Tpr. Hagen	☒ Yes ☐ No	What have you eaten today? When? "Nothing" N/A	What have you been drinking? How much? "Nothing" N/A	Time of last drink? N/A
Time now/ Actual: No answer	When did you last sleep? How long: No answer N/A	Are you sick or injured? ☐ Yes ☐ No "Not sick"	Are you diabetic or epileptic? ☐ Yes ☐ No "Not sick"	
Do you take insulin? ☐ Yes ☐ No "Not sick"	Do you have any physical defects? ☐ Yes ☐ No "Not sick"	Are you under the care of a doctor or dentist? ☐ Yes ☐ No No answer		
Are you taking any medication or drugs? ☐ Yes ☐ No "Not sick"	Attitude: Non-responsive, passive	Coordination: Unsteady, staggering		
Speech: Slow, slurred	Breath Odor: Chemical-like odor	Face: Blank stare		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☒ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☒ Yes ☐ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

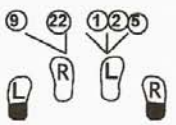
1. 104 / 2340
2. 108 / 2356
3. 104 / 0010

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	Yes	Yes
Angle of Onset	30	30

Convergence



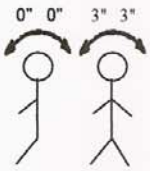
33 ONE LEG STAND



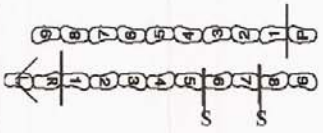
L R
☒ ☒ Sways while balancing (1/1)
☒ ☐ Uses arms to balance (2/0)
☐ ☐ Hopping (0/0)
☒ ☒ Puts foot down (2/3)

Test stopped for safety reasons

Romberg Balance



Walk and Turn test

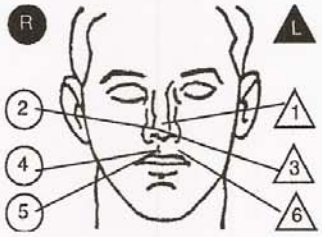


"Moonwalking", Rigid legs and arms

	1st Nine	2nd Nine
Cannot keep balance	XX	
Starts too soon		
Stops walking	XX	
Misses heel-toe		
Steps off line		
Raises arms	XXX	XX
Actual steps taken	9	9

Internal clock: 33 estimated as 30 seconds	Describe Turn: Turned backwards	Cannot do test (explain): N/A	Type of footwear: Boots

Draw lines to spots touched



Rigid movements

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	5.0	6.0	4.0
Right Eye	5.0	6.0	4.0

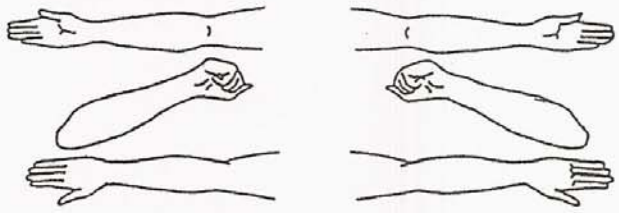
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure: 156/98	Temperature: 99.4		
Muscle tone: ☐ Normal ☐ Flaccid ☒ Rigid	Comments: Arms and legs		
What drugs or medications have you been using? No answer	How much? N/A	Time of use? No answer	Where were the drugs used? (Location) No answer
Date / Time of arrest: 2/22/07 2245	Time DRE was notified: 2315	Evaluation start time: 2330	Evaluation completion time: 0015 2/23/07
Officer's Signature:	DRE #: 5707	Reviewed/approved by / date:	Precinct/Station:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Martinez, Juan M.

1. **LOCATION:** The evaluation was conducted at Central Intake at M.P.D..

2. **WITNESSES:** Sgt. Bryan Schafer of M.P.D. recorded the evaluation.

3. **BREATH ALCOHOL TEST:** Martinez had a breath test of 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and requested to contact Trooper Hagen at the Intake Center for a drug evaluation. Trooper Hagen advised he had observed the suspect on the West River Parkway drifting over the lane divider line nearly hitting other vehicles. When stopped, the suspect appeared dazed and confused. He had a blank stare and was non-responsive at times. He did poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the Intake Center. He appeared dazed and disoriented. He had a fixed, blank stare and responded very slowly to questions. His speech was slow, slurred and confused.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" side to side and estimated 30 seconds in 33 seconds. Walk & Turn: Suspect lost his balance twice during the instructions, stopped walking twice and used his arms for balance. One Leg Stand: Suspect put his foot down twice while standing on his left foot and nearly fell while attempting to stand on his right and the test was stopped. Finger to Nose: Suspect missed the tip of his nose on three of the six attempts and his arm movements were very rigid.

8. **CLINICAL INDICATORS:** Suspect had six clues of HGN and exhibited an early onset of Nystagmus. Vertical Gaze Nystagmus and Lack of Convergence were also present. The suspect's pulse and blood pressure were above the normal ranges.

9. **SIGNS OF INGESTION:** There was a chemical-like odor on the suspect's breath.

10. **SUSPECT'S STATEMENTS:** The suspect did not respond to questions about drug use.

11. **DRE'S OPINION:** In my opinion Martinez is under the influence of a _____ _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:** A glass vial with an unknown liquid was found on the suspect.

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Trooper Sam Ketchum, Idaho State Police	DRE # 9323	Rolling Log # 07-22	**Session XVIII - #2**
Recorder/Witness: Sgt. Dean Matlock, Idaho State Police	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-10-2214

Arrestee's Name (Last, First, Middle)	Date of Birth	Sex	Race	Arresting Officer (Name, ID#)
Groves, Robert G.	8/10/77	M	W	Officer Dave Cavanaugh, Boise P.D. #8102

Date Examined / Time /Location	Breath Results:	Test Refused ☐	Chemical Test: Urine ☒ Blood ☐
10/15/07 1430 Ada Co. Jail	Results: 0.00	Instrument #: 4410	Test or tests refused ☐

Miranda Warning Given	☒ Yes ☐ No	What have you eaten today? When?	What have you been drinking? How much?	Time of last drink?
Given By: Ofc. Cavanaugh		Chicken 6PM	Nothing N/A	N/A

Time now/ Actual	When did you last sleep? How long	Are you sick or injured?	Are you diabetic or epileptic?
1:00 PM/1434	Last night 4 hours	☐ Yes ☒ No	☐ Yes ☒ No

Do you take insulin?	Do you have any physical defects?	Are you under the care of a doctor or dentist?
☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No

Are you taking any medication or drugs?	Attitude:	Coordination:
☒ Yes ☐ No "Pain pills for my back"	Cooperative	Poor, wobbly, stumbling

Speech: Slow, mumbling	Breath Odor: Normal, slow, shallow	Face: Normal

Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal

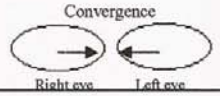
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy

Pulse and time

1. 60 / 1445
2. 60 / 1500
3. 60 / 1520

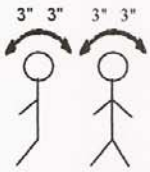
HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence



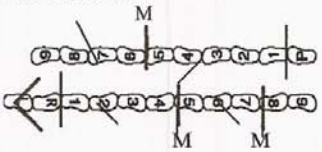
37/30 ONE LEG STAND 35/30

Romberg Balance



Circular sway

Walk and Turn test



Cannot keep balance XX

Starts too soon

	1st Nine	2nd Nine
Stops walking		
Misses heel-toe	XX	X
Steps off line	XX	XX
Raises arms	XXX	XXX
Actual steps taken	9	9

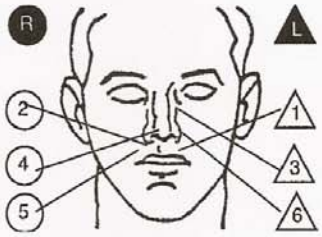
L R

☒ ☒ Sways while balancing (2/2)
☒ ☒ Uses arms to balance (2/2)
☐ ☐ Hopping
☒ ☒ Puts foot down (2/2)

Counted slowly

Internal clock	Describe Turn	Cannot do test (explain)	Type of footwear:
53 estimated as 30 seconds	Lost balance, staggered to right	N/A	Lace-up boots

Draw lines to spots touched



Slow movements

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	2.0	2.5	2.0
Right Eye	2.0	2.5	2.0

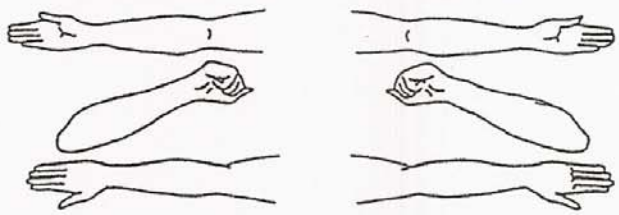
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: None

RIGHT ARM **LEFT ARM**



No visible marks

Blood pressure	Temperature
106/64	97.8

Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"A couple of pills for my back"		With dinner	Shari's Restaurant

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
10/15/07 1335	1400	1430	1540	

Officer's Signature: DRE # 9323 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Groves, Robert G.

1. **LOCATION:** The evaluation was conducted at the Ada County Jail Intake Center.

2. **WITNESSES:** Sergeant Dean Matlock of the Idaho State Police recorded the evaluation.

3. **BREATH ALCOHOL TEST:** Groves' breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and requested to contact Officer Cavanaugh at the Intake Center for a drug evaluation. Officer Cavanaugh advised that he had observed the suspect's vehicle drifting over the center line and traveling 15 mph under the posted speed zone on W. Overland Road. When stopped, the suspect had slow and slurred speech. His balance and coordination was poor and he did poorly on the SFST's and was arrested for DUI. He admitted to taking a "couple pain pills" for his back.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the Intake Center. He appeared sleepy and his head was nodding forward. His speech was slow and slurred. When he stood, his balance was poor and he staggered when he walked.

6. **MEDICAL PROBLEMS AND TREATMENT:** The suspect stated he was taking pain medicine for a back injury he suffered about five years ago.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" in a circular sway and estimated 30 seconds in 53 seconds. Walk & Turn: Suspect lost his balance twice during the instructions, missed heel to toe three times, stepped off the line four times and used his arms for balance. One Leg Stand: Suspect put his foot down twice while standing on each foot and counted slowly. Finger to Nose: Suspect missed the tip of his nose on all six attempts and had slow arm movements.

8. **CLINICAL INDICATORS:** The suspect's pulse was at the low end of normal. His blood pressure was below the normal range. His pupils were constricted in two of the lighting levels and had no reaction to light.

9. **SIGNS OF INGESTION:** None were evident.

10. **SUSPECT'S STATEMENTS:** Suspect admitted taking a "couple pain pills" with dinner.

11. **DRE'S OPINION:** In my opinion Groves is under the influence of a _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Dpty. Greg Nottingham, Maricopa Co. S.O.	DRE # 7023	Rolling Log # 07-34	**Session XVIII - #3**
Recorder/Witness: Dan Mulleneaux, Phoenix P.D.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-125699
Arrestee's Name (Last, First, Middle): Hatos, Carlos	Date of Birth: 7/13/79	Sex: M	Race: H
Arresting Officer (Name, ID#): Jim Toland, Phoenix PD #4646			
Date Examined / Time /Location: 11/25/07 2210 Maricopa Co. Jail	Breath Results: Results: 0.04	Test Refused ☐ Instrument #: 12835	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐

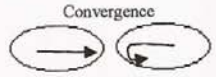
Miranda Warning Given: Given By: Ofc. Toland	☒ Yes ☐ No	What have you eaten today? When? Steak dinner 7 PM	What have you been drinking? How much? Glass of wine 1 glass	Time of last drink? 8 PM
Time now/ Actual: 11 PM/2215	When did you last sleep? How long: Last night 8 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Cooperative, nervous	Coordination: Poor, jerky, stumbling		
Speech: Normal, talkative	Breath Odor: Alcoholic beverage	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☐ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy	

Pulse and time

1.	100	2222
2.	100	2235
3.	98	2255

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence

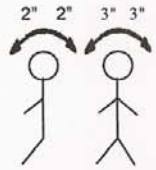


Right eye Left eye

34/30 ONE LEG STAND 35/30

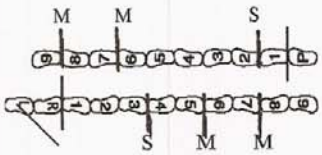
L R
☒ ☒ Sways while balancing (2/2)
☒ ☒ Uses arms to balance (2/2)
☐ ☐ Hopping (0/0)
☒ ☒ Puts foot down (1/1)

Romberg Balance



Eyelid tremors

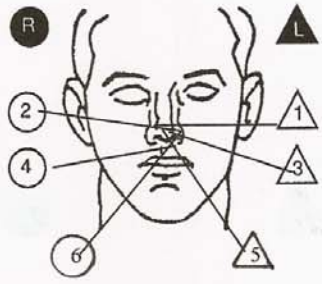
Walk and Turn test



	1st Nine	2nd Nine
Cannot keep balance	X	
Starts too soon		
Stops walking	X	X
Misses heel-toe	XX	XX
Steps off line		
Raises arms	XX	XX
Actual steps taken	9	9

Internal clock: 26 estimated as 30 seconds	Describe Turn: As instructed	Cannot do test (explain): N/A	Type of footwear: Loafers

Draw lines to spots touched



Eyelid tremors

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.5	8.0	5.5
Right Eye	6.5	8.0	5.5

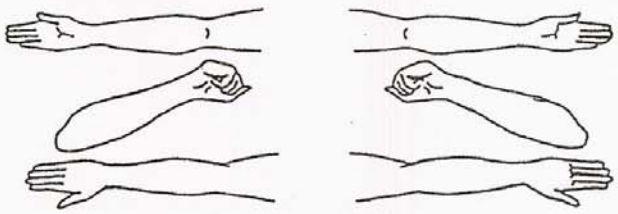
Nasal area: Red, bloody left nostril

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM LEFT ARM



Nothing observed

Blood pressure: 146/92	Temperature: 99.2		
Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid			
Comments:			
What drugs or medications have you been using? None	How much? N/A	Time of use? N/A	Where were the drugs used? (Location) N/A
Date / Time of arrest: 11/25/07 2105	Time DRE was notified: 2145	Evaluation start time: 2210	Evaluation completion time: 2315	Precinct/Station: Central
Officer's Signature:	DRE # 7023	Reviewed/approved by / date:		

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant
☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Hatos, Carlos

1. **LOCATION:** The evaluation was conducted the DRE room at the Maricopa County Jail .

2. **WITNESSES:** Dan Mulleneaux, the State DRE Coordinator witnessed the evaluation.

3. **BREATH ALCOHOL TEST:** Hatos had a breath test of 0.04%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and requested to meet Officer Toland at Maricopa County Jail for a drug evaluation. Officer Toland advised he had observed the suspect's vehicle traveling at a high rate of speed on East Camelback Road. When stopped, the suspect appeared nervous and was very talkative. The suspect did poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the DRE interview room at the Maricopa County Jail. The suspect was very talkative, repeatedly shifted his weight from foot to foot and was making abrupt, quick hand movements. When not speaking, he appeared to be grinding his teeth. There was an odor of alcoholic beverage on the suspect's breath.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted and none stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" side to side and approximately 2" front to back. He estimated 30 seconds in 26 seconds. Walk & Turn: Suspect lost his balance during the instructions, stopped twice while walking, missed heel-to-toe four times and raised his arms for balance four times. One Leg Stand: Suspect put his foot down once while standing on each foot, swayed while balancing and used his arms for balance. Finger to Nose: Suspect missed the tip of his nose on three of the six attempts and performed attempt #5 and #6 with the wrong hand.

8. **CLINICAL INDICATORS:** The suspect had a lack of smooth pursuit and a lack of convergence. His pulse and blood pressure were above the normal ranges. His pupils were dilated in two lighting levels and he had a slow reaction to light.

9. **SIGNS OF INGESTION:** None were evident.

10. **SUSPECT'S STATEMENTS:** Suspect admitted drinking a glass of wine but denied using any other drugs.

11. **DRE'S OPINION:** In my opinion Hatos is under the influence of _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:** Rev.0308

DRUG INFLUENCE EVALUATION

Evaluator: Officer Virgil Miller, Wichita PD	DRE # 10828	Rolling Log # 07-035	**Session XVIII - #4**
Recorder/Witness: Det. Karrina Brasser, Sedgwick Co. S.O.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-899105
Arrestee's Name (Last, First, Middle): Jackson, Scott M.	Date of Birth: 7/15/75	Sex: M	Race: W
Arresting Officer (Name, ID#): Trooper Mark Crump, Kansas H.P. #3448			
Date Examined / Time /Location: 3/18/07 2030 Sedgwick Co. Jail	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 88075	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

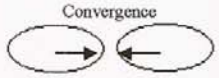
Miranda Warning Given: Given By: Tpr. Crump	☒ Yes ☐ No	What have you eaten today? When? Eggs and toast 9AM	What have you been drinking? How much? Coffee 2 cups	Time of last drink? N/A
Time now/ Actual: Midnight/2042	When did you last sleep? How long: Last night 7 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Passive, cooperative	Coordination: Poor, unsteady		
Speech: Slow, thick, slurred	Breath Odor: Halitosis	Face: Flushed, blank stare		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy	

Pulse and time

1. 54 / 2040
2. 56 / 2055
3. 58 / 2118

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

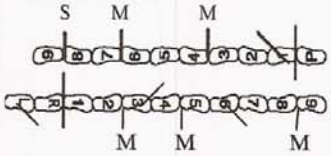
Convergence



ONE LEG STAND

Romberg Balance

Walk and Turn test



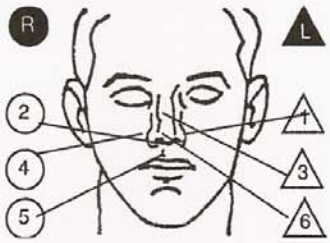
	1st Nine	2nd Nine
Cannot keep balance	X	
Starts too soon	X	
Stops walking	X	X
Misses heel-toe	XXX	XX
Steps off line	XX	X
Raises arms	XX	XXX
Actual steps taken	9	9

L R
☒ ☒ Sways while balancing (2/3)
☒ ☒ Uses arms to balance (2/2)
☐ ☐ Hopping (0/0)
☒ ☒ Puts foot down (3/3)

Both stopped for safety reasons

Internal clock: 42 estimated as 30 seconds	Describe Turn: Abrupt spin	Cannot do test (explain): N/A	Type of footwear: Lace-up shoes

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	2.0	3.0	2.0
Right Eye	2.0	3.0	2.0

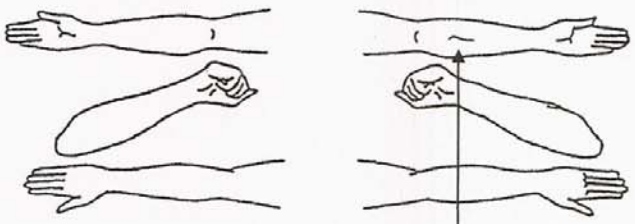
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: None visible

RIGHT ARM **LEFT ARM**



Fresh puncture wounds, red, oozing

Blood pressure: 122/68	Temperature: 98.0		
Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid			
Comments:			

What drugs or medications have you been using? "I didn't use anything today"	How much? N/A		Time of use? N/A	Where were the drugs used? (Location) N/A
Date / Time of arrest: 3/18/07 1910 hrs.	Time DRE was notified: 1950	Evaluation start time: 2030	Evaluation completion time: 2145	Precinct/Station:
Officer's Signature:	DRE # 10828	Reviewed/approved by / date:		

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Jackson, Scott M.

1. **LOCATION:** The evaluation was conducted at the Sedgwick County Jail.

2. **WITNESSES:** Detective Karrina Brasser witnessed and recorded the evaluation.

3. **BREATH ALCOHOL TEST:** Jackson's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted and requested to contact Trooper Crump at the Sedgwick County Jail for a drug evaluation. Trooper Crump advised he located the suspect's vehicle traveling E/B on Highway 54 near the Garden Plain exit. The suspect was traveling at approximately 45 mph and drifting in and out of his lane. When Trooper Crump tried to stop the suspect, he continued without stopping for over a mile. The suspect had a blank stare and his speech was thick and slow. The suspect did poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the jail. He was cooperative and had slow, thick, slurred speech. He was slow to respond to questions and was unstable on his feet.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 3" side to side and front to back. He estimated 30 seconds in 42 seconds. Walk & Turn: Suspect lost his balance during the instructions, stepped off the line twice on the first nine steps and once on the second nine steps. He also missed heel-to-toe five times, stopped while walking twice and raised his arms for balance. He also made an improper turn. One Leg Stand: Both tests were stopped for safety reasons after he put his down numerous times and nearly fell. Finger to Nose: Suspect missed the tip of his nose on five of the six attempts.

8. **CLINICAL INDICATORS:** The suspect's pulse and blood pressure were below the normal ranges. His pupils were constricted in two of the three lighting levels.

9. **SIGNS OF INGESTION:** The suspect had two fresh puncture marks on his left forearm.

10. **SUSPECT'S STATEMENTS:** Suspect denied using drugs.

11. **DRE'S OPINION:** In my opinion Jackson is under the influence of a _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Paul Kotter, Utah Highway Patrol	DRE # 10262	Rolling Log # 07-01-02	**Session XVIII - #5**
Recorder/Witness: Sgt. Kellie Oaks, Utah Highway Patrol	Crash: ☐ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-00345

Arrestee's Name (Last, First, Middle)	Date of Birth	Sex	Race	Arresting Officer (Name, ID#)
Stevens, William A.	4/14/84	M	W	Officer Jody Whitaker, Salt Lake City P.D. #3465

Date Examined / Time /Location	Breath Results:	Test Refused ☐	Chemical Test: Urine ☐ Blood ☒
01/17/07 2200 Salt Lake City P.D.	Results: 0.00	Instrument #: 47745	Test or tests refused ☐

Miranda Warning Given		What have you eaten today? When?	What have you been drinking? How much?	Time of last drink?
Given By: Ofc. Whitaker	☒ Yes ☐ No	"Burger" Noon	"Just water" N/A	N/A

Time now/ Actual	When did you last sleep? How long	Are you sick or injured?	Are you diabetic or epileptic?
9 PM/10:05 PM	Last night 2 hrs.	☐ Yes ☒ No	☐ Yes ☒ No

Do you take insulin?	Do you have any physical defects?	Are you under the care of a doctor or dentist?
☐ Yes ☒ No	☐ Yes ☒ No	☒ Yes ☐ No Dr. Frank at the Clinic

Are you taking any medication or drugs?	Attitude:	Coordination:
☒ Yes ☐ No Valium - 2 each day	Cooperative	Poor, staggering

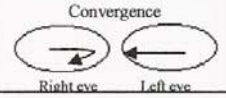
Speech: Thick, slow, slurred	Breath Odor: Normal	Face: Normal, dazed look

Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☒ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal

Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☒ Yes ☐ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy

Pulse and time	HGN	Right Eye	Left Eye
1. 60 / 2210	Lack of Smooth Pursuit	Yes	Yes
2. 58 / 2225	Maximum Deviation	Yes	Yes
3. 56 / 2235	Angle of Onset	30	30

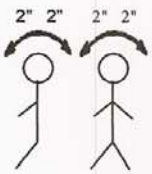
Convergence



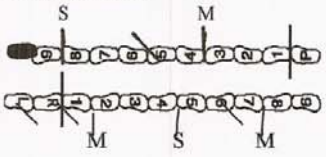
26 ONE LEG STAND 25

L R
☒ ☒ Sways while balancing (2/3)
☒ ☒ Uses arms to balance (1/1)
☐ ☐ Hopping (0/0)
☒ ☒ Puts foot down (2/2)

Romberg Balance



Walk and turn test

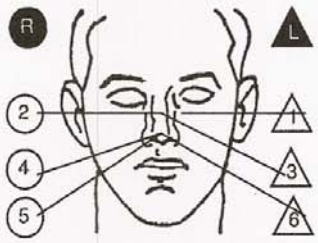


Had to repeat instructions

	1st Nine	2nd Nine
Cannot keep balance	XX	
Starts too soon		
Stops walking	X	X
Misses heel-toe	XX	X
Steps off line		X
Raises arms	XX	XXX
Actual steps taken	9	10

Internal clock	Describe Turn:	Cannot do test (explain)	Type of footwear:
38 estimated as 30 seconds	Lost balance	N/A	Boots

Draw lines to spots touched



Slow movements

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	5.5	6.5	4.0
Right Eye	5.5	6.5	4.0

Nasal area: Clear

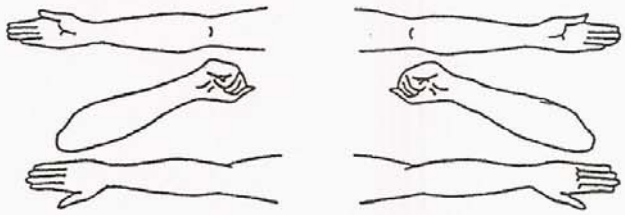
Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

P P P

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure	Temperature
112/68	98.0

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"Just my pills"	2 a day	10AM	At home

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
01/17/07 2120	2140	2200	2315	

Officer's Signature:	DRE # 10262	Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant
☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Stevens, William A.

1. **LOCATION:** The evaluation was conducted at the Salt Lake City Police Department.

2. **WITNESSES:** Sergeant Kellie Oaks of the Utah H.P. witnessed the evaluation.

3. **BREATH ALCOHOL TEST:** Stevens had a breath test of 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was requested to contact Officer Whitaker at the Salt Lake City Police Department for a drug evaluation. Officer Whitaker advised he had located the suspect's vehicle stopped in the intersection at California and S. 900th. He contacted the suspect who sitting in the driver's seat. He had a dazed appearance and his speech was thick, slurred and slow. He had six clues of HGN, did poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the P.D. The suspect was cooperative and had slow, thick, slurred speech. He was slow to respond to questions. His balance was poor and he staggered when walking.

6. **MEDICAL PROBLEMS AND TREATMENT:** The suspect stated he was seeing Dr. Frank at the Clinic. Dr. Frank had prescribed him Valium for anxiety problems.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 2" in a circular motion and he estimated 30 seconds in 38 seconds. Walk & Turn: Suspect lost his balance twice during the instructions, stepped off the line twice, missed heel to toe three times, stopped twice and used his arms for balance. He also lost his balance when he turned. One Leg Stand: Suspect put his foot down twice on each attempt, swayed while balancing and used his arms for balance. Finger to Nose: Suspect missed the tip of his nose on three of the six attempts. He used the pads of his fingers on attempts #1, #3 and #6.

8. **CLINICAL INDICATORS:** Suspect had six clues of HGN with a 30 degree angle of onset. He also had VGN and a Lack of Convergence. His pulse was below the normal range on two of the three checks and his blood pressure was below the normal range.

9. **SIGNS OF INGESTION:** Nothing observed or detected.

10. **SUSPECT'S STATEMENTS:** Suspect admitted taking two Valium earlier in the day.

11. **DRE'S OPINION:** In my opinion Stevens is under the influence of _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:** Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Officer Aaron Rohner, California H.P.	DRE # 10803	Rolling Log # 07-06-25	**Session XVIII - #6**
Recorder/Witness: Officer Kevin Craig, CHP	Crash: ☐ None ☒ Fatal ☐ Injury ☐ Property		Case # 07-717418
Arrestee's Name (Last, First, Middle): Sholly, Cameron H.	Date of Birth: 10/3/78	Sex: M	Race: W
Arresting Officer (Name, ID#): Officer Tom Flahaven, CHP #88744			
Date Examined / Time /Location: 06/10/07 1445 Sacramento Co. Jail	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 015233A	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Ofc. Flahaven	☒ Yes ☐ No	What have you eaten today? When? Nothing N/A	What have you been drinking? How much? "I didn't drink anything"	Time of last drink? N/A
Time now/ Actual: "Don't know"	When did you last sleep? How long: "About 2 days ago"	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No "I don't go to the doctor"		
Are you taking any medication or drugs? ☒ Yes ☐ No "Took Tylenol this morning"	Attitude: Cooperative	Coordination: Slow, sluggish		
Speech: Slow	Breath Odor: Normal	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☒ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☐ Equal ☒ Unequal (explain) Left 2mm larger	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

1. 94 / 1505
2. 92 / 1518
3. 92 / 1530

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence — Right eye — Left eye

30 ONE LEG STAND 29

16 19 R L L R

L R
☒ ☒ Sways while balancing (1/1)
☐ ☐ Uses arms to balance (0/0)
☐ ☐ Hopping (0/0)
☒ ☒ Puts foot down (1/1)

Romberg Balance

0" 0" 0" 0"

Walk and Turn test

Cannot keep balance

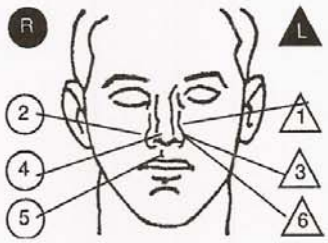
Starts too soon: XX

	1st Nine	2nd Nine
Stops walking		
Misses heel-toe		
Steps off line	X	
Raises arms		
Actual steps taken		

Stated, "This is impossible." Stepped off line and would not continue.

Internal clock	Describe Turn	Cannot do test (explain)	Type of footwear:
28 estimated as 30 seconds	N/A	Refused to complete	Work boots

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.0	7.5	5.0
Right Eye	4.0	5.5	3.0

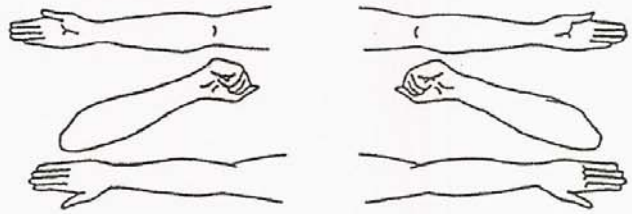
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



No visible marks

Blood pressure	Temperature
146/88	98.8

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"Just two Tylenol"	"Two"	This morning	Home

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
06/10/07 1400	1430	1445	1555	

Officer's Signature: DRE # 10803 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Sholly, Cameron H.

1. **LOCATION:** The evaluation was conducted at the Sacramento County Jail.

2. **WITNESSES:** Officer Kevin Craig of the CHP witnessed and recorded the evaluation.

3. **BREATH ALCOHOL TEST:** Sholly had a breath test of 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was requested to meet Officer's Flahaven and Craig at the Sacramento County Jail for a drug evaluation. According to Officer Flahaven, Sholly was a driver involved in a fatal crash on I-5 north of Sacramento. His vehicle rear-ended a stopped vehicle at a construction site. Sholly was sluggish acting at the scene and was slow to respond to questions. His speech was slow and slurred at times and he was unstable on his feet.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed Sholly in the interview room at the jail. He was cooperative and appeared stable. He was slow to respond to questions and he slurred his speech at times. He seemed confused and anxious.

6. **MEDICAL PROBLEMS AND TREATMENT:** Sholly was slow to respond when asked about medical problems and/or medical treatment. He eventually stated, "I don't go to the doctor. They don't know what they're doing."

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Sholly exhibited no sway and he estimated 30 seconds in 28 seconds. Walk & Turn: Sholly started too soon twice, took two steps, stepped off the line and said, "This is impossible!" and refused to continue. One Leg Stand: Sholly put his foot down one time while standing on each foot and swayed while balancing. Finger to Nose: Sholly missed the tip of his nose on four of the six attempts.

8. **CLINICAL INDICATORS:** Sholly's pulse and systolic blood pressure were above the normal ranges. His pupils were unequal in all three lighting levels.

9. **SIGNS OF INGESTION:** None were evident or stated.

10. **SUSPECT'S STATEMENTS:** Sholly admitted taking Tylenol only.

11. **DRE'S OPINION:** In my opinion Sholly is _____.

12. **TOXICOLOGICAL SAMPLE:** Sholly provided a blood sample.

13. **MISCELLANEOUS:**

Rev. 03/08

SESSION XIX

INHALANTS

SESSION XIX INHALANTS

Upon successfully completing this session the student will be able to:

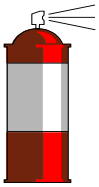
- Explain a brief history of the Inhalant category of drugs.
- Identify common drug names and terms associated with this category.
- Identify common methods of administration for this category.
- Describe the symptoms, observable signs and other effects associated with this category.
- Describe the typical time parameters, i.e. onset and duration of effects, associated with this category.
- List the clues that are likely to emerge when the drug evaluation and classification process is conducted for a person under the influence of this drug category.
- Correctly address the "topics for study" questions at the end of this session.

A. Overview of Inhalants

Inhalants include a wide variety of breathable chemicals that produce mind altering results. These substances are readily available in many households and can be purchased easily. Inhalants are sometimes called deliriants, in that they may produce delirium. Delirium is usually a brief state characterized by incoherent excitement, confused speech, restlessness and possible hallucinations. Depending on the nature of the particular Inhalant, the effects produced may be similar to those of stimulants, depressants, or hallucinogens.

There are three major subcategories of Inhalants: volatile solvents, aerosols and anesthetic gases.

The volatile solvents include a large number of readily available substances, none of which is intended by the manufacturer to be used as a drug. One of the most widely abused volatile solvents is plastic cement, or "model airplane glue". Plastic model cement includes the following volatile chemicals: toluene, acetone, naphtha, aliphatic acetates, hexane, cyclohexane, and benzene. Other frequently abused volatile solvents include: paint, gasoline, paint thinners, dry cleaning fluids, typewriter correction fluid, engine degreasers, spray paint, and fingernail polish removers.



The aerosols are chemicals discharged from a pressurized container by the propellant force of a compressed gas. Commonly abused aerosols include hair sprays, deodorants, insecticides, Freon, glass chillers and vegetable frying pan lubricants. Abused aerosols contain various hydrocarbon gases that produce drug effects.

The majority of abusers of volatile solvents and aerosols are pre-teens and teenagers.

The third subcategory, the anesthetic gases, includes substances that are less frequently abused than are volatile solvents or aerosols. The anesthetic gases are drugs that abolish pain, and they are used medically for that purpose during surgery. Anesthetic gases that are sometimes abused include ether, amyl nitrite, butyl nitrite, and isobutyl nitrite. Adults may be more frequent users of the anesthetic gases.

There is an important distinction between the anesthetic gases and the other two subcategories of Inhalants. The volatile solvents and the aerosols usually cause elevated blood pressure. But the anesthetic gases usually cause blood pressure to become lower than normal. Apparently, this is due to the fact that the anesthetic gases can dilate the blood vessels around the heart thus causing a lowered blood pressure. Pulse rate, however, usually is increased by all three subcategories of Inhalants.

Some Inhalant users prefer to put their Inhalants in a plastic bag, others soak rags or socks and then sniff the fumes. Many abusers use everyday items such as aluminum cans, balloons or other containers in an attempt to conceal their use and concentrate the fumes. Some common street names that Inhalant users use are, “Huffing”, “Hacking”, “Ballooning” and “Glading”.

B. Possible Effects of Inhalants

The effects of Inhalants vary from one substance to another. Common effects include:

- altered shapes and colors
- antagonistic behavior
- bizarre thoughts
- distorted perceptions of time and distance
- dizziness and numbness
- drowsiness and weakness
- euphoria and grandiosity
- floating sensation
- inebriation similar to alcohol intoxication
- intense headaches
- light-headedness
- nausea and excessive salivation
- possible hallucinations

In general, persons under the influence of Inhalants will appear confused and disoriented. Their speech usually will be slurred.

C. Onset and Duration of Inhalants' Effects

Inhalants' effects are felt virtually immediately. However, the duration of effects depends on the substance used. For example, glue, paint, gasoline and other commonly abused Inhalants usually produce effects that last from several minutes, up to eight hours depending on the substances abused and the duration of abuse. Nitrous oxide's effects typically last 5 minutes or less. The effects of amyl nitrite and butyl nitrite last from a few seconds to up to 20 minutes.

D. Signs and Symptoms of Inhalant Overdose

Some Inhalants will depress the central nervous system to the point where respiration ceases. Others can cause heart failure. Some Inhalant overdoses induce severe nausea and vomiting, and the unconscious user may drown in his or her own vomit. Others using bags to get high may pass out then suffocate with a bag over their face. Thus, there is a significant risk of death due to Inhalant abuse.

There is evidence that long term Inhalant abuse can cause:

- permanent damage to the central nervous system
- liver damage
- kidney damage
- bone and bone marrow damage
- greatly reduced mental and physical abilities

E. Expected Results of the Evaluation

When a person under the influence of Inhalants is examined by a drug recognition expert, the following results generally will be found.

Horizontal Gaze Nystagmus - present.

Vertical Gaze Nystagmus - present, high dose for that particular individual.

Lack of Convergence - present.

Pupil size - normal, but may be dilated with certain specific Inhalants (anesthetic gases).

Reaction to light - slow.

Romberg - subjects will exhibit impairment and will tend to sway when performing this test.

Walk and Turn - subjects will exhibit impairment and will often take slow deliberate steps and will commonly stagger.

One Leg Stand - subjects will exhibit impairment and will tend to sway when performing this test.

Finger To Nose - subjects will exhibit impairment and will tend to sway when performing this test.

Pulse rate - up.

Blood pressure - up or down. Volatile Solvents and Aerosols usually will cause elevated blood pressure, while Anesthetic Gases usually will lower the blood pressure.

Temperature - up, down or normal depending on the substance.

Muscle tone - flaccid or normal (Anesthetic Gases may cause muscles to be flaccid)

General Indicators:

- bloodshot, watery eyes
- confused
- disoriented appearance
- flaccid or normal muscle tone
- flushed face, possibly sweating
- intense headaches
- lack of muscle control
- non-communicative
- odor of the inhaled substance
- possible nausea
- residue of substance around face, nose, hands or clothing
- slow, thick, slurred speech

Topics for Study

1. What are the three major subcategories of Inhalants?

2. What are some of the principal active ingredients in many volatile substances?

3. In what important respect do the effects of Anesthetic Gases differ from the effects of Volatile Solvents and Aerosols?

4. Does any of the subcategories of Inhalants cause pulse rate to decrease?

5. The effects of Amyl Nitrite and Butyl Nitrite last from a few seconds to up to _____ minutes.

DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Gerry Britt, Yarmouth PD	DRE #: 5479	Rolling Log #: 07-07-15	**Session XIX - #1**
Recorder/Witness: Sgt. Don Decker, Marblehead PD	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-79961
Arrestee's Name (Last, First, Middle): Graves, James L.	Date of Birth: 6/8/88	Sex: M	Race: W
Arresting Officer (Name, ID#): Sgt. Deb Batista, Middleboro PD #6690			
Date Examined / Time /Location: 07/04/07 2200 Middleboro PD	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 77880	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

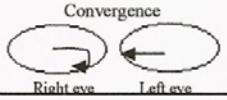
Miranda Warning Given: Given By: Sgt. Batista	☒ Yes ☐ No	What have you eaten today? When? Hamburger 6PM	What have you been drinking? How much? Coke N/A	Time of last drink? N/A
Time now/ Actual: 10 PM/10:10 PM	When did you last sleep? How long: Last night 6 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Cooperative	Coordination: Poor, unsteady, barely standing		
Speech: Slurred, mumbling	Breath Odor: Paint/chemical odor	Face: Paint residue on cheeks and chin		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☒ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

1. 104 / 2215
2. 102 / 2234
3. 104 / 2250

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	Yes	Yes
Angle of Onset	30	30

Convergence

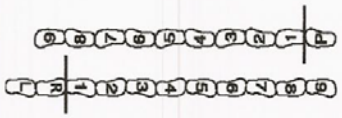


ONE LEG STAND

Romberg Balance

Test stopped

Walk and Turn test



Test stopped - could not stand

Cannot keep balance ____

Starts too soon ____

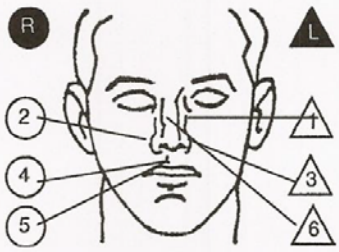
	1st Nine	2nd Nine
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms		
Actual steps taken		

L	R	
☒	☐	Sways while balancing (2/0)
☒	☐	Uses arms to balance (2/0)
☐	☐	Hopping (0/0)
☒	☐	Puts foot down (3/0)

Stopped - fell into wall

Internal clock: N/A estimated as 30 seconds	Describe Turn: N/A	Cannot do test (explain): Unable to stand heel to toe	Type of footwear: Athletic shoes

Draw lines to spots touched



Test administered in seated position

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	4.0	6.5	3.5
Right Eye	4.0	6.5	3.5

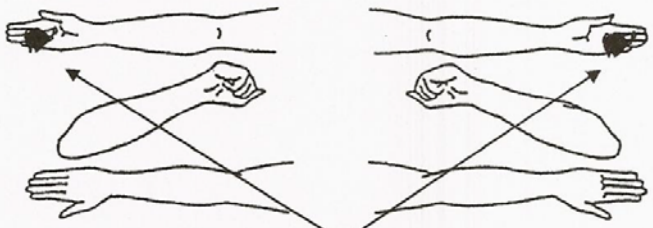
Nasal area: Red

Oral cavity: Odor of paint

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM **LEFT ARM**



Gold paint on hands

Blood pressure	Temperature
140/100	98.6

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"I huffed some Gold."	"The usual"	8PM	In the park

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
07/04/07 2130	2145	2200	2310	

Officer's Signature: DRE # 5479 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☒ Inhalant
☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Graves, James L.

1. **LOCATION:** The evaluation was conducted at the Middleboro Police Department.

2. **WITNESSES:** Sgt. Don Decker of the Marblehead P.D. witnessed the evaluation.

3. **BREATH ALCOHOL TEST:** Graves had a breath test of 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was requested to contact Sergeant Batista at the Middleboro Police Department for a drug evaluation. Sgt. Batista advised she arrested Graves for DUI after observing him fail to stop at a red traffic light at Main and Wareham Street. The suspect was cooperative but appeared dazed. He performed poorly on the SFST's and was arrested for DUI. A can of gold spray paint was located in the front seat of the suspect's vehicle along with paint soaked rags.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the P.D. He appeared passive and dazed. He had very poor coordination and balance. Gold paint smears were visible on his hands and face.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: The suspect was unable to perform the test and it was stopped for safety reasons. Walk & Turn: The suspect lost his balance three times and the test was stopped for safety reasons. One Leg Stand: The suspect put his foot down three times while standing on the left foot and the test was stopped. He was unable to perform the test when attempting to stand on the right foot and the test was stopped for safety reasons. Finger to Nose: The suspect was allowed to sit down for this test. He used the palm of his hands and touched in the general area of his nose.

8. **CLINICAL INDICATORS:** The suspect had six clues of HGN and a Lack of Convergence. His pulse and blood pressure were above the normal ranges.

9. **SIGNS OF INGESTION:** Paint-like odor on his breath. Paint smears on hands and face.

10. **SUSPECT'S STATEMENTS:** Suspect admitted "huffing" some gold paint in the park to celebrate the 4th of July.

11. **DRE'S OPINION:** In my opinion Graves is under the influence of an Inhalant and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

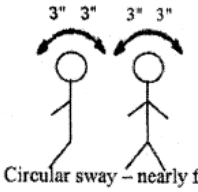
Evaluator: Trooper Marc Griggs, Iowa State Patrol	DRE # 8102	Rolling Log # 07-12-16	**Session XIX - #2**
Recorder/Witness: Sgt. Russ Belz, Story Co. S.O.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-12859
Arrestee's Name (Last, First, Middle): Mashburn, Cathy L.	Date of Birth: 9/1/88	Sex: F	Race: W
Arresting Officer (Name, ID#): Deputy Dan Grimm, Polk Co. S.O. #3538			
Date Examined / Time /Location: 12/07/07 2035 Polk Co. Jail	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 16670	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐

Miranda Warning Given: Given By: Dpty. Grimm	☒ Yes ☐ No	What have you eaten today? When? Pizza After work	What have you been drinking? How much? Wine coolers "A couple"	Time of last drink? 7 PM
Time now/ Actual: 9pm/8:10 pm	When did you last sleep? How long: Last night 7 hrs.	Are you sick or injured? ☒ Yes ☐ No "I feel dizzy"	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Cooperative, slow to respond	Coordination: Poor, staggering at times		
Speech: Slow, slurred	Breath Odor: Paint-like odor	Face: Flushed		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☒ Bloodshot ☒ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 100 / 2042	Lack of Smooth Pursuit	Yes	Yes
2. 100 / 2105	Maximum Deviation	Yes	Yes
3. 96 / 2120	Angle of Onset	35	35

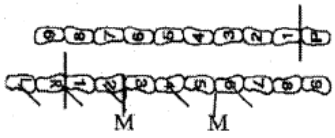
Convergence: Right eye, Left eye

Romberg Balance



Circular sway – nearly fell

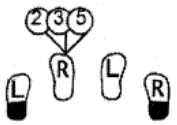
Walk and Turn test



Test stopped after six steps

	1st Nine	2nd Nine
Cannot keep balance	XX	
Starts too soon		
Stops walking		
Misses heel-toe	XX	
Steps off line	XXX	
Raises arms	X	
Actual steps taken	6	

ONE LEG STAND

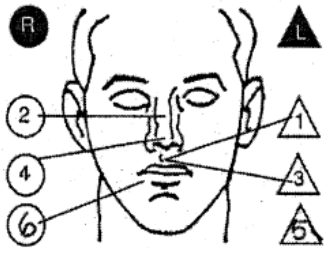


L R
☒ ☐ Sways while balancing (2/0)
☒ ☐ Uses arms to balance (2/0)
☐ ☐ Hopping (0/0)
☒ ☐ Puts foot down (3/0)

Test stopped

Internal clock: 19 estimated as 30 seconds	Describe Turn: N/A	Cannot do test (explain): Stopped - nearly fell	Type of footwear: Sandals

Draw lines to spots touched



PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	5.0	6.5	4.5
Right Eye	5.0	6.5	4.5

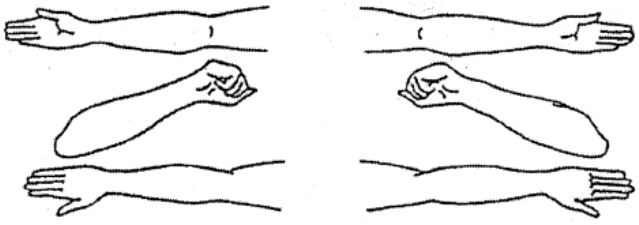
Nasal area: Runny nose, red

Oral cavity: Paint like odor

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure	Temperature
146/104	98.8

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"I don't do drugs."	N/A	Refused	Refused

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
12/07/07 1945	2005	2035	2140	

Officer's Signature: DRE # 8102 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☒ Inhalant
☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Mashburn, Cathy

1. **LOCATION:** The evaluation was conducted at the Polk County Jail.

2. **WITNESSES:** The evaluation was witnessed and recorded by Sergeant Russ Belz of the Story County Sheriff's Office.

3. **BREATH ALCOHOL TEST:** Mashburn's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was notified by radio to contact Deputy Grimm at the Polk County Jail for a drug evaluation. Deputy Grimm advised he arrested Mashburn after observing her pull out in front of oncoming traffic nearly causing a crash. The suspect was cooperative but slow to respond to questions. She performed poorly on the SFST's and was arrested for DUI. After arresting her, Deputy Grimm located a can of paint remover and several rags in her vehicle.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the jail. Her speech was slow and slurred. Her coordination was poor and she staggered several times. Her eyes were watery and bloodshot.

6. **MEDICAL PROBLEMS AND TREATMENT:** The suspect stated she felt dizzy.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: The suspect had an approximate 3" circular sway and she estimated 30 seconds in 19 seconds. Walk & Turn: The suspect lost her balance twice during the instructions, staggered and nearly fell. The test was stopped after six steps when she again nearly fell. One Leg Stand: After putting her right foot down three times and nearly falling, the test was stopped. Finger to Nose: The suspect had difficulty with this test. She touched the tip of her nose on one of the six attempts. She also used the wrong hand on attempts #5 and #6.

8. **CLINICAL INDICATORS:** The suspect had six clues of HGN and a Lack of Convergence. Her pulse and blood pressure were above the normal ranges.

9. **SIGNS OF INGESTION:** The suspect had a red, runny nose. Her eyes were bloodshot and watery. She also had a paint-like odor on her breath and clothing.

10. **SUSPECT'S STATEMENTS:** Suspect admitted drinking a "couple of wine coolers" but denied using any other substances.

11. **DRE'S OPINION:** In my opinion Mashburn is under the influence of an Inhalant and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:** Rev. 03/08

SESSION XX

PRACTICE: VITAL SIGNS EXAMINATIONS

SESSION XX **PRACTICE: VITAL SIGNS EXAMINATIONS**

Upon successfully completing this session the student will be able to:

- Conduct examinations of pulse, blood pressure and temperature.
- Describe the vital signs examination procedures.
- Document the results of the vital signs examinations.

In this session, you will have opportunities to practice taking measurements of pulse, blood pressure and temperature. You will work in a team with two or three students, taking turns measuring these vital signs on each other. When it is not your turn to serve either as the test administrator or the test subject, you should closely observe your teammate who is administering the examinations and offer any coaching that seems appropriate. You will record your measurements using the data collection sheet on the next page.

In preparation for this session, make sure you can do the following:

- Locate the radial, brachial and carotid artery pulse points.
- Position the blood pressure cuff properly on a subject's arm.

VITAL SIGNS EXAMINATIONS DATA SHEET

EXAMINER'S NAME ____

DATE ________/________/________

<u>PULSE MEASUREMENTS</u>

SUBJECT'S NAME ________________

TIME ______________________________

PULSE POINT USED ______________

BEATS PER MINUTES _____________

<u>BLOOD PRESSURE MEASUREMENTS</u>

SUBJECT'S NAME ____________________

TIME __________________________________

SYSTOLIC _____________________________

DIASTOLIC ____________________________

SUBJECT'S NAME ________________

TIME ______________________________

PULSE POINT USED ______________

BEATS PER MINUTES _____________

SUBJECT'S NAME ____________________

TIME __________________________________

SYSTOLIC _____________________________

DIASTOLIC ____________________________

SUBJECT'S NAME ________________

TIME ______________________________

PULSE POINT USED ______________

BEATS PER MINUTES _____________

SUBJECT'S NAME ____________________

TIME __________________________________

SYSTOLIC _____________________________

DIASTOLIC ____________________________

SESSION XXI

CANNABIS

Upon successfully completing this session the student will be able to:

- Explain a brief history of Cannabis.
- Identify common names and terms associated with Cannabis.
- Identify common methods of administration for Cannabis.
- Describe the symptoms, observable signs and other effects associated with Cannabis.
- Describe the typical time parameters, i.e. onset and duration of effects associated with Cannabis.
- List the clues that are likely to emerge when the drug influence evaluation is conducted for a person under the influence of this drug category.
- Correctly answer the "topics for study" questions at the end of this session.

A. Overview of Cannabis

"Cannabis" is the category of drugs that derive primarily from various species of Cannabis plants. Two species that supply much of the abused Cannabis are Cannabis Sativa and Cannabis Indica. Some jurisdictions as well as botanists don't recognize Cannabis Indica as a separate species. The active ingredient in these drugs is:

Delta-9 Tetrahydrocannabinol

(abbreviated Delta-9 THC, or simply "THC")

THC is found principally in the leaves and flowers of the plant, rather than the stems or branches. Different varieties of Cannabis plants have different concentrations of THC. A variety that has a relatively high concentration of THC is the Sinsemilla (the unfertilized female) plant, a type of Cannabis Sativa having very tiny seeds. ("Sinsemilla" is a Spanish expression for "without seeds".)

Cannabis has some limited medical applications. It lowers intraocular pressure, and can be helpful for glaucoma patients. It suppresses nausea, and sometimes is recommended for cancer patients to relieve the nausea that accompanies chemotherapy.

There are four principal forms of the drug Cannabis:

- **Marijuana** consists of the dried leaves of the plant.
- **Hashish** is a form of cannabis made from the dried and pressed resin of a marijuana plant.
- **Hash oil** is sometimes referred to as "marijuana oil" it is a highly concentrated syrup-like oil extracted from marijuana. It is normally produced by soaking marijuana in a container of solvent, such as acetone or alcohol for several hours and after the solvent has evaporated, a thick syrup-like oil is produced with a THC content generally ranging from 10 to 12 percent.
- **Marinol** (also known as Dronabinol) is a synthetic form of THC that is not derived from Cannabis plants. Marinol is a prescription drug administered to cancer patients to suppress the nausea that may accompany chemotherapy.

  Nabilone is a synthetic form of THC and is used as an anti-vomiting agent.

Potency, Purity and Dose

THC is the major psychoactive constituent of Cannabis. Potency is dependant on THC concentration and is usually expressed as percent THC per dry weight of material. Average THC concentration in marijuana is 1-5 percent, hashish 5-15 percent, and hash oil 10-12 percent.

The form of marijuana known as Sinsemilla is derived from the unpollenated female cannabis plant and is preferred for its high THC content (ranging from 15 percent and higher). Recreational doses are highly variable. A single intake of smoke from a pipe or joint is called a hit (approximately 1/20th of a gram). The lower the potency or THC content the more hits are needed to achieve the desired effects; 1-3 hits of high potency Sinsemilla is typically enough to produce the desired effects. In terms of its psychoactive effect, a drop or two of hash oil on a cigarette is equal to a single "joint" of marijuana. Medically, the initial starting dose of Marinol is 2.5 mg, twice daily.

Marijuana usually is smoked. Marijuana, hashish and hash oil also can be taken orally, e.g., baked in cookies or brownies and eaten. Marinol is taken orally.

B. Possible Effects of Cannabis

Cannabis interferes with a person's ability or willingness to divide attention. When driving, they may attend to certain parts of the driving task but ignore other parts. For example, they may continue to steer the car but ignore stop signs, traffic lights, etc.

Pharmacological effects of marijuana vary with dose, route of administration, experience of user, vulnerability to psychoactive effects, and setting of use. At recreational doses, effects may include relaxation, euphoria, relaxed inhibitions, sense of well-being, disorientation, altered time and distance perception, lack of concentration, impaired learning and memory, alterations in thought formation and expression, drowsiness, sedation, mood changes such as panic reactions and paranoia, and a more vivid sense of taste, sight, smell, and hearing. Stronger doses intensify reactions and may cause fluctuating emotions, flights or fragmentary thoughts with disturbed associations, a dulling of attention despite an illusion of heightened insight, image distortion, and psychosis.

Other characteristic indicators **may** include an odor of marijuana in the subject's vehicle or on the subject's breath, marijuana debris in the mouth, green coating on the subject's tongue, and reddening of the conjunctiva.

Because Cannabis impairs attention, divided attention tests are excellent tools forrecognizing people who are under the influence of this category of drug.

C. Onset and Duration of Cannabis Effects

Persons begin to feel and exhibit marijuana's effects within 8-9 seconds after inhaling the smoke. The effects usually reach their peak within 10-30 minutes, and the effects generally continue for 2-3 hours. The user typically feels "normal" within 3-6 hours after smoking marijuana. There are studies that indicate that the user may be impaired long after the euphoric feelings have ceased.

It is important to understand that some blood and urine tests may continue to disclose evidence of the use of marijuana long after the effects of marijuana have dissipated. That is because certain chemical tests do not seek to find THC itself, but instead look for metabolites of THC, or chemical by-products. It can take as long as 4 hours for THC to appear in the urine at concentrations sufficient to trigger an immunoassay (50 ng/mL) following smoking. Some blood tests may disclose marijuana use for at least 3 days after smoking. Some urine tests may indicate the presence of THC metabolites for 28-45 days.

There are two important metabolites of THC. One of these metabolites is Hydroxy THC; this causes the user to feel euphoric so that they are aware of the effects. Hydroxy THC usually is eliminated from the blood plasma within six hours. The other important metabolite is Carboxy THC. There is no evidence at this time that this metabolite is psychoactive. Carboxy THC may be found in the blood plasma for several days following marijuana use.

D. Signs and Symptoms of Cannabis Overdose

Excessive use of marijuana can create paranoia and possible psychosis. These same effects may develop from long term use of the drug, which has also been observed to produce sharp personality changes, especially in adolescent users. Other long term effects include:

- lung damage
- chronic bronchitis
- lowering of testosterone (male sex hormone)
- possible birth defects, still births and infant deaths
- acute anxiety attacks
- chronic reduction of attention span

E. Expected Results of the Evaluation

When a person under the influence of Cannabis is evaluated by a DRE, the following results can generally be expected:

Horizontal Gaze Nystagmus - none

Vertical Gaze Nystagmus - none

Lack of Convergence - present

Pupil size - dilated, but possibly normal. Rebound dilation may be observed.

Reaction to light - normal

Pulse rate - up

Blood Pressure - up

Temperature - normal

Muscle tone - normal

Injection sites usually will not be found.

General Indicators:

- body tremors
- disorientated
- debris in mouth (possible)
- eyelid tremors
- impaired perception of time and distance
- increased appetite
- marked reddening of the conjunctiva
- odor of marijuana
- possible paranoia
- relaxed inhibitions

Topics for Study

1. What is the active ingredient in Cannabis?

2. Why is the Walk and Turn test and the One Leg Stand test excellent tools for recognizing persons under the influence of marijuana?

3. What is Marinol?

4. What is Sinsemilla?

5. Name two important metabolites of THC, and describe how they affect the duration and perception of the effects of Cannabis.

DRUG INFLUENCE EVALUATION

Evaluator: Constable John Bercic, Vancouver PD	DRE # 4651	Rolling Log # 07-11-04	**Session XXI- #1**
Recorder/Witness: Sgt. Paul. Milne, New Westminister P.S.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 345789-07
Arrestee's Name (Last, First, Middle): Clark, Kenneth A.	Date of Birth: 5/24/84	Sex: M	Race: W
Arresting Officer (Name, ID#): Constable John Ferguson, RCMP #8890			
Date Examined / Time /Location: 11/05/07 2220 Vancouver PD	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 47451	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Cst. Ferguson	☒ Yes ☐ No	What have you eaten today? When? Couple of hot dogs 5 PM	What have you been drinking? How much? Nothing	Time of last drink? N/A
Time now/ Actual: 11:00 pm / 2225	When did you last sleep? How long: Last night 6 hrs.	Are you sick or injured? "Hell no I feel great." ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No "No, are you?"	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No "I don't do drugs man."	Attitude: Boisterous, cooperative	Coordination: Unsteady, relaxed		
Speech: Loud, talkative	Breath Odor: Odor of marijuana	Face: Flushed, sweaty		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☒ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 94 / 2212	Lack of Smooth Pursuit	No	No
2. 92 / 2227	Maximum Deviation	No	No
3. 92 / 2240	Angle of Onset	None	None

Convergence — Right eye / Left eye

26/30 ONE LEG STAND 24/30

9 15 21 16 19

L R L R

Romberg Balance

3" 3" 3" 3"

Circular Sway

Walk and Turn test

M M M M

M M M

Laughing during test

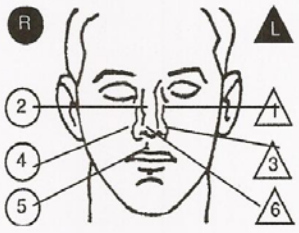
	1st Nine	2nd Nine
Cannot keep balance	XX	
Starts too soon		
Stops walking	X	
Misses heel-toe	XXX	XXXX
Steps off line		
Raises arms	X	XX
Actual steps taken	9	9

- ☒ ☒ Sways while balancing (1/2)
- ☒ ☒ Uses arms to balance (2/1)
- ☐ ☐ Hopping (0/0)
- ☒ ☒ Puts foot down (3/2)

Laughed during the test

Internal clock: 43 estimated as 30 seconds	Describe Turn: Stopped	Cannot do test (explain): N/A	Type of footwear: Boots

Draw lines to spots touched



Laughing and eyelid tremors

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	5.5	9.0	5.0-7.5
Right Eye	5.5	9.0	5.0-7.5

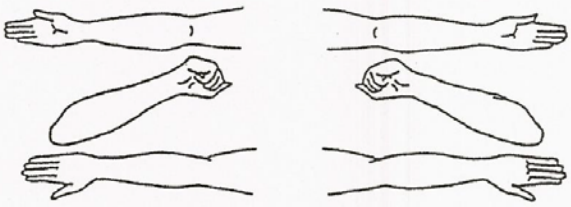
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☒ Yes ☐ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure	Temperature
154/106	98.6

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"I told you, I don't do drugs."	No answer	No answer	"I ain't saying anything."

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
11/05/07 2105	2150	2220	2350	

Officer's Signature: DRE # 4651 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☒ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Clark, Kenneth A.

1. **LOCATION:** The evaluation was conducted at the Vancouver Police Department.

2. **WITNESSES:** Sgt. Paul Milne of the New Westminster Police Services.

3. **BREATH ALCOHOL TEST:** Clark's breath test was a 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted by radio and advised to meet Constable Ferguson at the Vancouver Police Department for a drug evaluation. Constable Ferguson advised he stopped Clark after observing him exit Highway 1A at a high rate of speed then fail to stop at a stop sign. The suspect seemed unconcerned about his driving and told Ferguson that he was "just having some fun." After performing poorly on the SFST's, Clark was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at V.P.D. He was laughing a lot and several times said, "This machine says I'm not drunk" He was having problems with his coordination and several times he bumped into the interview table. He had a noticeable reddening of the conjunctiva.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect had a circular sway of approximately 3" and estimated 30 seconds in 43 seconds. Walk & Turn: Suspect lost his balance twice during the instructions stage, missed heel to toe three times on the first nine steps. On the return nine steps he missed heel-to-toe four times and began laughing. He also used his arms for balance. One Leg Stand: Suspect put his foot down three times while standing on the left foot and twice while standing on the right foot. He also used his arms for balance on both and laughed while completing the test. Finger to Nose: The suspect missed the tip of his nose on four of the attempts and laughed while completing the test.

8. **CLINICAL INDICATORS:** Suspect had a Lack of Convergence and Rebound Dilation. His pupils were dilated and his pulse and blood pressure were above the normal ranges.

9. **SIGNS OF INGESTION:** The suspect had an odor of marijuana on his breath and clothes.

10. **SUSPECT'S STATEMENTS:** Suspect stated, "I smoke pot. What's the big deal?"

11. **DRE'S OPINION:** In my opinion Clark is under the influence of a Cannabis and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

DRUG INFLUENCE EVALUATION

Evaluator: Officer Robert Hayes, Albany P.D.	DRE #: 6606	Rolling Log #: 07-23	**Session XXI-#2**
Recorder/Witness: Sr. Trooper Mike Iwai, Oregon State Police	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-99325
Arrestee's Name (Last, First, Middle): Peltier, Charles E.	Date of Birth: 5/16/70	Sex: M	Race: W
Arresting Officer (Name, ID#): Sr. Trooper Steve Webster, Oregon State Police #1055			
Date Examined / Time /Location: 09/21/07 2325 Linn Co. Jail	Breath Results: Results: 0.04	Test Refused ☐ Instrument #: 2124	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐
Miranda Warning Given: Given By: Tpr. Webster	☒ Yes ☐ No	What have you eaten today? When? Hot dog 3 hours ago	What have you been drinking? How much? Beer "Two"
Time of last drink? 2 hours ago			
Time now/ Actual: Midnight/11:30 pm	When did you last sleep? How long: Last night About 5 hrs. ago	Are you sick or injured? "No, and I'm not drunk" ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No
Do you take insulin? ☐ Yes ☒ No "I don't take anything."	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No	
Are you taking any medication or drugs? ☐ Yes ☒ No "Nothing man."	Attitude: Impatient, anxious	Coordination: Poor, disoriented	
Speech: Slow, slurred	Breath Odor: Alcoholic beverage	Face: Normal	
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☒ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy

Pulse and time	HGN	Left Eye	Right Eye
1. 104 / 2338	Lack of Smooth Pursuit	Yes	Yes
2. 102 / 2345	Maximum Deviation	No	No
3. 100 / 2358	Angle of Onset	None	None

Convergence: Right eye, Left eye

28/30 ONE LEG STAND 26/30

24 19 L R L R

L R
☒ ☒ Sways while balancing (1/1)
☒ ☒ Uses arms to balance (2/1)
☐ ☒ Hopping (0/1)
☒ ☒ Puts foot down (1/1)

Leg tremors

Romberg Balance: 3" 3" 3" 3"

Circular sway
Eyelid tremors

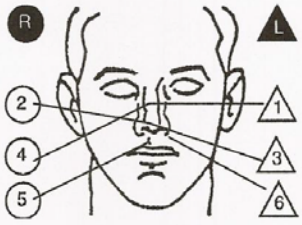
Walk and Turn test: S M M / M M S M

Walked slowly Leg tremors

	1st Nine	2nd Nine
Cannot keep balance	X	
Starts too soon		
Stops walking	X	X
Misses heel-toe	XXX	XX
Steps off line		
Raises arms	XX	X
Actual steps taken	9	9

Internal clock: 35 estimated as 30 seconds	Describe Turn: Lost balance, stepped to the right	Cannot do test (explain): N/A	Type of footwear: Lace-up boots

Draw lines to spots touched



Eyelid tremors

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.5	8.0	6.0
Right Eye	6.5	8.0	6.0

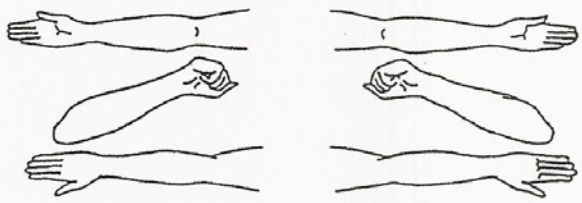
Nasal area: Clear

Oral cavity: Brownish coating on tongue

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: Slow

RIGHT ARM LEFT ARM



Nothing observed

Blood pressure	Temperature
148/100	98.4

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"Just a couple of beers."	N/A	N/A	N/A

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
09/21/07 2210	2250	2325	0030 9/22/07	

Officer's Signature: DRE #: 6606 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☒ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☒ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Peltier, Charles E.

1. **LOCATION:** The evaluation was conducted in the interview room at the Linn County Jail.

2. **WITNESSES:** The evaluation was witnessed and recorded by Senior Trooper Mike Iwai of the Oregon State Police.

3. **BREATH ALCOHOL TEST:** Peltier's breath test was a 0.04%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was dispatched to contact Sr. Trooper Webster at the Linn County Jail for a drug evaluation. Senior Trooper Webster advised he had arrested Peltier for DUI after he attempted to elude officers on I-5 south of Salem. The suspect was detained with the use of spike strips. The suspect was disoriented and had poor balance and coordination. After performing poorly on the SFST's, he was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the jail. He seemed impatient and anxious. He had poor coordination and balance and his speech was slow and slurred.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect had an approximate 3" circular sway and estimated 30 seconds in 35 seconds. Walk & Turn: Suspect lost his balance during the instructions stage, missed heel to toe three times on the first nine steps and twice on the second nine steps. He stopped twice while walking and raised his arms for balance. One Leg Stand: Suspect swayed while balancing, used his arms for balance, put his foot down once, hopped once and had leg tremors. Finger to Nose: Suspect missed the tip of his nose on four of the six attempts and exhibited eyelid tremors.

8. **CLINICAL INDICATORS:** Suspect had a Lack of Convergence. His pupils were dilated in room light and direct light. His pulse and blood pressure were above the normal ranges.

9. **SIGNS OF INGESTION:** The suspect had a brownish coloration on his tongue.

10. **SUSPECT'S STATEMENTS:** Suspect admitted drinking "two beers" and laughed when asked about smoking marijuana.

11. **DRE'S OPINION:** In my opinion Peltier is under the influence of ETOH (Alcohol) and Cannabis and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Officer Ed Harris, Seattle Police Department	DRE #: 009532	Rolling Log #: 07-034	**Session XXI-#3**
Recorder/Witness: Sgt. Robert Sharpe, Washington State Patrol	Crash: ☐ None ☐ Fatal ☐ Injury ☒ Property		Case # 07-776165
Arrestee's Name (Last, First, Middle): Wright, James B.	Date of Birth: 10/20/83	Sex: W	Race: M
Arresting Officer (Name, ID#): Officer Jon Huber, Seattle Police Department #7688			
Date Examined / Time /Location: 08/17/07 2130 Seattle PD West Precinct	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 4773	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

Miranda Warning Given: Given By: Ofc. Huber	☒ Yes ☐ No	What have you eaten today? When? "Couple of burgers" 7 PM	What have you been drinking? How much? "Nothing, I don't drink."	Time of last drink? N/A
Time now/ Actual: 9-10 pm/9:40 pm	When did you last sleep? How long: Last night 9 hours	Are you sick or injured? ☐ Yes ☒ No "I feel fine."	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Relaxed, carefree	Coordination: Unsteady		
Speech: Slow and deliberate	Breath Odor: Odor of marijuana	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☒ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 94 / 2140	Lack of Smooth Pursuit	No	No
2. 92 / 2152	Maximum Deviation	No	No
3. 92 / 2215	Angle of Onset	None	None

Convergence

Right eye Left eye

23 ONE LEG STAND 25

16 19 18 R L L R

L R
☒ ☒ Sways while balancing (1/1)
☒ ☒ Uses arms to balance (2/1)
☐ ☐ Hopping (0/0)
☒ ☒ Puts foot down (1/1)

Counted slowly

Romberg Balance

2" 2" 2" 2"

Circular sway

Walk and Turn test

M M M M M M M M M

M M M M M

	1st Nine	2nd Nine
Cannot keep balance	X	
Starts too soon	X	
Stops walking		
Misses heel-toe	XXXXX	X-9
Steps off line		
Raises arms		
Actual steps taken	XX / 9	X / 9

Internal clock: 38 estimated as 30 seconds

Describe Turn: Spun around

Cannot do test (explain): N/A

Type of footwear: Flip flops

Draw lines to spots touched

R L 1 2 3 4 5 6

Eyelid tremors

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.0	7.5	5.0-7.0
Right Eye	6.0	7.5	5.0-7.0

Nasal area: Clear

Oral cavity: Green coating on tongue

REBOUND DILATION ☒ Yes ☐ No

REACTION TO LIGHT: Normal

RIGHT ARM LEFT ARM

Nothing observed

Blood pressure	Temperature
140/96	98.8

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"Nothing man."	N/A	"I didn't."	"I ain't saying."

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
08/17/07 2005	2045	2130	2240	

Officer's Signature: DRE # 9532 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☒ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Wright, James B.

1. **LOCATION:** The evaluation was conducted at the West Precinct of the Seattle P.D.

2. **WITNESSES:** Sergeant Robert Sharpe, Washington State Patrol.

3. **BREATH ALCOHOL TEST:** Wright's breath test was a 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was on duty at the West Precinct when contacted by Officer Jon Huber requesting a drug evaluation. Officer Huber advised he arrested Wright after his vehicle struck another vehicle on Highway 99 north of Seattle. There was an odor of marijuana coming from the suspect's vehicle. He had poor balance and coordination and was unable to perform the SFST's as directed. A small pipe containing marijuana residue was located in the suspect's vehicle.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the jail. He was very relaxed and carefree acting. He had poor coordination and balance and his speech was slow and deliberate.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect had an approximate 2" circular sway and estimated 30 seconds in 38 seconds. Walk & Turn: Suspect lost his balance during the instructions stage, started walking too soon, raised his arms for balance and failed to touch heel to toe five times on the first nine steps and on all his steps during the second nine steps. One Leg Stand: Suspect swayed while balancing, used his arms for balance and put his foot down twice while standing on the left foot and once while standing on the right foot. Finger to Nose: Suspect missed the tip of his nose on three of the six attempts and exhibited eyelid tremors.

8. **CLINICAL INDICATORS:** Suspect had a lack of convergence. His pupils were dilated in room light and direct light. He also had rebound dilation. His pulse and blood pressure were above the normal ranges.

9. **SIGNS OF INGESTION:** The suspect had a green coating on his tongue.

10. **SUSPECT'S STATEMENTS:** Suspect denied using drugs.

11. **DRE'S OPINION:** In my opinion Wright is under the influence of Cannabis and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:** The suspect was also charged with possession of marijuana.

SESSION XXII

OVERVIEW OF SIGNS AND SYMPTOMS

SESSION XXII OVERVIEW OF SIGNS AND SYMPTOMS

Upon successfully completing this session the student will be able to:

- Describe the possible effects that may be observed in each major indicator of drug impairment.
- Identify the effects that will most likely be observed with subjects under the influence of each drug category.

Summarizing What We've Learned About The Effects of Each Category: An Exercise For The Student

We have now completed a detailed review of all seven drug categories. In this session, we will summarize what we've learned about the major indicators of drug impairment that DREs rely upon to form their opinions. We will also summarize how each drug category usually "discloses itself" on those major indicators.

The major indicators of impairment consist of nine items:

- Horizontal Gaze Nystagmus
- Vertical Gaze Nystagmus
- Lack of Convergence
- Pupil Size
- Reaction to Light
- Pulse Rate
- Blood Pressure
- Body Temperature
- Muscle Tone

As a DRE, you will evaluate each of these indicators for every subject you examine. What are the possible things that you may observe for each indicator? For example, what are the possible things that you may observe when you check a subject for Horizontal Gaze Nystagmus? What are the possible things that you may observe when you check the subject's blood pressure?

With HGN, there are only two possibilities: either it will be **Present** (i.e. the eyes will jerk) or **Not Present** (i.e. the eyes will move smoothly). Some drugs cause nystagmus, others do not; there is no drug that "cures" nystagmus. With blood pressure, there are three different things we might observe: it may be up, down, or it may be normal. Some drug categories elevate the blood pressure, others lower it; if a person is under the influence of two different drug categories, one that raises blood pressure and one that lowers it, it is possible that the two drugs will partly off-set each other, and the blood pressure may be normal.

What about the other seven major indicators? What are the possible things we may find with each of them? **Before you answer**, try to complete the list of possibilities we've started on the following chart:

Horizontal Gaze Nystagmus?	**PRESENT or NONE**
Vertical Gaze Nystagmus?	
Lack of Convergence?	
Pupil Size?	
Reaction to Light?	
Pulse Rate?	
Blood Pressure?	**UP, DOWN, or NORMAL**
Body Temperature?	
Muscle Tone?	

How did you do? Your completed list, on the previous page, should look something like this:

Indicator	Possible Effects
Horizontal Gaze Nystagmus?	**PRESENT or NONE**
Vertical Gaze Nystagmus?	**PRESENT or NONE**
Lack of Convergence?	**PRESENT or NONE**
Pupil Size?	**DILATED or NORMAL or CONSTRICTED**
Reaction to Light?	**NORMAL, SLOW, or LITTLE TO NONE VISIBLE**
Pulse Rate?	**UP or DOWN or NORMAL**
Blood Pressure?	**UP or DOWN or NORMAL**
Body Temperature?	**UP, DOWN, or NORMAL**
Muscle Tone?	**FLACCID, RIGID OR NORMAL**

Next, your instructors will expect you to be able to state how each category of drugs usually affects each of the eight major indicators. This is information that was first covered in your Pre-School, and covered in even greater detail earlier in this school. In the table on the next page, we've listed what we can usually expect to see in subjects who are under the influence of CNS Depressants. Try to fill in the rest of the table before Session XXII is given in class.

WHAT WILL WE USUALLY SEE IN OUR SUBJECTS?

	Depressants	Stims	Halluc	D/A	Narc	Inhalant	Cannabis
HGN	Present						
VGN	Present *(high dose)						
Lack Conv	Present						
Pupil Size	Normal (1)						
React Light	Slow						
Pulse Rate	Down (2)						
Blood Press	Down						
Body Temp	Normal						
Muscle Tone	Flaccid						

* high dose for that individual

(1)Soma, Quaaludes and some anti-depressants usually dilate pupils
(2)Quaaludes, ETOH and some anti-depressants may elevate
(3)Certain psychedelic amphetamines may cause slowing
(4)Normal, but may be dilated
(5)Down with anesthetic gases, up with volatile solvents and aerosols
(6)Pupil size possibly normal

The following attachment, Comparison of DRE Symptomatology With Cross Section of Drug Symptomatology Sources, is a small portion of the available scientific literature addressing drug influence. The Synopsis is consistent with the DRE training.

COMPARISON OF DRE SYMPTOMATOLOGY
WITH CROSS SECTION OF DRUG SYMPTOMATOLOGY SOURCES

CNS DEPRESSANTS:

DRE Symptomatology:

Nystagmus	decreased pulse
decreased blood pressure	uncoordinated
disoriented	sluggish
thick slurred speech	drunk-like appearance

The Pharmacological Basis of Therapeutics, Seventh Edition, Gilman, A,; Goodman, I.; MacMillan Publishing Co. 1985, Barbiturates, pages 546-547:

Nystagmus	Strabismus
difficulty in visual accommodation	
vertigo	ataxia gait
positive Romberg sign	Hypotonia
Dysmetria	Diplopia
sluggishness	difficulty in thinking
slowness, slurring of speech	poor comprehension
poor memory	faulty judgement
emotional lability	

A Primer of Drug Action, Julien, Robert M. W.H. Freeman and Company, New York, 8 Ed. 1997.

Drug and Alcohol Abuse, A Clinical Guide to Diagnosis and Treatment, (3rd Ed. , Schuckit, M.D., Mark A. Plenum Medical Book Co, New York 1989. p.19.

Encyclopedia of Drug Abuse, O'Brien, Robert; Cohen, Sydney. M.D. Facts on File, INC New York (1984), page 36: barbiturates effects like alcohol (staggering, poor motor control).

Drug Abuse and Dependence, Grinspoon, Lester,MD; Bakalar,James B., Harvard Medical School Mental Health Review No. 1 (1990), page 11: sedative hypnotics same as alcohol and other depressants

Drugs of Abuse, Giannini, A. James, M.D.; Slaby, Andrew E. M.D., Ph.D. Medical Economics Books, Oradell, New Jersey (1989), page 72: Benzodiazepines same as barbiturate effects; pages 247; 292): Barbiturates:

Nystagmus	depressed pulse
depressed blood pressure	diminished concentration
incoordination	decreased reaction time

Manual of Drug and Alcohol Abuse, Guidelines for Teaching in Medical and Health Institutions, ed Arif, Awni. M.D., Westermeyer, Joseph, M.D.. Ph.D..D Plenum Medical Book Company, New York (1988), p. 135.

Diagnostic and Statistical Manual of Mental Disorders (Third Ed, Revised), American Psychiatric Association (1987), p. 159

Maladaptive behavioral changes, e.g., disinhibition of sexual or aggressive impulses, mood lability, impaired judgment, impaired social or occupational functioning.

slurred speech
unsteady gait
incoordination
impairment in attention or memory

CNS STIMULANTS:

DRE Symptomatology:
dilated pupils
increased temperature
body tremors
excited
talkative
anxiety
redness to nasal area
loss of appetite
increased alertness
increased pulse rate
increased blood pressure
restlessness
euphoric
exaggerated reflexes
grinding teeth
runny nose
insomnia

The Pharmacological Basis of Therapeutics, Seventh Edition,

Gilman, A,; Goodman, I.; MacMillan Publishing Co. 1985, Cocaine 551-554

Medical Toxicology-Diagnosis and Treatment of Human Poisoning, Ellenhorn, Matthew J., Barceloux, Donald G. Elsevier Science Pub. Co. 1988, Amphetamines, Page 634:

Mild influence:
Mydriasis
restlessness
irritability
tremor
Diaphoresis
nausea
pallor
hyperreflexia
talkativeness
insomnia
flushing
combativeness
vomiting
dry mucous membranes

Moderate:
hyperactivity
hypertension
Tachycardia
chest discomfort
abdominal pain
mild temperature
elevation
repetitive behavior
panic reactions
confusion
Tachypnea
premature ventricular contraction
vomiting
Profuser Diaphoresis
impulsivity
hallucinations

Serious:

delirium	marked Hypertension/Tachycardia
Hyperreflexia	convulsions
Hypotension	coma

Cocaine, page 650-659

Early Stimulation:

euphoria	Garrulity
excitement	apprehension
irritable behavior	Mydriasis
sudden headache	nausea
vomiting	dizziness
twitching of small muscles	tics
tremor	jerks
Cocaine Psychosis	hallucinations
elevation of pulse	increased respiration

Advanced:

convulsions	Hyperreflexia
decreased consciousness	increased pulse and blood pressure

Later Stages:

Hypotension	Hypothermia
Dyspnea et al	

A Primer of Drug Action, Julien, Robert M. W.H. Freeman and Company, New York, 1992, pages 120-123: Amphetamines and cocaine (CNSS):

dilation of pupils	increased blood pressure
slight tremor	restlessness
agitation	possibly hallucinations

Drug and Alcohol Abuse, A Clinical Guide to Diagnosis and Treatment, (3rd Ed. , Schuckit, M.D., Mark A. Plenum Medical Book Co, New York 1989, page 99: CNSS cause:

dilation of pupils	rapid heart rate
elevation of blood pressure	tremor in hands
increased body temperature	restlessness

Encyclopedia of Drug Abuse, O'Brien, Robert; Cohen, Sydney. M.D. Facts on File, INC New York (1984), pages 25, 121: Amphetamine:

dilation of pupils	increase heart rate
blood pressure	flushing
teeth grinding	dry mouth
tremors	lack of coordination

pages 64, 100, 121:

dilation of pupils	increased heartbeat
increased temperature	similar to Amphetamine

Drug Abuse and Dependence, Grinspoon, Lester,MD; Bakalar,James B., Harvard Medical School Mental Health Review No. 1 (1990), pages 8 and 10 Cocaine and Amphetamine:

dilated pupils	increased pulse
increased blood pressure	vasoconstriction
agitation tremors	increased temperature

Drugs of Abuse, Giannini, A. James, M.D.; Slaby, Andrew E. M.D., Ph.D. Medical Economics Books, Oradell, New Jersey(1989), page 29 Amphetamines:

pupil dilation (Mydriasis)	increased pulse rate
elevated blood pressure	hyperactive
talkative	irritable
restless	Anorexia
tremors	urinary retention
teeth grinding (Bruxism)	fidgety, jerky, random motions
illogical, loose thoughts	

Page 295: Cocaine:

dilated pupils	Tachycardia
increased blood pressure	vasoconstriction
Hyperpyrexia	

Manual of Drug and Alcohol Abuse, Guidelines for Teaching in Medical and Health Institutions, ed Arif, Awni. M.D., Westermeyer, Joseph, M.D.. Ph.D..D Plenum Medical Book Company, New York (1988) page 142: Amphetamine:

increased pulse	increased blood pressure
possibly increased temperature	increased wakefulness
general increase in psychomotor activity	

page 145: Cocaine

Mydriasis (dilated pupils);	may cause psychosis
euphoria	agitation

Diagnostic and Statistical Manual of Mental Disorders (Third Ed, Revised), American Psychiatric Association (1987), p. 142.

COCAINE:
Maladaptive behavioral changes, e.g., euphoria, fighting, grandiosity, hyper-vigilance, psychomotor agitation, impaired judgment, impaired social or occupational functioning.

pupillary dilation	Tachycardia
elevated blood pressure	perspiration or chills
nausea or vomiting	visual or tactile hallucinations

AMPHETAMINE:
Maladaptive behavioral changes, e.g., fighting, grandiosity, hyper-vigilance, psychomotor agitation, impaired judgment, impaired social or occupational functioning.

pupillary dilation	Tachycardia
elevated blood pressure	perspiration or chills
nausea or vomiting	

HALLUCINOGENS:

DRE Symptomatology:

dilated pupils	increased pulse rate
increased blood pressure	increased temperature
dazed appearance	body tremors
Synesthesia	hallucinations
paranoia	uncoordinated
nausea	disoriented
difficulty in speech	perspiring
poor perception of time/distance	

The Pharmacological Basis of Therapeutics, Seventh Edition, Gilman, A,; Goodman, I.; MacMillan Publishing Co. 1985, LSD and Related Drugs, page 564

pupillary dilation	increased blood pressure
Tachycardia	Hyperreflexia
tremor	nausea
Piloerection	muscular weakness
increased body temperature	hallucinations
Hyper vigilance	Synesthesia
loss of boundaries	

Medical Toxicology-Diagnosis and Treatment of Human Poisoning, Ellenhorn, Matthew J., Barceloux, Donald G. Elsevier Science Pub. Co. 1988, LSD, pages 667-669:

pupillary dilation	increased heart rate
increased body temperature	Piloerection
weakness	tremor
Hyperreflexia	Ataxia
hallucinations	depersonalization
poor judgment	mood swings

A Primer of Drug Action, Julien, Robert M.; W. H. Freeman & Company, NY, 1992
Drug and Alcohol Abuse, A Clinical Guide to Diagnosis and Treatment, (3rd Ed.), Schuckit, M.D., Mark A. Plenum Medical Book Co, New York 1989 page 160:

dilated pupils	increased blood pressure
increased awareness	faltered body images
sensory input	fine tremor
flushed face	increased body temperature

Encyclopedia of Drug Abuse, O'Brien, Robert; Cohen, Sydney. M.D. Facts on File, Inc New York (1984), pages 100; 115 120, 153): Hallucinogens:

dilated pupils	increased heart rate
increased blood pressure	increased temperature
profuse perspiration	loss of appetite
hallucinations	

Drug Abuse and Dependence, Grinspoon, Lester,MD; Bakalar,James B., Harvard Medical School Mental Health Review No. 1 (1990)

Drugs of Abuse, Giannini, A. James, M.D.; Slaby, Andrew E. M.D., Ph.D. Medical Economics Books, Oradell, New Jersey (1989), page 218: LSD:

Ataxia	high blood pressure
Hyperreflexia	incoordination
Tachycardia	

Manual of Drug and Alcohol Abuse, Guidelines for Teaching in Medical and Health Institutions, ed Arif, Awni. M.D., Westermeyer, Plenum Medical Book Company, New York (1988)

Diagnostic and Statistical Manual of Mental Disorders (Third Ed, Revised), American Psychiatric Association (1987), p. 145.

> Maladaptive behavioral changes, e.g., marked anxiety or depression, ideas of reference, fear of losing one's mind, paranoid ideation, impaired judgment, impaired social or occupational functioning.

Perceptual changes occurring in a state of full wakefulness and alertness, e.g., subjective intensification of perceptions, depersonalization, derealization, illusions, hallucinations, Synesthesia

pupillary dilation
sweating
blurring of vision
incoordination
Tachycardia
palpitations
tremors

DISSOCIATIVE ANESTHETICS (PHENCYCLIDINE)

DRE Symptomatology:
Nystagmus
increased blood pressure
perspiring
blank stare
"moon walking"
incomplete responses
repetitive speech
cyclic behavior
hallucinations
increased pulse
increased temperature
warm to the touch
early onset of nystagmus
difficulty in speech
repetitive response
increased pain threshold
confused, agitated
possibly violent and combative

The Pharmacological Basis of Therapeutics, Seventh Edition, Gilman, A,; Goodman, I.; MacMillan Publishing Co. 1985, PCP, page 565-567

Nystagmus
elevated blood pressure
staggering gait
numbness of extremities
muscular rigidity
drowsiness
repetitive movements
elevated heart rate
feeling of intoxication
slurred speech
sweaty
blank stare
hostile behavior

Medical Toxicology-Diagnosis and Treatment of Human Poisoning, Ellenhorn, Matthew J., Barceloux, Donald G. Elsevier Science Pub. Co. 1988, PCP 768-777:

Nystagmus
depressed light reflexes
diminished pain
tremors
slurred speech
increased pulse rate
Amnesia
body image distortion
depersonalization
hallucinations
Miosis
blurred vision
Ataxia
muscle weakness
drowsiness
increased blood pressure
anxiety/agitation
euphoria
disordered thought processes

A Primer of Drug Action, Julien, Robert M. W.H. Freeman and Company, New York, 1997, page 262: PCP:

- increased blood pressure
- disinhibition
- muscle rigidity
- delirium excitement
- hallucinations
- speech difficulty
- elevated blood pressure
- blank stare
- mood swings
- agitation
- disorientation
- analgesia
- pain tolerance

Drug and Alcohol Abuse, A Clinical Guide to Diagnosis and Treatment, (3rd Ed.), Schuckit, M.D., Mark A. Plenum Medical Book Co, New York 1989 p. 178

- sweating
- fever convulsions
- muscle rigidity
- increased blood pressure

Encyclopedia of Drug Abuse, O'Brien, Robert; Cohen, Sydney. M.D. Facts on File, INC New York (1984), page 100, 208: PCP:

- Nystagmus
- increased pulse rate
- mood swings
- changes in body awareness
- violent behavior
- increased blood pressure
- flushing
- hallucinations
- speech difficulties
- decreased responsiveness

Drug Abuse and Dependence, Grinspoon, Lester, M.D.; Bakalar, James B., Harvard Medical School Mental Health Review No. 1 (1990), page 25: PCP:

- body image distortions
- Nystagmus
- loss of muscle control
- memory loss drooling
- increased blood pressure
- muscle rigidity
- incoherent speech
- blank stare

Drugs of Abuse, Giannini, A. James, M.D.; Slaby, Andrew E. M.D., Ph.D. Medical Economics Books, Oradell, New Jersey(1989) page 296: PCP:

- Nystagmus
- hallucination
- loss of motor control
- automated speech
- Nystagmus at rest
- disorientation
- extreme agitation
- disassociation from environment

Manual of Drug and Alcohol Abuse, Guidelines for Teaching in Medical and Health Institutions, ed Arif, Awni. M.D., Westermeyer, Joseph, M.D. Ph.D.D Plenum Medical Book Company, New York (1988), page 156: PCP:

Ataxia
muscular hypertonicity
Ptosis
Horizontal Gaze, Vertical Gaze
and Rotary Nystagmus
elevated blood pressure
mood swings
tremors
Hyperreflexia
Tachycardia

Diagnostic and Statistical Manual of Mental Disorders (Third Ed, Revised), American Psychiatric Association (1987), p. 155.

Maladaptive behavioral changes, e.g., belligerence, assaultiveness, impulsiveness, unpredictability, psychomotor agitation, impaired judgment, impaired social or occupational functioning.

Vertical or Horizontal Gaze Nystagmus
increased blood pressure or heart rate
numbness or diminished responsiveness to pain.
Ataxia
Dysarthria (slurred speech)
muscle rigidity
seizures
Hyperacusis

NARCOTICS:

DRE Symptomatology:
constricted pupils
decreased blood pressure
Ptosis (droopy eyelids)
drowsiness
low, raspy speech
facial itching
fresh puncture marks
decreased pulse rate
decreased temperature
"on the nod"
depressed reflexes
dry mouth
euphoria

The Pharmacological Basis of Therapeutics, Seventh Edition, Gilman, A,; Goodman, I.; MacMillan Publishing Co. 1985, Opiods page 541-545

Medical Toxicology-Diagnosis and Treatment of Human Poisoning, Ellenhorn, Matthew J., Barceloux, Donald G. Elsevier Science Pub. Co. 1988; Heroin, pages 702-703. See also Methadone, Demerol, etc.:

A Primer of Drug Action, Julien, Robert M. W.H. Freeman and Company, New York, 1997: Morphine:

- constructed pupils
- drowsiness
- mental clouding
- depressed respiration
- euphoria
- decreased blood pressure
- Dysphoria
- sedation
- Analgesia

Drug and Alcohol Abuse, A Clinical Guide to Diagnosis and Treatment, (3rd Ed., Schuckit, M.D., Mark A. Plenum Medical Book Co, New York 1989

Decrease pain (p.6)

Encyclopedia of Drug Abuse, O'Brien, Robert,Cohen, Sydney. M.D. Facts on File, INC New York (1984) page 100, 120, 123, 124: Narcotics:

- constricted pupils
- Analgesia
- euphoria
- reduced heart rate
- depressed appetite
- going "on the nod"

Drug Abuse and Dependence, Grinspoon, Lester,MD; Bakalar,James B., Harvard Medical School Mental Health Review No. 1 (1[illegible]age 14: Narcotics:

- constricted pupils
- dreamy state
- euphoria
- "nodding off"
- pain suppression

Drugs of Abuse, Giannini, A. James, M.D.; Slaby, Andrew E. M.D., Ph.D. Medical Economics Books, Oradell, New Jersey (1989) page 293 - 294:

- Miosis (constricted pupils)
- Hypothermia
- decreased temperature)
- drowsiness lethargy
- flaccid muscle tone
- Analgesia
- Bradycardia
- (decreased heart beat)
- euphoria/dysphoria
- confusion
- depressed respiration

Manual of Drug and Alcohol Abuse, Guidelines for Teaching in Medical and Health Institutions, ed Arif, Awni. M.D., Westermeyer, Joseph, M.D.. Ph.D..D Plenum Medical Book Company, New York (1988), page 132

- Miosis (constricted pupils)
- itching
- low blood pressure
- flushing sweating

Diagnostic and Statistical Manual of Mental Disorders (Third Ed, Revised), American Psychiatric Association (1987), p. 152.

Maladaptive behavioral changes, e.g., initial euphoria followed by apathy, dysphoria, psychomotor retardation, impaired judgment, impaired social or occupational functioning.

pupillary constriction
slurred speech
drowsiness
impairment in attention or memory

INHALANTS: (Toluene)

DRE Symptomatology:
Nystagmus
increased blood pressure
odor on mouth
slurred speech
increased pulse rate
residue around nose
nausea disorientation
confusion

The Pharmacological Basis of Therapeutics, Seventh Edition, Gilman, A,; Goodman, I.; MacMillan Publishing Co. 1985, Inhalants, page 567

Drug and Alcohol Abuse, A Clinical Guide to Diagnosis and Treatment, (3rd Ed. , Schuckit, M.D., Mark A. Plenum Medical Book Co, New York 1989. p. 185

decreased inhibitions
drowsiness
sneezing runny nose
floating sensation
light sensitivity

Encyclopedia of Drug Abuse, O'Brien, Robert; Cohen, Sydney. M.D. Facts on File, INC New York (1984)

lowered inhibitions
incoordination confusion
nausea
restlessness
disorientation
impaired judgment

Drug Abuse and Dependence, Grinspoon, Lester,MD; Bakalar,James B., Harvard Medical School Mental Health Review No. 1 (1990)

Drugs of Abuse, Giannini, A. James, M.D.; Slaby, Andrew E. M.D., Ph.D. Medical Economics Books, Oradell, New Jersey(1989), pages 265, 272, 297: Toluene:

Nystagmus
tremors cerebellar
rambling speech
light headedness
CNS depression that mimics Ataxia
Narcotic Analgesics
blank stare
euphoric mood
mental dulling
Ataxia
irritability
tremors

Manual of Drug and Alcohol Abuse, Guidelines for Teaching in Medical and Health Institutions, ed Arif, Awni. M.D., Westermeyer, Joseph, M.D.. Ph.D..D Plenum Medical Book Company, New York (1988)

brief euphoria
giddy intoxication, similar to alcohol
CNS depression (volatile solvents/toluene)
dizziness
Vertigo

Diagnostic and Statistical Manual of Mental Disorders (Third Ed, Revised), American Psychiatric Association (1987), p. 149.

Maladaptive behavioral changes, e.g., belligerence, assaultiveness, apathy, impaired judgment, impaired social or occupational functioning.

Nystagmus
incoordination
unsteady gait
depressed reflexes
tremor generalized muscle
stupor or coma
euphoria
dizziness
slurred speech
lethargy
psychomotor retardation
blurred vision or diplopia
weakness

CANNABIS:

DRE Symptomatology:
dilated pupils
odor of Marijuana
body tremors
relaxed inhibitions
paranoia
impaired perception of time and distance
marked reddening of conjunctivae
debris in mouth
eyelid tremors
increased appetite
disorientation

The Pharmacological Basis of Therapeutics, Seventh Edition, Gilman, A,; Goodman, I.; MacMillan Publishing Co. 1985, Cannabis, pages 559-561

euphoria
temporal disintegration
information processing impairment
dry mouth
short term memory impairment
balance and stance impairment
increased hunger
additive to alcohol

Lower doses affect perception, impairing well beyond when subject subjectively feels effects; alters all information processing; relatively simple motor skills unaffected

High doses:

- anxiety
- increased heart rate
- marked reddening of Conjunctiva
- hallucinations
- increased systolic blood pressure
- simple motor skills affected

Medical Toxicology-Diagnosis and Treatment of Human Poisoning, Ellenhorn, Matthew J., Barceloux, Donald G. Elsevier Science Pub. Co. 1988; Cannabis, page 678-681

- reddening of Conjunctiva
- motor coordination impairment
- relaxation
- temporal distortion (time slows)
- impairment of motor tasks and reaction times requires higher dosages
- loss of short term memory
- systematic thinking impaired
- dry mouth
- alteration in mood
- euphoria
- sleepiness
- decrease in balance, steadiness and muscle strength
- elective attention
- stimulated appetite

A Primer of Drug Action, Julien, Robert M. W.H. Freeman and Company, New York, 1997, Marijuana

- reddening of Conjunctiva
- increased blood pressure
- dry mouth
- altered sensory perception

Drug and Alcohol Abuse, A Clinical Guide to Diagnosis and Treatment, (3rd Ed. , Schuckit, M.D., Mark A. Plenum Medical Book Co, New York 1989, page 145: Cannabis:

- red Conjunctiva
- relaxation
- increased heart rate
- time distortion
- impairment in ability to do multi-step tasks
- decrease level of motor coordination
- euphoria
- dry mouth
- possibly Nystagmus
- short term memory
- tremors

Encyclopedia of Drug Abuse, O'Brien, Robert; Cohen, Sydney. M.D. Facts on File, INC New York (1984), pages 100, 120: Marijuana:

- red eye
- increased heart beat
- dryness of mouth and throat
- increased pulse rate
- increased appetite
- time and space distortions
- increased heart rate
- lack of coordination

Drug Abuse and Dependence, Grinspoon, Lester,MD; Bakalar,James B., Harvard Medical School Mental Health Review No. 1 (1990).page 19: Marijuana:

increased appetite	faster heartbeat
bloodshot eyes	confusion
agitation	incoordination
hallucinations	

Drugs of Abuse, Giannini, A. James, M.D.; Slaby, Andrew E. M.D., Ph.D. Medical Economics Books, Oradell, New Jersey(1989), page 296: Cannabis:

red Conjunctiva	increased appetite
pleasant relaxation	intensification of sensations
slowed time	passivity
apathy	Tachycardia (increased heart rate)
problems with motor coordination	

Manual of Drug and Alcohol Abuse, Guidelines for Teaching in Medical and Health Institutions, ed Arif, Awni. M.D., Westermeyer, Joseph, M.D.. Ph.D..D Plenum Medical Book Company, New York (1988), page 147: Cannabis:

red Conjunctiva	increased hunger
changes in time sense	short-term memory loss
memory	dry mouth
coordination	Tachycardia (rapid heart beat)
balance and stance	elevated systolic pressure affected

Diagnostic and Statistical Manual of Mental Disorders (Third Ed, Revised), American Psychiatric Association (1987), p. 140.

Maladaptive behavioral changes, e.g., euphoria anxiety, suspiciousness, or paranoid ideation, sensation of slowed time, in 18 d judgment, social withdrawal.

red Conjunctiva	increased appetite
Tachycardia (rapid heart)	dry mouth

Lack of Convergence:

Clinical Procedures for Ocular Examination, Kurtz and Carlson; McGraw-Hill Medical, 3rd Edition, September 26, 2003.

A Recognized Clinical Trial of Treatment for Convergence Insufficiency in Children, Scheiman, Cotter, Cooper, et al, Arch Ophthalmology, Jan 2005.

SESSION XXIII

CURRICULUM VITAE PREPARATION AND MAINTENANCE

SESSION XXIII CURRICULUM VITAE PREPARATION AND MAINTENANCE

Upon successfully completing this session the student will be able to:

- Describe and discuss the purpose of the DRE Curriculum Vitae.
- Identify the elements of a DRE Curriculum Vitae.
- Prepare a basic Curriculum Vitae summarizing relevant training, education, experience and accomplishments to date.
- Update and extend the Curriculum Vitae, as relevant achievements continue to expand.

A. Purpose of the Curriculum Vitae

The principal purpose of the Curriculum Vitae (C.V.) is to help establish your qualifications for testifying in court as a drug recognition expert. The C.V. records the education and training you have received, and the experience you have accumulated, that qualify you to render an opinion concerning drug impairment.

As a general rule, witnesses can testify only to personal knowledge, and cannot offer opinions as testimony. An important exception to this rule is granted to expert witnesses.

Basically, an expert witness is someone who the court decides is an expert. But "experts" usually are persons skilled in some art, trade, science or profession, who have a knowledge of matters not within the knowledge of people of average education, learning and experience. The prosecution or defense will call a witness who, they assert, is an "expert" in some matter. The court will carefully assess the credentials of that witness, i.e. the education, training and experience he or she has had in the matter in question. And the court -- and the court alone -- will decide whether the witness is an expert. If the court rules that the witness is an expert, then the witness may assist the finder of fact (jury or judge) in arriving at a verdict by expressing an opinion on a state of facts shown by the evidence, and based upon his or her special knowledge. Generally a witness' qualification is achieved through "Voir Dire" which is a French expression literally meaning "to see, to say" or in English "to seek the truth". Voir Dire is normally done outside the presence of the jury.

After you have completed all of the necessary training, the prosecution will begin to call you as an expert witness in drug evaluation and classification cases. The court will wish to consider relevant evidence of your alleged expertise. Your C.V. can help to ensure that the court rules in your favor.

B. Preparation for Court Qualification

Being qualified as an expert may be as simple as stating your occupation. Or, it could require several hours of exhausting questioning by the prosecutor and the defense attorney. The prosecutor will seek to show that, insofar as drug recognition is concerned, your knowledge is greater than that of the average person. The stronger your credentials, the better the chance that the court will consider you an "expert". And, the stronger your credentials, the more impressed the jury will be with your expertise, and the more weight they will give to your testimony.

The credentials that you have to offer to establish your expertise consist mainly of:

- The formal education and training you have received.
- The directly relevant experience you have acquired.
- The "outside" readings and study you have done.

You need to have accurate, up to date and documented evidence of these credentials, to support the assertion that you are a expert.

C. Curriculum Vitae Content

1. Relevant Formal Education.

   a. High School Education
   List the high school(s) you attended and the dates of your attendance. Highlight classes that provided knowledge in the area of drugs.

   b. College Education
   List the schools and dates. Highlight courses relevant to drugs, and relevant to the drug evaluation and classification examination procedures. List major field(s) of study, degree(s) earned, etc.

   c. Specialized College or University - level courses.
   List dates, instructor, subject(s) covered, credits earned, etc. Highlight the relevance of these courses to drugs.

2. Formal Training.

   a. Police Academy (recruit level training).
   List dates of attendance, major topics covered. Highlight drug relevant training.

   b. Specialized Police Training/In-Service Training.
   List dates, topics, instructors. Highlight drug relevant training.

   c. Other specialized training (e.g., military; special seminars; lectures).
   List dates, topics, instructors. Highlight drug relevant training.

3. Relevant Experience.

   a. Job Experience. (law enforcement)
   List specific assignments, including dates, rank held, etc. Include special assignments. Highlight duties associated with drug enforcement.

   b. Assignments.
   List agencies, dates, and specialized assignments related to impaired driving, drug enforcement, etc.

   c. Prior law enforcement experience.

   d. Other Job Related Experience.
   List employers, dates, specific duties, etc. Highlight work relevant to drugs.

   e. Drug Enforcement/Evaluation Experience.
   Maintain up to date totals of vehicle stops; DWI investigations; DWI arrests; drug evaluations; filings on alcohol and drug related charges; convictions on each charge.

f. Prior experience in testifying in drug-related cases. Maintain up to date totals of the numbers of appearances in various level courts (e.g., municipal, superior, etc.); the number of times qualified as an expert witness in drug cases; the number of times qualified as an expert witness in other cases.

4. Outside Readings and Study.

   a. Maintain listings of the drug related texts read; departmental training bulletins read; journals read; research papers read; films and videos viewed; etc.

5. Training or research conducted.

   Document drug related training and research that you conducted or in which you participated.

6. Published works

   List all relevant writings that you authored or co-authored, including departmental briefing papers, training manuals/bulletins, magazine articles, books, etc.

D. Curriculum Vitae Examples

The remainder of this session presents two examples of a DRE Curriculum Vitae. They are based on the training and experience of actual drug recognition experts, although specific identifiers have been changed to preserve their anonymity.

SAMPLE CURRICULUM VITAE NUMBER ONE

SHELTON POLICE DEPARTMENT

Traffic Division

The Curriculum Vitae of:

SERGEANT DAVID CARROLL REGAN
Drug Recognition Expert

Latest update: 3/17/XX

Sgt. David C. Regan

Introduction

Sergeant David Carroll Regan is a supervisor in the Traffic Division, Shelton Police Department. He currently commands the special Impaired Driving Enforcement Activities Squad (IDEAS), a unit he was instrumental in forming. Sgt. Regan is a 15 year veteran of law enforcement. Prior to joining the Shelton Police Department ten years ago, he served for five years as a deputy with the Fairfield County Sheriff's Department.

Sergeant Regan has been assigned to the Traffic Division since his promotion to sergeant on 11/18/YY. His duties have included coordination of speed and DWI enforcement activities, the Joint Shelton-Derby Task Force for Sobriety Checkpoints, the Officer Friendly Program, the Motorcycle Safety Education Project, and general supervision of Traffic Division officers. He also serves as the Department's principal instructor for radar speed measurement, Standardized Field Sobriety Testing and Drug Recognition Expert training.

Sergeant Regan holds a Bachelor's Degree in the Administration of Justice from Fairfield University, and currently is a candidate for a Master's Degree in Police Science and Administration at the University of Stratford. He also holds an Instructor Certificate from the State Law Enforcement Training Board.

Sergeant Regan has served on two committees of the Governor's Task Force to Prevent Drunk Driving: The Standardized Field Sobriety Tests Committee and The Paperwork Reduction Committee. The one page Standard Notetaking Guide for Field Sobriety Testing that is employed by all departments statewide was designed by him.

Law Enforcement Experience

11/18/YY to Present	Sergeant, Traffic Division Shelton Police Department Supervisor, IDEAS Unit Drug Recognition Expert Program Coordinator
7/8/ZZ to 11/17/YY	Patrol Officer First Class Training and Operations Shelton Police Department Unit Supervisor, Traffic Law Enforcement Training Branch
9/11/XX to 7/7/ZZ	Patrol Officer Third Precinct, Motorcycle Shelton Police Department

Sgt. David C. Regan

Law Enforcement Experience (continued)

11/5/MM to 9/10/XX	Patrol Officer First Precinct Shelton Police Department
10/10/NN to 11/4/MM	Deputy Traffic Patrol Fairfield County Sheriff's Department

Special Police Training

10/XX	NHTSA/IACP **DRE Instructor Training** (Certified as a DRE Instructor on 11/12/XX)
8/XX	Drug Enforcement Administration **Drug Interdiction Seminar**
11/YY	NHTSA/IACP **Drug Evaluation and Classification Training: DRE School** (Certified as a DRE on 1/28/XX)
10/YY	NHTSA/IACP **Drug Evaluation and Classification Training: DRE Pre-School**
3/YY	Southeastern University Institute of Police Technology **Special Conference: Managing DWI Squads**
4/ZZ	International Association of Chiefs of Police **Instructor Training in Horizontal Gaze Nystagmus and Divided Attention Field Sobriety Tests**
10/MM	University of Stanford, Northern Police Institute **Standardized Field Sobriety Testing**
6/NN	Acme Scientific Instruments, Inc. (Certified to perform inspection and repair of the Intoxotector J2Z breath testing instrument on 6/22/NN)

Sgt. David C. Regan

Court Qualification Record

8/VV	Qualified as Drug Recognition Expert in a case involving Phencyclidine impairment. (Judge Sally Grey, 8th District)
11/WW	Qualified as Drug Recognition Expert in a case involving a combination of CNS Stimulant and Narcotic Analgesic. (Judge Lewis Buchanan, Superior Court)
3/WW	Qualified as Drug Recognition Expert in a case involving Cannabis impairment. (Judge Sally Grey, 8th District)
9/UU	Qualified as Drug Recognition Expert in a case involving Narcotic Analgesic impairment. (Judge Jerome Byrnes, 8th District)

Specialized Readings

Title	Author
Drug and Alcohol Abuse	Marc A. Schuckit, M.D.
A Primer of Drug Action	Jerome Jaffee, Robert Petersen and Ray Hodgson
The Practitioner's Guide to Psychoactive Drugs	Ellen L. Bassuk, M.D. and Stephen C. Schoonover, M.D.
Drug Abuse: A Manual for Law Enforcement Officers	Smith, Kline & French (pub.)
Licit and Illicit Drugs	Edward M. Brecher
Chocolate to Morphine	Andrew Weil, M.D. and Winifred Rosen
Cocaine Addiction	U.S. Department of Health and Human Services
Marijuana Alert	Peggy Mann

SAMPLE CURRICULUM VITAE NUMBER TWO

TRUMBULL POLICE DEPARTMENT

The Curriculum Vitae of:

OFFICER ANN MARIE REED
Drug Recognition Expert

Latest Update: 4/25/YY

Officer Ann M. Reed

Introduction

Officer Ann Marie Reed is an eight year veteran with the Trumbull Police Department. She is currently assigned to the Special Operations Branch of the Administrative Division, where she serves as a Narcotics Enforcement Officer. Previously, she has served in the same Branch as a Vice Enforcement Officer, and as a patrol officer in the Department's first and second precincts.

Officer Reed is a graduate of Monroe College, with the Bachelor's Degree in Police Science and Administration. She is currently a candidate for the JD Degree at the Law School of the University of Bridgeport.

Law Enforcement Experience

5/12/VV to Present	Narcotics Enforcement Officer and Drug Recognition Expert Special Operations Branch Trumbull Police Department
3/26/WW to 5/11/VV	Vice Enforcement Officer Special Operations Branch Trumbull Police Department
9/23/XX to 3/25/WW	Patrol Officer First Precinct Trumbull Police Department
8/28/NN to 9/22/XX	Patrol Officer Second Precinct Trumbull Police Department
5/15/NN to 8/25/NN	Trainee Fairfield County Regional Police Academy (Graduated 8/25/NN)

Special Police Training

2/YY	University of Norwalk, Police Science Institute **Seminar: Packaging and Transport of Illicit Drugs**
10/VV	University of Norwalk, Police Science Institute **Seminar: Suppression of Drug-related Crime**
3/VV	NHTSA/IACP **Drug Evaluation and Classification Training: DRE School** (Certified as a DRE on 5/22/VV)

Officer Ann M. Reed

Special Police Training (Continued)

2/VV Fairfield County Regional Police Academy
Drug Evaluation and Classification Training: DRE Pre-School

10/WW Fairfield County Regional Police Academy
Standardized Field Sobriety Testing

Publications Authored

Reed, Ann M. and Cockroft, Robert S., "Narcotics Enforcement Tactics for the Medium-sized Department"; The Police Chief. January 17, 19XX.

Reed, Ann M., Procedures for Requesting Drug Recognition Expert Services; Training Bulletin for the Trumbull Police Department. 6/VV.

Reed, Ann M., Recognizing the Heroin Addict; Training Bulletin for the Trumbull Police Department. 1/VV.

Court Qualification Record

11/WW Qualified as an expert witness for identification of Heroin impairment. (Judge Michael Adkins, 7th District)

3/WW Qualified as a Drug Recognition Expert in a case involving a combination of CNS Stimulant and Narcotic Analgesic. (Judge Roberta Mayer, 7th District)

9/ZZ Qualified as an expert witness for identification of "track" marks. (Judge Charles Peltier, 7th District)

Specialized Readings

Title	Author
Signs and Symptoms Handbook	Barbara McVan, M.D.
Drugs From A to Z	Richard R. Lingeman
Guide to Psychoactive Drugs	Richard Seymour and David E. Smith, M.D.
Addictions: Issues and Answers	Robert M. Julien, M.D.
Report on Synthetic China White: Fentanyl	Det. James Miller, LAPD

SESSION XXIV

DRUG COMBINATIONS

SESSION XXIV DRUG COMBINATIONS

Upon successfully completing this session the student will be able to:

- Explain the prevalence of polydrug use among drug impaired subjects and identify common combinations of drugs abused by those subjects.
- Describe the possible effects that combinations of drugs can produce on the major indicators of drug impairment.
- Define the terms "Null", "Overlapping", "Additive" and "Antagonistic" as they relate to polydrug effects.
- Identify the specific effects that are most likely to be observed in persons under the influence of particular drug combinations.

A. The Prevalence of Polydrug Use

Studies have shown that polydrug use is on the rise throughout the country. In the Los Angeles Field Validation Study (1985), nearly three-quarters (72%) of the subject's who were evaluated were found to have two or more drugs in their blood samples. The most familiar drug of all, alcohol, apparently is an especially popular "mixer" with other drugs. Alcohol routinely shows up in combination with virtually everything else, and often DREs encounter subject's who have consumed alcohol along with two or more other drugs.

Cannabis is another popular "mixer", and frequently shows up in combination with Cocaine, PCP and various other drugs. The "speedball", a combination of Cocaine and Heroin, remains popular, despite the well-publicized hazards of this particular mixture.

Polydrug use among suspected drug impaired drivers continues to be very common. Data collected from DREs from throughout the U.S. and entered into the national DRE tracking database indicates that approximately 25% of all cases where toxicology was conducted resulted in two or more drug categories detected.

DREs should not be surprised to encounter virtually any possible combination of drugs. DREs may find more polydrug users than single drug users. This means that if the DRE is to do a good job at interpreting the results of evaluations, they must understand the mechanisms of drug interaction.

B. Possible Effects of Drug Combinations

When a person ingests two or more different drugs, each drug may work independently. What the body will **exhibit**, however, is a combination of those effects.

Four types of combined effects can, and generally will, occur when two or more drug categories are used together.

1. **The Null Effect**

   The simplest way to explain the Null Effect is to say that it is the same thing as "zero plus zero equals zero". Some specific examples may help clarify this.

   One of the first things a DRE does when examining a subject is to check for HGN. We know that many drugs **do not affect nystagmus**. For instance, if we examined a subject that was under the influence of a CNS Stimulant and nothing else, we would not expect to observe nystagmus. Likewise, if we examined someone who was under the influence of Cannabis and nothing else, no nystagmus would be present. What do you expect we would see when we check for nystagmus in the eyes of someone who has used a CNS Stimulant and Cannabis in combination? Since neither drug independently has any affect on nystagmus, the combination also would not affect nystagmus: nothing plus nothing equals nothing.

   Another example of the Null Effect would be found when we check the pupil size

of a subject who was under the influence of a Dissociative Anesthetic and a CNS Depressant. Dissociative Anesthetics generally do not affect pupil size; neither does a CNS Depressant. The combination of these drugs will not affect the size of the pupils.

The Null Effect, then, means simply this: **If neither drug affects some particular indicator of impairment, their combination also will not affect that indicator**.

2. **The Overlapping Effect**

The Overlapping Effect comes into play when one drug **does affect** some indicator of impairment and the other drug has **no effect whatsoever** on that indicator. This is a case of "something plus nothing equals something".

Consider once again the example of a combination of a CNS Stimulant and Cannabis. We've already seen that this combination produces a Null Effect as far as nystagmus is concerned. But what about when we examine the subject's eyes for a Lack of Convergence? Cannabis **does** produce a Lack of Convergence, a CNS Stimulant doesn't. Therefore, the subject who is under the combined influence of Cannabis and a CNS Stimulant will exhibit a Lack of Convergence due to the independent effect of the Cannabis. This is an instance where the effects of the two drugs "overlap".

Another example of an Overlapping Effect would be the pupil size of a person who has taken a Dissociative Anesthetic in combination with a Narcotic Analgesic. A Dissociative Anesthetic doesn't have any effect on pupil size. Narcotic Analgesics cause constricted pupils. Therefore, the combination would also cause the pupils to constrict.

The Overlapping Effect boils down to: **Action plus no action equals action**.

3. **The Additive Effect**

The Additive Effect occurs when two drug categories both affect some indicator of impairment in the same way. In combination, these effects reinforce each other.

Once again, think of the combination of a CNS Stimulant and Cannabis. What will we find when we check this subject's pulse rate? Cannabis produces Tachycardia, so does a CNS Stimulant. When the two drugs are taken together, we can expect to observe tachycardia because the drugs reinforce each other for that particular indicator of impairment. That is, the effect is <u>additive</u>.

The simplest way to express the Additive Effect is to say "something plus the same something produces that same something". One thing we can't say for

certain is how much the two drugs will reinforce each other. Sometimes the reinforced effect is as simple as "one plus one equals two". But at other times, the combined effect is much greater than the individual contributions of the two drugs, e.g., on the order of "one plus one equals five". We use the term Additive Effect to cover all situations where two drugs impact on some indicator in the same way.

You have already noticed that we have used one particular drug combination, Cannabis and a CNS Stimulant, to furnish examples of all three kinds of effects covered so far. This drives home the important point that drug interactions are often complex, and involve a number of different mechanisms operating at the same time.

4. **The Antagonistic Effect**

The Antagonistic Effect occurs when two drug categories affect some indicator in exactly the opposite ways. This is a case of "action plus opposing action". For example, suppose we check the blood pressure of someone who is under the combined influence of a Narcotic Analgesic and a CNS Stimulant; what are we likely to find?

The fact is, we're likely to find just about anything at all. The Narcotic Analgesic, independently, tends to produce hypotension, the CNS Stimulant, independently, usually produces hypertension. The two drugs may offset each other, as far as blood pressure is concerned, and the subject's blood pressure may wind up normal. On the other hand, if the CNS Stimulant effects are starting to wear off and the Narcotic Analgesic is still active in the subject's body, we might find the blood pressure down. Conversely, if the CNS Stimulant is active but the Narcotic Analgesic effects have not yet reached their peak, we might find the blood pressure up. When we deal with an Antagonistic Effect, we simply can't predict what the outcome will be.

C. Identifying Expected Indicators of Specific Combinations

On the next page, you will find the Cumulative Drug Symptomatology Matrix. This lists all of the expected effects of each drug category on the major indicators of impairment, and summarizes the general indicators, time parameters and methods of ingestion for each category. This matrix will be useful in identifying how specific combinations of drugs will interact to produce a variety of Null, Overlapping, Additive and Antagonistic Effects.

INDICATORS CONSISTENT WITH DRUG CATEGORIES

	CNS DEPRESSANTS	CNS STIMULANTS	HALLUCINOGENS	DISSOCIATIVE ANESTHETICS	NARCOTIC ANALGESICS	INHALANTS	CANNABIS
HGN	PRESENT	NONE	NONE	PRESENT	NONE	PRESENT	NONE
VGN	PRESENT (HIGH DOSE)	NONE	NONE	PRESENT	NONE	PRESENT (HIGH DOSE)	NONE
LACK OF CONVERGENCE	PRESENT	NONE	NONE	PRESENT	NONE	PRESENT	PRESENT
PUPIL SIZE	NORMAL (1)	DILATED	DILATED	NORMAL	CONSTRICTED	NORMAL (4)	DILATED (6)
REACTION TO LIGHT	SLOW	SLOW	NORMAL (3)	NORMAL	LITTLE TO NONE VISIBLE	SLOW	NORMAL
PULSE RATE	DOWN (2)	UP	UP	UP	DOWN	UP	UP
BLOOD PRESSURE	DOWN	UP	UP	UP	DOWN	UP/DOWN (5)	UP
BODY TEMPERATURE	NORMAL	UP	UP	UP	DOWN	UP/DOWN/NORMAL	NORMAL
MUSCLE TONE	FLACCID	RIGID	RIGID	RIGID	FLACCID	NORMAL OR FLACCID	NORMAL

FOOTNOTE: These indicators are those most consistent with the category, keep in mind that there may be variations due to individual reaction, dose taken and drug interactions.

(1) Soma, Quaaludes and some anti-depressants usually dilate pupils.
(2) Quaaludes, ETOH and some anti-depressants may elevate.
(3) Certain psychedelic amphetamines may cause slowing.
(4) Normal, but may be dilated.
(5) Down with anesthetic gases, up with volatile solvents and aerosols.
(6) Pupil size possibly normal.

MAJOR INDICATORS	CNS DEPRESSANTS	CNS STIMULANTS	HALLUCINOGENS	DISSOCIATIVE ANESTHETICS	NARCOTIC ANALGESICS	INHALANTS	CANNABIS
GENERAL INDICATORS	Disoriented Droopy eyes (Ptosis) Drowsiness Drunk-like behavior Gait ataxia Slow, sluggish reactions Thick, slurred speech Uncoordinated *NOTE: With Methaqualone, pulse will be elevated and body tremors will be evident. Alcohol and Quaaludes elevate pulse. Soma and Quaaludes dilate pupils.	Anxiety Body tremors Dry mouth Euphoria Exaggerated reflexes Excited Eyelid tremors Grinding teeth (Bruxism) Increased alertness Insomnia Irritability Redness to nasal area Restlessness Runny nose Talkative	Body tremors Dazed appearance Difficulty w/speech Disoriented Flashbacks Hallucinations Memory loss Nausea Paranoia Perspiring Poor perception of time and distance Synesthesia Uncoordinated NOTE: With LSD, piloerection may be observed (goose bumps, hair standing on end).	Blank stare Confused Chemical odor (PCP) Cyclic behavior (PCP) Difficulty w/speech Disoriented Early HGN Onset Hallucinations Incomplete verbal responses Increased pain threshold "Moon Walking" (PCP) Non-communicative Perspiring (PCP) Possibly violent (PCP) Sensory distortions Slow, slurred speech	Constricted pupils Depressed reflexes Drowsiness Droopy eyelids (Ptosis) Dry mouth Euphoria Facial itching Nausea "On the Nod" Puncture marks Slow, low, raspy speech Slowed breathing NOTE: Tolerant users exhibit relatively little psychomotor impairment.	Bloodshot, watery eyes Confusion Disoriented Flushed face Intense headaches Lack of muscle control Non-communicative Odor of substance Possible nausea Residue of substance Slow, thick, slurred speech **NOTE: Anesthetic gases cause below normal blood pressure; volatile solvents and aerosols cause above normal blood pressure.	Body tremors Disoriented Debris in mouth Eyelid tremors Impaired perception of time & distance Increased appetite Marked reddening of conjunctiva Odor of Marijuana Possible paranoia Relaxed inhibitions
DURATION OF EFFECTS	Barbiturates: 1-16 hours Tranquilizers: 4-8 hours Methaqualone: 4-8 hours	Cocaine: 5-90 minutes Amphetamines: 4-8 hours Meth: 12 hours	Duration varies widely from one hallucinogen to another. LSD: 4-6 hours Psilocybin: 2-3 hours	PCP Onset: 1-5 minutes Peak Effects: 15-30 minutes Exhibits effects up to 4-6 hours DXM: Onset 15-30 min. Effects 3-6 hours	Heroin: 4-6 hours Methadone: Up to 24 hours Others: Vary	6-8 hours for most volatile solvents Anesthetic gases and aerosols – very short duration	2-3 hours – exhibit effects (Impairment may last up to 24 hours, without awareness effects.)
USUAL METHODS OF ADMINISTRATION	Oral Injected (occasionally)	Insufflation (snorting) Smoked Injected Oral	Oral Insufflation Smoked Injected Transdermal	Smoked (PCP) Oral Insufflation (PCP) Injected (PCP) Eye drops	Injected Oral Smoked Insufflation	Insufflation (Historically, have been taken orally.)	Smoked Oral
OVERDOSE SIGNS	Shallow breathing Cold, clammy skin Pupils dilated Rapid, weak pulse Coma Shallow breathing	Agitation Increased body temperature Hallucinations Convulsions	Long intense "trip"	Long intense "trip"	Slow, shallow breathing Clammy skin Coma Convulsions	Coma	Fatigue Paranoia

D. Specific Examples of Drug Combinations: An Exercise for the Student

On the final five pages of this session, you will find examples of specific drug combinations. The expected results for the first two of these combinations (Cannabis and Stimulants, and Dissociative Anesthetic and Narcotic Analgesic) have been worked out for you. Study those examples, then complete the work sheets for the three remaining combinations.

CANNABIS AND CNS STIMULANT
IN COMBINATION

IMPAIRMENT INDICATOR	EFFECT DUE TO CANNABIS	EFFECT DUE TO CNS STIMULANT	TYPE OF COMBINED EFFECT	WHAT WILL WE SEE
HORIZONTAL GAZE NYSTAGMUS	NONE	NONE	NULL	NONE
VERTICAL GAZE NYSTAGMUS	NONE	NONE	NULL	NONE
LACK OF CONV.	PRESENT	NONE	OVERLAPPING	PRESENT
PUPIL SIZE	DILATED OR NORMAL	DILATED	OVERLAPPING OR ADDITIVE	DILATED
REACTION TO LIGHT	NORMAL	SLOW	OVERLAPPING	SLOW
PULSE RATE	UP	UP	ADDITIVE	UP
BLOOD PRESSURE	UP	UP	ADDITIVE	UP
BODY TEMP	NORMAL	UP	OVERLAPPING	UP
MUSCLE TONE	NORMAL	RIGID	OVERLAPPING	RIGID

DISSOCIATIVE ANESTHETIC AND NARCOTIC ANALGESIC IN COMBINATION

IMPAIRMENT INDICATOR	EFFECT DUE TO PHENCYCLIDINE	EFFECT DUE TO HEROIN	TYPE OF COMBINED EFFECT	WHAT WILL WE SEE
HORIZONTAL GAZE NYSTAGMUS	PRESENT	NONE	OVERLAPPING	PRESENT
VERTICAL GAZE NYSTAGMUS	PRESENT	NONE	OVERLAPPING	PRESENT
LACK OF CONV.	PRESENT	NONE	OVERLAPPING	PRESENT
PUPIL SIZE	NORMAL	CONSTRICTED	OVERLAPPING	CONSTRICTED
REACTION TO LIGHT	NORMAL	LITTLE OR NONE VISIBLE	OVERLAPPING	LITTLE OR NONE VISIBLE
PULSE RATE	UP	DOWN	ANTAGONISTIC	DOWN/ NORMAL/UP
BLOOD PRESSURE	UP	DOWN	ANTAGONISTIC	DOWN/ NORMAL/UP
BODY TEMP	UP	DOWN	ANTAGONISTIC	DOWN/ NORMAL/UP
MUSCLE TONE	RIGID	FLACCID	ANTAGONISTIC	NORMAL/ RIGID/ FLACCID

WORKSHEET #1

KETAMINE AND LSD

IMPAIRMENT INDICATOR	EFFECT DUE TO D/A	EFFECT DUE TO Hallucinogen (Hall)	TYPE OF COMBINED EFFECT*	WHAT WILL WE SEE
HORIZONTAL GAZE NYSTAGMUS				
VERTICAL GAZE NYSTAGMUS				
LACK OF CONV.				
PUPIL SIZE				
REACTION TO LIGHT				
PULSE RATE				
BLOOD PRESSURE				
BODY TEMP				
MUSCLE TONE				

*Null; Overlapping; Additive; or, Antagonistic

WORKSHEET #2

CANNABIS AND CNS DEPRESSANT

IMPAIRMENT INDICATOR	EFFECT DUE TO CANNABIS	EFFECT DUE TO DEPRESSANT	TYPE OF COMBINED EFFECT*	WHAT WILL WE SEE
HORIZONTAL GAZE NYSTAGMUS				
VERTICAL GAZE NYSTAGMUS				
LACK OF CONV.				
PUPIL SIZE				
REACTION TO LIGHT				
PULSE RATE				
BLOOD PRESSURE				
BODY TEMP				
MUSCLE TONE				

*Null; Overlapping; Additive; or, Antagonistic

WORKSHEET #3

CNS STIMULANT AND CNS DEPRESSANT

IMPAIRMENT INDICATOR	EFFECT DUE TO CNS STIMULANT	EFFECT DUE TO DEPRESSANT	TYPE OF COMBINED EFFECT*	WHAT WILL WE SEE
HORIZONTAL GAZE NYSTAGMUS				
VERTICAL GAZE NYSTAGMUS				
LACK OF CONV.				
PUPIL SIZE				
REACTION TO LIGHT				
PULSE RATE				
BLOOD PRESSURE				
BODY TEMP				
MUSCLE TONE				

*Null; Overlapping; Additive; or, Antagonistic

SESSION XXV

PRACTICE: TEST INTERPRETATION

SESSION XXV PRACTICE: TEST INTERPRETATION

Upon successfully completing this session the student will be able to:

- Analyze the results of completed drug influence evaluations and identify the category or categories of drugs affecting the individual examined.

- Describe the basis for the drug category identification.

This session is similar to sessions XV and XVIII. You will once again review some drug influence evaluation "exemplars", consider all of the "evidence" they provide, and determine what categories of drugs -- if any -- are present. Now that we have covered all seven categories, you can expect to find any or all of the categories in these exemplars. Some exemplars might involve combinations of drug categories. Pay close attention to all of the information in these exemplars when making your determinations.

DRUG INFLUENCE EVALUATION

Evaluator: Tpr. Chris Erickson, Minnesota S.P.	DRE # 5661	Rolling Log # 07-079	**Session XXV - #1**	
Recorder/Witness: Lt. Doug Thooft, Minnesota State Patrol	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-779445	
Arrestee's Name (Last, First, Middle): Allen, Thomas E.	Date of Birth: 9/3/78	Sex: M	Race: W	Arresting Officer (Name, ID#): Tpr. Beth Stanton, Minnesota State Patrol #3455
Date Examined / Time /Location: 03/21/07 2030 Dakota Co. Jail	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 44773	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐	

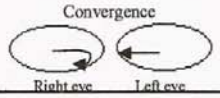
Miranda Warning Given: Given By: Tpr. Stanton	☒ Yes ☐ No	What have you eaten today? When? Cookies "Few hours ago"	What have you been drinking? How much? Coffee 2 cups	Time of last drink? N/A
Time now/ Actual: "No idea"	When did you last sleep? How long: "Don't remember"	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Cooperative, slow, disinterested	Coordination: Disoriented, unsteady		
Speech: Slow, thick	Breath Odor: Stale odor	Face: Normal		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☒ Reddened Conjunctiva ☐ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

1.	90	2040
2.	88	2056
3.	90	2110

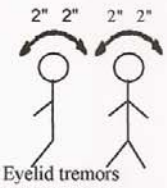
HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

Convergence



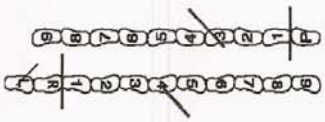
34 ONE LEG STAND 36

Romberg Balance



Eyelid tremors
Circular sway

Walk and Turn test



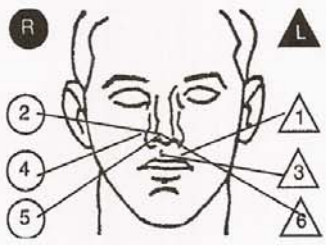
Lower body tremors

	1st Nine	2nd Nine
Cannot keep balance	X	
Starts too soon		
Stops walking		
Misses heel-toe		
Steps off line	X	X
Raises arms	XX	X
Actual steps taken	9	9

L	R	
☒	☒	Sways while balancing (1/2)
☒	☒	Uses arms to balance (2/1)
☐	☐	Hopping (0/0)
☒	☒	Puts foot down (1/2)

Internal clock: 43 estimated as 30 seconds	Describe Turn: As instructed, but slow	Cannot do test (explain): N/A	Type of footwear: Sandals

Draw lines to spots touched



Eyelid tremors

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	7.0	9.0	6.0
Right Eye	7.0	9.0	6.0

Nasal area: Clear

Oral cavity: Brownish-green coating on tongue

REBOUND DILATION ☐ Yes ☒ No

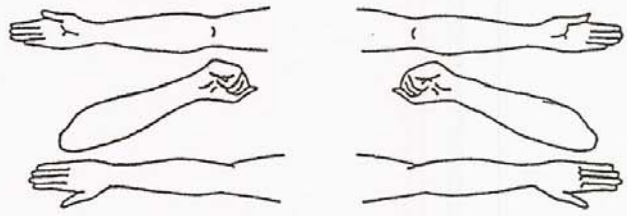
REACTION TO LIGHT: Normal

Blood pressure	Temperature
152/92	98.6

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

RIGHT ARM / LEFT ARM



Nothing observed

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"Nothing"	N/A	No answer	No answer

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
03/21/07 1940	2000	2030	2130	

Officer's Signature: | DRE # 5661 | Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant
☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Allen, Thomas E.

1. **LOCATION:** The evaluation was conducted in the interview room at the Dakota Co. Jail.

2. **WITNESSES:** Lt. Doug Thooft of the M.S.P. witnessed and recorded the evaluation.

3. **BREATH ALCOHOL TEST:** Allen's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was on duty when contacted by Tpr. Stanton requesting a drug evaluation. Writer met Tpr. Stanton at the Dakota County Jail where she advised that she had arrested Allen for DUI after observing his vehicle without headlights and driving 15 mph under the posted speed limit. The suspect seemed disoriented and had slow, unsteady movements. He had poor balance and coordination and was unable to perform the SFST's as directed.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the jail. He was seemed disinterested in what was going on around him. He had poor coordination and balance. His speech was slow and thick.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect had an approximate 2" circular sway and estimated 30 seconds in 43 seconds. Walk & Turn: Suspect lost his balance during the instructions stage and raised his arms for balance. He stepped off the line twice, once during the first nine steps and once during the second nine steps. He also had lower body tremors when performing the test. One Leg Stand: Suspect swayed while balancing, used his arms for balance and put his foot down once while standing on his left foot and twice when standing on his right foot. Finger to Nose: Suspect missed the tip of his nose on four of the six attempts and exhibited eyelid tremors.

8. **CLINICAL INDICATORS:** Suspect had a lack of convergence and his pupils were dilated. His pulse was at the high end of normal. His B/P was above normal range.

9. **SIGNS OF INGESTION:** The suspect had a brownish-green coating on his tongue.

10. **SUSPECT'S STATEMENTS:** Suspect denied using drugs.

11. **DRE'S OPINION:** In my opinion Allen is under the influence of _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:** Suspect had eyelid and body tremors throughout the evaluation.

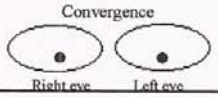
Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Officer Petrona Cummings, LAPD	DRE # 10176	Rolling Log # 07-08-15	**SessionXXV - #2**
Recorder/Witness: Sgt. Mike Delgadillo, LAPD	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-776810
Arrestee's Name (Last, First, Middle): Brown, Jerome A.	Date of Birth: 4/6/77	Sex: M	Race: B
Arresting Officer (Name, ID#): Officer Helen Pallares, LAPD #7785			
Date Examined / Time /Location: 08/21/07 2210 Parker Center	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 451130	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐
Miranda Warning Given: Given By: Ofc. Pallares	☒ Yes ☐ No	What have you eaten today? When? No response	What have you been drinking? How much? No response
Time of last drink? N/A			
Time now/ Actual: No response	When did you last sleep? How long: "Eat? I had a hot dog"	Are you sick or injured? ☐ Yes ☐ No No response	Are you diabetic or epileptic? ☐ Yes ☐ No No response
Do you take insulin? ☐ Yes ☐ No No response	Do you have any physical defects? ☐ Yes ☐ No "I didn't drink anything"	Are you under the care of a doctor or dentist? ☐ Yes ☐ No No response	
Are you taking any medication or drugs? ☐ Yes ☒ No Answered "no" very slow	Attitude: Passive, non-responsive	Coordination: Very poor, staggering	
Speech: Slow, repetitive at times	Breath Odor: Odor of marijuana	Face: Sweaty, blank stare	
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☒ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☒ Yes ☐ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy

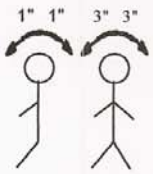
Pulse and time	HGN	Left Eye	Right Eye
1. 108 / 2218	Lack of Smooth Pursuit	Yes	Yes
2. 110 / 2230	Maximum Deviation	Yes	Yes
3. 108 / 2242	Angle of Onset	30	30

Convergence



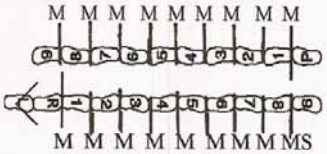
ONE LEG STAND

Romberg Balance



Very rigid

Walk and Turn test



Arms and legs rigid

Cannot keep balance: XX

Starts too soon:

	1st Nine	2nd Nine
Stops walking	X	
Misses heel-toe	All Steps	All Steps
Steps off line		
Raises arms	Constant	Constant
Actual steps taken	9	9

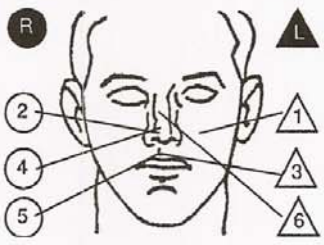
L	R	
☒	☒	Sways while balancing (2/2)
☒	☒	Uses arms to balance (2/3)
☐	☐	Hopping (0/0)
☒	☒	Puts foot down (3/3)

Test stopped

Internal clock: 55 estimated as 30 seconds	Describe Turn: Stopped, walked in circle	Cannot do test (explain): N/A

Type of footwear: Running shoes

Draw lines to spots touched



Rigid arms

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.0	7.5	5.0-7.5
Right Eye	6.0	7.5	5.0-7.5

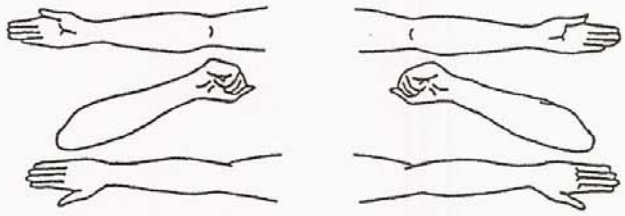
Nasal area: Clear

Oral cavity: Green material in teeth

REBOUND DILATION ☒ Yes ☐ No

REACTION TO LIGHT: Normal

RIGHT ARM **LEFT ARM**



Nothing observed

Blood pressure	Temperature
148/102	99.8

Muscle tone: ☐ Normal ☐ Flaccid ☒ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
No response (blank stare)	No response	No response	"I'm not saying"

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
08/21/07 2130	2145	2210	2305	

Officer's Signature: DRE # 10176 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Brown, Jerome A.

1. **LOCATION:** The evaluation was conducted in the interview room at Parker Center.

2. **WITNESSES:** Sgt. Mike Delgadillo of the LAPD DRE Unit witnessed the evaluation.

3. **BREATH ALCOHOL TEST:** Brown's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted by telephone by Officer Pallares requesting a drug evaluation. Writer and Sgt. Delgadillo contacted Officer Pallares at Parker Center where it was determined that the suspect had nearly hit an officer working a sobriety checkpoint detail. The suspect was non-responsive when contacted. He had a blank stare and was sweating profusely. He performed very poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the Parker Center interview room. He was looking straight ahead with a blank stare. When asked questions he responded slowly and at times did not respond at all. He was perspiring heavily and his speech was slow and thick. When he stood, he would stagger and nearly fell several times.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect had an approximate 3" side to side sway and estimated 30 seconds in 55 seconds. Walk & Turn: Suspect lost his balance during the instructions, stopped once while walking, missed heel to toe on every step and used his arms for balance. One Leg Stand: The suspect lost his balance while attempting this test and nearly fell and the test was stopped. He also swayed and used his arms for balance. Finger to Nose: Suspect missed the tip of his nose on each attempt and kept his finger in contact with his face on each attempt.

8. **CLINICAL INDICATORS:** Suspect had HGN, VGN, Lack of Convergence and Rebound Dilation. His pulse, blood pressure and temperature were above the normal ranges.

9. **SIGNS OF INGESTION:** Suspect had a marijuana odor on his breath and green vegetable material in his teeth.

10. **SUSPECT'S STATEMENTS:** Suspect denied using any medication or drugs.

11. **DRE'S OPINION:** In my opinion Brown is under the influence of a _____ _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:**

DRUG INFLUENCE EVALUATION

Evaluator: Officer Jon Gonzales, Los Alamos PD	DRE # 4184	Rolling Log # 07-05-010	**Session XXV - #3**
Recorder/Witness: Christine Frank, Albuquerque P.D.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-05-74480
Arrestee's Name (Last, First, Middle): Cole, Ricky Lee	Date of Birth: 6/4/88	Sex: M	Race: W
Arresting Officer (Name, ID#): Officer Tim McCarson, APD #5500			
Date Examined / Time /Location: 05-07-07, 0200 Albuquerque P.D.	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 45704	Chemical Test: Urine ☐ Blood ☒ Test or tests refused ☐

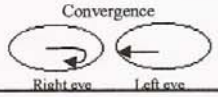
Miranda Warning Given: Given By: Ofc. McCarson	☒ Yes ☐ No	What have you eaten today? When? Sandwich "don't remember"	What have you been drinking? How much? Mountain Dew One	Time of last drink? N/A
Time now/ Actual: 1 AM/0208	When did you last sleep? How long: Last night 8-9 hours	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Withdrawn, passive	Coordination: Poor, stumbling		
Speech: Slow, slurred	Breath Odor: Rancid odor	Face: Flushed		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☒ Bloodshot ☒ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☒ Yes ☐ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time

1. 102 / 0210
2. 104 / 0222
3. 104 / 0232

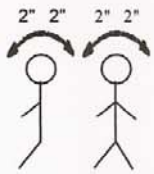
HGN	Left Eye	Right Eye
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	Yes	Yes
Angle of Onset	35	35

Convergence



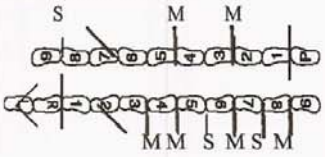
ONE LEG STAND

Romberg Balance



Circular sway

Walk and Turn test



Cannot keep balance: XX

Starts too soon:

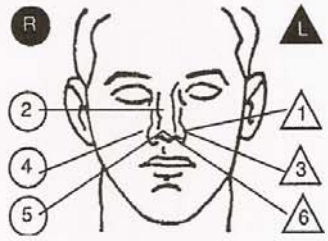
	1st Nine	2nd Nine
Stops walking	XX	X
Misses heel-toe	XXXX	XXX
Steps off line	X	X
Raises arms	X	
Actual steps taken	9	9

L	R	
☒	☒	Sways while balancing (2/1)
☒	☒	Uses arms to balance (2/1)
☐	☐	Hopping (0/0)
☒	☒	Puts foot down (3/3)

Nearly fell, test stopped

Internal clock: 45 estimated as 30 seconds	Describe Turn: Very slow, stiff movements	Cannot do test (explain): N/A	Type of footwear: Boots

Draw lines to spots touched



Swaying Opened eyes

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	5.0	6.5	4.0
Right Eye	5.0	6.5	4.0

Nasal area: Runny nose, paint smears on face

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

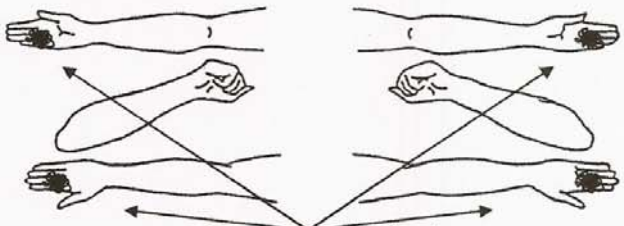
REACTION TO LIGHT: Normal

Blood pressure	Temperature
142/98	98.8

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

RIGHT ARM LEFT ARM



Paint smears on both hands

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"Nothing"	No answer	No answer	No answer

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
05/07/07 0130	0145	0200	0250	

Officer's Signature: DRE # 4184 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Cole, Ricky L.

1. **LOCATION:** The evaluation was conducted at the Albuquerque Police Department.

2. **WITNESSES:** Christine Frank of the Albuquerque Police Department.

3. **BREATH ALCOHOL TEST:** Cole's breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was on-duty and was contacted by Officer McCarson requesting a drug evaluation. Officer McCarson advised he detained the suspect after observing him fail to stop at a red traffic light at Central Ave. and University Blvd. The suspect's speech was slow and slurred. He had gold and silver paint on his hands and clothing. He performed poorly on the SFST's.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at A.P.D. He appeared passive and withdrawn. He had poor balance and coordination. He swayed as he stood and stumbled several times when walking. Gold and silver paint smears were visible on his hands, face and shirt.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: The suspect swayed approximately 2" in a circular motion and estimated 30 seconds in 45 seconds. When asked how he estimated the 30 seconds the suspect stated, "Just guessed." Walk & Turn: The suspect lost his balance twice during the instructions, stopped walking twice on the first nine steps and once on the second nine steps. He missed heel to toe seven times and stepped off the line twice. One Leg Stand: The suspect was unable to maintain his balance and the test was stopped for safety reasons. Finger to Nose: The suspect was unable to touch the tip of his nose on any of the six attempts, repeatedly opened his eyes and swayed noticeably.

8. **CLINICAL INDICATORS:** The suspect had HGN, Vertical Gaze Nystagmus and Lack of Convergence. His pulse and blood pressure were above the normal ranges.

9. **SIGNS OF INGESTION:** The suspect had a paint-like odor on his breath and paint smears on his hands and face.

10. **SUSPECT'S STATEMENTS:** Suspect denied using any medication or drugs.

11. **DRE'S OPINION:** In my opinion Cole is under the influence of an _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:**

Rev. 03/08

DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Joe Marcantonio, East Brunswick P.D.	DRE # 4429	Rolling Log # 07-10-042	**Session XXV- #4**
Recorder/Witness: Ofc. James Angermeir, East Brunswick P.D.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-47745

Arrestee's Name (Last, First, Middle)	Date of Birth	Sex	Race	Arresting Officer (Name, ID#)
Davis, Paul Allen	1/21/75	M	W	Officer James Angermeir, East Brunswick P.D. #6698

Date Examined / Time /Location	Breath Results:	Test Refused ☐	Chemical Test: Urine ☐ Blood ☒
10/02/07 1925 East Brunswick P.D.	Results: 0.00	Instrument #: 43210	Test or tests refused ☐

Miranda Warning Given	☒ Yes ☐ No	What have you eaten today? When?	What have you been drinking? How much?	Time of last drink?
Given By: Ofc. Angermeir		Pancakes 7AM	Nothing N/A	N/A

Time now/ Actual	When did you last sleep? How long	Are you sick or injured?	Are you diabetic or epileptic?
11 PM/1930	"I don't remember"	☒ Yes ☐ No "I feel sick"	☐ Yes ☒ No

Do you take insulin?	Do you have any physical defects?	Are you under the care of a doctor or dentist?
☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No

Are you taking any medication or drugs?	Attitude:	Coordination:
☐ Yes ☐ No "I'm clean"	Cooperative, slow	Poor, unstable

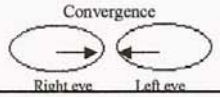
Speech: Slow, low, raspy	Breath Odor: Normal	Face: Drowsy looking, pale

Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal

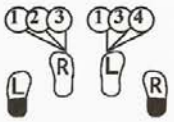
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy

Pulse and time	HGN	Left Eye	Right Eye
1. 56 / 1935	Lack of Smooth Pursuit	No	No
2. 58 / 1950	Maximum Deviation	No	No
3. 56 / 2005	Angle of Onset	None	None

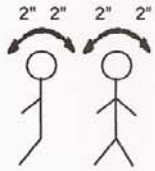
Convergence



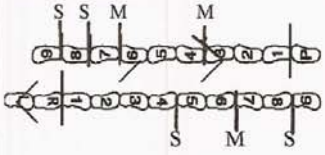
ONE LEG STAND



Romberg Balance



Walk and Turn test



Cannot keep balance XX

Starts too soon

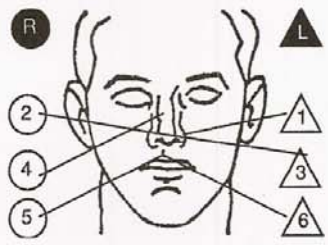
	1st Nine	2nd Nine
Stops walking	XX	XX
Misses heel-toe	X	XX
Steps off line	X	XX
Raises arms	XX	XXX
Actual steps taken	9	9

L	R	
☒	☒	Sways while balancing (1/1)
☒	☒	Uses arms to balance (2/3)
☐	☐	Hopping (0/0)
☒	☒	Puts foot down (3/3)

Test stopped

Internal clock	Describe Turn: Lost balance	Cannot do test (explain)	Type of footwear: Lace-up boots
68 estimated as 30 seconds		N/A	

Draw lines to spots touched



Kept leaning forward

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	1.5	1.5	1.5
Right Eye	1.5	1.5	1.5

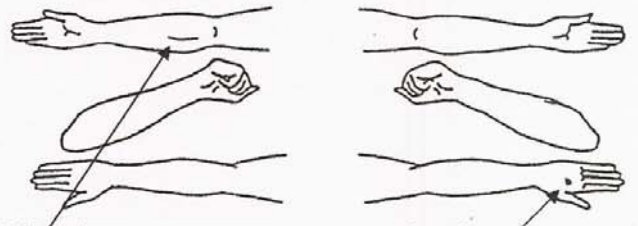
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: None visible

RIGHT ARM **LEFT ARM**



Old scarring

Fresh oozing puncture wound

Blood pressure	Temperature
110/60	97.5

Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid

Comments:

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"I'm not using"		No answer	No answer

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
10/02/07 1820	1915	1925	2030	

Officer's Signature:	DRE # 4429	Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Davis, Paul M.

1. **LOCATION:** The evaluation was conducted in interview room at the E.B.P.D.

2. **WITNESSES:** Officer James Angermeir of the East Brunswick Police Department.

3. **BREATH ALCOHOL TEST:** Davis' breath test was 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** Writer was contacted by radio and advised to contact Officer Angermeir for a drug evaluation. Officer Angermeir advised that he had located the suspect slumped over behind the steering wheel of his vehicle parked along the shoulder of E. Main Street. The vehicle was in drive and his foot was on the brake. The suspect's speech was slow, low and raspy. His coordination was poor and he was very unstable on his feet. He performed poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at the P.D. He appeared drowsy and was having difficulty keeping his eyes open. His head was nodding forward and he had droopy eyelids. His voice was slow, low and raspy and his pupils appeared to be constricted.

6. **MEDICAL PROBLEMS AND TREATMENT:** The suspect said he felt sick.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately two inches side to side and two inches front to back. He estimated 30 seconds in 68 seconds. Walk & Turn: Suspect lost his balance twice during the instructions, stopped walking four times, missed heel to toe three times, stepped off the line three times and used his arms for balance. One Leg Stand: Suspect put his foot down numerous times on both the left and right foot and the tests were stopped for safety reasons. Finger to Nose: Suspect missed the tip of his nose on five of the six attempts. His movements were slow and his head was leaning forward towards his chest.

8. **CLINICAL INDICATORS:** Suspect's pupils were constricted and showed no visible reaction to light. His pulse, blood pressure and temperature were below the normal ranges.

9. **SIGNS OF INGESTION:** Fresh oozing puncture mark on the back of the left hand.

10. **SUSPECT'S STATEMENTS:** The suspect made several references to being "clean."

11. **DRE'S OPINION:** In my opinion Davis is under the influence of a _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a blood sample.

13. **MISCELLANEOUS:** Rev. 03/

DRUG INFLUENCE EVALUATION

Evaluator: Sgt. Jon Bonar, Fort Wayne P.D.	DRE # 1550	Rolling Log # 07-017	**Session XXV - #5**
Recorder/Witness: Richie Tucker, Winchester P.D.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 98445-07
Arrestee's Name (Last, First, Middle): Elliott, John B.	Date of Birth: 6/1/88	Sex: M	Race: W
Arresting Officer (Name, ID#): Sgt. Fred Ilnicki, Indianapolis P.D. #4461			
Date Examined / Time /Location: 11/05/07 2210 Adult Processing Center	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 51547	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐

Miranda Warning Given: Given By: Sgt. Ilnicki	☒ Yes ☐ No	What have you eaten today? When? Tacos lunch	What have you been drinking? How much? "I don't drink"	Time of last drink? N/A
Time now/ Actual: "Don't know"	When did you last sleep? How long: Today 2 hrs.	Are you sick or injured? ☐ Yes ☒ No "I'm okay"	Are you diabetic or epileptic? ☐ Yes ☒ No	
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No		
Are you taking any medication or drugs? ☐ Yes ☒ No	Attitude: Emotional changes (laughing/cry	Coordination: Poor, stumbling		
Speech: Mumbled, incoherent	Breath Odor: Normal	Face: Flushed, sweaty		
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☒ Normal ☐ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal	
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☒ Normal ☐ Droopy	

Pulse and time	HGN	Left Eye	Right Eye
1. 116 / 2218	Lack of Smooth Pursuit	No	No
2. 110 / 2224	Maximum Deviation	No	No
3. 112 / 2235	Angle of Onset	None	None

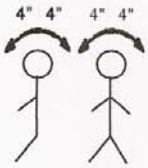
Convergence

ONE LEG STAND

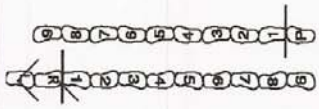
L R
☒ ☐ Sways while balancing (1/0)
☒ ☐ Uses arms to balance (2/0)
☐ ☐ Hopping (0/0)
☒ ☐ Puts foot down (3/0)

Test stopped

Romberg Balance



Walk and Turn test



Test stopped – could not stand heel to toe

	1st Nine	2nd Nine
Cannot keep balance	XXX	
Starts too soon		
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms		
Actual steps taken		

Internal clock: N/A estimated as 30 seconds	Describe Turn: N/A	Cannot do test (explain): Lost balance three (3) times	Type of footwear: Boots

Draw lines to spots touched

Test stopped - nearly fell

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	6.5	9.0	6.0
Right Eye	6.5	9.0	6.0

Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

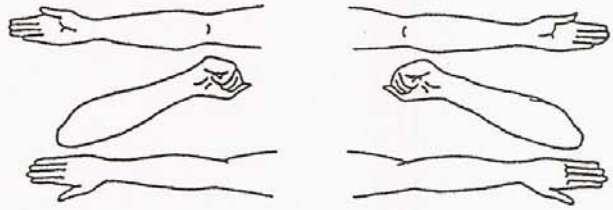
REACTION TO LIGHT: Normal

Blood pressure: 156/102	Temperature: 99.8

Muscle tone: ☒ Normal ☐ Flaccid ☐ Rigid

Comments:

RIGHT ARM **LEFT ARM**



Nothing observed

What drugs or medications have you been using? No answer, started laughing	How much? No answer	Time of use? N/A	Where were the drugs used? (Location) No answer - started laughing
Date / Time of arrest: 11/05/07 2030 hrs.	Time DRE was notified: 2120	Evaluation start time: 2210	Evaluation completion time: 2315
Officer's Signature:	DRE # 1550	Reviewed/approved by / date:	Precinct/Station:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant
☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Elliott, John B.

1. **LOCATION:** The evaluation was conducted at the Adult Processing Center (APC)

2. **WITNESSES:** Deputy Chief Richie Tucker of the Winchester Police Department witnessed and recorded the evaluation

3. **BREATH ALCOHOL TEST:** Elliott's breath test was a 0.00%.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** The writer was on duty and contacted Sergeant Ilnicki requesting a drug evaluation. According to Sergeant Ilnicki, the suspect had just left a concert at the RCA Dome and was stopped for driving without headlights and for failure to yield the right of way. The suspect was acting very strange. He was highly emotional and his speech was incoherent at times. He performed poorly on the SFST's and was arrested for DUI.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the interview room at A.P.C. He had very poor balance and stumbled when he walked. He was very emotional. At times he was laughing uncontrollably and then would start crying for no reason. His speech was mumbled and mostly incoherent. His pupils appeared dilated.

6. **MEDICAL PROBLEMS AND TREATMENT:** None noted or stated.

7. **PSYCHOPHYSICAL TESTS:** Romberg Balance: Suspect swayed approximately 4" front to back and 4" side to side until losing his balance and the test was stopped for safety reasons. Walk and Turn: The suspect could not maintain his balance in the instructions stage of the test had to be stopped for safety reasons. One leg Stand: Suspect could not stand on one foot and nearly fell each time. The test was stopped for safety reasons. Finger to Nose: The suspect was unable to complete this test and it was also stopped for safety reasons.

8. **CLINICAL INDICATORS:** The suspects pupils were dilated in all three lighting conditions, His pulse, blood pressure and temperature were above the normal ranges.

9. **SIGNS OF INGESTION:** None noted or stated.

10. **SUSPECT'S STATEMENTS:** When asked about drug use, the suspect started laughing.

11. **DRE'S OPINION:** In my opinion Elliot is under the influence of a _____ and unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** The suspect provided a urine sample.

13. **MISCELLANEOUS:**

Rev. 03/08

SESSION XXVI

PREPARING THE NARRATIVE REPORT

SESSION XXVI PREPARING THE NARRATIVE REPORT

Upon successfully completing this session the student will be able to:

- Discuss the essential elements of the drug influence evaluation report.
- Prepare a clear and concise narrative description of the results of the drug influence evaluation.

The Importance of Documentation

Successful prosecution of a DRE case will depend, more than anything else, on the evidence that **you** supply, and on how clearly and convincingly you **present** that evidence. The chemist or toxicologist may also be able to provide some important evidence. The results of the blood or urine analysis definitely play a supportive, or corroborative role. However, the chemical test simply cannot prove that the subject was impaired, or under the influence at the time the violation occurred. It is up to you to prove that, and to prove that the nature of the impairment was consistent with some category or categories of drugs. Your observations, examinations and your expertise are the prosecution's strongest weapons. In some cases, they will be the only weapons. You have to get your evidence across, and you have to make it as believable as possible. You start doing this in your DRE report.

The Components of the Drug Influence Evaluation Report

The DRE report has two major components. The first is the standard Drug Influence Evaluation face sheet. Its purpose is to document the results of all observations and examinations that you personally made of the subject. This face sheet is a unique document. It is used by every law enforcement agency that participates in the Drug Evaluation and Classification program. It contains some very important information, and it must be filled out accurately and completely. Every box on the face sheet should be completed. The face sheet does not constitute the entire DRE report. A **narrative** section also must be prepared. The narrative section must be a clear, plain English, detailed rendition of all evidence obtained during all twelve components of the DRE evaluation, including the breath test result; the information obtained from your interview of the arresting officer; statements, actions, gestures, etc. made by the subject; paraphernalia found in the subject's possession; to name a few. Bear in mind that the face sheet is a **technical document**. As a DRE, you must be very familiar with the face sheet, and with its various symbols, and abbreviations. However, many prosecutors, most judges and virtually all jurors won't know how to interpret the face sheet. It is up to you to "translate" the face sheet and all other evidence into language that they can understand. That's where the narrative section of your report comes in.

Standard Procedures for Completing the Face Sheet

The Drug Influence Evaluation face sheet should be completed in its entirety, every time you conduct an evaluation of a person suspected of drug impairment. Follow the guidelines given in the paragraphs below every time you complete a face sheet.

In order to assist with the interpretation of the information on the face sheet, boxes on the face sheet should not be left blank. It is recommended that “N/A” or “None Observed” be used.

The first two lines of the drug influence evaluation face sheet consists of spaces to record data consistent with your department's standard operating procedures.

EVALUATOR:	DRE No.	Rolling Log No.		
Recorder/Witness	Crash: [] None [] Fatal [] Injury [] Property			

On the next three full lines of the report, you will record identifying information about the subject, the arresting officer, and the time and place where the DRE evaluation was conducted. You will also note the results of the breath test (if available), and note the type of sample (blood or urine) collected for drug analysis. You will indicate whether the subject was admonished of his or her constitutional rights in accordance with the Miranda ruling, and if so, by whom.

ARRESTEE"S NAME *(LAST, FIRST, MI)*	DOB	SEX	RACE	Arresting Officer (Name, ID No.)	
DATE EXAMINED/TIME/LOCATION	BREATH RESULTS: [] Refused Instrument #			CHEMICAL TEST [] Urine [] Blood [] Refused	
MIRANDA WARNING GIVEN: [] Yes [] No By:	What have you eaten today? When?			What have you been drinking? How much?	Time of last drink?

Starting on the sixth line, and continuing through the tenth line, you will record the results of the preliminary examination of the subject. If the subject merely responds "yes" or "no" to a question, you may simply put a mark through the appropriate box on the right side of the space provided for the question. But if they embellish the response, you should use the space provided to document the response. For example, if the subject were to answer the question "what have you eaten today" in an obviously false or ridiculous manner ("I haven't eaten for six years"), you should record that answer verbatim.

Time Now?	When did you last sleep? How long?	Are you sick or injured? [] Yes [] No	Are you diabetic or epileptic? [] Yes [] No	
Do you take insulin? [] Yes [] No		Do you have any physical defects? [] Yes [] No	Are you under the care of a doctor or dentist? [] Yes [] No	
Are you taking any medication or drugs? [] Yes [] No		ATTITUDE	COORDINATION	
		BREATH	FACE	
SPEECH		EYES: [] Reddened Conjunctiva [] Normal [] Bloodshot [] Watery	Blindness:[] None [] L Eye []R Eye	Tracking: [] Equal [] Unequal
CORRECTIVE LENS: [] None [] Glasses [] Contacts, if so [] Hard [] oft		PUPIL SIZE: [] Equal [] Unequal (explain)	Able to follow stimulus: [] Yes [] No	Eyelids: [] Normal [] Droopy

After completing the preliminary questioning of the subject, be sure to record brief descriptions of their attitude, coordination, speech, breath and facial appearance. Check to determine the type of corrective lenses the subject is wearing, if any, and record the general appearance of the subject's eyes. Be sure to indicate whether the subject is or claims to be blind in either eye. Check the subject's tracking ability (just as you would test for lack of smooth pursuit). While you are assessing the subject's tracking ability, you can also perform a preliminary assessment of whether horizontal gaze nystagmus is present in the subject's eyes. In particular, if the nystagmus or "jerking" is observed, an initial estimation of the angle of onset can be made. The approximate angle of onset may help to determine

whether the subject has consumed some drug other than alcohol. Note whether the subject's pupils are of equal size, and the condition of their eyelids.

Almost midway down the form, and on the left side, is the space to record the three measurements of the subject's pulse that are required during the DRE evaluation. Always record the pulse in beats per minute. For example, since you use a 30 second interval to count the pulse, be sure to multiply the count by two, and record that result on the form. Also, always record the time at which each pulse count was taken.

PULSE & TIME
1. _____/_____
2. _____/_____
3. _____/_____

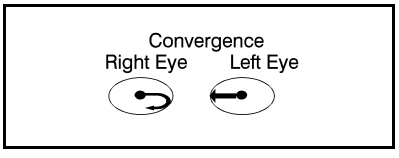
Record the results of the checks for Horizontal Gaze Nystagmus, Vertical Gaze Nystagmus and Lack of Convergence in the spaces at the center of the form. For HGN, write the word "YES" to indicate that there was a Lack of Smooth Pursuit, and write "NO" if the eye does pursue smoothly. In other words, "YES" means that evidence of HGN is present and "NO" means that the evidence wasn't found. Similarly, along the "Max. Deviation" line, write "YES" if there is distinct and sustained jerking when the eye is held as far to the side as possible, and write "NO" if the eye does not jerk distinctly. Along the "Angle of Onset" line, write the number of degrees at which the jerking first is noticed; estimate the angle to the nearest five degrees (i.e., 30, 35, 40, etc.). If the eyes actually jerk while the subject stares straight ahead, write the word "RESTING" on the "Angle of Onset" line. If the jerking begins before the eye has moved to the 30-degree point, write the word "IMMEDIATE". Be sure to check each eye independently, and record the evidence of HGN separately for each eye.

HGN	Left Eye	Right Eye
Lack of Smooth Pursuit		
Max. Deviation		
Angle of Onset		

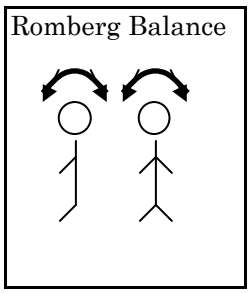
For the Vertical Gaze Nystagmus test, simply check either the "YES" or "NO" box, depending on whether the evidence was present or absent.

Vertical Nystagmus?
[] Yes [] No

For the Convergence test, draw a circle in the middle of each "eye socket" provided on the form, and connect arrows to the circles to depict how the eyes moved when the test was given. For example, the sketch at the right shows that the

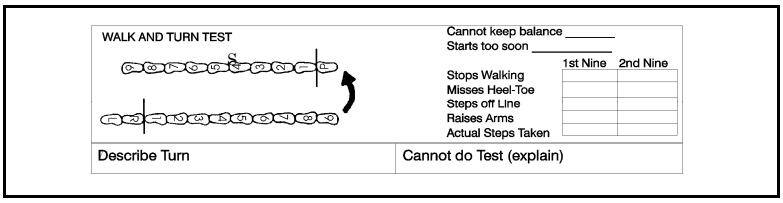


left eye converged properly, while the right started to move in, and then drifted back out.



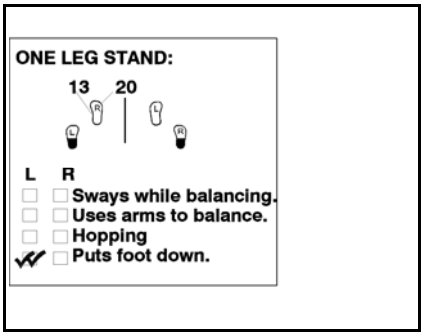
Spaces are provided to record in detail the subject's performance of the four divided attention tests. Make sure that the Romberg Balance test is the first one that you administer. The two "stick figures" are used to indicate how much the subject sways while standing with the eyes closed. The figure on the left (with only one arm and one leg visible) is used to depict front to back swaying; at the arrow points above the "head", write the approximate number of inches the subject sways forward and backwards from center. The figure on the right (with two arms and legs) is used to depict side to side swaying. If the subject sways in a circular manner, indicate by writing "Circular Swaying" across the "stick figures". In the space marked “Internal Clock”, write the number of seconds that the subject actually stood with the eyes closed, while he or she attempted to estimate the passage of 30 seconds.

Internal Clock Estimated At 30 Sec. ____



For the Walk and Turn test, you must diagram how the subject walked, and you must indicate how often each of the eight validated clues was observed. On the diagram of steps, when the subject steps off the line, indicate with half a slash mark at an angle in the direction the step was taken. If the subject misses heel to toe, indicate it with a slash mark between the feet with an “M” marked underneath. If the subjects stops walking, indicate that with a slash mark between the feet with an “S” marked underneath.

Anything else that is unusual or noteworthy about how the subject walked should be indicated in writing near the diagram (e.g., "stopped counting aloud after the third step"). In the spaces provided to the right of the diagram of the feet, use check marks to record how often each clue was seen and the actual numbers of steps the subject took. In the space below the diagram of the feet, write a brief but clear description of how the subject executed the turn; if he or she turned in the proper fashion, simply write "PROPER". If the subject was unable to complete the test, write an explanation of why the test was stopped.



For the One Leg Stand, you will diagram when the subject put the foot down (if at all) and you will indicate how often each of the four validated clues was observed. Always have the subject first perform this test by standing on the left foot. If the subject puts the elevated foot down, indicate above the foot the number they were counting when they put their foot down. In the example to the left, the subject put the right foot down when they had counted to “one thousand thirteen” and again when the count reached "one thousand twenty". Put check marks in or near the boxes below the sketch to indicate how often each of the

four clues was seen while the subject stood on the left foot. Place the count the subject reached in 30 seconds in the top of the box over the foot they were standing on.

Then, have the subject repeat the test by standing on the right foot, and use the right side sketch to record the results of that test. In the box below, indicate the type of footwear the subject was wearing while performing these tests.

Type of Footwear

For the Finger to Nose test, you will diagram exactly where each finger tip touched the subject's face. Simply draw a line from the point touched on the face to the symbol representing each finger (this makes it easier to draw a straight line). The finger symbols are numbered in the sequence in which you should instruct the subject (i.e., "left, right, left, right, right, left"). If the subject inadvertently uses the incorrect hand at some point, draw in an additional appropriate symbol (circle or triangle), write the number in it (1 to 6) and draw a line from it to the spot touched on the face. Then, cross out the symbol for the finger that he or she should have used on that attempt.

Pupil size estimations are to be recorded in the boxes provided. Using a pupillometer, record the size of the circle or semi-circle that comes closest to the size of the pupil. If a pupil appears to be slightly smaller than the 3.0 mm circle/semi-circle, DO NOT write 2.8 or 2.9 as the pupil size. Always record to the nearest half mm.

PUPIL SIZE	Room Light	Darkness	Direct	NASAL AREA
Left Eye				ORAL CAVITY
Right Eye				
		REBOUND DILATION [] Yes [] No		Reaction to Light

In the spaces provided, write a brief but clear description of anything noteworthy that you found in your examinations of the subject's nose and mouth. If rebound dilation is observed, note that in the appropriate space. Rebound dilation is a period of pupillary constriction followed by a period of pupillary dilation where the pupil steadily increases in size and does not return to its original constricted size. For example, the pupil might initially expand to 5.0 mm, constrict, and then "balloon out" to 7.0 mm, constrict, then expand back to 7.0 mm, etc. REMEMBER that sloppy procedure with the penlight could induce a response that could be confused with rebound dilation. If you inadvertently move the penlight closer to the subject's eye and then draw it farther away, you will change the intensity of the light flooding into the eye and you may cause the pupil to constrict or dilate. Make sure that you always hold the light steady while making these examinations.

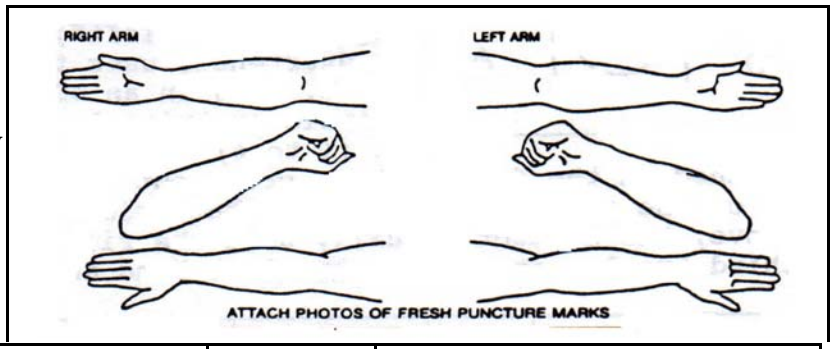
In the space provided, indicate how the subject's pupils reacted when the light was directed into the eye. If the reaction appeared to be normal, write "Normal"; if it appeared to be a slow reaction but some constriction of the pupil was evident, write "Slow"; if the pupil did not appear to constrict at all, write "None". Approximately one (1) second is normal.

Record both the systolic and diastolic blood pressure (in even numbers), and the subject's body temperature, in the spaces provided. Also indicate whether the subject's muscle tone appeared to be rigid, flaccid or normal.

BLOOD PRESSURE _____/_____ TEMP_____o

Muscle Tone: [] Normal [] Flaccid [] Rigid
Comments

On the fourth line from the bottom, record the subject's responses to the final three questions. Remember that most, if not all, courts generally hold that a subject must be advised of constitutional rights before these kinds of questions should be asked.



What Medicine or Drug Have You Been Using? How Much?	Time of use?	Where Were the Drugs Used? (Location)

The last three lines on the form are used to record information about basic time parameters of concern to the evaluation, and to record additional pertinent information about you, the DRE who conducted the evaluation, and your opinion of the evaluation. If another DRE supervised your evaluation, their name should be written in the "Reviewed By" block on the lower right corner of the form. That is especially important during your certification training phase.

Date/Time of Arrest	Time DRE Notified	Eval Start Time	Time Completed
Member Signature (Include Rank)	ID No.	Reviewed By:	
Opinion of Evaluator: [] Rule Out [] Medical	[] Alcohol [] Depressant	[] Stimulant [] Hallucinogen	[] Dissoc. Anesthetic [] Narcotic Analgesic	[] Inhalant [] Cannabis

The reverse side of the form should be used for the narrative drug evaluation report, and continuation sheets should be attached, as appropriate. Guidelines for organizing the narrative report include the following: (Refer to next page)

Guidelines for Writing the Narrative Report

The narrative portion of a standard DRE report has thirteen segments, which include:

a. **Location**

State where the drug influence evaluation was conducted.

Example: **The evaluation was conducted in the DRE room, at the Maricopa County Jail, Phoenix, Arizona.**

b. **Witnesses**

List the names, agency affiliations and other identifiers of any persons who witnessed all or portions of the evaluation. State the person who served as the evaluator and recorder with complete agency names.

Example: **The entire evaluation was witnessed and recorded by Sergeant Paul White of the Maricopa County Sheriff's Office.**

c. **Breath Alcohol Test**

Indicate if the test was taken, and state who administered the test. Give the test results, the time of the test and record the serial number or other identifier of the instrument on which the test was taken.

Example: **The arresting officer, Officer Darren Nielsen of the Phoenix Police Department obtained an 0.00 BrAC reading from the suspect at 9:20 p.m. using the Intoxilyzer 5000, Serial #474501.**

d. **Notification and Interview of the Arresting Officer**

Indicate when you were first notified of the request for a drug influence evaluation and summarize the information you were given at that time. Include a summary of your interview of the arresting officer.

Example: **At approximately 9:20 p.m. the writer was contacted by dispatch and requested to conduct a DRE evaluation for Officer Nielsen. Writer contacted Officer Nielsen at the Maricopa County Jail where it was determined that Richardson had been observed driving slowly and failed to stop at a red light. Officer Nielsen stated Richardson appeared sleepy and was "on the nod." Officer Nielsen also stated the suspect's voice was low in volume, raspy in tone and slow in tempo. His balance and coordination was poor and he was arrested for DUI after performing poorly on the SFST's.**

e. **Initial Observation of the Subject**

Document in detail your personal initial observations of the subject. Describe where and when you first saw the subject. Highlight any noteworthy or unusual actions, appearances, etc. that you observed. Summarize the findings of your Preliminary Examination of the subject.

Example: **Writer first observed the suspect in the M.C.S.O. DRE room. He moved very slowly, was unstable on his feet and when he walked across the room he stumbled and nearly fell. His head nodded forward repeatedly and he appeared to be "on the nod." When he answered questions from Officer Nielsen, his words were slow and slurred. His eyelids were droopy and his pupils appeared to be constricted. His first pulse was checked at 58 BPM.**

f. **Medical Problems and Treatment**

Describe your own observations concerning possible injuries or illness that the subject may be suffering. Document subject's statements or claims concerning illness or injury. Document any medical attention or treatment that the subject received while in your care.

Example: **The suspect claimed no illness or injury. No evidence of injury or illness was observed during the evaluation.**

g. **Psychophysical Indicators of Impairment**

Give a brief but clear, complete and accurate description of the subject's performance of the Romberg Balance, Walk and Turn, One Leg Stand and Finger to Nose tests.

Example: **Romberg Balance: The suspect exhibited a 2" front to back sway and a 3" side to side sway. The suspect had a slow internal clock estimating 30 seconds in 52 seconds and his head repeatedly dropped forward towards his chest during the test. Walk & Turn: The suspect lost his balance during the instruction stage, missed heel to toe three times during the first nine steps and three times on the second nine steps. He turned incorrectly with a pivot and nearly fell. One Leg Stand: The suspect ..... etc.**

h. **Clinical Indicators of Impairment**

Give a brief but clear, complete and accurate description of your examinations of the subject's eyes, vital signs and any tremors observed.

Example: **No clues of HGN and VGN were observed. Lack of Convergence was observed. The suspect's pupils were constricted in all three lighting conditions, there was no visible reaction to light and his eyelids were droopy. The suspect's pulse rates were below the normal range (58, 56, 58 BPM). His blood pressure was also below the normal range at 114/68.**

i. **Signs of Ingestion**

Document the results of your examinations of the subject's oral and nasal cavities, search for injection marks, etc. Describe any odors detected on the subject's breath, hands, clothing, etc. Describe any physical debris of drugs or drug paraphernalia found on the subject's person.

Example: **Three fresh puncture wounds were located on the suspect's left forearm. Numerous scar lines ("track marks") were observed on his left inside forearm. (Photographs attached)**

j. **Suspect's Statements**

Document the subject's statements, both in response to your questions and spontaneous utterances. Use verbatim quotes whenever possible. Document your Miranda admonition to the subject and his or her waiver.

Example: **The suspect repeatedly denied using drugs, stating "I told you, I don't do drugs."**

k. **The DRE's Opinion**

State the category or combination of categories of drugs that you believe is/are affecting the subject. State your opinion concerning the subject's ability to operate a vehicle safely, if vehicle operation is relevant to this case.

Example: **In my opinion, Richardson is under the influence of a Narcotic Analgesic and is unable to operate a vehicle safely.**

l. **The Toxicologic Sample**

State the type of sample (blood, urine, etc.) collected from the subject. Give the name, title, agency affiliation, etc. of the person who drew the sample or observed its collection. State where the sample was taken and to whom it was given. If the results of the toxicologic analysis are known at the time the report is written, state those results. If the subject refused to submit a sample, state that fact in the report.

Example: **A urine sample was obtained from the suspect at 10:35 p.m., witnessed by the writer and Sgt. White. The sample was .....**

m. **Miscellaneous**

Include any other information that might be relevant.

Example: **Three syringes with needles were located by Officer Nielsen in Richardson's vehicle.**

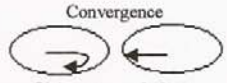
The remaining pages of this session provide a complete sample DRE drug influence evaluation report, on suspect Richardson.

DRUG INFLUENCE EVALUATION

Evaluator: Det. Jeff Riddle, Phoenix, Police Dept.	DRE # 7113	Rolling Log # 07-10-024	**Session XXVI**
Recorder/Witness: Sgt. Paul White, Maricopa Co. S.O.	Crash: ☒ None ☐ Fatal ☐ Injury ☐ Property		Case # 07-10-17654
Arrestee's Name (Last, First, Middle): Richardson, John M.	Date of Birth: 9/6/84	Sex: M	Race: W
Arresting Officer (Name, ID#): Officer Darren Nielsen, Phoenix P.D. #4458			
Date Examined / Time /Location: 10/21/07 2130 Maricopa Co. Jail	Breath Results: Results: 0.00	Test Refused ☐ Instrument #: 474501	Chemical Test: Urine ☒ Blood ☐ Test or tests refused ☐
Miranda Warning Given: Given By: Officer Nielsen	☒ Yes ☐ No	What have you eaten today? When? Hamburger 5 PM	What have you been drinking? How much? Nothing N/A
Time of last drink? N/A			
Time now/ Actual: 7 pm/9:40 pm	When did you last sleep? How long: Last night 4 hrs.	Are you sick or injured? ☐ Yes ☒ No	Are you diabetic or epileptic? ☐ Yes ☒ No
Do you take insulin? ☐ Yes ☒ No	Do you have any physical defects? ☐ Yes ☒ No	Are you under the care of a doctor or dentist? ☐ Yes ☒ No	
Are you taking any medication or drugs? ☐ Yes ☒ No Long pause before answering	Attitude: Cooperative, withdrawn	Coordination: Poor, trouble standing	
Speech: Low, slow, raspy	Breath Odor: Normal	Face: Pale	
Corrective Lenses: ☒ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft	Eyes: ☐ Reddened Conjunctiva ☐ Normal ☒ Bloodshot ☐ Watery	Blindness: ☒ None ☐ Left ☐ Right	Tracking: ☒ Equal ☐ Unequal
Pupil Size: ☒ Equal ☐ Unequal (explain)	Vertical Nystagmus ☐ Yes ☒ No	Able to follow stimulus ☒ Yes ☐ No	Eyelids ☐ Normal ☒ Droopy

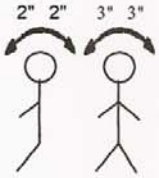
Pulse and time		HGN	Left Eye	Right Eye
1.	58 / 2142	Lack of Smooth Pursuit	No	No
2.	56 / 2154	Maximum Deviation	No	No
3.	58 / 2207	Angle of Onset	None	None

Convergence



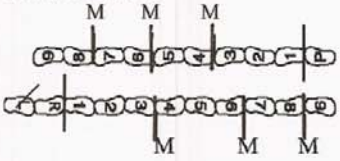
12 ONE LEG STAND 15

Romberg Balance



Head dropped forward

Walk and Turn test



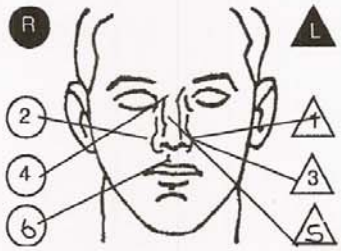
	1st Nine	2nd Nine
Cannot keep balance	X	
Starts too soon		
Stops walking		
Misses heel-toe	XXX	XXX
Steps off line		
Raises arms	XXXX	XXXX
Actual steps taken	9	9

L R
☒ ☒ Sways while balancing (1/1)
☒ ☒ Uses arms to balance (1/1)
☐ ☐ Hopping (0/0)
☒ ☒ Puts foot down (3/2)

Counted slowly

Internal clock: 52 estimated as 30 seconds	Describe Turn: Pivoted	Cannot do test (explain): N/A	Type of footwear: Tennis shoes

Draw lines to spots touched



Switched hands on #5 and #6

PUPIL SIZE	Room light 2.5 – 5.0	Darkness 5.0 – 8.5	Direct 2.0 – 4.5
Left Eye	2.0	2.0	2.0
Right Eye	2.0	2.0	2.0

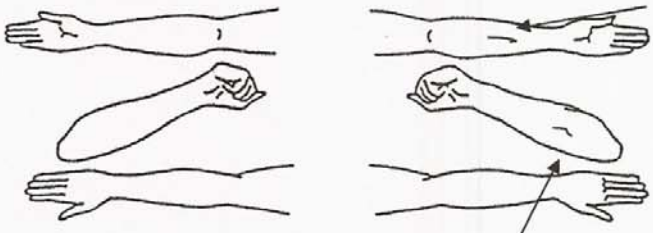
Nasal area: Clear

Oral cavity: Clear

REBOUND DILATION ☐ Yes ☒ No

REACTION TO LIGHT: None visible

RIGHT ARM **LEFT ARM** Scars



Three fresh puncture marks

Blood pressure	Temperature
114/68	97.8

Muscle tone: ☐ Normal ☒ Flaccid ☐ Rigid

Comments: Arms cool to the touch

What drugs or medications have you been using?	How much?	Time of use?	Where were the drugs used? (Location)
"I don't do drugs"	No answer	No answer	No answer

Date / Time of arrest:	Time DRE was notified:	Evaluation start time:	Evaluation completion time:	Precinct/Station:
10/21/07 2025 hrs.	2115 hrs.	2130 hrs.	2230 hrs.	

Officer's Signature: DRE # 7113 Reviewed/approved by / date:

Opinion of Evaluator: ☐ Rule Out ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetic ☐ Inhalant
☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☒ Narcotic Analgesic ☐ Cannabis

Revised. 06/07

DRUG INFLUENCE EVALUATION NARRATIVE

Suspect**:** Richardson, John.

1. **LOCATION:** The evaluation was conducted in the DRE room at the Maricopa County Jail, Phoenix, Arizona.

2. **WITNESSES:** The entire evaluation was witnessed and recorded by Sergeant Paul White of the Maricopa County Sheriff's Office.

3. **BREATH ALCOHOL TEST:** The arresting officer, Officer Darren Nielsen of the Phoenix Police Department obtained an 0.00 BrAC reading from the suspect at 9:20 p.m., using the Intoxilyzer 5000, Serial #474501.

4. **NOTIFICATION AND INTERVIEW OF THE ARRESTING OFFICER:** At approximately 9:20 p.m., the writer was contacted by dispatch and requested to conduct a DRE evaluation for Officer Nielsen. Writer contact Officer Nielsen at the Maricopa County Jail where it was determined that Richardson (DOB 09/06/74) had been observed driving slowly and failed to stop at a red light. Officer Nielsen stated Richardson appeared sleepy and was "on the nod." Officer Neilsen also stated the suspect's voice was low in volume, raspy in tone and slow in tempo. His balance and coordination was poor and he was arrested for DUI after performing poorly on the SFST's.

5. **INITIAL OBSERVATION OF SUSPECT:** Writer first observed the suspect in the M.C.S.O. DRE room. He moved very slowly, was unstable on his feet and when he walked across the room he stumbled and nearly fell. His head nodded forward repeatedly and he appeared to be "on the nod." When he answered questions from Officer Nielsen, his words were slowed and slurred. His eyelids were droopy and his pupils appeared to be constricted.

6. **MEDICAL PROBLEMS AND TREATMENT:** The suspect claimed no illness or injury. No evidence of injury or illness was observed during the evaluation.

7. **PSYCHOPHYSICAL TESTS:** The suspect exhibited impairment throughout all portions of the psychophysical tests. Romberg Balance: The suspect exhibited a 2" front to back sway and a 3" side to side sway. The suspect had a slowed internal clock estimating 30 seconds in 52 seconds and his head repeatedly dropped forward towards his chest during the test. Walk and Turn: The suspect lost his balance during the instruction stage, missed hell to toe three times during the first nine steps and three times on the second nine steps. He turned incorrectly with a pivot and nearly fell. He also raised his arms almost continuously throughout the test. One Leg Stand: The suspect counted very slowly throughout the test making it to 1012 in 30 seconds while standing on his left foot and 1015 in 30 seconds while standing on his right foot. He also put his foot down three times while standing on his left foot and twice while standing on his right foot. Additionally, he swayed while trying to balance and used his arms for balance throughout both tests. Finger to Nose: The suspect responded to commands very slowly and used the wrong hands on attempts #5 and #6. He did not touch the tip of his nose on any of the six attempts.

8. **CLINICAL INDICATORS:** EYES: No clues of HGN or VGN were observed. Lack of Convergence was observed. The suspect's pupils were constricted in all three lighting conditions, there was no visible reaction to light and his eyelids were droopy. VITAL SIGNS: The suspect's pulse rates were below the normal range (58, 56, 58 BPM). His blood pressure was also below the normal range at 114/68.

9. **SIGNS OF INGESTION:** Three fresh puncture wounds were located on the suspect's left forearm. Numerous scar lines ("track marks") were observed on his left inside forearm. (Photographs attached) Muscle tone was flaccid and the suspect's arms felt cool to the touch.

10. **SUSPECT'S STATEMENTS:** The suspect repeatedly denied using drugs stating, "I told you, I don't do drugs." He stated he was right-handed and the puncture wounds on his left forearm were thorn scratches from gardening.

11. **DRE'S OPINION:** In my opinion, Richardson is under the influence of a Narcotic Analgesic and is unable to operate a vehicle safely.

12. **TOXICOLOGICAL SAMPLE:** A urine sample was obtained from the suspect at 10:35 p.m., witnessed by the writer and Sgt. White. The sample was delivered to the Evidence Property Room pending analysis by the Forensic Laboratory.

13. **MISCELLANEOUS:** Three syringes with needles were located by Officer Nielsen in Richardson's vehicle.

Rev. 03/08

SESSION XXVII

PRACTICE: TEST ADMINISTRATION

SESSION XXVII PRACTICE: TEST ADMINISTRATION

Upon successfully completing this session the student will be better able to:

- Administer selected portions of the battery of examinations that constitute the drug influence evaluation.
- Describe the evaluation procedures.
- Document the results of the examinations.

In this session, you will have an opportunity to practice conducting a complete drug influence evaluation. You will work in a team with one or two fellow students. When you conduct the evaluation, your teammate will serve as your test subject. And, you will serve as the subject for a teammate when he or she conducts the evaluation.

This is an opportunity for you to practice the components of the evaluation in a controlled setting. Gaining confidence in your ability to conduct the evaluation now will assist you when you are examining drug impaired subjects who may not be as cooperative as your fellow students. When not serving as a test subject or examiner, pay close attention to the evaluation conducted by your team members.

SESSION XXVIII

CASE PREPARATION AND TESTIMONY

SESSION XXVIII CASE PREPARATION AND TESTIMONY

Upon successfully completing this session the student will be able to:

- Conduct a thorough pre-trial review of all evidence and prepare for testimony.
- Provide clear, accurate and descriptive direct testimony concerning drug influence evaluations.
- Respond effectively and appropriately to cross examination in Drug Evaluation and Classification cases.

A. Guidelines for Case Preparation

Case preparation actually begins with your first contact with the suspect. At that point you begin "collecting" the evidence that you will organize and present at trial.

To begin properly, make sure that you complete each portion of the standard drug influence evaluation report form. Be especially careful to take accurate notes of your observations of the suspect, and to record their statements accurately. Note and document all relevant information you obtain during your interview of the arresting officer.

When you are notified of the trial date, you should conduct a careful review of all records and reports associated with the case. If you made the arrest, or were summoned to the scene, revisit the scene. During discovery, list and properly document all evidence. Compare your notes with the arresting officer, and clarify or resolve any discrepancies, if possible.

If at all possible, try to arrange a pre-trial conference with the prosecutor. Review with the prosecutor all evidence and all basis for your conclusions. If there are weak points in your case, bring them to the prosecutor's attention. Ask the prosecutor to review the questions he or she intends to ask you on the witness stand. Point out when you do not know the answer to a question. Ask the prosecutor to review questions and tactics that they anticipate the defense attorney may use. Make sure your curriculum vitae is current. Review your credentials and qualifications with the prosecutor. Offers to assist and educate prosecutors are usually appreciated.

If you cannot have a pre-trial conference, try to identify the main points about the case, and be sure to discuss these with the prosecutor during the few minutes you will have just before the trial. It is important for you to advise a prosecutor that has no experience in DRE, that the case can not be treated like a, “typical DUI case”.

B. Guidelines for Direct Testimony

1. Testifying about your qualifications as a Drug Recognition Expert.

   Remember that having been qualified as an expert in the past does not automatically guarantee that this court and judge will deem that you are an expert in this case. You may have to testify in some detail as to your relevant training, education and experience. In fact, it often is to the prosecution's advantage to have you provide such detailed testimony.

   Juries and even judges may be favorably impressed by the depth and scope of your experience and other credentials, and may attach added "weight" to your opinions and conclusions if they have had an opportunity to learn how well qualified you are to render them. For this reason, you should encourage the prosecutor, if possible, not to accept the defense's stipulation as to your expertise. Instead, always try to enter testimony as to your credentials into the record.

When testifying about your qualifications, try to relate your training and experience to the specific categories of drugs involved in the case at hand. Highlight the number of times you have seen a person under the influence of those categories. Explicitly highlight the number of times you have examined subjects and concluded they were not under the influence of drugs: this helps to demonstrate the fairness and impartiality of your evaluations.

Voir Dire is a French expression literally meaning "to see, to say". Loosely, this would be rendered in English as "To seek the truth", or "to call it as you see it". In a law or court context, one application of Voir Dire is to question a witness to assess his or her qualifications to be considered an expert in some matter pending before the court.

2. Testifying about the facts of the case.

   Your basic task is to establish that the suspect was under the influence of a drug or combination of drugs. When you testify about the suspect's performance of the Standardized Field Sobriety Tests, do not use the terms "pass" or "fail". Also, do not refer to the suspect's "score" on the test or the number of "points" he or she produced. Instead, describe clearly and explicitly how the suspect performed (e.g., "stepped off the line twice, raised the arms three times, etc."). By presenting your observations clearly and convincingly, you will allow the fact of the suspect's impairment to speak for itself. In the same way, describe exactly what you observed and measured during the eye examinations and vital signs examinations, and relate these observations and measurements to your training and experience. In this way you will establish a solid foundation for introducing your opinions and conclusions.

   Always keep in mind that juries typically focus on an officer's demeanor as much or more than on the content of their testimony. Strive to maintain your professionalism and impartiality. Be clear in your testimony: explain technical terms in layman's language; don't use jargon, abbreviations, acronyms, etc. Be polite and courteous. Do not become agitated as a result of questions by the defense. Above all, if you don't know the answer to a question, say so. Don't guess at answers, or compromise your honesty in any way.

Introduction of Evidence Involving "New" Scientific Principles

As a DRE, you will be asked to offer opinions and conclusions based on scientific principles that are quite unfamiliar to the jury or even to the judge. These principles aren't really "new", but they are newly discovered, and they aren't yet within the common realm of knowledge of average people. Your task is to help see to it that the evidence you have obtained through your special knowledge and your hard work will be acceptable to the court.

American courts employ either the Frye or the Daubert standards for determining the admissibility of scientific evidence. Evidence derived from a "new" scientific principle is subjected to the Frye standard of admissibility. This standard derives from the landmark case Frye vs. United States, 293F. 1013 (D.C. Cir. 1923). Frye requires that the scientific principle or theory used to support some offered "evidence" be in conformity with a generally accepted explanatory theory, if the "evidence" is to be admissible. Under Frye, it is not enough that a qualified expert, or even several experts, testify that a particular scientific technique is valid. The technique must be generally accepted by the relevant scientific community.

Courts in many states have ruled that the Drug Evaluation and Classification protocol is not subject to the Frye standard, as the techniques and principles of the protocol are not new or novel. In this situation, the DRE's challenge is to establish a foundation for admissibility of the evidence gained during the evaluation of the defendant. The DRE officer's training and experience is critical to establishing this foundation for admissibility. The DRE's demeanor and credibility will heavily impact the "weight" the judge or jury gives to this evidence.

The Daubert standard derives from Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993). Some courts refer to the standard as the Daubert/ Kumho standard because the Supreme Court readdressed and reaffirmed the standard in Kumho Tire Co. v. Carmichael, 526 U.S. 137 (1999). Pursuant to Daubert, courts serve as a "gatekeeper" for all scientific evidence, regardless of newness or novelty. Scientific evidence is admissible if the court determines that the underlying "reasoning or methodology" is "scientifically valid." Courts assess the evidence by considering four factors: (1) whether the opinions offered are testable; (2) whether the methods or principles used to reach the opinions have been subject to peer review evaluation; (3) whether a known error rate can be identified with respect to the methods or principles underlying the opinion; and (4) whether the opinion rests on methodology that is generally accepted within the relevant scientific or technical community(ies).

C. Typical Defense Tactics

In a DRE case, you will be the key witness for the prosecution. Therefore, the defense will try very hard to cast doubt on your testimony.

The defense may ask some questions to challenge your observations and interpretations. For example, you may be asked whether the signs, symptoms, and behaviors you observed in the suspect couldn't have been caused by an injury or illness, or by alcohol, or by something else other than the drug categories you concluded were present. You may also be asked questions whose purpose is to make it appear that you weren't really certain that you actually saw what you say you saw. Answer these questions honestly, but carefully. If your observations are not consistent with what an illness or injury or alcohol would produce, explain why not. Make it clear that your conclusions about drug influence are not simply one plausible interpretation of the observed facts, but the only logical interpretation.

The defense may also ask some questions to challenge your credentials. These questions may try to disparage or deprecate the formal training you have had as a DRE. There may also be an attempt to ask questions to "trip you up" on technical or scientific issues, to make it appear that you are less knowledgeable than you should be or claim to be. Stick to absolute honesty. Answer all questions about your training fully and accurately, but don't embellish. Don't try to make the training appear to have been more elaborate or extensive than it really was.

Answer scientific and technical questions if you know the answer. Otherwise, admit that you don't know. Don't try to fake or guess the answers.

The defense may ask questions to challenge your credibility. You may be asked several very similar questions, in the hope that your answers will be inconsistent. You may be asked questions whose purpose is to show that you had already formed your opinion well before you completed the evaluation of the suspect. And, you may be asked questions that try to suggest that you eliminated portions of the evaluation, or only gave very cursory attention to some portions. Guard against these kinds of defense challenges by always performing a complete, painstaking evaluation, exactly as you have been taught. Standardization will help ensure both consistency and credibility.

DRE DEFENSE CROSS EXAMINATION QUESTIONS

The following are representative of questions the defense may use to challenge the DRE's testimony in court. (The defendant is identified as Miss Alicia Ann Ace.)

Missing Symptoms/Normals

This line of questions attempts to elicit the fact that the defendant did not have all of the expected signs or symptoms of the drug (s) in question.

Officer, you were taught that bruxism or grinding of the teeth is a sign of CNS Stimulant influence, isn't it? Miss Ace didn't have that sign, did she?

The defense may also focus on those signs or symptoms that were normal, and were therefore, not consistent with the drug in question.

Officer, you learned the normal range of temperature in DRE training, didn't you? And that range is 98.6 plus or minus one degree, isn't it? What was Miss Ace's temperature? (98) 98 is within normal ranges, isn't it? Miss Ace's temperature was normal, wasn't it? CNS Stimulants cause elevated temperature, don't they? Miss Ace's was not elevated, was it?

Alternative Explanations

The defense elicits alternative explanations for the signs and symptoms of the drug (s) in question. These alternative explanations usually deal with medical conditions, stress, a traffic crash, etc.

Officer, an elevated pulse rate can be caused by things other than drugs, can't it? Excitement may cause it? Stress may cause it? Being involved in a traffic crash is stressful, isn't it? And being involved in a traffic crash may cause elevated pulse, right? Being interviewed in the early morning by three police officers is stressful? And that may also cause the pulse to be elevated, can't it?

Defendant's Normals

The defense attempts to emphasize the fact that not everyone is so-called normal, that normal is subjective.

Officer, you were taught the normal range for pulse in DRE training, weren't you? And you agree that not all people fall in that normal range, don't you? That there are people with pulse rates above normal that aren't on drugs, right? A person's pulse changes over time, doesn't it? You don't know what Miss Ace's normal pulse is, do you? It could be in the normal range, right? But it could be above or below the normal range - normally for her, isn't that so?

Doctor Cop

The line of questioning challenges the credibility of the officer's teachers - that they are police officers, rather than medical professionals.

Officer, the teachers in this DRE school weren't doctors, were they? They weren't nurses either? Toxicologists? Pharmacologists? Paramedics? They were police officers, right?

Just a Cop

This line of questioning challenges the DRE's credentials - that they are "just a cop." This infers that the DRE evaluation is actually a medical evaluation that should be undertaken only by a medical professional.

Officer, you're not a doctor, are you? A toxicologist? A pharmacologist? A nurse? A physiologist? You don't have a degree in chemistry, do you? You're a police officer, right?

The Unknown

By causing the officer to state that they don't know how a sign or symptom is caused, the defense attacks the officer's credibility. This line of questioning challenges the officer's expertise, by implying that a real expert would know these things.

Officer, you don't know how CNS Stimulants dilate the pupil, do you? You don't know how alcohol supposedly causes Nystagmus, do you? You don't know how CNS Stimulants supposedly elevate the heart rate, do you?

Guessing Game

This tactic attacks the DRE's opinion as a subjective guess, a belief, rather than objective. Guesses can be wrong.

Officer, your opinion in a DRE case is subjective, isn't it? It's a belief on your part? You've made these beliefs in DRE cases in the past, haven't you? And sometimes toxicology didn't find the drug you predicted, isn't that so? And, in fact, sometimes, toxicology didn't find any drug, isn't that so? And so, sometimes your opinion is not correct, right? Sometimes, you guess wrong?

Document provided by Sgt. Tom Page (Retired), LAPD and DDA Linda Condron, Santa Clara County, CA.

SESSION XXIX

CLASSIFYING A SUSPECT (ROLE PLAY)

SESSION XXIX CLASSIFYING A SUSPECT (ROLE PLAY)

Upon successfully completing this session the student will be able to:

- Conduct a complete drug influence evaluation using the systematic and standardized 12-step process.

- Compile a complete, clear and accurate report documenting the results of a drug influence evaluation using the 13-step component narrative report format.

In this session, you will have opportunities to participate in conducting a complete DRE drug influence evaluation of "arrested suspects". Of course, these "suspects" will not actually be under the influence of any drug. However, at various points during the evaluation they will instruct you to record certain measurements and observations. In this way they will supply you with information simulating a possible drug impaired subject.

When you complete the evaluation, you will carefully review all of the data you have recorded and decide whether the "suspect" is simulating a person who is:

(1) under the influence of a drug or drugs; and,

(2) if so, what category or combination of categories of drugs is causing the simulated "impairment".

A word of caution: it is possible that one or more of these "suspects" will be role playing unimpaired subjects. That is, in some cases, the correct conclusion may be that the "suspect" is not under the influence of any drug. In addition, it highly likely that one or more "suspect" will be simulating a person who is under the influence of a combination of drug categories.

At some point during this practice session an instructor will approach you and notify you that you will have to prepare a complete narrative report on your evaluation of one of the "suspects". The particular "suspect" who will be the subject of your report could be any of the ones you examine. Therefore, it is very important that you take good, comprehensive and detailed notes on each evaluation.

You will work in this session as a member of a team with two or three fellow students. You and your teammates should "put your heads together" in reaching your conclusions concerning each "suspect"; that is, discuss the "evidence" you have recorded and reach a joint conclusion. You should divide the report writing work among yourselves in some equitable fashion. And, you should each take at least one turn at conducting the complete evaluation.

This is a very important session in this course. It is here that your instructors will begin to determine whether you have the skills needed to progress to Certification Training, or whether you need more practice before you are ready to move on.

SESSION XXX

TRANSITION TO CERTIFICATION TRAINING

SESSION XXX **TRANSITION TO CERTIFICATION TRAINING**

Upon successfully completing this session the student will be able to:

- Demonstrate their mastery of the knowledge and skills the course was intended to help develop.
- Summarize the key topics covered.
- Offer comments and suggestions for improving the course.
- Receive assignments for Field Certification Training.
- Understand the steps involved in the DRE certification process.

This session completes the second phase, of your training as a Candidate DRE. Among other things, three important events will take place during this session.

(1) You will take a written, multiple choice test, designed to measure your knowledge of drugs, drug influence evaluation procedures, and related facts. This knowledge test is one indicator of whether you are ready for Certification Training. You must pass this examination with a score of 80% or better.

(2) You will take a proficiency examination, in which you will demonstrate your skills in conducting the drug influence evaluation. This skill test is the other indicator of your readiness for the next phase.

(3) You will complete a written -- but anonymous -- critique form, which gives you a chance to express your opinions about this course and the instructors. This information is very important. It will help improve the quality of the training, and to maintain the quality at the highest possible level.

A. Preparing For the Final Knowledge Examination

The following are not the questions that will appear on the Final Knowledge Examination. But some of them are quite similar to the examination questions, and all of them address subject matter that will be covered on the test.

If you can answer these questions correctly, you will have no problem in scoring very well on the knowledge examination.

Answers appear on the pages following the questions.

REVIEW QUESTIONS

1. What is the definition of "drug" that is used in this course? (Hint: it is a simple, enforcement oriented rather than medically oriented definition.)

2. Would model airplane glue be considered a "drug" under this definition? Would Alcohol? Would Nicotine?

3. What are the seven categories of drugs (name them all)?

4. To what category of drugs does Cocaine belong? How about Methamphetamine? How about Demerol? How about Psilocybin?

5. What do we mean when we refer to polydrug use?

6. What does it mean to say that two drugs are antagonistic?

7. What is the name of the pulse point that is located in the crease of the wrist?

8. What are the names of the two pressures that are recorded during a blood pressure measurement? Which is the higher pressure?

9. What category or categories of drugs generally will cause Horizontal Gaze Nystagmus? What categories will not?

10. To what category of drugs does Codeine belong? How about Secobarbital? How about STP?

11. What category or categories of drugs generally will cause the pupils of the eyes to constrict? What categories generally will cause dilation? What categories generally will not affect pupil size?

12. What are the eight clues that are considered in assessing the subject's performance on the Walk and Turn test? What are the four clues considered in the One Leg Stand test?

13. What category or categories of drugs generally will cause a Lack of Convergence of the eyes? What categories generally will not?

14. What is the formula that expresses the approximate relationship between blood alcohol concentration and Nystagmus onset angle?

15. How many times should you measure the suspect's pulse during the drug influence evaluation?

16. What category or categories of drugs generally will cause the body temperature to go down? What categories generally will cause the temperature to go up? What categories generally will not affect body temperature?

17. What are the two subcategories of Narcotic Analgesics?

18. What does the term "Synesthesia" mean?

19. What is Toluene?

20. What category or categories of drugs generally will cause the blood pressure to go up? What categories generally will cause the blood pressure to go down?

21. To what category of drugs does Chloral Hydrate belong? How about Phencyclidine?

22. About how far in front of the subject's face should the stimulus be held to test for Horizontal Gaze Nystagmus or Vertical Gaze Nystagmus?

23. Suppose a subject is under the influence of a combination of Amphetamines and Heroin. Will that subject exhibit Horizontal Gaze Nystagmus? Will the subject's pulse be up, down or normal?

24. What is a Sphygmomanometer? What are its major components, or parts?

25. What category or categories of drugs generally will cause muscle rigidity? What categories generally will not?

ANSWERS TO REVIEW QUESTIONS

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

2. Model airplane glue definitely would be considered a drug. So would alcohol. But for our purposes, Nicotine is not considered a drug. It is certainly true that consumption of Nicotine, especially over a long period of time, can cause health problems. But there is no evidence of significant driving impairment from Nicotine.

3. The seven categories are CNS Depressants; CNS Stimulants; Hallucinogens; Dissociative Anesthetics; Narcotic Analgesics; Inhalants; and, Cannabis.

4. Cocaine is a CNS Stimulant. Methamphetamine also is a CNS Stimulant. Demerol is a Narcotic Analgesic. Psilocybin is an Hallucinogen.

5. Polydrug use means the ingestion of drugs from two or more drug categories. This is very common, especially combinations involving alcohol.

6. Two drugs are antagonistic when they produce some opposite signs and symptoms. An example would be a Narcotic Analgesic and a CNS Stimulant. The Narcotic Analgesics will cause the pulse rate and blood pressure to go down. The Stimulant generally will cause both pulse rate and blood pressure to go up. A person using both drugs might exhibit normal pulse rate and blood pressure, as the antagonistic effects of the two drugs mask each other's signs and symptoms.

7. The radial artery pulse point is located in the crease of the wrist.

8. The Systolic is the higher pressure. The Diastolic is the lower.

9. CNS Depressants, Dissociative Anesthetics, (most) Inhalants will cause Horizontal Gaze Nystagmus. CNS Stimulants, Hallucinogens, Narcotic Analgesics and Cannabis will not.

10. Codeine is a Narcotic Analgesic. Secobarbital (like all Barbiturates) is a CNS Depressant. STP is an Hallucinogen.

11. Narcotic Analgesics will cause constriction of the pupils. CNS Stimulants and Hallucinogens will cause pupil dilation. Cannabis might induce dilation or may be normal. Dissociative Anesthetics and (most) Inhalants generally won't affect pupil size. The specific CNS Depressant Methaqualone ("Quaalude") will dilate the pupils; other CNS Depressants won't affect pupil size.

12. For the Walk and Turn test, the eight clues are:

    (1) Whether the subject loses balance while the instructions are being given.
    (2) Whether they start walking too soon, i.e. before the instructions are completed.
    (3) Whether they step off the line;

(4) or fails to touch heel to toe;
(5) or raises the arms while walking;
(6) or stops while walking.
(7) Whether the subject turns improperly; and,
(8) Whether the correct number of steps are taken.

For the One Leg Stand test, the four clues are:

(1) putting the foot down;
(2) swaying;
(3) hopping;
(4) raising the arms.

13. Lack of Convergence generally will be caused by CNS Depressants; Dissociative Anesthetics; (most) Inhalants; and, Cannabis. Lack of Convergence will <u>not</u> be caused by CNS Stimulants, Hallucinogens or Narcotic Analgesics.

14. Either of the following formulae expresses the approximate, statistical relationship:

(1) BAC = 50 - ONSET ANGLE
(2) ONSET ANGLE = 50 - BAC

<u>But remember:</u> this is only a gross approximation. It is not an exact relationship. It can never be used as a substitute for a chemical test.

15. Pulse rate should be measured <u>three</u> times.

16. Narcotic Analgesics generally will cause the body temperature to go down. Dissociative Anesthetics, Stimulants and Hallucinogens generally will <u>cause</u> temperature to go up. Depressants and Cannabis generally will not affect temperature. Different Inhalants may affect temperature in different ways.

17. The two subcategories of Narcotic Analgesics are the Opiates and the Synthetic Opiates. Natural Alkaloids are actually found in, and can be isolated from, the sap of the Opium Poppy. The Opium Derivatives are produced by chemically treating the Natural Alkaloids. The Synthetic Opiates have nothing at all to do with the opium poppy, but are produced entirely artificially.

18. <u>Synesthesia</u> is a mixing of the sensory modes. For example, a person may <u>look</u> at a particular color, and that visual input may cause the person to <u>hear</u> a sound or <u>smell</u> an odor. Synesthesia is an effect generally associated with Hallucinogens.

19. Toluene is one of the active ingredients in various volatile solvents, a subcategory of the Inhalants.

20. CNS Depressants and Narcotic Analgesics cause the blood pressure to go down. CNS Stimulants, Hallucinogens, Cannabis and Dissociative Anesthetics generally cause the blood pressure to go up. With Inhalants, it depends on the particular subcategory: Anesthetic Gases lower blood pressure, while Aerosols and Volatile Solvents raise blood pressure.

21. Chloral Hydrate is a CNS Depressant. Phencyclidine is a Dissociative Anesthetic.

22. It is good practice to hold the stimulus about 12 to 15 inches in front of the subject's face.

23. Amphetamine is a CNS Stimulant. Heroin is a Narcotic Analgesic. Neither category will cause Horizontal Gaze Nystagmus. Therefore, their combination also will not cause Nystagmus.

    However, the combination of Amphetamine and Heroin may have unpredictable effects on pulse rate. The stimulant, by itself, will tend to cause the pulse to go up, the narcotic will tend to cause the pulse to go down. A person using both drugs may exhibit a pulse that is up/down/normal. And, this can change during the course of the examination.

24. A Sphygmomanometer is a device used for measuring blood pressure. Its major parts are:

    - the compression cuff, which contains an inflatable rubber bladder.
    - the manometer, or pressure gauge.
    - the pressure bulb, which is squeezed to inflate the bladder.
    - the pressure control valve, which regulates inflation and deflation of the bladder.

25. Muscle rigidity generally will be caused by Dissociative Anesthetics, and possibly will be caused by CNS Stimulants or Hallucinogens. CNS Depressants, Narcotic Analgesics, Inhalants or Cannabis generally will not cause muscle tone to be rigid.

B. Preparing For The Proficiency Examination

On the three pages that immediately follow, you will find a copy of the Proficiency Examination Checklist that your instructors will use to assess your skills in conducting the drug influence evaluation. Review the checklist carefully. It will give you a good idea of what factors will be considered in your examination, i.e. the errors of omission or commission that you need to avoid.

Practice conducting the procedures before submitting yourself to this proficiency examination. Make sure you can administer the procedures flawlessly. It would be a good idea to conduct some after class hours practice with fellow students, so that you can coach each other and help each other progress to Certification Training.

PROFICIENCY EXAMINATION CHECKLIST
(For Use During Certification Training)

Student's Name _____

Date _____ Examiner _____

I. Preliminary Examination

1. Did the student ask all preliminary examination questions?

_____yes _____no

(If No: What questions were deleted? _____

_____

2. Did the student properly estimate pupil size?

_____yes _____no

3. Did the student properly assess the eyes' tracking ability?

_____yes _____no

4. Did the student properly measure pulse rate?

_____yes _____no

II. Eye Examinations

1. Did the student properly administer the Horizontal Gaze Nystagmus test?

_____yes _____no

(If no, explain deficiencies) _____

_____

2. Did the student properly administer the Vertical Gaze Nystagmus test?

_____yes _____no

(If no, explain deficiencies) _____

_____

3. Did the student properly administer the test for Lack of Convergence?

_____yes _____no

(If no, explain deficiencies) _____

_____

III. Psychophysical Tests

1. Did the student properly administer the Romberg Balance test?

_____yes _____no

(If no, explain deficiencies) _____

_____

2. Did the student properly administer the Walk and Turn test?

_____yes _____no

(If no, explain deficiencies) _____

_____

3. Did the student properly administer the One Leg Stand test?

_____yes _____no

(If no, explain deficiencies) _____

_____

4. Did the student properly administer the Finger To Nose test?

_____yes _____no

(If no, explain deficiencies) _____

_____

V. Vital Signs Examinations

1. Did the student properly measure blood pressure?

_____yes _____no

(If no, explain deficiencies) _____

_____

2. Did the student properly measure temperature?

_____yes _____no

(If no, explain deficiencies) _____

_____

3. Did the student properly measure pulse?

_____yes _____no

(If no, explain deficiencies) _____

_____

IV. Dark Room Examinations

1. Did the student properly control the pen light for the two checks of pupil size?

_____ yes _____no

(If no, explain deficiencies) _____

_____

2. Did the student accurately estimate pupil size?

_____yes _____no

3. Did the student properly check the nasal area?

_____yes _____no

4. Did the student properly check the oral cavity?

_____yes _____no

VI. Examinations of Muscle Tone

1. Did the student adequately inspect for muscle tone?

_____yes _____no

(If no, explain deficiencies) _____

_____

V. Examinations of Injection Sites and Third Pulse

1. Did the student adequately inspect for injection sites?

_____yes _____no

(If no, explain deficiencies) _____

_____

2. Did the student properly measure pulse?

_____yes _____no

(If no, explain deficiencies) _____

_____

VII. Evaluator's Opinion of Student's Proficiency

(Offer appropriate, specific comments concerning the student's progress)

_____

_____

_____

_____

C. The Anonymous Written Critique

The Student's Critique Form appears on the following pages. You will have time, during the final session of the course, to complete this form and offer any comments that you think are appropriate. It will be especially helpful to hear your suggestions for improving this training.

Please look over the critique form prior to the final session, to start organizing your thoughts and feelings about the instruction you have received.

D. Maintaining the Log of Drug Influence Evaluations

Beginning with your first night of Certification Training, and **continuing throughout your career as a DRE**, you will maintain a log of all persons you examine for possible drug impairment. The log is your personal record of your work as a DRE, and it will have a major impact on three things that should be of major importance to you:

(1) Whether or not your instructors can recommend you for your initial certification as a DRE.

(2) Whether or not you qualify for re-certification, when your initial certification expires.

(3) Whether or not the trial judge in a particular drug impairment case qualifies you as an expert, and allows you to render your opinion as evidence.

Under the International Standards for the Drug Evaluation and Classification Program established by IACP, your instructors cannot endorse you for certification unless your log of drug influence evaluations is up-to-date, complete and accurate. The next-to-last line on the Certification Progress Log that you received at the beginning of the DRE Pre-School, and that you handed back in at the start of this School, is titled "Rolling" Log Approved. ("Rolling Log" is the informal name of the log used to document your drug influence examinations.) If a valid instructor's signature does not appear on that line, IACP cannot grant you a certificate. Once you do receive a certificate, it usually will be valid for two years. At that time, to qualify for re-certification, you must submit a copy of the entries in your "Rolling Log" since you were certified, as proof that you have maintained your proficiency. And, each time you go to court as a DRE, you must bring your "Rolling Log" along, to help establish your credentials as an expert. Remember that your state may have more stringent requirements.

What is the "Rolling Log"? Five copies of it appear on the final pages of this manual. Remove one of those copies now, so that you can refer to it as you read the instructions for entering information on it.

At the top of the Log, there is a space in which you will print your name ("Drug Recognition Expert"); another space for the page number (obviously, the first page will be #1, the second #2, and so on; as you continue your career as a DRE, the page number will grow very large); and, a third space in which to print your DRE certification number assigned to you by

IACP. Until you have completed your certification training, you will print the word "STUDENT" in that space.

Each subsequent line of the log corresponds to a drug influence evaluation in which you participated. In the "Control Number" box, you will print the number that you assign to the evaluation; i.e. if this is the seventh examination in which you participated in 2005, the control number would be 2005-7. If you were the actual examining DRE for this particular case, you need not print anything other than the control number in that box. But if you served only as the recorder, you must print "RECORDER" in the box, immediately below the control number. Likewise, if you were participating only as a witness, you will print "WITNESS" in the box.

In the box to the right of the control number, you will print the subject's full name (last, first, middle initial); further to the right, enter the arrest booking number if applicable. The booking number is whatever control number the responsible law enforcement agency assigned to track the case. In some instances, there may be no booking number. For example, you may have an opportunity to examine a person who is receiving drugs in a clinical setting, and no arrest is involved. Or, the person you are examining might be someone already incarcerated in the jail who agrees to submit to the evaluation with the understanding that its outcome will not affect their particular case; in that instance, the booking number would not be relevant. In any case where there is no relevant booking number, simply print "N/A" in the box.

In the next box, print the date on which the evaluation began; in other words, an evaluation that starts one minute before midnight on March 17th is recorded on that date, not on the 18th, despite the fact that almost all of the work took place on the later day.

The next box, of course, is very important. Record your opinion in complete detail. If you conclude that the subject is not impaired, that is what you will record. If you conclude that the person is under the influence of alcohol only, that is what you must record. If you believe the subject is suffering from an injury or illness, print "Medical Rule Out" in the box. Otherwise, print the category or combination of categories of drugs that you believe is causing the impairment. If the subject has a positive BAC, don't forget to include "alcohol or ETOH" as one of those.

In the "Toxicologic Results" box, you will print the outcome of all chemical tests performed on the subject. Obviously, days or weeks will usually pass by before you have the results of blood or urine tests, so you will routinely have to "update" your log. Don't forget to include the BAC obtained from the breath test in this space. And, if the suspect refused to submit to the blood or urine test, indicate that.

In the final box, print the names of persons who witnessed the evaluation, and include any other appropriate comments. Use the reverse side of the page, or add continuation sheets, if longer comments are appropriate.

Experienced DREs usually maintain two copies of their "Rolling Log" to ensure preservation of this most important record.

E. Certification Requirements

At a minimum you will need to conduct 12 DRE evaluations with an instructor. You need to be the evaluator on at least 6 of these evaluations, and at least 75% of your opinions must be collaborated by toxicological results.

If no instructor is available you may still be able to complete an evaluation. Check with your DRE State Coordinator or DRE Agency Coordinator to determine what polices pertain to this situation. The ultimate goal of this program is to remove the drugged driver from the roadway.

Remember, you must have a DRE Instructor present when you conduct an evaluation to receive credit for certification.

DRUG EVALUATION AND CLASSIFICATION PROGRAM

LOG OF DRUG INFLUENCE EVALUATIONS

Drug Recognition Expert _____ Page: _____

IACP Certification Number _____

CONTROL NUMBER	SUSPECT'S NAME	BOOKING NUMBER	DATE	OPINION OF DRE	TOXICOLOGIC RESULTS

Course Location Date

DRE SCHOOL
STUDENT'S CRITIQUE FORM

1. Rating The Various Segments Of The School

On a scale from 1 (="low") to 5 (="high"), please indicate how import each major topic or activity of this school was for you personally.

Drugs In Society and In Vehicle Operation _____
Development and Effectiveness of the DEC Program _____
Overview of the Drug Recognition Expert Procedures _____
Physician's Desk Reference _____
Eye Examinations: Explanation and Demonstrations by Instructors _____
Eye Examinations: Hands-on Practice by Students _____
Vital Signs: Explanations and Demonstrations by Instructors _____
Vital Signs: Hands-on Practice by Students _____
Physiology and Drugs _____
The Alcohol Workshop _____
The **"Practice: Test Interpretation"** Sessions _____
The Sessions on the Individual Drug Categories _____
Overview of Signs and Symptoms _____
Drug Combinations _____
Curriculum Vitae Preparation and Maintenance _____
Preparing the Narrative Report _____
Case Preparation and Testimony _____
The Mid-Course Review Session _____
The Role Play Session (Instructors "simulating" drug impaired subjects) _____
The Quizzes _____

2. Suggestions For Improving The School

If you absolutely had to cut four hours out of this school, what topics or sessions would you reduce or eliminate?

_____

_____

If you could add four hours to the School, how would you recommend that the additional time be spent?

_____

_____

3. Specific Features Of The School

Please circle the appropriate word to indicate your agreement or disagreement with each of the following statements.

1. The DRE School is at least one day too long.

   Agree Disagree Not Sure

2. We spent too much time in hands-on practice.

   Agree Disagree Not Sure

3. Now that I've had the DRE School, I believe that the PRE-School really wasn't needed.

   Agree Disagree Not Sure

4. Some of the instructors didn't seem to be as well prepared as they should have been.

   Agree Disagree Not Sure

5. I do not feel confident about my ability to estimate nystagmus onset angle accurately.

   Agree Disagree Not Sure

6. This School was much harder than I thought it would be.

   Agree Disagree Not Sure

7. We should have spent more time in hands-on practice.

   Agree Disagree Not Sure

8. The instructors seemed to know their material, but some of them didn't get it across very well.

   Agree Disagree Not Sure

9. We spent too much time on the details of each drug category.

   Agree Disagree Not Sure

10. I am not confident that I can measure blood pressure accurately.

Agree Disagree Not Sure

11. I would have to say that the final examination was hard, but fair.

Agree Disagree Not Sure

12. Some of the instructors "threw the bull" a bit too much.

Agree Disagree Not Sure

13. Now that I've had the DRE School, I am more convinced than ever that the PRE-School is very important.

Agree Disagree Not Sure

14. I am still very confused about drug combinations and their effects.

Agree Disagree Not Sure

15. I am not confident that I can estimate pupil size accurately.

Agree Disagree Not Sure

16. I would have to say that this School wasn't quite as hard as I thought it would be.

Agree Disagree Not Sure

17. There were too many quizzes in this School.

Agree Disagree Not Sure

18. The final examination was much harder than it should have been.

Agree Disagree Not Sure

19. We did not receive enough information about the effects, signs and symptoms of the various drug categories.

Agree Disagree Not Sure

20. I am confident that I will succeed in the Certification Stage of my training.

Agree Disagree Not Sure

21. The DRE School is at least one day too short.

Agree Disagree Not Sure

4. Rating of Instructors

On a scale from 1 (="poor") to 5 (="excellent"), please indicate your overall assessment of each instructor.

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

Instructor Rating _____

5. Overall Rating Of The School

On a scale from 1 (="poor") to 5 (="excellent"), please indicate your overall assessment of the quality of this School:

1 2 3 4 5

Please offer any final comments or suggestions that you feel are appropriate.

_____

_____

_____

_____

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_____

_____

REVIEW OF THE DRE SCHOOL

Test Your Knowledge

The Final Written Examination for this School will take place during Session XXX. This is an opportunity for you to test your knowledge prior to the exam, to verify that you are ready for it. The test that appears on the following pages is similar to the final exam in terms of its content and structure, although it does not (of course) contain the same questions. Take this sample test, and compare your answers with the answer key that appears on the pages following the test.

A SELF-TEST FOR REVIEW AND STUDY

Circle the letters corresponding to the correct answers. Note that some questions have **more than one** correct answer.

1. Suppose you examine a suspect that you know is under the combined influence of Demerol and Thorazine. Which of the following would you **not** expect to find in that suspect? (Circle all that you wouldn't expect to see.)

   A. Tachycardia is present
   B. Horizontal Gaze Nystagmus is present
   C. Hypotension is present
   D. Mydriasis is present
   E. Lack of Convergence is present

2. The Autonomic Nervous System has **sympathetic** nerves and _____ nerves.

   A. parasympathetic
   B. metasympathetic
   C. postsympathetic
   D. mesosympathetic
   E. pilosympathetic

3. Suppose you examine a suspect that you know is under the combined influence of Ketamine and Methamphetamine, and you observe that he or she exhibits Horizontal Gaze Nystagmus. This is an example of ....

   A. A Synergistic Effect
   B. An Antagonistic Effect
   C. The Null Effect
   D. An Overlapping Effect
   E. An Additive Effect

4. The technical term meaning "constricted pupils" is ....

   A. Mydriasis
   B. Occulosis
   C. Miosis
   D. Bruxism
   E. Ptosis

5. **Chloral Hydrate** is an example of ....

   A. a Non-Barbiturate
   B. an Anti-Psychotic Tranquilizer
   C. an Anti-Depressant
   D. a Barbiturate
   E. an Anti-Anxiety Tranquilizer

6. **Numorphan** is an example of ....
   A. a Synthetic Opiate
   B. an Analog of Phencyclidine
   C. a Natural Alkaloid of Opium
   D. an Opium Derivative
   E. a non-Amphetamine-based Stimulant

7. Which of the following ordinarily will cause Horizontal Gaze Nystagmus? (Circle all that usually cause nystagmus.)

   A. Methamphetamine
   B. Valium
   C. The combination of Cocaine and Xanax
   D. The combination of Cannabis and LSD
   E. The combination of Heroin and Dilaudid

8. **Ritalin** is an example of ....

   A. a CNS Stimulant
   B. a Narcotic Analgesic
   C. an Hallucinogen
   D. a CNS Depressant
   E. an Analog of Phencyclidine

9. Suppose you examine a suspect that you know is under the combined influence of Heroin and PCP, and you observe that he or she exhibits **miosis**. This is most likely due to ....

   A. The "Downside" of Heroin
   B. An Overlapping Effect between the two drugs
   C. An Antagonistic Effect between the two drugs
   D. An Additive Effect between the two drugs
   E. The "Downside" of PCP

10. Which of the following usually will be true in a subject who is under the influence of an Hallucinogen? (Circle all that usually will be true.)

    A. Pupils will be constricted
    B. Body temperature will be elevated
    C. Eyes will be unable to converge
    D. Blood pressure will be elevated
    E. Horizontal Gaze Nystagmus will be present

11. Which of the following is not classified as an Hallucinogen? (Circle all that **are not** Hallucinogens.)

    A. ETOH
    B. DOM
    C. MDMA
    D. MPPP
    E. THC

12. Which of the following ordinarily will leave body temperature within the normal range? (Circle all that usually don't affect body temperature.)

    A. CNS Stimulants
    B. Dissociative Anethetics
    C. Cannabis
    D. CNS Depressants
    E. All of the above **usually do** affect body temperature

13. Suppose you examine a suspect that you know is under the combined influence of Percodan and Cannabis, and you find that the suspect's pulse rate is 74 bpm. This is most likely due to ....

    A. An Additive Effect between the two drugs
    B. The "Downside" of Cannabis
    C. An Overlapping Effect between the two drugs
    D. An Antagonistic Effect between the two drugs
    E. The "Downside" of Percodan

14. How many distinct, validated clues have been established for the Romberg Balance test?

    A. Eight
    B. Six
    C. Four
    D. Three
    E. There are **no validated** clues for that test.

15. A person under the combined influence of Ritalin and LSD usually will have above normal blood pressure. This is an example of ....

    A. An Overlapping Effect
    B. A Synergistic Effect
    C. The Null Effect
    D. An Additive Effect
    E. An Antagonistic Effect

16. The gap between two nerve cells is called the ....

A. Vesicle
B. Neuron
C. Synapse
D. Dendrite
E. Axon

17. **"Ptosis"** most nearly means ....

A. Dilated pupils
B. Grinding the teeth
C. Constricted pupils
D. Droopy eyelids
E. Goose bumps

18. How many distinct, validated clues have been established for the Walk-and-Turn test?

A. Eight
B. Six
C. Four
D. Three
E. There are **no validated** clues for that test.

19. Which of the following are not subcategories of Inhalants? (Circle all that are not proper names for Inhalant Subcategories.)

A. Fluorocarbons
B. Anesthetic Gases
C. Aerosols
D. Volatile Solvents
E. Propellants

20. **Phencyclidine** is best described as ....

A. parasympathomimetic
B. an anti-depressant
C. a cellular stimulant
D. psychotophobic
E. a dissociative anesthetic

21. Which of the following usually **will not cause** the pupils to dilate? (Circle all that usually do not cause dilation.)

A. MDMA
B. Methaqualone
C. Desoxyn
D. Peyote
E. Ketamine

22. Which subcategory or subcategories of Inhalants usually cause blood pressure to **be below normal**? (Circle all that usually cause below normal blood pressure.)

A. Anesthetic Gases
B. Propellants
C. Volatile Solvents
D. Aerosols
E. Fluorocarbons

23. Which of the following are **Natural Alkaloids** of opium? (Circle all that are Natural Alkaloids.)

A. Lortab
B. Dilaudid
C. Codeine
D. Thebaine
E. Hycodan

24. **"Crank"** is a street name for ....

A. Heroin
B. Cocaine
C. PCP
D. Methamphetamine
E. LSD

25. Which of the following are **not validated clues** for the One Leg Stand test? (Circle all that aren't validated clues.)

A. Hopping
B. Raising the arms
C. Putting the foot down
D. Failing to count out loud
E. Swaying

26. Which of the following would be considered **sympathomimetic** drugs? (Circle <u>all</u> that are sympathomimetic.)

A. MDMA
B. Dexedrine
C. Xanax
D. Oxycontin
E. Desoxyn

27. Suppose you examine a suspect, and you observe **all** of the following: Horizontal Gaze Nystagmus is present, with an onset of approximately 30 degrees; BAC is 0.00; eyes are unable to converge; pupil size is 5.5 mm in near-total darkness and 3.5 mm in direct light; pupil reaction to light is within normal; pulse rate is 100 bpm; blood pressure is 148/96; body temperature is 99.8 degrees. In your opinion, this suspect is under the influence of ....

A. a combination of a CNS Depressant and a CNS Stimulant
B. a CNS Depressant alone
C. a Dissociative Anesthetic alone
D. a combination of a Dissociative Anesthetic and a CNS Stimulant
E. a combination of a CNS Depressant and Cannabis

28. The only artery that carries **de-oxygenated** blood is the _____ artery.

A. Carotid
B. Brachial
C. Pulmonary
D. Radial
E. Coronal

29. Suppose a subject is under the influence of **Hycodan** and nothing else. Indicate whether each of the following will be true or false:

A. T F Horizontal Gaze Nystagmus will not be present
B. T F Pupils will be constricted
C. T F Bradycardia will be present
D. T F Eyes will be able to converge
E. T F Hypotension will be present

30. **"Bruxism"** most nearly means ....

A. Dilated pupils
B. Grinding the teeth
C. Constricted pupils
D. Droopy eyelids
E. Goose bumps

31. Suppose a suspect is under the influence of a combination of Marijuana and Cocaine, but nothing else. Indicate whether each of the following will be true or false:

A.	T F	Pulse rate will be elevated
B.	T F	Pupils will be dilated
C.	T F	Horizontal Gaze Nystagmus will be present
D.	T F	Eyes will be able to converge
E.	T F	Blood pressure will be elevated

32. How many distinct, validated clues have been established for the Finger-to-Nose test?

A. Eight
B. Six
C. Four
D. Three
E. There are **no validated** clues for this test.

33. The drug _____ is an example of an Anti-Anxiety Tranquilizer. (Circle all that are Anti-Anxiety Tranquilizers.)

A. Librium
B. Valium
C. Amobarbital
D. Chloral Hydrate
E. Xanax

ANSWER KEY FOR THE SELF-TEST

1. Correct answers are A and D.
Demerol is a Narcotic Analgesic, Thorazine is a CNS Depressant. The combination should **not produce** elevated heart rate (Tachycardia) nor dilated pupils (Mydriasis). But Horizontal Gaze Nystagmus and Lack of Convergence should be present, due to the Depressant, Thorazine. And, lowered blood pressure (Hypotension) should be present as an Additive Effect of both drugs.

2. Correct answer is A, **parasympathetic**.

3. Correct answer is D, **Overlapping**.
Ketamine is an Analog of PCP, a drug that usually does cause Horizontal Gaze Nystagmus. Methamphetamine is a CNS Stimulant, a type of drug that doesn't affect nystagmus. This is a case of **action plus no action equals action**, i.e., an Overlapping Effect.

4. Correct answer is C, **Miosis**.

5. Correct answer is A, **Non-Barbiturate**.

6. Correct answer is D, **Opiate Derivative**.

7. Correct answers are B and C.
Valium is a CNS Depressant, which of course causes nystagmus. The combination of Cocaine and Xanax gives us a Stimulant and a Depressant (Xanax), which causes Nystagmus via an Overlapping Effect. None of the other drugs mentioned cause Nystagmus: Methamphetamine is a Stimulant; LSD is an Hallucinogen; Heroin and Dilaudid are Narcotics; Cannabis, of course, is its own category.

8. Correct answer is A, **CNS Stimulant**.

9. Correct answer is B, **Overlapping**.
Heroin, a Narcotic, causes constriction of the pupils (Miosis); PCP does not affect pupil size. This is another case of **action plus no action equals action**.

10. Correct answers are B and D.
Hallucinogens are **sympathomimetic** drugs, and therefore usually elevate the vital signs. But they have no affect on either Nystagmus or Lack of Convergence. And, instead of constricting the pupils, Hallucinogens usually cause pupils to dilate.

11. Correct answers are A, D and E.
ETOH is the chemical name for Ethyl Alcohol, the common beverage form of alcohol that remains the most commonly-abused drug. **MPPP** is a synthetic opiate. **THC** is the primary active ingredient in Cannabis. But "MDMA" (also known as "Ecstasy") and "DOM" (also known as "STP") **are** Hallucinogens.

12. Correct answers are C and D, **Cannabis and Depressants**.

13. Correct answer is D, **Antagonistic**.
A pulse rate of 74 bpm is within the normal range. Percodan, a Narcotic Analgesic, usually lowers the pulse, while Cannabis usually elevates the pulse. The Antagonistic Effect of the two drugs has put this suspect's pulse into a precarious, and probably temporary, state of balance.

14. Correct answer is E, **no validated clues**.
It is important to understand that, when we say there are no validated clues for Romberg, that does **not mean** that the test is invalid. It simply means that we do not have the research data to attest that specific clues on that test are statistically reliable indicators of impairment. Those kinds of research data, at the present time, are available only for Horizontal Gaze Nystagmus, Walk and Turn and One Leg Stand.

15. Correct answer is D, **Additive**.
Ritalin (a Stimulant) and LSD (an Hallucinogen) both usually elevate blood pressure.

16. Correct answer is C, **Synapse**.

17. Correct answer is D, **Droopy Eyelids**.

18. Correct answer is A, **Eight**.
Of the eight **validated** clues for Walk and Turn, two may be observed during the Instructions Stage of the test. They are can't keep balance (which means the suspect breaks away from the heel-to-toe stance) and starts too soon. The other six clues pertain to the Walking Stage of the test. They include:

- misses heel-to-toe
- raises arms
- steps off line
- stops walking
- turns improperly
- takes the wrong number of steps

Although these eight are the only validated clues for Walk and Turn, they aren't the only things that might be observed that could serve as evidence of impairment. All of your observations of the suspect are important.

19. Correct answers are A and E, **Fluorocarbons and Propellants**.
The only proper names for subcategories of Inhalants are Volatile Solvents, Aerosols and Anesthetic Gases.

20. Correct answer is E, **dissociative anesthetic**.

21. Correct answer is E, **Ketamine**.
Ketamine is an analog of PCP, a drug that doesn't affect pupil size. MDMA and Peyote are Hallucinogens, and Desoxyn is a CNS Stimulant; all of those dilate pupils. Methaqualone is a very special CNS Depressant; unlike almost all other Depressants, Methaqualone does affect pupil size (by dilating the pupils).

22. Correct answer is A, **Anesthetic Gases**.
Volatile Solvents and Aerosols usually produce above-normal blood pressure. "Fluorocarbons" and "Propellants" are, of course, not proper names for subcategories of Inhalants.

23. Correct answers are C and D, **Codeine and Thebaine**.
Lortab, Dilaudid and Hycodan are all **opium derivatives**. Dilaudid derives from Morphine, and Hycodan and Lortab from Codeine.

24. Correct answer is D, **Methamphetamine**.

25. Correct answer is D, **Failing to Count Out Loud**.
Hopping, Raising the Arms, Putting the Foot Down and Swaying are the four (and only four) **validated** clues of impairment for One Leg Stand.

26. Correct answers are A, B and E: **MDMA, Dexedrine and Desoxyn**.
Dexedrine and Desoxyn are members of the Amphetamine family of CNS Stimulants. MDMA is a "Psychedelic Amphetamine" belonging to the Hallucinogens. CNS Stimulants and Hallucinogens are the two categories that make up the **sympathomimetic** drugs. That means they simulate the responses that the body makes to messages conveyed along the **sympathetic** nerves, i.e., elevated vital signs, dilated pupils, etc. Three other categories, namely the Inhalants, Phencyclidine and Cannabis have **some** sympathomimetic characteristics, but they are not considered to be fully sympathomimetic, and not to the degree of the CNS Stimulants and Hallucinogens. Xanax and Oxycontin aren't even close to being sympathomimetic. Xanax (a Depressant) and Oxycontin (a Narcotic) are better described as wholly or partially **parasympathomimetic**.

27. Correct answer is C, **a Dissociative Anesthetic**.
Dissociative Anesthetics, by themselves, can account for all of the observations listed. Dissociative Anesthetics cause Nystagmus, and Lack of Convergence; they do not affect pupil size, so the pupils remain within the normal range; they do not affect the reaction of the pupils to light; they usually elevate all three vital signs.

A Depressant, by itself, could not account for the elevated vitals, and usually would slow the pupils' reaction to light.

If we had a combination of a Depressant and a Stimulant, we'd expect to see the pupils dilated beyond the normal range (due to an Overlapping Effect), and we'd expect to see the reaction of the pupils slowed (due to an Additive Effect). Also, although it is possible that the vital signs could all be elevated with a combination of Depressant and Stimulant, we'd probably expect to see some "moderation" of the vitals due to an Antagonistic Effect.

If we had a combination of a Dissociative Anesthetic and a Stimulant, we could expect to see pupil dilation and some slowing of the reaction to light, due to Overlapping Effects.

If we had a combination of a Dissociative Anesthetic and a Stimulant, we could expect to see the temperature within the normal range, since neither of those drugs temperature.

28. Correct answer is C, **Pulmonary**.

29. Correct answers are:
    (A) True: **no nystagmus** will be present
    (B) True: we will see miosis, or **constricted pupils**
    (C) True: we will find a slow pulse, or **Bradycardia**
    (D) True: we won't see a Lack of Convergence, so the eyes **will be able to converge**
    (E) True: we will find a lowered blood pressure, or **Hypotension**
    Hycodan is a Narcotic Analgesic, and these observations will be consistent with impairment by Narcotics.

30. Correct answer is B, **Grinding the Teeth**

31. Correct answers are:
    (A) True: An Additive Effect will **elevate the pulse** for this combo
    (B) True: **pupils will dilate** due to an Overlapping or Additive Effect
    (C) False: neither drug causes Nystagmus, so the Null Effect will also **cause no nystagmus**
    (D) False: Marijuana causes Lack of Convergence, so the Overlapping Effect means the **eyes won't converge**
    (E) True: An Additive Effect will **elevate the blood pressure**

32. Correct answer is E, **no validated clues**

33. Correct answer are A, B and E: **Librium, Valium** and **Xanax**

MID-COURSE REVIEW

A. Drugs, Drug Categories and the Drug Influence Evaluation

1. Define the word "drug".

2. Name the seven drug categories.

   a. Name the six subcategories of CNS Depressants.
   b. Name three subcategories of CNS Stimulants.
   c. Name two subcategories of the Narcotic Analgesics.

3. Identify the category for each of the listed drugs.

   a. Xanax
   b. Desoxyn
   c. Secobarbital
   d. Dilaudid
   e. Alprazolam
   f. Phenyl Cyclohexyl Peperidine
   g. Ecstasy
   h. ETOH
   i. Numorphan
   j. Psilocybin

4. List the twelve components of the Drug Influence Evaluation in the proper sequence.

   a. Demonstrate the Preliminary Examination.
   b. Demonstrate the Eye Examinations.
   c. Demonstrate the Administration of the Divided Attention Tests.
   d. Demonstrate the Vital Signs Examinations.
   e. Demonstrate the Darkroom Examinations.
   f. Demonstrate the Check for Muscle Tone and the inspection for Injection Sites.

5. Identify the category for each of the listed drugs.

   a. Demerol
   b. Adderall
   c. Chlordiazepoxide
   d. Ketamine
   e. Percodan
   f. Ritalin
   g. Isopropanol
   h. Bufotenine
   i. Methaqualone

B. Eyes and Vital Signs

1. Name the three clues of Horizontal Gaze Nystagmus.

   a. Demonstrate the check for "Lack of smooth pursuit".
   b. Demonstrate the check for "Distinct and sustained nystagmus at maximum deviation".
   c. Demonstrate the check for "Angle of Onset".

2. Name the categories of drugs that will cause Horizontal Gaze Nystagmus.

    a. Name the categories that will cause Vertical Gaze Nystagmus.
    b. Demonstrate the check for Vertical Gaze Nystagmus.

3. Name the test that is always administered immediately after Vertical Gaze Nystagmus.

    a. Demonstrate the check for Lack of Convergence.
    b. Name the categories of drugs that usually will cause Lack of Convergence.

4. Name the lighting conditions under which we make estimations of pupil size.

    a. Demonstrate the room light pupil size estimation procedure.
    b. Demonstrate the near-total darkness procedure.
    c. Demonstrate the direct light procedure.
    d. Name the other things a DRE looks for while shining the light directly into the subject's eye.
    e. How quickly must the pupil start to constrict if it is considered to exhibit normal reaction to light?
    f. Define Rebound Dilation.

5. State the normal range of pupil sizes for the three lighting conditions.

    a. Define each of the listed terms.

        - Miosis
        - Mydriasis
        - Ptosis

    b. What kinds of drugs will cause dilation of the pupils?
    c. What kinds of drugs will cause constriction?

6. Identify the category for each of the listed drugs.

    a. Oxycodone
    b. Halcion
    c. Librium
    d. Peyote
    e. Preludin
    f. Diazepam
    g. Dexedrine
    h. Hycodan
    i. Xanax

7. Define "Pulse".

    a. Define "Pulse Rate".
    b. Define "Artery".
    c. Define "Vein".
    d. Identify the location of each listed pulse point.

- Radial
- Brachial
- Carotid

e. Demonstrate a pulse measurement, using the left Radial pulse point.
f. State the normal range of adult human pulse rate.
g. Name the drug categories that usually cause elevated pulse rate.
h. Name the drug categories that usually cause lowered pulse rate.

8. Define "Blood Pressure".

a. How often does a person's blood pressure change?
b. When does the blood pressure reach its highest value?
c. When does the blood pressure reach its lowest value?
d. Name the two medical instruments that are used to measure blood pressure.
e. Name the sounds that we hear through the stethoscope when we make a blood pressure measurement.
f. What does this "Hg" mean?
g. In what units is blood pressure measured?
h. Suppose that, at some particular instant, a person has a blood pressure of 120 mmHg. What does that "120 mmHg" mean?
i. Name the types of drugs that usually cause a lowered blood pressure.
j. Name the types of drugs that elevate blood pressure.
k. State the meaning of each of the listed terms.

- Systolic
- Diastolic
- Bradycardia
- Tachycardia
- Hypertension
- Hypotension

l. State the normal range of Systolic blood pressure.
m. State the normal range of Diastolic blood pressure.
n. Demonstrate the measurement of blood pressure.

C. Physiology

1. Define "Physiology".

2. What is the expression we use to remember the names of the ten major body systems?

a. What is **M** for?
b. What is **U** for?
c. What is the first **R** for?
d. What is **D** for?
e. What is **E** for?
h. What is **I** for?
i. What is **N** for?
j. What is **C** for?

f. What is the second **R** for?
g. What is **S** for?

3. State the word that means "dynamic balance involving levels of salts, water, sugars and other materials in the body's fluids".

4. Which artery carries blood from the heart to the lungs?

   a. What is unique about the Pulmonary Artery, compared to all other arteries?
   b. What are the Pulmonary Veins?
   c. What is unique about the Pulmonary Veins?

5. Name the various types of nerves.

   a. Sensory Nerves, carry messages to the brain.
   b. Motor Nerves, carry messages from the brain.
   c. Voluntary Nerves are motor nerves that carry messages to the muscles that we consciously control.
   d. Autonomic Nerves are motor nerves that carry messages to the muscles and organs we do not consciously control.
   e. Sympathetic Nerves are autonomic nerves that carry messages commanding the body to react to fear, stress, excitement, etc.
   f. Parasympathetic Nerves are Autonomic Nerves that carry messages to produce relaxed and tranquil activities.

6. Define each of the listed terms.

   a. Neuron
   b. Synapse
   c. Neurotransmitter
   d. Axon
   e. Dendrite