DRE

Drug Recognition Expert

Canadian Combined 9-Day School (Pre-DRE & DRE)

PARTICIPANT MANUAL

VOLUME 1 – Sessions 1 to 17

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This DRE course is dedicated to the memory of DRE Instructor
Heidi Stevenson
End of Watch April 19, 2020

On April 19th, 2020, Constable Heidi Stevenson was involved in the search for an active shooter who murdered numerous people in rural communities in Nova Scotia. The shooter had previously wounded Constable Chad Morrison when Constable Stevenson was engaged by the active shooter on an off-ramp of Highway 102 near Shubenacadie, NS. An exchange of gunfire between Heidi and the gunman followed, in which the shooter was wounded. Tragically, Heidi lost her life.

Heidi was certified as a DRE in 2010 and became a DRE Instructor in 2014. She was passionate about the DRE and SFST programs, teaching on countless courses across Canada and numerous DRE certification events. There are very few DRE's and DRE Instructors across Canada who Heidi did not influence either directly or indirectly. Her loss is still felt to this day within the DRE program.

Heidi will be remembered for her courage and strength of character. We will always be grateful for her commitment to the DRE program, the bravery she demonstrated on that day and every other day and for the actions she took through her entire career to protect the communities in which she worked and cared so deeply for.

The 2023 DRE and SFST manuals are dedicated in her honor as well as to her husband, Dean and her children Connor and Ava.

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Drug Recognition Expert Course

Instructor Guide

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A. ACKNOWLEDGEMENTS

The National Highway Traffic Safety Administration (NHTSA) and the International Association of Chiefs of Police (IACP) would like to thank the following individuals for their contributions in updating and revising the 2023 Impaired Driving Enforcement Programs (DRE, SFST) curricula.

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Amy Ziegler, U.S. Department of Transportation, Transportation Safety Institute

B. PREFACE

The DRE course is a series of three training phases that, collectively, prepare police officers and other qualified persons to serve as DREs. Throughout this guide, 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 suspected drug-impaired drivers. This training, developed as part of the Drug Evaluation and Classification (DEC) Program under the auspices and direction of NHTSA and IACP has experienced remarkable success since its inception in the 1980s.

As in any educational training program, an instruction guide 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 IACP Technical Advisory Panel (TAP) with contributions from many sources in health care science, toxicology, optometry, 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 DRE training curriculum. The reorganized guides are then prepared and disseminated, both domestically and internationally, to the DEC Program State Coordinators. Changes will take effect after approval by TAP, unless otherwise specified or when so designated.

The material in this curriculum is to help DREs interpret what is most likely to be seen when performing a drug impairment evaluation. When it comes to the signs and symptoms of drug impairment, what is expected to be seen does not guarantee every indicator will be present during each drug impairment evaluation. There may be variations due to individual reaction, dose taken, and drug interactions.

Prior to initiating training, all States and equivalents must ensure they comply with DRE section six in the International Standards of Impaired Driving Programs.

C. ADAPTATION

This course material is published exclusively for Canadian use by the Canadian DECP (State) Coordinating Office. It was adapted from the combined Pre-DRE and DRE schools published by the IACP, in accordance with Canadian law and pursuant to IACP/NHTSA agreements.

ONLY FOR USE AUTHORIZED BY THE NATIONAL COORDINATOR.
The Canadian DRE School is to be exclusively provided in the current format: all modifications must be approved by the National (State) Coordination Office.

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Estimated time for session: 1 Hour 50 Minutes

1 DRE

INTRODUCTION AND OVERVIEW

LEARNING OBJECTIVES

- State the objectives and goals of the course
- Outline the major course content
- Outline the schedule of major course activities
- Outline the participant guide content and organization
- Recognize course administrative matters

i. CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participant-Led Presentations
- Knowledge Examination
- Reading Assignments

MATERIALS NEEDED FOR THIS SESSION

- Pre-tests
- Participant guide with current training schedule

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A. Welcoming Remarks and Goals

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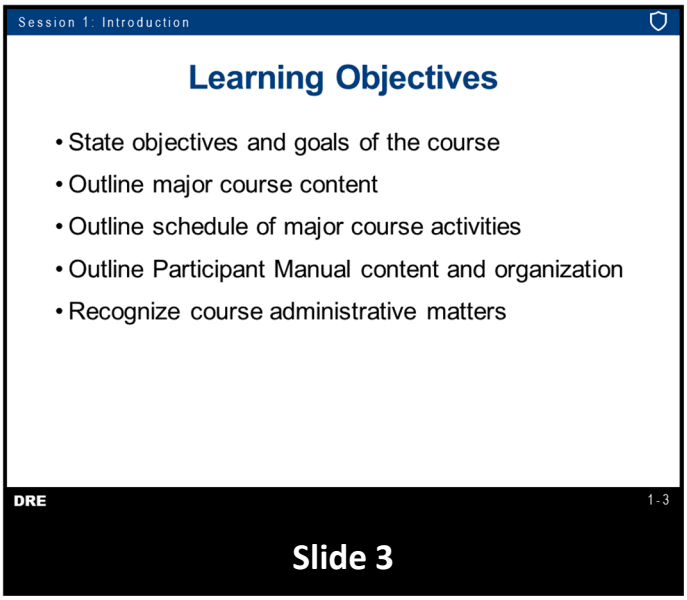

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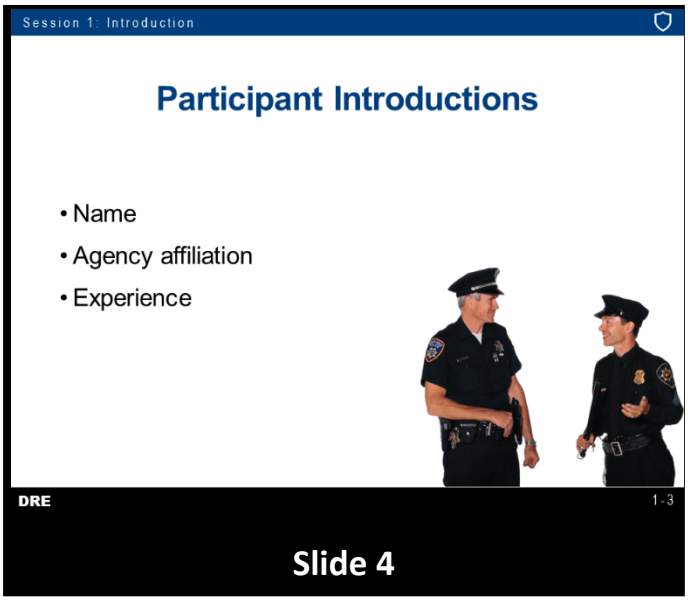
B. Participant Introductions



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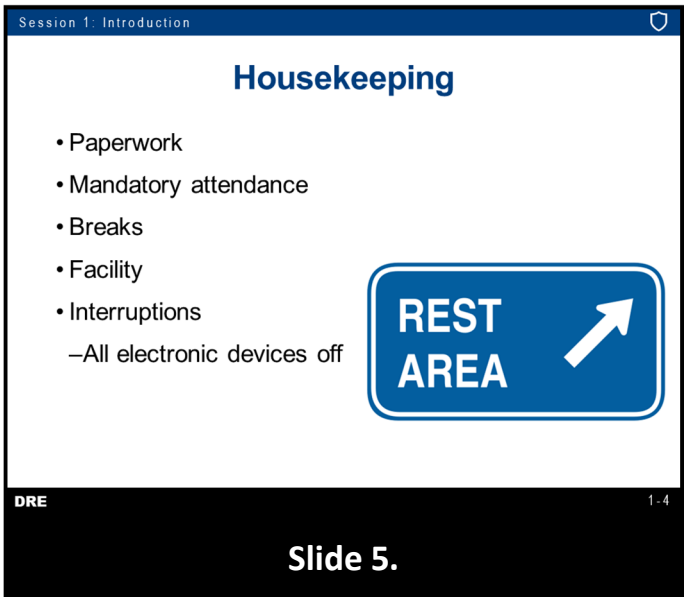
C. Housekeeping



Slide 5.

Attendance is mandatory at all sessions of this school.

Slide 6.

In this 9-day course, you will be completing the DRE Pre-School portion of training simultaneously to the DRE School portion. Upon completion of this course, you will 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.

There is one essential learning experience this classroom training cannot provide – the 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 of examining persons who are under the influence of drugs.

Although this DRE School will not conclude with the participant's immediate certification as a DRE, successful completion of this classroom training is 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 in the DEC Program process.

Slide 7.

The ultimate goal of the DEC Program and of this course of instruction is to "help you prevent collisions, 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 collisions, deaths, and injuries these people cause. But even the most conservative estimates suggest drug-impaired drivers kill thousands of people each year and seriously injure tens of thousands of others.

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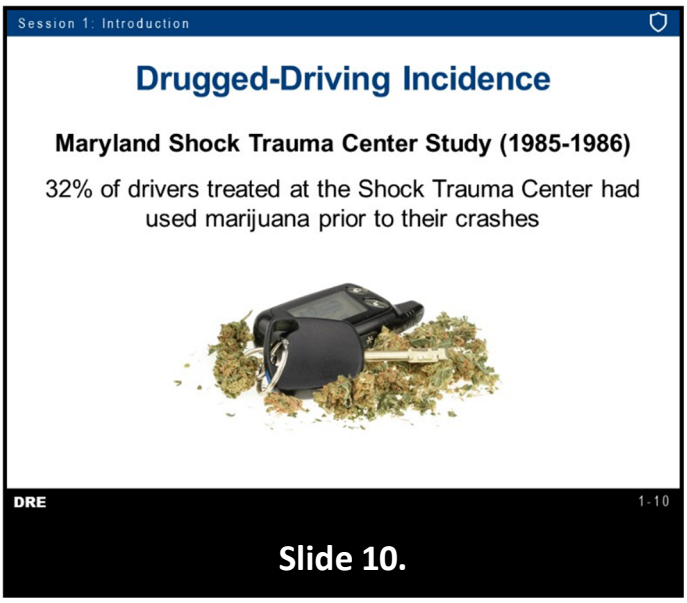
Slide 9.

This ongoing study (2021 and onwards) reveals a striking feature: the prevalence of polysubstance use while driving, with approximately one in five drivers (21.8%) testing positive for more than one impairing substance.



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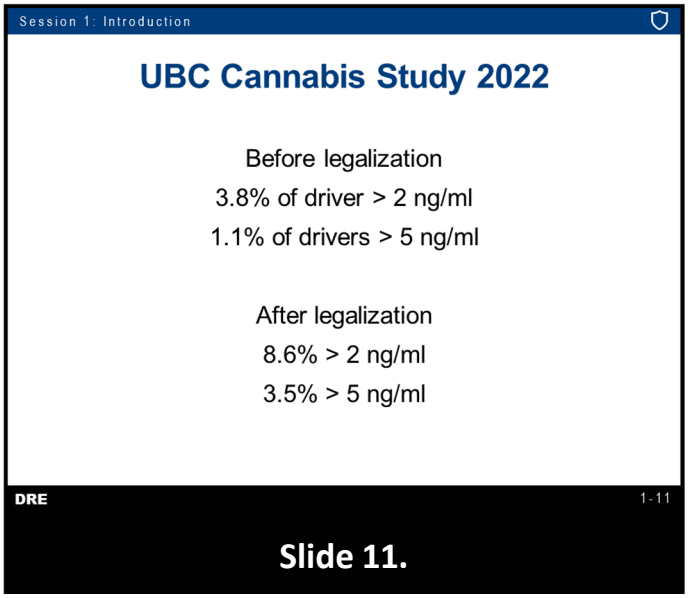
Maryland Shock Trauma Center study (1985 – 1986) states that 32% of drivers treated at the Shock Trauma Center had used cannabis prior to their collisions.



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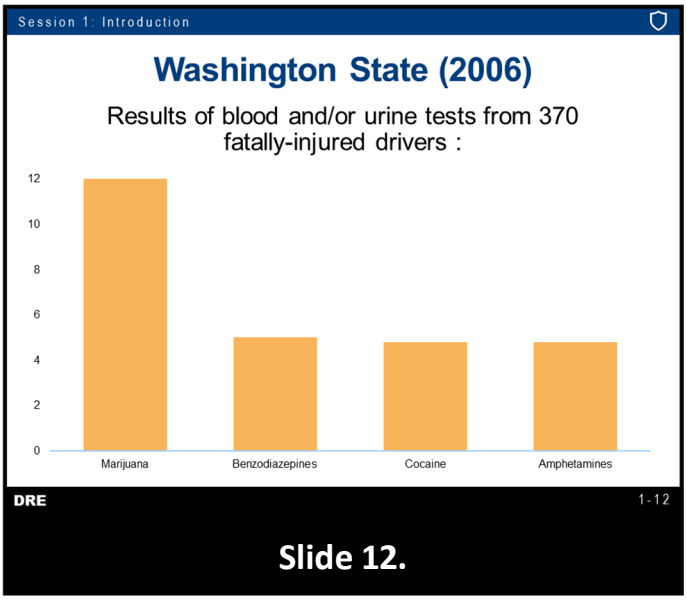
Before cannabis was legalized, 3.8 per cent of drivers had blood THC concentrations above the now Canadian legal driving limit of 2 nanograms/ml. That percentage rose to 8.6 per cent after legalization. The proportion of drivers with higher concentrations of THC (above 5 nanograms/ml) also increased, going from 1.1 per cent pre-legalization to 3.5 per cent afterwards.



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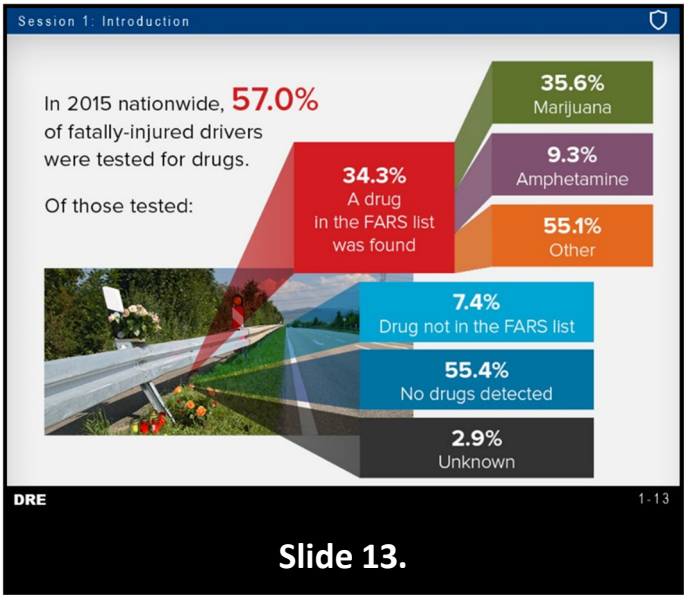
According to Washington State (Schwilke, et al., 2006), the results of tests of blood and/or urine from 370 fatally injured drivers revealed Cannabis was the most encountered drug (12 %) followed by Benzodiazepines (5%), Cocaine (4.8%), and Amphetamines (4.8%)



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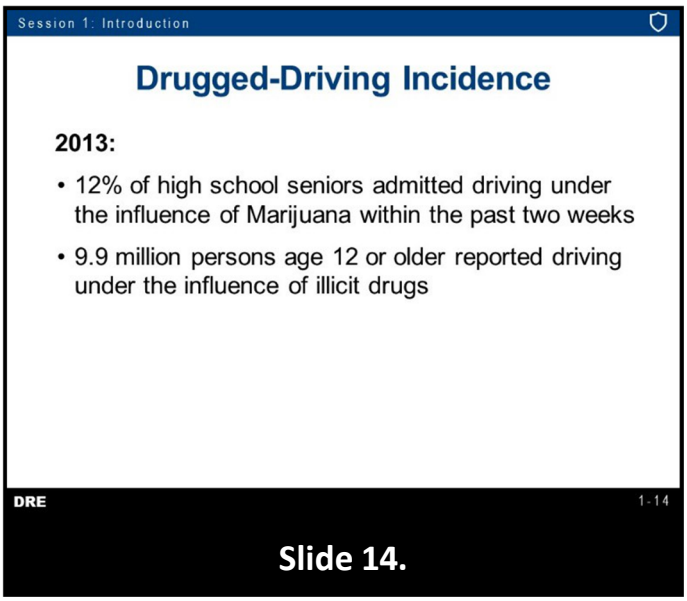
In 2015 nationwide Fatality Analysis Reporting System (FARS) annual report file, 57.0% of the fatally injured drivers were tested for drugs.

Of those tested, no drugs were detected in 55.4%, a drug in the FARS list was found in 34.3%, some other drug in 7.4%, and test results were unknown for 2.9%. Over one-third – 35.6% – of the identified drugs were Cannabis in some form, followed by amphetamine at 9.3%.



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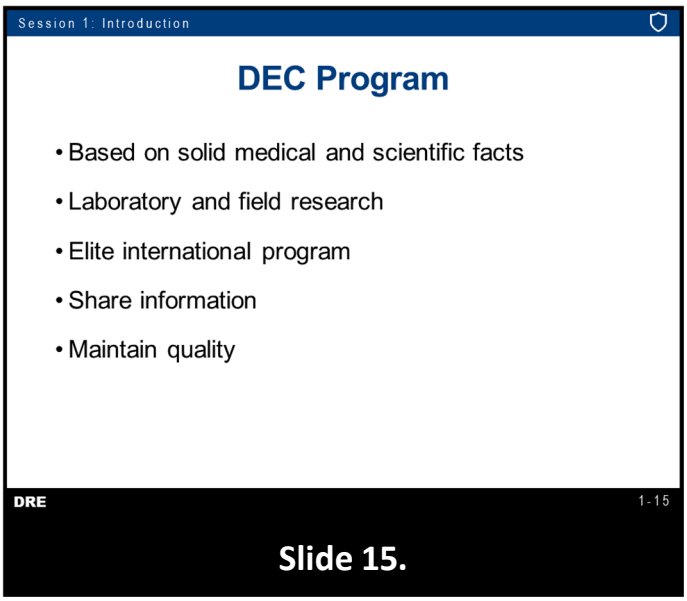
In 2013, 12% of high school seniors admitted driving under the influence of cannabis within the past two weeks and 9.9 million persons age 12 or older reported driving under the influence of illicit drugs.



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The DEC Program is based on solid medical and scientific facts. The validity of the DEC Program has been tested in carefully controlled research in both the laboratory and the field. By enrolling in DRE training, you have become part of an elite international program. DREs form one of the tightest knit fraternities in law enforcement. DREs from many agencies and from many parts of the country work closely together to share information and other resources and to maintain the highest standards of quality. Each of you have been selected to receive this training because you were recognized by your department as a skilled and dedicated law enforcement professional. Your instructors welcome you to this school and are proud to have you here and we're sure you are proud to be here.

D. Training Goals

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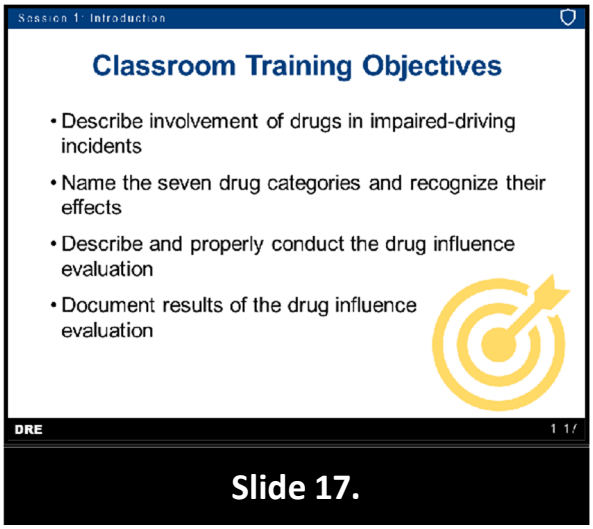
The goals of the classroom training, from the viewpoint of the law enforcement agencies participating in it, are threefold: 1) To help police officers acquire the knowledge and skills needed to distinguish individuals under the influence of alcohol, other drugs, combinations of alcohol and other drugs, 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; and, 3) To qualify police officers to progress to Certification Training.

E. Training Objectives



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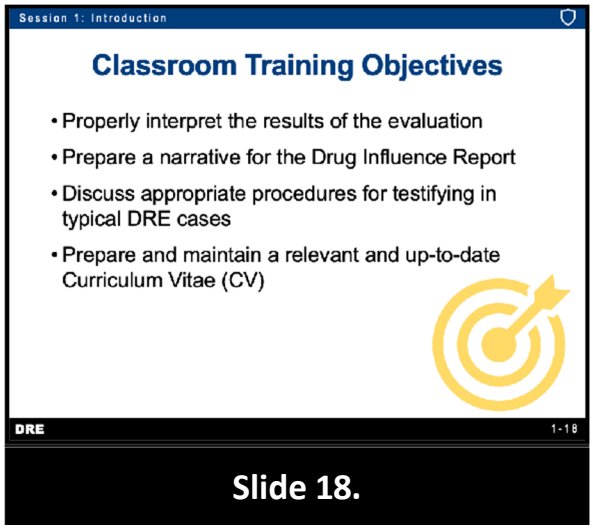

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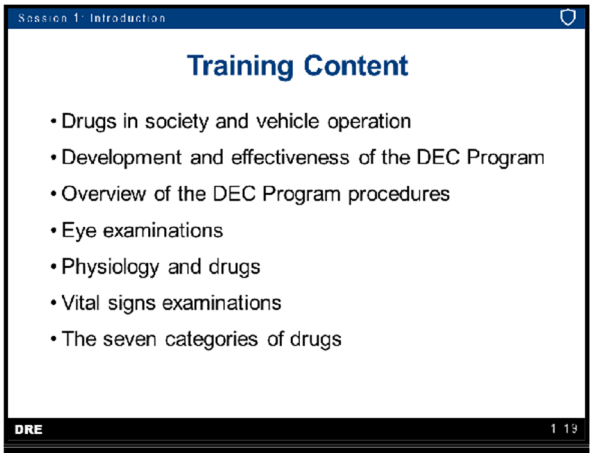
When you successfully complete this training, you will be able to:

- Describe the involvement of drugs in impaired-driving incidents
- Name the seven categories of drugs and recognize their effects
- Describe and properly conduct the drug impairment evaluation
- Document the results of the drug impairment evaluation
- Properly interpret the results of the evaluation
- Prepare a narrative for the Drug impairment Report
- Discuss appropriate procedures for testifying in typical DRE cases
- Prepare and maintain a relevant and up-to-date Curriculum Vitae (CV).

Before you can be certified as a DRE, you will have to demonstrate that you can do each of these things.

F. Overview of Course Content and Schedule



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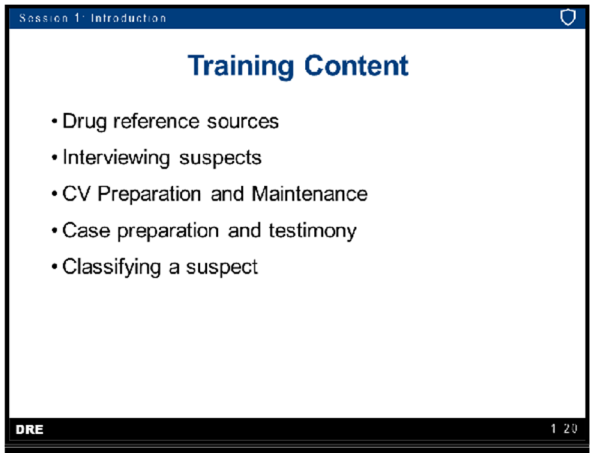

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The course will cover the following topics:

- Drugs in Society and in Vehicle Operation
- Development and Effectiveness of the DEC Program
- Overview of the DEC Program Procedures
- Eye Examinations (a major component of the DEC Program procedures)
- Physiology and Drugs
- Vital Signs Examinations (a major component of the DEC Program procedures)
- The Seven Categories of Drugs
- Drug Reference Sources
- Interviewing Suspects (a major component of the DEC Program procedures)
- CV Preparation and Maintenance
- Case Preparation and Testimony
- Classifying a Suspect (interpreting and documenting the results of an evaluation)

G. Course Activities

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Hands-on practice is the principal learning activity of the course.

Eye Examinations Practice: Horizontal Gaze Nystagmus (HGN), Vertical Gaze Nystagmus (VGN), Lack of Convergence (LOC), Pupil Size, and Reaction to Light.

Alcohol Workshop: Psychophysical testing practice and Volunteer drinkers from outside the class will be recruited for this session.

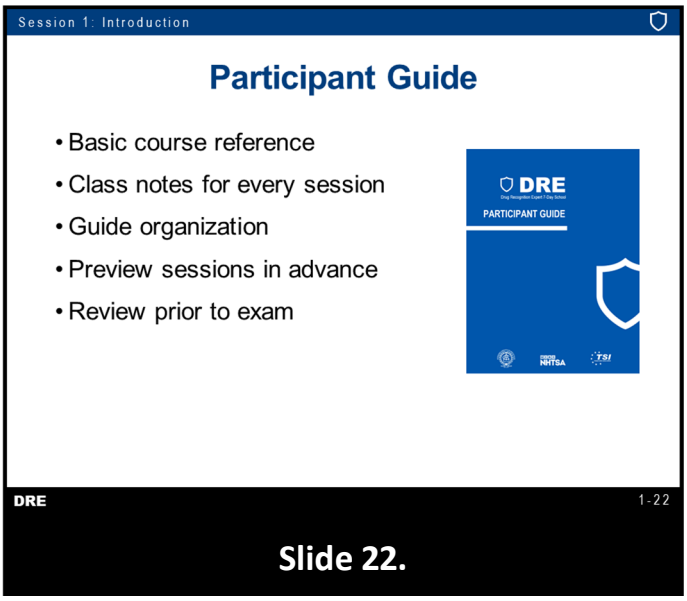
Practicing interpretation of the examination results: Several sessions will be devoted to this allowing the participants to review drug evaluation reports and identify the probable drug category or combinations of categories.

Vital signs examinations: Pulse, Blood Pressure, Body Temperature.

Practicing administration of the drug impairment evaluation process: Several sessions will be devoted to this. In each, participants will practice administering the drug impairment examinations to each other. No hands-on practice with actual drugged subjects is included in the classroom portion of DRE training.

Simulated drug-impaired subject examinations: Participants will work in teams to conduct and document examinations of instructors who will be simulating the indicators of drug-impaired subjects.

H. Overview of Participant Guide



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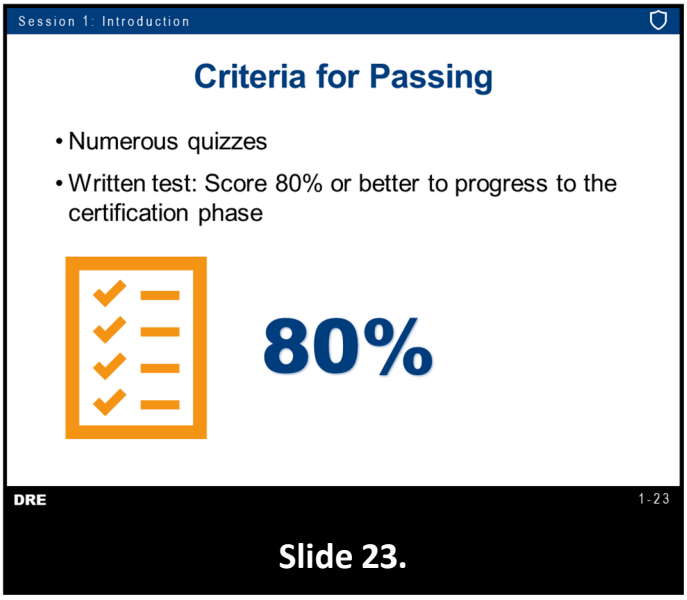
The participant guide is the basic reference document for this course. The guide contains thumbnails of each instructor presentation per session that includes key messages for each slide.

Read each session prior to each day's classes. Use the guide to review the material prior to taking the final exam.



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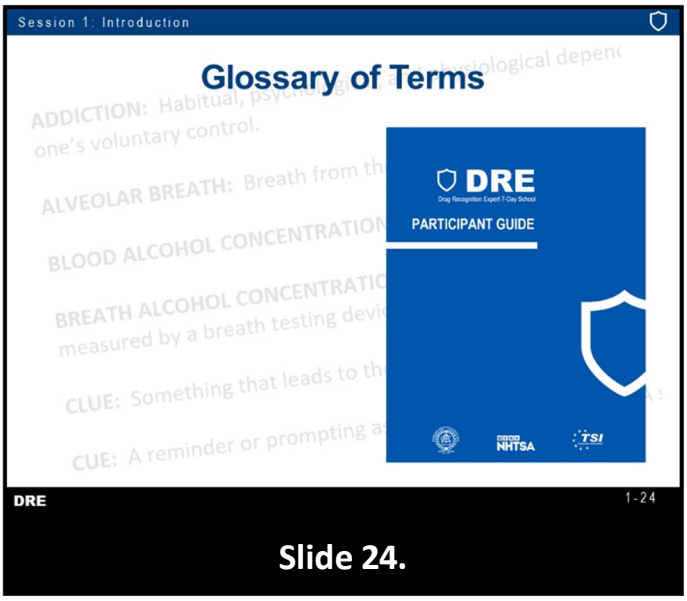
By taking good notes and by studying the guide carefully, participants should have no trouble in passing the course. There will be numerous quizzes during the class.

I. Glossary of Terms



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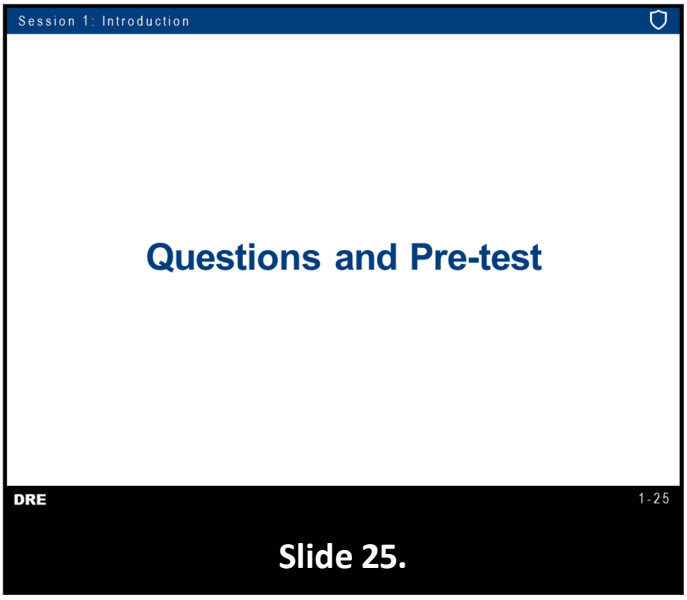
The Glossary of Terms used in the course is located in the Participant Manual. It is recommended participants be familiar with the terms and definitions in the Glossary of Terms.

J. Course Pre-Test Administration



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ACCOMMODATION REFLEX: The adjustment of the eyes for viewing at various distances. Meaning the pupils will automatically constrict as objects move closer and dilate as objects move further away.

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

ADDITIVE EFFECT: One mechanism of polydrug interaction. Occurs when the drugs independently affect some indicator in the same way and their use in combination will also affect the indicator and the effect may be reinforced. 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): 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. Occurs when a drug causes an action and another drug causes an opposite action, the effect cannot be predicted. 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 suspect's pupils could be constricted, or dilated, or within the DRE Average range of pupil size.

ARRHYTHMIA: An abnormal heart rhythm.

ARTERY: The strong, elastic blood vessels that carry blood away from the heart.

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.

BAD TRIP: A hallucination where the user becomes panic-stricken by what he/she is seeing or hearing, and may become uncontrollably excited, or even try to flee from the terror.

BLOOD ALCOHOL CONCENTRATION (BAC): The percentage of alcohol in a person's blood.

BREATH ALCOHOL CONCENTRATION (BrAC): The percentage of alcohol in a person's blood as measured by a breath testing device.

BIPOLAR DISORDER: A condition characterized by the alteration of manic and depressive states.

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.

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 Marihuana. Marihuana comes primarily from the leaves of certain species of Cannabis plants that grow readily all 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 Marihuana and Hashish is a chemical called delta-9 tetrahydrocannabinol, usually abbreviated THC.

CARBOXY THC: A metabolite of THC (tetrahydrocannabinol).

CENTRAL NERVOUS SYSTEM (CNS): A system within the body consisting of the brain, the brain stem, and the spinal cord.

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

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, Desoxyn, 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 chunk form resembling pebbles or small rocks. It produces a very intense, but relatively short duration "high".

CURRICULUM VITAE (CV): 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 person 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.

DIABETES: A condition that can result in insulin shock (taking too much insulin) which may produce tremors, increased blood pressure, rapid respiration, lack of coordination, headache, confusion, and seizures.

DIACETYL MORPHINE: The chemical name for Heroin.

DIPLOPIA: Double vision.

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

DISSOCIATIVE ANESTHETICS: One of the seven drug categories. Includes drugs that inhibits pain by cutting off or disassociating the brain's perception of pain. PCP and its analogs are considered Dissociative Anesthetics.

DIVIDED ATTENTION: Concentrating on more than one thing at a time. The four psychophysical tests used by DREs require the suspect to divide their attention.

DOWNSIDE EFFECT: An effect that may occur when the body reacts to the presence of a drug by producing 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 conveyance.

DRUG RECOGNITION EXPERT (DRE): An individual who successfully completed all phases of the DRE training requirements for certification established by the IACP and NHTSA. The word “evaluator,” “technician,” or similar words may be used as a substitute for “expert,” depending upon locale or jurisdiction.

DYSARTHIA: Slurred speech. Difficult, poorly articulated speech.

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

DYSPHORIA: A disorder of mood. Feelings of depression and anguish.

DYSPNEA: Shortness of breath.

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, who 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 a 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.

GAIT ATAXIA: An unsteady, staggering gait (walk) in which walking is uncoordinated and appears to be "not ordered."

GARRULITY: Chatter, rambling or pointless speech. Talkative.

GENERAL INDICATOR: Behavior or observations of the subject that are observed and not specifically tested for. (Observational and Behavioral Indicators)

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.

HASH OIL: Sometimes referred to as "marihuana oil" it is a highly concentrated syrup-like oil extracted from cannabis. It is normally produced by soaking cannabis 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 high THC content.

HASHISH: A form of cannabis made from the dried and pressed resin of a marihuana plant.

HEAD TRAUMA: A blow or bump to the head that injures the brain and may cause observable signs and symptoms which may mimic drug and alcohol impairment.

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

HOMEOSTASIS: Dynamic, self-regulating process by which the body maintains a balanced or constant state involving levels of salts, water, sugars and other material in the body's fluid, while adjusting to internal and external conditions.

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.

HYPERTHERMIA: Increased body temperature.

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".

IMPAIRMENT: One of the several items used to describe the degradation of mental and/or physical abilities necessary for safely operating a vehicle.

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: One method of administering certain drugs. Insufflation requires that the drug be in powdered form. The user rapidly draws the drug up into the nostril, usually via a paper or glass tube. Insufflation is also known as 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 (LOC): 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.

MAJOR INDICATORS: Physiological signs that are specifically assessed and are, for the most part, involuntary reflecting the status of the central nervous system (CNS) homeostasis (Physiological Indicators).

MARIHUANA: 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 Marinol is not produced from any species of cannabis plant. Marinol is not legally available in Canada.

MEDICAL IMPAIRMENT: An opinion made by a DRE based on the evaluation that the condition of a suspected impaired driver is more likely related to a medical impairment that has affected the subject's ability to operate a conveyance.

METABOLISM: 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 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.

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

MIOSIS: Abnormally small (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.

MULTIPLE SCLEROSIS: A degenerative muscular disorder.

MUSCULAR HYPERTONICITY: Rigid muscle tone.

MYDRIASIS: Abnormally large (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, hydromorphone and oxycodone), and the synthetic narcotics.

NEGATIVE FEEDBACK: A condition following chronic administration of a drug where the body may decrease or cease its natural actions through hormone and neurotransmitter receptors such that if the drug is not taken, the user does not return to a normal, non-drug-using state and may instead feel much worse in the opposite direction of the substance used.

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. Occurs when neither drug affects a particular indicator of impairment, and their combination also will not affect that indicator. 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 analgesics. The suspect's eyelids droop, and chin rests on the chest. Suspect may appear to be asleep but can be easily aroused and will respond to questions.

OVERLAPPING EFFECT: One mechanism of polydrug interaction. Occurs when one drug causes an effect, and the other drug does not. 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 administer a drug. Hypodermic needles, small pipes, bent spoons, etc., are examples of drug paraphernalia.

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

PHENCYCLIDINE: A contraction of **PHEN**YL**CYCL**OHEXYLPIPER**IDINE**, or PCP. Formerly used as a surgical anesthetic, however, it has no current legitimate medical use in humans.

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

PHYSICIAN'S DESK REFERENCE (PDR): A basic reference source for drug recognition experts. The PDR provides detailed information on the physical appearance and psychoactive effects of licitly manufactured drugs.

PHYSIOLOGY: Physiology is the branch of biology that deals 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.

POLYCATEGORY IMPAIRMENT: Being under the combined influence of drugs from two or more drug categories.

POLYDRUG IMPAIRMENT: Being under the combined influence of two or more different drugs, which may be in the same or different 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 suspect'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 rhythmic dilation and relaxation of an artery that results from the beating of the heart.

PULSE RATE: The number of expansions of an artery per minute.

PUPILLARY LIGHT REFLEX: The pupils of the eyes will constrict and dilate depending 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 a period of pupillary dilation where the pupil steadily increases in size and the range between minimum and maximum is equal to or greater than 1mm 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 unpollinated female cannabis plant, with a relatively high concentration of THC.

SNORTING (See Insufflation): One method of administering certain drugs. Snorting requires that the drug be in powdered 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.

STANDARDIZED: Conforming to a model in comparative applications.

STANDARDIZED FIELD SOBRIETY TESTING (SFST): There are three NHTSA/IACP-approved SFSTs, namely Horizontal Gaze Nystagmus (HGN), Walk and Turn (WAT), and One Leg Stand (OLS). Based on a series of controlled laboratory and field studies, scientifically validated clues of impairment have been identified for each of these three tests. They are the only NHTSA/IACP-approved Standardized Field Sobriety Tests for which validated clues have been identified for Impaired Driving investigations.

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

STROKE: A medical condition that occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or a burst and may cause observable signs and symptoms which may mimic drug and alcohol impairment.

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. In its simplest terms, it is the transposition of the senses. 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.

SYSTEMATIC: Done or acting according to a fixed plan or system; methodical.

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.

TACHYPNEA: Abnormally rapid rate of breathing.

TETRAHYDROCANNABINOL (THC): The principal psychoactive ingredient in drugs belonging to the cannabis category.

THERAPEUTIC DOSE: The amount of a drug needed to treat a disease or condition.

TOLERANCE: An adjustment of the drug user's body and brain to the repeated presence of a 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.

VEIN: A blood vessel that carries blood back to the heart from the body tissues

VERTICAL GAZE NYSTAGMUS (VGN): 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 his or her 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.

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Estimated time for session: 50 Minutes

2 DRE

DRUGS IN SOCIETY AND IN VEHICLE OPERATION

LEARNING OBJECTIVES

- Define the term “drug” in the context of this course
- Name the seven drug categories relevant to the Drug Evaluation and Classification (DEC) 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 collisions and other driving incidents

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Reading Assignments

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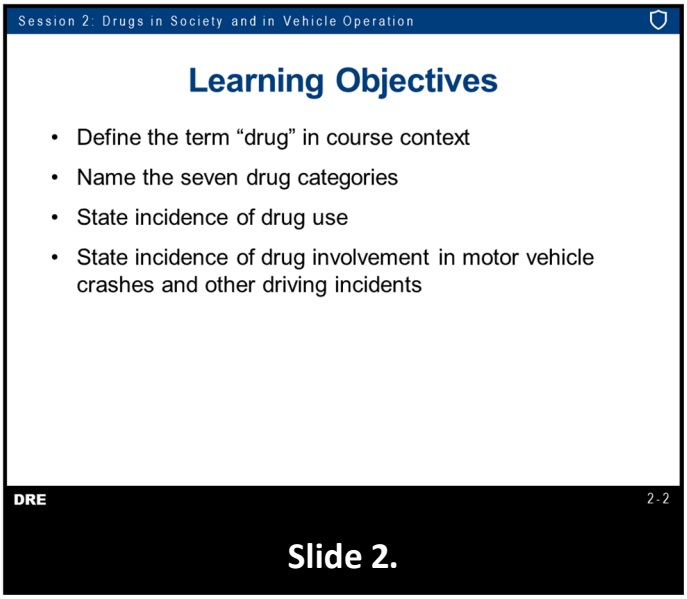
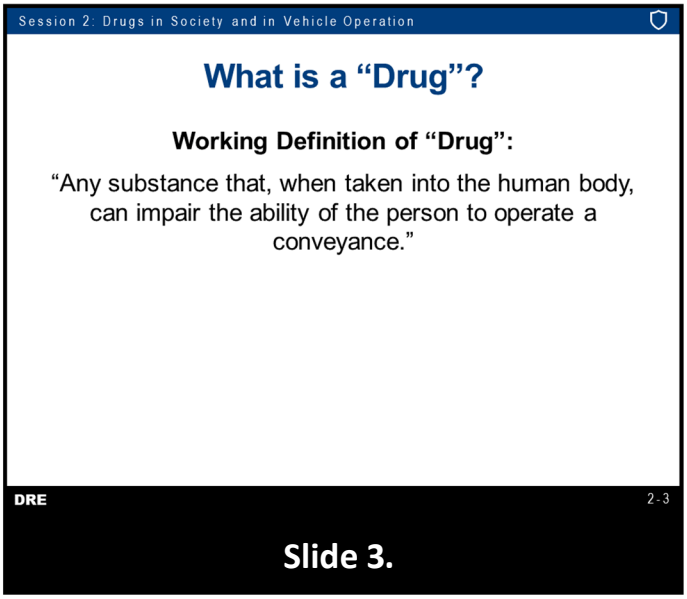


Slide 2.

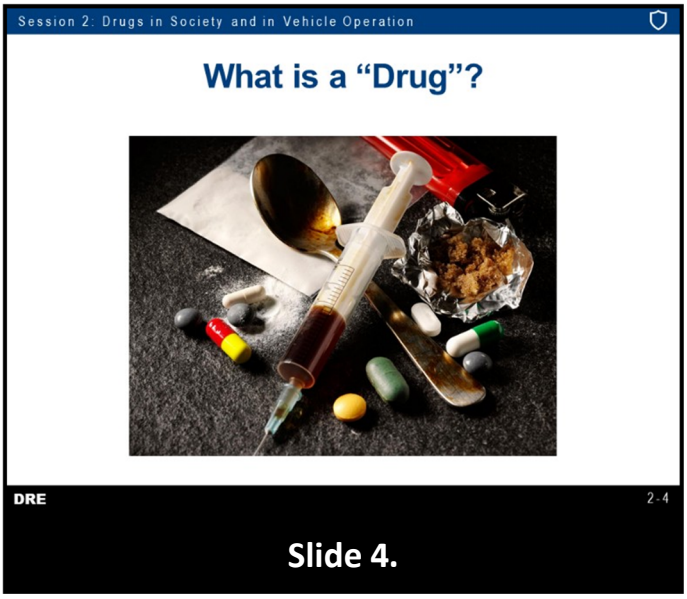
A. Definition and Categories of Drugs



Slide 3.

What is a Drug?

- Medicines? Are all drugs medicines? Are all medicines drugs?
- Narcotics? Are all drugs Narcotics?
- Habit forming substances. Are all drugs habit forming? Are all habit-forming substances drugs?
- A simple, law enforcement-oriented definition
- This definition is derived from the California Vehicle Code

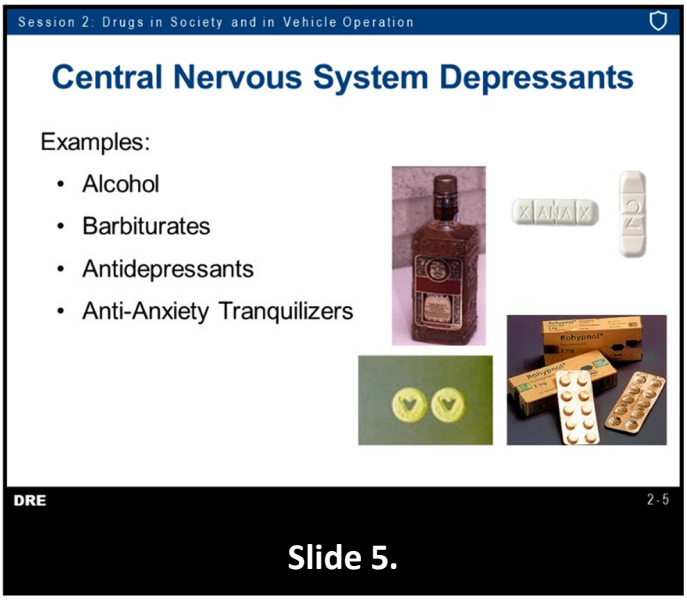


Slide 4.

Within this simple, law enforcement-oriented definition, there are seven categories of drugs. Each category consists of substances that impair a person's ability to drive. The categories differ from one another in terms of how they impair driving ability and in terms of the kinds of impairment they cause. Because the categories produce different types of impairment, they generate different signs and symptoms. With training and practice, you will be able to recognize the different signs of drug impairment and determine which category is causing the impairment you observe in a subject.

Drug manufacturers are continuously developing new drugs and evaluating the need to continue production of current drugs. For this reason, some brand names or chemical compounds may change, or the drug may become distributed in generic forms only. Some prescription drugs encountered by the DRE may not be FDA approved for use in the United States but are still prescribed or available in other countries.

Illicit drug producers often slightly alter the chemical structure of a legally manufactured drug to avoid legal restrictions. These may be referred to as designer or novel substances.



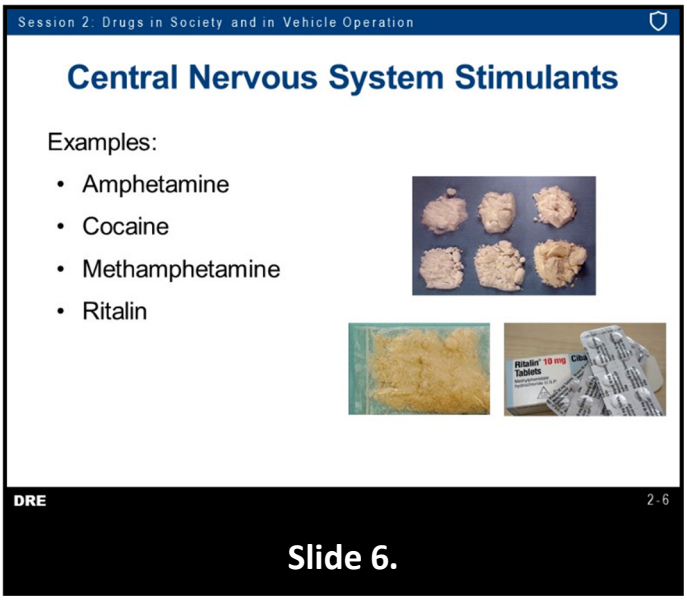
Slide 5.

The category of CNS Depressants includes some of the most commonly abused drugs.

Alcohol remains the most familiar drug. In 2020, 138.5 million persons aged 12 and older were current drinkers of alcohol. 17.7 million classified themselves as heavy drinkers.

CNS Depressants slow down the operation of the central nervous system (i.e., brain, brain stem, and spinal cord), cause the user to react more slowly, cause the user to process information more slowly, relieve anxiety and tension, and induce sedation, drowsiness, and sleep.

In high doses, CNS Depressants will produce general anesthesia (i.e., depress the brain's ability to sense pain). In very high doses, induce coma and death.

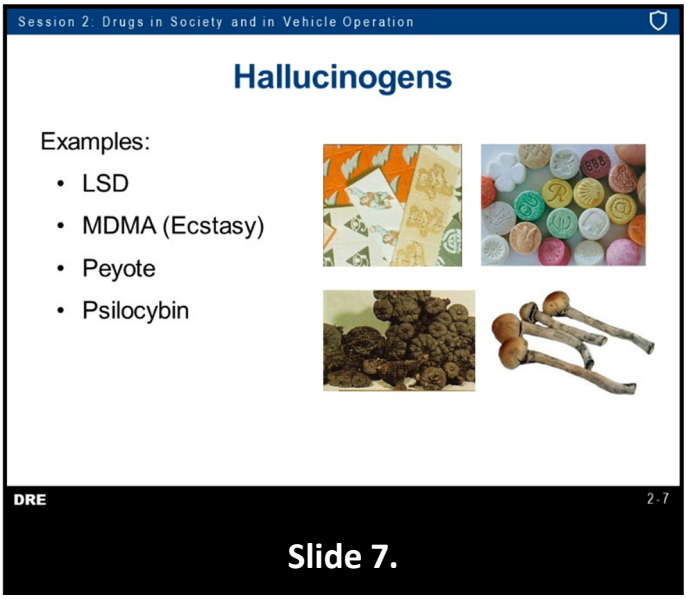


Slide 6.

CNS Stimulants constitute another widely abused category of drugs.

According to the 2020 National Survey on Drug Use and Health, of users 12 or older, there appears to be approximately 5.2 million current (within the last month) Cocaine users aged 12 and older in the U.S. Additionally, 5.1 million persons reported non-medical use of prescription stimulants, and 2.5 million reported using Methamphetamine.

CNS Stimulants speed up the operation of the central nervous system and of the various bodily functions controlled by the central nervous system and cause the user to become hyperactive and/or extremely talkative. The user's speech may become rapid and repetitive, heart rate increases, blood pressure increases, body temperature rises, and the user may become excessively sweaty. CNS Stimulants induce emotional excitement, restlessness, irritability and can induce cardiac arrhythmia (abnormal beating of the heart), cardiac seizures, and death.



Slide 7.

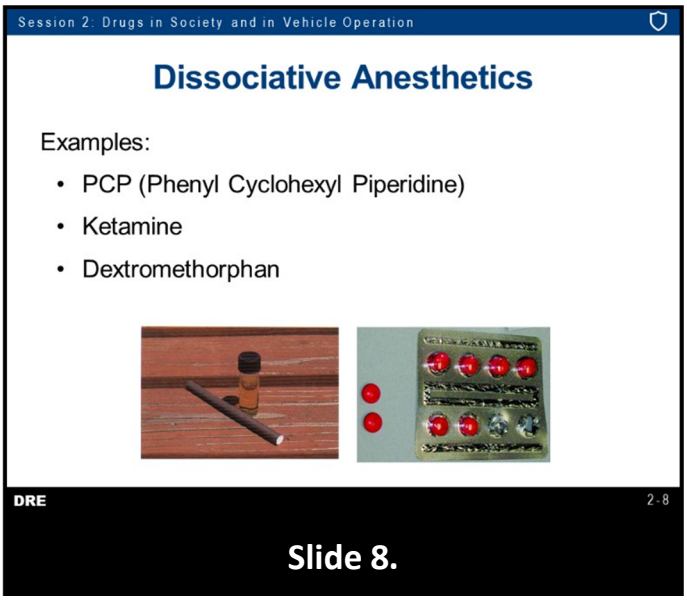
Hallucinogens are also widely abused.

LSD and Peyote are only two examples of Hallucinogens. There are many other Hallucinogens.

In recent years, significant increases in the abuse of both LSD and "Ecstasy" (MDMA) have been reported. In 2020, an estimated 7.1 million reported using Hallucinogens within the last year.

Hallucinogens create perceptions that differ from reality. These perceptions are often very distorted, so the user sees, hears, and smells things in a way quite different from how they really look, sound, and smell. Hallucinogens cause the nervous system to send strange or false signals to the brain. Clarification: Hallucinogens confuse the Central Nervous System (as well as speeding it up, like CNS Stimulants).

Hallucinogens produce sights, sounds, odours, feelings, and tastes that aren't real, induce a temporary condition very much like psychosis or insanity, and can create a "mixing" of sensory modalities, so the user "hears colors," "sees music". This mixing of the senses is called Synesthesia. With all of these false and distorted perceptions a person under the influence of hallucinogens would be a very unsafe driver.

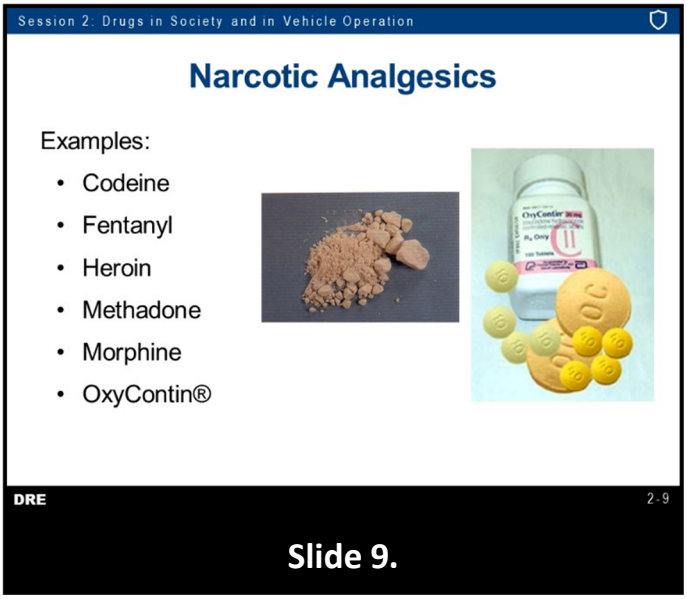


Slide 8.

PCP, its analogs, and Dextromethorphan are examples of Dissociative Anesthetics. PCP is considered by the medical community to be a Hallucinogen. However, because of the symptomatology it presents, it is in a separate category.

Phencyclidine is a short form of the chemical name Phenylcyclohexylpiperidine, from which we get the abbreviation “PCP”. PCP is a synthetic drug, i.e., it does not occur naturally but must be produced in a laboratory-like setting. PCP has many analogs, or “chemical cousins,” very similar to PCP in chemical structure and produce essentially the same effects. Analogs of PCP include Ketamine, Ketalar and Ketajet. PCP is also a very powerful pain killer, or anesthetic.

Dextromethorphan (DXM) is found in many over-the-counter antitussive cold medications such as Robitussin, Coricidin Cough and Cold, and Dimetapp. DXM is typically abused by school age children, teenagers, or young adults to achieve impairment. DXM is normally used in liquid or pill form. In high doses, DXM impairment is similar to the effects of PCP or Hallucinogens.



Slide 9.

In 2020, there was an estimated 2.5 million current abusers of prescription Narcotic Analgesics and over half a million Heroin users.

There are two subcategories of Narcotic Analgesics:

1. Natural Opiates are derivatives of Opium
2. Synthetics are produced chemically in the laboratory. The synthetics are not derived in any way from Opium but produce similar effects.

The word “analgesic” means pain reliever. All of the drugs in this category reduce the person’s reaction to pain. Heroin is one of the most-commonly abused of the Narcotic Analgesics. Heroin is highly addictive.

In addition to reducing pain, Narcotic Analgesics produce euphoria, drowsiness, apathy, lessened physical activity, and sometimes impaired vision.

Persons under the influence of Narcotic Analgesics often pass into a semi-conscious type of sleep or near-sleep. This condition is often called being “on the nod.” They often are sufficiently alert to respond to questions effectively. Higher doses of Narcotic Analgesics can induce coma, respiratory failure, and death.

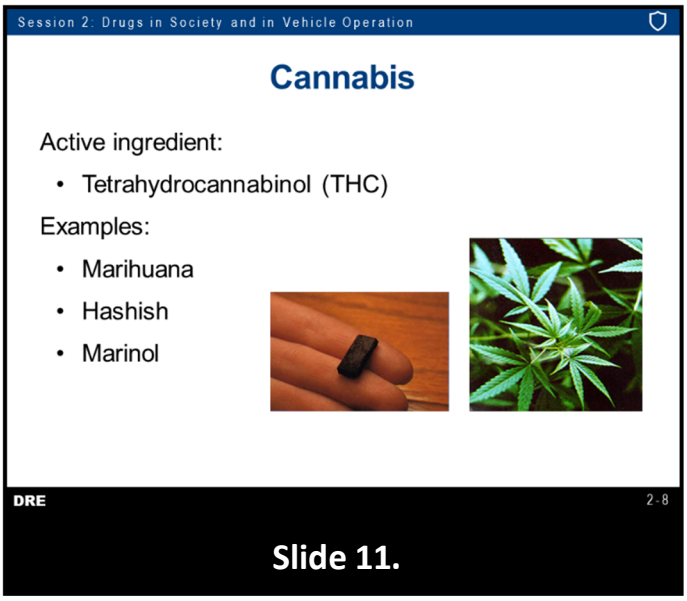
Slide 10.

In 2020, nearly 1 million persons reported abusing Inhalants within the past month.

Inhalants are the fumes of certain substances. These substances are found in many common products such as gasoline, oil-based paints, various glues, aerosol cans, varnish remover, cleaning fluids, etc. Examples: Volatile Solvents (Various Glues, Gasoline, Paint, etc.); Aerosols (Hairspray, Insecticides, etc.); Anesthetic Gases (Nitrous Oxide, Amyl Nitrite, etc.).

Different Inhalants produce different effects. Many produce effects similar to those of CNS Depressants. A few produce stimulant-like effects. Some produce hallucinogenic effects.

The Inhalant abuser's attitude and demeanor can vary from inattentive, stuporous and passive, to irritable, violent, and dangerous. The abuser's speech will often be slow, thick, and slurred.



Slide 11.

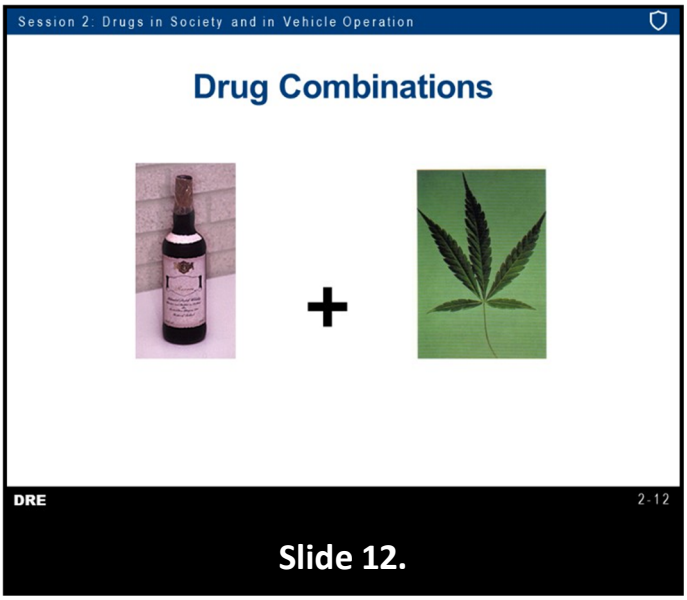
The category "Cannabis" includes the various forms and products of the Cannabis Sativa plant and other species of Cannabis plants.

The primary active ingredient in Cannabis products is the substance known as “Delta-9 Tetrahydrocannabinol” or “THC.”

Apart from alcohol, Cannabis is the most commonly abused drug in this country. According to the 2020 National Survey on Drug Use and Health, Cannabis was listed as the most common illicit drug used in the U.S. There were 32.8 million Americans over the age of 12 reporting use in the past month.

Cannabis appears to interfere with the attention process. Drivers under the influence of Cannabis often do not pay attention to their driving.

Cannabis also produces a distortion of the user’s perception of time, an increased heart rate (often over 100 beats per minute) and reddening of the eyes.



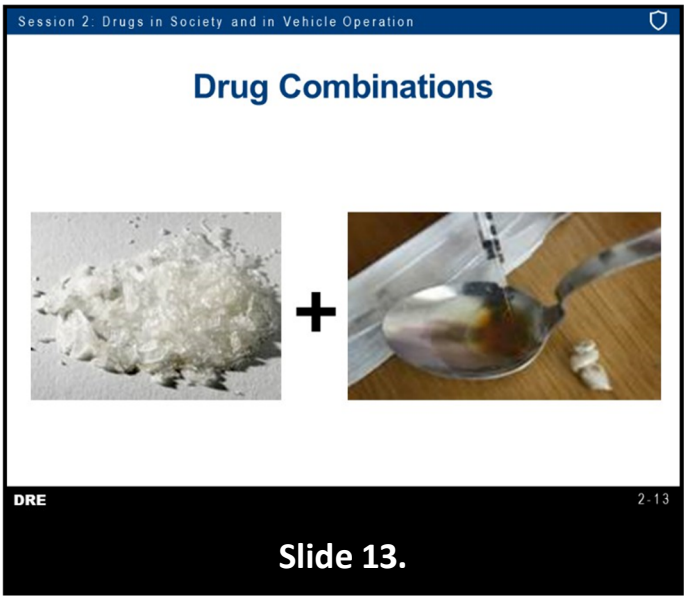
Slide 12.

Many drug users appear to be “chemical gluttons.” They often are under the combined influence of two or more different drugs. The term for this is “polydrug use.”

When drug users are under the combined influence of drugs from two or more drug categories, this is termed “polycategory use.”

Some very common examples of polydrug or polycategory use include:

- Alcohol with virtually any other drug
- Cannabis and PCP - A common way to use PCP is to sprinkle it on a Cannabis “joint” and smoke it
- Cocaine and Heroin, sometimes called a “speedball”
- Heroin and Amphetamine, 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 Cannabis, sometimes called “primo”
- “Crack” and Methamphetamine, sometimes called “croak”

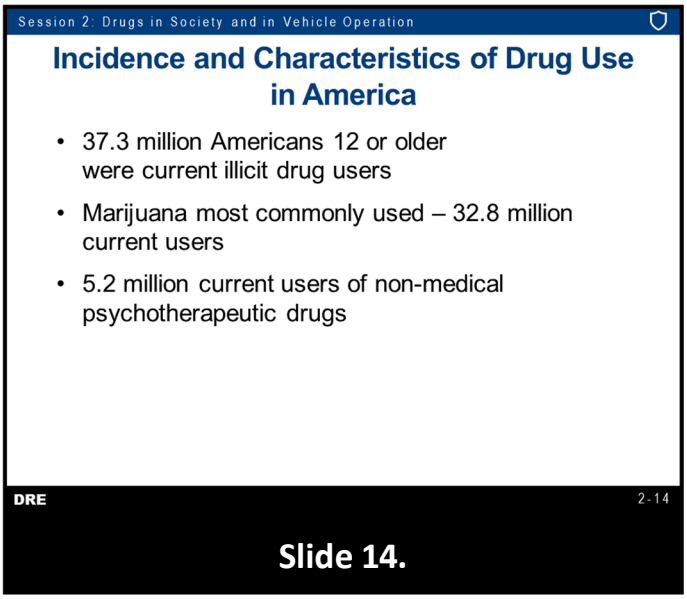


Slide 13.

Sometimes, people take two different drugs (such as Heroin and Cocaine) that produce some opposite effects. For example, Heroin tends to lower blood pressure and Cocaine tends to elevate blood pressure.

Different drug combinations may produce unique, interactive effects. When a person has used multiple drugs, that person will experience multiple drug effects. Under proper medical supervision, specific drugs often are used to reverse overdose conditions. However, in a polydrug or polycategory situation, some of the signs of a particular drug may not be evident even though the person is under the influence of that drug.

B. Incidence and Characteristics of Drug Use in America



Slide 14.

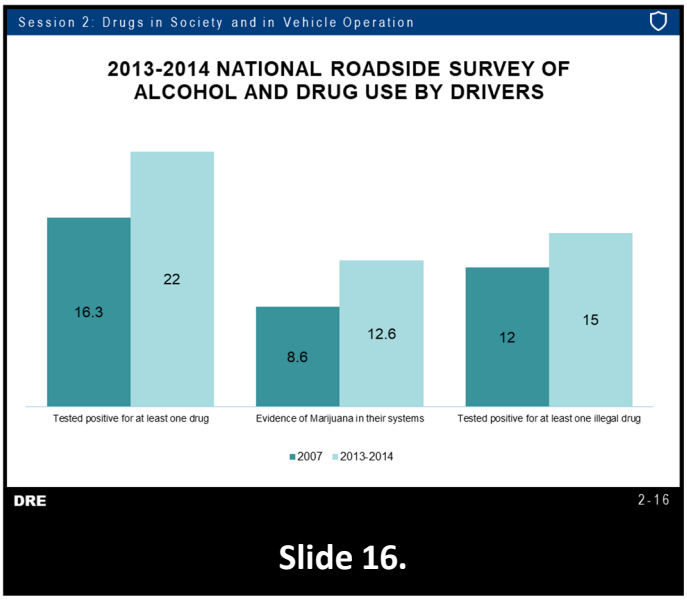
In 2020, 37.3 million Americans aged 12 years or older were current illicit drug users. Cannabis was the most commonly used illicit drug in 2020, with 32.8 million users reporting use in the past month. In 2020, there were 5.2 million current users of non-medical psychotherapeutic drugs. These include pain relievers, tranquilizers, stimulants, and sedatives.

C. Incidence of Drug-Impaired Driving

Slide 15.

Accurate data on the frequency with which people drive while under the influence of drugs is somewhat limited. This is due to the various reasons that include: Many impaired drivers are never detected, and many drug users also consume alcohol. When they are stopped for impaired driving they may be arrested (and tabulated in statistics) as alcohol-impaired drivers only. Fact: About 11.8 million people aged 12 years and older admitted driving under the influence of illicit drugs in the past year.

When they are involved in collisions, they may not be tested for drugs.



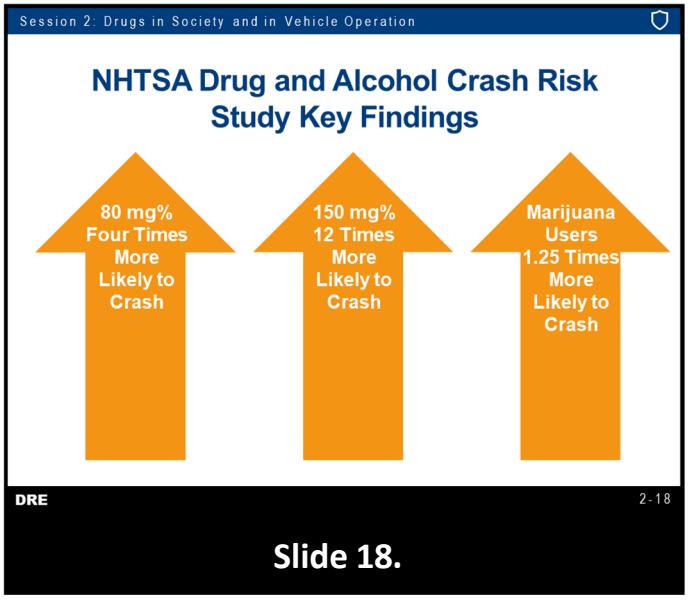
Slide 16.

The National Highway Traffic Safety Administration (NHTSA) undertook a comprehensive study of the prevalence of potentially impairing drug use by drivers in 2013 and 2014. Over 30,000 drivers over 40 years, were asked to provide an oral fluid or blood sample. Samples were tested for illegal drugs, prescription medicines, and over-the-counter drugs. Twenty-two percent of drivers tested positive for at least one drug, up from 16.3% in the 2007 Roadside Study. 12.6% of the drivers had evidence of Cannabis use in their systems, up from 8.6% in the 2007 Roadside Study. Fifteen percent of drivers tested positive for at least one illegal drug, up from 12% in 2007.

The facts are unmistakable: Drug use is common among many people. So is drug-impaired driving.

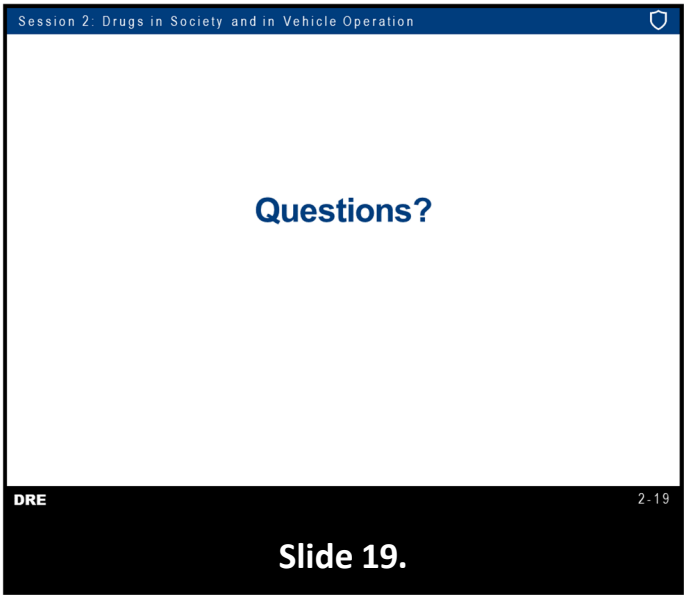
Slide 17.

The largest such study ever conducted to assess the comparative risk of drunk- and drugged-driving was conducted in Virginia Beach, VA over a 20-month period. It collected data from more than 3,000 drivers involved in a collision and more than 6,000 non-collision drivers for comparison. Drivers were tested for a wide range of drugs, but cannabis was the only drug found in large enough numbers for statistically significant findings.



Slide 18.

Drivers at a BAC level of 80 mg% were about four times more likely to crash than sober drivers. Drivers with a BAC level of 150 mg% were 12 times more likely to crash than sober drivers. Cannabis users were about 25% more likely to be involved in a collision than drivers with no evidence of Cannabis use.



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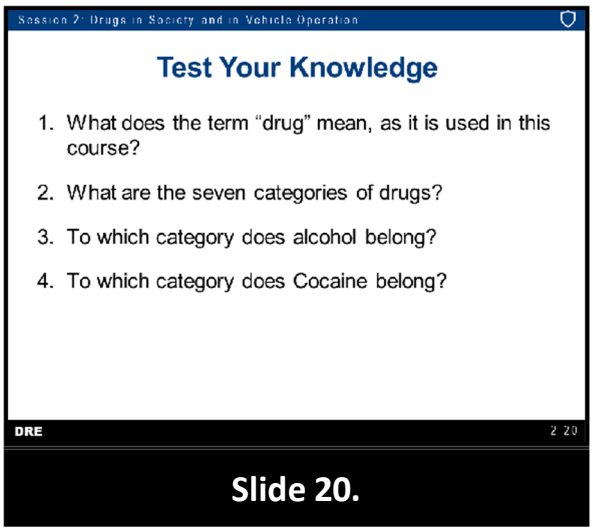

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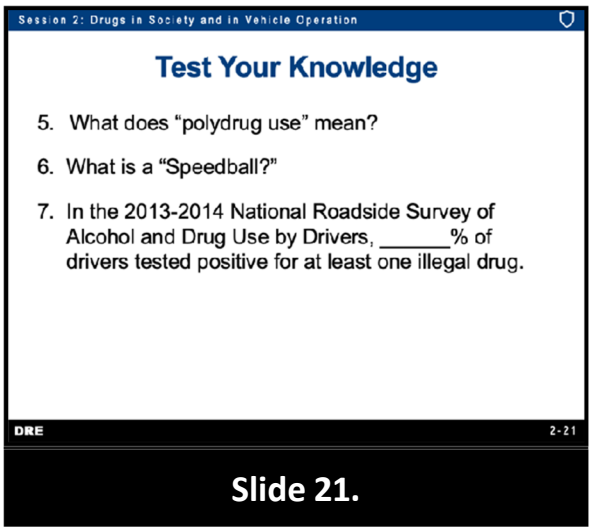

Slide 21.

Test Your Knowledge

1. What does the term "drug" mean, as it is used in this course?
2. What are the seven categories of drugs?
3. To which category does alcohol belong?
4. To which category does Cocaine belong?
5. What does "polydrug use" mean?
6. What is a "Speedball?"
7. In the 2013-2014 National Roadside Survey of Alcohol and Drug Use by Drivers, ____ % of drivers tested positive for at least one **illegal** drug.

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Estimated time for session: 50 Minutes

3 DRE

DEVELOPMENT AND EFFECTIVENESS OF THE DRUG EVALUATION AND CLASSIFICATION PROGRAM

LEARNING OBJECTIVES

- State the origin and evolution of the Drug Evaluation and Classification (DEC) Program
- Describe research and demonstration project results that validate the effectiveness of the program
- State the impact of legal precedents established by case law

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Reading Assignments

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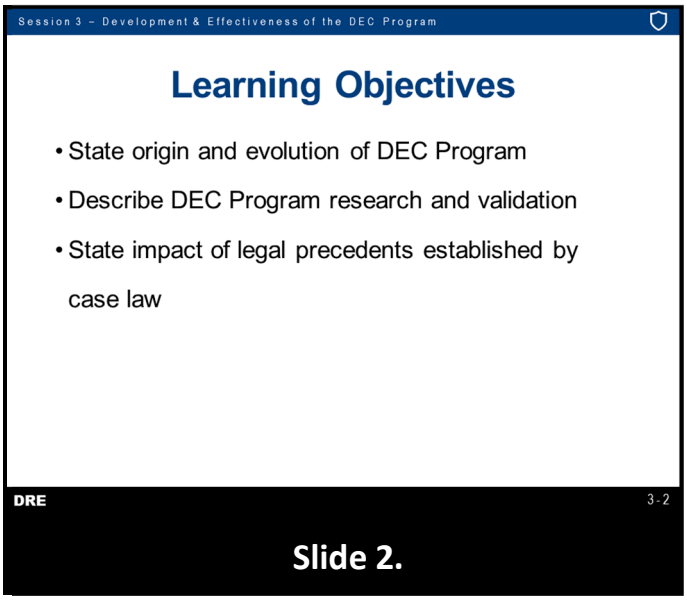


Slide 2.

A. Origin and Evolution of the Drug Evaluation and Classification (DEC) Program

Slide 3.

The DEC Program was developed by personnel of the Los Angeles Police Department (LAPD).

Development of the DEC Program began in the early 1970's in response to a growing awareness that many people apprehended for impaired driving were under the influence of drugs rather than alcohol.

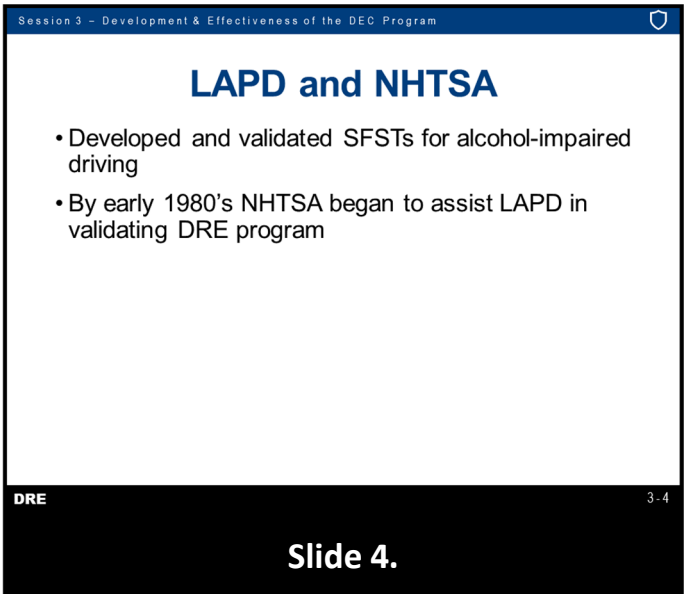
Sergeant Dick Studdard (Traffic Officer) retired from the LAPD in June 1990. Sergeant Studdard and his fellow officers often encountered many impaired drivers whose blood alcohol concentrations (BACs) were zero or very low. They occasionally succeeded in having physicians examine some of these low BAC subjects, resulting in diagnosis of drug impairment.

There are some reasons why doctors may be reluctant. They typically receive little training in the recognition of specific signs of drug impairment, particularly at street-level doses. They may not see the subject until hours after the drugs were used, by which time the signs and symptoms often have changed.

As a result, some drivers whom Studdard and other officers were certain were impaired by drugs were not prosecuted or convicted for Impaired Driving. Studdard concluded it was essential to develop appropriate procedures officers could use when confronted with persons suspected of drug impairment.

Len Leeds, former LAPD narcotics officer, was approached by Sergeant Studdard and asked to collaborate in the development of a program to help identify drug-impaired subjects. They initiated some independent research by consulting with physicians, enrolling in relevant classes, studying textbooks, technical articles, etc. and secured management-level support within the department to continue research and program development. As time went on, many other key persons both within and outside LAPD contributed to the development and refinement of the program. In 1979, the program was officially recognized by LAPD.

B. Evidence of Program Effectiveness



Slide 4.

LAPD and the National Highway Traffic Safety Administration (NHTSA) worked together to develop the Drug Recognition Expert (DRE) training as we know it today. The first step was to develop and validate standardized field sobriety tests (SFSTs) for investigating alcohol-impaired driving. LAPD personnel played a major role in the research that led to the widespread use of

Horizontal Gaze Nystagmus (HGN), the Walk and Turn (WAT) test, and the One Leg Stand (OLS) test. By the early 1980's, NHTSA completed its validation of the standardized tests for Impaired Driving enforcement. At this time, NHTSA began to assist LAPD in validating the DRE program.

Slide 5.

The DRE process evolved into what is essentially a three-part determination. First, it establishes the subject is impaired and verifies his or her alcohol level is not consistent with the degree of impairment that is evident.

Inconsistency between the observed impairment and the BAC suggests the presence of some other drug(s) or some other complicating factor such as an illness or injury.

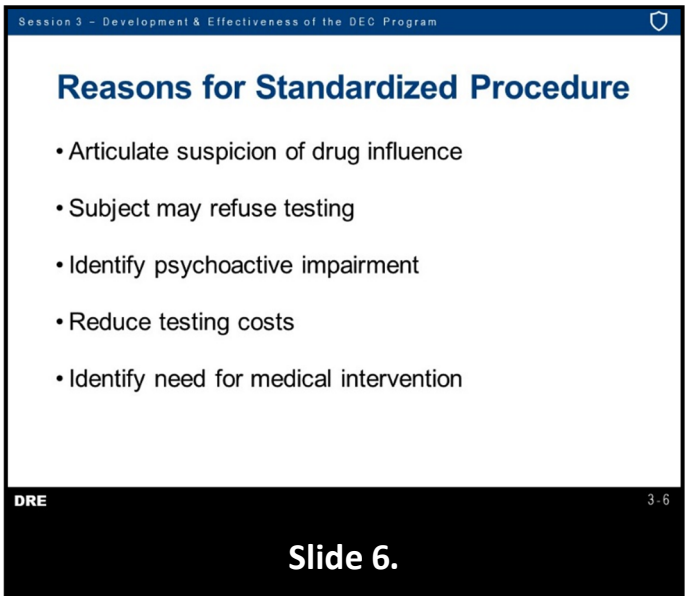
Second, it uses evaluation procedures to determine whether the impairment may stem from illness or injury requiring medical attention or is drug related.

Third, it uses evaluation procedures to determine what category (or categories) of drugs are the likely cause of the impairment.

Key Point: The entire evaluation process is standardized which means it is administered the same way to all subjects and administered the same way by all officers.

One reason for needing a reliable standardized assessment procedure is we may be called upon to submit evidence of articulable grounds of drug impairment to support our demand for an evidentiary test of the subject. Some courts or tribunals may find a low BAC result, by itself, does not provide adequate basis for impairment offences.

Another reason is the subject may refuse to provide a sample, or it may be otherwise impossible to admit it in evidence, removing scientific corroboration. In that case, conviction or acquittal may hinge on the officer's observations and expertise as a DRE.



Slide 6.

A third reason is evidentiary tests usually disclose only that the subject has used a particular drug recently. The evidentiary test usually does not indicate whether the drug is psychoactive at the present time. Thus, the DRE procedures are needed to establish the subject not only has used the drug, but also that he or she is under the influence.

A fourth reason is it can be expensive and require a large sample of blood or urine to perform a broad analysis for any or all drugs. Practical constraints require we be able to point the laboratory technician toward those types of drugs most likely to be found in the sample. It is always possible that a person suspected of drug impairment is actually suffering from some medical problem. If a sample is collected and the subject is not examined by someone who is qualified, evidence of medical problems may not come to light until it is too late.

Slide 7.

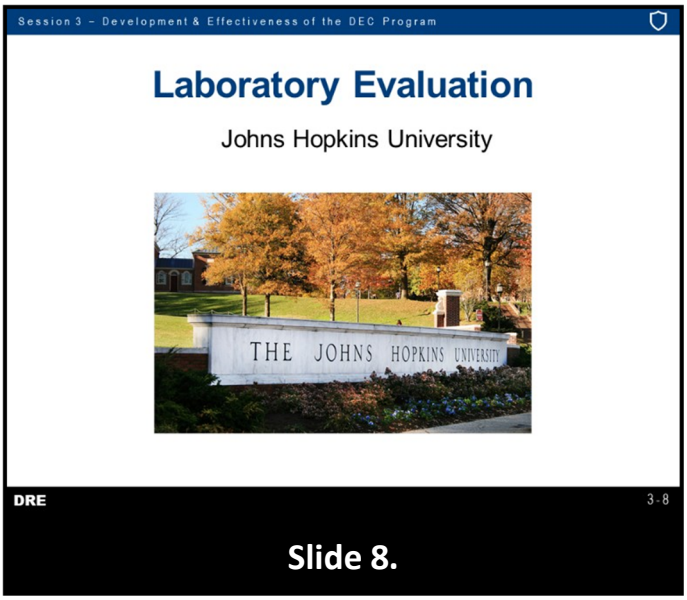
NHTSA assisted LAPD in a two-phase study. There was laboratory evaluation, using volunteers who administered selected drugs which was the Johns Hopkins study conducted in 1984. There

was also a field evaluation, using persons actually arrested in Los Angeles on suspicion of drug influence which was the LAPD Field Study conducted in 1985.

The research studies and their titles were:

- Identifying Types of Drug Intoxication: Laboratory Evaluation of a Subject Examination Procedure, May 1984 Final Report. George E. Bigelow, Ph.D. et al. Behavioral Pharmacology Research Unit, Department of Psychiatry and Behavioral Sciences.

  Funded by the U.S. Department of Transportation's NHTSA and the National Institute of Drug Abuse.
- Field Evaluation of the Los Angeles Police Department Drug Detection Procedure, February 1986, DOT HS 807 012, A NHTSA Technical Report, National Highway Traffic Safety Administration. Richard P. Compton. (Commonly referred to as the 173 Case Study)



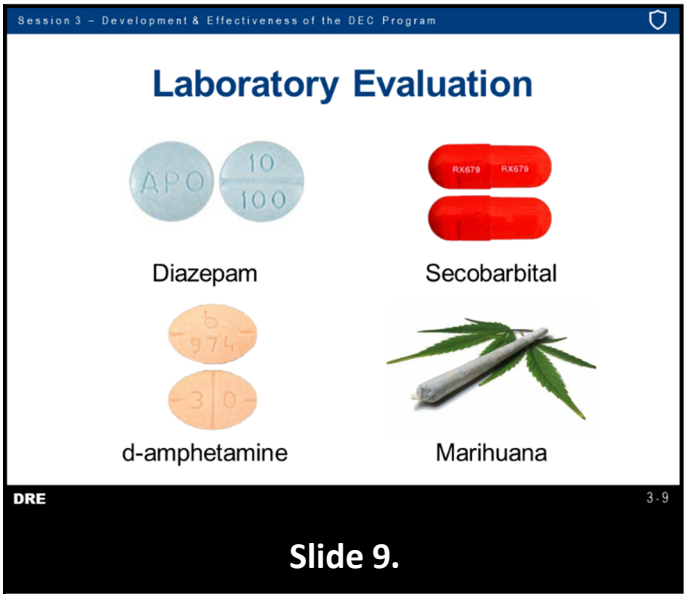
Slide 8.

The Laboratory Evaluation took place at Johns Hopkins University in Maryland. The drug examiners were senior DREs from LAPD. The LAPD participants were Dick Studdard, Jerry Powell, Pat Russell, and Doug Laird. The laboratory experiments were planned and conducted by researchers from Johns Hopkins. Volunteers each took a "pill" and smoked a "cigarette". The "pill" contained either no drug (placebo) or one of the following drugs:

- Secobarbital (CNS Depressant)
- Valium (i.e., Diazepam – CNS Depressant)
- d-amphetamine (CNS Stimulant)

A common brand name for Secobarbital is Seconal; a common brand name for Diazepam is Valium and a common brand name for d-amphetamine is Dexedrine. The "cigarette" contained either THC or no drug (placebo). Neither the volunteers nor the LAPD officers knew what the volunteers had taken.

Two different dose levels of Cannabis, Diazepam, and d-amphetamine were used. Clarification: some of the Diazepam and d-amphetamine pills were "weak," some were "strong." Similarly, some of the Cannabis cigarettes were "weak," some "strong." All of the Secobarbital pills were "strong."



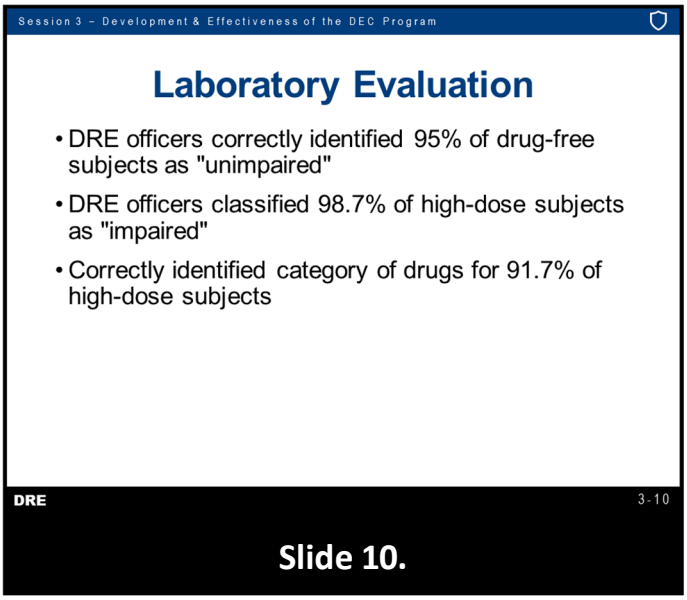
Slide 9.

Normal daily dose for therapeutic purposes:

- Diazepam: 4-40 mg
- Secobarbital: approx. 100 mg
- d-amphetamine: 15 mg

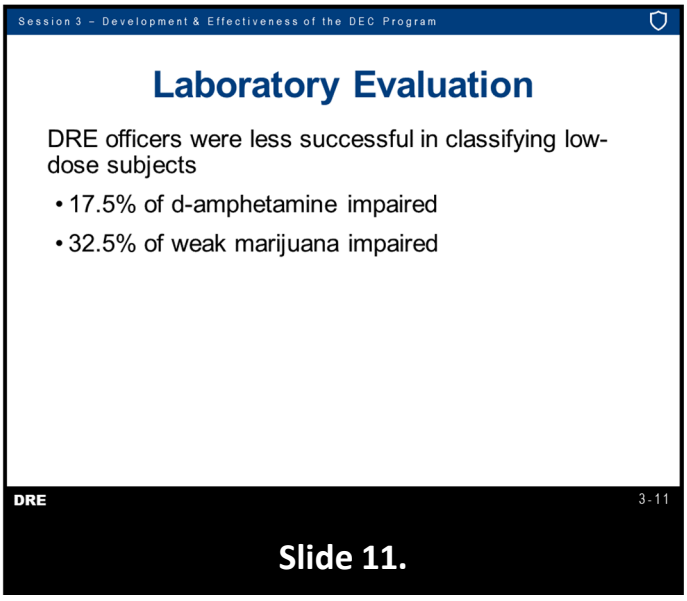
Doses administered for this study:

- Diazepam: weak – 15mg, strong – 30mg
- Secobarbital: 300 mg
- d-amphetamine: weak – 15 mg, strong – 30 mg
- Cannabis: weak – 12 puffs of 1.3% THC cigarettes, strong – 12 puffs of 2.8% THC cigarettes



Slide 10.

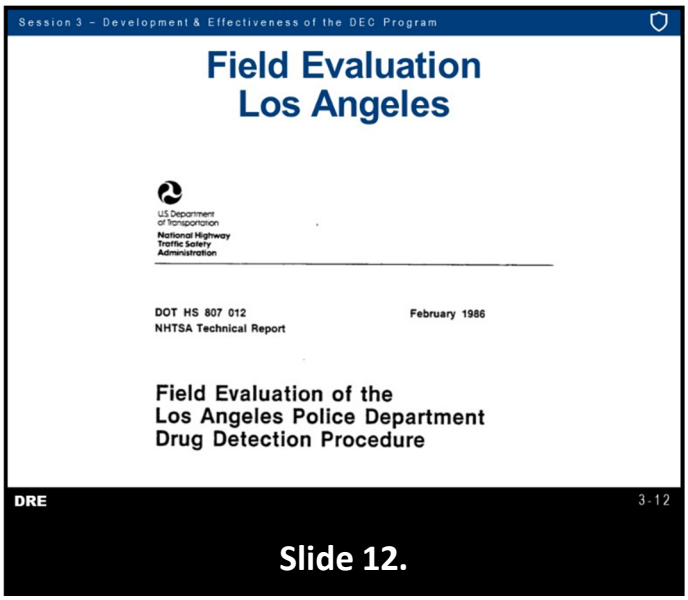
The results of the laboratory evaluation showed the DREs were excellent in identifying subjects who received only placebo doses: they classified 95% of the drug-free subjects as “not impaired”. Similarly, they were excellent in identifying the high-dose subjects. They classified as “impaired” 98.7% of the subjects who received Secobarbital or strong doses of Cannabis, Diazepam, or d-amphetamine. They correctly identified the category of drug for 91.7% of those strong dose subjects.



Slide 11.

The DREs were less successful in identifying the weak dose subjects. Only 17.5% of the subjects who received the weak dose of d-amphetamine were classified as “impaired”. Only 32.5% of the subjects who smoked the “weak” Cannabis cigarettes were classified as “impaired”.

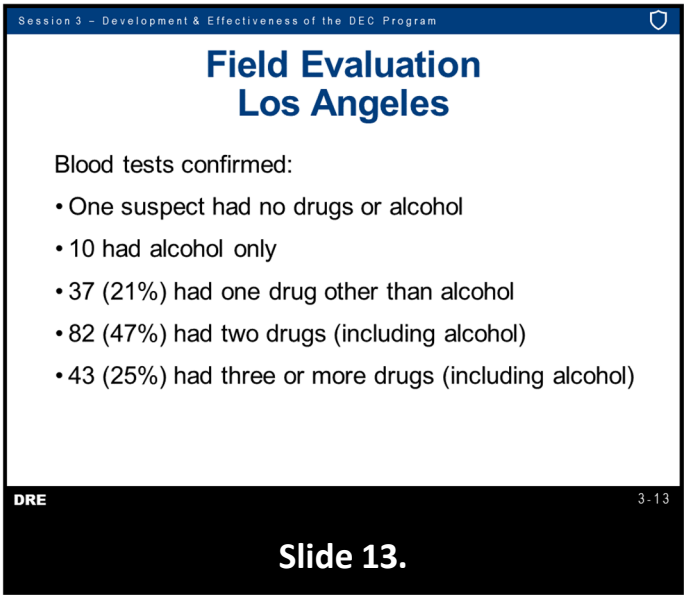
The results of the laboratory validation study were considered to be extremely positive. The DRE procedures correctly identified the category of drugs in more than 90% of the subjects who were impaired. The procedures only rarely indicated that unimpaired subjects were under the influence of drugs. Laboratory studies can only allow certain dose levels of drugs, which are much lower than those seen at street levels. Therefore, participants in laboratory studies may not show many of the signs of impairment that are seen with subjects administering street- level doses of drugs.



Slide 12.

The field validation study was based on 173 people actually arrested on suspicion of driving under the influence of drugs.

None of the 173 cases involved a collision. In all of the cases, the arrested subjects agreed to submit to a blood test. Twenty-eight different DREs from LAPD and the Los Angeles area participated in the examinations of these 173 subjects. The researchers excluded all cases where the subjects refused to give blood since it would have been impossible to check the DREs accuracy in those cases. Similarly, they excluded all cases that involved collisions since the subjects' injuries could have confounded the drug examination. Also excluded were subjects who were found in possession of drugs or had any charges other than the drugged driving charge.



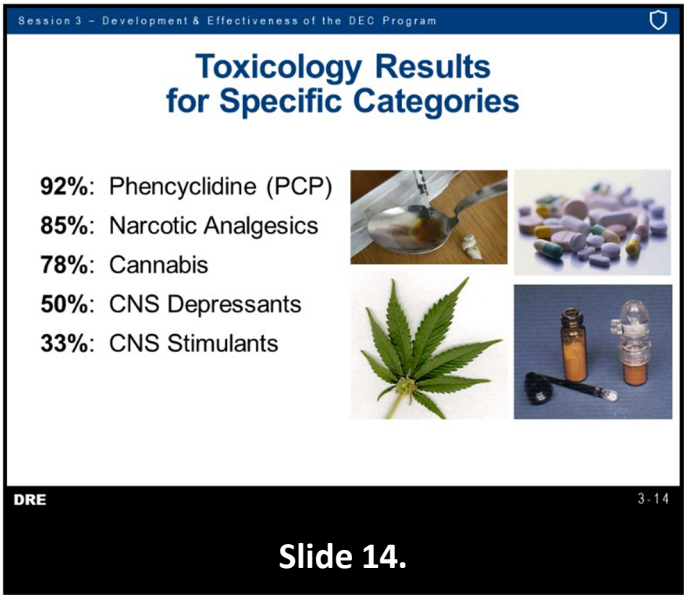
Slide 13.

Based on the independent blood tests, only one of the 173 subjects was found to have no alcohol or other drugs. Another ten subjects were found to have only alcohol in them.

Thirty-seven (21%) of the subjects were found to have only one drug other than alcohol. Eighty-two had two drugs (including alcohol) (47%) and forty-three (25%) had three or more drugs (including alcohol).

This means 125 of the 173 subjects had used two or more drugs: that is more than 72% of the subjects.

PCP was the drug most often found among these 173 subjects: more than half of them (56%) had used PCP. The key finding of this study was that for more than nine out of ten of the subjects (92.5%), the blood test confirmed the presence of at least one drug category “opined” by the DREs.



Slide 14.

Below are the toxicology results for specific categories:

- PCP: blood tests supported DREs' opinions in 92% of the cases
- Narcotic Analgesics: blood tests supported 85% of the DREs' opinions
- Cannabis: blood tests supported 78% of DREs' opinions
- Central Nervous System (CNS) Depressants: blood tests supported 50% of DREs' opinions
- CNS Stimulants: blood tests supported 33% of DREs' opinions

Numerous States have conducted comparisons of laboratory analysis and DRE opinions. The correlation rates exceeded 80% in those studies.

A study conducted in 1990 by the Arizona Department of Public Safety Central Regional Crime Laboratory compiled records of the toxicological analysis corresponding to Arizona DREs were analyzed showing a laboratory corroboration rate of 86.5% had been achieved.

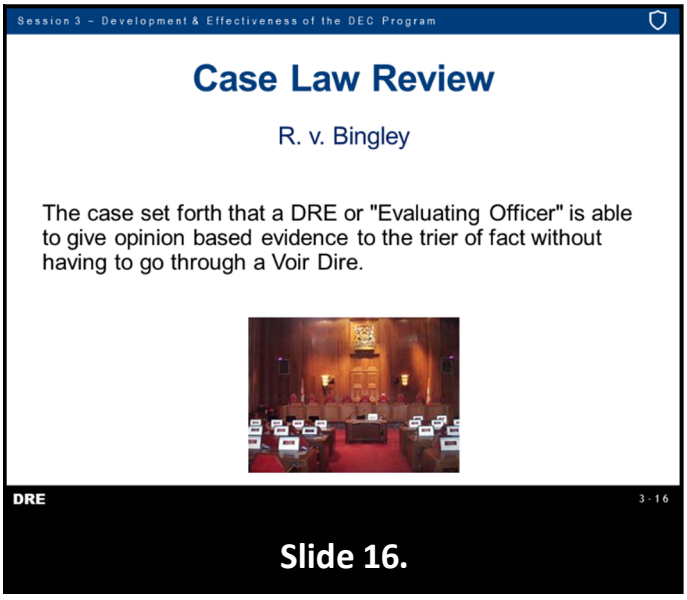
The overall conclusion of the laboratory and field studies is the DEC Program is an effective tool for law enforcement.

C. DEC Program Acceptance

Slide 15.

The DEC Program has also been effective in the court room.

Favorable Court Rulings on DEC Procedures: Courts in various States and Provinces have ruled favorably on the DEC Program. Normally, any scientific evidence, person introducing such evidence or asked to provide their opinion as evidence must be admitted as an expert by the courts. While in the USA most courts still require DREs to be admitted as experts on a case by case basis, Canadian courts no longer require this systematically.
In 2017, the Supreme Court determined in a landmark decision that the DEC Procedures were a reliable method for determining drug impairment (R. v. Bingley, SCC 2017).

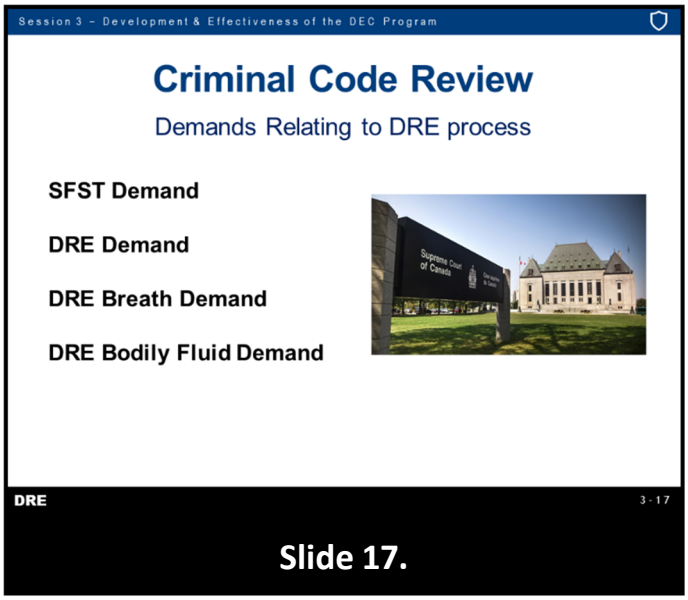


Slide 16.

Bingley set forth that DREs (or "Evaluating Officer") are, by virtue or their training, able to provide opinion-based evidence to the trier of fact without being subjected to a *Voir Dire.* This paved the way for a rewrite of the Criminal Code in 2018 (C-46) which now codifies that DREs may provide opinion-based evidence in Canadian courts without being deemed “experts” case by case. There may still be circumstances where this is required by the Judge or requested by either party, but as a general rule it is not necessary.

The trier of fact takes the information provided by the DRE and assigns it an appropriate evidentiary weight when making their decision on the matter as a whole.

This change in legislation essentially allows a DRE to be the only witnesses to be able to give opinion-based evidence without extra steps. This is an extremely powerful standing and holds much responsibility; doctors, toxicologists, coroners, etc. all still need to be deemed experts each and every time before testifying to their opinions, whereas DREs are allowed to by law.



Slide 17.

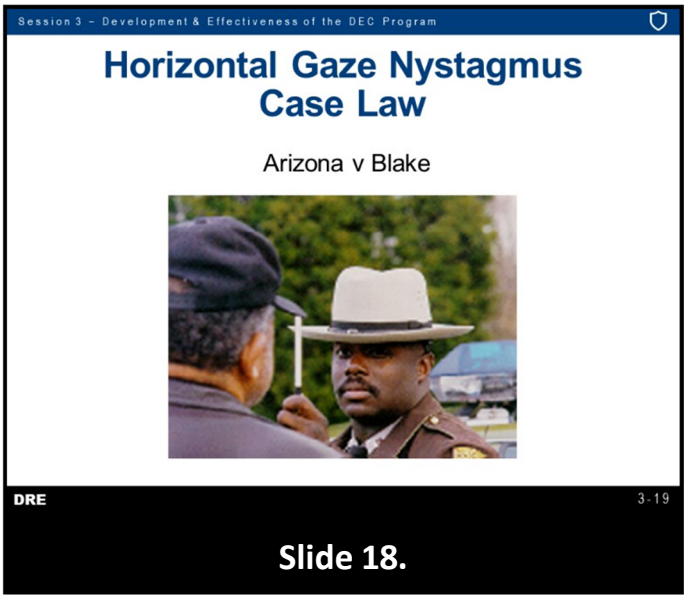
There are several demands involved in the entire DRE process. The first usual – but not mandatory – step is the SFST demand, which may or may not be made by the DRE at roadside. If the arresting officer does not have sufficient Reasonable Grounds to Believe for an arrest (sometimes known as “straight” impaired), but have grounds to *suspect*, then they may proceed with an SFST demand and subsequent test.

The SFST demand can be read by any officer who is trained in SFST (R. v. Breault SCC 2023), who has suspicion that there is a drug, alcohol or a combination of both in the body of the driver (R. v. Orbanski SCC 2005).

DRE Demand must be read by the officer who has the Reasonable Grounds to Believe an Impaired Operation offence, by drugs or combination of drugs and alcohol, has occurred. Note that unlike screening demands, the DRE demand may be given by an officer who is not themselves a DRE.

The DRE Breath Demand is a specific demand only DREs may read, which is related to the suspicion of alcohol in Step 1 of the 12 Step process (more on this later). When the DRE suspects the subject has alcohol in their system and may be a contributing factor to the impairment, they make this demand to take **one** suitable sample into an approved instrument. If the sample is at or over 80 mg%, the DRE will read a standard Breath Demand and take **two more** samples as you would any other alcohol impaired subject.

Finally, at the conclusion of the evaluation, if a DRE believes the subject to be impaired by at least one drug category, they will proceed with the DRE Bodily Fluid Demand. This demand is consequent to the DRE's opinion based on the totality of the event. Usually, urine is the bodily substance requested but blood is also allowed(oral fluid is also legally allowed, but rarely used because of practical limitations). Remember that the decision to which fluid is taken is up to the DRE, **not** the subject.



Slide 18.

HGN, one key element of the DEC Program, has been recognized as meeting the Frye standard by several State Supreme Courts (legal basis verifying if scientific evidence is admissible). The first to do so was Arizona, in the case known as State vs. Blake. To Canadian DREs, this notably bolsters the scientific validity of HGN.

Summary of HGN Case Law: The American Prosecutor's Research Institute HGN State Case Law Summary is available at the end of this session. The prevailing trend is for courts in the USA to admit HGN as evidence of impairment, with the proper scientific foundation. In Canada, HGN is accepted and admissible as part of the entire DRE process, as long as it is done properly and as per standardized training. It remains an excellent indicator of impairment, especially when related to the driving task by a testifying DRE. HGN cannot however be used to determine BAC or equate drug impairment to an equivalent BAC.


Session 3 – Development & Effectiveness of the DEC Program
Questions?
DRE
3-20

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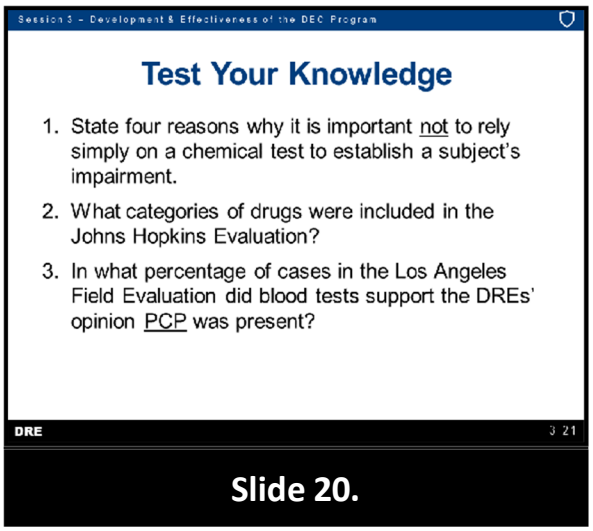

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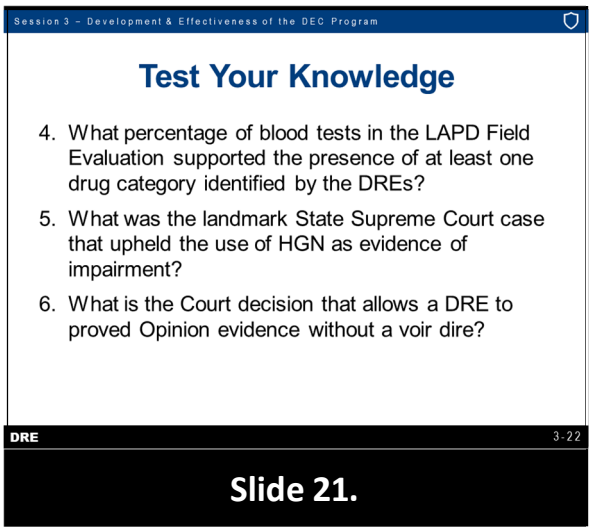

Slide 21.

Test Your Knowledge

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 Evaluation?

3. In what percentage of cases in the Los Angeles Field Evaluation did blood tests support the DREs' opinion PCP was present?

4. What percentage of blood tests in the LAPD Field Evaluation supported the presence of at least one drug category identified by the DRE's?

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

6. What Supreme Court decision deemed a DRE to be allowed to provide opinion evidence without a voir dire?

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Estimated time for session: 2 Hours 30 Minutes

4 DRE

OVERVIEW OF DRUG RECOGNITION EXPERT PROCEDURES

LEARNING OBJECTIVES

- Name the components of the Drug Evaluation and Classification (DEC) Program drug impairment evaluation
- State the purpose of each component
- Describe the activities performed during each component

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentation/Demonstrations
- Video Presentations
- Reading Assignments

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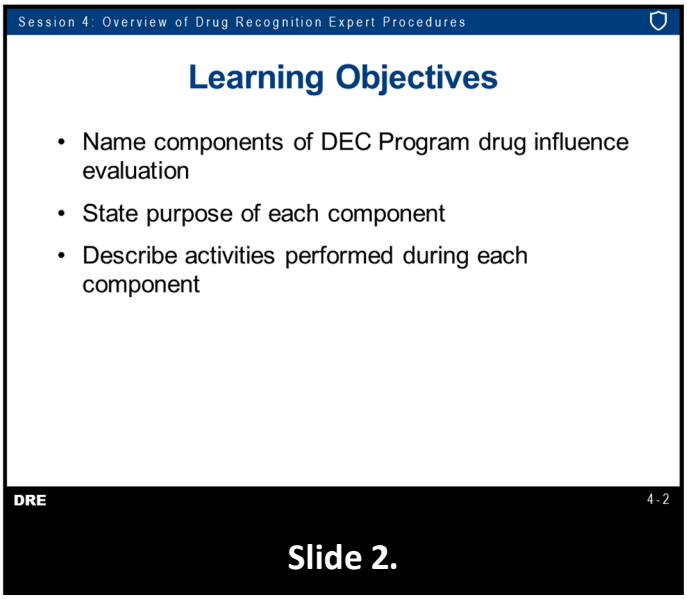
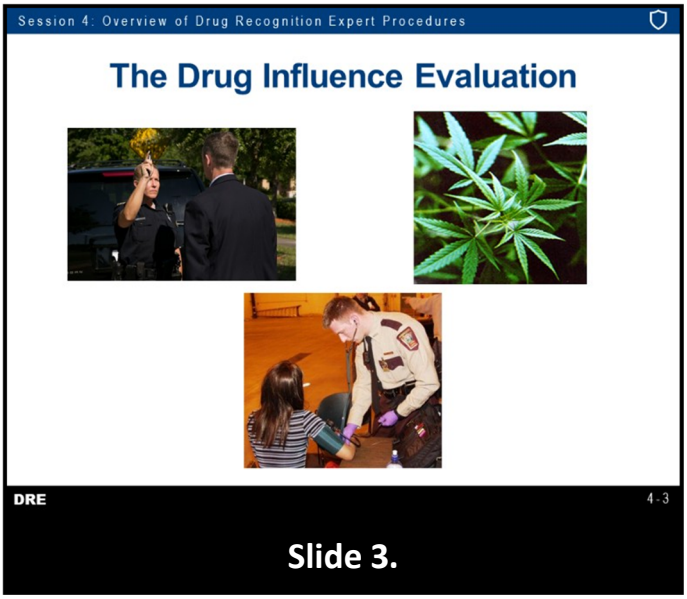


Slide 2.

A. Components of the Drug Evaluation and Classification Process



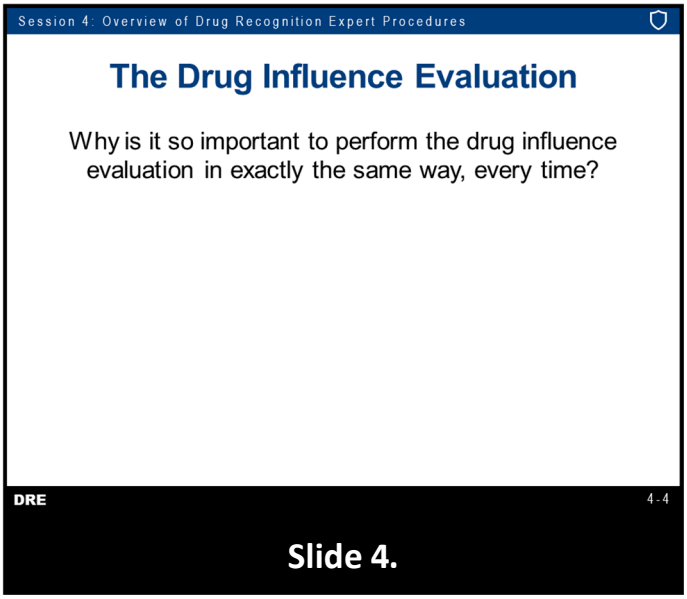
Slide 3.

The DEC Program Process is a systematic and standardized method to establish the subject is impaired and verifies his or her alcohol level is not consistent with the degree of impairment that is evident. Inconsistency between the observed impairment and the blood alcohol concentration (BAC) suggests the presence of some other drug(s) or some other complicating factor such as an illness or injury. The DEC Program Process is to determine whether the impairment may stem from illness or injury requiring medical attention or is drug related. And, the DEC Program Process is to determine what category (or categories) of drugs are the likely cause of the impairment.

Some of these observable signs and symptoms relate to the subject's appearance.

Some of these observable signs and symptoms relate to the subject's behavior.

Some relate to the subject's performance of carefully administered psychophysical tests.



Slide 4.

Drugs impair the subject's ability to control his or her mind and body. Psychophysical tests can disclose the subject's ability to control mind and body is impaired. The specific manner in which the subject performs the psychophysical tests may help indicate the category or categories of drugs causing the impairment. Some of the observable signs and symptoms relate to the subject's automatic responses to the specific drugs that are present. All of these reliable indicators are examined and carefully considered before an opinion is made concerning what categories of drugs are affecting the subject.

DREs should always try to conduct the 12-step process in the same manner each time. If there is deviation from the 12-step process, it should be noted in the narrative report. DREs should make every effort to conduct a complete post arrest drug impairment evaluation for every drug impaired driver, whether they are the arresting officer or not. However, there may be times when DREs begin the 12-step process, but are unable to complete it (for example, uncooperative subject, equipment failure, or refusals). DREs should document all available evidence and observations in their report.

In almost every case, DREs will conduct the entire drug impairment evaluation in accordance with DEC Program training. At the very least, an attempt at every step of the evaluation must be made and documented, as well as taking note of the reasons why it was not completed, or completed out of order.

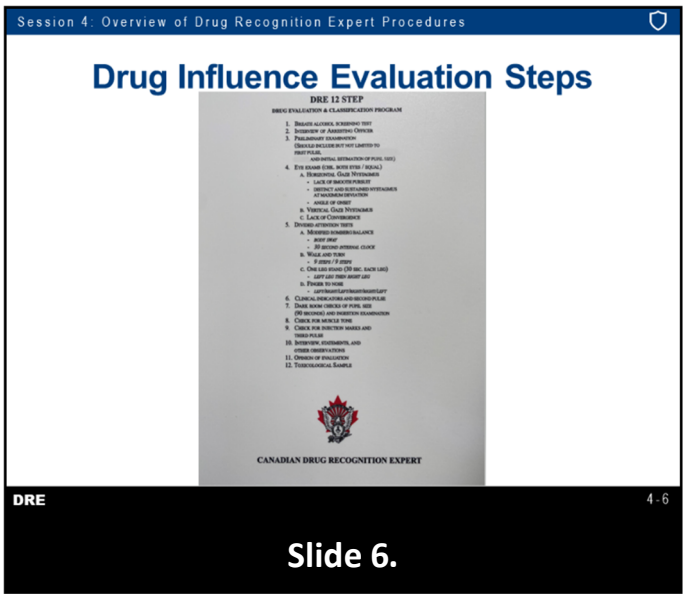
Slide 5.

Standardization helps to ensure no mistakes are made. There are no steps omitted and no extraneous or unreliable "indicators" are included. Standardization helps to promote professionalism among Drug Recognition Experts (DREs). Standardization helps to secure acceptance in court.

Circumstances may warrant a DRE to perform a step out of sequence or the suspect may be unable, or refuses, to perform part of the evaluation. If this occurs, the DRE should document the circumstances in their narrative report. Note that in Canada, it is a Criminal offence to refuse to comply to a demand; since the drug impairment evaluation stems from a demand, the subject *must* comply with the evaluation (with the exception of answering questions, which is protected by Charter Rights). Failure to comply to a demand carries the same minimum penalties as impaired operation: one year driving prohibition, $2000 in fine and a Criminal Record.

However, there is a difference between not being able to complete and refusing to do so. You may find some subjects may only partially comply, or make a significant effort to cooperate but simply be unable to. While the DRE is the ultimate decider of whether or not the subject is "legally refusing", there should be great care in making that determination as you will be questioned on whether the subject understood their legal requirements, the jeopardy of refusing among other things.

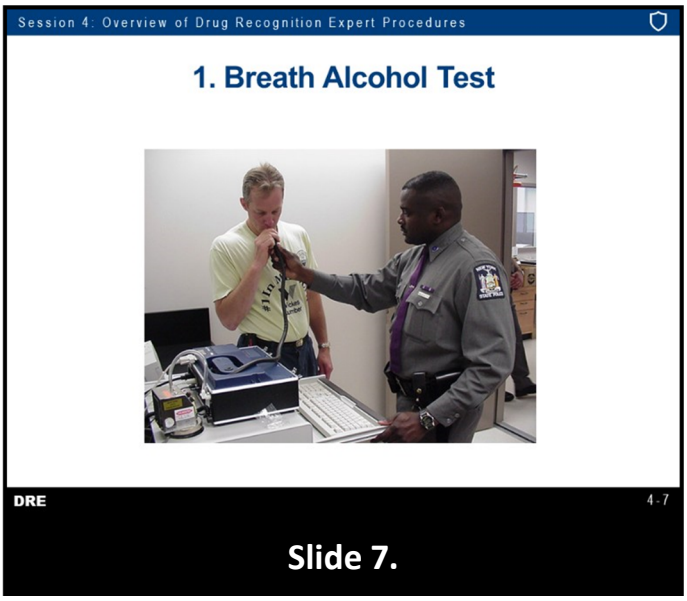
In the event of a partial evaluation, the DRE may still be able to form an opinion based upon the evidence obtained. State v. Cammack, 1997 WL 104913 (Minnesota Ct. Appeals, 1997) ruled a DRE need not complete the entire 12-step evaluation for an opinion to be admissible so long as there is sufficient admissible evidence.



Slide 6.

The DEC Program drug impairment evaluation has twelve components or steps.

Before beginning any Drug Impairment Evaluation, the DRE should ensure that the subject had been properly arrested, read the proper demand (DRE) and had an opportunity to consult with a lawyer. Furthermore, if the DRE should remind the subject of their Police Caution, or in the case they are not the arresting officer, provide them with a Secondary Warning.



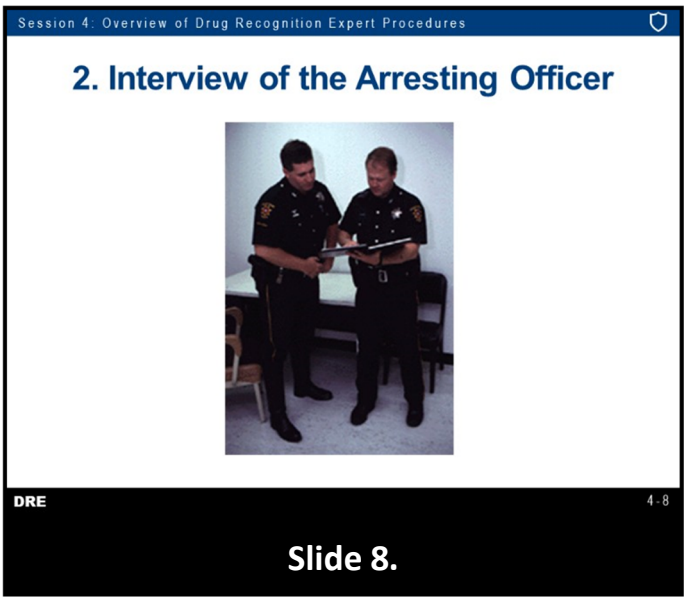
Slide 7.

The Breath Alcohol Test is needed to determine BAC. The purpose of the breath test is to determine whether the specific drug, alcohol, may be contributing to the impairment observed in the subject. Obtaining an accurate measurement of BAC enables the DRE to assess whether alcohol may be contributing to the impairment.

In Canada, this first step is not always performed. This deviance in procedure is unique to Canadian DREs because we are not legally authorized to systematically require a breath test from a subject without any grounds.

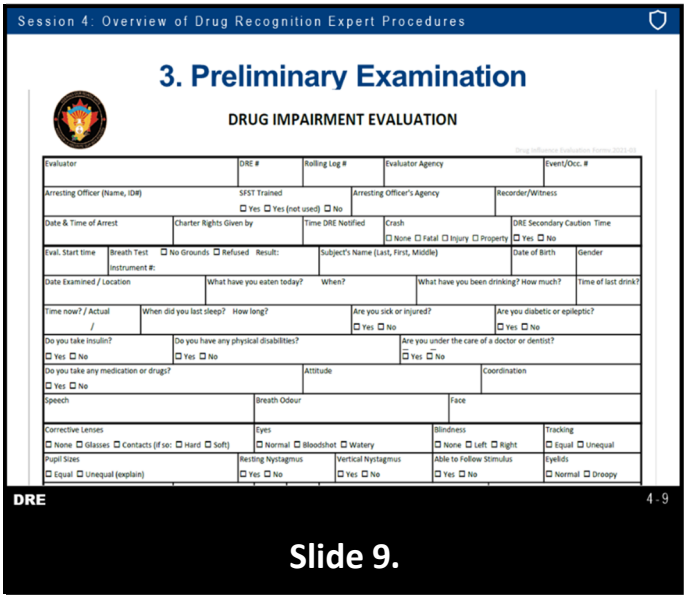
That said, a DRE must only reach Reasonable *suspicion* that the subject has alcohol in their body to demand a breath sample (remember: the suspicion threshold can be very low), and this sample is made into an **approved instrument** as opposed to an approved device, providing a precise reading. If the DRE themselves are not a Breath Technician, then they will need to ask of one to attend (Note that R. v. Breault does not apply here as the subject is already under arrest).

If the sample is at or above 80 mg%, the DRE will read a standard Breath Demand and two more samples will be taken, as you would any other alcohol impaired subject. Whether the investigation stops here, with an alcohol impaired charge, or if it continues further with the Drug Impairment Evaluation is ultimately a local decision to be discussed with respective Crowns and agencies; legally speaking, the DRE may continue with the evaluation once both subsequent breath samples have been provided.



Slide 8.

If the DRE is the arresting officer, the information gained from this step will already be known. Even when the DRE is the arresting officer, every effort should be made to conduct a complete post arrest drug impairment evaluation on the subject. In most cases, the subjects you will examine will not be people you arrested. The arresting officer may have seen or heard things that would be valuable indicators of the kinds of drugs the subject has administered. The arresting officer, in searching the subject, may have uncovered drug-related paraphernalia or even drugs themselves. The arresting officer also may be able to alert you to important information about the subject's behavior that could be very valuable for your own safety. Document if the arresting officer has been trained in SFST.

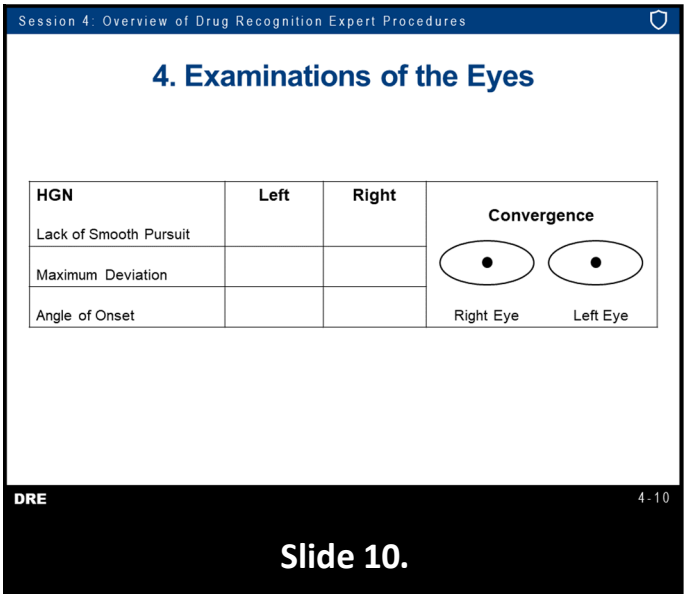


Slide 9.

The purpose of the preliminary examination is to help you decide whether to continue with the drug impairment evaluation, pursue a possible medical complication, or proceed with an Impaired Driving (alcohol) case. The preliminary examination is your first opportunity to observe the subject closely and directly. Another purpose of the preliminary examination is to begin systematically assessing the subject's appearance, behavior, and automatic bodily responses for signs of drug- induced impairment.

The preliminary examination consists of a series of questions and observations dealing with possible injuries or medical problems, the subject's face, speech, breath, pupil size and tracking ability, and initial examination of the subject's pulse.

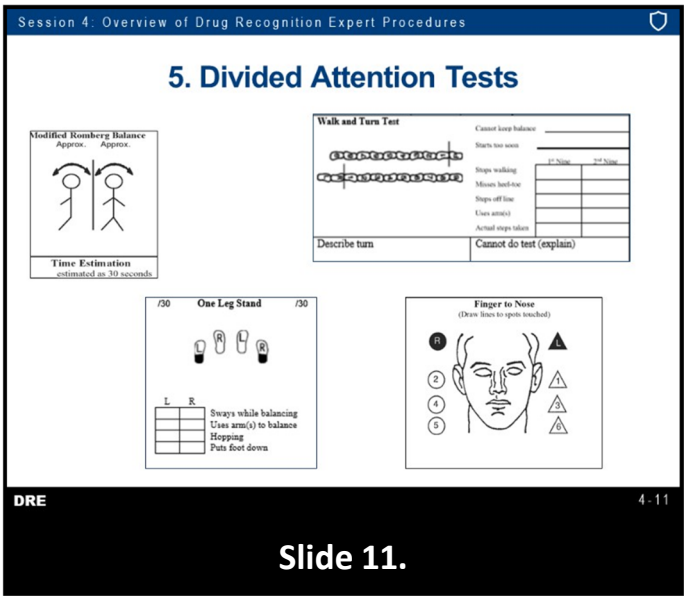
While you are assessing the subject's tracking ability, you also have an opportunity for a preliminary assessment of the subject's eyes movement. **This is not a complete Horizontal Gaze Nystagmus (HGN) test at this time and only serves to give you an idea of the person's condition. If jerking is seen in one eye only while verifying tracking for instance, you should start investigating a possible medical condition. An entire HGN test will be conducted in the next step.**



Slide 10.

Certain drugs produce very easily observable effects on the eyes.

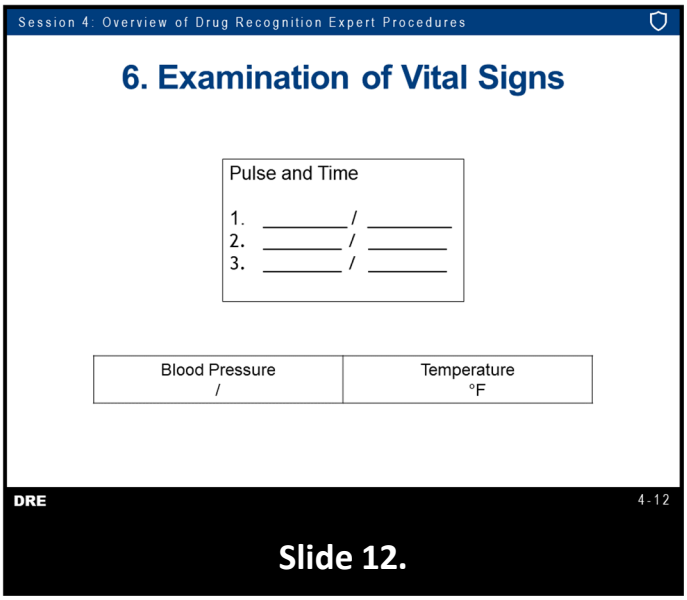
One of the most dramatic of these effects is nystagmus, which means an involuntary jerking of the eyes. Persons under the influence of alcohol usually will exhibit HGN, which is an involuntary jerking of the eyes occurring as the eyes gaze to the side. Alcohol is not the only drug that causes HGN. HGN is not the only observable effect on the eyes that will be caused by various drugs.



Slide 11.

All drugs that impair driving ability will also impair the subject's ability to perform divided attention tests. These tests are familiar to you in the context of examining alcohol-impaired subjects. The same tests are very valuable for disclosing evidence of impairment due to drugs other than alcohol.

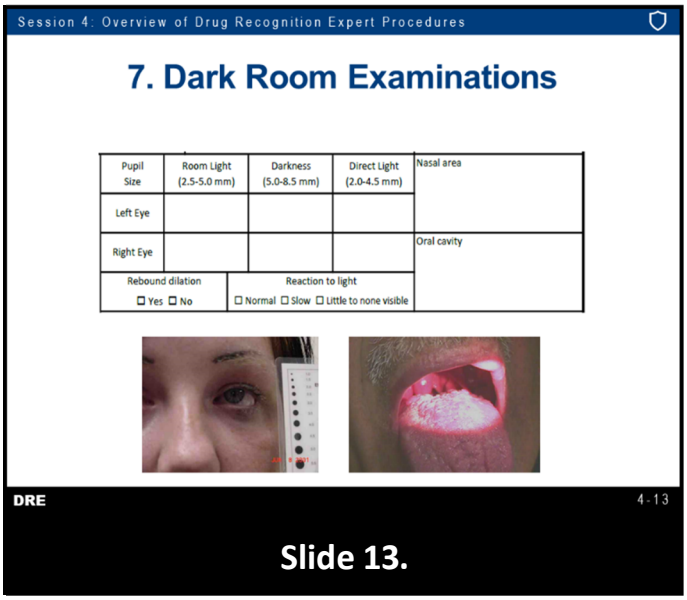
The divided attention tests used in the DRE examination include: Modified Romberg Balance (MRB); Walk and Turn (WAT); One Leg Stand (OLS); and Finger to Nose (FTN).



Slide 12.

Drugs affect the operation of the heart, lungs, and other major organs of the body. These effects show up during examination of the subject's vital signs.

The vital signs that are reliable indicators of drug impairment include blood pressure, pulse, and temperature.



Slide 13.

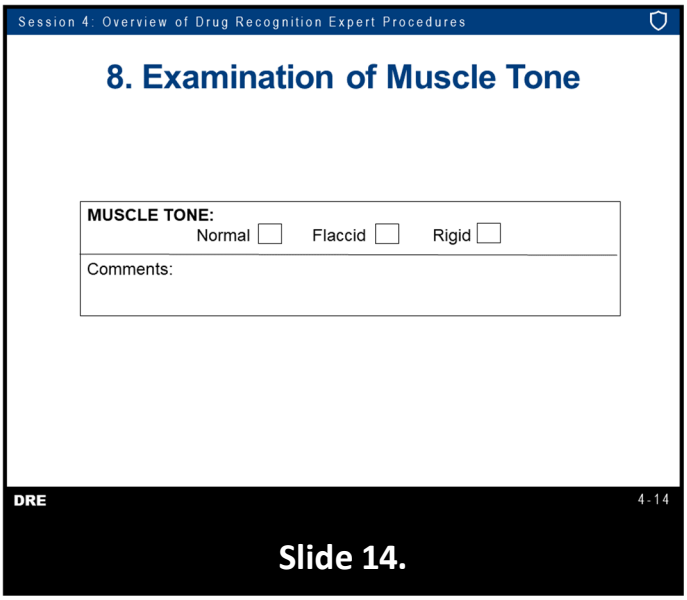
Many categories of drugs affect how the pupils will appear and how they respond to light.

Certain kinds of drugs will cause the pupils to become larger or dilate. Some other drugs cause the pupils to become smaller or constrict. By systematically changing the amount of light entering the subject's eyes, we can observe the pupils' appearance and reaction under controlled conditions. We carry out these examinations in a dark room, using a penlight to control the amount of illumination entering the subject's eyes.

We use a device called a pupillometer to estimate the size of the subject's pupils.

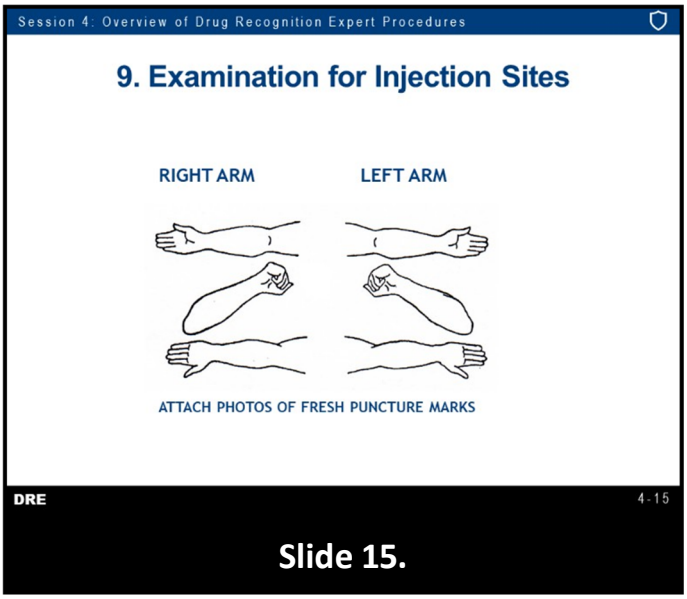
By lining the circles up alongside the subject's pupil, the pupil's size can be determined.

Other examinations are also conducted in the darkroom, using the penlight, i.e., examination of the nasal area and mouth for signs of drug use and for concealed contraband.
Note: an ultraviolet (UV) light may also at times be used when the subjects have very dark eyes.



Slide 14.

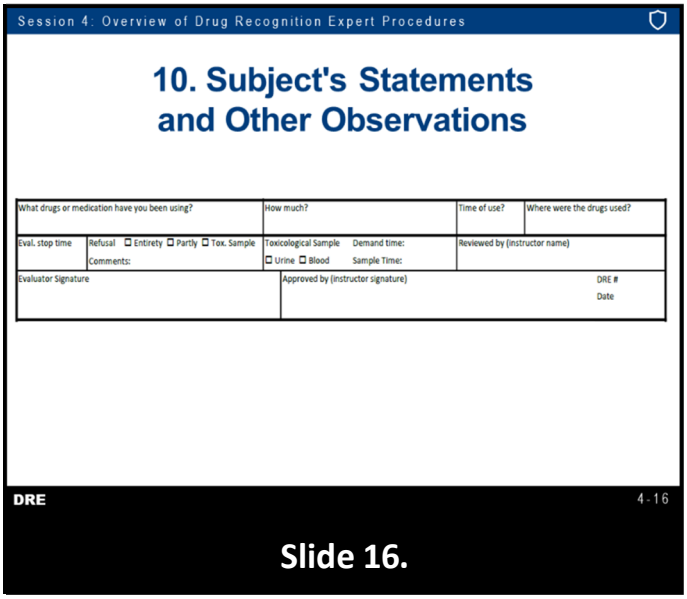
Certain categories of drugs may cause the user's muscles to become noticeably tense and rigid. Others may cause the muscle tone to be flaccid or soft. Evidence of muscle tone may be apparent when the subject attempts to perform the divided attention tests. It may also be observed when taking the subject's pulse, blood pressure, or while examining for injection sites.



Slide 15.

Certain drugs are commonly injected by users via hypodermic needles.

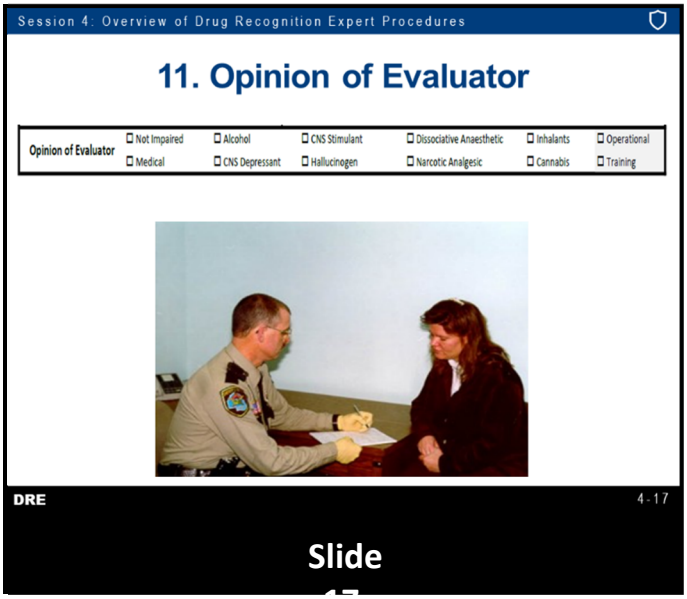
Heroin is probably most commonly associated with injection, but several other types of drugs also are injected by many users. Locating injection sites on a subject provides evidence of possible drug use.



Slide 16.

At this point in the evaluation, the DRE may have reasonable grounds to believe the subject is under the influence of a drug or drugs. The DRE may also have at least an articulable suspicion as to the category or categories of drugs causing the impairment. The DRE should proceed to interview the subject to support their opinion concerning the drug category or categories involved.

The DRE must carefully record the subject's statements and any other observations that may constitute relevant evidence of drug-induced impairment.



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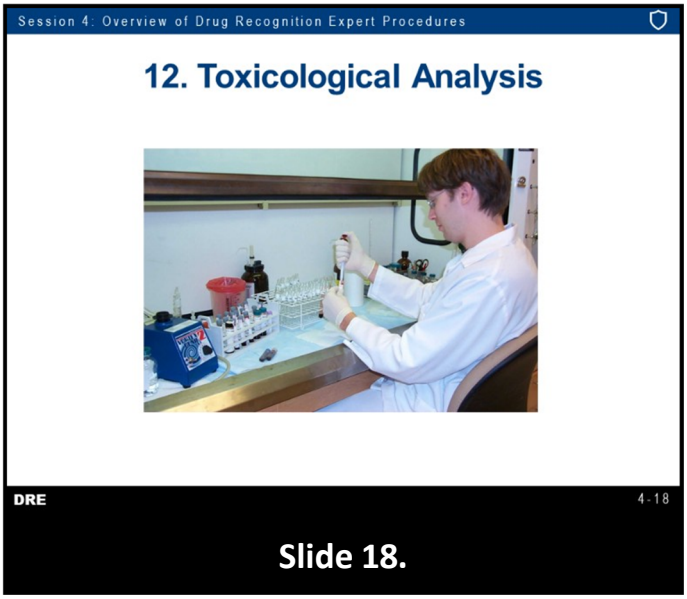
Based on all of the evidence and observations collected from the preceding steps, the DRE should be able to reach an informed opinion as to:

1. Whether the subject is impaired by a drug or drugs, and if so;
2. Which category(ies) of drugs is causing the impairment.

At this point, the DRE had achieved Reasonable Grounds to Believe the subject was impaired by a drug category at the time of the offence. The following step will be to read the Evaluator Demand for Bodily Substance for Urine or Blood. If for whatever reason the DRE can not make an opinion that the driver is impaired by a drug category, the Demand for Bodily Substance cannot be made.

The DRE must record a narrative summary of the facts forming the basis for their opinion.



Slide 18.

The toxicological analysis of the sample is designed to obtain scientific, admissible evidence to support the DRE's opinion. This step is the analysis of the collected specimen. Specimen collection may have occurred earlier in the arrest process or evaluation. If not, it should be collected now. Proper forensic laboratory and agency policy and procedures should be followed in obtaining, and handling the toxicological sample.

In some cases, the arresting officer may have already obtained the specimen prior to the DRE's arrival. In Canada this situation most often occurs if a Blood Demand (Drugs *Per Se*) was read roadside and a blood sample taken within two hours of driving. Note that if this was the case, blood cannot be drawn a second time and urine must be obtained. A sample may also have been provided under informed consent before the DRE opinion is reached. Not all jurisdictions are comfortable with this procedure, but if you or another officer proceeds this way ensure to follow proper agency procedures (forms, warnings, etc.).

In the event of a subject refuses to provide a sample, not only should they be charged with Refusal, but this does not negate the DRE opinion nor their grounds. Only corroboration is lost, but an Impaired Operation charge based on the opinion alone is still possible.

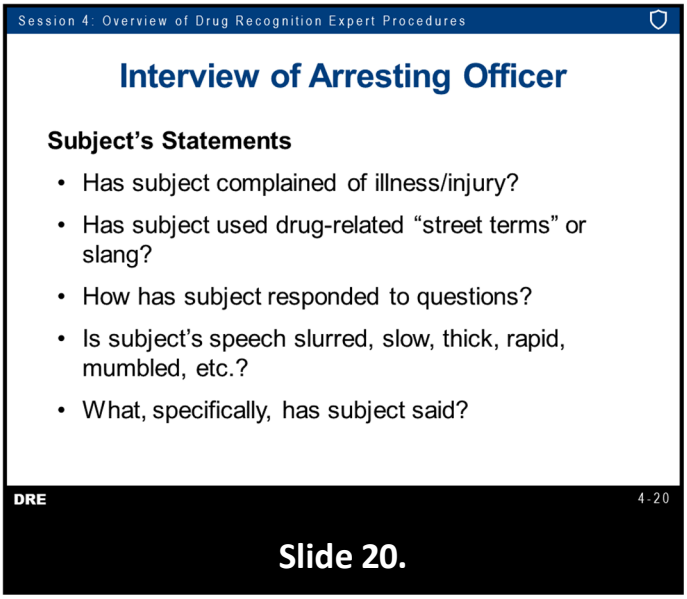
B. Interview of the Arresting Officer

Slide 19.

The purpose of the interview of the arresting officer is to obtain a summary of the subject's actions, behaviors, etc., that led to the arrest and the suspicion that drugs other than alcohol may be involved. If the arresting officer is SFST trained, they may have additional observations that are helpful in identifying drug impairment. The DRE should elicit this information during this interview.

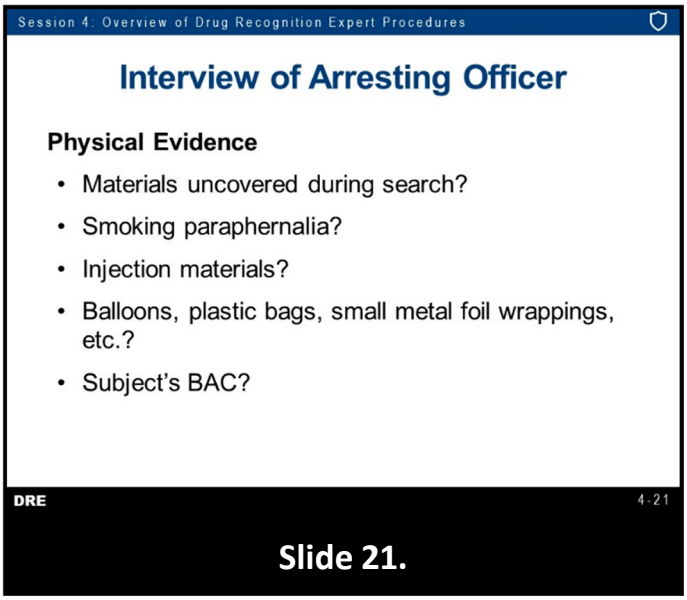
Interview Behavior: Examples of questions DREs could ask during the interview include:

- Was the subject operating a vehicle?
- What actions, maneuvers, etc. were observed?
- Was there a collision?
- If yes, was the subject injured?
- Was the subject observed smoking, drinking or eating?
- Was the subject apparently inhaling any substance?
- How did the subject respond to the arresting officer's stop?
- Did the subject attempt to conceal or throw away any items or materials?
- What has been the subject's attitude and demeanor during contact with the arresting officer and have there been any changes?
- Describe the subject's performance on roadside field sobriety tests.



Interview Concerning Subject's Statements

- Has the subject complained of an illness or injury?
- Has the subject used any "street terms" or slang associated with drugs or drug paraphernalia?
- How has the subject responded to the arresting officer's questions?
- Was the subject's speech slurred, slow, rapid, thick, mumbled, etc.?
- What, specifically, has the subject said to the arresting officer?

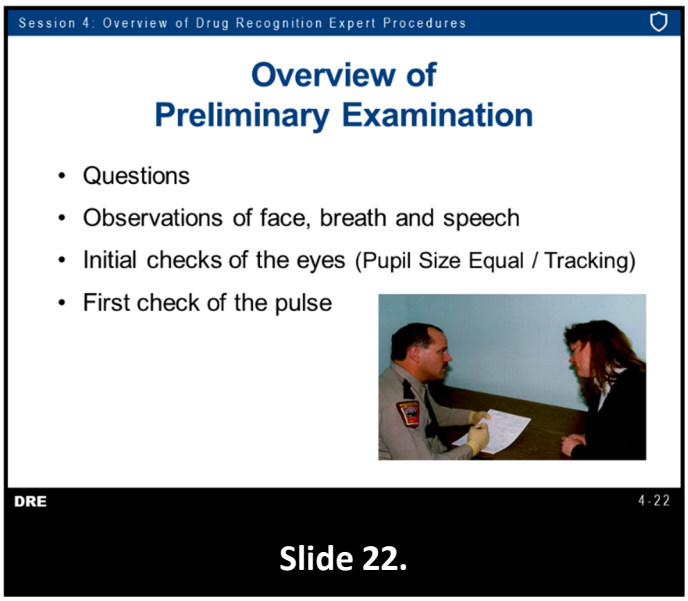


Slide 21.

Interview: Physical Evidence: Issues concerning physical evidence include:

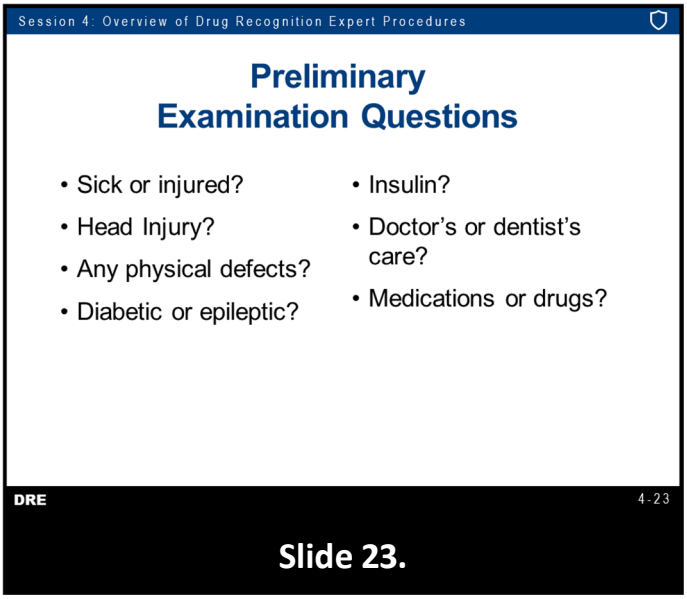
- What items or materials were uncovered during the search of the subject or vehicle?
- Were any smoking paraphernalia uncovered?
- Were any injection materials, i.e., needles, syringes, leather straps, rubber tubes, spoons, bottle caps, etc. found
- Were there any balloons, plastic bags, small metal foil wrappings, etc. found?
- What was the subject's blood alcohol concentration?

C. Overview of the Preliminary Examination



Slide 22.

The preliminary examination consists of questions, observations of face, breath, and speech, initial checks of the eyes, and the initial check of the subject's pulse.

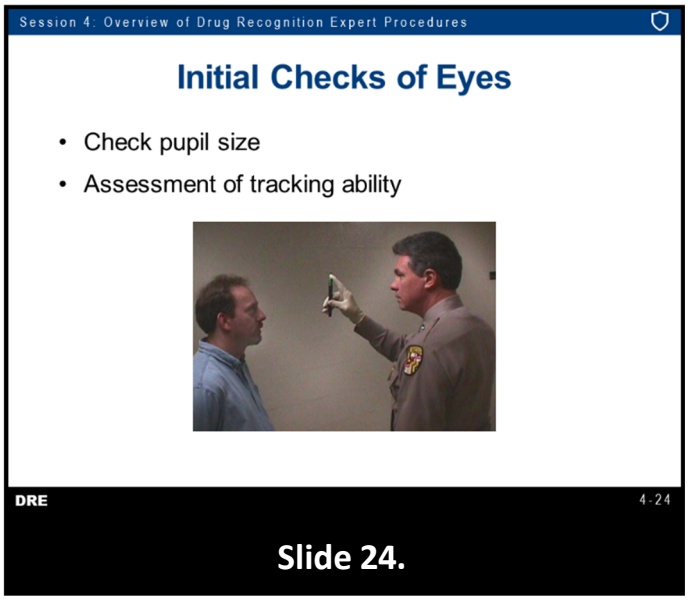


Slide 23.

The questions deal with injuries or medical problems the subject may have. They include:

- Are you sick or injured?
- Do you suffer from a head injury/trauma?
- Do you have any physical defects?
- Are you diabetic or epileptic?
- Do you take insulin?
- Are you under a doctor or dentist's care?
- Are you taking any medications or drugs?

If the subject responds in the affirmative to any of the above questions, ask follow-up questions to gather more information.



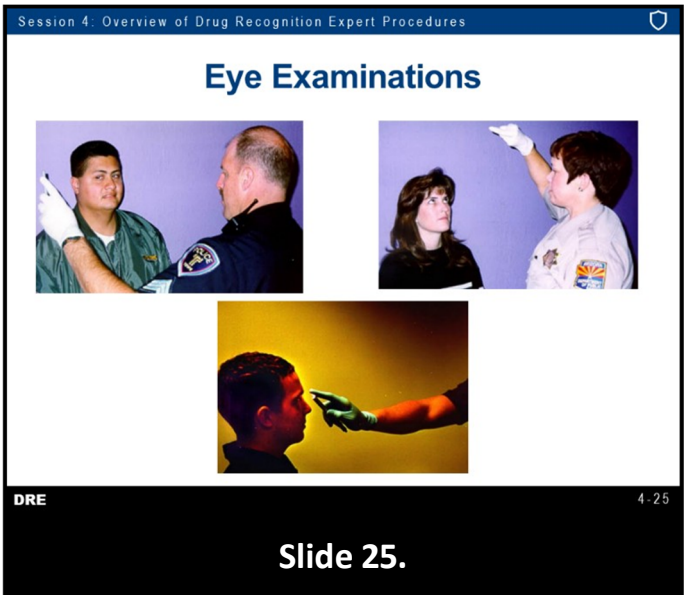
Slide 24.

The initial checks of the subject's eyes include several important steps.

Check of the Size of Each Pupil: The initial examination of the eyes may reveal signs of injury or illness. This is **not** done with a pupillometer; the initial estimation is solely done visually and to determine differences between both eyes: a difference in pupil size of greater than 0.5 mm may indicate an injury or existing medical condition. A DRE may also note the extremes of the spectrum, i.e. where either almost no iris (colour of the eye) is visible, or almost no pupil is visible.

Assessment of the Ability of the Eyes to Track a Moving Object: This is to determine if the subject's eyes properly follow the stimulus when moved. Again, inability to do this, or desynchronized eyes may be indicative of injury, previous or recent.

D. Examinations of the Eyes



Slide 25.

The Examinations of the Eyes consist of three tests.

HGN: The HGN test includes three clues; Lack of Smooth Pursuit, Distinct and Sustained Nystagmus at Maximum Deviation, and Angle of Onset.

If the subject has also used some other drug that also causes nystagmus, the angle of onset may occur even earlier than the BAC would indicate. Example: Suppose you are examining a subject who has an angle of onset at 40 degrees. Based on that alone, you would expect the person's BAC to be in the 80-100 mg% range. But if that subject has also administered a Dissociative Anesthetic, the onset could occur much earlier, perhaps as soon as the eyes start to move to the side.

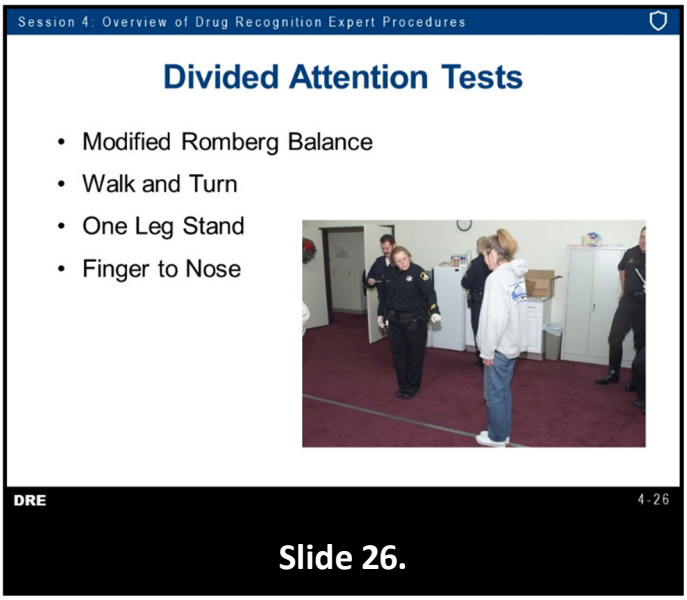
Vertical Gaze Nystagmus (VGN): VGN is an involuntary jerking of the eyes (up-and-down) which occurs when the eyes gaze upward at maximum elevation. Certain types of drugs tend to cause VGN, while others do not.

Lack of Convergence (LOC): LOC is the inability of the eyes to draw in toward the center (cross) while fixating on a stimulus being moved in toward the bridge of the nose. LOC is checked by first getting the subject to focus on and track the stimulus as it slowly moves in a circle in front of the subject's face.

Then, the stimulus is slowly pushed in toward the bridge of the subject's nose, stopping at a distance approximately, but no closer than, 2 inches (5 cm), and held for approximately one (1) second.

Under the influence of certain types of drugs, the eyes may not be able to converge.

E. Divided Attention Tests

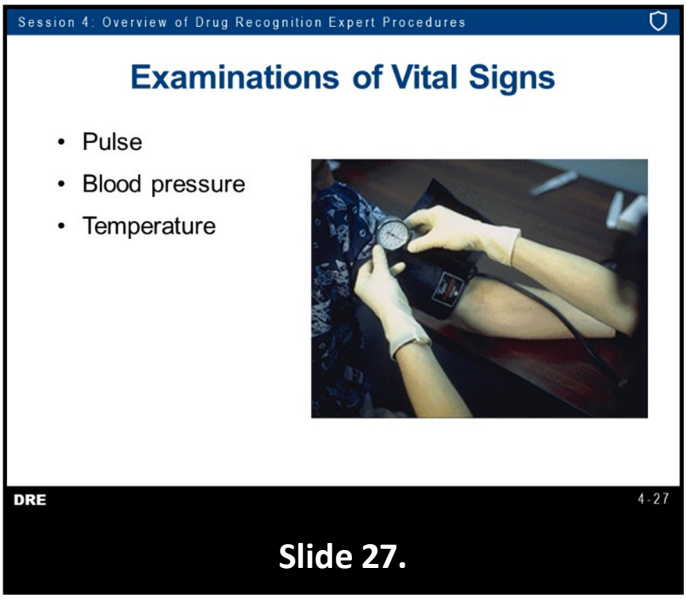


Slide 26.

Several Divided Attention tests used for drug examinations are the same familiar tests used for examining alcohol-impaired subjects.

- Modified Romberg Balance (MRB)
- Walk and Turn (WAT)
- One Leg Stand (OLS)
- Finger to Nose (FTN)

F. Examinations of Vital Signs



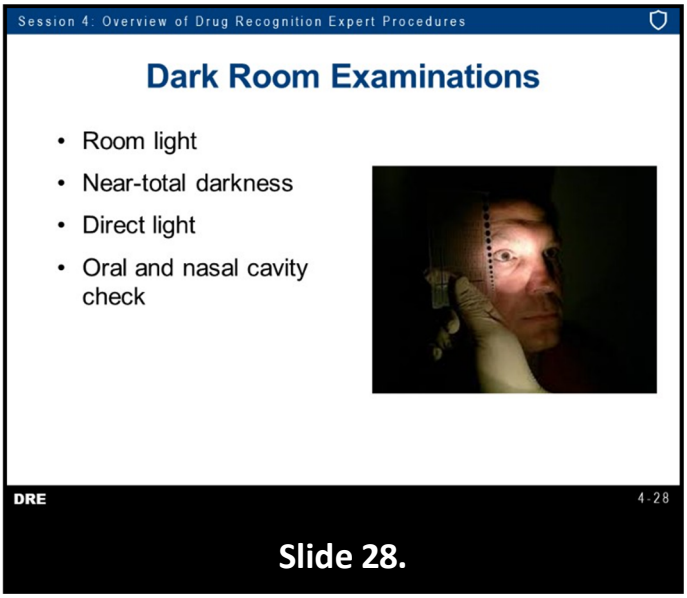
Slide 27.

The vital signs consist of three things routinely measured in basic physical examinations: Pulse; Blood Pressure; and Temperature.

These measurements require some familiar instruments: stethoscope; manual blood pressure cuff and gauge (sphygmomanometer); and oral thermometer with disposable mouthpieces. A time piece capable of measuring in seconds is also required.

Any other equipment must be approved by the Technical Advisory Panel (TAP) of the International Association of Chiefs of Police (IACP).

G. Dark Room Examinations



Slide 28.

The principal activity that takes place during the dark room examinations is the estimation of pupil size under three lighting conditions, or levels. Those levels are: Room light; Near total darkness; and Direct light.

The room light estimation is conducted prior to darkening the room lights. Whenever possible, the room light estimation should be conducted in the same room where the other pupil estimations are conducted. This helps ensure the same focal point and light intensity.

For safety reasons, whenever possible, another officer should always accompany you and the subject into the dark room.

Room Light: Before turning off the lights, you will estimate the size of the subject's pupils under room light.

You must always first estimate the left pupil, then the right.

You must position the pupillometer alongside the eye to ensure an accurate estimation. After you have completed the room light estimations, turn off the lights and wait at least 90 seconds to allow your eyes and the subject's eyes to adapt to the darkness.

Near Total Darkness: The next check will be of pupil size under near total darkness. You will need the bare minimum amount of light necessary to see the subject's pupils and the pupillometer.

You can create the necessary light by covering the tip of the penlight with your finger or thumb or by using a dim red light.

The light is then moved near the subjects left eye just until it is possible to distinguish the colored portion of the eye (Iris). Hold the pupillometer alongside the eye and locate the circle or semi-circle closest in size to the pupil.

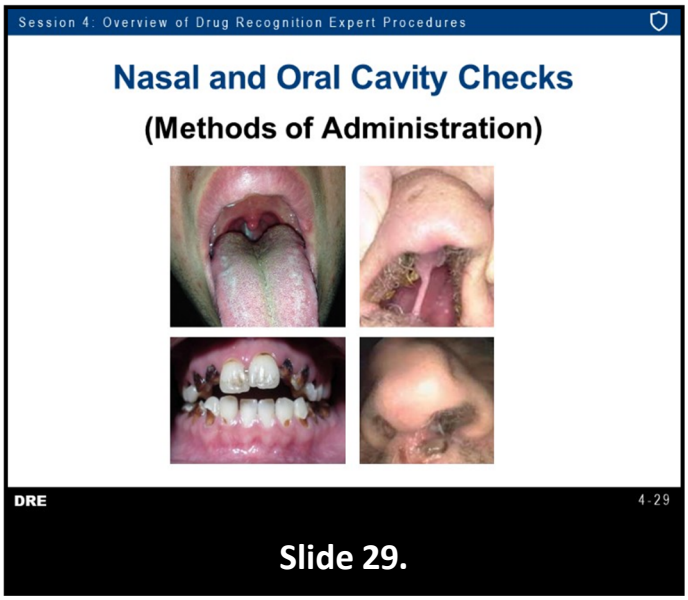
Direct Light: The third and final check will be of the pupil size under direct light. You will shine the full strength of the penlight directly into the subject's eye for a minimum of 15 seconds.

Do this by activating the penlight pre-positioned in front of the eye.

The penlight should be held close enough to the subject's eye so its beam fills the eye socket.

When the light is initially shown into the eye, you will check for the pupil's reaction to light. Then immediately estimate the pupil size under direct light at the end of the 15-second period.

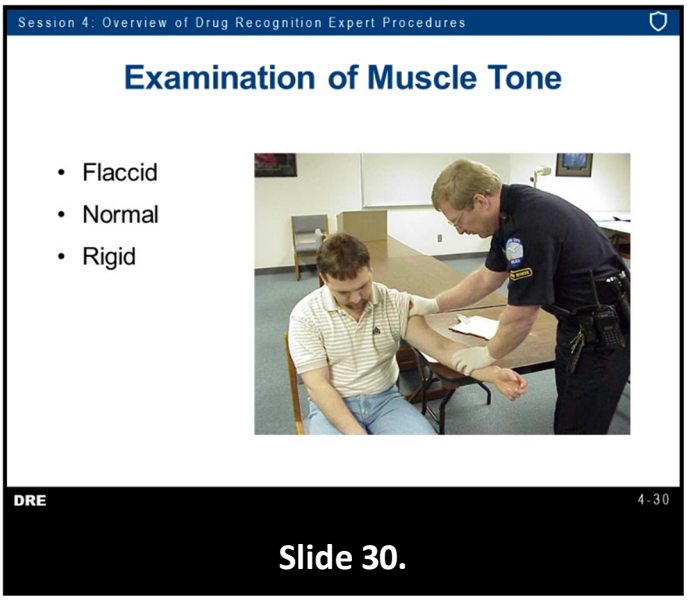
Other Activities: Two other activities are conducted while in the darkroom. They are examination of the nasal area and examination of the oral cavity.



Slide 29.

For the purpose of this training we will use the term methods of administration to describe any manner by which a drug or alcohol enters the human body whether it be orally or otherwise. In the dark room, DREs may observe evidence that drugs were administered through the nose or the mouth. If administered through the nose, observations may include powder in the nasal area, redness in the nasal area, and others. If administered through the mouth, observations may include coating on the tongue, blisters/burns, debris in the mouth, and others.

H. Examination of Muscle Tone

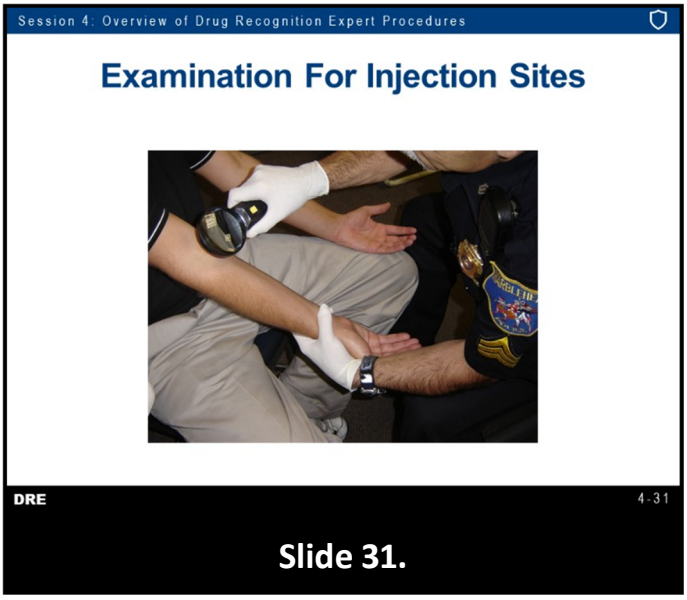


Slide 30.

*S*tarting with the subject's left arm, examine the arm muscles. Firmly grasp the upper arm and slowly move down to determine muscle tone. Concentrate on the biceps and triceps muscles for an accurate reading the muscles should appear flaccid, normal, or rigid to the touch.

Examine the right arm in the same manner.

I. Examination for Injection Sites



Slide 31.

Some injection sites may be relatively easy to notice. Persons who frequently inject certain drugs develop lengthy scars, commonly referred to as "tracks," from repeated injections in the same veins. Injection of certain drugs may result in severe caustic action against the skin and flesh producing easily observable sores. A fresh injection site may not be readily observable.

Frequently, a DRE will locate the injection site initially by touch, running the fingers along such commonly used locations as the neck, forearms, wrists, back of hand, etc.

When the DRE locates a possible injection site, a light magnifying lens, commonly known as a "ski light," can be used to provide a magnified visual examination. "Ski" – short for schematic.

During this step, the third pulse is taken.

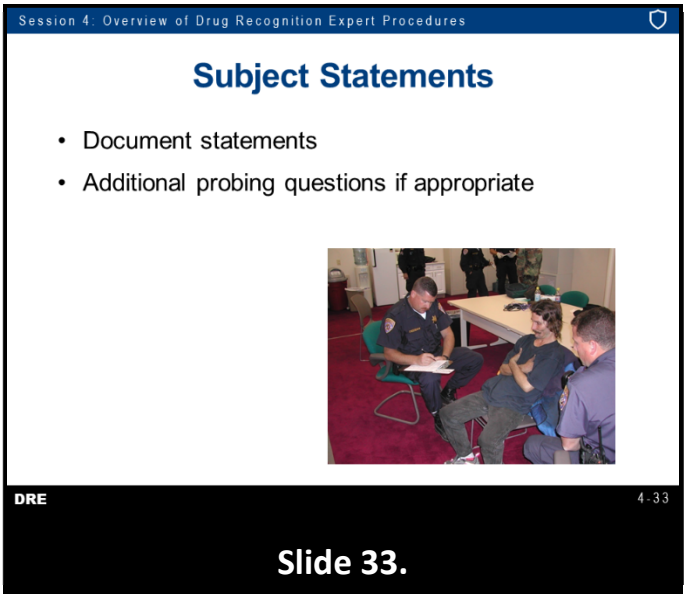
Slide 32.

While conducting the examination for injection sites, DREs may observe evidence that drugs were administered through injection or transdermally.

In addition to injecting drugs into the veins in the arms, since needles typically leave marks which can be difficult to conceal, users will find more creative and less conspicuous areas on the body to administer a substance.

Drugs which are able to be administered transdermally can be administered accidentally through contact. Some selected Hallucinogens, Dissociative Anesthetics, and Narcotic Analgesics can be administered transdermally. Cannabis can also be administered transdermally.

J. Subject Statements



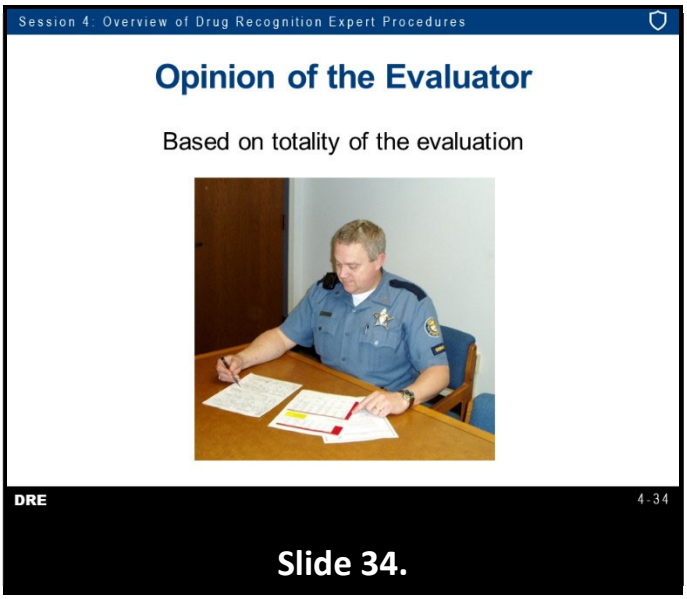
Slide 33.

All spontaneous statements and subject's response to questions should be documented. Ask additional probing questions as appropriate. This is a warned statement setting; treat it the same as you would any other investigative interview.

Drug impairment Form Questions:

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

K. Opinion of the Evaluator

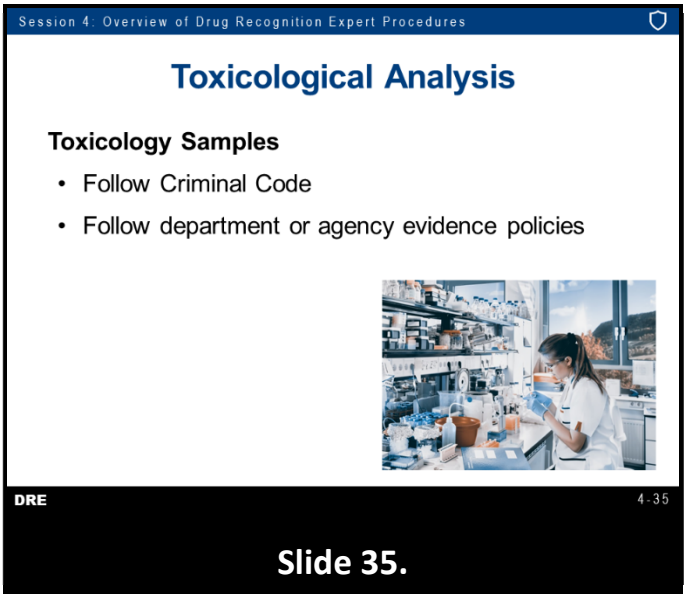


Slide 34.

Based on the totality of the evaluation, the DRE should form an opinion of the subject's impairment and, if impaired, the drug category or categories responsible. Anytime there is a positive BAC reading during an evaluation, the DRE must list alcohol (ETOH) as part of their opinion.

The DRE should not base their opinion on just one thing, i.e., admissions, drugs and/or contraband, etc. All the facts and context must be considered and a conclusion made from the whole picture regarding the subject's impairment and its cause.

L. Toxicological Examination



Slide 35.

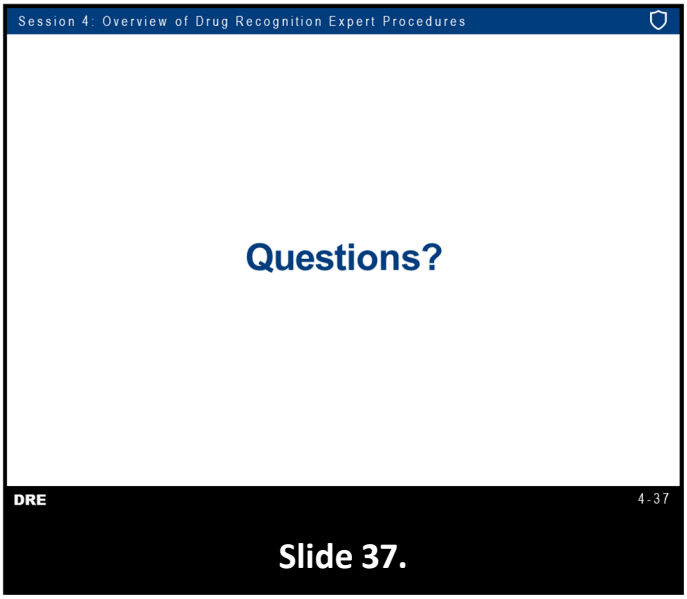
The toxicological examination is a chemical analysis of the subject's blood, urine, or oral fluid by an approved toxicology laboratory. This is not to be confused with the collection of the toxicology sample. A specimen should be collected at some point during the investigation, usually after the DRE's opinion in step 10.

Collecting Toxicology Samples: The Criminal Code allows the DRE to demand either blood, urine or oral fluid – although there are currently no labs in Canada which analyse oral fluid, which is why only urine and blood are usually mentioned. The choice to go either blood or urine is at the DRE's discretion but it is recommended to consider all factors when demanding the sample, including delays and intrusiveness. Agency policy, forensic laboratory guidelines and procedures, as well as Criminal Code process should be followed in requesting, obtaining, and handling the toxicology sample. There may be rare times when the toxicology sample was obtained prior to Step 12 of the DRE protocol pursuant to a consent by the subject. If the toxicology sample has not been collected prior to Step 12, it should be collected now. The DRE should document the details of collecting the evidentiary toxicological sample regardless of when it was obtained.

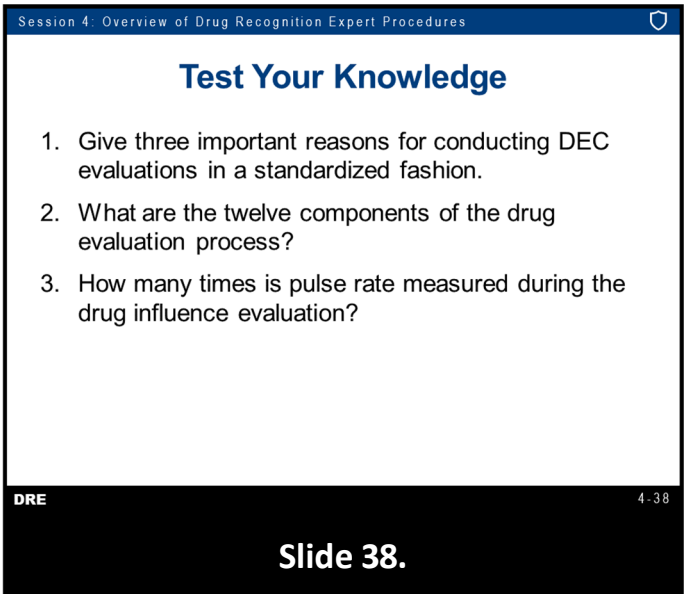
Specimen Containers: The type of container for collecting the sample will be dictated by the type of sample taken and the laboratory requirements where it will be tested. Containers should be sterile and have a lid that will seal tightly to prevent leaks.

M. Video Demonstrations (Optional)

Slide 36.



Slide 37.



Test Your Knowledge

1. Give three important reasons for conducting DEC evaluations in a standardized fashion.
2. What are the twelve components of the drug evaluation process?
3. How many times is pulse rate measured during the drug influence evaluation?

International Association of Chiefs of Police

Drug Evaluation and Classification Program

Drug impairment 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:

- _____ Modified Romberg Balance
- _____ Walk and Turn
- _____ One Leg Stand
- _____ Finger to Nose

_____ 6. Vital signs and second pulse

_____ 7. Dark room examinations

_____ 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

DRUG IMPAIRMENT EVALUATION

Drug Influence Evaluation Form v.2021-03

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #

Arresting Officer (Name, ID#)	SFST Trained ☐ Yes ☐ Yes (not used) ☐ No	Arresting Officer's Agency	Recorder/Witness

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash ☐ None ☐ Fatal ☐ Injury ☐ Property	DRE Secondary Caution Time ☐ Yes ☐ No

Eval. Start time	Breath Test ☐ No Grounds ☐ Refused Result: Instrument #:	Subject's Name (Last, First, Middle)	Date of Birth	Gender

Date Examined / Time / Location	What have you eaten today? When?	What have you been drinking? How much?	Time of last drink?

Time now? / Actual /	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 disabilities? ☐ Yes ☐ No	Are you under the care of a doctor or dentist? ☐ Yes ☐ No

Do you take any medication or drugs? ☐ Yes ☐ No	Attitude	Coordination

Speech	Breath Odour	Face

Corrective Lenses ☐ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	Eyes ☐ Normal ☐ Bloodshot ☐ Watery	Blindness ☐ None ☐ Left ☐ Right	Tracking ☐ Equal ☐ Unequal

Pupil Sizes ☐ Equal ☐ Unequal (explain)	Resting Nystagmus ☐ Yes ☐ No	Vertical Nystagmus ☐ Yes ☐ No	Able to Follow Stimulus ☐ Yes ☐ No	Eyelids ☐ Normal ☐ Droopy

Pulse and Time

1. _____ @ _____
2. _____ @ _____
3. _____ @ _____

HGN	Left	Right
Lack of Smooth Pursuit		
Maximum Deviation		
Angle of Onset		

Convergence

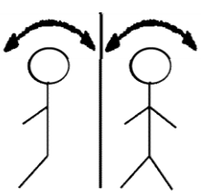
Right Eye Left Eye

One Leg Stand

/30 /30

Modified Romberg Balance

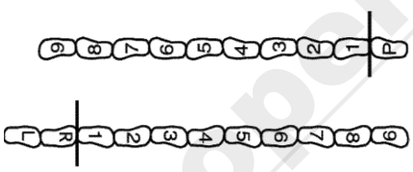
Approx. Approx.



Walk and Turn

Cannot keep balance _____

Starts too soon _____



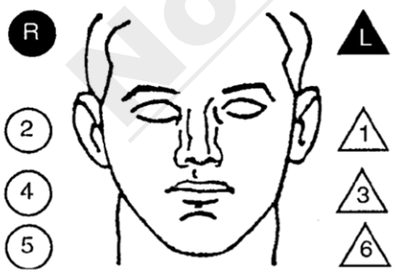
	1st nine	2nd nine
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms		
Actual steps taken		

L	R	
		Sways while balancing
		Uses arms to balance
		Hopping
		Puts foot down

Time estimation & questions (p.2) _____ estimated as 30 seconds	Describe turn	Cannot do test (explain)	Type of footwear

Finger to nose

(Draw lines to spots touched)



Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye			
Right Eye			

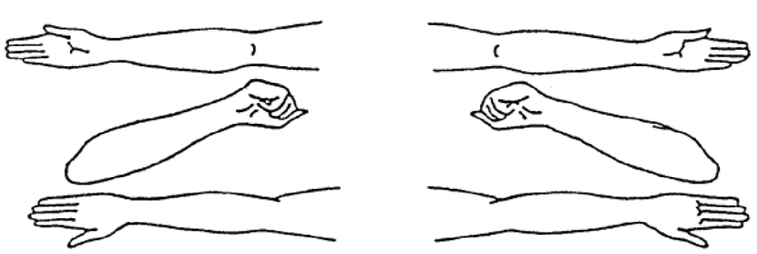
Rebound dilation ☐ Yes ☐ No

Reaction to light ☐ Normal ☐ Slow ☐ Little to none visible

Nasal area

Oral cavity

Right Arm **Left Arm**



Blood Pressure _____/_____	Temperature °C

Muscle tone: ☐ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?

Eval. stop time	Refusal ☐ Entirety ☐ Partly ☐ Tox. Sample Comments:	Toxicological Sample ☐ Urine ☐ Blood Demand time: Sample Time:	Reviewed by (instructor name)

Evaluator Signature	Approved by (instructor signature)	DRE # Date

Opinion of Evaluator

☐ Not Impaired ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anaesthetic ☐ Inhalants ☐ Operational

☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis ☐ Training

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Estimated time for session: 1 Hour 30 Minutes

5 DRE
PRELIMINARY TRAINING

PSYCHOPHYSICAL TESTS

LEARNING OBJECTIVES

- Administer the four divided attention tests used in the drug influence evaluation process
- Document the subject's performance of those tests

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participant-Led Demonstrations
- Hands-on Practice

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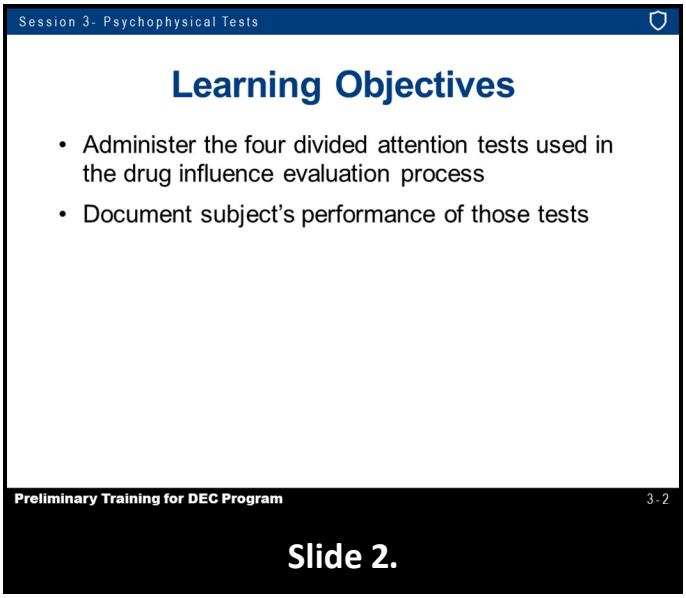
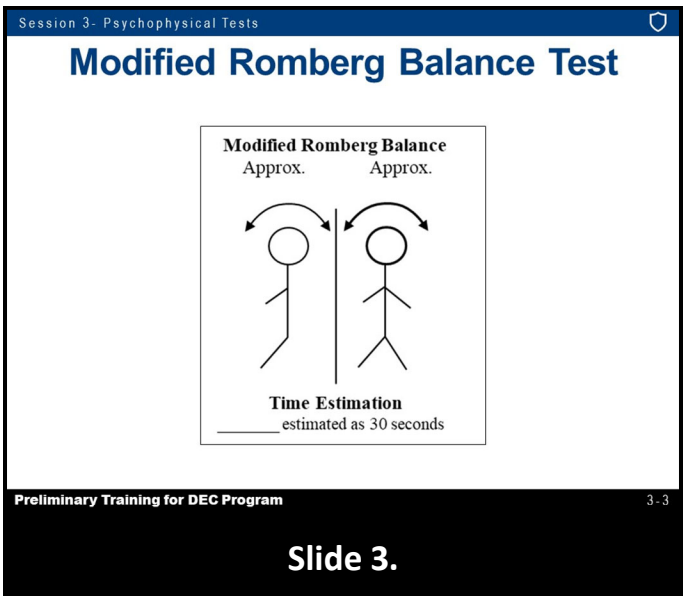


Slide 2.

Four divided attention psychophysical tests are administered in the Drug Recognition Expert (DRE) evaluation – MRB, WAT, OLS, and FTN. The WAT and OLS, as well as Horizontal Gaze Nystagmus (HGN), have been scientifically validated by conducting controlled research to demonstrate their reliability. The MRB and FTN have not been subjected to that sort of scrutiny, however, if properly administered and recorded, they are very credible evidence of impairment.

A. Modified Romberg Balance (MRB)

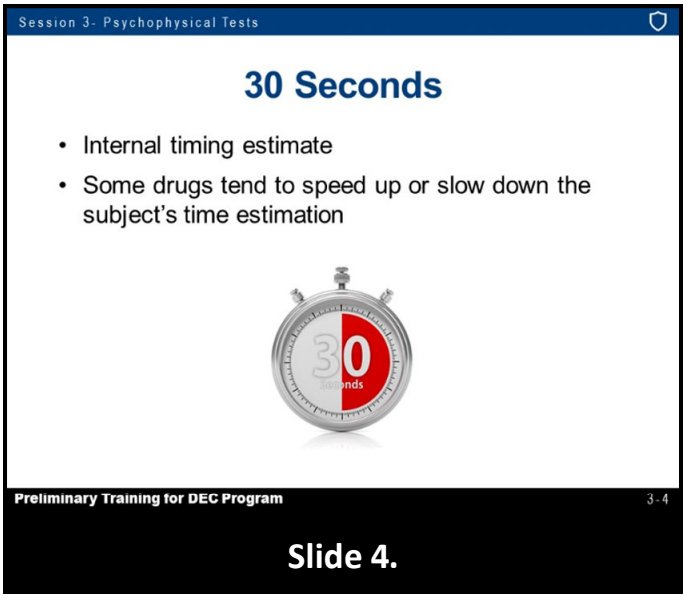


Slide 3.

The MRB is the first divided attention test administered during the drug influence evaluation.

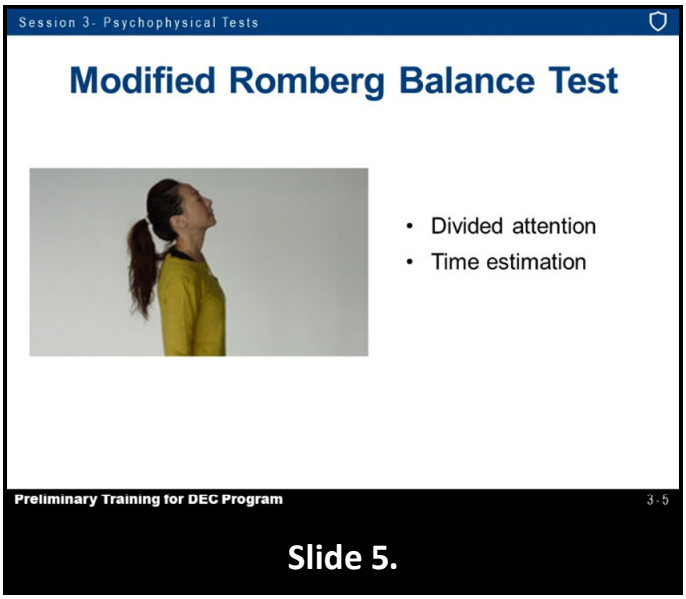
The test requires the subject to stand with the feet together and the head tilted back slightly and with the eyes closed.

The test also requires the subject attempt to estimate 30 seconds; the subject must be instructed to open the eyes and tilt the head forward and say "stop" when they think thirty seconds has elapsed.



Slide 4.

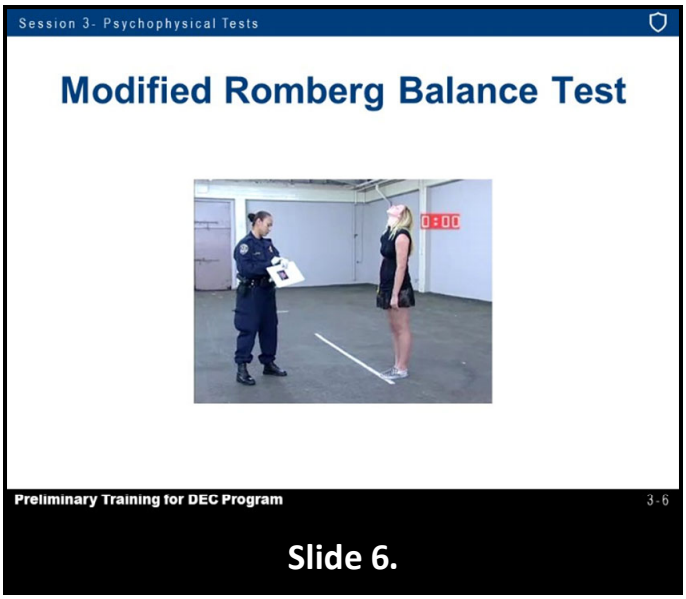
Some drugs tend to "speed up" the subject's time estimation so the subject may open the eyes after only 10 or 15 seconds have gone by. Other drugs may "slow down" the time estimation. Sometimes the drugs affect the subject's divided attention to the point where they won't remember to open the eyes until instructed to do so by the DRE.



Slide 5.

Drug impairment can affect both divided attention and the subject's internal time estimation mechanism and can vary among people. Performance outside the range of plus or minus 5 seconds should be used cautiously and considered with the totality of the decision process. The DRE modified version of the original Romberg Balance Test is a divided attention test as well as a possible measurement of the person's internal timing estimates. The DRE must look at a timing device as soon as the subject starts the test (i.e. when they tilt their head back and close their eyes) and must record the actual amount of time that elapses until the subject opens his or her eyes. The DRE should not close their eyes while demonstrating this test for safety reasons.

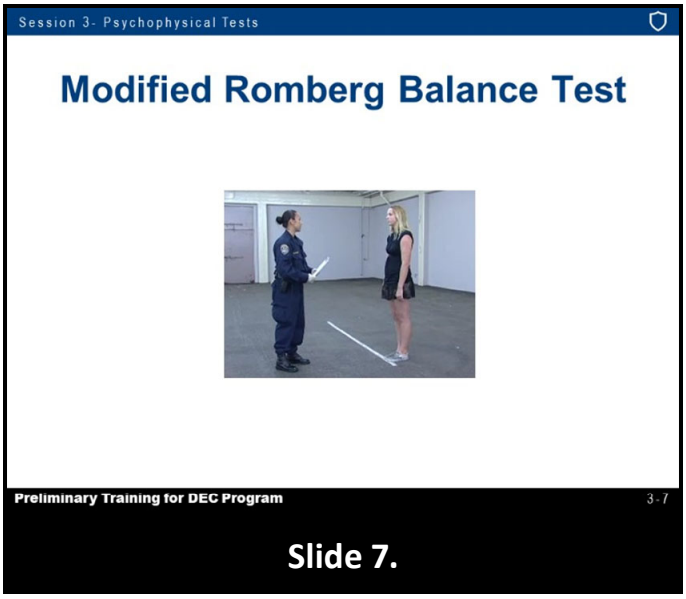
The DRE must record how much time actually elapsed from the start of the test until the subject opened their eyes and said “stop”. If the subject continues to keep their eyes closed for 90 seconds, the DRE should stop the test and record the fact it was terminated at 90 seconds.



Slide 6.

Administrative Procedures: Instruction Stage

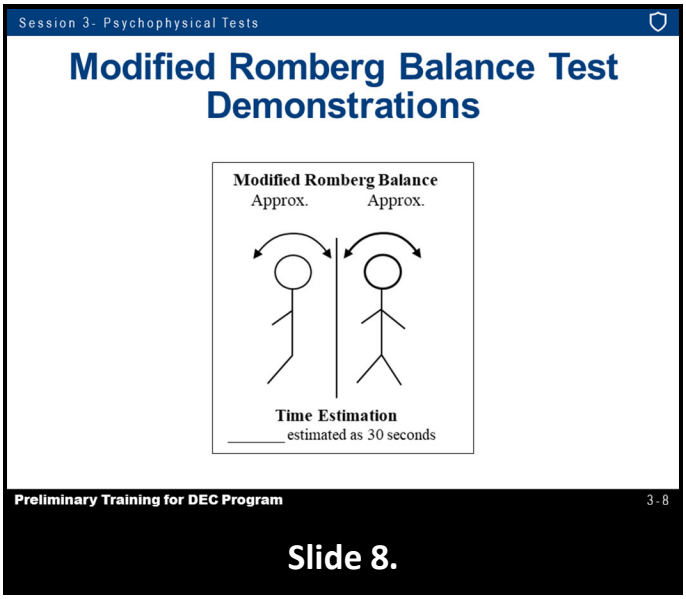
1. Stand straight with your feet together and your arms down at your sides.
2. Remain in this position while I finish giving the instructions.
3. Do not begin the test until told to do so.
4. Ask if the subject understands the instructions. **Make sure to obtain a verbal response from the subject.**
5. When I ask, tilt your head back and close your eyes.
6. When I tell you to begin, tilt your head back and stay in that position until you think 30 seconds have gone by.
7. As soon as you think 30 seconds have gone by, open your eyes, tilt your head forward and say ‘Stop’.
8. Do you understand? Make sure to obtain a verbal response from the subject.
9. Look at your timing device and pick a convenient time to start the test. Instruct the subject to tilt their head back.
10. Instruct the subject to close their eyes.
11. Instruct the subject to begin. DREs should measure the elapsed time from the subject tilting their head until either the subject says ‘Stop’, or the test is terminated.



Slide 7.

Administrative Procedures: Balancing Stage

1. Look at your timing device and pick a convenient time to start the test.
2. Tell the subject to tilt their head back.
3. Tell the subject to close their eyes.
4. Tell the subject to begin or start the test.
5. Keep track of time while the subject performs the test.
6. Check subject for presence of tremors (eyelid and/or body) and sway.
7. When the subject opens their eyes, ask them “how much time was that?”.
8. Record how much time actually elapsed from the start of the test until the subject opened their eyes or was told to stop.
   If the subject continues to keep their eyes closed for 90 seconds, stop the test and record the fact it was terminated at 90 seconds.

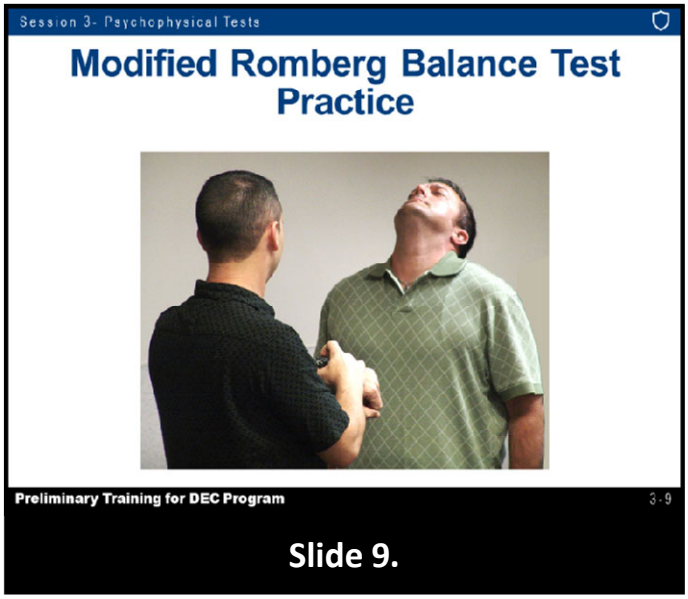


Slide 8.

Recording Results of the MRB Test

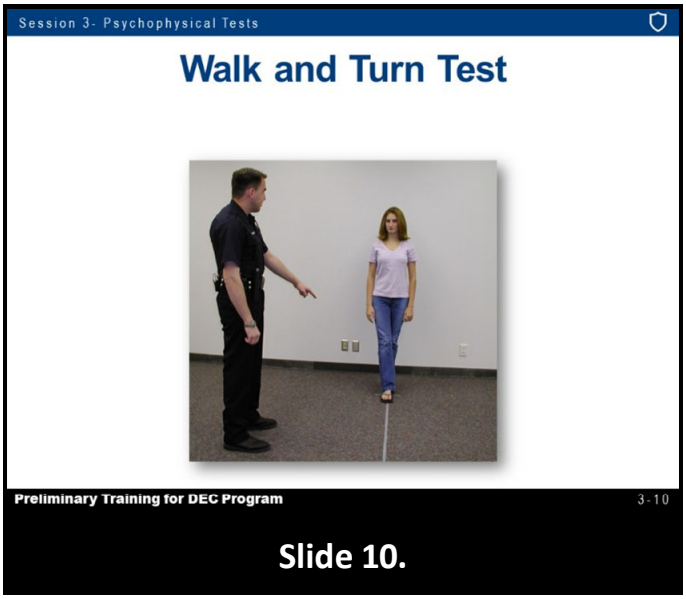
The major items that need to be recorded for the MRB test are the amount the subject sways and the actual amount of time the subject keeps the eyes closed.

To record swaying, the DRE must estimate how many inches or centimeters (cm) the subject sways, either front-to- back, left-to-right, or circular. Example: If the subject sways approximately two inches (5 cm) toward the left and approximately two inches (5 cm) toward the right, the DRE should write the number "2" (or 5 cm) on each side of the "stick figure" that shows left-to-right movement. To record the subject's time estimate, simply write the number of seconds the subject kept his or her eyes closed.
Research has indicated a non-impaired subject's time estimation will typically be within +/- 5 seconds of 30 seconds.



Slide 9.

B. Walk and Turn (WAT)



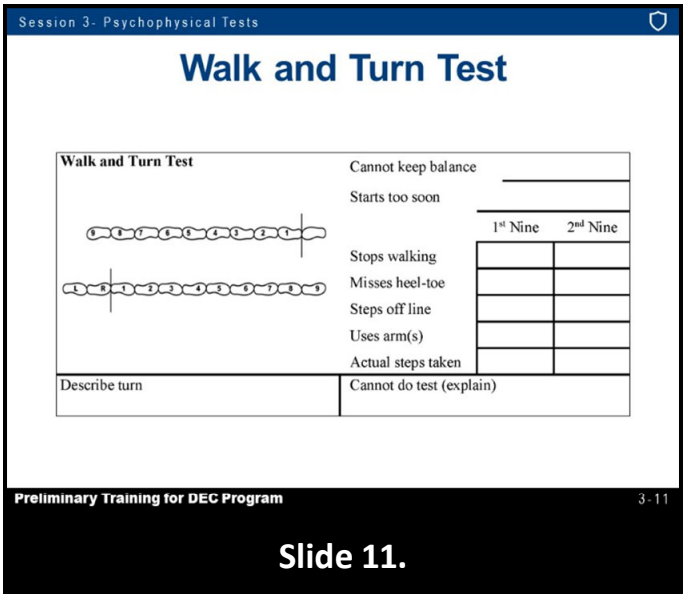
Slide 10.

WAT is the second divided attention test administered during the drug influence evaluation.

The test is administered the same way we have used it for Standardized Field Sobriety Testing (SFST) purposes: Monitor the practice and offer coaching and constructive criticism, as appropriate and Review of WAT administrative procedures.

The test has two stages: the instruction stage and the walking stage. During the instruction stage, the subject must stand heel-to-toe with the right foot ahead of the left foot with the heel of the right foot against the toe of the left foot and keeping the arms at the sides.

Demonstrate the stance the subject must maintain during the instruction stage. If the subject fails to maintain the starting position during your instructions, discontinue the instructions and direct the subject back to the starting position before continuing. The subject is told to not start walking until told to do so. The subject must be told to take nine heel-to-toe steps on the line, to turn around keeping the front or lead foot on the line and to turn by taking a series of small steps with the other foot, and to return nine heel-to-toe steps down the line.

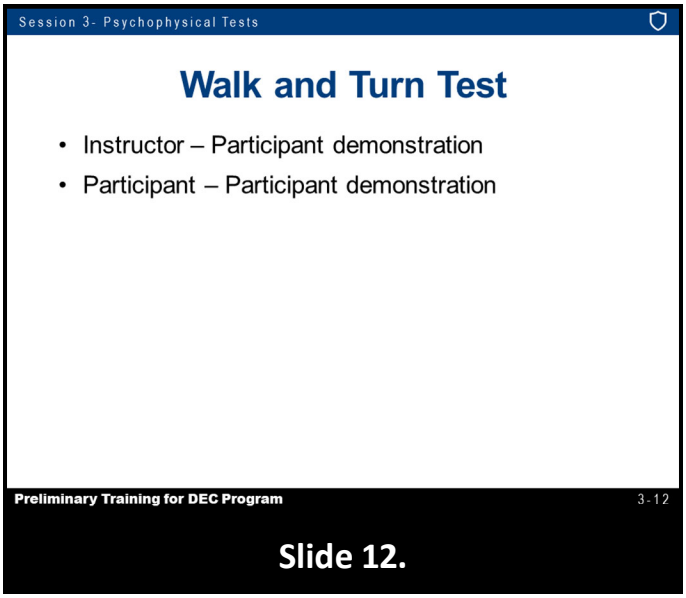


Slide 11.

Officers should be mindful of safety precautions when providing instructions for the WAT. By demonstrating the test perpendicular to the subject's "line" and initiating the demonstration with the subject to the left of the officer, the officer will properly demonstrate the turn WITHOUT turning his/her back to the subject. Officers should always be aware of their surroundings and environment when conducting Impaired Operation roadside investigations.

- The subject must be told to keep their arms at the sides at all times
- The subject must be told to watch his or her feet while walking
- The subject must be told to count the steps out loud
- The subject must be told not to stop walking until the test is completed
- The subject should be asked if he/she understands the instructions
- Once the subject acknowledges his/her understanding of the instructions, instruct the subject to begin the test

If the subject does not count out loud or watch his/her feet, remind him/her to perform these tasks. This interruption will not affect the validity of the test and is essential for evaluating divided attention.



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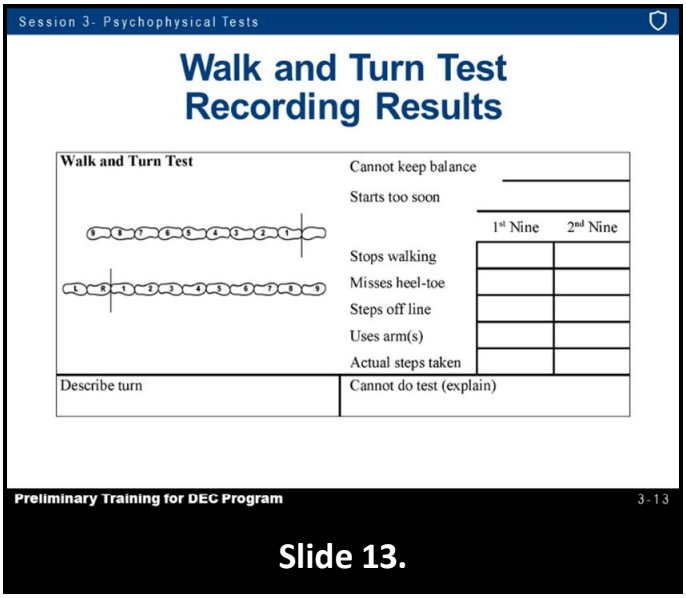


Slide 13.

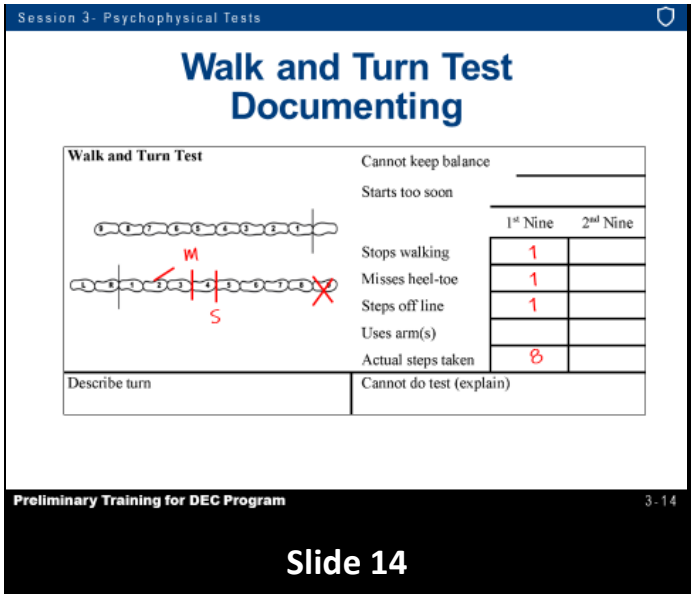
Recording Results of the WAT Test

We record the very same clues on this test we use for SFST purposes.

Instruction stage clues:

If the subject cannot maintain balance while listening to instructions (feet break away from the heel-to-toe stance), draw a slash mark at an angle in the direction the subject stepped out of the instruction position.

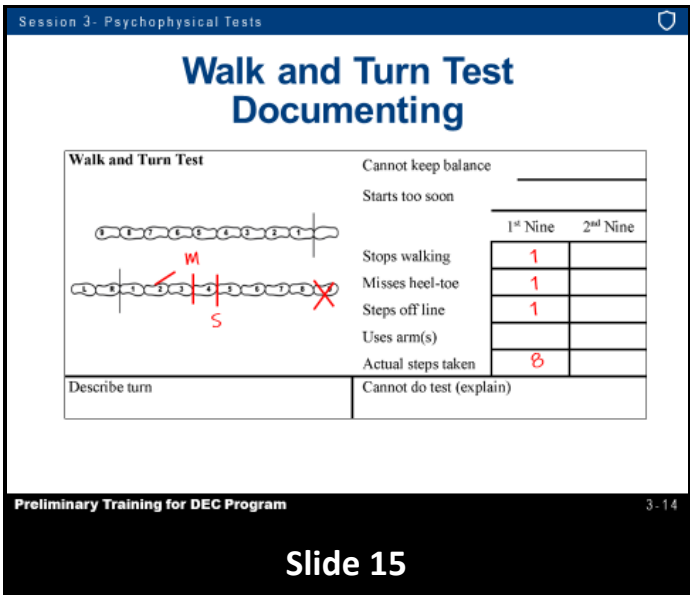
Record if the subject starts too soon (i.e., subject starts walking before told to do so).



Slide 14

Walking stage clues:

- Stops while walking
- Does not touch heel-to-toe [one-half inch (1 cm) or more]
- Steps off the line
- Uses arm(s) to balance [6" or more(15 cm +)]
- Improper turn
- Record the actual number of steps taken. If the subject takes additional steps, draw in the additional steps to reflect the actual number of steps taken. If the subject takes less than nine steps, place an (x) in the missing steps. If subject stops walking, record it by drawing a vertical line from the toe at the step at which the stop occurred. Do this for each of the nine steps.



Slide 15

How many times during first nine steps? How many times during second nine steps?

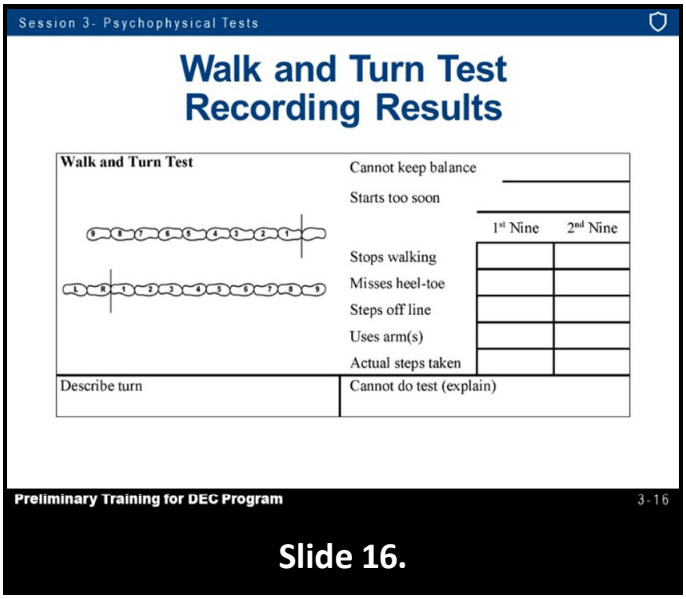
If subject fails to touch heel-to-toe, record how many times this happens.

If subject steps off the line while walking, record it by drawing a line from the appropriate footprint at the angle in the direction in which the foot stepped. Do this for each nine steps.

If the subject steps off the line, indicate with a half of slash mark at an angle in the direction the step was taken

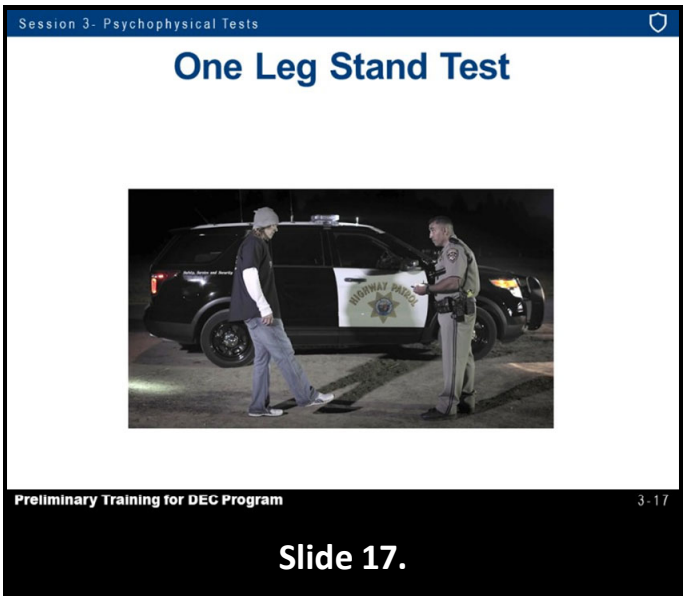
If the subject misses heel-to-toe, indicate with a slash mark between the feet and label with an "M". The "M" indicates "missed".

DREs are not limited to only documenting the above evidence during the test. DREs are encouraged to record sufficient evidence to deliver effective testimony in court.



Slide 16.

C. One Leg Stand (OLS)



Slide 17.

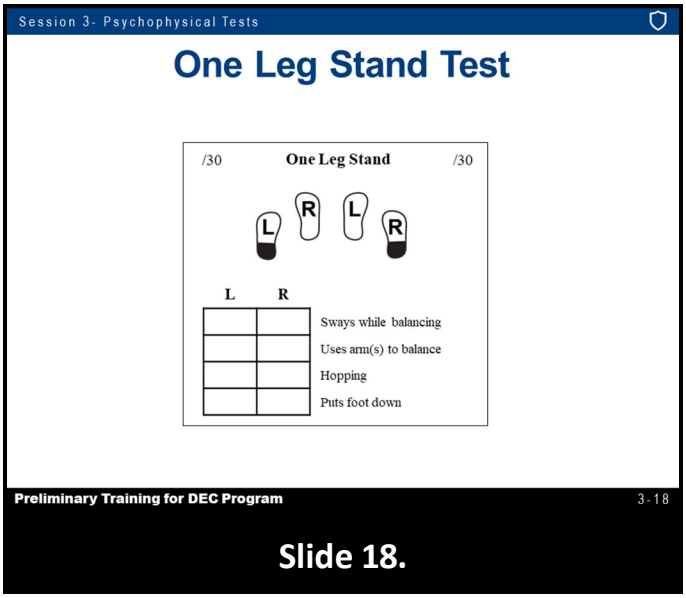
OLS is the third divided attention test administered during the drug influence evaluation. For drug evaluation purposes, OLS is given twice to the subject. First, the subject is required to perform the OLS while standing on the left foot.

Next, they are required to perform the test while standing on the right foot. Otherwise, the OLS is used in the same fashion as in SFST.

Review of OLS Administrative Procedures

The test has two stages, the instruction stage and the balance and counting stage. During the instruction stage, the subject must stand with the feet together, arms at the side, facing the examiner. Demonstrate the stance the subject is required to maintain.

The subject must be told they will have to stand on the left foot and raise the right foot approximately **6" (15 cm)** off the ground, with both legs held straight and the raised foot parallel to the ground. The examiner must demonstrate the one-leg stance. Emphasize the subject must keep the foot raised throughout the test.

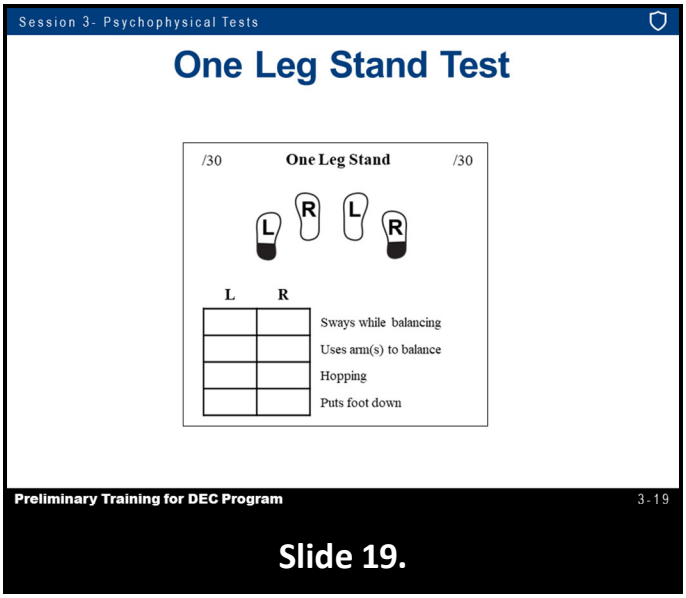


Slide 18.

The subject must be told they must look at the raised foot during the test. Emphasize the examiner should not look at his or her own foot while giving the instructions; for safety reasons, the examiner must keep the eyes on the subject at all times.

The subject must be told they will have to count out loud in the following manner: "one thousand one, one thousand two, one thousand three" and so on until told to stop. After giving the instructions, the examiner should ask the subject if they understand.

After the subject has completed the test on the left foot, they must be told to repeat the test on the right foot.



Slide 19.

Recording Results of the OLS

For drug evaluation purposes, we use the same clues on the OLS we use for SFST. The OLS clues are:

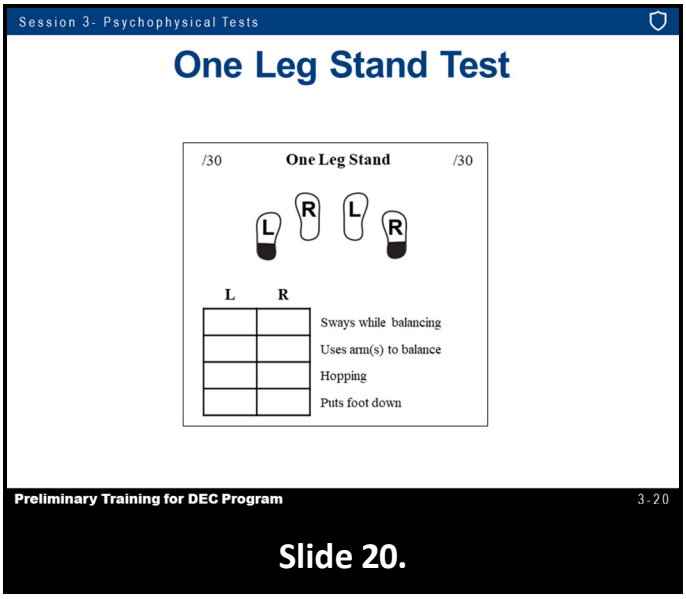
- Sways while balancing
- Uses arm(s) to balance
- Hopping
- Puts foot down

Indicate above the feet the number they were counting when they put their foot down.

Check marks should be made or a number recorded to indicate the number of times the subject swayed, used arm(s) to balance, hopped, or put their foot down.

The subject's actual count during the 30 seconds should be documented in the top area of the box above the foot on which the subject was standing.

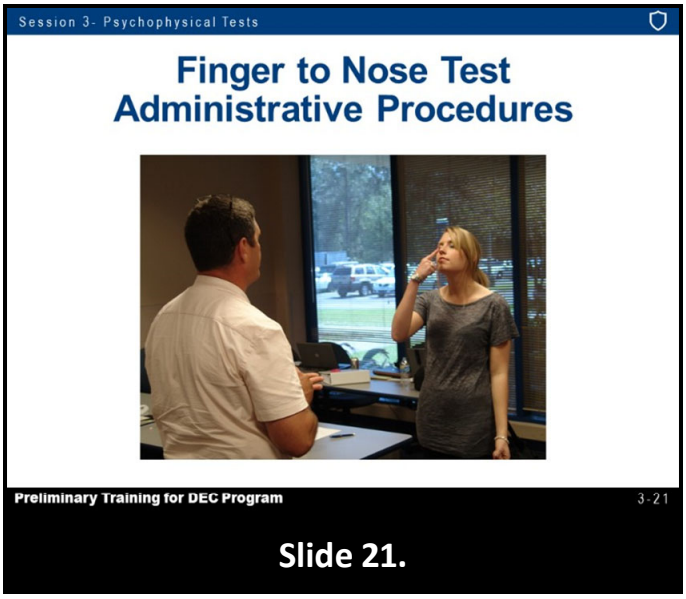
DREs should also be observant for the presence of other indicators, such as body tremors and improper counting during this test.



Slide 20.

The original SCRI studies suggested individuals over 65 years of age, people with back, leg, or inner ear problems, or people who are overweight by 50 or more pounds (22.5 kg+) may have difficulty performing this test. Less than 1.5% of the test subjects in the original studies were over 65 years of age. There was no data containing the weight of the test subjects included in the final report. Also, the SCRI studies suggest individuals wearing heels more than 2 inches (5 cm) high should be given the opportunity to remove their shoes.

D. Finger to Nose (FTN)

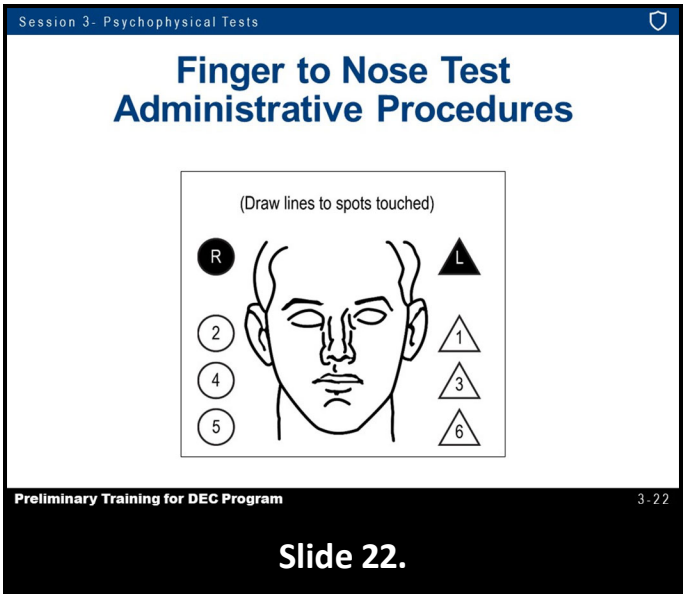


Slide 21.

The FTN is the final divided attention test used in the drug influence evaluation. FTN differs from the other three tests in that the examiner must continue to give instructions to the subject throughout the test.

Administrative Procedures for FTN

- The subject must be told he/she will be given a series of commands, i.e., "left, right, etc." to indicate which fingertip is to be brought to the tip of the nose
- The subject must be told to stand with feet together, arms down at the sides, facing the examiner
- The examiner should demonstrate the stance
- The subject must be told to close his/her hands, rotate the palms forward and then to extend the index fingers from the closed hands
- The examiner must tell subject they will be asked to touch the tip of the index finger to the tip of the nose



Slide 22.

- The examiner must demonstrate to the subject how they are expected to touch the fingertip to the nose (without actually touching the nose)
- Demonstrate: When I say 'left,' touch the tip of your left index finger to the tip of your nose
- The examiner must tell the subject they are expected to return the arm to the side immediately after touching the fingertip to the nose
- Demonstrate the movement of the fingertip to the nose by standing at an angle to the subject so he/she can see the proper method for touching the nose
- The subject must be told to tilt the head back slightly and to close the eyes and keep them closed until the examiner says to open them
- The examiner should demonstrate the stance with head tilted back, arms at the sides with index fingers extended

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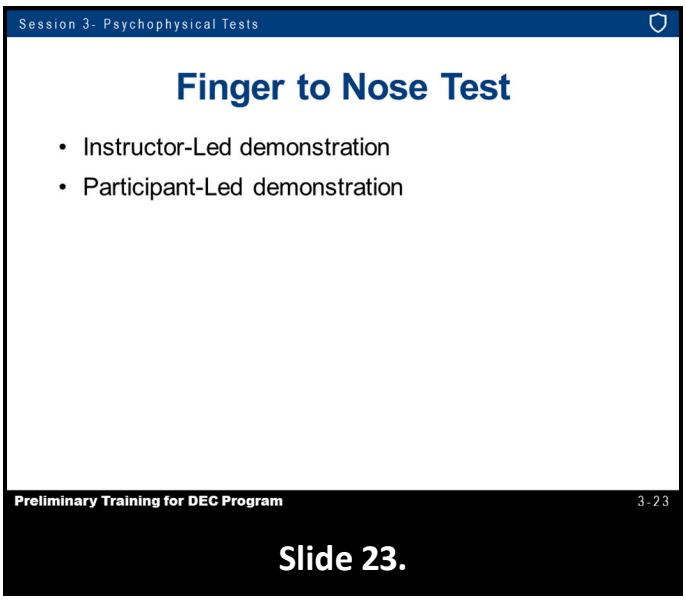

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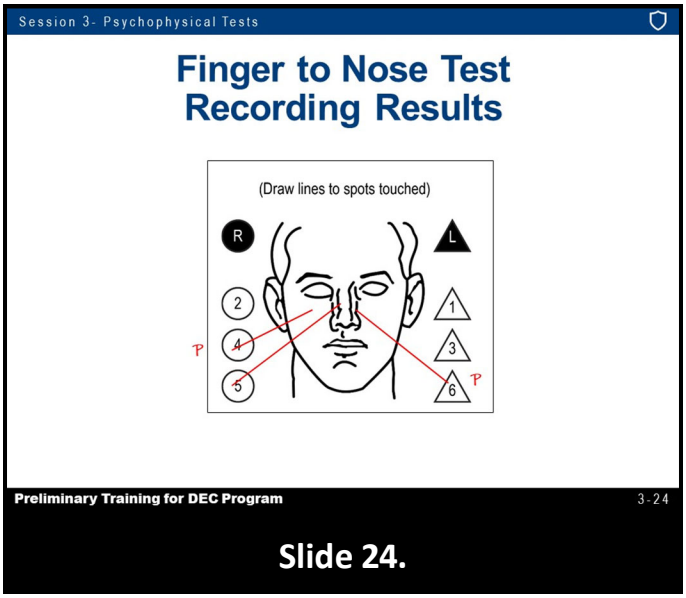
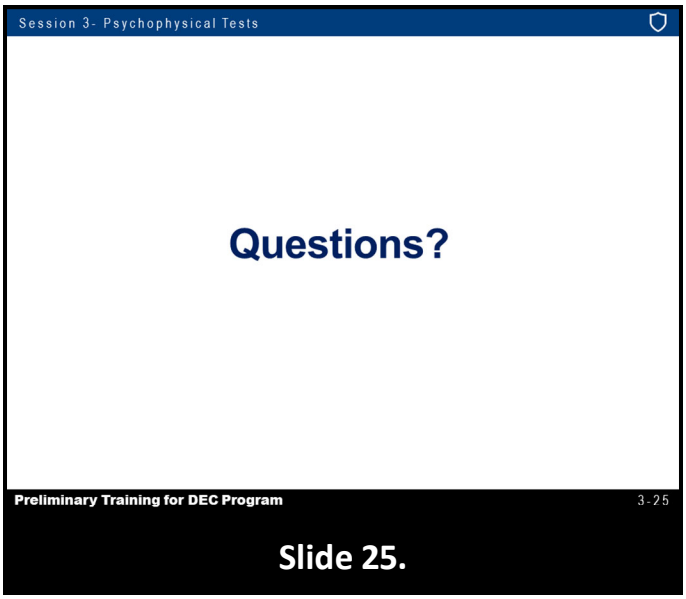


Slide 24.

The results of FTN test are recorded by drawing a "map" showing where the fingertips touched on each attempt. A line should be drawn to the appropriate circle or triangle to indicate where the subject touched their nose. Suggestion: If the DRE draws the line from the place where the subject touches to the appropriate circle or triangle, it enables them to draw a straighter line.



Slide 25.

Estimated time for session: 1 Hour 45 Minutes

6 DRE

EYE EXAMINATIONS

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- State the purpose of various eye examinations in the Drug Evaluation and Classification (DEC) Program drug impairment evaluation procedure
- Describe the administrative procedures for the eye examinations
- Describe the clues for each eye examination
- Conduct the eye examinations and note the clues observed
- Prepare complete, clear, and accurate records of the eye examinations

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- Instructor-Led Presentation/Demonstrations
- Participant-Led Demonstrations
- Participants' Hands-On Practice
- Reading Assignments

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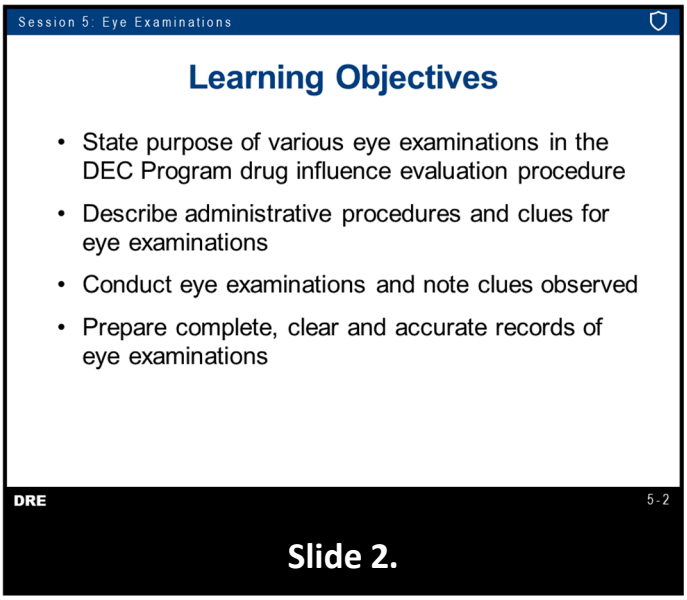
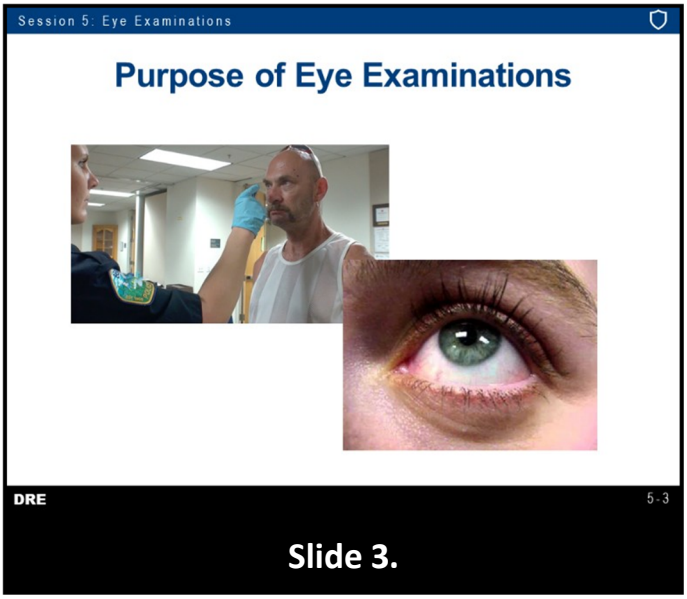


Slide 2.

A. Purpose of the Eye Examinations



Slide 3.

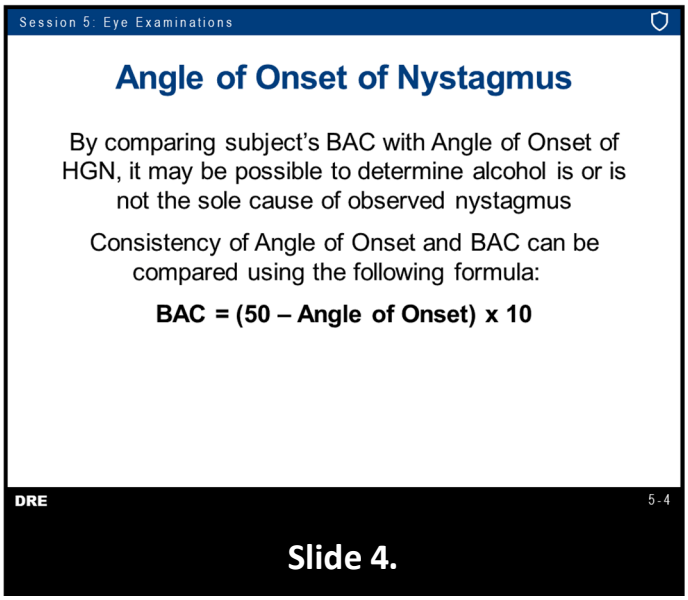
The principal purpose of the eye examinations is to obtain articulable facts indicating the presence or absence of specific categories of drugs. Certain drug categories usually cause the eyes to react in specific ways. Other drug categories usually do not cause those reactions. The tests of Horizontal Gaze Nystagmus (HGN) and Vertical Gaze Nystagmus (VGN) provide important indicators of the drug categories that may or may not be present.

If HGN is observed, it is likely the subject may have administered alcohol or another CNS Depressant, an Inhalant, a Dissociative Anesthetic, or a combination of those. If VGN is observed, the implication may be the subject administered a large dose of alcohol for that individual, a Dissociative Anesthetic, such as PCP, or high doses of other Depressants or Inhalants.

Any deficiency in eye movement or pupil response, especially if it is acquired or of recent onset, can impair a person's ability to see properly. Drug impairment, including from alcohol, can affect eye movements in several ways, depending on the nature of the intoxicant used. Drug use, including alcohol, is understood to cause physiological changes that are of recent onset and acquired:

1. Lack of smooth pursuit can impair the ability to see details (such as when reading a sign) or make accurate observations (as of the direction and speed of another vehicle) when there is relative motion between the observer and the target (one or the other is moving, or both are moving but at different speeds and/or different directions);
2. Acquired nystagmus (either at or before maximum deviation) causes a reduction of visual acuity, primarily because of the suppression of visual processing during the fast phase of the nystagmus; and
3. Lack of convergence can cause double vision (diplopia) when looking at objects up close or when frequently or repeatedly changing viewing distance between far and near (such as when looking back and forth from the road to the car's dashboard).

Individuals with long-standing abnormality or deficiency often learn to compensate in some manner. One example includes making a head movement rather than an eye movement when someone has a natural lack of smooth pursuit, not due to intoxication, illness, or trauma. Likewise, someone who has a constant and long-standing nystagmus may be able to detect and extract visual information between successive eye movements. Therefore, while the appearance to the officer may be abnormal, the person is not necessarily impaired.



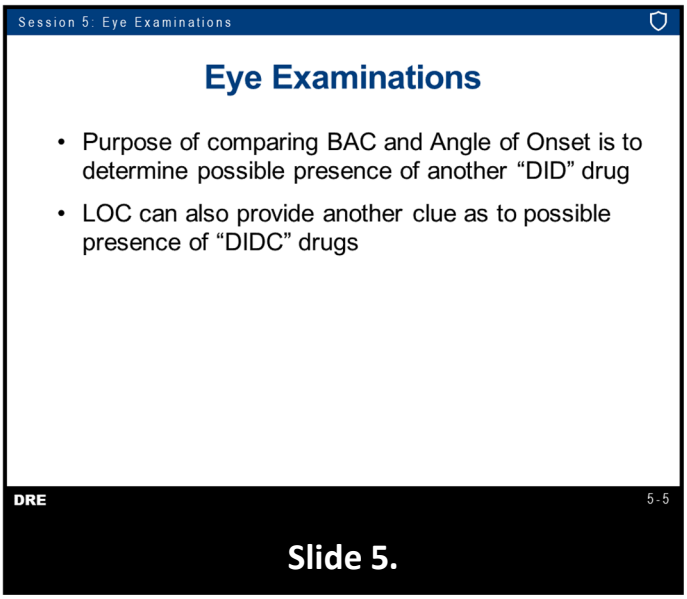
Slide 4.

By comparing the subject's blood alcohol concentration (BAC) with the Angle of Onset of HGN, it may be possible to determine that alcohol is or is not the sole cause of the observed nystagmus.

Clarification: If the angle of onset is significantly inconsistent with the BAC, the implication may be the subject has also taken a Dissociative Anesthetic, such as PCP, an Inhalant, or some CNS Depressant other than alcohol.

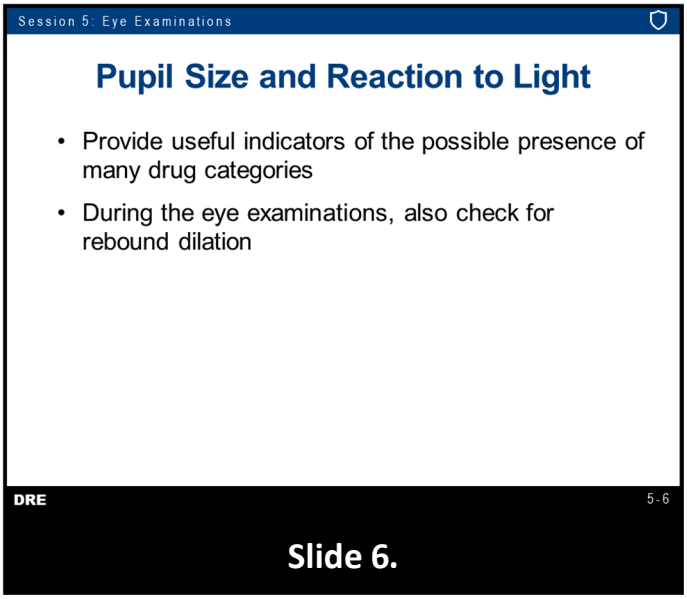
The consistency of the Angle of Onset and BAC can be compared using the following formula: BAC = (50 – Angle of Onset) x 10.

Example: If onset angle is 35 degrees, then: BAC = (50 – 35) x 10 = 150 mg%. Keep in mind this formula is only a statistical approximation. It is not an exact relationship for all subjects at all times. The formula can easily be "off" by 50 mg% or more even though the subject has consumed no drug other than alcohol.



Slide 5.

The purpose of comparing BAC and Angle of Onset is to obtain a general indication of the possible presence of another CNS Depressant, a Dissociative Anesthetic, or an Inhalant. The check for Lack of Convergence (LOC) can provide another cue as to the possible presence of Depressants, Inhalants, Dissociative Anesthetics ("DID" drugs). LOC is also an indicator of the possible presence of Cannabis.



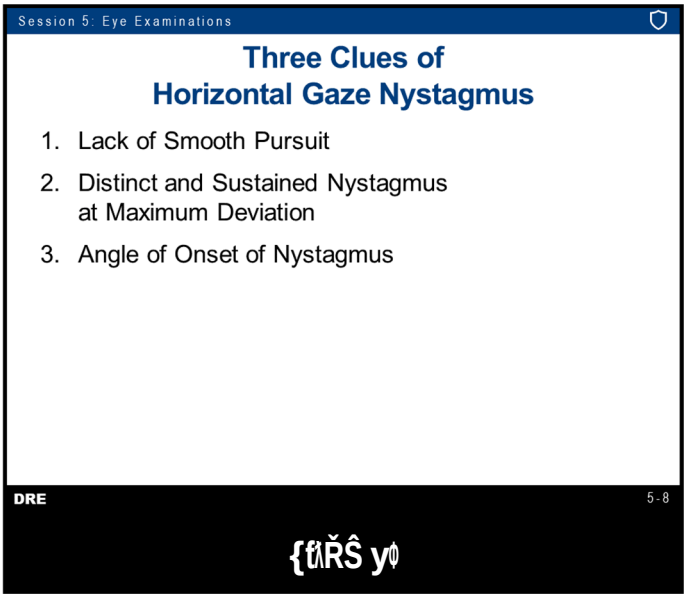
Slide 6.

The checks of pupil size and Reaction to Light provide useful indicators of the possible presence of many drug categories. CNS Depressants, CNS Stimulants, and Inhalants will normally cause the pupils to react slowly. There will generally be little movement with Narcotic Analgesics. CNS Stimulants and Hallucinogens normally will cause the pupils to dilate. Cannabis normally causes dilation of the pupils, although this isn't always observed.

Some specific Inhalants may cause pupil dilation. Narcotic Analgesics will normally cause observable constriction of the pupils. During the eye examinations you will also check for rebound dilation.

To review, the Eye Examinations consists of: HGN; VGN; and LOC.

B. Procedures and Clues



HGN test consists of three separate checks, administered independently to each eye. There are three clues of HGN: Lack of Smooth Pursuit; Distinct and Sustained Nystagmus at Maximum Deviation; and Angle of Onset of Nystagmus. Prior to checking for the three clues of nystagmus, check for Equal Pupil Size, Equal Tracking, and Resting Nystagmus. There should be a noticeable break between equal tracking and lack of smooth pursuit.

First Clue: Lack of Smooth Pursuit

If the subject is wearing contact lenses, note that fact on the report but don't have the subject remove them; the presence of contact lenses will not negatively affect the subject's ability to do the test.

If the subject is wearing eyeglasses, have him or her remove them.

Position the stimulus approximately 12 – 15 inches (30-38 cm) in front of the subject's nose. Hold the tip of the stimulus slightly above the level of the subject's eye.

Instruct the subject: Please look at the top of the stimulus. Keep your head still, and follow the top of the stimulus when I move it. Only move your eyes, not your head. Do you understand?

The first check is for "Lack of Smooth Pursuit." Move the stimulus smoothly all the way to the subject's left side and back all the way to the right side. Do not arc the stimulus – keep it in a straight line from side to side.

Make at least two complete passes of the stimulus: to the left side, to the right side, back to the left side, and finally back to the right side. When doing this, don't pause at the center of the subject's face; move all the way to the left, then all the way to the right, then again, all the way to the left and back all the way to the right, in a smooth, continuous motion. While the eye is moving, examine it for evidence of a Lack of Smooth Pursuit.

Second Clue: Distinct and Sustained Nystagmus at Maximum Deviation

The second check is for "Distinct and Sustained Nystagmus at Maximum Deviation."

Again, position the stimulus as before.

Move the stimulus all the way to the subject's left side and hold it there so the subject's eye is turned as far to the side as possible.

Hold the eye at that position for a minimum of 4 seconds, to check carefully for jerking that may be present and is distinct.

When you have completed this check for the left eye, repeat the process for the right eye. Then, do it once again for the left eye, and again for the right, to verify distinct and sustained nystagmus is or is not present.

A slight or barely visible tremor is not sufficient to consider this clue present. A definite, sustained jerking must be seen.

Third Clue: Angle of Onset of Nystagmus

The final check is for the "Angle of Onset of Nystagmus."

Position the stimulus as before.

Slowly move the stimulus to the subject's left side, carefully watching the eye for the first sign of jerking. The stimulus should be moved at a speed that takes approximately four seconds or more to move from center to approximately 45 degrees. Moving the stimulus at a slower speed aids the officer in observing when the eye first begins to jerk.

When you see the eye jerk, stop moving the stimulus, hold it at that position, and verify the jerking continues. You should hold the stimulus in place for at least one second, or longer if you believe it necessary to positively determine nystagmus is present. If jerking is not evident with the stimulus held steady, you have not located the point of onset. Therefore, resume moving the stimulus slowly toward the side until you notice the jerking again.

When you locate the point of onset nystagmus, stop moving the stimulus and estimate the angle of onset. If the nystagmus is not observed prior to approximately 45 degrees, stop and hold the stimulus at a 45-degree angle to verify the nystagmus is not present.

Then, repeat the process for the right eye.

Then, again check onset for the left eye, and again for the right.

- 30 degrees
- 35 degrees
- 40 degrees
- 45 degrees

Slide 9.

Position the stimulus horizontally, approximately 12 – 15 inches (30-38 cm) in front of the subject's nose. Instruct the subject to hold the head still and follow the stimulus with the eyes only.

Raise the stimulus from the centre of the nose until the subject's eyes are elevated as far as possible (look for a raise in the eyebrows). This movement should take approximately 2 seconds to ensure the subject can follow the stimulus. Watch closely for evidence of the eyes jerking upward.

Slide 10.

The test for LOC determines whether the subject is able to cross his or her eyes.

Lack of Convergence (LOC) means an inability to cross the eyes. If the subject to be tested routinely wears eyeglasses during reading and near visual tasks, the eyeglasses should be worn for the LOC check if they are readily available.

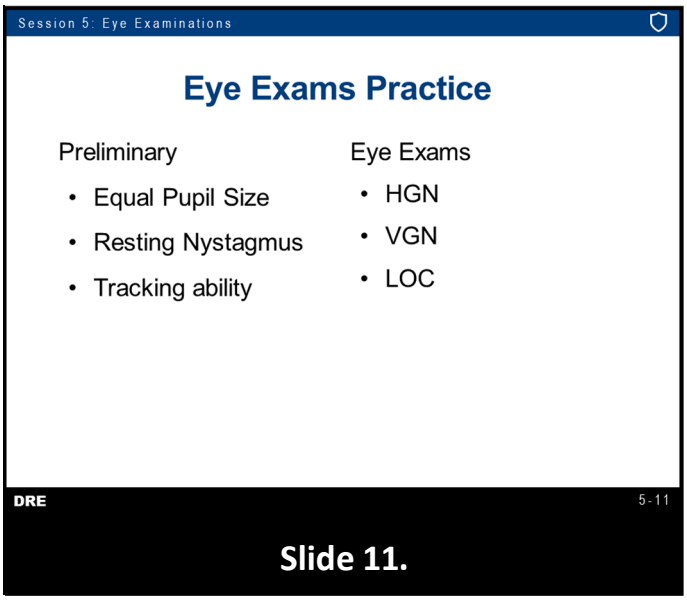
If the subject's eyeglasses are not readily available, the DRE should still conduct the test.

Position the stimulus approximately 12-15 inches (30-38 cm) in front of the subject's face. Instruct the subject to hold their head still and follow the stimulus with the eyes only. Keep the object 12-15 inches (30-38 cm) away from the subject's nose and start to move the stimulus slowly in a circle approximately the same size as the subject's face.

Once you have verified the subject is tracking the stimulus, stop moving in a circular manner with the stimulus above eye level, pause and then move it down slowly and steadily toward the bridge of the nose.

Hold the stimulus near the bridge of the nose for approximately one (1) second. The stimulus should not come any closer than approximately two (2) inches (5 cm) from the bridge of the nose.

Carefully observe the subject's eyes to determine whether both eyes converge. Repeat twice to confirm your observations. It is important to understand you are confirming the result (can or cannot converge), and not the specific movement of the eyes. If the eyes do not converge, they should normally move in a very similar way on both attempts. If they do not however, it is the end result that matters and the result can be considered confirmed.



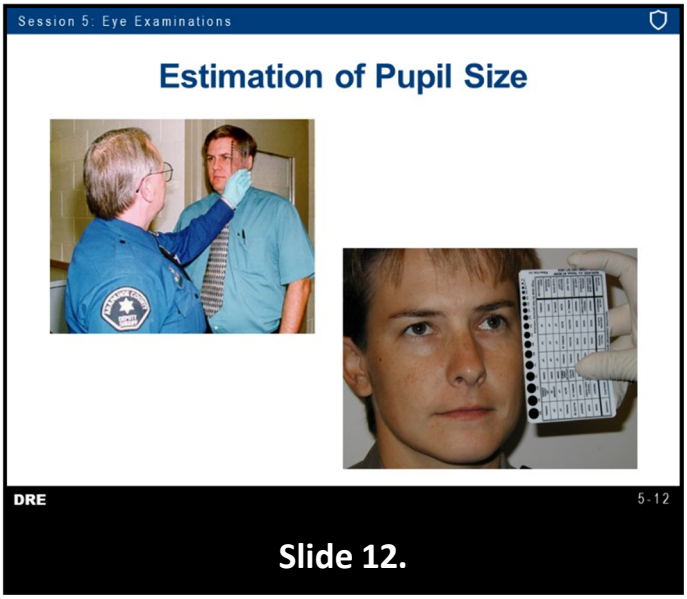
Slide 11.

Preliminary Eye Exams: The following checks are conducted in the preliminary examination.

- Check for Equal Pupil Size
- Check for Resting Nystagmus
- Assessment of tracking ability

Eye Exams: These eye exams are conducted in the following step.

- HGN
- VGN
- LOC



Slide 12.

The pupils of our eyes continually adjust in size to accommodate different lighting conditions.

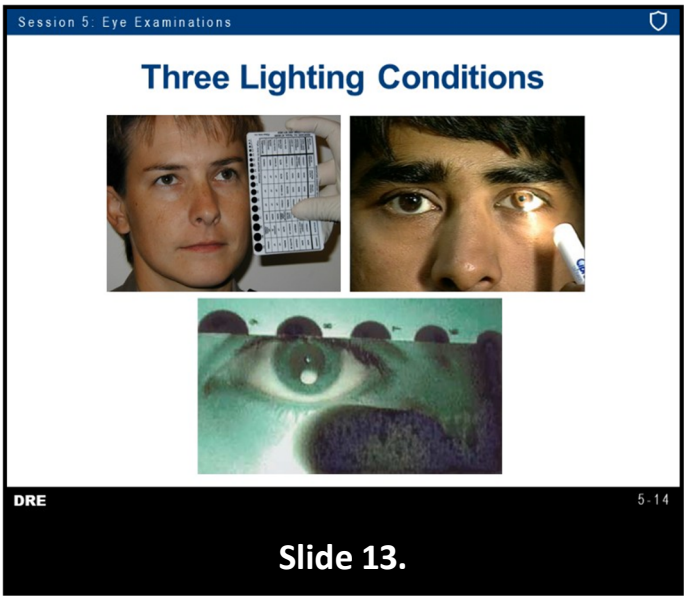
We use a device called a pupillometer to estimate the size of the subject's pupils. The pupillometer is held alongside the subject's eye, moved up and down until the circle or semi-circle closest in size to the pupil is located.

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.

Another eye sign that may be observed by the DRE is Pupillary Unrest. 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. Pupillary Unrest is not abnormal or a sign of impairment. If observed, it is most likely not related to drug or medical impairment. Its presence can be due to various reasons, e.g., light source fluctuations in focusing and attention issues of the subject being tested. Pupillary Unrest is seen as natural pupillary movements that are active in the presence of light, focusing, and maintaining alertness in normal people.

"Accommodation Reflex" is an adjustment of the eyes for viewing at various distances, meaning the pupils will automatically constrict as objects move closer and dilate as objects move farther away.

This should not be confused with Pupillary Unrest, the continuous, irregular change in the size of the pupils that may be observed under room or steady light conditions or with pupillary light reflex which is the pupil's normal reaction to the changes in light. To avoid the possibility of causing accommodation reflex, have the subject maintain his/her eyes fixated on a stationary object greater than six feet away.



Slide 13.

Pupil sizes are estimated under three different lighting conditions: Room Light; Near Total Darkness; and Direct Light.

Estimation of Pupil Size under Room Light: The pupils are examined in room light prior to darkening the room.

After you have completed the pupil size estimations in room light, you must darken the room, wait approximately 90 seconds (for eyes to adjust to the light), and then proceed with the dark room exam.

Estimation of Pupil Size under Near Total Darkness:
For the check under near total darkness completely cover the tip of the penlight with your finger or thumb, so only a slight glow is exhibited and no white light emerges or use a dim red light.

Bring the light source up toward the subject's left eye until you can just distinguish the pupil from the colored portion of the eye (iris).

Continue to hold the light source in that position and bring the pupillometer up alongside the subject's left eye and locate the circle or semi-circle that is closest in size to the pupil.

Repeat this procedure for the subject's right eye.

Slide 14.

Ultraviolet (UV) light is an approved additional technique for use at the discretion of the State coordinator. The UV light is primarily to be used for the Near Total Darkness pupil size estimation only. The UV light does not replace using a pen light with a tip of a light cover with the finger or a thumb. The UV light procedure may be used by a DRE trained in its use, if the result using the standard procedure is in question or an accurate result cannot be obtained due to extreme darkness of the subject's iris.

Independent research has demonstrated UV lights are effective tools for assessing pupil size in near total darkness, giving essentially identical results to the standard evaluation regardless of subject eye color. Evaluators found the UV light easier to use, especially when assessing subjects with dark eyes. If the UV light is used, it should be used after pupil size estimations have been attempted with the appropriate light source.

"Position the UV light near the subject's face along the cheek just below the eye, starting with the subject's left eye first." If the light is held along the cheek, it can be used to illuminate the pupilometer.

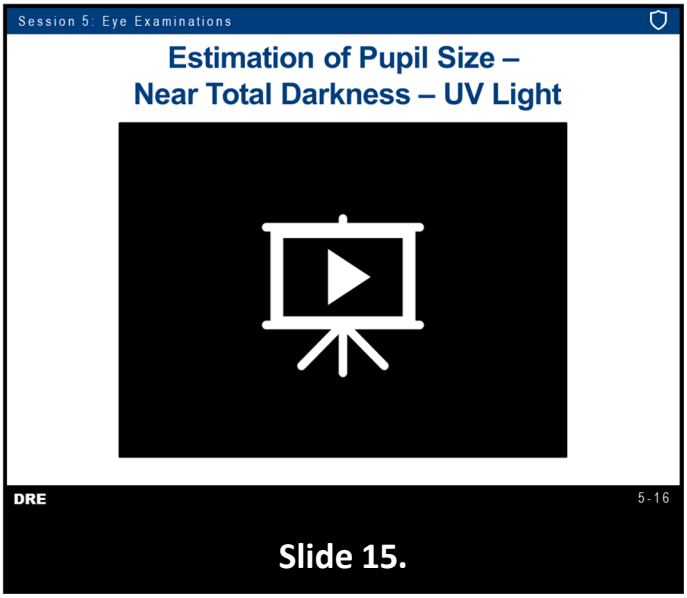
"Start with the light about parallel to the subject's face and slowly increase the angle outward away from the subject's face until the light passes through the cornea (the clear window at the front of the eye) keep moving the light until the yellow-green glow of the crystalline lens is evident."

When using a UV light to assess pupil size, avoid shining the light directly into the subject's eye. In low dosages and for short exposure times, the UV light is not harmful to the subject's eye. However, the light does emit visible wavelengths in the blue-violet region of the spectrum, otherwise the evaluator would not be able to see the light is on. Consequently, shining the light directly into the subject's eye can unintentionally cause the pupil to constrict.

"For certain individuals, the UV light may not work as intended. Contact lens wearers whose contact lenses absorb UV will not exhibit fluorescence of the crystalline lens. Some subjects who have had cataract surgery may also not exhibit fluorescence. When the crystalline lens inside the eye develops a cataract, it is usually removed surgically. If the lens is not replaced, the individual often will need to wear very high-power spectacle or contact lenses in order to see clearly. In this case, there is no longer any structure behind the pupil and thus no fluorescence occurs. Even if the lens is replaced with an artificial lens, the artificial lens typically will not exhibit fluorescence."

Using a DRE pupilometer, estimate the size of the glowing pupil in near total darkness.

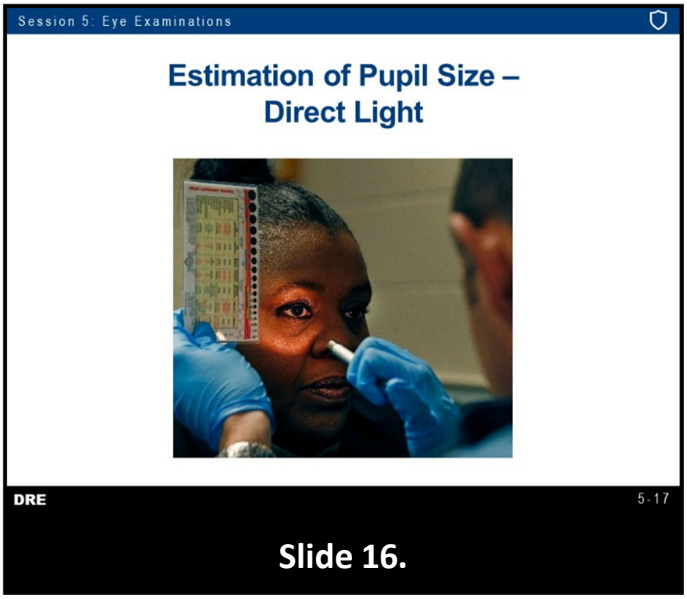
Conduct the same procedure for the right eye.



Slide 15.

Using a UV light to estimate pupil size in the near total darkness lighting condition is an easy, safe, and effective evaluation, especially when assessing subjects with dark eyes. Used properly, there is no potential harm to the subject or the DRE.

Use of the UV light for the near total darkness pupil estimation is not mandatory and does not replace the current near total darkness penlight procedure. If a DRE uses the UV light for the near total darkness estimation, it shall be documented in the narrative report.



Slide 16.

From a darkened environment, quickly illuminate the left eye. The objective is to capture an accurate assessment of the reaction to light by minimizing the pupil's exposure to light before the penlight can be directed solely into the eye. In other words, the goal is to do it in a manner in which you are comfortable to achieve the intended result. There are three common methods used:

1. While still in the dark, position the pen light in front of the subject's left eye and turn it on bathing the eye socket. This method is the most efficient but requires practice as you could easily find yourself too close, too far or completely off mark.
2. Hold the pen light by the subject's left ear. In one motion, swing the pen light toward the left eye as you turn on the pen light bathing the left eye socket. Be cautious at turning on the penlight too soon or moving too slow, as this could induce a significant amount or ambient light and skew your observations.
3. Hold the pen light in front of the subject's left eye with your thumb (or index) entirely covering the lightbulb, creating a red light (same process as dark room examination). When ready, flick off your thumb and introduce direct light to the left eye bathing the left eye socket. This method is efficient but only if you do not hold the "red light" too long in front of the eye as this could trigger an early reaction which could be missed at full illumination.

Find the method that works best for you and become proficient at this process.

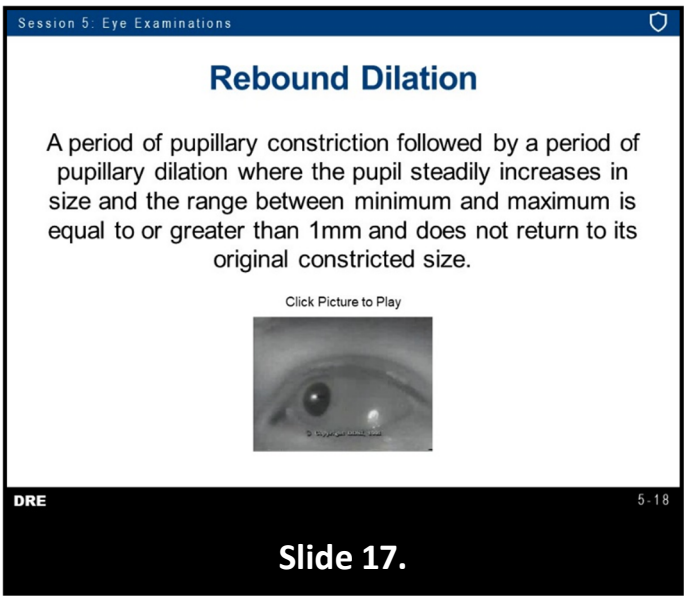
Position the penlight so it illuminates and approximately fills the subject's eye socket.

Regardless of the technique used, hold the penlight in its final position for 15 seconds. During the 15 seconds, bring the pupilometer up alongside the left eye.

Find the circle or semi-circle that is closest in size to the pupil.

Repeat this procedure for the subject's right eye.

Transition from Left eye to Right eye during direct light: once 15 seconds have passed and pupil size is accurately obtained, turn off the penlight. Set up with the chosen method to test the right eye. Do not leave the penlight turned on when switching sides.



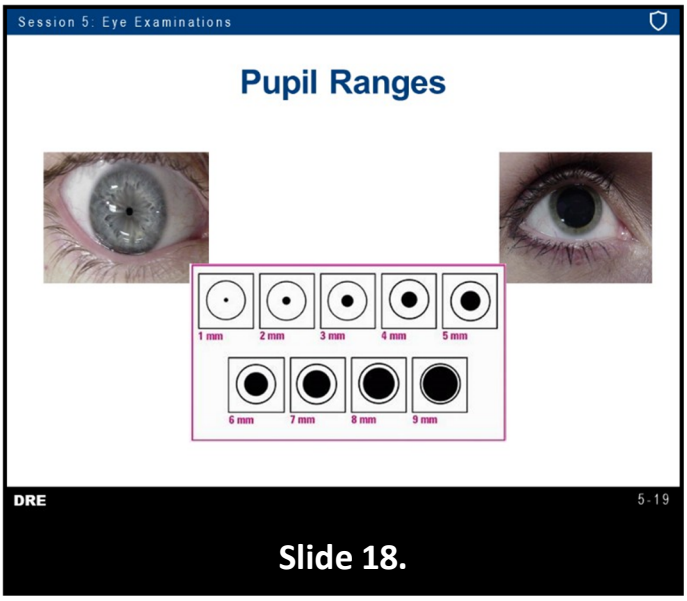
Slide 17.

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 the range between minimum and maximum is equal to or greater than 1mm and does not return to its original constricted size.

Medical research indicates fluctuations under 1mm are relatively common for reasons unrelated to drug impairment (Bergamin et al. 2002).

Example: The pupil is estimated at 8.5 mm in near total darkness. Once the penlight is shined into the pupil it constricts to 4.0 mm then steadily dilates to 6.0 mm and remains that diameter while the direct light is shined into the eye for 15 seconds.

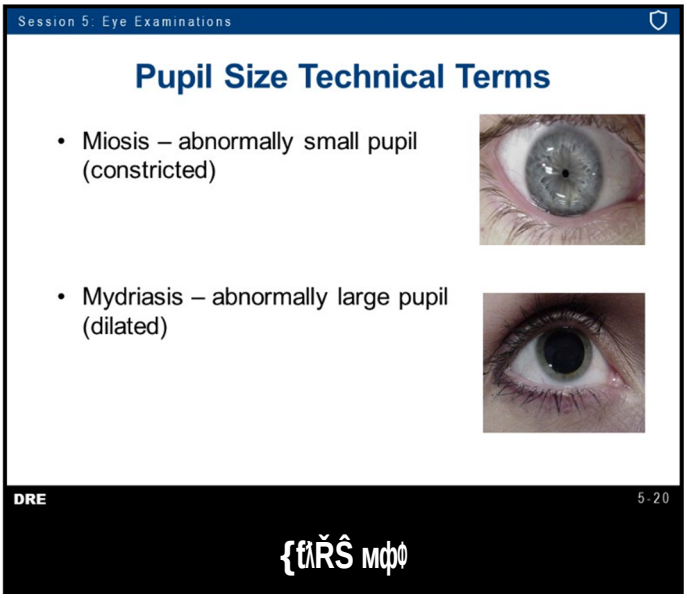
Rebound dilation has been reported with persons impaired by drugs that cause pupillary dilation. Cannabis is most common. In a 2016 study, nearly 71% of Cannabis-impaired subjects displayed rebound dilation. In another study (Declues, et. al), nearly 51% of Cannabis-impaired subjects displayed rebound dilation.



Slide 18.

For most people, even under very bright light the pupils will not constrict much below a diameter of 2.0 millimeters (mm) or dilate to a diameter of more than 8.5 mm in near total darkness conditions.

Consequently, the use of three distinct pupil size ranges for each of the different testing conditions may be considered more useful in the evaluation to determine impairment vs. non- impairment.

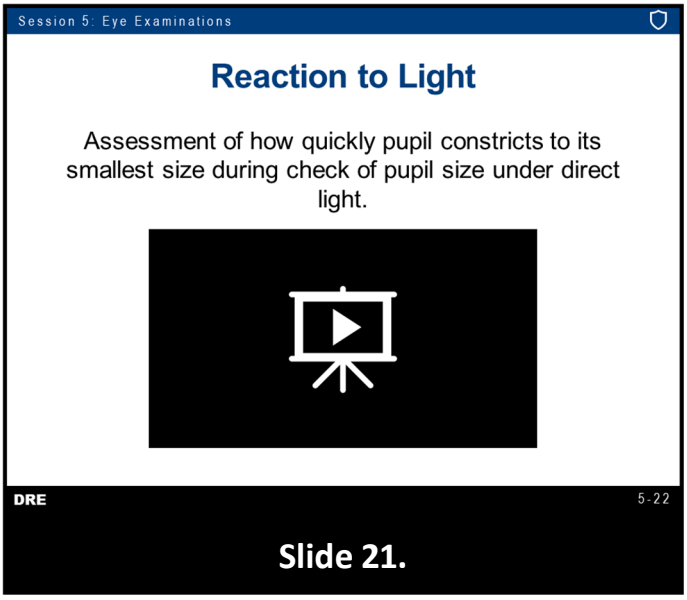


Two key technical terms regarding pupil sizes are: Miosis – abnormally small pupil, i.e., constricted; Mydriasis – an abnormally large pupil, i.e., dilated.

Room Light: For a non-impaired person, the average pupil size and range for room light is approximately 4.0 mm with pupil sizes ranging from 2.5 to 5.0 mm.

Near Total Darkness: For a non impaired person, the average pupil size and range for near total darkness is approximately 6.5 mm with pupil sizes ranging from 5.0 to 8.5 mm.

Direct Light: For a non-impaired person, the average pupil size and range for direct light is approximately 3.0 mm with pupil sizes ranging from 2.0 to 4.5 mm.



Assessment of how quickly the pupil constricts to its smallest size during the check of pupil size under direct light when the light is first introduced into the subject's eye.

As you introduce the beam of light directly into the subject's eye, note how the pupil reacts.

Under ordinary conditions, the pupil should react very quickly and constrict noticeably when the light beam strikes the eye.

Under the influence of certain categories of drugs, the pupil's reaction may be slow or there may be no visible reaction at all. CNS Depressants, CNS Stimulants, and Inhalants will usually cause the pupils to react slowly to light. Narcotic Analgesics may have little or no visible reaction to light.

For DRE purposes, we consider the pupil's reaction to be slow if it takes more than one second to reach its smallest size.

Hold the direct light on the subject's eye for a minimum of 15 seconds to assess pupil reaction.

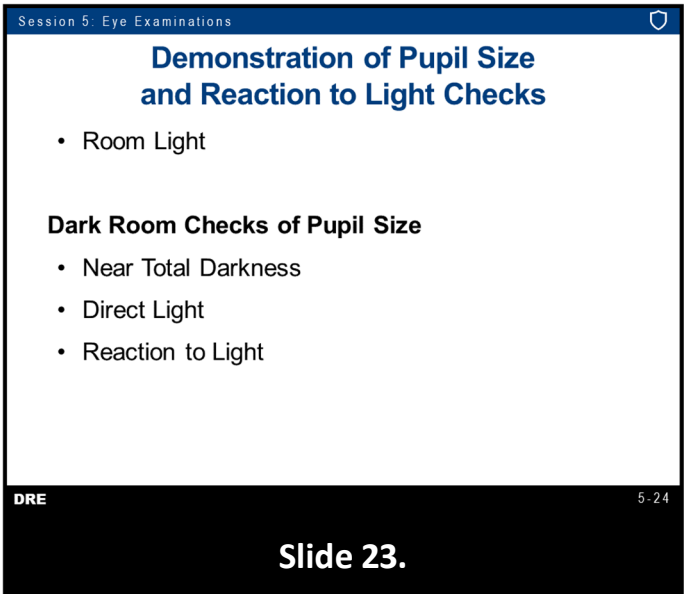
Also check for Rebound Dilation during this 15-second period.
Caution should be used so as not to move the light beam or allow the bulb to change in light intensity.

When you have completed this process for the left eye, repeat it for the right eye.

C. Demonstrations

Slide 22.

- Check for Lack of Smooth Pursuit
- Check for Distinct and Sustained Nystagmus at Maximum Deviation
- Check for an Angle of Onset of Nystagmus



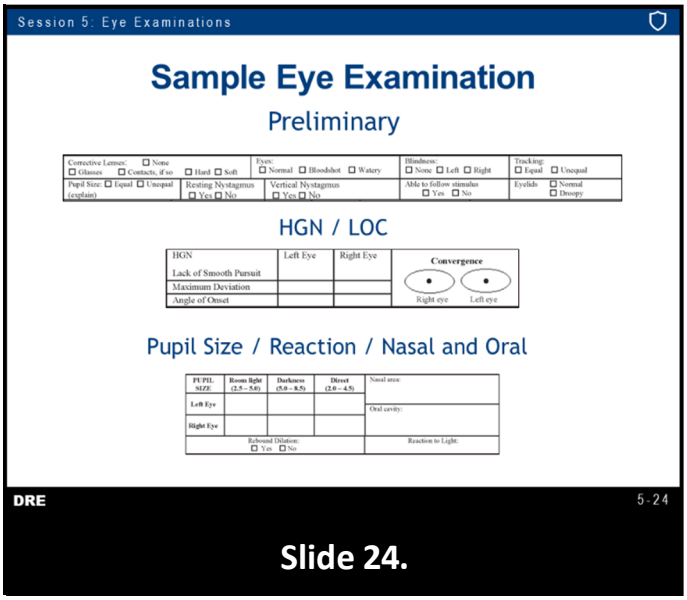
Slide 23.

- Room Light

Dark Room checks of pupil size:

- Near Total Darkness
- Direct Light
- Reaction to Light

D. Documentation Procedures



Slide 24.

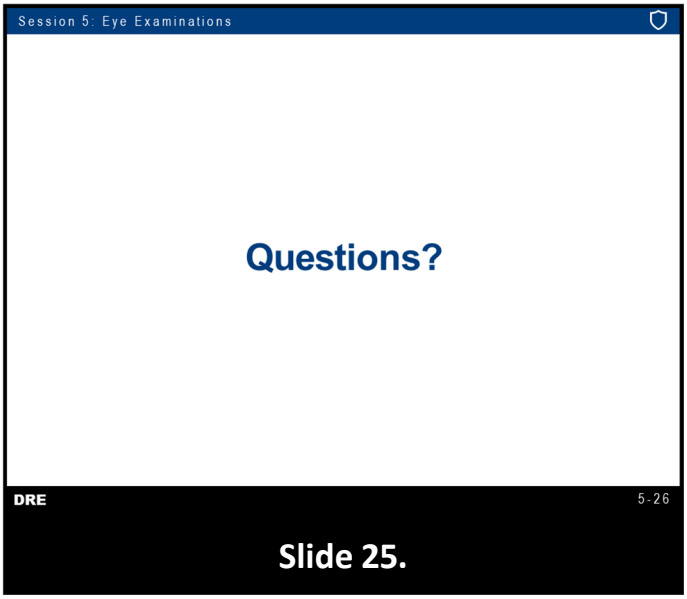
A brief examination of the eyes is made during the Preliminary Examination.

- Check for Equal Pupil Size
- Check for Resting Nystagmus
- Assessment of tracking ability

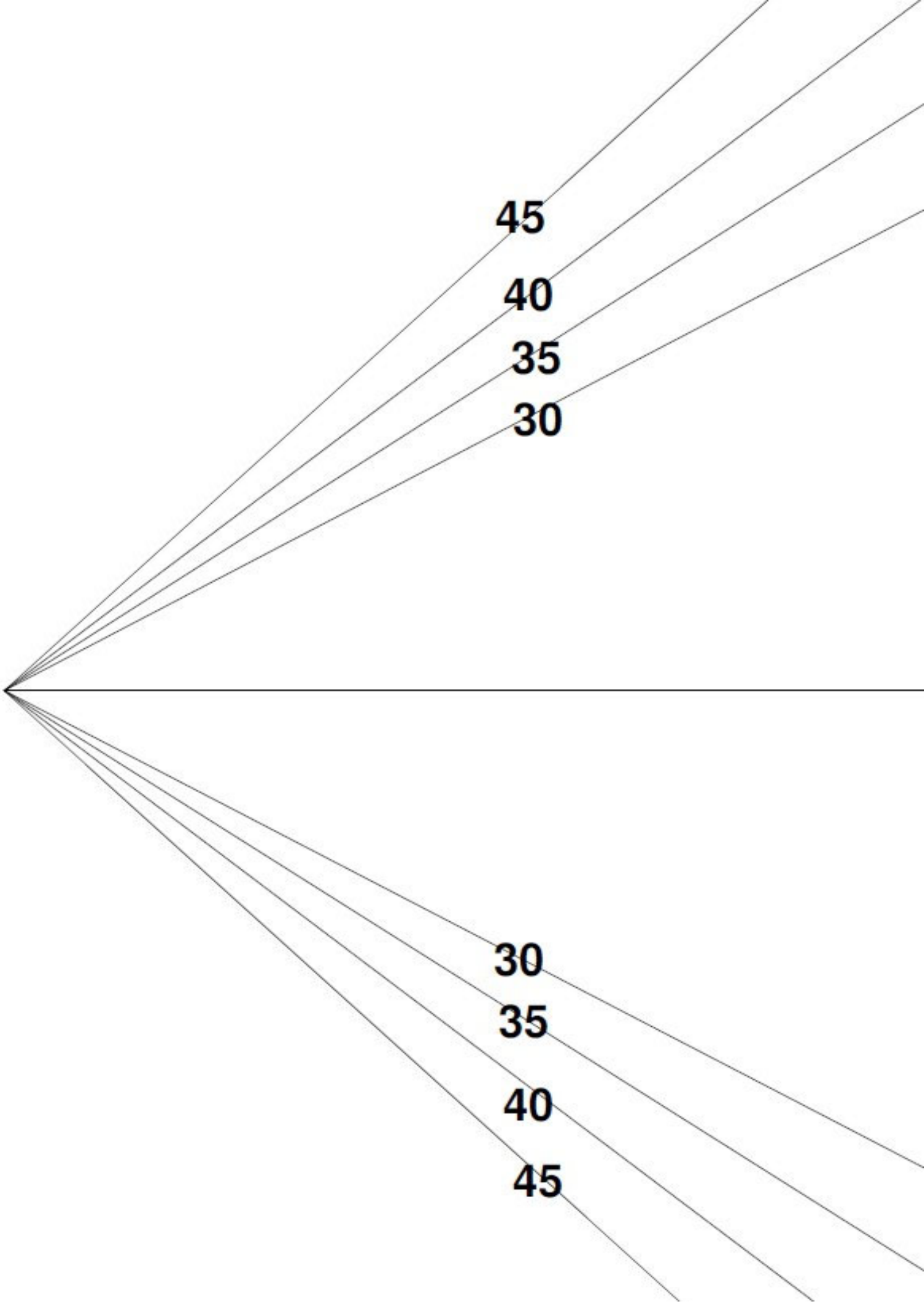
For VGN, “Yes” implies VGN was present, “No” implies it was not present.

For LOC, it will be necessary to diagram the movement of the eyes. The dark room eye examinations are documented in a subsequent section of the form.

Pupil Size Estimations: Room Light; Near Total Darkness; and Direct Light.



Slide 25.


45
40
35
30
30
35
40
45

Pupil Size Chart

Pupil Size	Room Light	Near Total Darkness	Direct Light
2.0 mm			
2.5 mm			
3.0 mm			
3.5 mm			
4.0 mm			
4.5 mm			
5.0 mm			
5.5 mm			
6.0 mm			
6.5 mm			
7.0 mm			
7.5 mm			
8.0 mm and above			

DRUG IMPAIRMENT EVALUATION

Drug Influence Evaluation Form v.2021-03

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #

Arresting Officer (Name, ID#)	SFST Trained ☐ Yes ☐ Yes (not used) ☐ No	Arresting Officer's Agency	Recorder/Witness

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash ☐ None ☐ Fatal ☐ Injury ☐ Property	DRE Secondary Caution Time ☐ Yes ☐ No

Eval. Start time	Breath Test ☐ No Grounds ☐ Refused Result: Instrument #:	Subject's Name (Last, First, Middle)	Date of Birth	Gender

Date Examined / Time / Location	What have you eaten today? When?	What have you been drinking? How much?	Time of last drink?

Time now? / Actual /	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 disabilities? ☐ Yes ☐ No	Are you under the care of a doctor or dentist? ☐ Yes ☐ No

Do you take any medication or drugs? ☐ Yes ☐ No	Attitude	Coordination

Speech	Breath Odour	Face

Corrective Lenses ☐ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	Eyes ☐ Normal ☐ Bloodshot ☐ Watery	Blindness ☐ None ☐ Left ☐ Right	Tracking ☐ Equal ☐ Unequal

Pupil Sizes ☐ Equal ☐ Unequal (explain)	Resting Nystagmus ☐ Yes ☐ No	Vertical Nystagmus ☐ Yes ☐ No	Able to Follow Stimulus ☐ Yes ☐ No	Eyelids ☐ Normal ☐ Droopy

Pulse and Time

1. _____ @ _____
2. _____ @ _____
3. _____ @ _____

HGN	Left	Right
Lack of Smooth Pursuit		
Maximum Deviation		
Angle of Onset		

Convergence

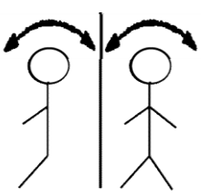
Right Eye Left Eye

One Leg Stand

/30 /30

Modified Romberg Balance

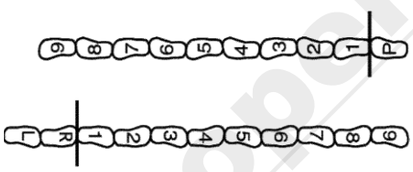
Approx. Approx.



Walk and Turn

Cannot keep balance _____

Starts too soon _____



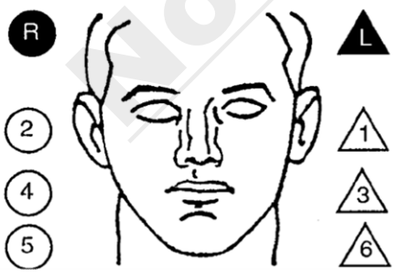
	1st nine	2nd nine
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms		
Actual steps taken		

L	R	
		Sways while balancing
		Uses arms to balance
		Hopping
		Puts foot down

Time estimation & questions (p.2) _____ estimated as 30 seconds	Describe turn	Cannot do test (explain)	Type of footwear

Finger to nose

(Draw lines to spots touched)



Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye			
Right Eye			

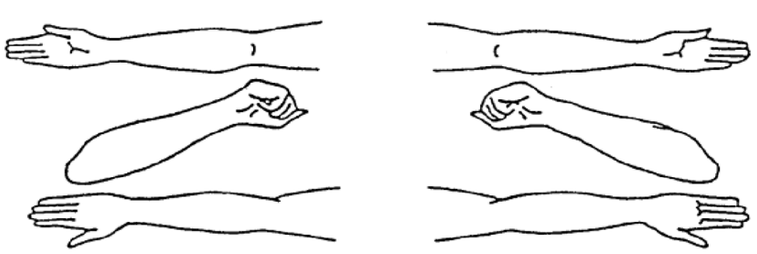
Rebound dilation ☐ Yes ☐ No

Reaction to light ☐ Normal ☐ Slow ☐ Little to none visible

Nasal area

Oral cavity

Right Arm **Left Arm**



Blood Pressure _____/_____	Temperature °C

Muscle tone: ☐ Normal ☐ Flaccid ☐ Rigid

Comments:

What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?

Eval. stop time	Refusal ☐ Entirety ☐ Partly ☐ Tox. Sample Comments:	Toxicological Sample ☐ Urine ☐ Blood Demand time: Sample Time:	Reviewed by (instructor name)

Evaluator Signature	Approved by (instructor signature)	DRE # Date

Opinion of Evaluator

☐ Not Impaired ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anaesthetic ☐ Inhalants ☐ Operational

☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis ☐ Training

Estimated time for session: 3 Hours

7 DRE

PRELIMINARY TRAINING

EXAMINATION OF VITAL SIGNS

LEARNING OBJECTIVES

- List the vital signs utilized in the Drug Recognition Expert (DRE) drug influence evaluation
- Define basic terms relevant to pulse rate and blood pressure measurements
- Measure pulse rate
- Measure blood pressure
- Relate the results of vital sign examinations to the various categories of drugs

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participant-Led Demonstrations
- Hands-on Practice

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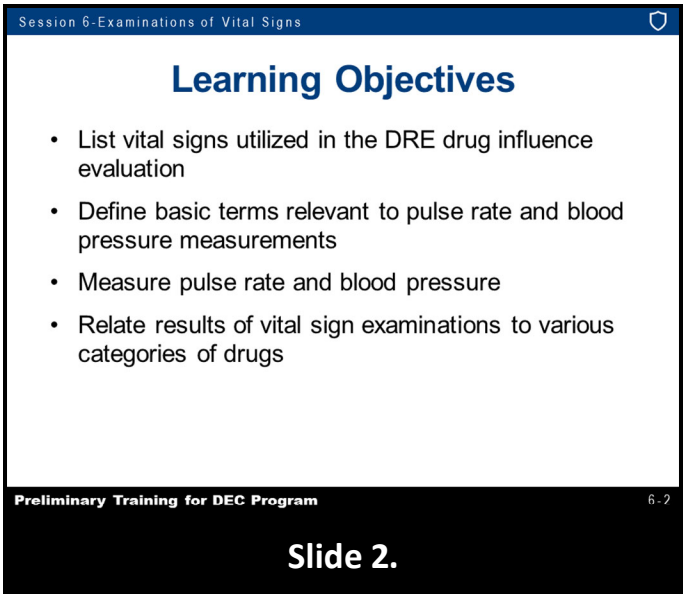
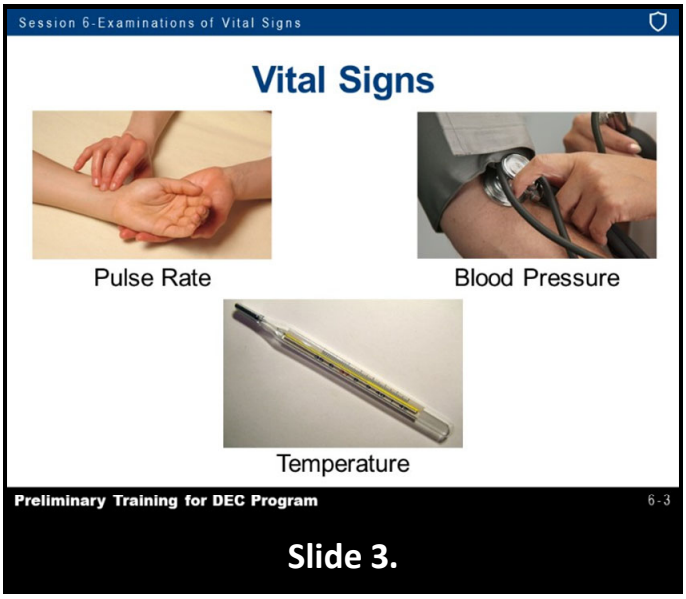


Slide 2.

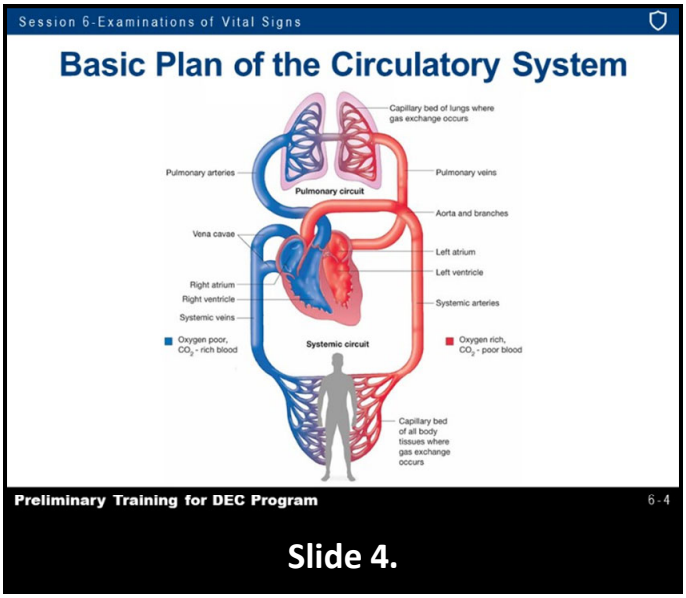
A. Purpose of the Examination



Slide 3.

The vital signs relevant to the drug influence evaluation process include pulse rate, blood pressure, and temperature.

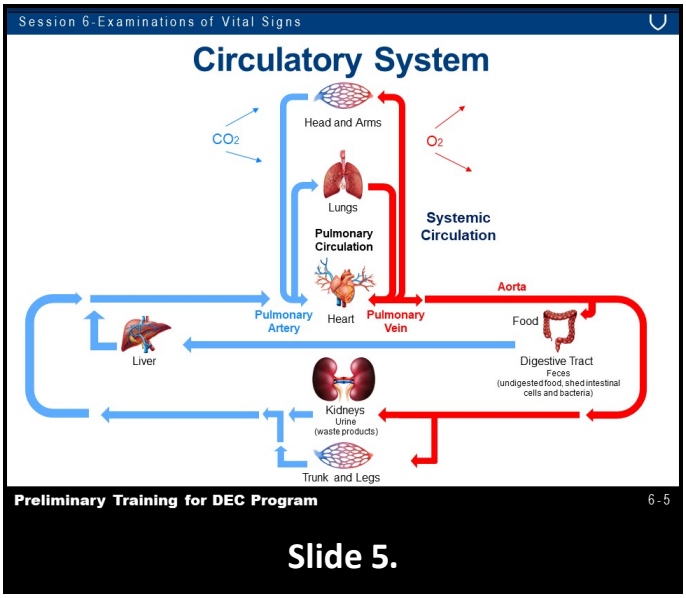
Different types of drugs affect these vital signs in different ways. Certain drugs tend to "speed up" the body and elevate these vital signs. For clarification, pulse may quicken, blood pressure may rise, and/or temperature may rise. Other drugs tend to "slow down" the body and lower these vital signs. For clarification, pulse may slow, blood pressure may drop, and/or temperature may fall. Systematic examination of the vital signs gives us much useful information concerning the possible presence or absence of various categories of drugs.



Slide 4.

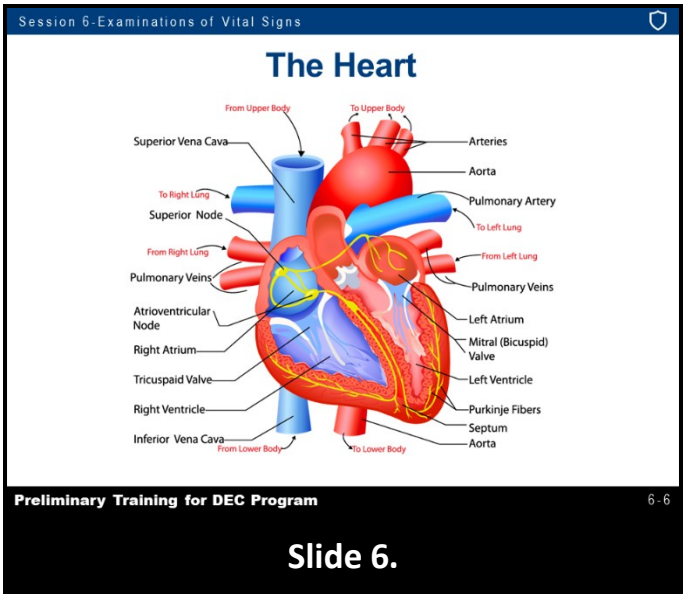
Before we look at the vital signs, we need to look at the circulatory system and how it works. Circulation is a closed system where blood is propelled by contractions of the heart. Blood is driven into arteries, arteries divide into smaller and smaller branches, and finally into meshwork of fine capillaries which pervade body tissues.

Meshwork joins up again to form small veins which become larger trunks as they travel centrally towards the heart.



Slide 5.

There are two separate circulation systems. Systemic system involves the whole body and is driven by the left side of the heart. Pulmonary system deals with the passage of blood through the lungs and is driven by the right side of the heart.



Slide 6.

The heart is the pump and has two sides. The left atrium and ventricle which is the upper chamber (atrium) receives blood from the great veins, the lower chamber discharges blood into the great arteries. The left side pumps blood through the aorta and the arteries to the tissues.

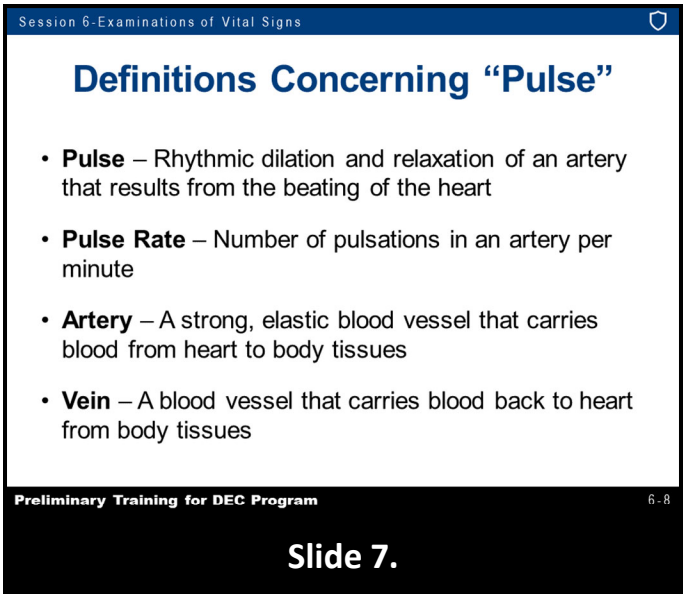
Blood, after passing through the tissues, returns via the veins to the right side. The right side pumps blood through the pulmonary artery to the lungs and returns it to the left side of the heart again via the four pulmonary veins and consists of the right atrium and ventricle.

NOTE: The pulmonary artery is the only artery that carries de-oxygenated blood; all other arteries carry blood that has received fresh oxygen from the lungs. Likewise, the pulmonary vein is the only vein that carries blood rich in oxygen; all other veins carry blood depleted of oxygen back to the heart.

The normal heart continues to beat regularly and continuously with a rest interval never longer than a fraction of a second. Heart rate is the number of beats per minute.

Pulse rate is the number of pulsations per minute. **For DRE purposes, the average range for the pulse rate is 60-90 pulsation beats per minute.**

B. Procedures and Cues



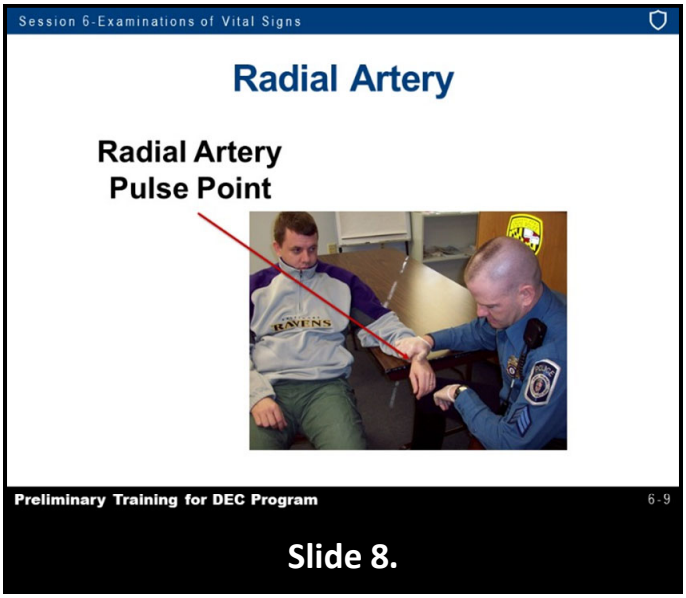
Slide 7.

Measurement of Pulse Rate: Pulse is the rhythmic dilation and relaxation of an artery that results from the beating of the heart. Pulse rate is the number of pulsations in an artery per minute.

An artery is a strong, elastic blood vessel that carries blood away from the heart. A vein is a blood vessel that carries blood back to the heart from the body tissues. When the heart contracts, it squeezes blood out of its chambers into the arteries. The surging blood causes the arteries to expand. By placing your fingers on the skin next to an artery and pressing down, you can feel the artery expand as the blood surges through.

By keeping your fingers on the artery and counting the number of pulses that occur in one minute, you will measure the pulse rate.

Pulse is easy to measure once you locate an artery close to the surface of the skin.



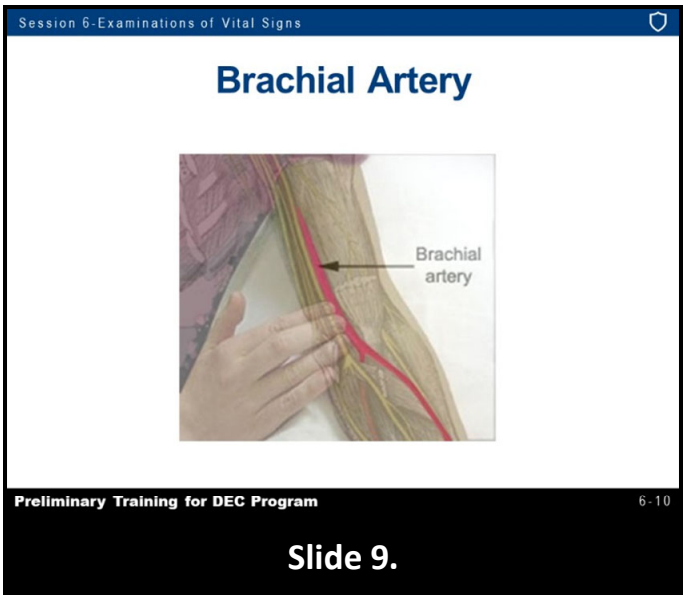
Slide 8.

One convenient pulse point involves the radial artery. 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. Hold your left hand out, with the palm down.

Place the tips of your right hand's index finger and middle finger into the crease of your left wrist and exert a slight pressure.

Allow your left hand to curl downward or have the subject hold his or her hand in a position that will best permit the DRE to measure the radial pulse point.

You should be able to feel the pulse in your radial artery.



Slide 9.

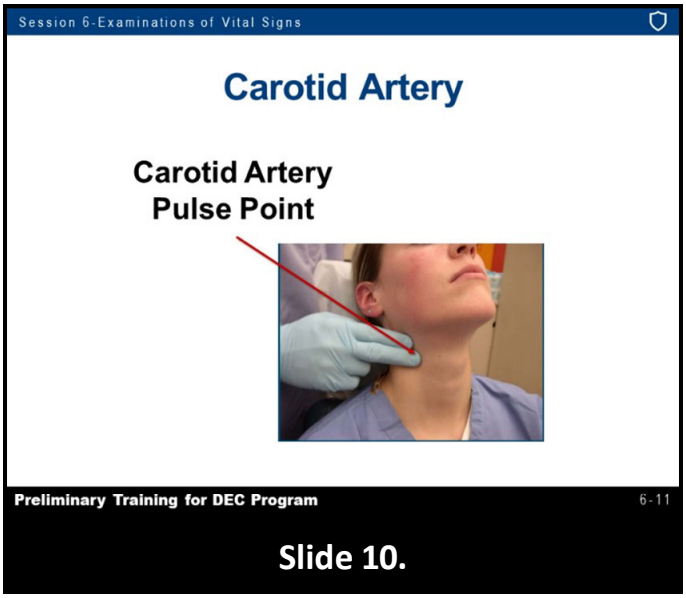
Another pulse point involves the brachial artery.

The brachial artery 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.

Hold your left hand out, with the palm up, and point to the brachial artery.

Place the tips of your right hand's index and middle fingers into the crook of your left arm, close to the body, and exert a slight pressure.

You should be able to feel the pulse in your brachial artery.

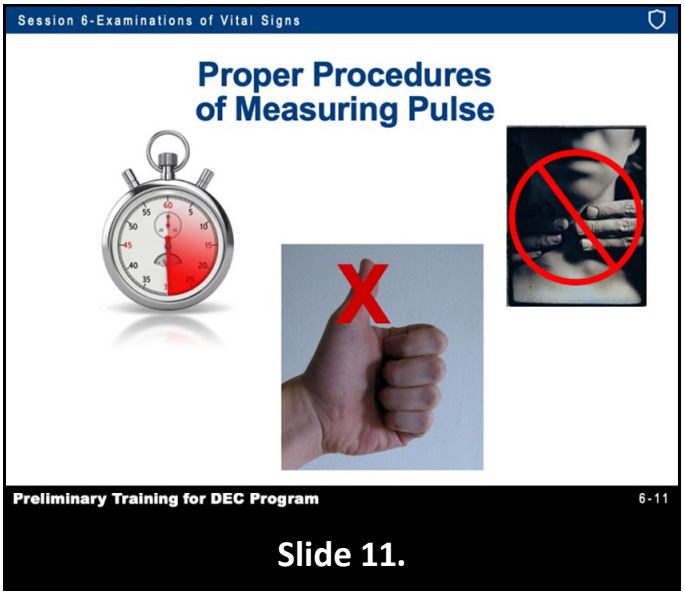


Slide 10.

Another pulse point involves the carotid artery.

The carotid artery can be located in the neck, on either side of the middle of the throat ("Adam's Apple"). Place the tips of your right hand's index and middle fingers alongside the right side of your "Adam's Apple" or the center of the throat.

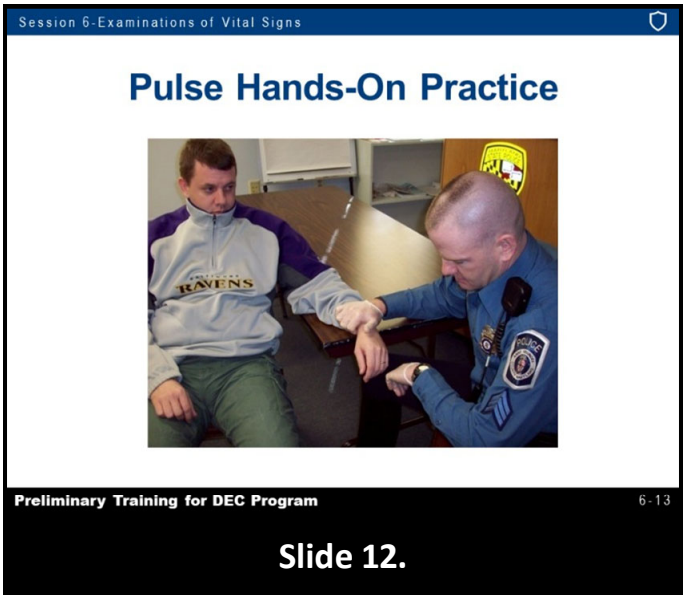
You should be able to feel the pulse in your carotid artery.



Slide 11.

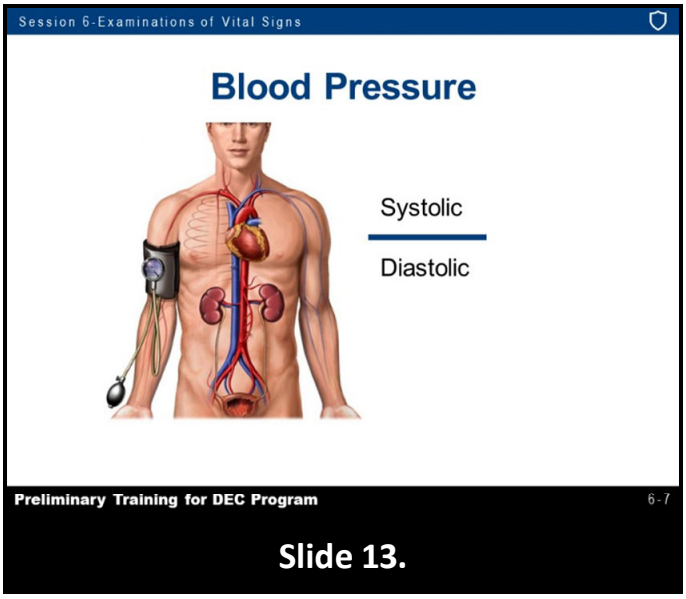
When measuring the pulse rate, use 30 seconds as the standard time interval. Don't use your thumb to apply pressure while measuring a subject's pulse.

If you use the carotid artery pulse point, don't apply pressure to both sides of the middle of the throat: this can cut off the supply of blood to the brain.



Slide 12.

50 or less ____	76-78____
52-54____	80-82____
56-58____	84-86____
60-62____	88-90____
64-66____	92-94____
68-70____	96-98____
72-74____	100+ ____



Slide 13.

Blood pressure is the force exerted on the arteries by the circulating blood.

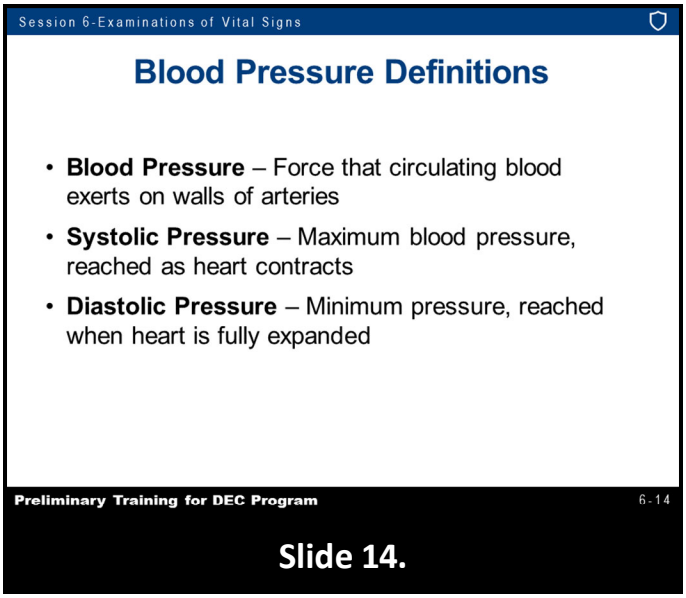
Blood pressure is categorized as systolic or diastolic.

Systolic pressure is the maximum force occurring during contraction. Diastolic pressure represents the minimum force occurring when the heart relaxes.

The DRE average range for systolic blood pressure is 120 to 140. The DRE average range for diastolic blood pressure is 70 to 90.

Control Systems: The functions of the organs of the body are controlled in two ways. This is a function of the endocrine system.

One, by sending "chemical messengers" known as hormones via the blood stream from an endocrine gland where they are produced. Second system of control is by means of the nervous system. This will be covered in greater detail in the Physiology session in the 7-Day school.



Slide 14.

Measurement of Blood Pressure: Blood pressure is the force that the circulating blood exerts on the walls of the arteries. Blood pressure changes constantly as the heart cycles between contraction and expansion. Blood pressure reaches its maximum as the heart contracts and sends the blood surging through the arteries – this is called the systolic pressure. Blood pressure reaches it minimum when the heart is fully expanded – this is called the diastolic pressure. It is always necessary to measure and record both the systolic and diastolic blood pressure.

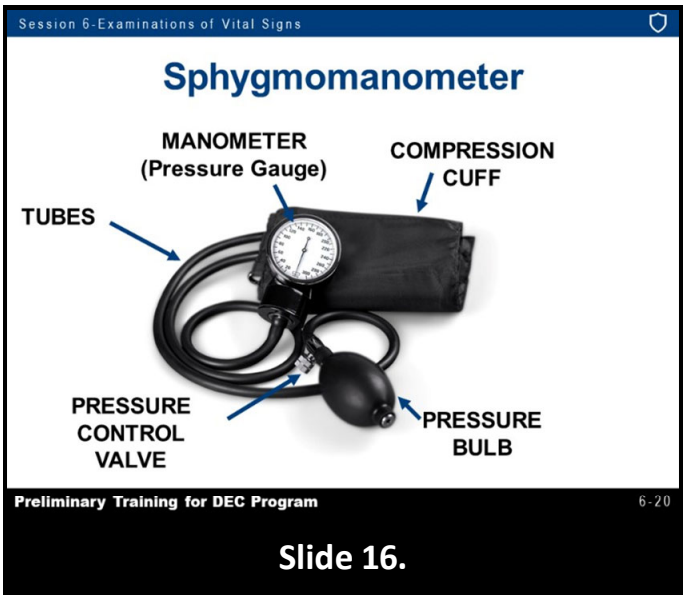
Memory aid:

- Systolic: "S" for "Superior"
- Diastolic: "D" for "Down"

Slide 15.

The device used for measuring blood pressure is called a sphygmomanometer.

The sphygmomanometer has a special cuff that can be wrapped around the subject's arm and inflated with air pressure.



Slide 16.

The compression cuff contains an inflatable rubber bladder. A tube connects the bladder to the manometer, or pressure gauge.

Another tube connects the bladder to the pressure bulb, which can be squeezed to inflate the bladder. The pressure control valve permits inflation of the bladder and regulates the rate at which the bladder is deflated. To inflate the bladder, the pressure control valve must be twisted all the way to the right. When the valve is twisted all the way to the right, air can be pumped into the bladder but no air can escape from the bladder.

To deflate the bladder, twist the valve to the left. The more the valve is twisted to the left, the faster the bladder will deflate.

Slide 17.

As the pressure in the cuff increases, the cuff squeezes tightly on the arm.

When the pressure gets high enough, it will squeeze the artery completely shut.

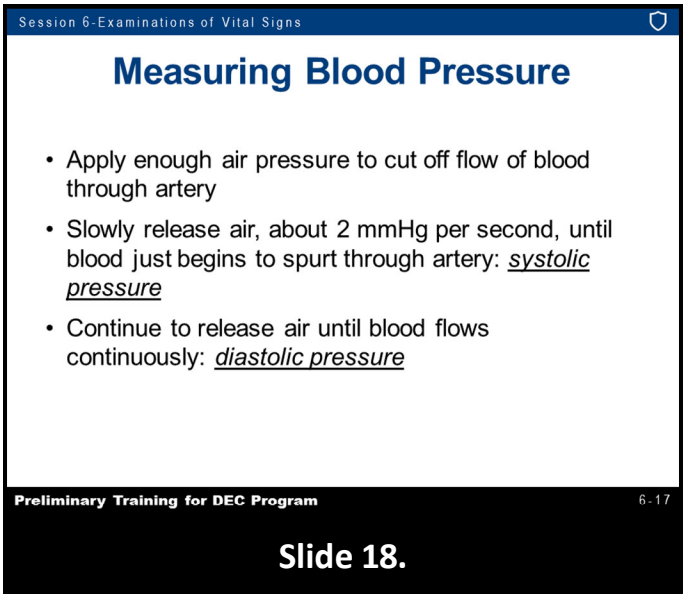
Blood will cease flowing through the brachial artery. Since the brachial artery “feeds” the radial artery, blood will also cease flowing through the radial artery.

If we slowly release the air in the cuff, the pressure on the arm and on the artery will start to drop. Eventually, the pressure will drop enough so blood will once again start to flow through the artery.

Blood will start flowing in the artery once the pressure inside the artery equals the pressure outside the artery.

The two pressures will become equal when the air pressure in the cuff drops down to the systolic pressure.

When that happens, blood will spurt through the artery each time the heart contracts. Once the air pressure in the cuff drops down to the diastolic level, the blood will flow continuously through the artery.



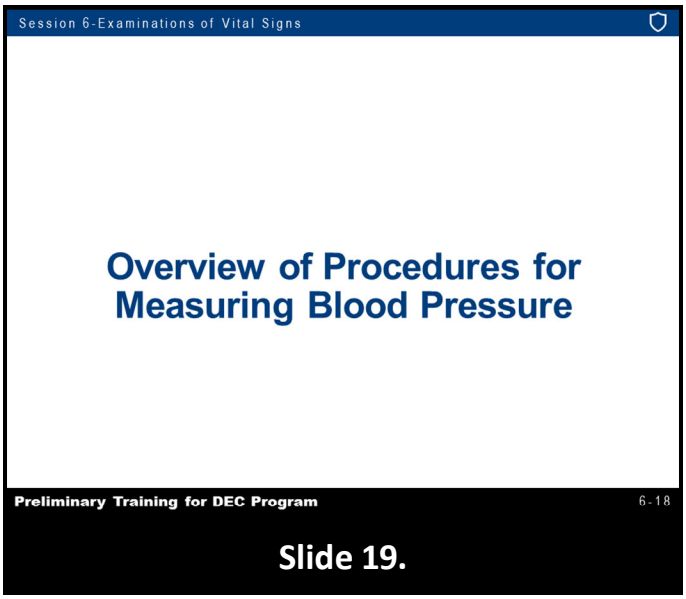
Slide 18.

Apply enough air pressure to the cuff to cut off the flow of blood through the artery (approximately 180 mmHg).

Slowly release the air pressure until the blood just begins to spurt through the artery: that level will be the systolic pressure.

Slowly release the pressure in the cuff.

Continue to release the air pressure until the blood flows continuously through the artery: that level will be the diastolic pressure.



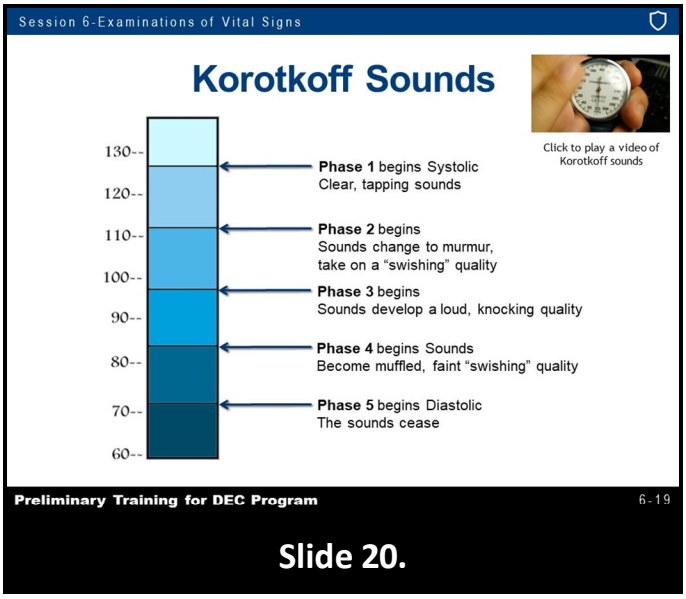
Slide 19.

- Apply the stethoscope to the skin directly above the artery.
- Apply pressure to the cuff, enough to cut off the flow of blood.
- Inflate the cuff on the arm.
- When no blood is flowing through the artery, we hear nothing through the stethoscope.
- Slowly release the air from the cuff, letting the pressure start to drop.
- Release the air in the cuff.

When we drop to the systolic pressure, we start to hear a spurting sound.

As we continue to allow the air pressure to drop, the surges of blood become steadily longer.

When we drop to the diastolic pressure, the blood slows steadily and all sounds cease.



Slide 20.

The sounds we listen to are called Korotkoff Sounds. Named after Dr. Nikolai Korotkoff, a Russian physician who introduced the method of determining blood pressure in 1905.

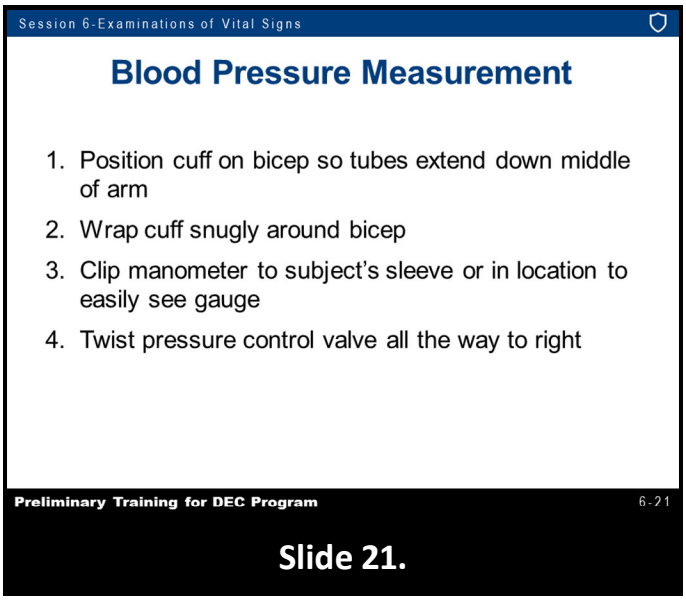
Phase 1: the first appearance of clear, tapping sounds that gradually increase in intensity. **The beginning of Phase 1 corresponds to the systolic pressure.**

Phase 2: the sounds change to a murmur and take on a swishing quality.

Phase 3: the sounds develop a loud, knocking quality (not quite as clear as Phase 1).

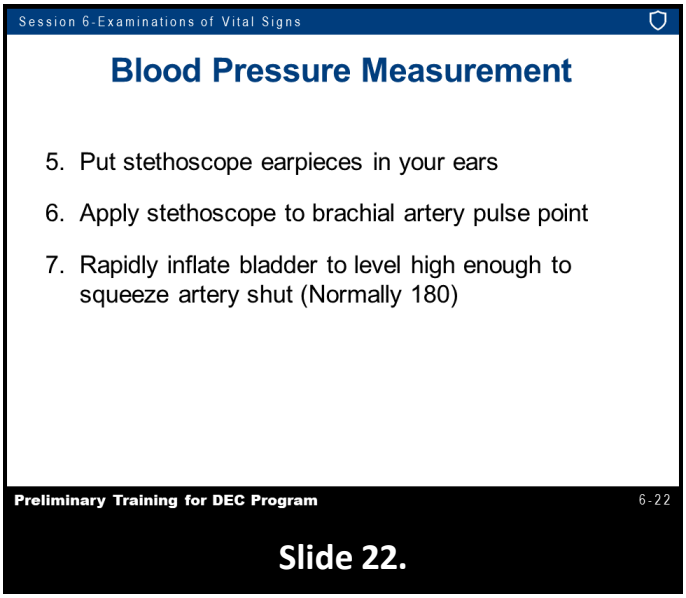
Phase 4: the sounds suddenly become muffled and again have a faint swishing quality.

Phase 5: the sounds cease. The beginning of Phase 5 corresponds to the diastolic pressure.



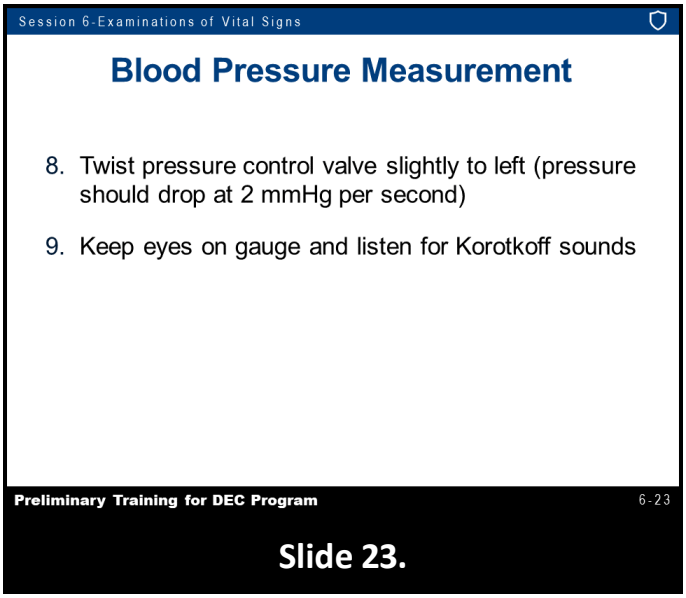
Slide 21.

1. Position the cuff on the bicep so the tubes extend down the middle of the arm.
2. Wrap the cuff snugly around the bicep.
3. Clip the manometer (pressure gauge) on the subject's sleeve, so it is readily viewable.
4. Twist the pressure control valve all the way to the right.



Slide 22.

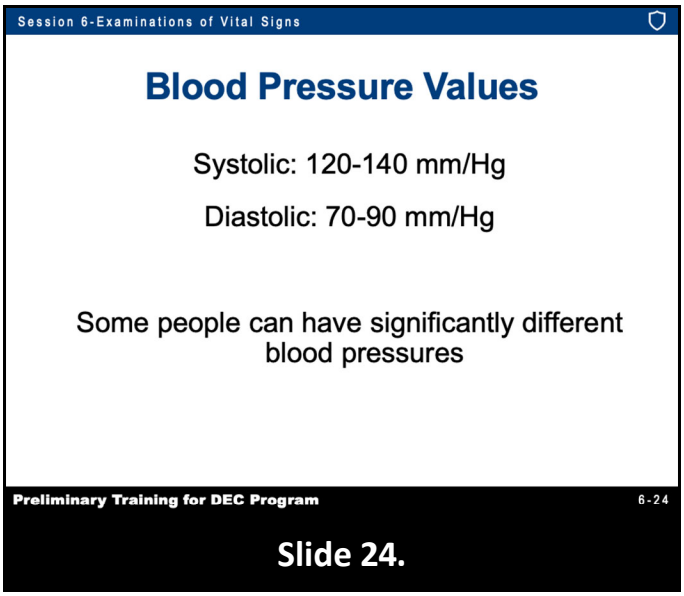
5. Put the stethoscope earpieces in your ears – Make sure the earpieces are turned forward, i.e., toward the nose.
6. Place the diaphragm or bell of the stethoscope over the brachial artery.
7. Rapidly inflate bladder to a level high enough to squeeze the artery shut (normally 180 mmHg).



Slide 23.

8. Twist the pressure control valve slightly to the left to release the pressure slowly (pressure should drop at 2 mmHg per second).
9. Keep your eyes on the gauge and listen for the Korotkoff sounds.

The needle on the pressure gauge generally will “bounce” slightly when blood starts to spurt through the artery.

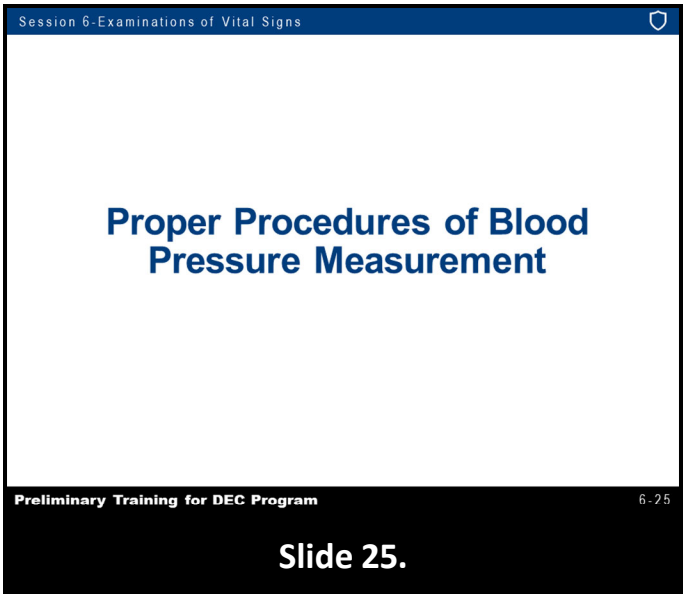


Slide 24.

DRE average blood pressure values are:

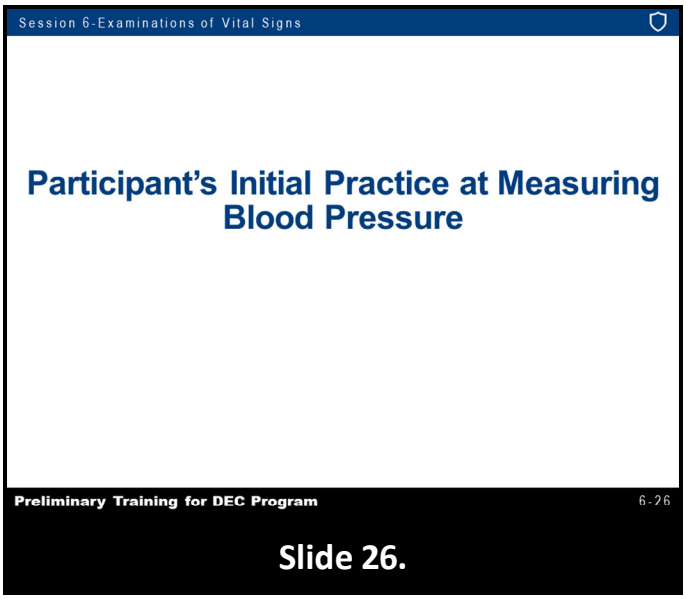
- Systolic: 120-140 mm/Hg
- Diastolic: 70-90 mm/Hg

Some people can have significantly different blood pressures: there is a wide variation in human blood pressure.



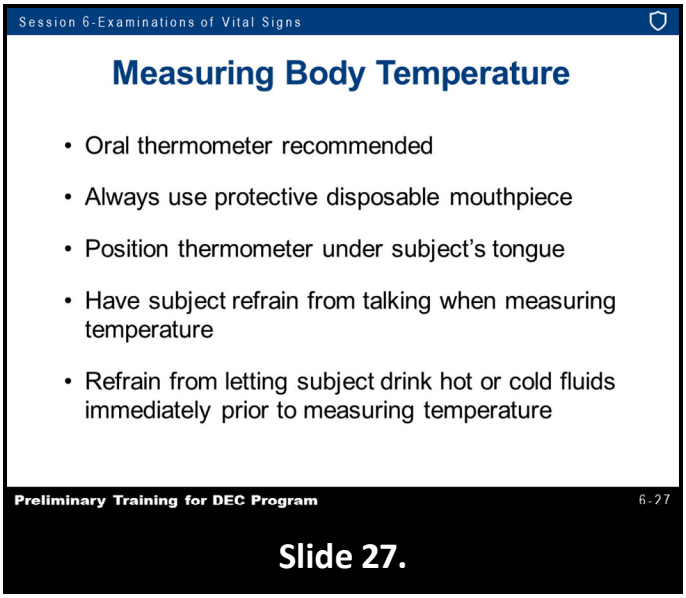
Slide 25.

If you inflate the bladder and then need to repeat the measurement, wait at least three minutes to allow the subject's artery to return to normal. **If difficulty is encountered in hearing the Korotkoff sounds, try having the subject raise his or her arm and clench the fist to allow blood flow back to the heart.** Hold the bell of the stethoscope with your fingers; don't slide it under the cuff – that will distort the measurement.



Slide 26.

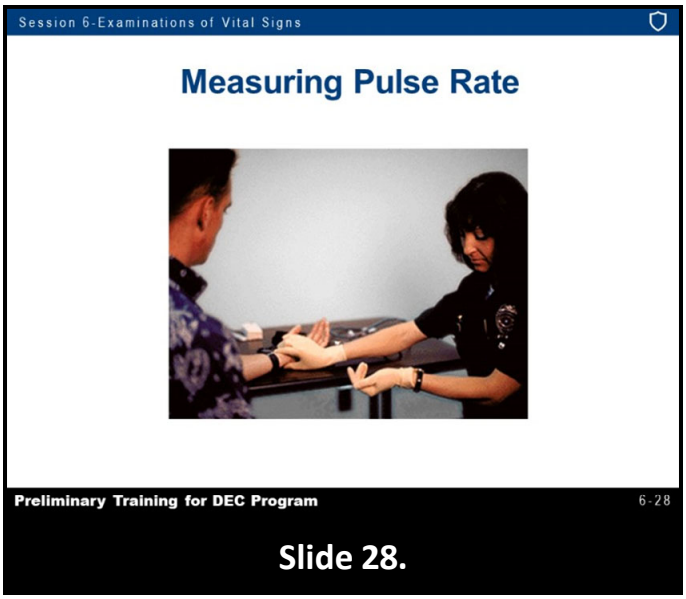
C. Demonstrations



Slide 27.

The range for body temperature taken orally is 37.0 degrees Celsius +/- 0.5 degree Celsius. Temperature is measured orally using a thermometer.

A fresh disposable mouthpiece should be used each time. Position thermometer under the subject's tongue. Have subject refrain from talking when measuring temperature. Ensure the subject does not take any hot or cold liquids by mouth prior to taking the temperature. Hot and cold liquids immediately prior to the temperature examination may affect the result.



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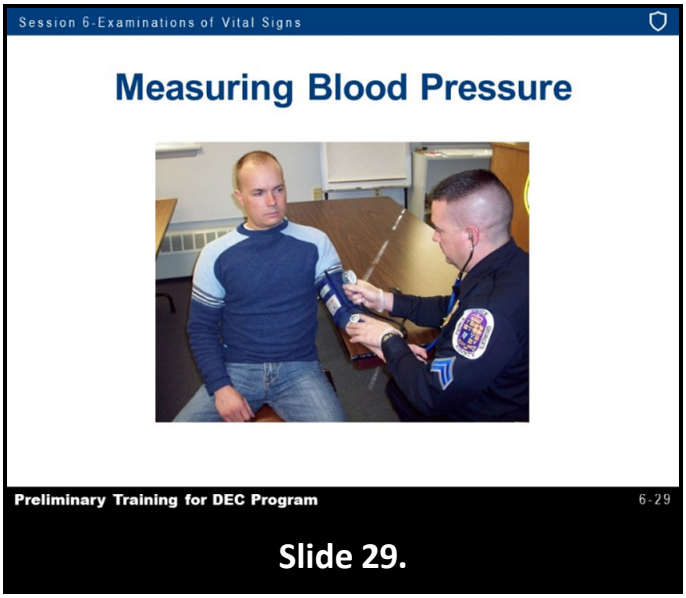
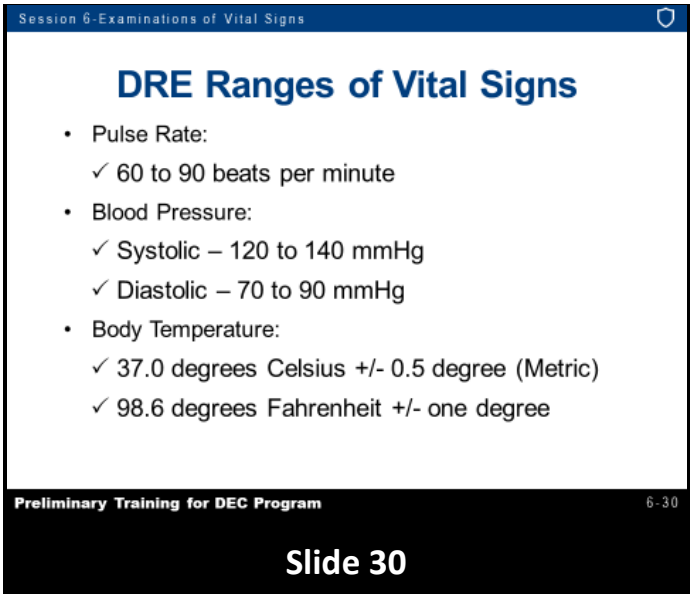

Session 6-Examinations of Vital Signs
Measuring Blood Pressure
Preliminary Training for DEC Program
6-29

Slide 29.

D. Ranges of Vital Signs



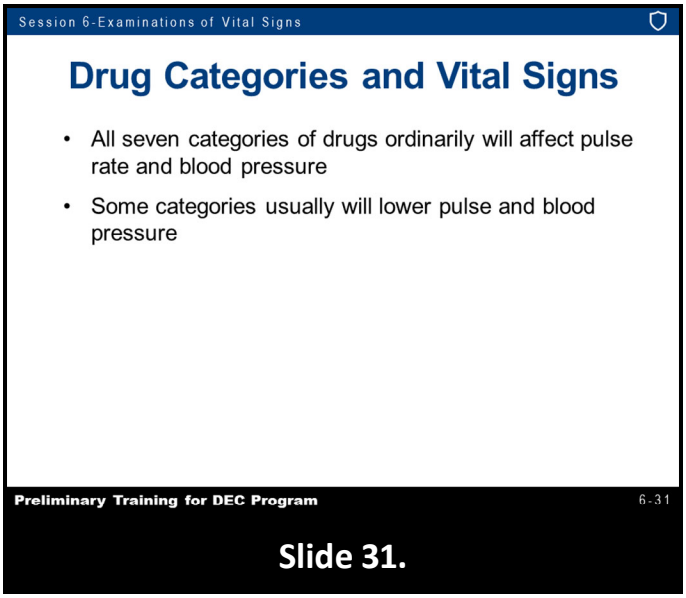
Slide 30

Human vital signs vary between individuals. However, the DEC Program has identified a set of ranges for each of the three vital sign examinations used in the drug influence evaluation process. These ranges, which are referred to as "DRE average ranges" can also be described as the "expected range" for a non-impaired healthy person. When checking a person's pulse and blood pressure, DREs are assessing the person's cardiovascular system for signs or indicators of being outside of the expected range of a non-impaired healthy person.

DEC Program ranges:

- Pulse rate: 60 to 90 beats per minute
- Blood pressure: Systolic: 120-140 mmHg and Diastolic: 70-90 mmHg
- Body temperature: 37.0 degrees Celsius +/- 0.5-degree

E. Relationship of Drug Categories to the Vital Signs Examinations



Slide 31.

All seven categories of drugs ordinarily will affect pulse rate and blood pressure. Some categories usually will lower pulse and blood pressure.

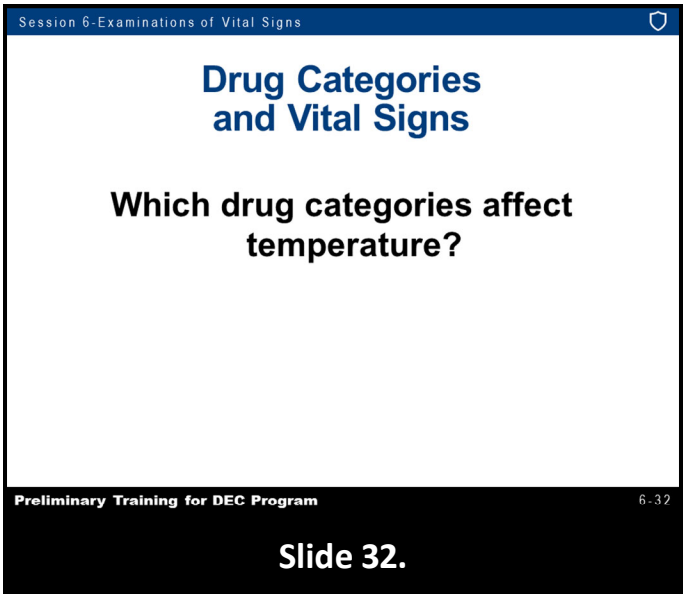
CNS Depressants and Narcotic Analgesics usually lower pulse and BP.

Quaaludes, ETOH, and possibly some antidepressants may cause the pulse to increase. The other five categories all tend to elevate pulse rate.

Most of the drug categories that elevate pulse rate also elevate blood pressure. CNS Stimulants, Hallucinogens, Dissociative Anesthetics, and Cannabis all usually cause blood pressure to rise.

The vast majority of Inhalants, namely, the volatile solvents and the aerosols, also elevate blood pressure. But the remaining small group of Inhalants, the anesthetic gases, actually lowers the blood pressure.

So for Inhalants, the effect on blood pressure will be up or down.



Slide 32.

Three of the categories usually will cause the body temperature to rise.

The drug PCP and its analogs from the Dissociative Anesthetics category usually increase body temperature; PCP users have been known to remove their clothing to cool down.

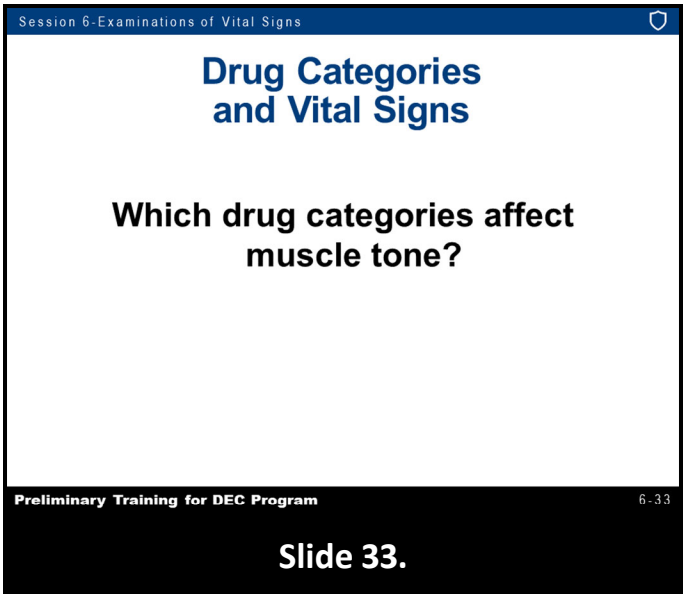
CNS Stimulants and Hallucinogens also will usually increase body temperature.

The effect of Inhalants on body temperature depends on the specific substance inhaled. Some Inhalants may cause temperature to increase or be down. But other Inhalants may leave the temperature near normal.

One category usually causes body temperature to be lowered.

Narcotic Analgesics usually lower body temperature.

The remaining two categories usually do not affect temperature.



Slide 33.

Three of the categories usually will cause the muscle tone to be rigid.

CNS Stimulants, Hallucinogens, and Dissociative Anesthetics will usually cause a rigid muscle tone.

Two categories usually cause muscle tone to be flaccid.

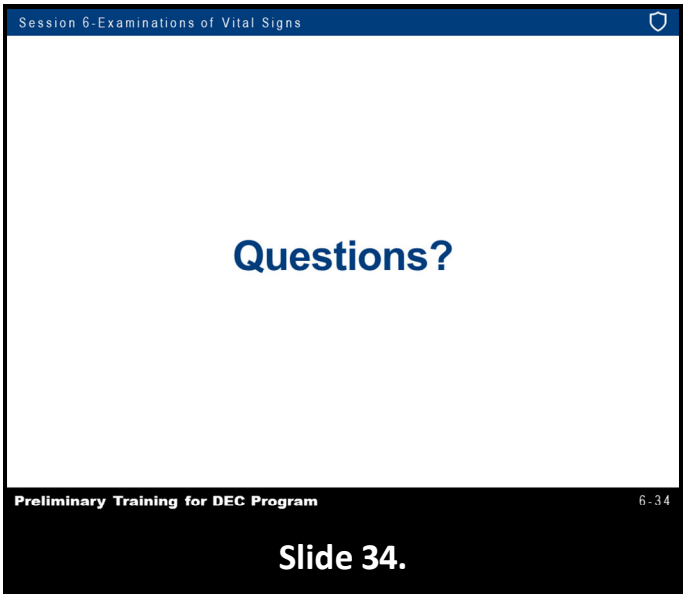
CNS Depressants and Narcotic Analgesics usually cause a flaccid muscle tone.

One category usually causes normal muscle tone.

Cannabis usually causes normal muscle tone.

One category will usually cause either normal or flaccid muscle tone.

Inhalants usually cause either normal or flaccid muscle tone.



Slide 34.

Semi-Blank Matrix

Indicator	CNS Depressant	CNS Stimulant	Hallucinogen	Dissociative Anesthetic	Narcotic Analgesic	Inhalant	Cannabis
HGN							
VGN							
LOC							
Pupil Size							
Reaction to Light							
Pulse							
Blood Pressure							
Body Temperature							
Muscle Tone							

1.

2.

3.

4.

5.

6.

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Estimated time for session: 3 Hours

8 DRE

PRELIMINARY TRAINING

OVERVIEW OF SIGNS AND SYMPTOMS

LEARNING OBJECTIVES

- Give examples of specific drugs belonging to the seven drug categories
- Describe the major signs and symptoms of impairment associated with each category

CONTENTS

LEARNING ACTIVITIES

- Interactive Discussion

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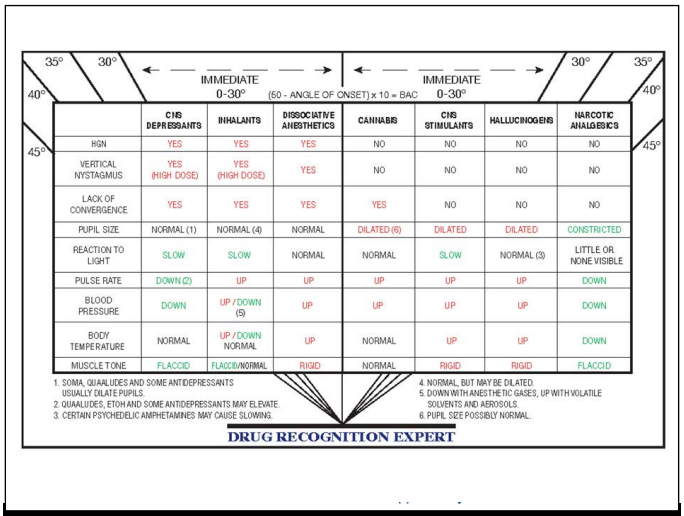

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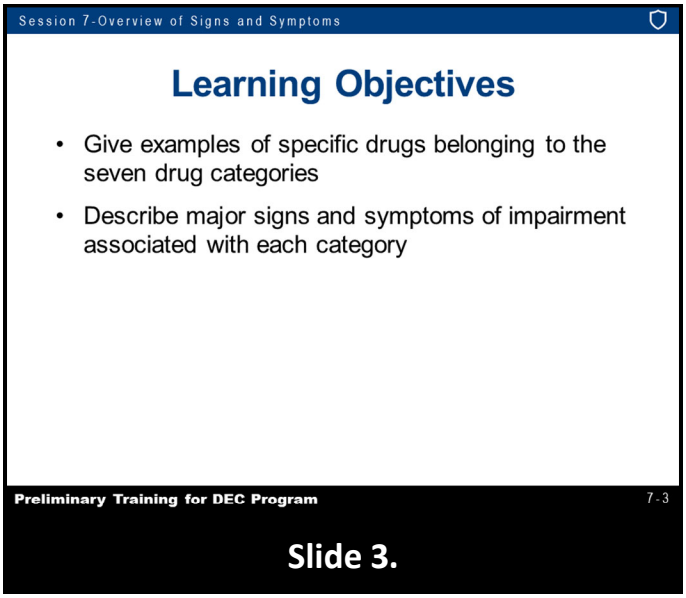
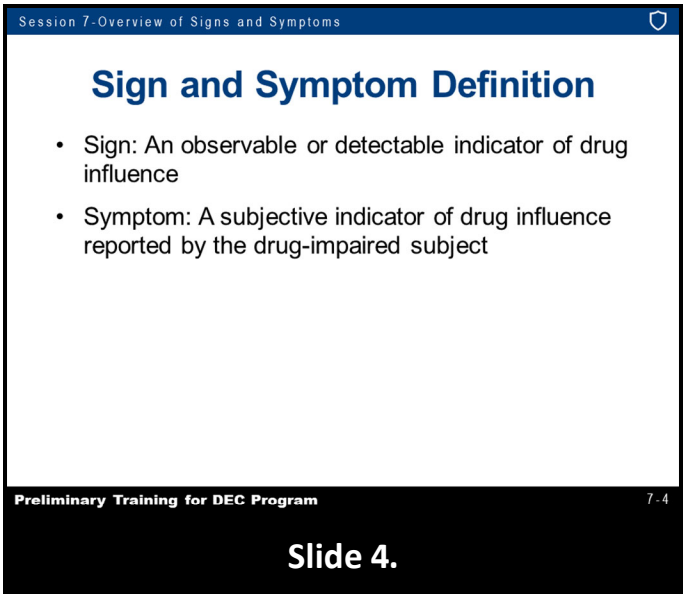


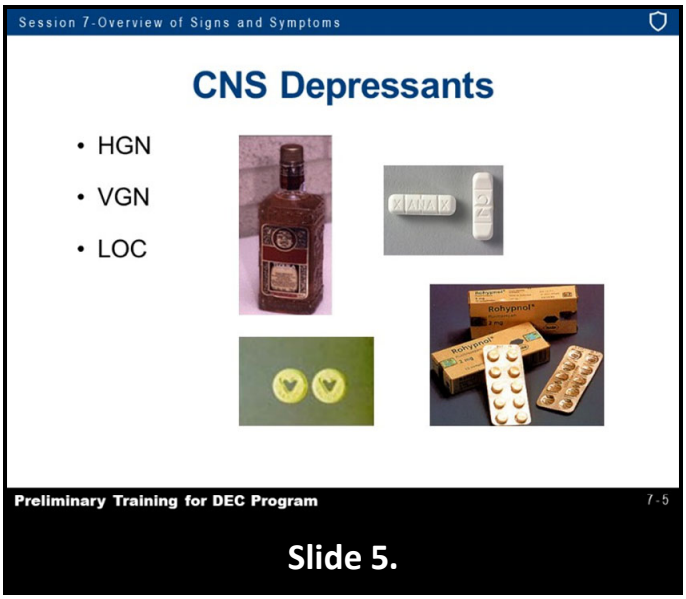
Slide 3.



Slide 4.

Sign: An observable or detectable indicator of drug influence (i.e., dilated pupils, high blood pressure). Symptom: A subjective indicator of drug influence reported by the drug-impaired subject (i.e., "I feel nauseous").

A. CNS Depressants



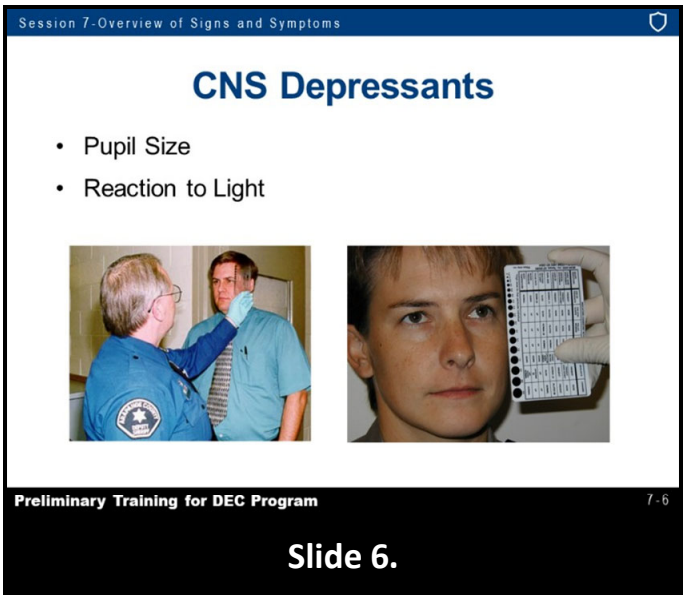
Slide 5.

Central Nervous System (CNS) Depressants is a category that includes many different drugs.

Horizontal Gaze Nystagmus (HGN) usually will be present.

Vertical Gaze Nystagmus (VGN) may be present, especially with high doses (for that individual) of Depressants.

Under the influence of Depressants, Lack of Convergence (LOC) usually will be present.



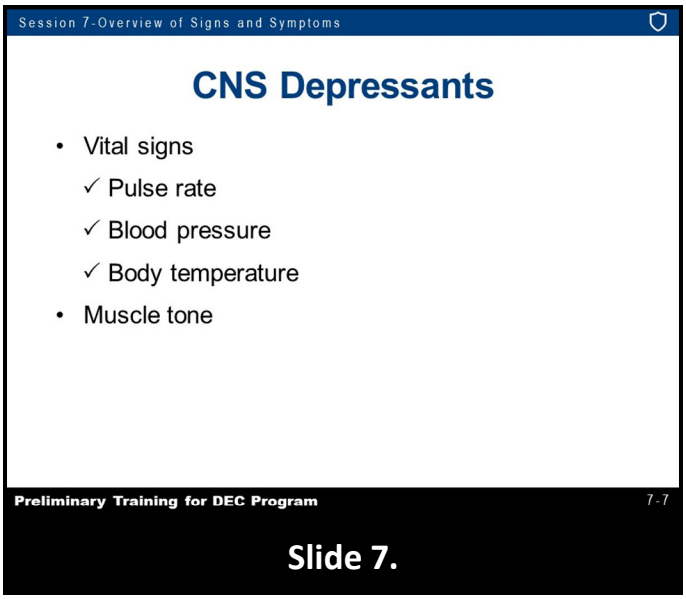
Slide 6.

With depressants there is usually no effect on pupil size; therefore, the pupils will generally be in the average range or expected range.

But some specific Depressant drugs do affect pupil size.

Soma, Methaqualone (Quaaludes), and some antidepressants usually dilate.

Depressants generally will cause pupillary Reaction to Light to be slow.



Slide 7.

Depressants usually lower pulse rate.

But some specific Depressant drugs may elevate the pulse.

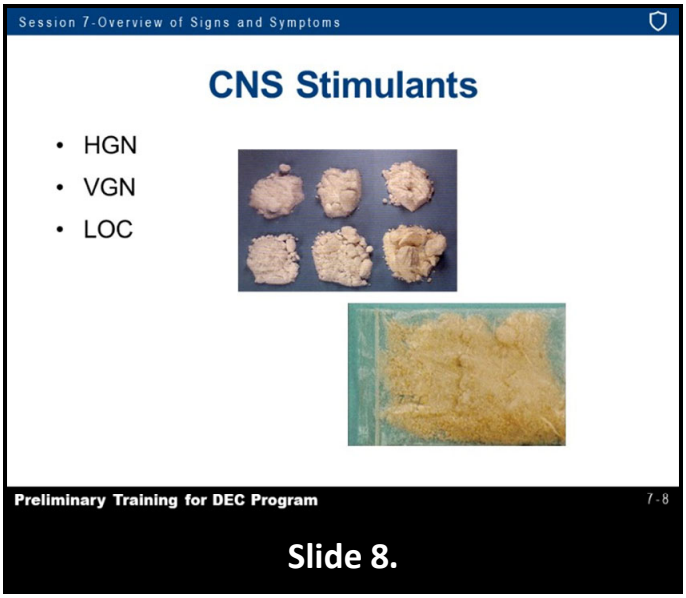
Alcohol, Methaqualone (Quaaludes), and some antidepressants may cause elevation in pulse rate.

Depressants usually lower blood pressure.

Depressants usually do not affect body temperature.

Depressants usually cause flaccid muscle tone.

B. CNS Stimulants

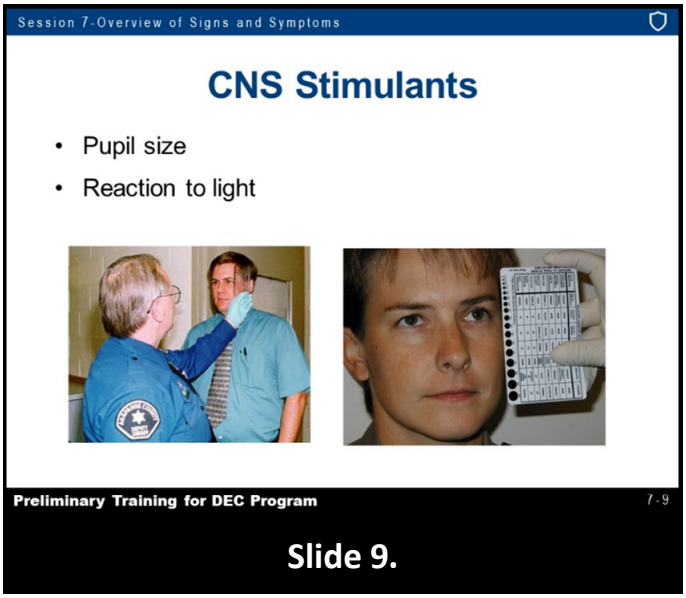


Slide 8.

The CNS Stimulants category includes many drugs.

HGN will not be present.

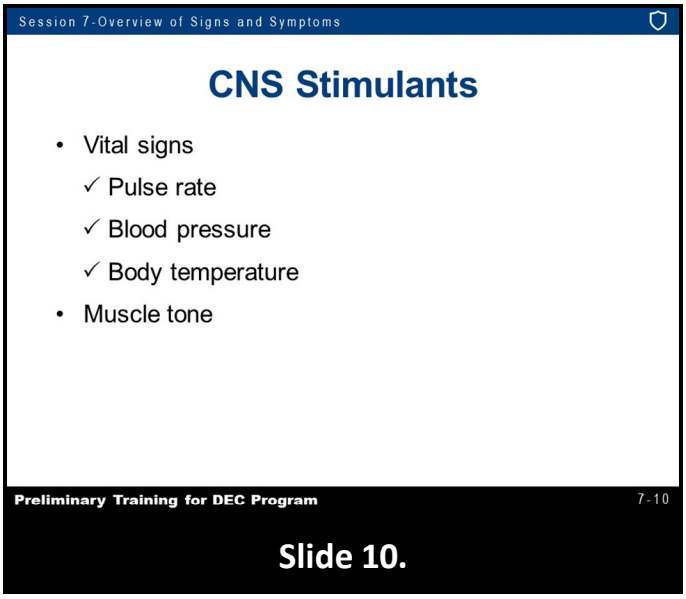
VGN will not be present.



Slide 9.

CNS Stimulants usually cause the pupils to dilate.

We have seen CNS Depressants affect pupillary reaction; similarly, CNS Stimulants may cause a slowing in the pupillary reaction to light.



Slide 10.

Indicators of CNS Stimulant Influence Found in Checks of Vital Signs

CNS Stimulants usually increase pulse rate.

CNS Stimulants usually increase blood pressure.

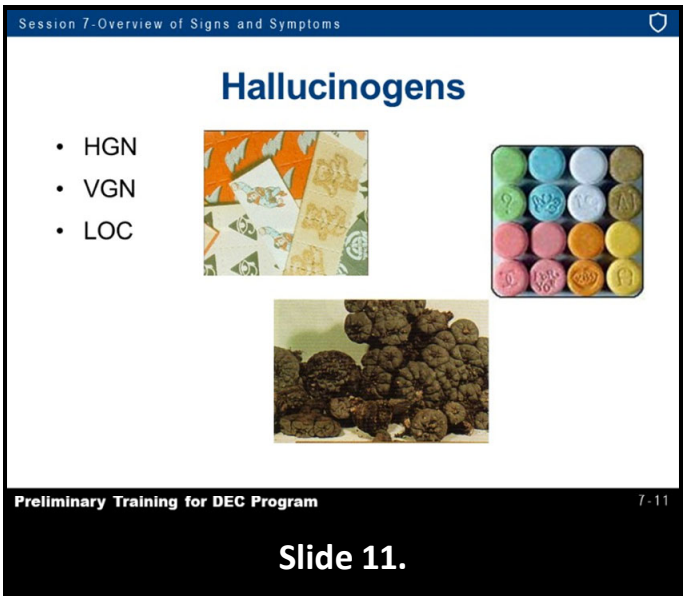
CNS Stimulants usually elevate body temperature.

CNS Stimulants usually cause a rigid muscle tone.

Though not directly related to the vital signs, the DRE may find the subject's muscle tone to be rigid with possible body tremors.

A grinding of the teeth, referred to as "bruxism" may also be noticed.

C. Hallucinogens



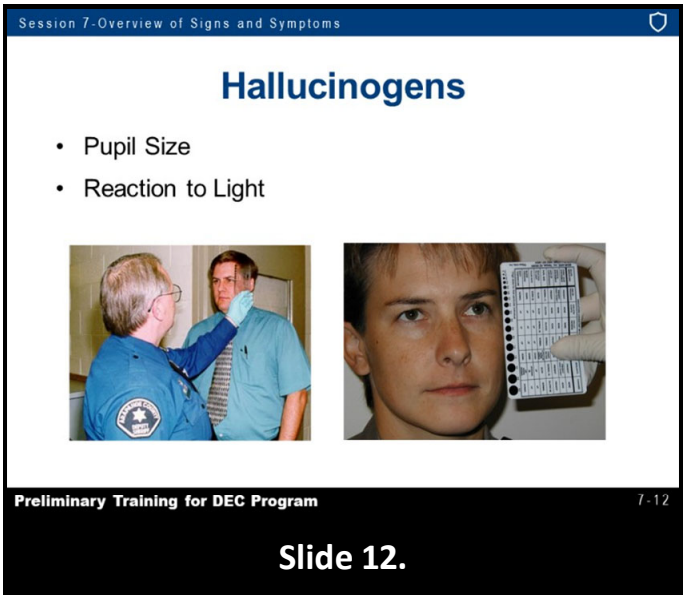
Slide 11.

Hallucinogens include some naturally occurring substances as well as some synthetic drugs.

Hallucinogens typically do not affect HGN and therefore will not be present.

VGN will not be present.

Under the influence of Hallucinogens, the eyes should still be able to converge; therefore, LOC will not be present.

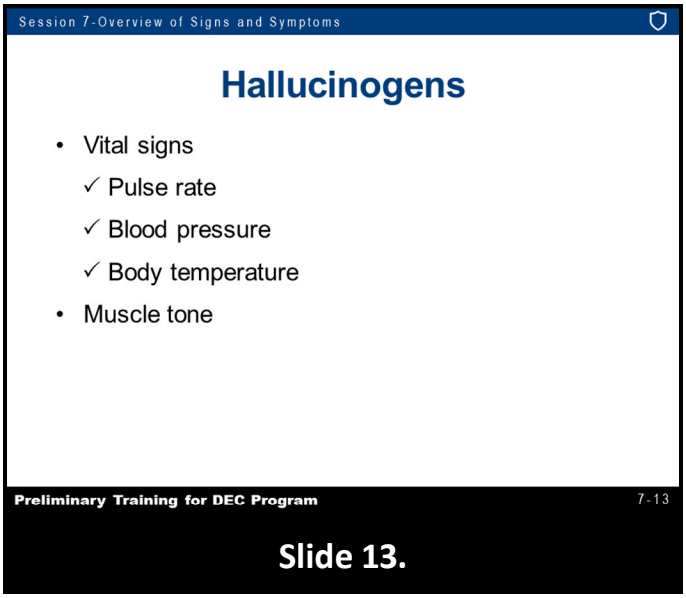


Slide 12.

Hallucinogens usually cause the pupils to dilate.

Normally, Hallucinogens do not affect pupillary reaction to light.

However, certain psychedelic Amphetamines may cause a slowing in the pupillary reaction.



Slide 13.

Hallucinogens usually increase pulse rate.

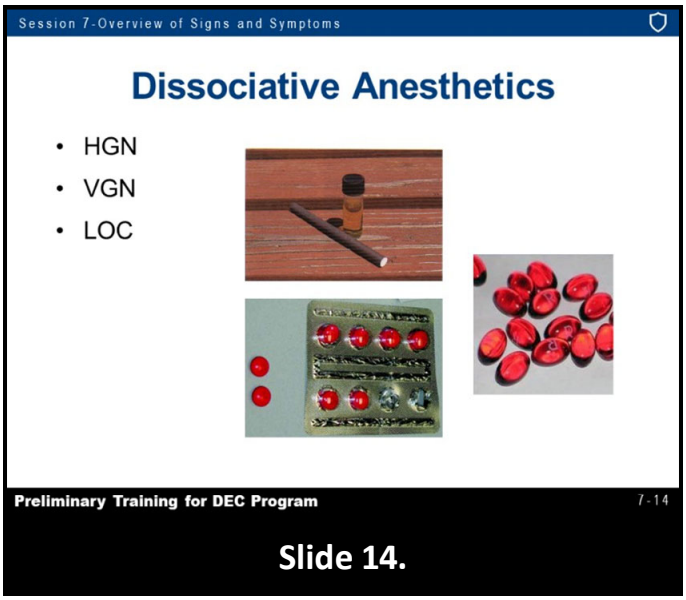
Hallucinogens usually increase blood pressure.

Hallucinogens usually elevate body temperature.

Hallucinogens usually cause a rigid muscle tone.

If we only had these major signs to go by, it would be difficult to distinguish between someone under the influence of CNS Stimulants from someone under the influence of Hallucinogens.

D. Dissociative Anesthetics



Slide 14.

The category called Dissociative Anesthetics consists of the drug PCP, its various analogs, and Dextromethorphan.

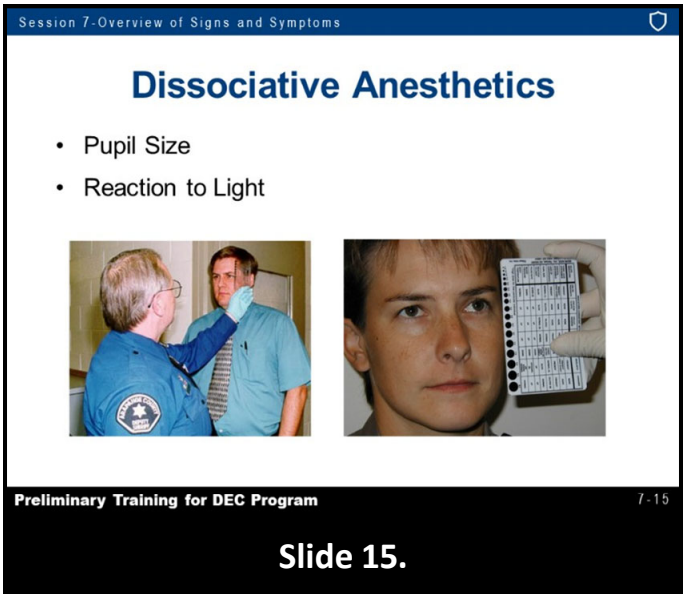
An “analog” of PCP is a drug that is a “chemical first cousin” of PCP; that is, it is a drug that has a slightly different molecular structure from PCP but produces the same effects as PCP.

One of the most popular analogs of PCP is the drug called Ketamine. Ketamine is a legally manufactured (but controlled) drug used as an anesthetic in some surgical applications. Some other analogs of PCP include Ketalar and Ketaset. Dextromethorphan is a drug found in numerous over-the-counter substances.

HGN usually will be present and often with a very early onset.

VGN usually will be present.

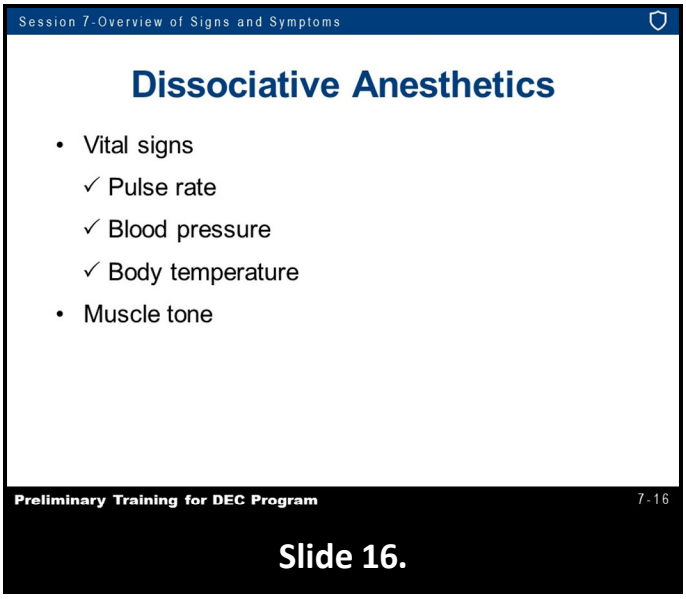
LOC usually will be present.



Slide 15.

Dissociative Anesthetics do not normally affect pupil size; therefore, a person under the influence of a Dissociative Anesthetic, such as PCP, usually will have pupils in the DRE average ranges.

Dissociative Anesthetics normally will not affect pupillary reaction to light.



Slide 16.

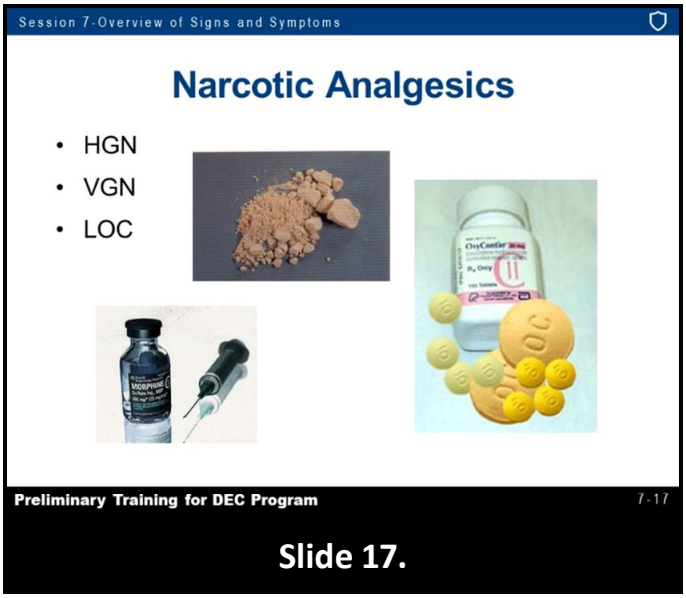
Dissociative Anesthetics usually increase pulse rate.

Dissociative Anesthetics usually elevate blood pressure.

PCP and its analogs usually elevate body temperature. Dextromethorphan may or may not rise temperature.

Dissociative Anesthetics usually cause rigid muscle tone.

E. Narcotic Analgesics



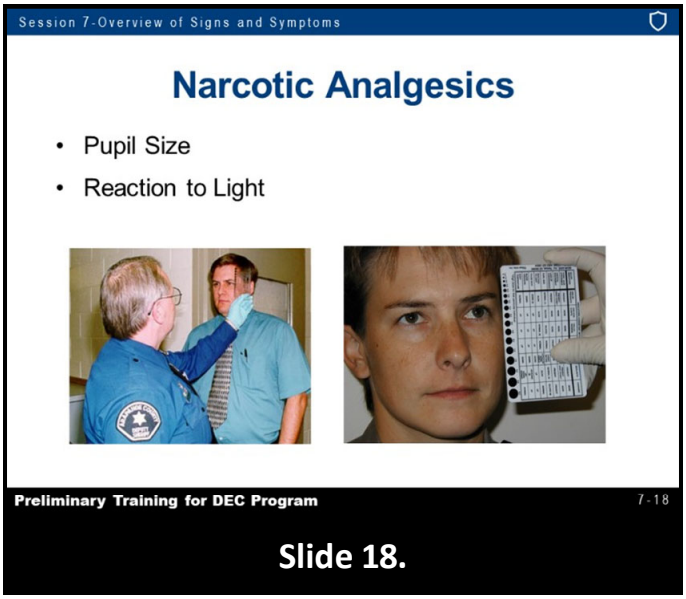
Slide 17.

Narcotic Analgesics include some natural derivatives of Opium as well as some synthetic drugs.

There is typically no effect of HGN on VGN with Narcotic Analgesics, therefore HGN will not be present.

VGN will not be present.

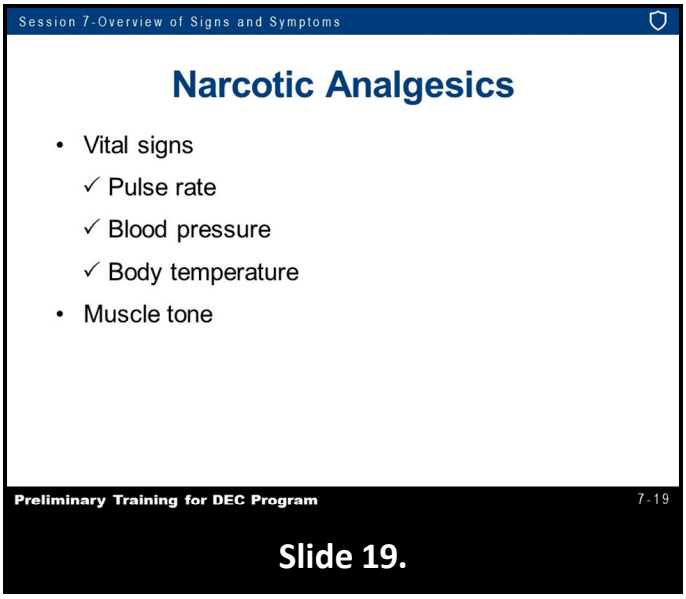
Under the influence of Narcotic Analgesics, the eyes should still be able to converge; therefore, LOC usually is not present.



Slide 18.

Narcotic Analgesics usually cause a very noticeable constriction of the pupils.

Though there is always some reaction to light, the constricted pupils caused by Narcotic Analgesics can make it nearly impossible to observe a change in pupil size. However, when observed it will generally be little or none visible.



Slide 19.

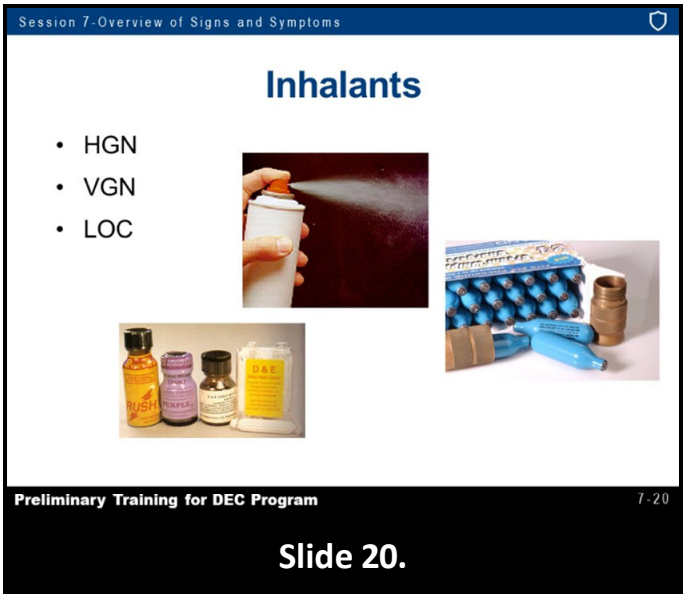
Narcotic Analgesics usually lower pulse rate.

Narcotic Analgesics usually lower blood pressure.

Narcotic Analgesics usually lower body temperature.

With a Narcotic Analgesic, muscle tone will be flaccid.

F. Inhalants



Slide 20.

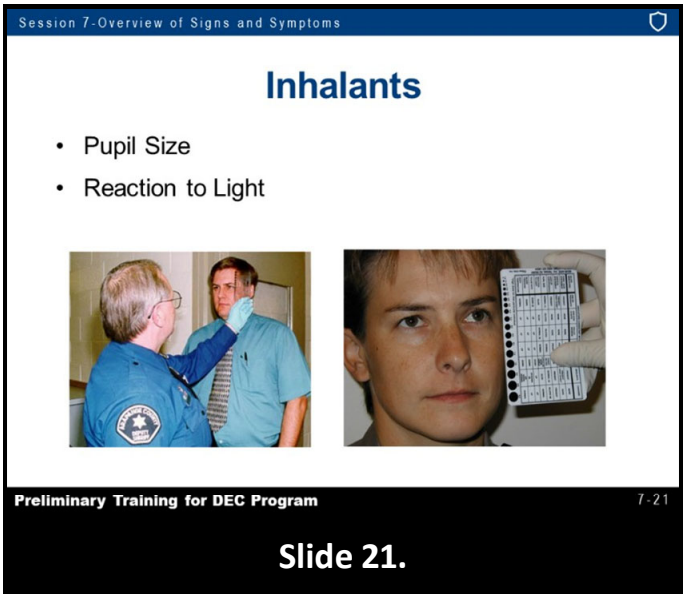
The category of Inhalants includes a wide variety of gases and fumes that have mind-altering effects.

Not all Inhalants affect their users in exactly the same way. There is probably less consistency in the signs and symptoms of Inhalants than there is with any other category. When we talk of the signs and symptoms of Inhalants, we often must qualify our statements. For example, we may say a particular effect will be observed “for most Inhalants”.

With most Inhalants, HGN usually will be present.

With most Inhalants, VGN may be present, especially with large doses.

Under the influence of Inhalants, LOC usually will be present.



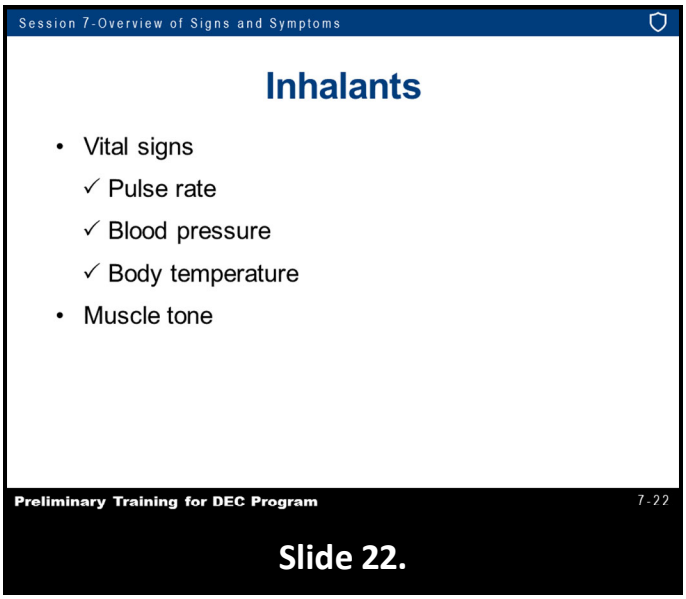
Slide 21.

The effect of Inhalants on pupil size depends on the particular substance inhaled.

Most Inhalants do not affect pupil size and usually leave the pupils in the DRE average ranges.

Some Inhalants may cause pupil dilation.

Depending on the substance used, Inhalants may cause a slowed reaction to light or the pupils may react normally. However, the most frequently observed effect will be a slow reaction to light.



Slide 22.

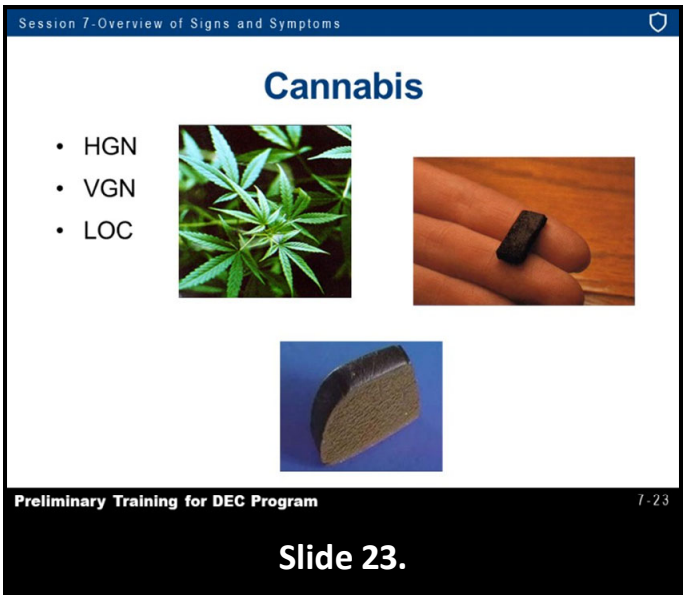
Inhalants usually elevate pulse rate.

Most inhalants usually elevate blood pressure, but some lower blood pressure.

The effects of Inhalants on temperature depend on the particular substance inhaled.

Depending on the Inhalant, muscle tone may or may not be affected resulting in a normal or flaccid muscle tone.

G. Cannabis

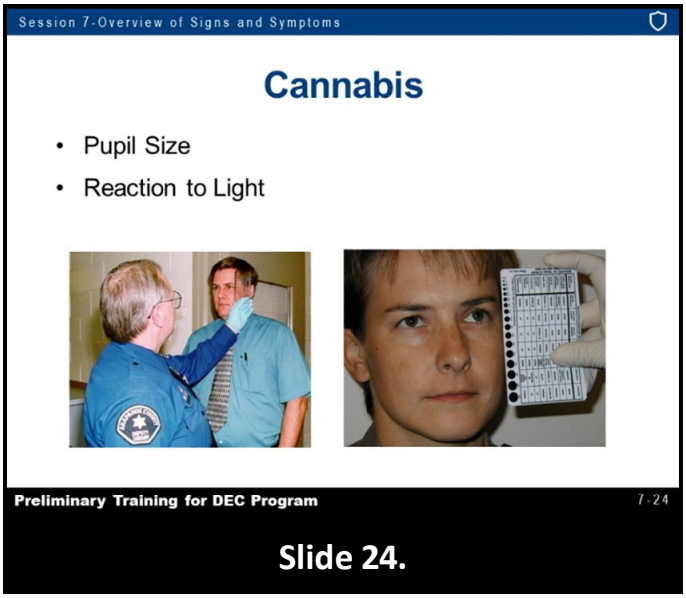


Slide 23.

Typically, Cannabis has no effect on HGN or VGN therefore, HGN will not be present.

VGN will not be present.

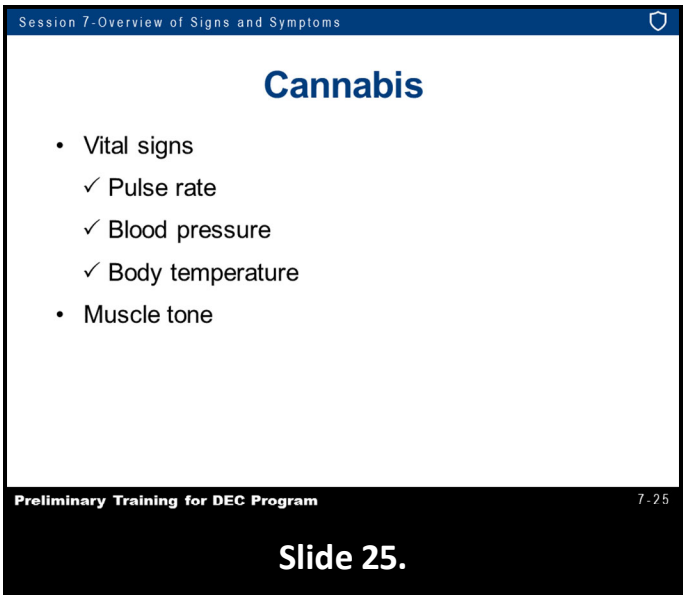
Under the influence of Cannabis, LOC will be present.



Slide 24.

Under the influence of Cannabis, the pupils may be dilated or possibly within the DRE average ranges.

The pupillary reaction to light with Cannabis is typically not affected and will appear normal when under the influence of Cannabis.



Slide 25.

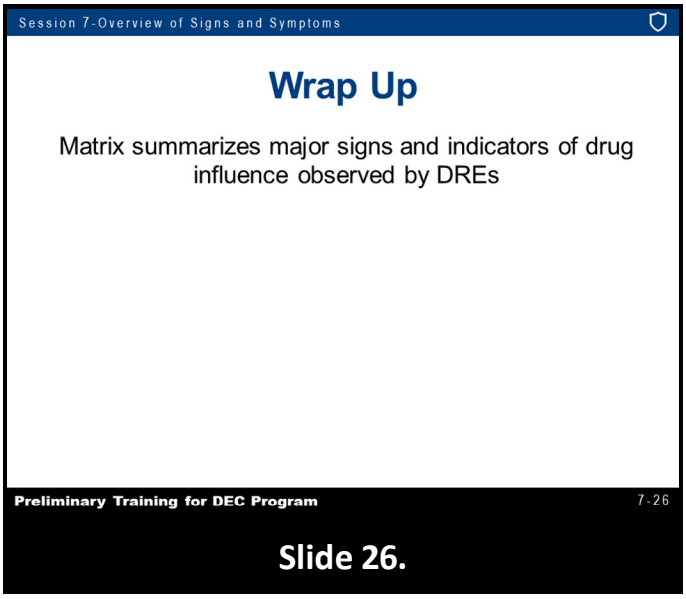
Cannabis usually elevates pulse rate.

Blood pressure with Cannabis impairment can vary depending upon use, tolerance and time of use. Cannabis usually elevates blood pressure.

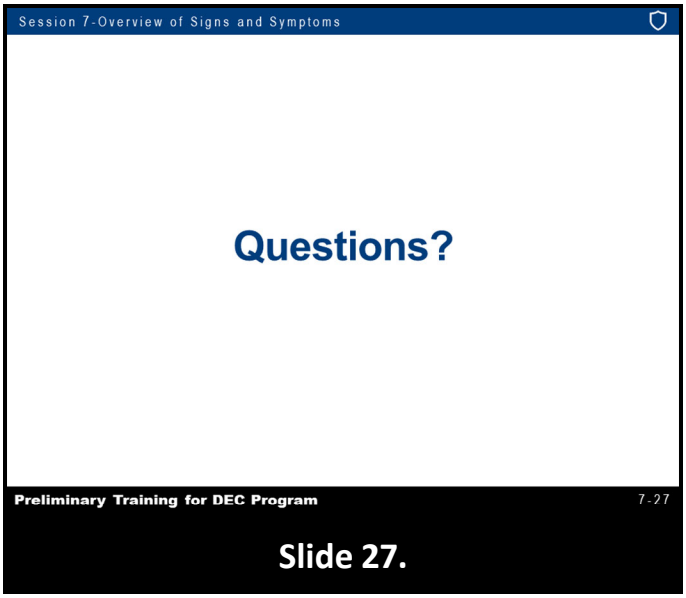
Cannabis usually leaves temperature near the normal body temperature ranges.

Cannabis usually causes normal muscle tone.

H. Wrap-Up



Slide 26.


Session 7-Overview of Signs and Symptoms
Questions?
Preliminary Training for DEC Program
7-27

Slide 27.

Estimated time for session: 1 Hour, 30 Minutes

9 DRE
PRELIMINARY TRAINING

ALCOHOL AS A DRUG

LEARNING OBJECTIVES

- Describe a brief overview of alcohol
- Identify common types of alcohols
- Describe the physiological processes of absorption, distribution, and elimination of alcohol in the human body
- Describe dose response relationships that impact alcohol's impairing effects

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Oral Quiz

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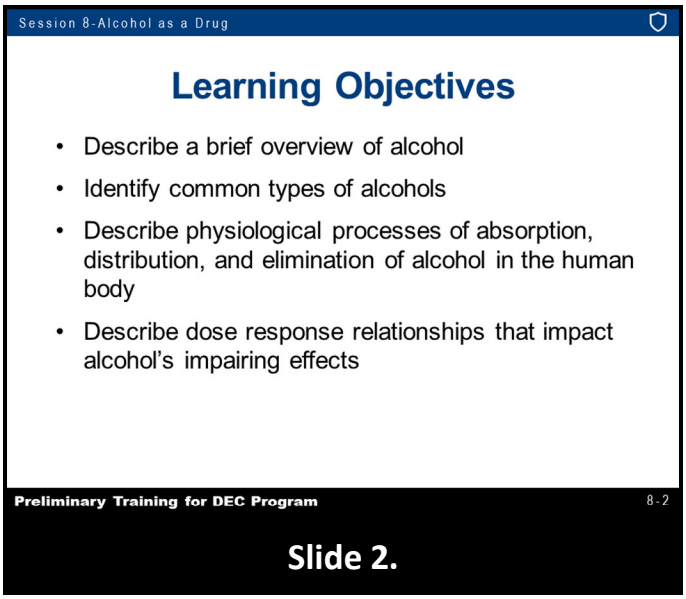
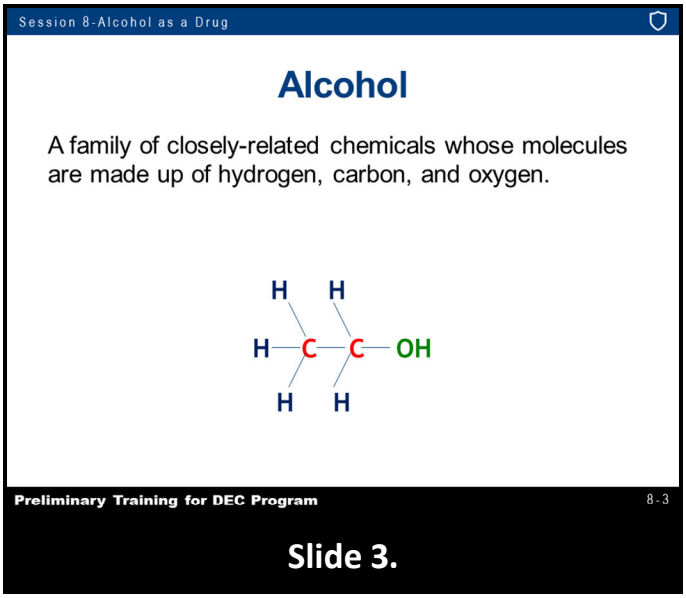


Slide 2.

Alcohol is a drug. In fact, alcohol is the most commonly abused drug. As Drug Recognition Experts (DREs), the participants will often encounter persons who are under the combined influence of alcohol and some other drug.

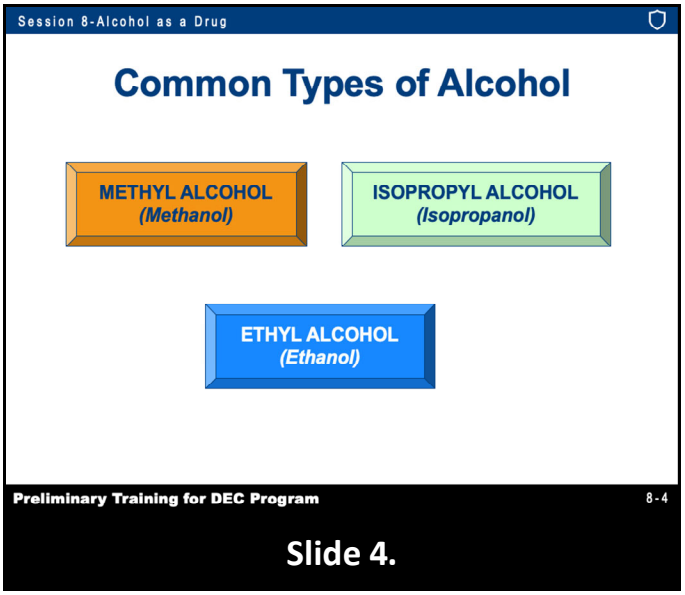
A. Brief Overview of Alcohol



Slide 3.

The word “alcohol” refers to a number of distinct, but similar, chemicals. Each of the chemicals called an “alcohol” is composed of the three elements: hydrogen, carbon, and oxygen. Each of the “alcohols” is a drug within the scope of our definition.

But only one can be tolerated by the human body in substantial quantities.

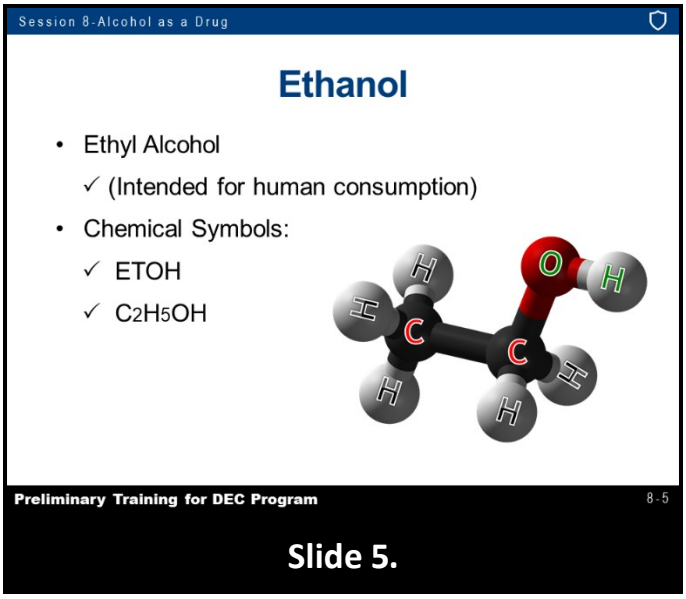


Slide 4.

Three of the more commonly known “alcohols” are Methyl, Isopropyl, and Ethyl. Methyl Alcohol, also known as Methanol, or “wood alcohol”. Isopropyl Alcohol, also known as Isopropanol, or “rubbing alcohol”.

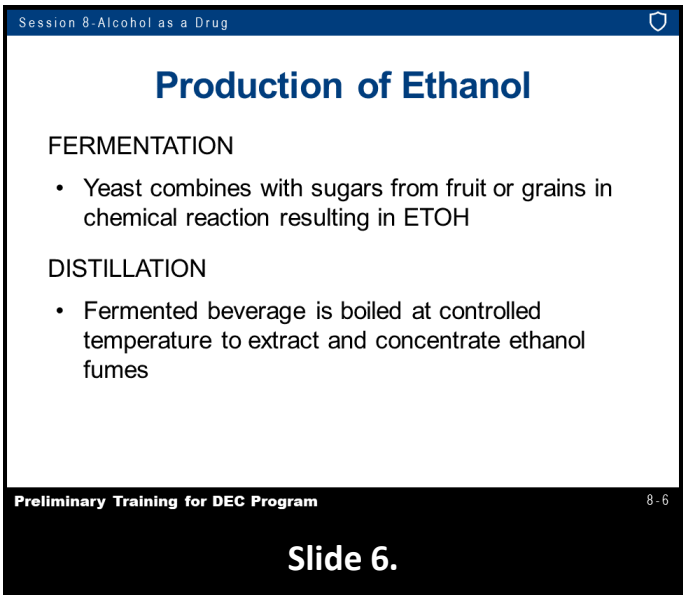
Ethyl Alcohol, also known as Ethanol, or “beverage alcohol”.

Ethanol Alcohol: Ethanol is the kind of alcohol on which we will focus because it is the only type intended for human consumption. Ethanol is the active ingredient in beer, wine, whiskey, and other alcoholic beverages intended for drinking. Like all “alcohols,” ethanol is composed of hydrogen, carbon, and oxygen. Chemists use a number of different symbols to represent ethanol.



Slide 5.

For our purposes, we will use the symbol “ETOH”. The “ET” represents “ethyl” and the “OH” represents an oxygen atom and hydrogen atom, bonded together in what the chemists refer to as the “hydroxy radical”. All alcohols have a hydroxy radical in their molecules. Ethanol has been around for a long time. People drank it long before they learned to write.



Slide 6.

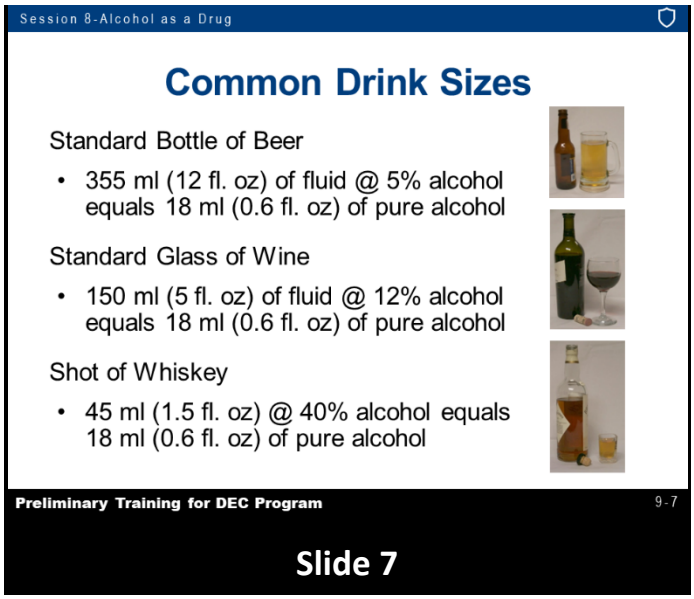
Ethanol is a naturally occurring drug. That is, it is produced through a process called fermentation. In fermentation, spores of yeast, carried by the wind, come in contact with fruit or grain that has fallen to the ground.

Sugars in the fruit or grain chemically react with yeast and produce ethanol. Humans almost certainly first encountered ethanol that had been produced accidentally in this fashion. Of course, today we don't sit around waiting for the wind to bring yeast to fallen fruit. Most fermentation takes place on purpose, under controlled conditions. Through the process of fermentation, we can produce a beverage that has, at most, about 14% ethanol.

When the ethanol concentration reaches 14%, the yeast dies, so fermentation stops.

If we want to have higher concentration ethanol beverages, we have to use another step in the production. Distillation is the process used to produce a higher concentration of ethanol. In distillation, a fermented beverage is heated to the point where the ethanol begins to boil. Ethanol starts to boil at a lower temperature than water. The ethanol vapor is collected and allowed to cool until it turns back into a liquid. By repeating the process of heating the liquid and collecting and cooling the vapors, higher and higher concentrations of ethanol can be produced. Ethanol beverages produced by distillation are called distilled spirits.

Over the centuries in which people have produced ethanol, some general or common-sized servings of different beverages have evolved.



Slide 7

Beer is traditionally served in 12-ounce (355 ml) cans or bottles. Since beer averages an ethanol concentration of five percent, a can or bottle contains slightly more than one-half ounce (18 ml) of pure ethanol (craft, microbrewery, and imported beverages may contain a higher ethanol concentration).

Five ounces (150 ml) of wine with an alcohol concentration of 12% contains slightly more than one half ounce (18 ml) of pure alcohol.

Whiskey and other distilled spirits are dispensed in a “shot” glass, which usually contain one and one-half ounces (30-45 ml) of liquid. Since whiskey usually has an ethanol concentration of 40%, a “shot” of whiskey has slightly more than one-half ounce (18 ml) of pure ethanol.

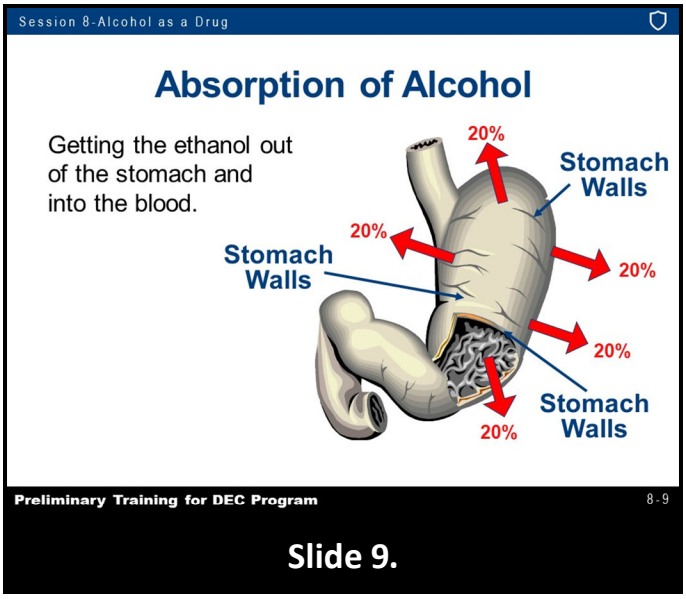
For all practical purposes, standard sized servings of beer, wine, and whiskey all pack the same “punch.”

B. Physiological Processes

Alcohol is the most abused drug in the United States and Canada.

Ethanol is a Central Nervous System (CNS) Depressant. It doesn't impair until it gets into the brain. It can't get into the brain until it first gets into the blood. It can't get into the blood until it first gets into the body. **This concept is true with all drugs that impair.**

There are a number of ways in which alcohol can get into the body. It can be injected into a vein via hypodermic needle. It can be inhaled, i.e., alcohol fumes can be brought into the lungs and some molecules will pass into the blood. It could also be inserted as an enema and administered by quickly passing from the large intestine into the blood. But the vast majority of times alcohol gets into the body, it gets there via drinking.

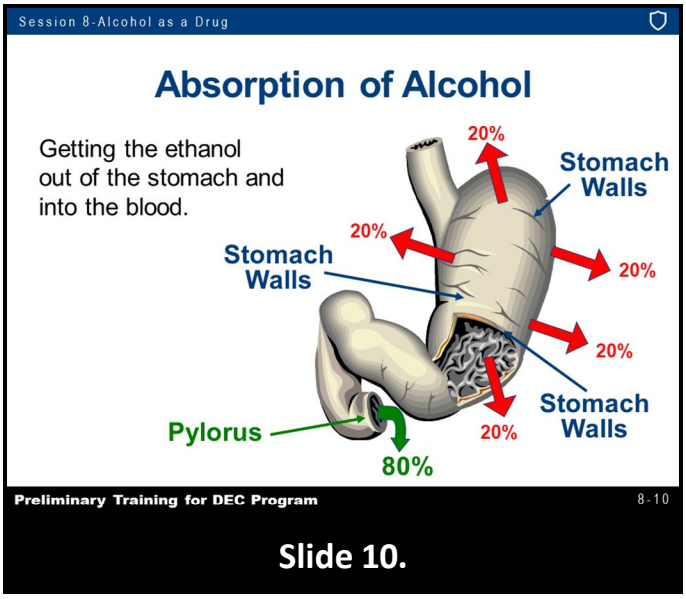


Slide 9.

Once the alcohol is in the stomach, it will take two routes to get into the blood.

One interesting thing about alcohol is it is able to pass directly through the stomach walls. Under normal conditions, about 20% of the alcohol a person drinks gets into the blood by diffusing through the walls of the stomach. But most of the alcohol usually passes through the base of the stomach into the small intestine, from which it passes quickly into the blood.

Another interesting thing about alcohol is it does not have to be digested before it can move from the stomach to the small intestine. When a person eats food, the food must remain for a time in the stomach. Acids and enzymes in the stomach must begin to break down the food to prepare it to pass to the lower portion of the gastrointestinal track. While the initial digestive process is underway, a muscle at the base of the stomach will constrict and shut off the passage to the small intestine.

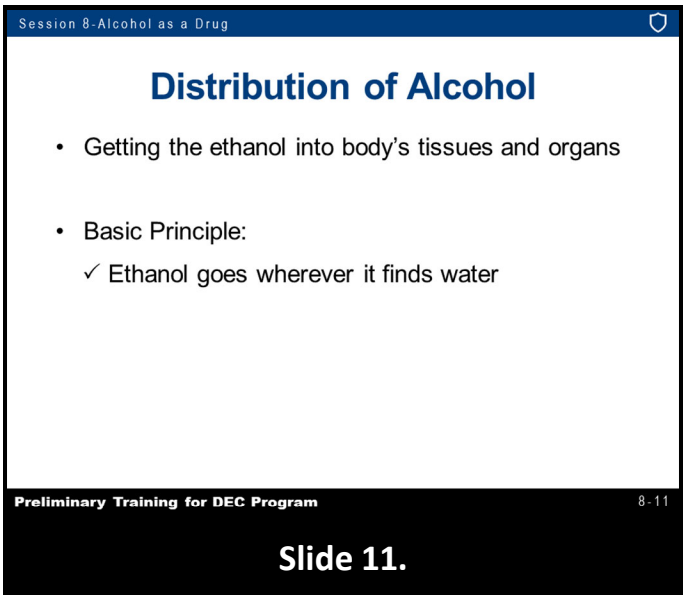


Slide 10.

Note the muscle called the pylorus, or pyloric valve. Since alcohol doesn't have to be digested, the pylorus does not constrict when alcohol enters the stomach. If we drink on an empty stomach, the pylorus stays wide open. The alcohol will pass immediately through the base of the stomach, into the small intestine and quickly move into the bloodstream.

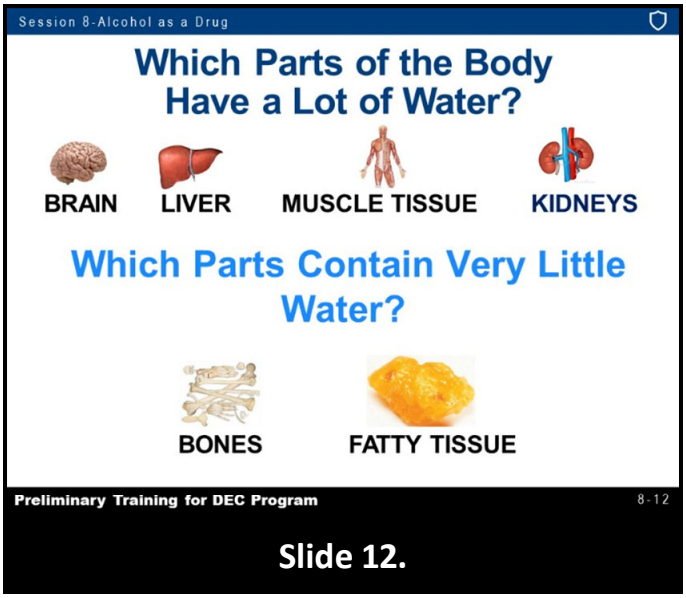
Food will cause the pylorus to constrict. While the pylorus is closed, nothing will move from the stomach to the small intestine. Any alcohol in the stomach will be “trapped” there, along with the food and the alcohol will not get into the blood as quickly. Drugs taken orally will behave similarly. Blood alcohol concentration (BAC) will not get as high as it would if the drinking had been done on an empty stomach. While the alcohol is trapped in the stomach, the acids and enzymes will start to react with it and break it down. By the time the pylorus opens, some of the alcohol will have been chemically changed so there will be less available to get into the blood.

Once the alcohol gets into the blood, the blood will carry it to the various tissues and organs of the body.



Slide 11.

Alcohol is attracted to water. The blood will deposit the alcohol in all the parts of the body where water is found. Parts of the body that have a lot of water will receive a lot of alcohol. Parts of the body that have only a little water will receive little alcohol. **Basic Principle: Ethanol goes wherever it finds water.**

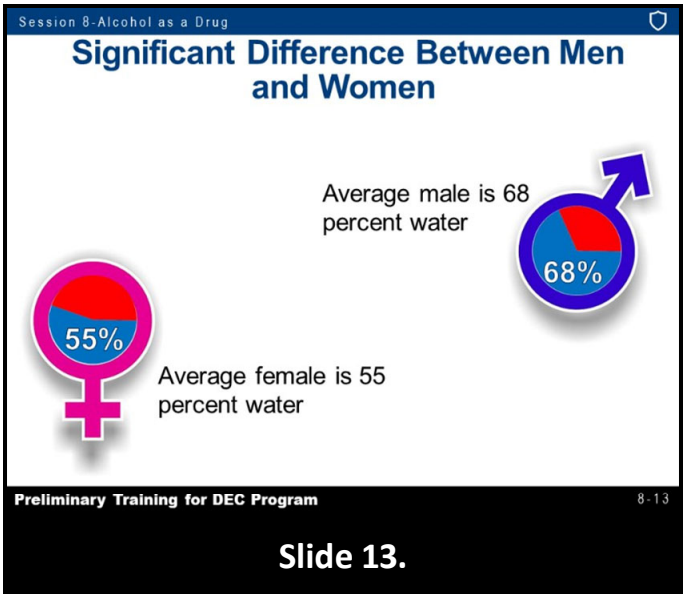


Slide 12.

- Brain
- Liver
- Muscle tissue
- Kidneys
- Bones
- Fatty tissue

The fatty tissue will receive very little of the alcohol.

The muscle tissue will receive a relatively high proportion of the alcohol a person drinks.

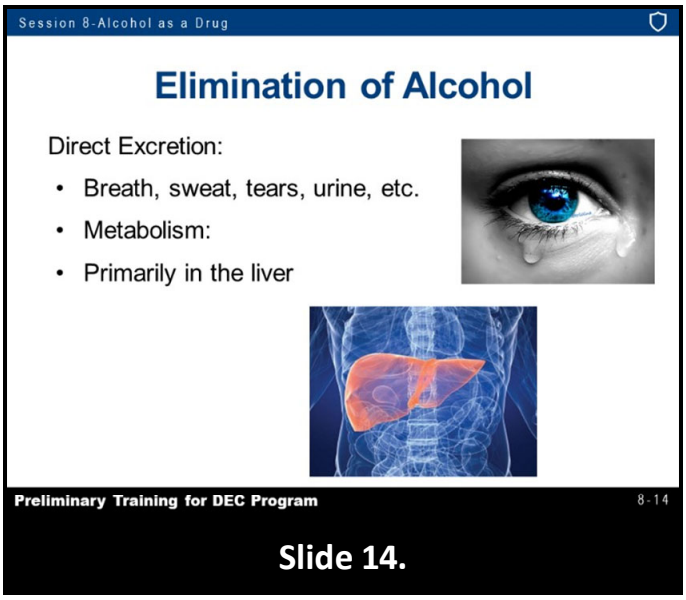


Slide 13.

Here is an interesting and significant difference between men and women: pound-for-pound, the average male has much more water in his body than the average female.

The female body has more fatty tissue than does the male body.

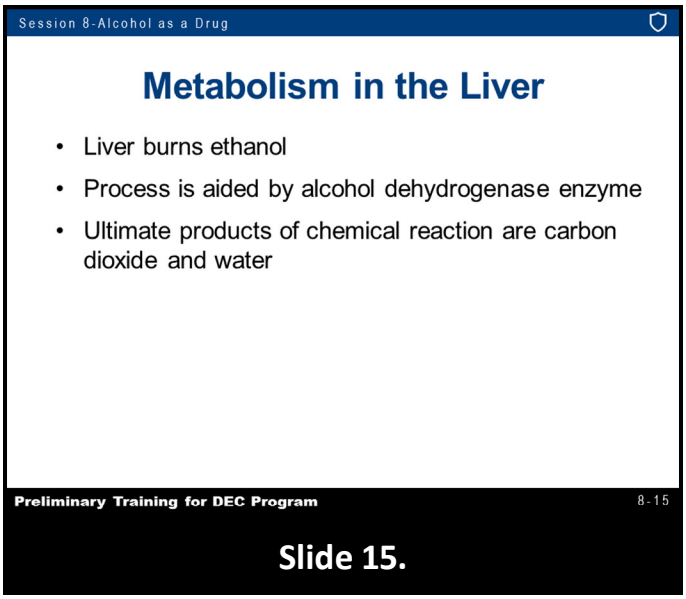
Pound-for-pound, the average female has more fat and less muscle than does the average male. Since fatty tissue has very little water, the average female, pound-for-pound, has less water than the average male. This means the average woman has fewer places in her body in which to deposit the alcohol she drinks.



Slide 14.

As soon as alcohol gets into the body, the body begins working to get rid of it. Some alcohol is simply expelled directly from the body, i.e., on the breath, in the sweat, in urine, etc. Relatively little of the alcohol we drink is directly expelled from the body. Clarification: Only about 2–10% of the alcohol we consume is directly excreted in the breath, urine, etc. The body eliminates most of the alcohol by chemically breaking it down.

The liver is primarily responsible for breaking down, or metabolizing, the alcohol. Clarification: Some metabolism of alcohol also takes place in other parts of the body, including the brain. The liver does the vast majority of the job.

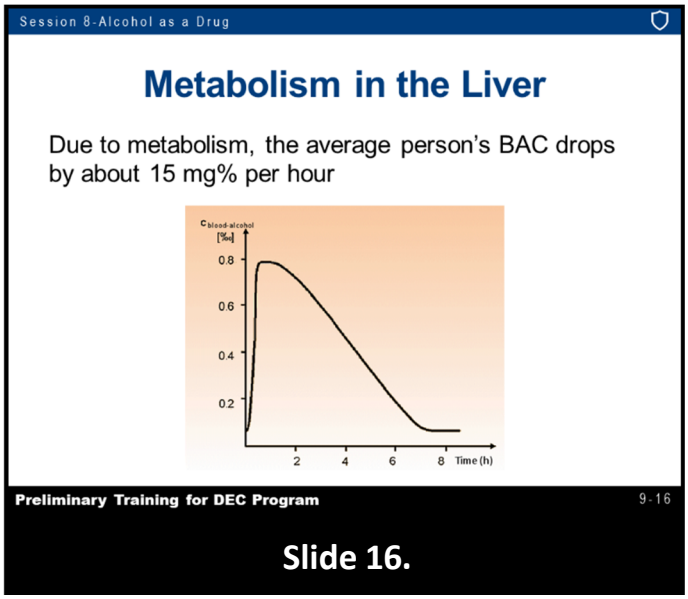


Slide 15.

Metabolism of alcohol actually consists of a slow, controlled burning of the alcohol.

In the burning process, the alcohol combines with oxygen. The liver has an enzyme called alcohol dehydrogenase, which helps to speed up the reaction of oxygen with the alcohol. Clarification: The enzyme does not react with the alcohol itself, but simply makes it easier for the oxygen to react with the alcohol. The technical term for something that helps a chemical reaction while not itself taking part in the reaction is a catalyst. Alcohol dehydrogenase is a catalyst for the metabolism of alcohol.

The reaction of alcohol with oxygen ultimately produces carbon dioxide and water, which can be directly expelled from the body.

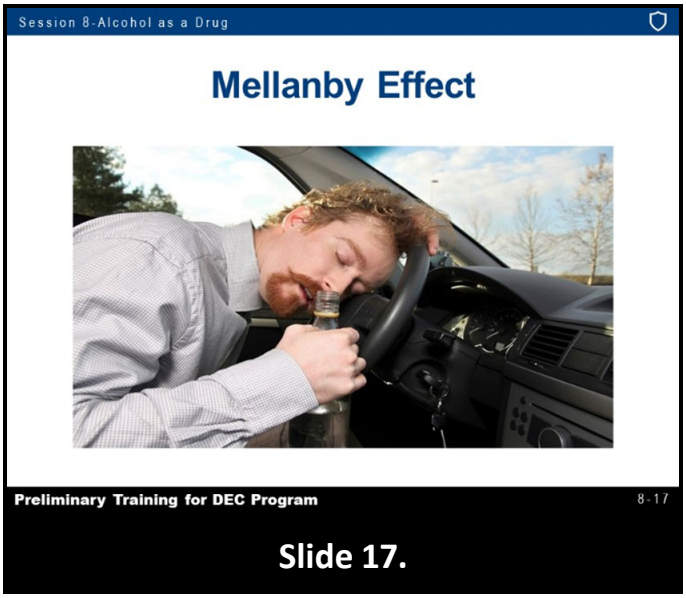


Slide 16.

The speed with which the liver burns alcohol varies from person to person and will change from time to time for any particular person.

BUT ON THE AVERAGE: Due to metabolism, a person's BAC will drop by about 15 mg% per hour. For the average male, a BAC of 15 mg% is equal to the alcohol content of about two-thirds of a "standard drink," i.e., about two-thirds of a can of beer, or about two-thirds of a glass of wine, or two-thirds of a shot of whiskey. For the average woman, a BAC of 15 mg% is equal to the alcohol content of only one-half of a "standard drink." So the average male can "burn up" about two-thirds of a drink in an hour. But the average female can only burn up about one-half of a drink in an hour. In other words: suppose a person gulps down a can of beer, or a glass of wine, or a shot of whiskey; if the person is an average man, it will take him about an hour and one-half to burn up that alcohol; if the person is a woman, it will take her about two hours.

- We can't speed it up
- Drinking coffee won't help
- A cold shower won't help
- Exercise won't help
- Our livers take their own sweet time burning the alcohol



Slide 17.

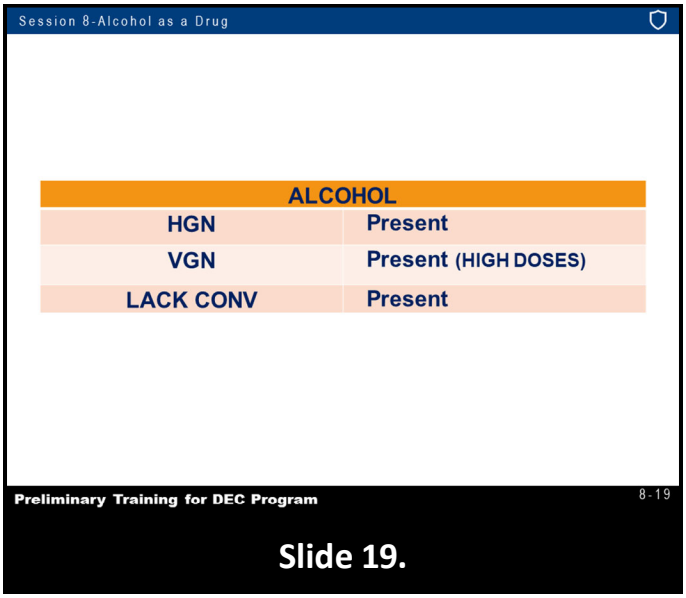
A person feels more impaired while his/her BAC is still rising, than at the same level while his/her BAC is declining. The person is not less impaired, but they "feel better;" (the "Mellanby Effect") which makes them more likely to drive while impaired. Even though a person may feel better on the declining curve, their impairment may be worse. Sample analogy: Imagine driving on a feeder road to the freeway. The speed limit on that feeder road is 70 km/h. 70 km/h feels like a good speed. You then merge onto the freeway and drive at speeds of 100 – 110 km/h. You reach your exit, exit back onto a feeder road. You decrease your speed to 70 km/h; however, now 70 km/h feels painstakingly slow. This is the Mellanby Effect in a nutshell; you felt the 70 km/h was faster before you went faster. You felt you were more impaired before you were more intoxicated.

Slide 18.

The findings of the study done by Sir Edward Mellanby:

1. At a blood alcohol concentration on the way up, a person will feel more impaired than at the same blood alcohol concentration on the way back down. A person on the declining prong of the BAC curve will feel "better," but still be impaired. For example, at a BAC of 50 mg% when a person's BAC is rising, will feel more impaired and refuse to drive; as compared to the person at a BAC of 50 mg% when they are on the declining prong of the BAC curve.
2. The skills needed to drive safely are objectively worse on the declining prong of the BAC curve, even though the person subjectively feels better.
3. A person is more likely to drive impaired on the declining BAC prong because of loss of inhibitory control.

C. Symptomatology of Alcohol

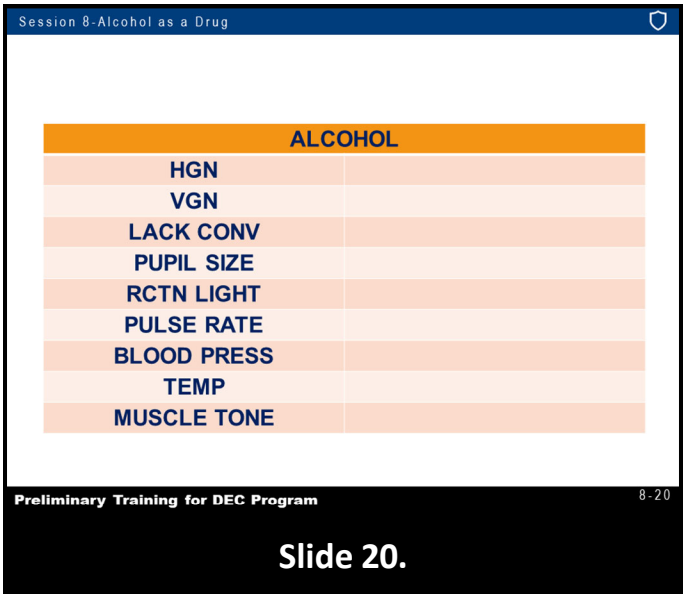


Slide 19.

Horizontal Gaze Nystagmus (HGN) will be present.

Vertical Gaze Nystagmus (VGN) may be present, especially with high doses (for that individual) of alcohol.

Under the influence of alcohol, Lack of Convergence (LOC) frequently will be present.



Slide 20.

Alcohol does not affect pupil size; therefore, alcohol usually leaves the pupils in the DRE average ranges.

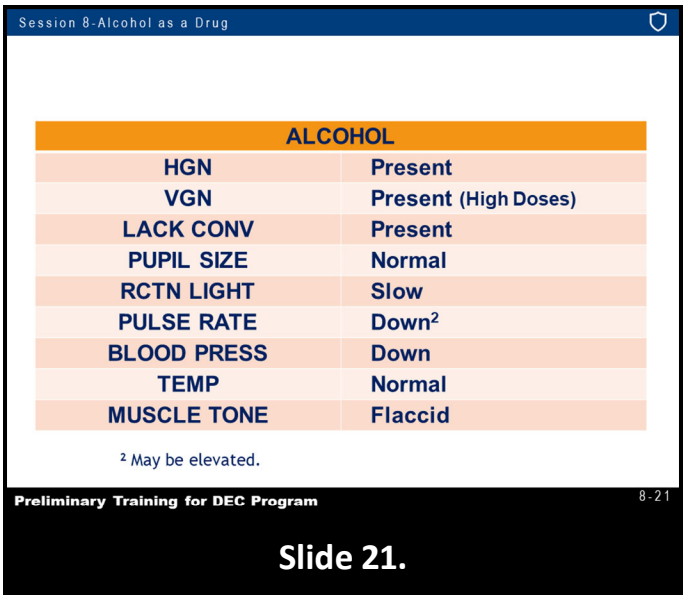
Alcohol will cause pupillary reaction to light to be slow.

Pulse rate will usually be down. However, ETOH is one of the exceptions and some subjects have been found to have elevated pulse rates at lower BACs.

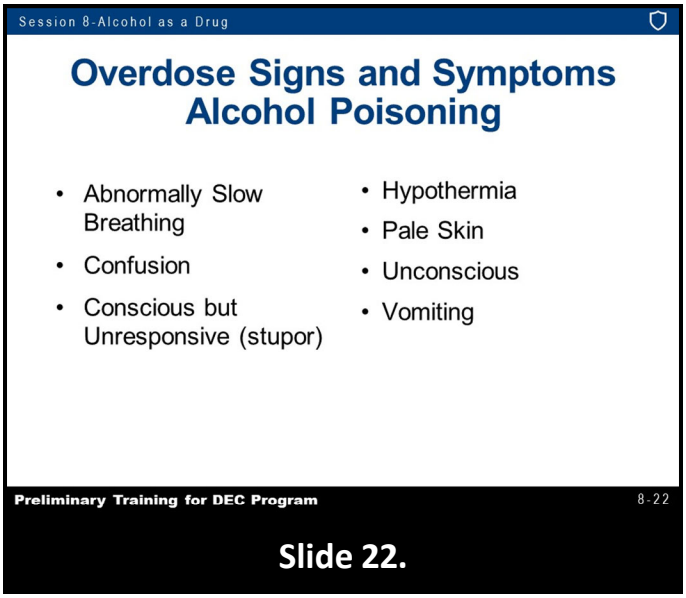
Blood pressure response to alcohol will normally be down.

Alcohol usually leaves body temperature near the average range.

Alcohol usually causes flaccid muscle tone.



Slide 21.

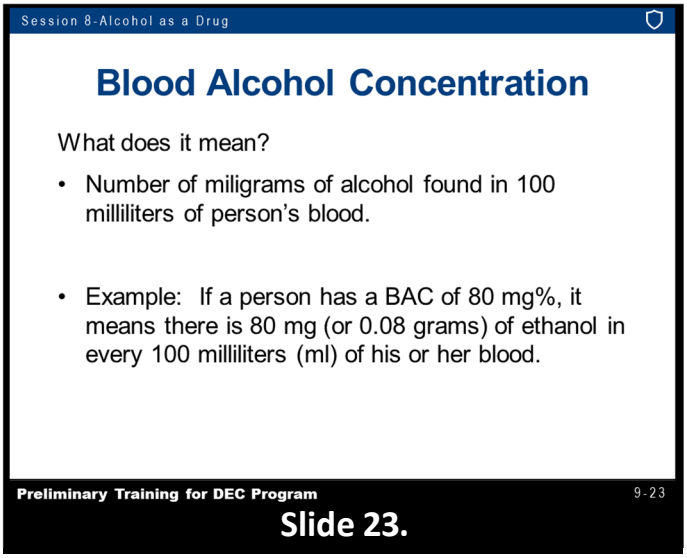


Slide 22.

There are conditions associated with alcohol consumption which need medical consideration. In addition to possible injuries associated with poor coordination, balance, and dizziness as a side effect of consuming alcohol, we also need to be aware and on the lookout for **alcohol poisoning**.

Alcohol poisoning is a serious – and sometimes deadly – consequence of drinking large amounts of alcohol in a short period of time. Drinking too much too quickly can affect your breathing, heart rate, body temperature, gag reflex, and potentially lead to coma and death. Alcohol poisoning can occur with both binge drinkers and heavy drinkers.

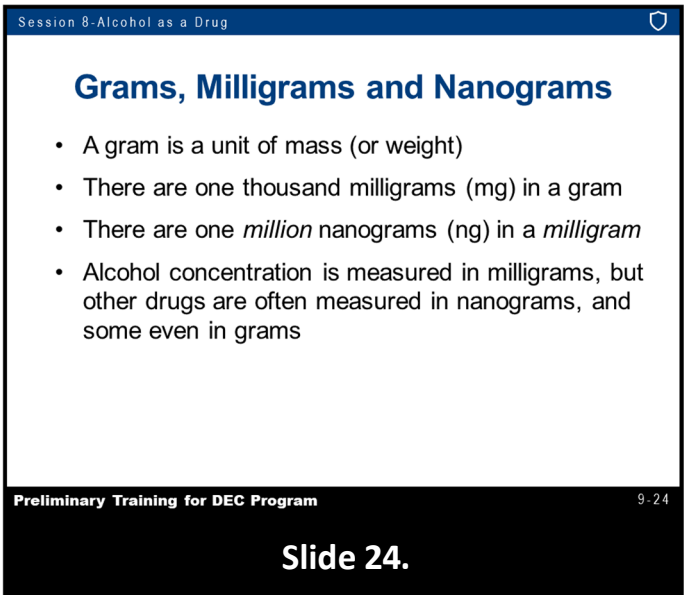
D. Dose-Response Relationships



Slide 23.

What does "Blood Alcohol Concentration (BAC)" mean?

BAC is the number of grams of alcohol found in 100 milliliters of the person's blood. Example: If a person has a BAC of 80 mg%, it means there is 80 milligrams of ethanol in every 100 milliliters (ml) of his or her blood.

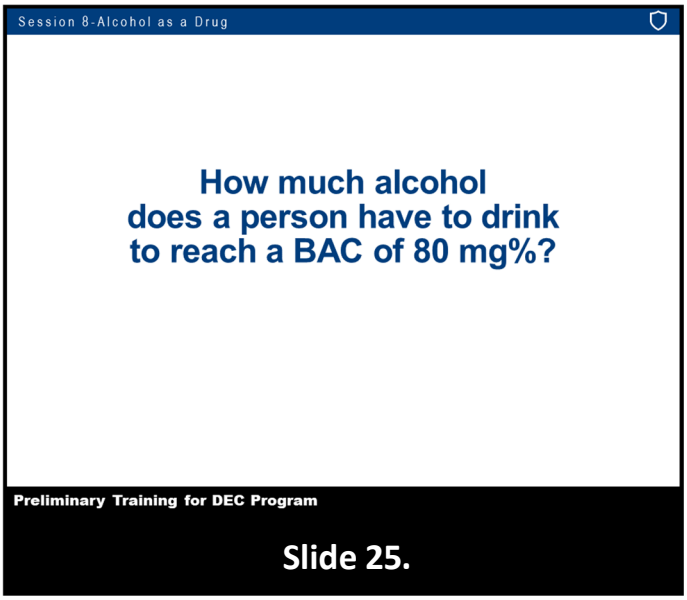


Slide 24.

BAC means the number of grams of pure ethanol found in every 100 milliliters of a person's blood.

The so-called "legal limit" of BAC is 80 mg% in Canada (Criminal Offence) as well as in most American States. If a person has a BAC of 80 mg%, it means there is 0.08 grams (g) of ethanol in every 100 milliliters (ml) of his/her blood.

BAC is measured in milligrams, but other drug concentrations are often measured in nanogram, or sometimes even grams.



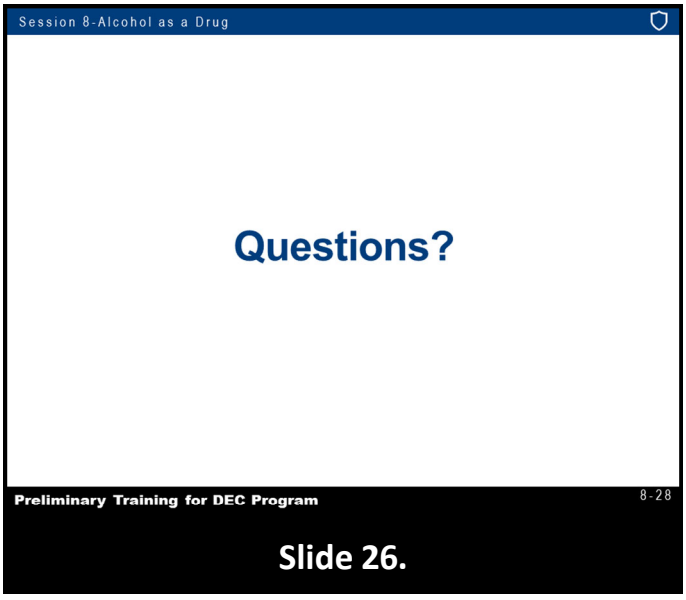
Slide 25.

Take an average male weighing 175 pounds (79 kg) and in reasonably good physical shape. Assume he does his drinking on an empty stomach. He would have to gulp down about 4 to 5 cans of beer, or 4 to 5 glasses of wine, or five shots of whiskey in a fairly short period of time to reach 80 mg% BAC. In terms of pure ethanol, that would amount to just about two and one-half fluid ounces or about two shot glasses.

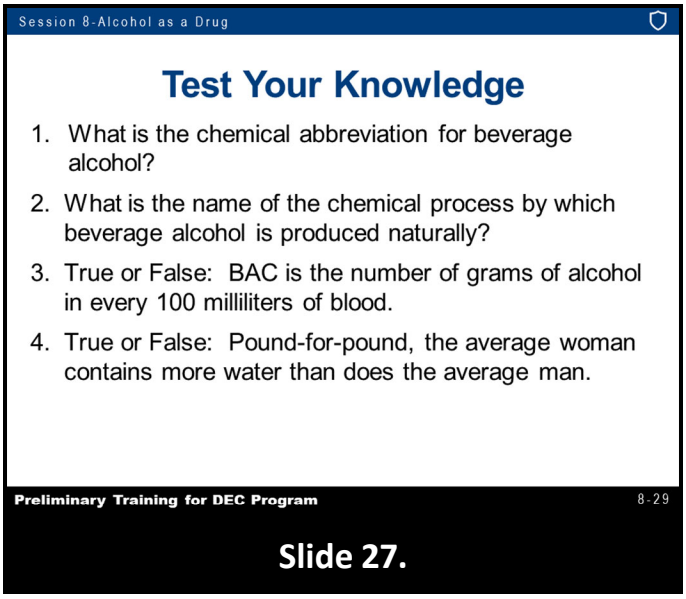
If two shot glasses were filled with pure ethanol, we would have just enough of the drug to bring an average man to a BAC of approximately 100 mg%.

In one respect, it certainly doesn't take much ethanol to impair; just two full shot glasses will more than do the trick for a full-sized man.

BUT COMPARED TO OTHER DRUGS, it takes an enormous quantity of ethanol to cause impairment. In order to compare ethanol to other drugs, we have to review some more units of weight.



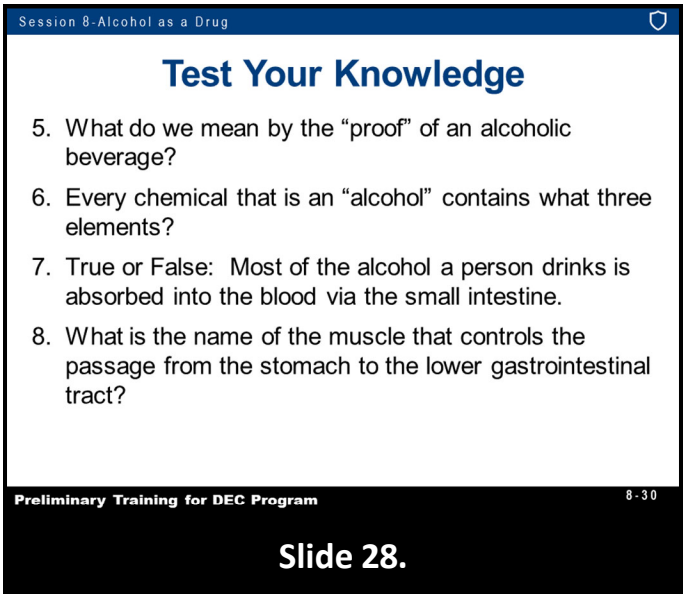
Slide 26.



Slide 27.

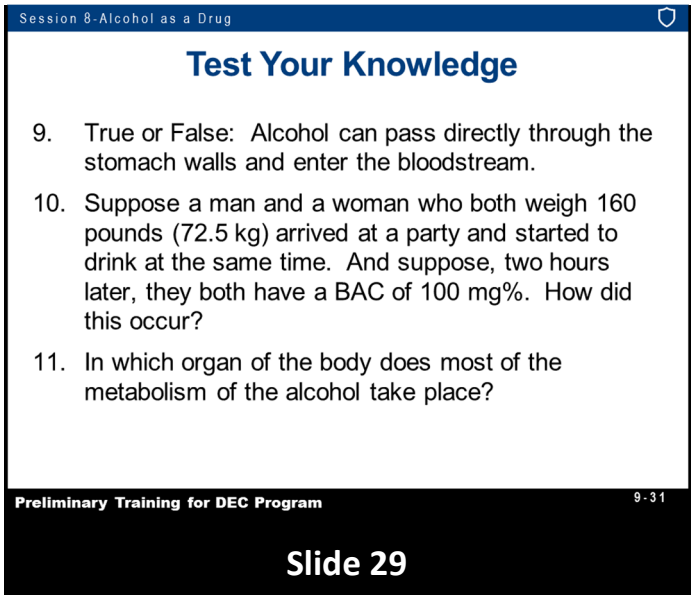
Test Your Knowledge

1. What is the chemical abbreviation for beverage alcohol?
2. What is the name of the chemical process by which beverage alcohol is produced naturally?
3. True or False: BAC is the number of grams of alcohol in every 100 milliliters of blood.
4. True or False: Pound-for-pound, the average woman contains more water than does the average man.

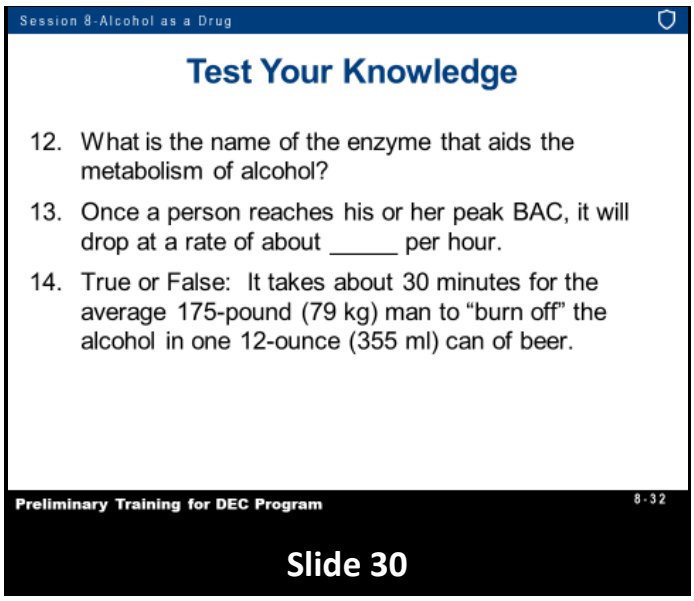


Slide 28.

5. What do we mean by the "proof" of an alcoholic beverage?
6. Every chemical that is an "alcohol" contains what three elements?
7. True or False: Most of the alcohol a person drinks is absorbed into the blood via the small intestine.
8. What is the name of the muscle that controls the passage from the stomach to the lower gastrointestinal tract?



9. True or False: Alcohol can pass directly through the stomach walls and enter the bloodstream.
10. Suppose a man and a woman who both weigh 160 pounds (72.5 kg) arrived at a party and started to drink at the same time. And suppose, two hours later, they both have a BAC of 100 mg%. How did this occur?
11. In which organ of the body does most of the metabolism of the alcohol take place?



12. What is the name of the enzyme that aids the metabolism of alcohol?
13. Once a person reaches his or her peak BAC, it will drop at a rate of about _____ per hour.
14. True or False: It takes about thirty minutes for the average 175-pound (79 kg) man to "burn off" the alcohol in one 12-ounce (355 ml) can of beer.

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Estimated time for session: 1 Hour 45 Minutes

10 DRE

DEMONSTRATION OF THE EVALUATION SEQUENCE

LEARNING OBJECTIVES

- Describe the sequence in which examinations and other activities are performed during the drug impairment evaluation procedure

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Instructor-Led Demonstrations
- Video Presentations
- Reading Assignments

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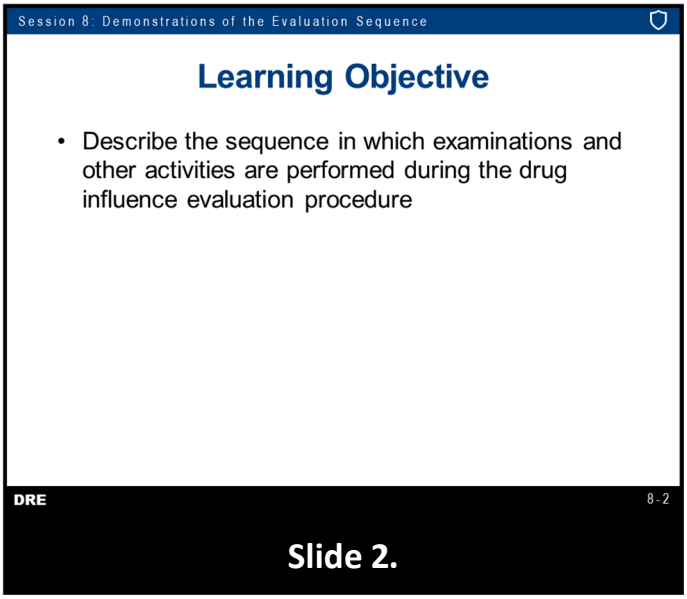
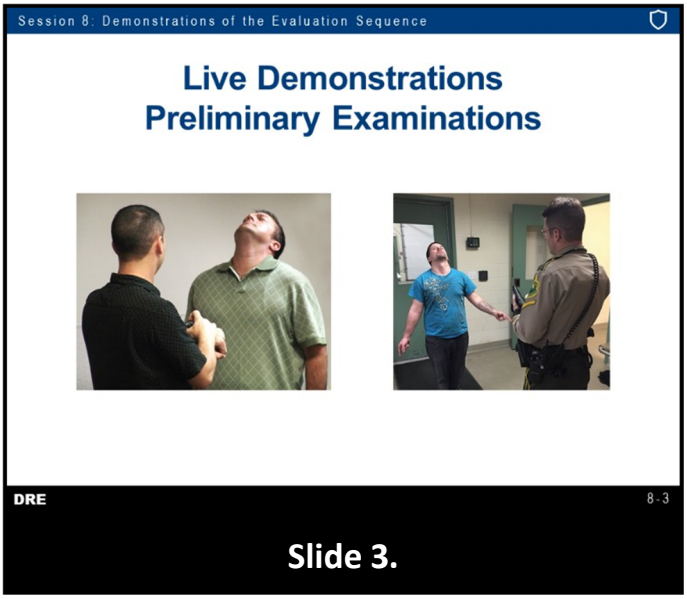


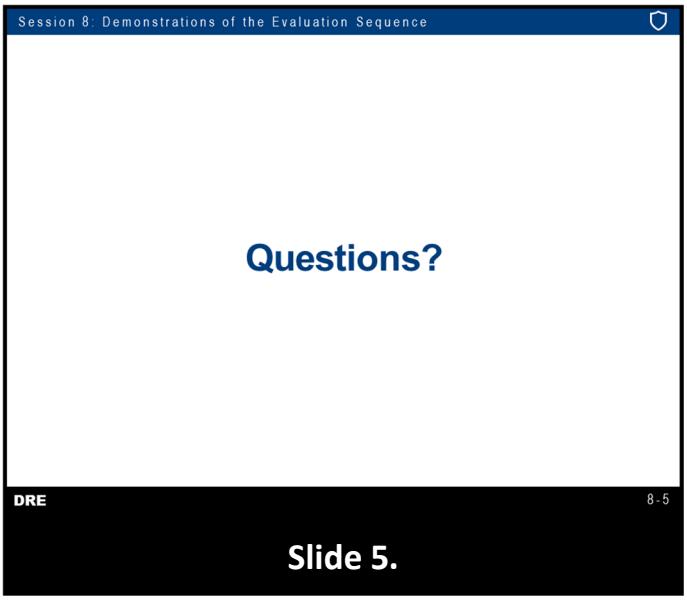
Slide 2.

A. Live Demonstrations



Slide 3.

Slide 4.



Slide 5.

International Association of Chiefs of Police

Drug Evaluation and Classification Program

Drug impairment 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:

- _____ Modified Romberg Balance
- _____ Walk and Turn
- _____ One Leg Stand
- _____ Finger to Nose

_____ 6. Vital signs and second pulse

_____ 7. Dark room examinations

_____ 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 analysis

CERTIFICATION DRUG IMPAIRMENT EVALUATION

Canada Cert FS v.2023-10

Evaluator	DRE # N/A	Rolling Log #	Evaluator Agency
Supervising Instructor (Name, DRE#)		Instructor Agency	
Witness(es)			

Eval. Start time	Breath Test Result:	No grounds: ☐ Test refused: ☐ Instrument #:	Subject's Name and sequence # **(AS APPEARS ON NAMETAG)**	Date of Birth	Gender
Date Examined / Time / Location	What have you eaten today? When?		What have you been drinking? How much?	Time of last drink	
Time now / Actual /	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 disabilities? ☐ Yes ☐ No		Are you under the care of a doctor or dentist? ☐ Yes ☐ No		
Do you take any medication or drugs? ☐ Yes ☐ No	Attitude:		Coordination:		
Speech:	Breath Odour:		Face:		
Corrective Lenses: ☐ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	Eyes: ☐ Normal ☐ Bloodshot ☐ Watery		Blindness: ☐ None ☐ Left ☐ Right	Tracking: ☐ Equal ☐ Unequal	
Pupil Sizes: ☐ Equal ☐ Unequal (explain)	Resting Nystagmus ☐ Yes ☐ No	Vertical Nystagmus ☐ Yes ☐ No	Able to follow stimulus ☐ Yes ☐ No	Eyelids ☐ Normal ☐ Droopy	

Pulse and Time

1. _____ @ _____
2. _____ @ _____
3. _____ @ _____

HGN	Left	Right
Lack of Smooth Pursuit		
Maximum Deviation		
Angle of Onset		

Convergence

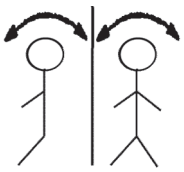
Right Eye Left Eye

One Leg Stand

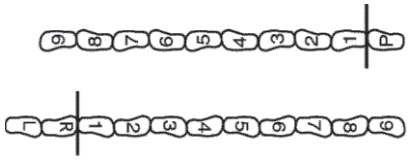
/30 /30

Modified Romberg Balance

Approx. Approx.



Walk and turn



Cannot keep balance _____

Starts too soon _____

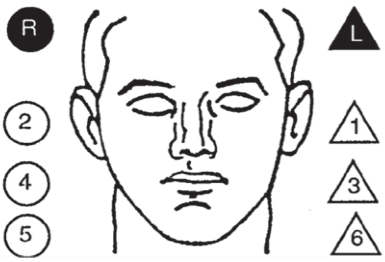
	1st nine	2nd nine
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms		
Actual steps taken		

L	R	
		Sways while balancing
		Uses arms to balance
		Hopping
		Puts foot down

Time estimation _____ estimated as 30 seconds	Describe turn	Cannot do test (explain)	Type of footwear

Finger to nose

(Draw lines to spots touched)



Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye			
Right Eye			

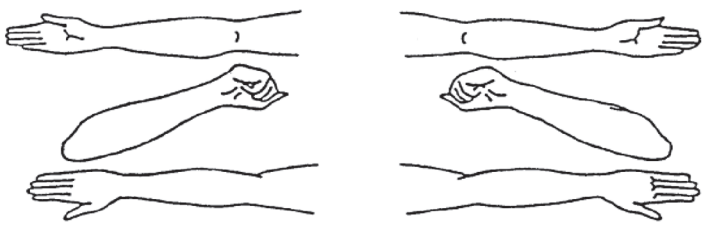
Nasal area

Oral cavity

Rebound dilation ☐ Yes ☐ No

Reaction to light ☐ Normal ☐ Slow ☐ Little to none visible

Right Arm **Left Arm**



Blood Pressure _____/_____	Temperature °C

Muscle tone: ☐ Normal ☐ Flaccid ☐ Rigid

Comments:

CERTIFICATION TRAINING ONLY

Eval. stop time	Toxicological Sample: Urine ☑ Blood -- Oral Fluid -- Test or tests refused --	Reviewer Name	Evaluation Approved ☐ Evaluation NOT Approved (DO NOT SIGN) ☐
Evaluator Signature		Reviewer Signature	DRE # Date:

Opinion of Evaluator: ☐ Not Impaired ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anaesthetic ☐ Inhalants ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis ☑ Training

NOTES	Rolling log #	Name

NARRATIVE: (1) LOCATION; (2) WITNESSES; (3) SOURCE; (4) FIRST OBSERVATIONS OF SUBJECT; (5) PSYCHOPHYSICAL SIGNS; (6) CLINICAL SIGNS; (7) STATEMENTS; (8) MEDICAL PROBLEMS/TREATMENT; (9) OPINION; (10) MISCELLANEOUS

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Estimated time for session: 2 Hours

11 DRE

PHYSIOLOGY AND DRUGS: AN OVERVIEW

LEARNING OBJECTIVES

- Explain the general concept of human physiology
- Explain the purposes and functions of major systems in the body (nervous system, circulatory system, respiratory system, etc.)
- Explain how drugs work in the body
- Explain how the drug impairment evaluation is used to detect signs and symptoms indicative of drug impairment

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentation/Demonstrations
- Reading Assignments

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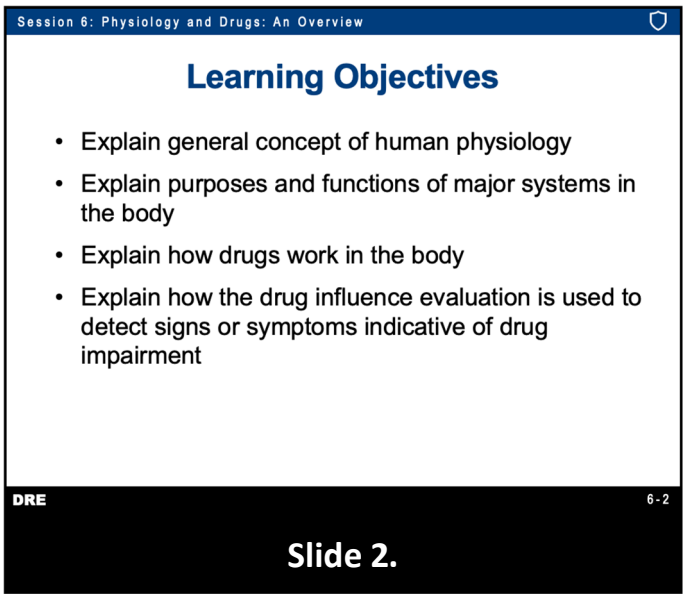
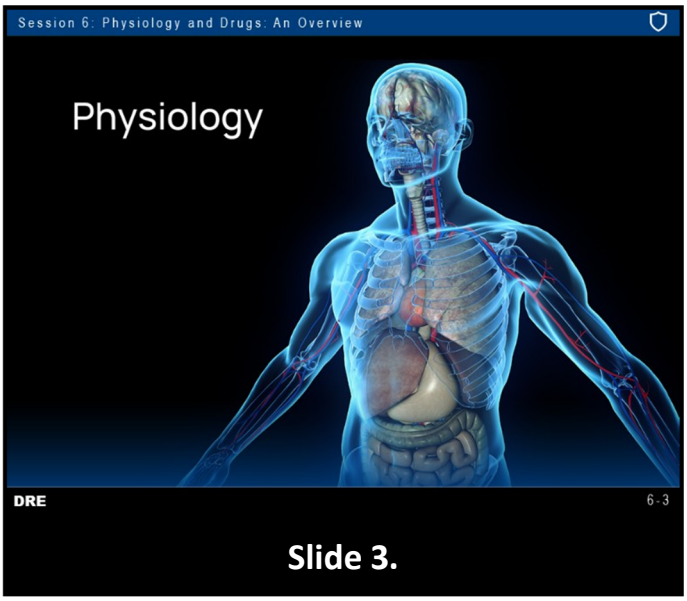


Slide 2.

A. Physiology and Drugs: An Overview

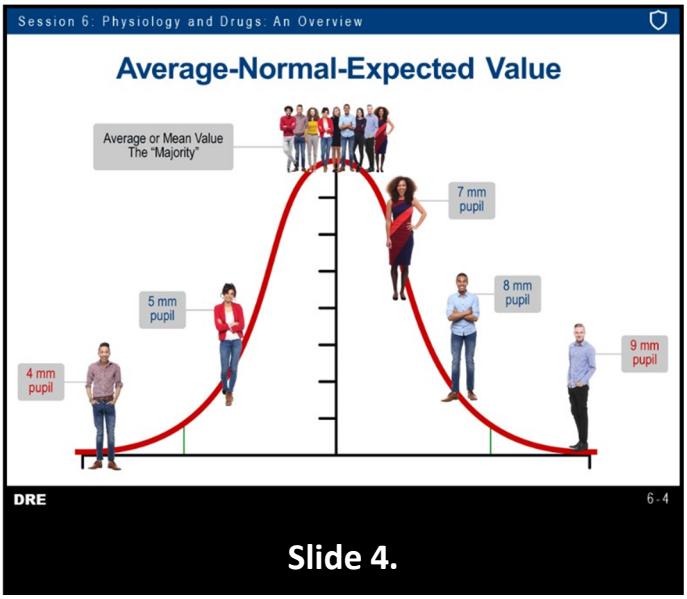


Slide 3.

For the purposes of this training, physiology is the study of the functions of living organisms and their parts. Before we can understand how drugs work, we must have a basic understanding of how the body works. It is not necessary to have detailed knowledge of specific functions or medical terminology. DREs will not become medical specialists as a result of this limited overview; however, they are encouraged to learn as much as possible about human physiology through additional instruction and independent reading.

We will review general concepts of how the body functions in a “normal” or “standard” human.

All human beings are different, and a “normal” or “standard” human does not exist. However, experience and scientific studies have produced an average range of values, or expected values, of non-impaired people that can be used for comparison purposes.



Slide 4.

In the Drug Evaluation and Classification (DEC) Program we use the terms Average Value or Expected Range.

- **Average Value** is a single value that represents the middle of the range that the majority of healthy, non-impaired people would exhibit. For example, the average for pupil size in near total darkness is 6.5 mm. This means when ALL the sizes were measured using the DRE protocol in a large number of pupils in healthy, non-impaired adults, the average pupil size was approximately 6.5 mm.
- **Expected Range** describes a range of values above or below the average for the majority of healthy non-impaired people. The average pupil size in near-total darkness is 6.5 mm, but the "Expected" range is 5.0-8.5 mm for healthy or non-impaired person.

Normal can be used to describe conditions that are not measured numerically such as muscle tone, etc.

For DREs, the closer the finding is to the average value, the more likely the person is not exhibiting impairment in that function. The farther away from the average value and nearer the edge of the expected range, the more likely the person is exhibiting impairment in that function.

For example: If the average value for life expectancy of males in the U.S. is 76 years old, we would expect someone to live between 70 and 80 years old. If someone dies at age 60 or at age 90, we may consider that outside of the expected range.

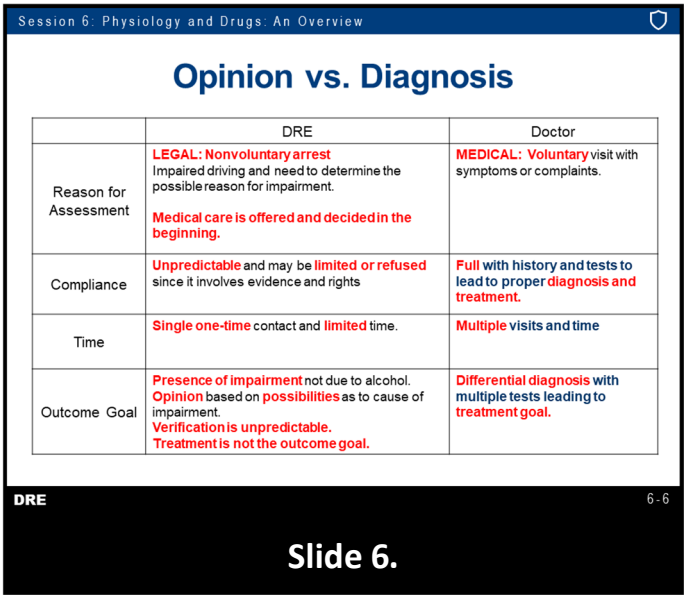
The defence may ask "what is normal for my client?" A DRE needs to be prepared to explain the meanings of the terms average value and expected range and how it relates to the drug impairment evaluation.

Slide 5.

The DRE's goal is to determine if impairment is present and the probable cause(s) of observed impairment.

A diagnosis is a medical conclusion reached by someone with medical experience and expertise. DREs do not make a diagnosis.

An opinion is a determination based on special knowledge, experience, and articulable facts. As a DRE, when you complete a drug impairment evaluation, you are rendering an opinion that the impairment is a result of a medical issue(s) and/or drugs.



Slide 6.

REASON FOR ASSESSMENT

DRE: Non-voluntary arrest: Impaired driving and need to determine possible reason for impairment. Medical care is offered and decided in beginning.

Doctor: Voluntary visit with symptoms or complaints.

COMPLIANCE

DRE: Unpredictable compliance and may be limited or the subject may simply refuse, since it involves rights and evidence.

Doctor: Doctor or medical personnel generally get full compliance, a full history, order tests in order to receive the proper diagnosis and treatment. DREs do not provide treatment in regard to the evaluation.

TIME

DRE: A single, one-time contact with limited time.

Doctor: May involve multiple visits and time.

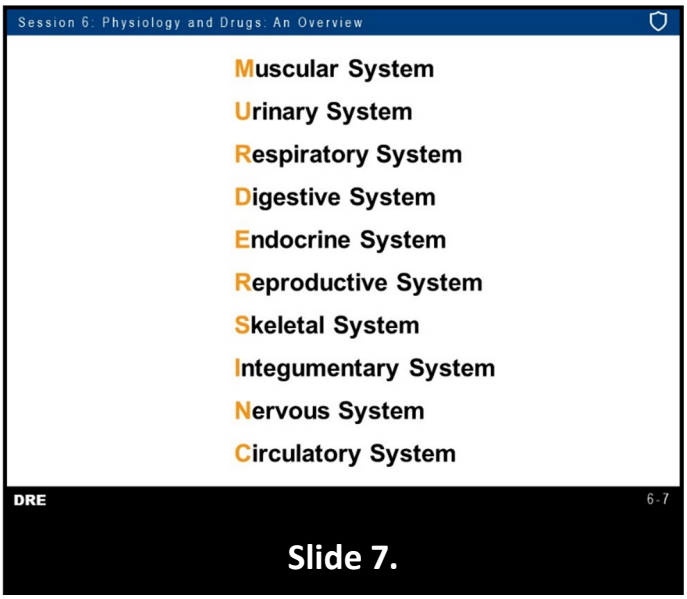
OUTCOME GOAL

DRE: Presence of impairment, and inconsistent with BAC, the opinion is based on probabilities as to the cause of impairment. Treatment is not the outcome goal.

Doctor: Differential diagnosis leading to multiple tests, leading to the treatment goal(s).

The DRE DOES NOT make a diagnosis, he/she forms an opinion.

B. Body Systems



Slide 7.

A convenient way of discussing human physiology is to list the ten major systems of the body. The acronym "MURDERS INC" helps us remember the names of the ten systems. Each letter stands for the name of one system. Changes in these systems act as the basis for determining impairment.

M is for the **Muscular System**. We assess the muscular system in the drug impairment evaluation when we test coordination and balance by administering divided attention tests and when we check for muscle rigidity. The body has three different kinds of muscles. All three types of muscles are examined at various stages of the drug impairment evaluation. The heart or cardiac muscle. Smooth muscles, which control the body's involuntary operations. Examples: Smooth muscles control breathing, the operation of the pyloric valve (a muscle located at the base of the stomach), dilation and constriction of pupils, and all other things we do not consciously control. Striated muscles, which carry out our voluntary movements.

U is for the **Urinary System**. The system consists of two kidneys, the bladder, ureters connecting the kidneys to the bladder, and the urethra which transports the urine out of the body. Kidneys filter waste or harmful products, such as drugs and their metabolites, from the blood and these waste products are collected in the bladder. Drugs can usually be detected in the urine and collection of a urine specimen, in many jurisdictions, is an important part of the drug impairment evaluation.

The first R in "MURDERS INC" stands for the Respiratory System. Some drugs cause the user to breathe slowly and shallowly, while others cause rapid breathing. The major parts of the Respiratory System are the lungs and the diaphragm. The diaphragm is a smooth muscle that draws the air into the lungs and forces it out.
Lungs take in oxygen and transfer it to the blood and remove carbon dioxide and some other waste products from the blood and expel them into the outside air.
Important clues of drug use, i.e., odours of alcoholic beverages, cannabis, chemicals, etc. may be present on a suspect's breath.

D is for the **Digestive System**. Major components of this system are the tongue, teeth, esophagus, stomach, intestines, liver, and pancreas. The Digestive System breaks down large particles of food until they are of a size and chemical composition that can be absorbed in the blood. When drugs are taken orally, they might be retained in the stomach for a while until any food there has been broken down sufficiently to allow passage into the small intestine.

E is for the **Endocrine System**. The Endocrine System is made up of a number of different glands that secrete hormones. The glands that make up the Endocrine System include: Thyroid, Parathyroid, Pituitary and Adrenal glands, as well as portions of the pancreas, testes and ovaries. Hormones are complex chemicals that travel through the blood stream and control or regulate certain body processes. Some drugs can mimic the effects of certain hormones or can react with the hormones in ways that alter the hormones' effects.

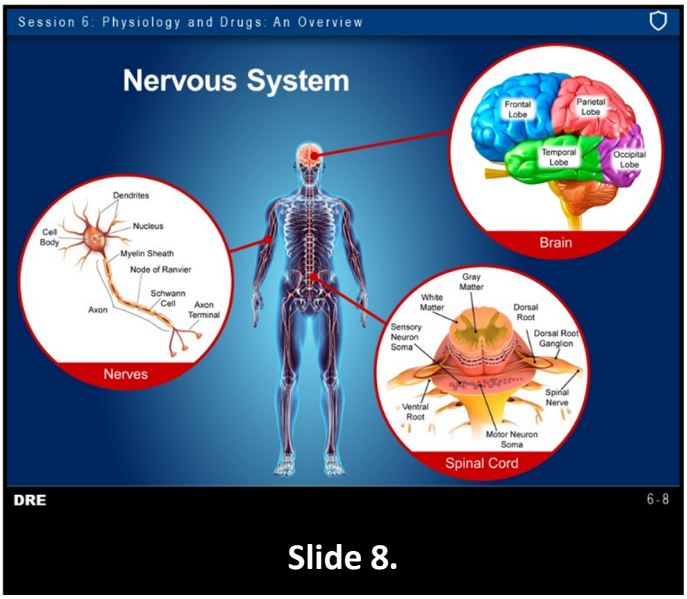
The second **R** in "MURDERS INC" stands for the **Reproductive System**. The functions of the reproductive system fall into two categories: self-producing (cytogenic) and hormone producing (endocrinic). We are primarily concerned with hormone production since the hormones produced by the reproductive system aid the nervous system in its regulatory role.

S is for the **Skeletal System**. This consists of bones, cartilage, and ligaments. The Skeletal System provides support to the body, permits movement, and forms blood cells. The Reproductive and Skeletal Systems are the only major components of physiology and are not directly involved in the drug impairment evaluation.

The **I** in "INC" stands for the **Integumentary System**. This consists of the skin, hair, fingernails and toe nails, and accessory structures. DREs examine the skin for hypodermic injection sites and for sweating, clamminess, and temperature. The chief functions of the Integumentary System include protection of the body, control of the body temperature, excretion of wastes (i.e., through sweat) and sensory perception.

N is for the **Nervous System**. The Nervous System is one of the most important components of physiology as far as the drug impairment evaluation is concerned. This system consists of the brain, the brain stem, the spinal cord, and the nerves. Nerves keep the brain informed of changes in the body's external and internal environments. Clarification: Nerves carry messages to the brain from the sense organs (eyes, ears, nose, etc., and from pain sensors). Nerves also carry messages from the brain to the body's muscles, tissues, and organs. Clarification: The brain uses nerves to send messages commanding the heart to beat, the fingers to move, the pupils to dilate, etc. The nervous system controls, coordinates, and integrates all physiological processes, so normal body functions can be maintained.

C is for the Circulatory System. This is another very important component of physiology, as far as the drug impairment evaluation is concerned. For our purposes, the most important parts of the Circulatory System are the heart, the blood vessels (e.g., arteries, veins, capillaries, etc.), and the blood. Blood is the body's primary transport mechanism: it carries food, water, oxygen, hormones, antibodies, etc. to the body's tissues and organs. Blood is also primarily responsible for carrying heat throughout the body. Blood is the main transport mechanism for bringing drugs to the brain. The heart, of course, pumps the blood and causes it to circulate throughout the body.

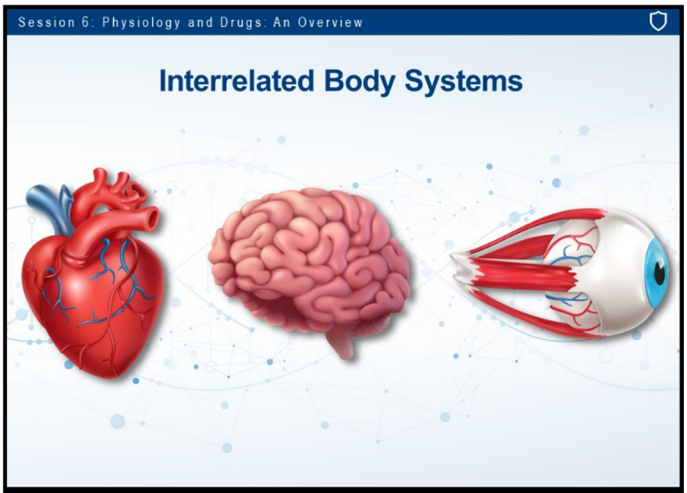


Slide 8.

Nervous System

The nervous system keeps the body apprised of changes in the environment by enabling sight, hearing, smell, taste, and touch. It also keeps the body apprised through sensations of temperature, pressure, pleasure, and pain. The nervous system also enables reasoning, memory, and emotions.

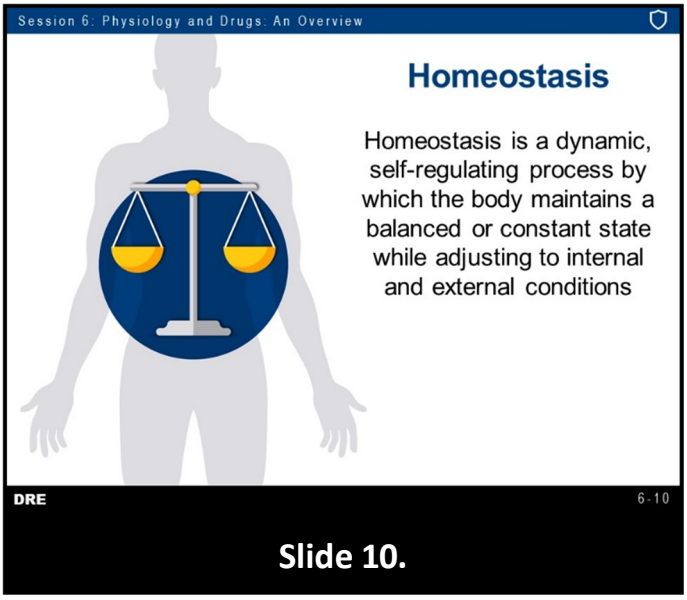
The Central Nervous System (CNS) sends impulses that cause muscles to contract and glands to secrete and it works with all body systems to integrate all physiological processes so normal functions can be maintained. Much of the activity of the nervous system is involuntary and therefore it is carried out below the level of consciousness. The CNS is one of the body's major control systems and the brain is the center of that system.



Slide 9.

All these systems need to work together to maintain a functioning, non-impaired person. This leads to understanding the term “homeostasis”, which will be covered in this Session. The primary focus will be on the Central Nervous System (CNS) and the effects it exhibits on other components examined during the drug impairment evaluation. These include eyes, blood pressure and pulse, balance and coordination, and body temperature.

C. The Concept of Homeostasis

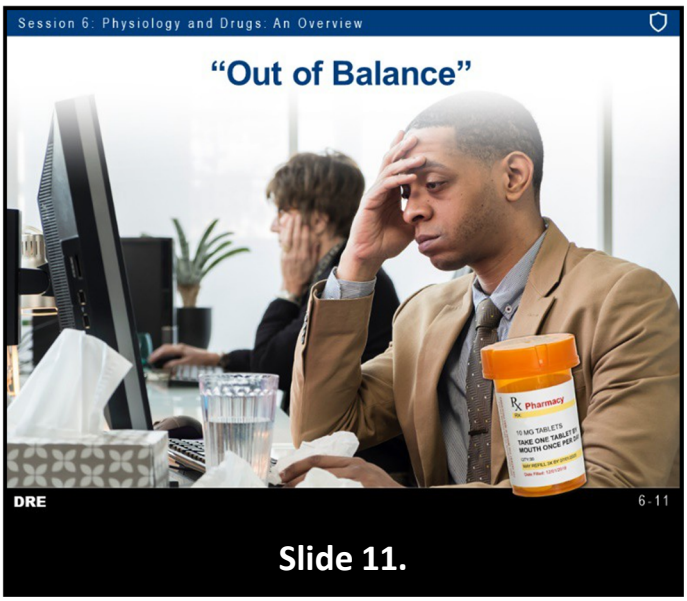


Slide 10.

Homeostasis is "a dynamic, self-regulating process by which the body maintains a balanced or constant state while adjusting to internal and external conditions" (Britannica, T. Editors of Encyclopaedia, 2020). "Homeo" means similar or the same elements and "stasis" means balance. The rhythm of the heart, breathing, 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. This balance impacts physiological and psychological functions via the central and peripheral nervous systems and neurotransmitters.

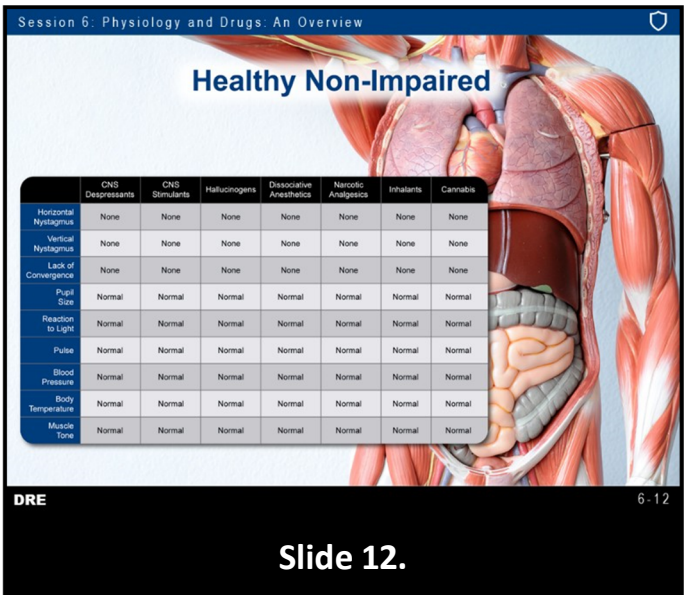
The human body is exposed to a constantly changing external environment, which influences the internal environment. Changes are neutralized by the internal environment – the blood. Oxygen, foods, water, and other substances are constantly leaving bodily fluids to enter cells, while carbon dioxide and other wastes are leaving the cells to enter these fluids. Yet, the chemical composition of these fluids remains within very narrow limits. This phenomenon is called homeostasis. This involves message sending and actions triggered by the balance within the autonomic nervous system (sympathetic and parasympathetic), hormones, and neurotransmitters.

Drugs interfere with the homeostatic mechanisms and produce signs and symptoms that can be recognized by a trained DRE.



Slide 11.

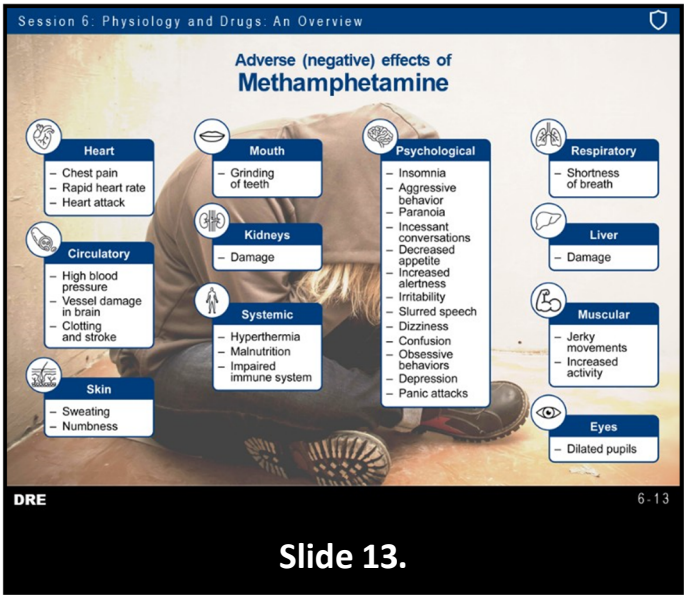
Non-substance-abusing people who are sick have signs and symptoms of being "out of balance." In other words, their homeostasis is "out of balance", and they do not want to experience these effects. They want to get their homeostasis back "in balance" to feel better ("like usual"), so physicians may prescribe them drugs or medications to help put them in balance.



	CNS Despressants	CNS Stimulants	Hallucinogens	Dissociative Anesthetics	Narcotic Analgesics	Inhalants	Cannabis
Horizontal Nystagmus	None	None	None	None	None	None	None
Vertical Nystagmus	None	None	None	None	None	None	None
Lack of Convergence	None	None	None	None	None	None	None
Pupil Size	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Reaction to Light	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Pulse	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Blood Pressure	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Body Temperature	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Muscle Tone	Normal	Normal	Normal	Normal	Normal	Normal	Normal

Slide 12.

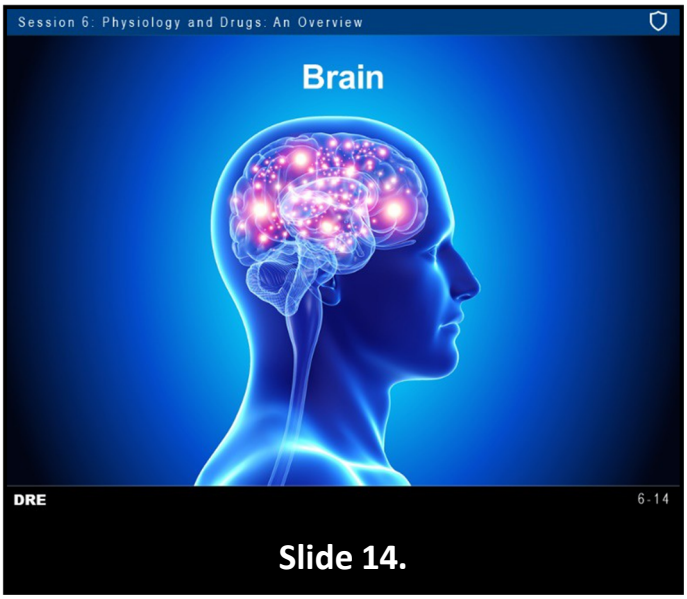
Homeostasis is indicated in the above slide. It represents average (expected) values for the clinical indicators used by the DRE to assist in making an opinion of impairment and medical drug related causes.



Slide 13.

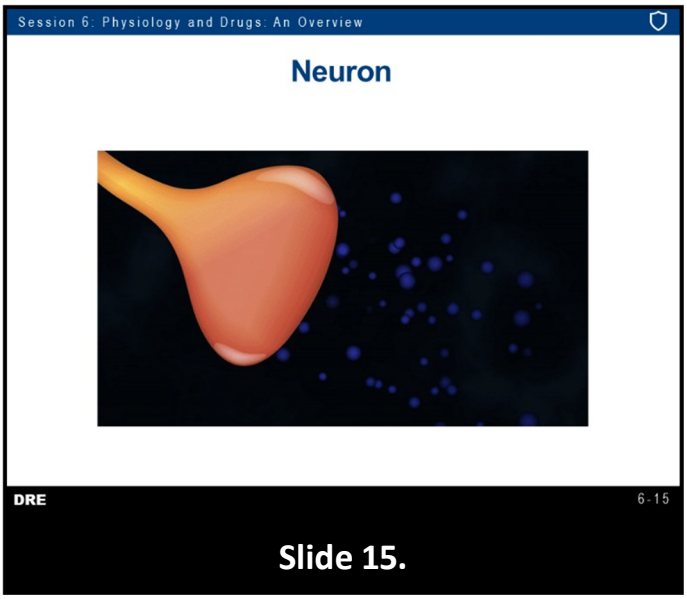
In the above slide, the indicators listed are common with persons impaired by a drug category or categories, in this case CNS Stimulants, or perhaps someone experiencing an immediate medical emergency. Medical conditions will be discussed later in this session.

Whatever the case, they usually will exhibit indicators of impairment. Individuals that are impaired exhibit numerous indicators of impairment. In other words, they generally do not exhibit the DRE average range or expected values for the related indicators.



Slide 14.

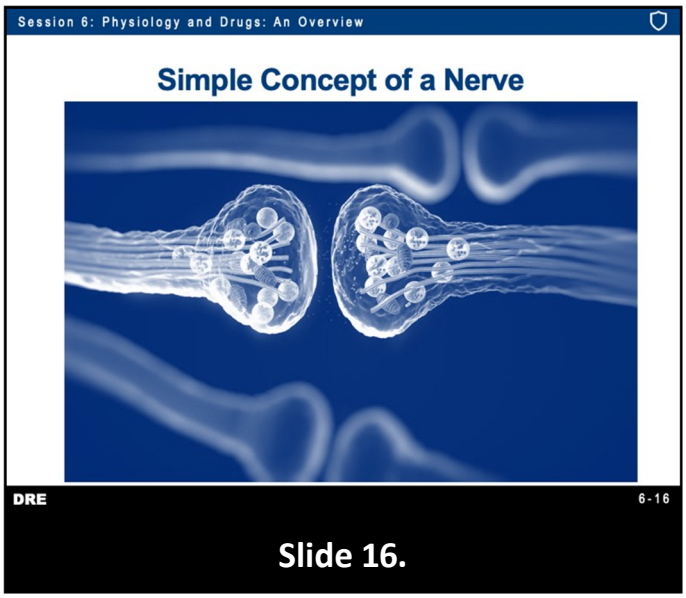
The brain is made up of billions of nerve cells, also known as neurons. Nerve cells communicate by transferring chemical substances between each other. When a message is sent from one neuron (transmitter), it triggers the release of neurotransmitters and sends the message to another nerve cell which is called the receptor. This is the way nerve cells share information. There are many different types of neurotransmitters and each one has a specific role to play in how the brain and the CNS functions. Some drugs affect the brain because their chemical makeup is similar to the neurotransmitters which occur in the body naturally. In the appropriate dose amount, drugs have a positive influence on how the neurons function. However, in some cases, drugs can cause the release of large amounts of a similar neurotransmitter while others can block the receptors and have a negative influence.



Slide 15.

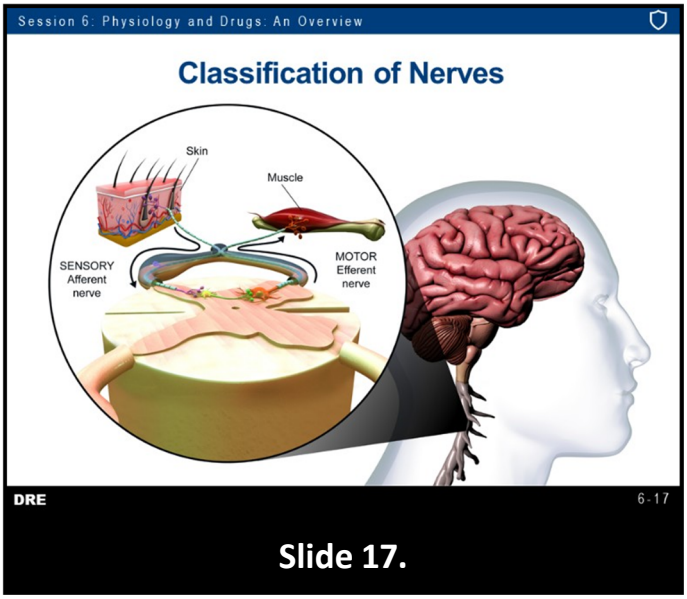
Each neuron, or “wire segment” has three main parts: the cell body, the axon, and the dendrite. The cell body contains the nucleus, which contains the cell's DNA and is responsible for protein production and packaging. The axon is the part of the neuron that sends out the neurotransmitter, or chemical messenger.

The dendrite is the part that receives the neurotransmitter. The gap between two neurons is called a synapse, or synaptic gap.



Slide 16.

We can imagine messages running along the “wire segments” in much the same manner electrical impulses run along electrical wires. When the message reaches the end of the “wire segment,” it triggers the release of chemicals that flow across the gap and contact the next “wire segment.” When the chemical contacts the next wire segment, it generates an electrical impulse which runs along the wire until it reaches the next gap. At that gap, the message again triggers the release of chemicals that flow across to the next “wire segment” and the process continues.

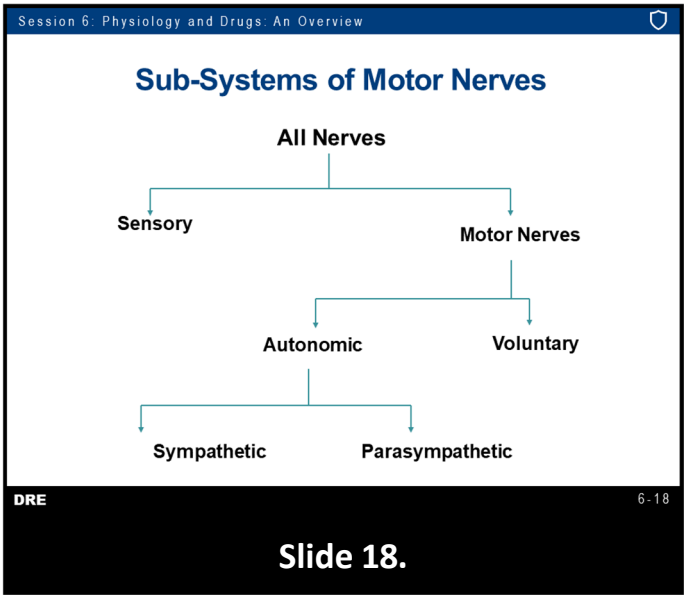


Slide 17.

Some nerves carry messages away from the brain to the body's muscles and organs. These are called motor, or efferent nerves. The brain uses motor nerves to send commands to the heart to beat, the lungs to breathe, the muscles to contract or expand, and so forth.

Other nerves carry messages to the brain, i.e., from the eyes, ears, and other senses, from the muscles, etc. These are called Sensory, or Afferent nerves. The brain decodes the messages that come along the sensory nerves to monitor the condition of the body and of the outside world.

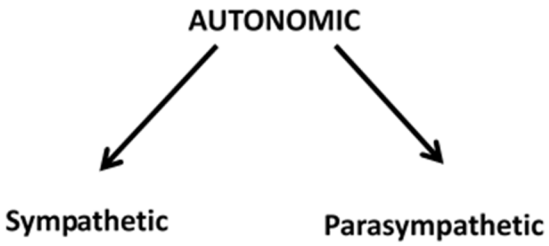
A fundamental notion: If something interferes with the messages the brain sends along the motor nerves, the brain's control over the heart, the lungs, the muscles, and other organs will be distorted. Another fundamental notion: if something interferes with the messages the brain receives from the sensory nerves, the brain's perception of the outside world and of the body's status will be distorted. This is basically how drugs work: They interfere with transmission or reception of the messages that travel along nerves.



Slide 18.

There are two sub-systems of motor nerves. The first is the voluntary nerves, which send messages to the striated muscles that we consciously control. The second is the autonomic nerves, which send messages to the muscles and organs that we do not consciously control, i.e., smooth muscle and cardiac muscle.

The Autonomic sub-system is divided into two groups.



The Sympathetic nerves command the body to react in response to fear, stress, excitement, etc.

Clarification: **Sympathetic nerves control the body's "fight or flight" responses.** Examples: Sympathetic nerves carry the messages that cause the blood pressure to elevate, pupils to dilate, sweat glands to activate, hair to stand on end, heartbeat to increase and strengthen, and blood vessels of the skin to constrict.

Parasympathetic nerves carry messages that produce relaxed and tranquil activities. Examples: Parasympathetic nerves carry messages that cause the pupils to constrict, heartbeat to slow, peripheral blood vessels to dilate, blood pressure to decrease. Certain neurotransmitters (i.e., chemical messengers) aid in the transmission of messages along sympathetic and parasympathetic nerves. Drugs that mimic the neurotransmitter associated with sympathetic nerves are called sympathomimetic drugs.

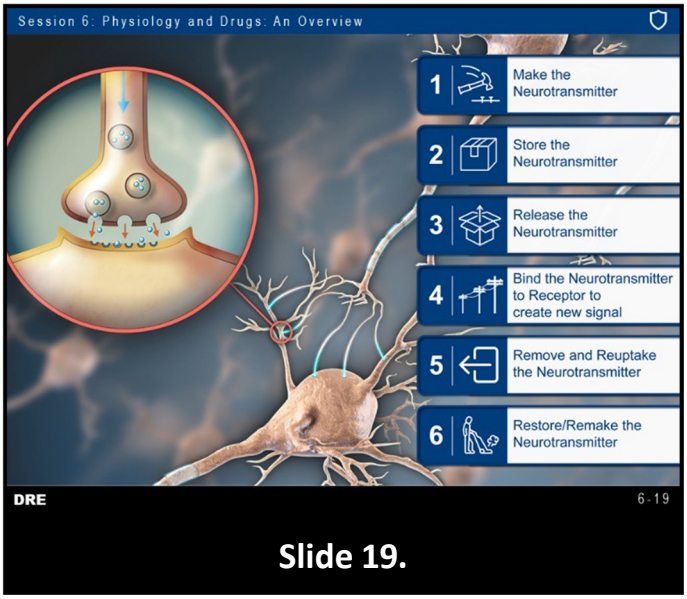
Drugs that mimic neurotransmitters associated with parasympathetic nerves are called parasympathomimetic drugs.

Some drugs mimic the action of these neurotransmitters: When taken into the body. These drugs artificially cause the transmission of messages along sympathetic or parasympathetic nerves.

Sympathomimetic drugs artificially cause the transmission of messages that produce elevated blood pressure, dilated pupils, etc.

The Sympathetic subsystem of the autonomic nervous system controls the stimulating type effects of the body. This process is automatic. We can relate this to "adrenaline" as a hormone or "norepinephrine" as a neurotransmitter that tends to speed up the body's processes. Some of the sympathetic responses include pupil dilation, inhibits the flow of saliva (dry mouth), increased heartbeat, dilates bronchial tubes.

The Parasympathetic subsystem of the autonomic nervous system controls the calming-type effects of the body. This results in the transmission of messages that produce lowered blood pressure, drowsiness, etc. Like the Sympathetic subsystem, this process is also automatic. Some of the Parasympathetic responses include stimulating the flow of saliva, slowing heartbeat, and constricting bronchial tubes (slows breathing).



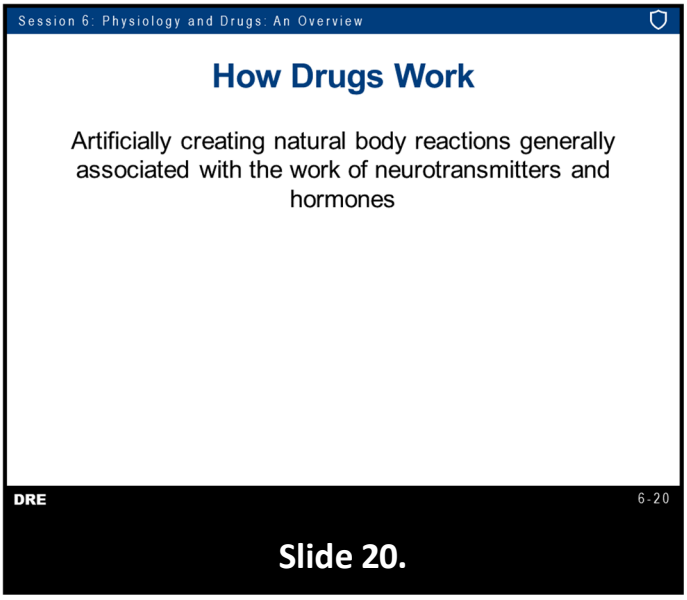
Slide 19.

In our simple model of nerves, each "wire segment" corresponds to a nerve cell, called a neuron. The chemical that flows across the gaps separating neurons is called a neurotransmitter. Clarification: neurotransmitters are the body's chemical messengers.

The body has a number of different neurotransmitters; each carries a different chemical message. The sequence of how a neurotransmitter works is:

1. The neuron makes a neurotransmitter
2. Synaptic vesicles are small membrane bound structures in the axon terminals of nerve cells that contain neurotransmitters for storage
3. These vesicles release neurotransmitters into the synaptic gap
4. The neurotransmitter crosses the synaptic gap and binds to a receptor site on the adjacent neuron to cause the receptor to perform a function, usually generating an electrical impulse to continue onward through that neuron
5. Removal and Reuptake—the neurotransmitter is either broken down or taken back up into the originating neuron
6. Restore or Remake—for future reuse

D. How Drugs Work

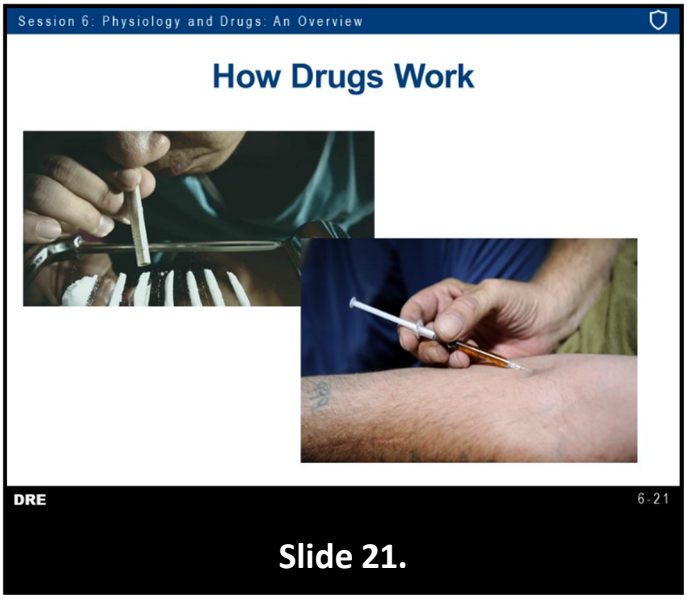


In very simple terms, drugs work by artificially creating natural body reactions generally associated with the work of neurotransmitters and hormones. Therapeutic doses of legitimate prescription and over-the-counter drugs are designed to produce mild and carefully controlled simulations of the natural action of neurotransmitters and hormones.

Large, abusive doses of drugs may produce greatly exaggerated simulations of the natural action of hormones and neurotransmitters, sometimes with disastrous results. Example: Cocaine (a sympathomimetic drug) may artificially create a message commanding the heart to beat so rapidly cardiac arrest results.

When a person administers a drug and artificially simulates the natural action of hormones and neurotransmitters, the body's dynamic balance is disrupted.

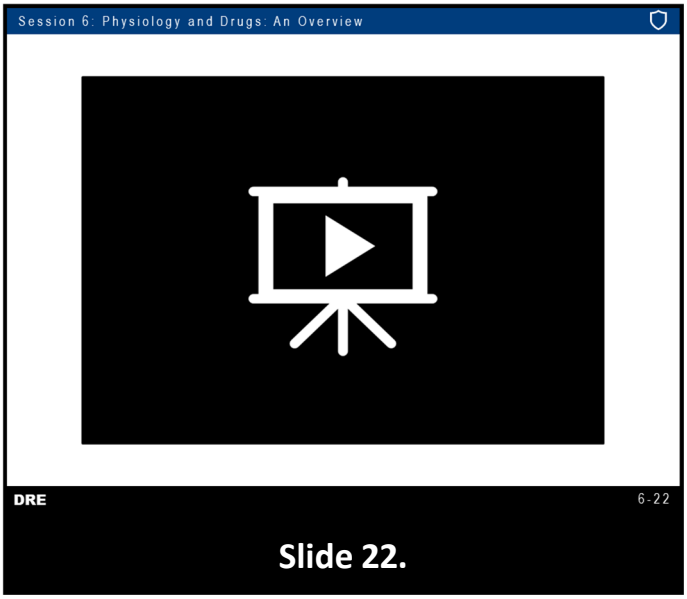
The body automatically responds to the presence of the drug by producing other hormones and chemicals that can oppose the drug's effects and bring the body back into balance.



Slide 21.

Example Number One: If a person administers a stimulant drug that mimics neurotransmitters associated with the sympathetic nerves, the body may react by excreting hormones that depress the bodily functions the drug is exciting. If a person administers Cocaine, for example, the Cocaine would artificially stimulate the body functions. The body would then produce hormones and neurotransmitters to slow down the body functions to try to maintain homeostasis.

Example Number Two: If a person administers a drug that depresses some bodily function, the body may pour out one of its natural chemicals that stimulate that same function. An interesting situation can occur when the drug is no longer psychoactive. The chemicals produced by the body in an effort to counteract the drug may still be active. These natural chemicals have exactly the opposite effect on the body the drug had: after all, that is precisely why the body produced those chemicals. As a result, the person may feel, appear and act in a manner exactly opposite to the way he or she would feel, appear and act when under the influence of the drug.



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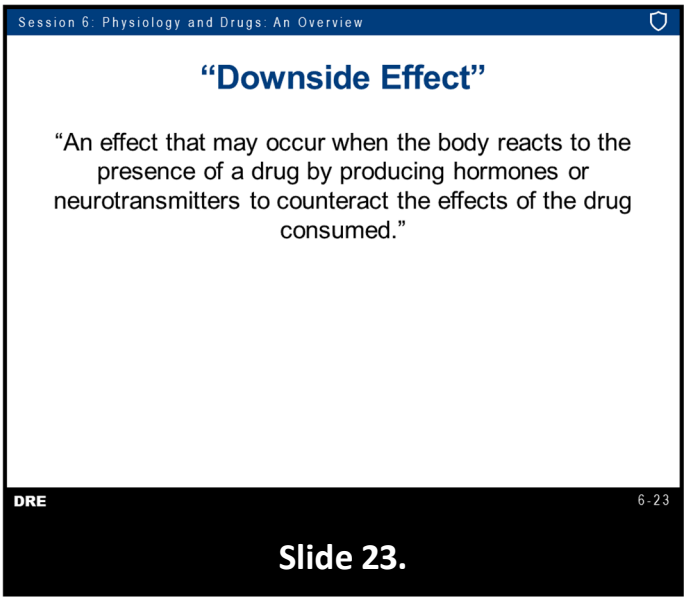
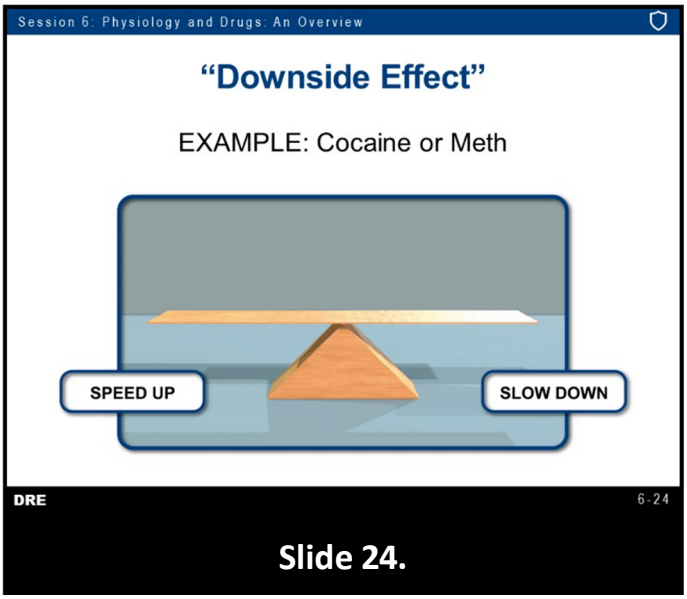


Slide 23.

It is not uncommon for a DRE to encounter someone on the "downside" as a result of drug administration. The definition of downside is "an effect that may occur when the body reacts to the presence of a drug by producing hormones or neurotransmitters to counteract the effects of the drug consumed."

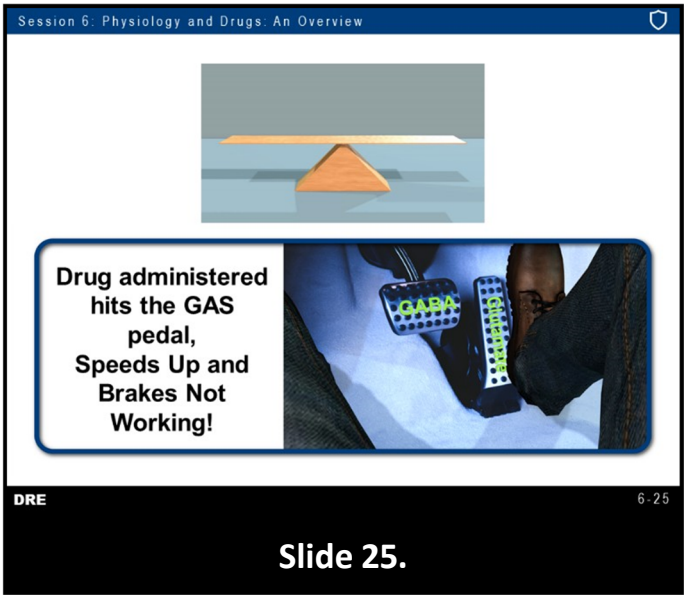
The neurotransmitters and hormones persist in the body longer than the drug they are responding to, resulting in the demonstration of opposite findings after the drug is gone from the body until the hormones and neurotransmitters are eliminated. In other words, after drinking several drinks, a person may become drowsy, go to bed, and fall asleep quickly. But, after a few hours, when it is still the middle of the night, they suddenly awaken and are wide awake, unable to fall asleep again. What has happened is the alcohol has worn off, but the natural CNS Stimulants the body produced to counteract the alcohol are still around. We call this situation being on the "downside" of the drug.



Slide 24.

One example of the downside effect can be seen with an individual abusing Stimulant drugs, such as Cocaine or Methamphetamine. Example: with Cocaine (a drug metabolized or broken down by the body fairly quickly) the user may be exhibiting drowsiness and general depression by the time the DRE is called to the scene. The concept of "downside" will be especially important to us when we discuss the effects of CNS Stimulants and drug combinations.

An example is the body attempts to "counteract" the stimulant effects. When the effects of the drug diminish, the results may mimic a Narcotic Analgesic. This is the body's efforts to return to homeostasis.



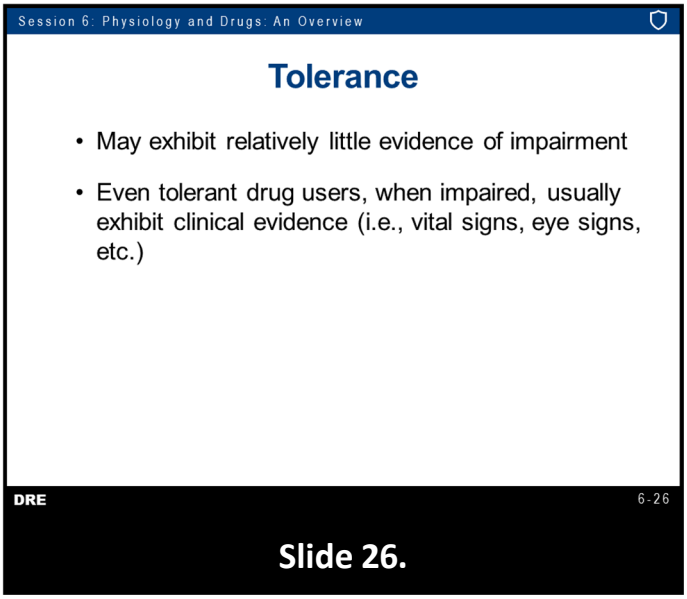
Slide 25.

A simple analogy is using a vehicle's gas pedal and brake. While the drug is present and active in the body—applying the gas pedal in this Stimulant example—the body triggers its systems to apply the brakes to try to regain homeostasis. This involves engagement of the parasympathetic nervous system to attempt to regulate and slow the sympathetic system, as well as release of inhibitory neurotransmitters and hormones into the blood stream. The hormone system is the slowest to engage and the slowest to disengage.

As time passes, the (Stimulant) drug ingested "wears off" by metabolism to inactivate the foreign chemical and prepare it for elimination from the body. This results in a reduced pressure on the gas pedal. While this is occurring, the body's effort at "braking" to counter the Stimulant's pressure on the gas pedal is still ramping up and engaging to try to regain homeostasis.

The Stimulant drug ingested is now essentially eliminated, or its effect has worn off, so there is no pressure on the gas pedal.

The body's attempt at braking to regain homeostasis is now in full swing and is UNOPPOSED, so effects the OPPOSITE of the original drug ingested (Stimulant) can be seen on evaluation (Narcotic Analgesic).



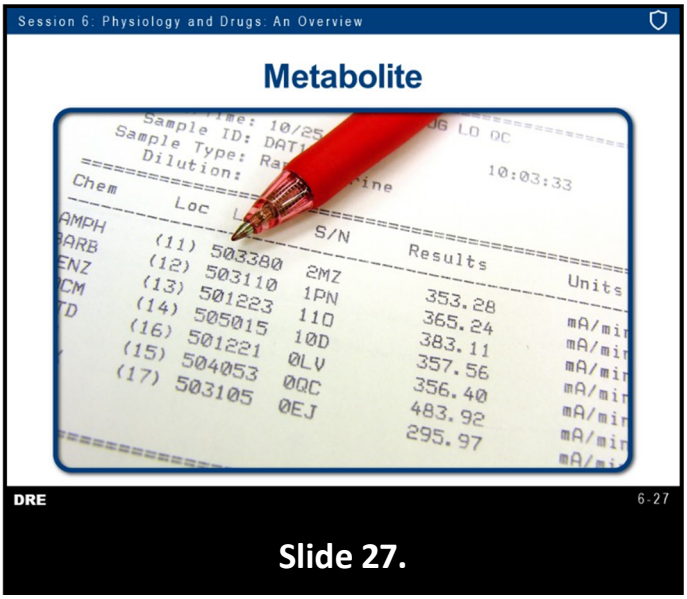
Slide 26.

Habitual users of drugs may develop tolerance to the drug. As a result, they may exhibit relatively little evidence of impairment on the psychophysical tests. “Tolerance” means the same dose of the drug will produce diminishing effects or conversely a steadily larger dose is needed to produce the same effects.

As with nearly all drugs of abuse, the effects produced depend on the tolerance the user has developed for the drug. A user who has developed tolerance and who is using his or her “normal” dose of the drug may exhibit little or no evidence of intellectual or physical impairment. As a result, they may exhibit relatively little evidence of impairment on the psychophysical tests. Even tolerant drug users, when impaired, usually exhibit clinical evidence (i.e., in the vital signs and eye signs). Impairment is more evident with new users and with tolerant users who exceed their “normal” doses.

Another result may be physical dependence, or addiction.

In simplest terms, people take drugs because they like the feelings the drugs produce. The artificial simulation of the natural action of hormones and neurotransmitters appears to permit the user to create any feeling or mood he or she desires.
As time goes on, negative feedback may develop. The body may cease producing the natural chemicals that the drug simulates, and if the drug is not taken, the user does not return to a normal, non-drug-using state. He/she feels much worse in the opposite direction of the substance used. So, one additional reason for physical dependence or addiction is to PREVENT WITHDRAWAL SYMPTOMS and ALLOW
“NORMAL” FUNCTIONING. The habitual user must externally supply some of the drug just to feel like a typical, non-drug-using person would.



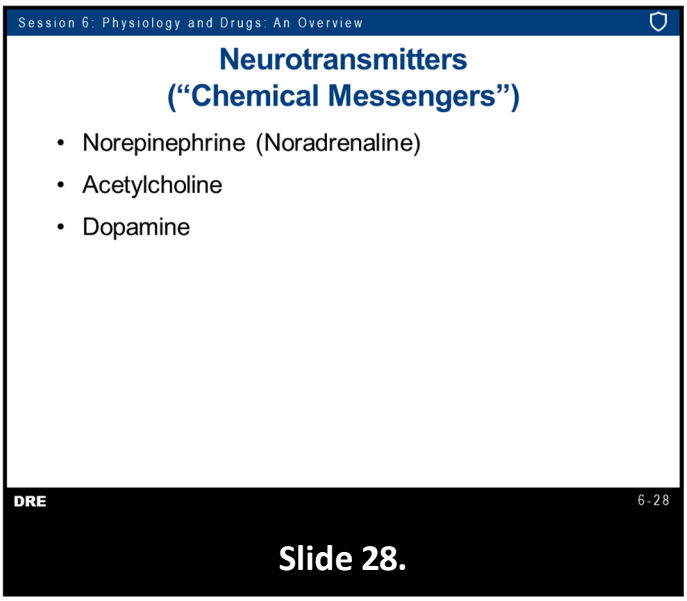
Slide 27.

One final concept is important for an understanding of how drugs work. A metabolite is a product of metabolism which is the chemical changes that take place when the drug reacts with enzymes and other substances 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 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.

The body uses chemical reactions to break down the drug, and ultimately to eliminate it.

Example: when we drink alcohol, we initiate a series of chemical reactions that ultimately transform the alcohol into harmless carbon dioxide and water. Sometimes, metabolites of the original drug are themselves drugs, and cause impairment. For example, the body quickly metabolizes Heroin into morphine and it is the morphine that actually produces the effects the heroin user experiences.



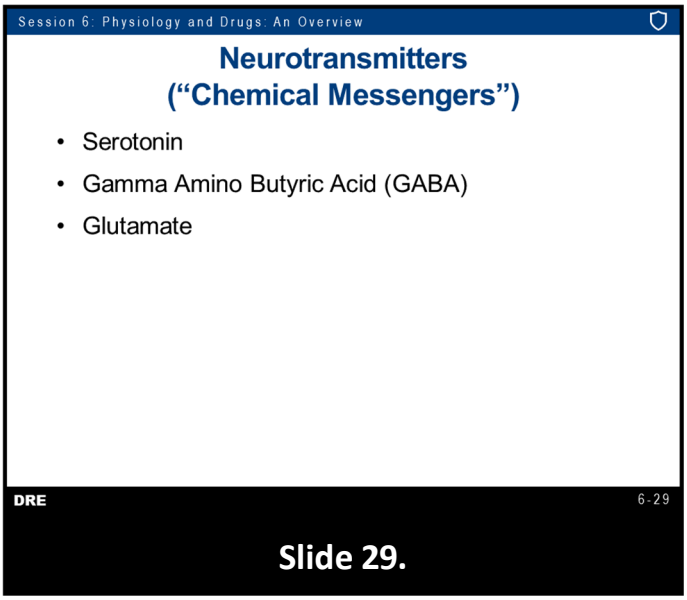
Slide 28.

Although there are more than 100 chemicals in the brain, only about two dozen probably are true neurotransmitters. The primary neurotransmitters identified are listed below.

Norepinephrine (also called Noradrenaline).

Acetylcholine – Plays an important role in muscle control and affects neuromuscular or myoneural junctions. Acetylcholine also plays an important role in learning and memory.

Dopamine – Plays a role in mood control. It is necessary for mental concentration, alertness, high energy, motivation, hunger regulation, and sex drive. Dopamine functions in the brain's reward pathway, release making you feel good. It is an EXCITATORY neurotransmitter and acts like the "gas pedal" in a car.

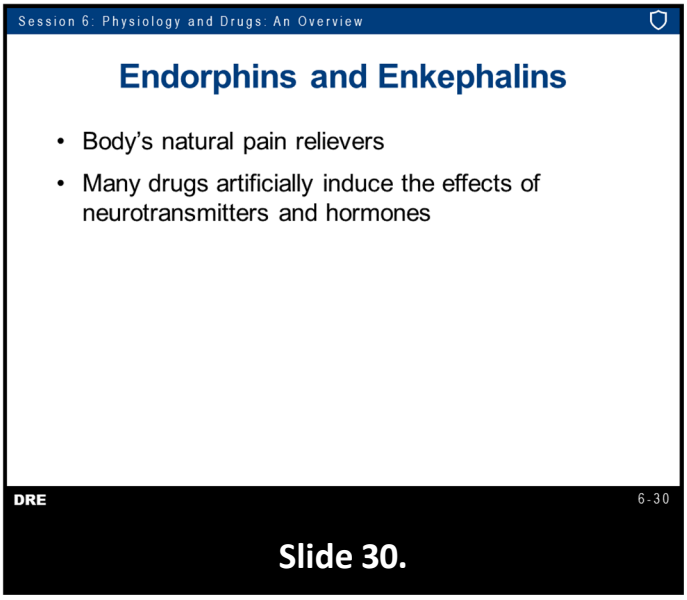


Slide 29.

Serotonin – A vasoconstrictor, thought to be involved in sleep, wakefulness, and sensory perception. Tryptophan is a precursor to Serotonin and has been used to treat insomnia. Serotonin is strongly associated with mood — overall state of mind — and deficiency is associated with depression.

Gamma Amino Butyric Acid (GABA) – Inhibits various neurotransmitters and also causes a release of growth hormones. GABA is the major INHIBITORY neurotransmitter in the brain and acts like the "brake pedal" in a car.

Glutamate – Functions as an "on switch" in the brain and is classified as an excitatory neurotransmitter. Glutamate is the most common EXCITATORY neurotransmitter in the brain.



Slide 30.

These are the body's natural pain relievers. They may be released in response to influences that may cause pain to the person. There are many drugs that artificially induce the effects of neurotransmitters and hormones.

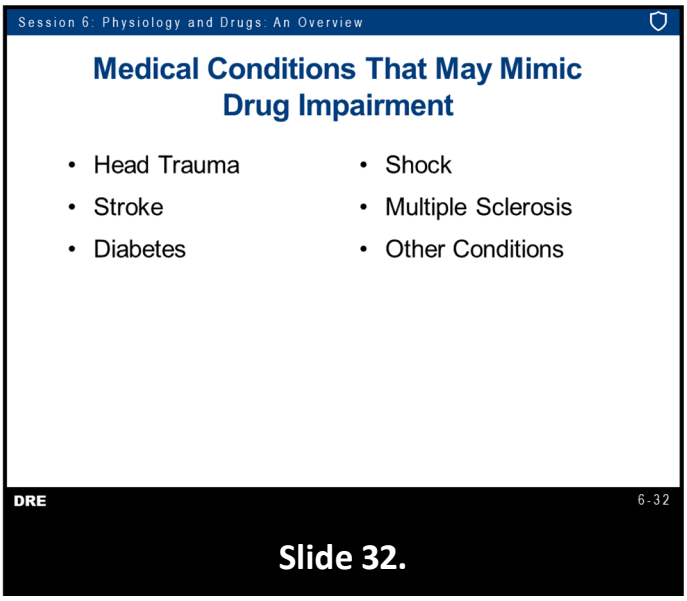
E. Medical Conditions That May Mimic Drug Impairment

Slide 31.

Certain medical conditions or injuries may cause signs and symptoms similar to those of drug impairment.

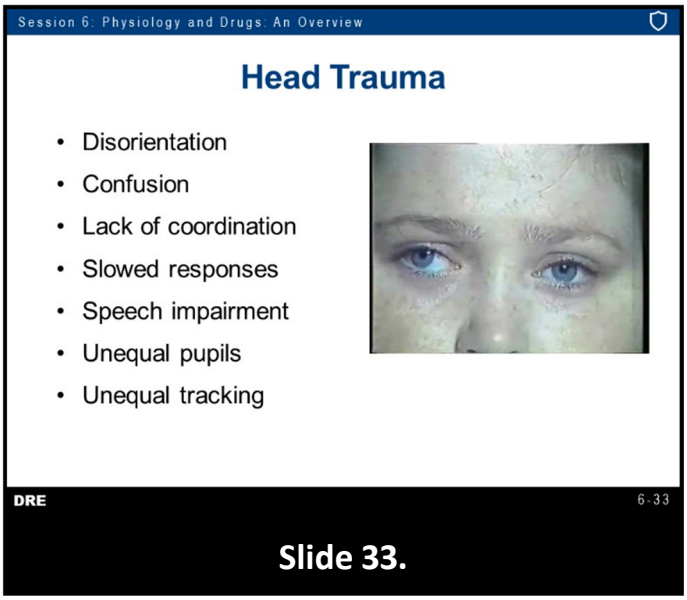
There are times when a DRE may encounter situations where a subject arrested for drugged driving may be suffering from a medical condition that has affected the subject's ability to operate a motor vehicle. If the DRE makes the determination that a possible medical issue is the likely cause of impairment (observable signs and symptoms), the DRE should consider taking the appropriate steps to ensure the subject is referred to the proper medical personnel.

In such cases, the DRE should prepare the drug impairment evaluation report documenting his or her findings and indicating in their opinion they suspect medical impairment as the cause of the impairment that has affected the subject's ability to operate a motor vehicle. Appropriate discretion should be applied by the arresting officer whether or not an impaired driving charge is relevant, but the person should receive prompt, formal medical attention, as necessary.



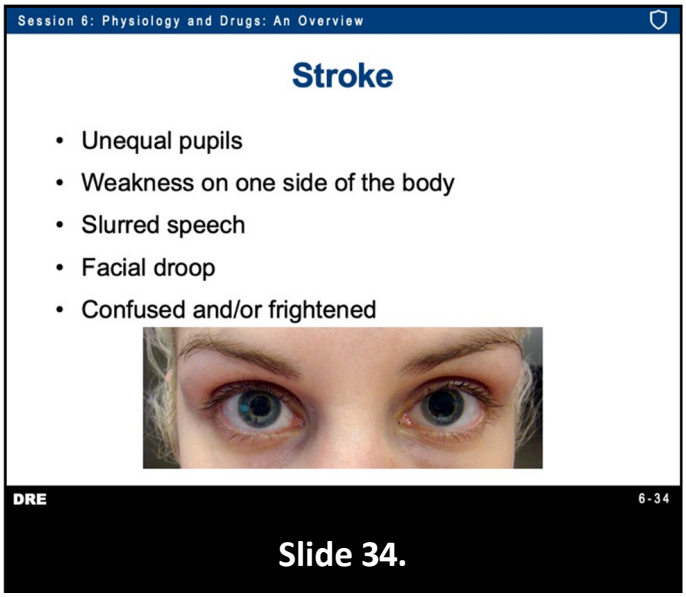
Slide 32.

There are various medical conditions and injuries that may cause subjects to appear to be impaired by alcohol and/or other drugs. Some of the more common medical conditions that may mimic drug impairment include head trauma, stroke, diabetes, shock, Multiple Sclerosis, and other conditions.



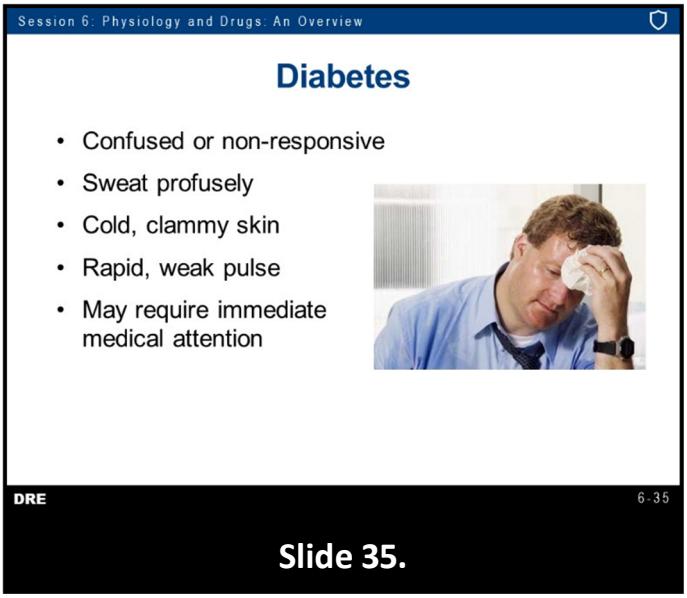
Slide 33.

A severe blow or bump to the head may injure the brain and create disorientation, confusion, lack of coordination, slowed responses, speech impairment, unequal pupil size, and eyes do not track equally. Because the injury usually affects one side of the brain more than the other, disparities usually will be evident in the subject's eyes. Sometimes the pupils will be noticeably different in size or one eyelid may droop while the other appears normal. Additionally, the eyes may not be able to track equally while following a stimulus.



Slide 34.

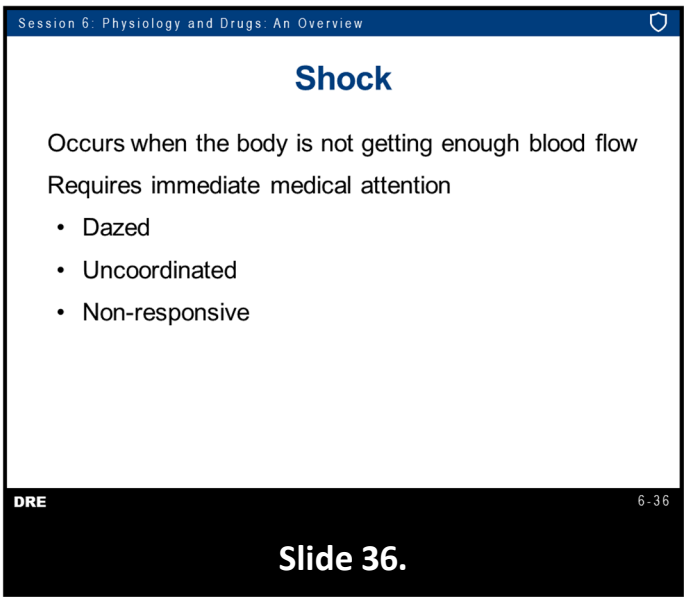
A medical condition caused by a rupture or obstruction (as if by clot) of an artery of the brain. A stroke will usually produce many of the same effects and indicators associated with head trauma. Stroke victims often will have pupils noticeably different in size. One pupil may remain fixed and exhibit no visible reaction to light, while the other reacts normally. Paralysis, physical weakness, and other observable signs are often more predominant on one side of the body than the other. Additionally, subjects suffering from a stroke will often have a dazed appearance and be confused and/or frightened.



Slide 35.

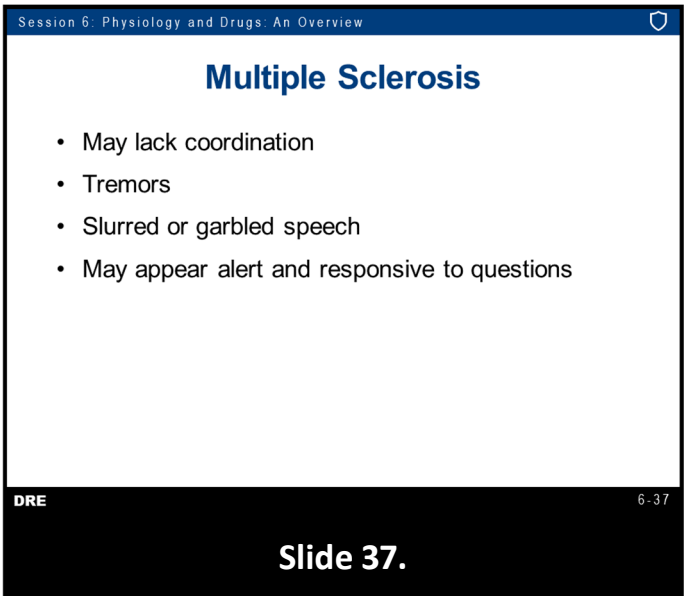
Diabetes is an endocrine disorder where the pancreas fails to properly produce a sufficient amount of insulin. A diabetic is most likely to be mistaken for a person impaired by alcohol and/or drugs when they have too much insulin, causing the blood sugar level to become dangerously low. This low blood sugar condition is referred to as insulin shock, or hypoglycemia. A diabetic in insulin shock may appear very confused, be non-responsive, sweat profusely, have an elevated pulse, and elevated blood pressure. Their speech may be slurred, and they may be non-communicative.

Another diabetic condition is hyperglycemia, or high blood sugar. This condition is where a person has not enough insulin or too much blood sugar. A person in this condition may appear flushed, dry skinned, irritable, confused, and may have a sweet, fruity breath odour known as acetone breath. Symptoms may include headaches and blurred vision.



Slide 36.

Shock is a life-threatening condition that occurs when the body is not getting proper blood flow. This can damage multiple organs and lead to death. Subjects in shock may have a dazed appearance, be uncoordinated, and non-responsive. Other indicators include extremely low blood pressure, fast but weak pulse, dizziness, cold clammy skin, profuse sweating, rapid shallow breathing, blue lips and fingernails. Shock requires IMMEDIATE medical treatment and can get worse very rapidly.



Slide 37.

Multiple Sclerosis (MS)is a progressive disease in which the nerve fibers of the brain and spinal cord lose their protective cover. Some signs and symptoms are abnormal sensations in the face or extremities, weakness, double vision, etc. Victims of MS and other degenerative neurological disorders may lack coordination, have tremors, slurred or garbled speech, and many of the other gross motor indicators of intoxication. Unlike subjects impaired by alcohol and/or drugs, MS sufferers usually appear alert.

Slide 38.

There are some mental health conditions that may affect vital signs such as Anxiety (panic disorder), Depression, Bipolar Disorder, Schizophrenia, and flashbacks.

Panic disorder is a type of anxiety. The subject may also have physical symptoms such as fast heartbeat (tachycardia), chest pain, breathing difficulty, weakness or dizziness, sweating and/or feeling hot or cold chill.

Depression is a disorder of the brain and can be a serious mental illness. There are a variety of causes including genetic, biological, environmental, and psychological factors. Symptoms can include feeling sad or empty, loss of interest in favorite activities, not being able to sleep or sleeping too much, feeling very tired, feeling hopeless, irritable, anxious, or guilty, aches or pains, headaches, and thoughts of death or suicide.

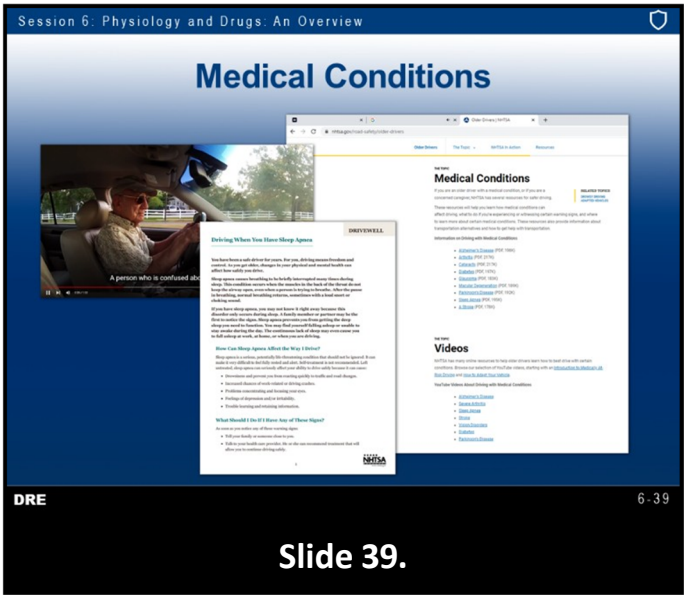
Symptoms of a Manic Episode	Symptoms of a Depressive Episode
Feeling very up, high, elated, or extremely irritable or touchy	Feeling very down or sad, or anxious
Feeling jumpy or wired, more active than usual	Feeling slowed down or restless
Racing thoughts	Trouble concentrating or making decisions
Decreased need for sleep	Trouble falling asleep, waking up too early, or sleeping too much
Talking fast about a lot of different things (“flight of ideas”)	Talking very slowly, feeling like you have nothing to say, or forgetting a lot

Bipolar disorder is a serious mental illness. People who have it go through unusual mood changes. They go from very happy and active (manic) to very sad, hopeless and inactive (depressive), and then back again.

Schizophrenia is a chronic and severe mental disorder that affects how a person thinks, feels, and behaves. People with schizophrenia may seem like they have lost touch with reality. Symptoms may include hallucinations, delusions, thought disorders (unusual or dysfunctional ways of thinking), movement disorders (agitated body movements), reduced speaking, difficulty understanding information and using it to make decisions, difficulty focusing or paying attention, and impaired short-term memory.

A person who has previously used a hallucinogen may experience a flashback, which is a portion of a prior hallucinogenic experience. Flashbacks do not cause all the signs and symptoms expected from an evaluation of a subject under the influence of a hallucinogen. A flashback does not occur because of a residual quantity of drug in the user's body. Instead, a flashback essentially is a very intense daydream. There are three types of flashbacks:

- Emotional: most dangerous - feelings of panic, fear, etc.; the sensations of a "bad trip"
- Somatic: Altered body sensations, tremors, weakness, dizziness, crawly, tingly feelings on the skin
- Perceptual: Distortions of vision, hearing, smell, taste, and touch (associated with original "trip" least harmful, unless driving a motor vehicle)



Slide 39.

How many different medical conditions are there? Depending on source, from about 2,500 to 12,000 diseases and conditions!! An excellent source for medical conditions that impair driving is: Medical Conditions and Driving: A Review of the Literature (1960-2000). The National Highway Traffic Safety Administration (NHTSA) has produced this excellent guide reviewing numerous articles and studies on medical conditions and their effects on driving.

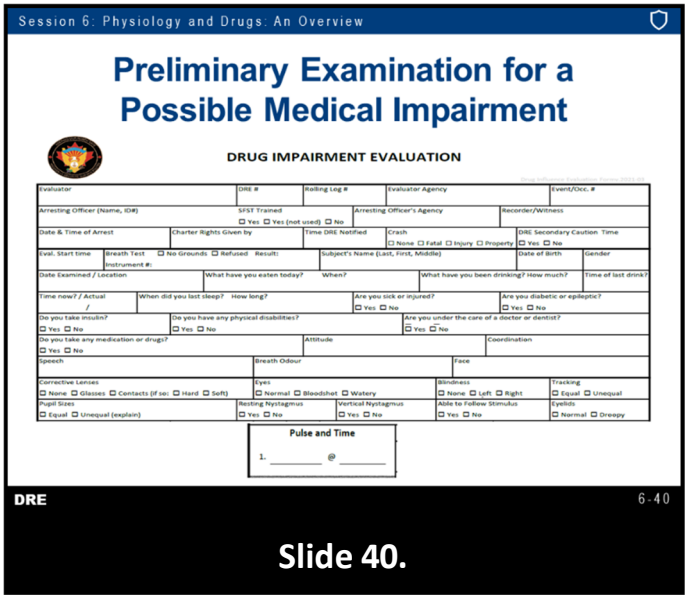
Although this reference will not allow you to make a determination of which medical condition may be affecting a person, it will give you a good reference for understanding how many medical conditions adversely affect driving.

It is recommended the DRE get as much detail when you interview the subject about their medical conditions, the stage of their condition(s), whether it is treated or untreated, if it is in later stages, remission, or under control with medications.

The location of the injury or disease will determine the signs and symptoms — for this reason, we CANNOT generalize a set of specific signs and symptoms for a condition as we do with the drug categories. In many injuries or diseases, the effects will be seen primarily on ONE SIDE of the body. This is the ONE-SIDED (Lateralized) SIGN. Impairment due to drugs will be seen on BOTH sides.

A medical condition will usually not go away in 24 hours as with a drug. It will be present well after the initial stop and arrest. The condition may include conflicting signs in the DRE evaluation.

The DRE may evaluate a subject in which there is a COMBINED medical condition and drug abuse. People with medical conditions also use drugs, both legally and illegally. BOTH situations can have impairing effects and can be present at the time of the DRE evaluation.



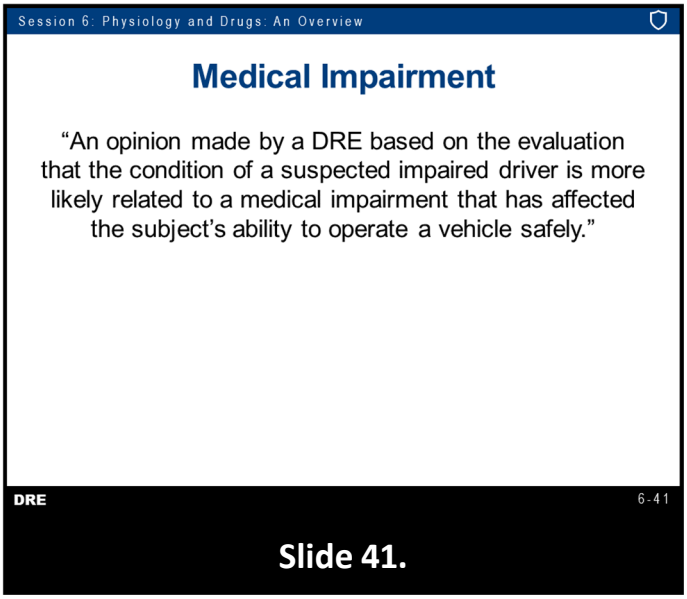
The preliminary examination consists of questions, observations of face, breath, and speech, initial checks of the eyes, and the initial check of the subject's pulse.

The pulse check is part of the examination of the subject's vital signs. Pulse is checked three times during the drug impairment evaluation for many reasons, including to exclude nervousness as a factor of elevated pulse. This gives a more accurate and reliable pulse.

Preliminary examination questions deal with injuries or medical problems the subject may have. They 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 or dentist's care?
- Are you taking any medications or drugs?

It is not only allowable, but recommended the DRE ask more questions related to these areas. This is especially true if the subject answers any of these questions in the affirmative.



Slide 41.

There are times when a DRE may encounter situations where a subject arrested for drugged driving may be suffering from a medical condition that has affected the subject's ability to operate a motor vehicle. In other words, the DRE, through his or her evaluation, has eliminated impairing substances as the probable cause of impairment, and while doing so, identified signs and symptoms consistent with a medical issue. Once the DRE makes the determination, the DRE should consider taking appropriate steps to ensure the subject is referred to the proper medical personnel. In such cases, the DRE should prepare the drug impairment report documenting his or her findings that support an opinion of a DRE medical impairment.

For purposes of DRE and the DEC Program, medical impairment is defined as, **"An opinion made by a DRE based on the evaluation that the condition of a suspected impaired driver is more likely related to a medical impairment that has affected the subject's ability to operate a conveyance."**

The suggested way to document this type of opinion in Step 11 of the DRE report would be: "It is the opinion of [your name], a Drug Recognition Expert, that the Subject's ability to operate a conveyance is affected by a medical condition."

DREs and other police officers will at times encounter individuals with mental illness or intellectual/developmental disabilities. These individuals may exhibit signs and symptoms very similar to those of an individual impaired by drugs and/or alcohol. These individuals may also be experiencing coexisting conditions of mental illness with drug impairment. It is important for DREs to make every effort to prevent violent interactions using an array of tools and resources necessary for positive, successful outcomes.

Using a strategic approach to interactions with individuals with suspected mental health problems or intellectual/developmental disabilities can ensure officer safety through the DRE interaction.

IACP has resources to respond to people in crisis and mental health disorders. This is titled the One Mind Campaign and can be found on the IACP website.

Other recommended Web sites and links for further information that may be beneficial for DREs and other police officers include:

- Substance Abuse and Mental Health Services Administration - www.samhsa.gov
- National Alliance on Mental Illness – www.nami.org
- National Council for Mental Wellbeing - Mental Health First Aid - www.mentalhealthfirstaid.org
- National Coalition for Mental Health Recovery - www.ncmhr.org

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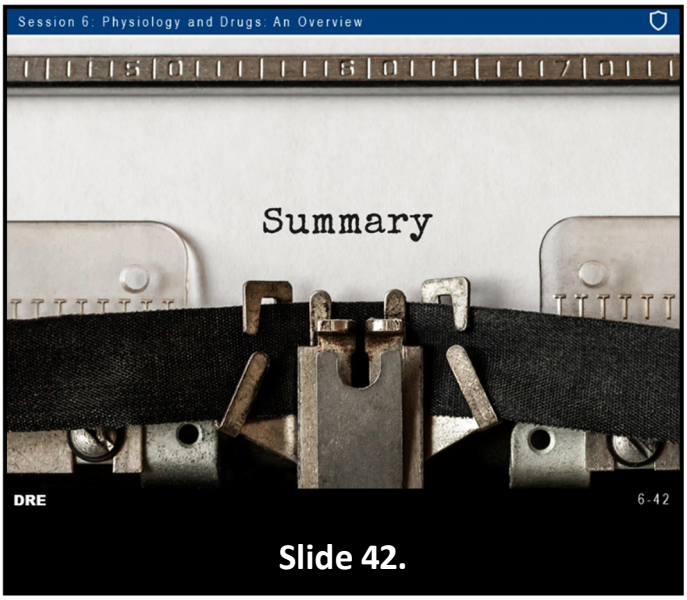
F. Summary



Slide 42.

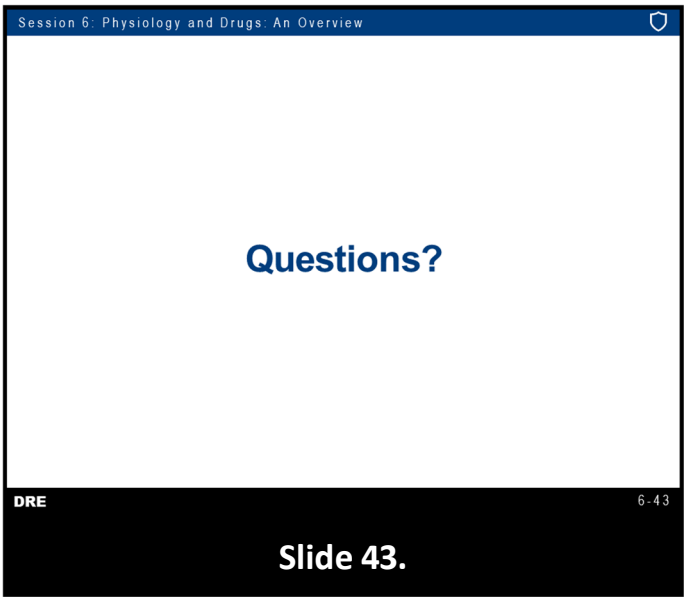
A basic understanding of how the body works is necessary to understand the general concept of human physiology and understand purposes and functions of major systems in the body (nervous system, circulatory system, respiratory system, etc.).

This limited overview will not qualify participants as medical specialists.
The knowledge gained during this session must be supplemented by additional reading and/or instruction. The body of knowledge in this area is being constantly expanded.

The body maintains homeostasis (equilibrium) by constantly adjusting to changes in the external and internal environment.

When drugs are introduced into the body this process comes into play. When drugs interact in the body they tend to speed things up, or slow things down, or confuse signals, or block signals, or some combination of the above.

The effects of drugs can be detected and/or observed in the drug impairment evaluation.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Questions?
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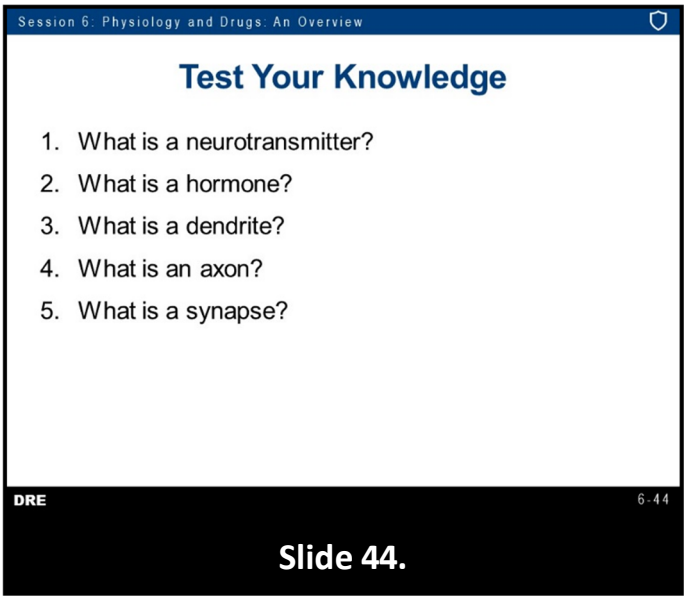
6-43

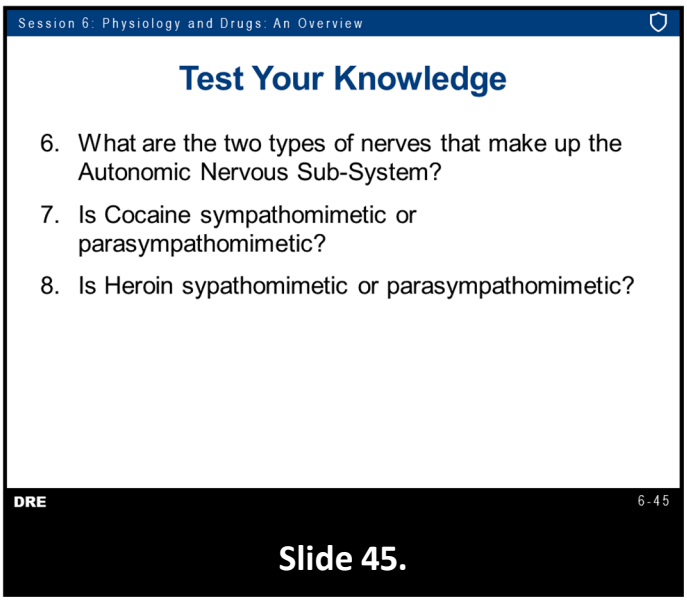
Slide 43.



Slide 44.

Test Your Knowledge

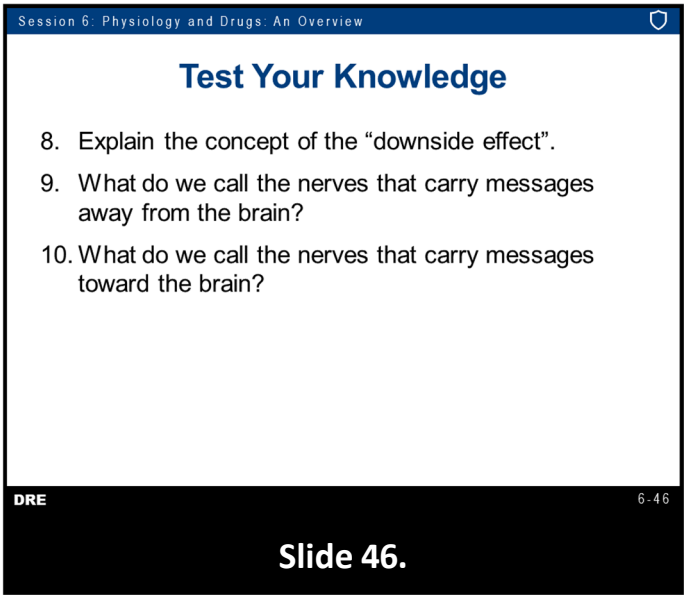
1. What is a neurotransmitter?
2. What is a hormone?
3. What is a dendrite?
4. What is an axon?
5. What is a synapse?



Slide 45.

Test Your Knowledge

6. What are the two types of nerves that make up the Autonomic Nervous Sub-System?
7. Is Cocaine sympathomimetic or parasympathomimetic?
8. Is Heroin sympathomimetic or parasympathomimetic?



Test Your Knowledge

9. Explain the concept of the “downside effect.”
10. What do we call the nerves that carry messages away from the brain?
11. What do we call the nerves that carry messages toward the brain?

Estimated time for session: 1 Hour

12 DRE

PRACTICE: EYE EXAMINATIONS

LEARNING OBJECTIVES

- Describe the eye examination procedures
- Conduct examinations of pupil size and reaction to light under both lighted and darkened room conditions
- Document the results of the eye examinations

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Participants' Hands-On Practice
- Instructor-Led Coaching
- Participant-Led Coaching

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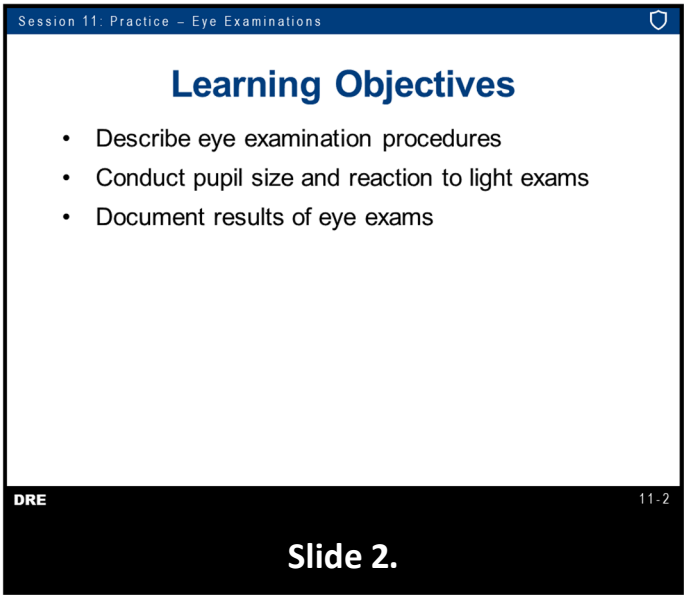
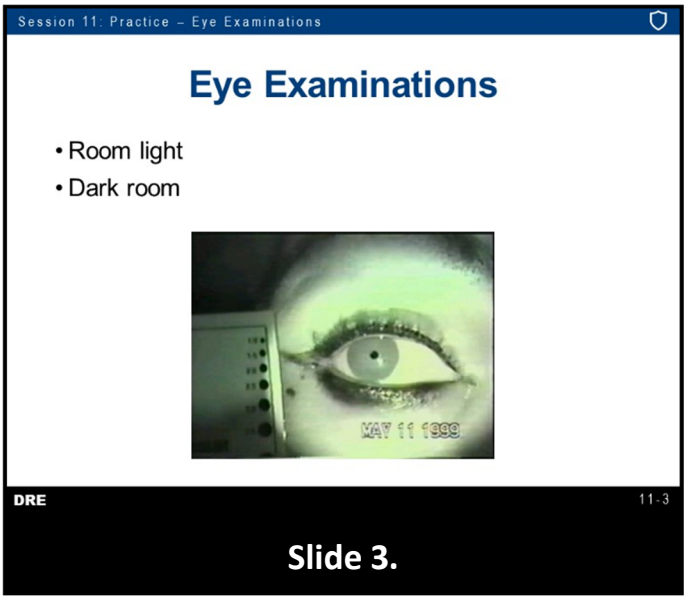


Slide 2.

A. Procedures for this Session



Slide 3.

Team Assignments: Participants will work in three- or four-member teams.

At any given time, one member of the team will be engaged in conducting and recording eye examinations of another member. The remaining member(s) will help coach and critique the participant who is conducting the examinations.

B. Room Light Examinations

Pupil Size Estimation: Pupil size estimation under room light.

Sequence of roles should be as follows:

- Test Administrator
- Test Subject
- Coach
- Test Administrator (continue cycle)

C. Dark Room Examinations

Pupil Size Estimation: Pupil size estimation under near total darkness. Pupil reaction and size estimation under direct light.

Sequence of roles should be as follows:

- Test Administrator
- Test Subject
- Coach
- Test Administrator (continue cycle)

Slide 4.

EYE EXAMINATIONS DATA SHEET

Subject: ______________________

	Left	Right
Room Light		
NTD		
Direct Light		
Reaction		

Subject: __________________

	Left	Right
Room Light		
NTD		
Direct Light		
Reaction		

Subject: ______________________

	Left	Right
Room Light		
NTD		
Direct Light		
Reaction		

Subject: ______________________

	Left	Right
Room Light		
NTD		
Direct Light		
Reaction		

Subject: ______________________

	Left	Right
Room Light		
NTD		
Direct Light		
Reaction		

Subject: ______________________

	Left	Right
Room Light		
NTD		
Direct Light		
Reaction		

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Estimated time for session: 2 Hours

13 DRE

PRELIMINARY TRAINING

ALCOHOL WORKSHOP AND PROFICIENCY TEST

LEARNING OBJECTIVES

- Administer the psychophysical tests and the eye examinations to persons who have consumed varying amounts of alcohol
- Document the results of these tests and examinations
- Accurately assess the extent of a person's alcohol impairment based on the tests and examinations

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Hands-on Practice

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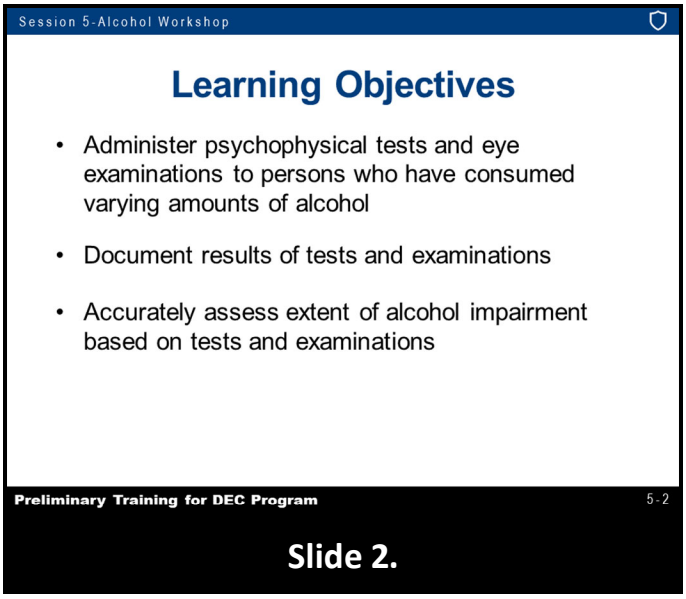
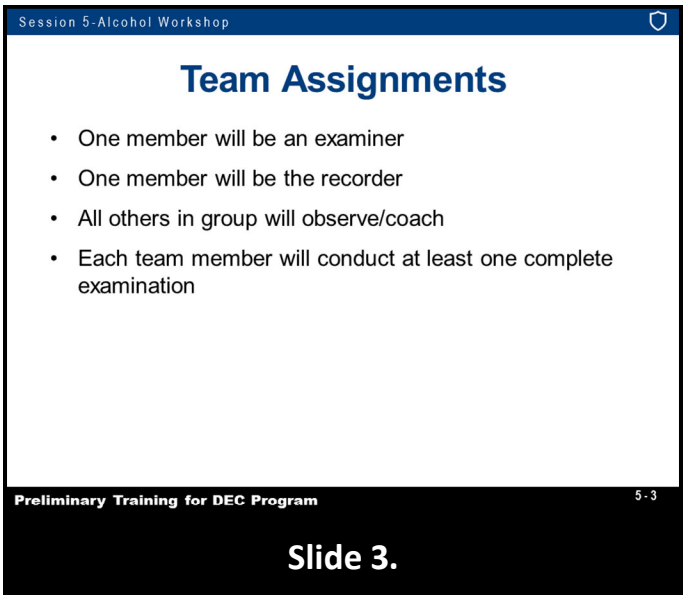
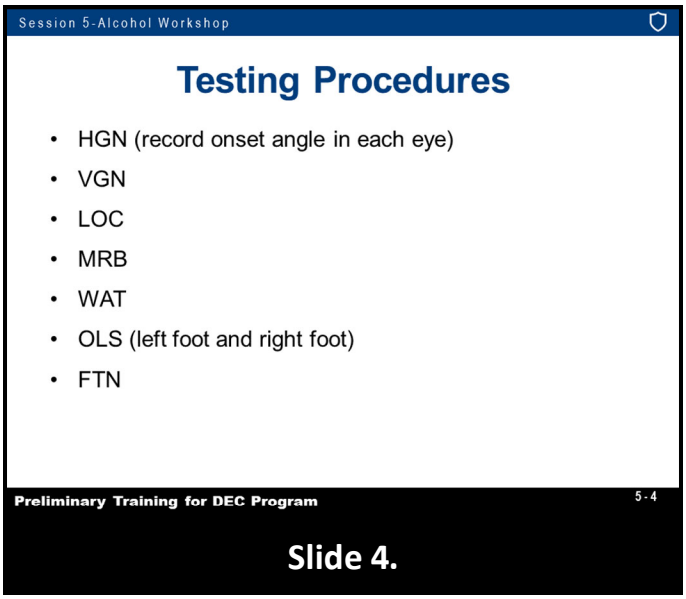


Slide 2.

A. Assignments and Procedures



Slide 3.



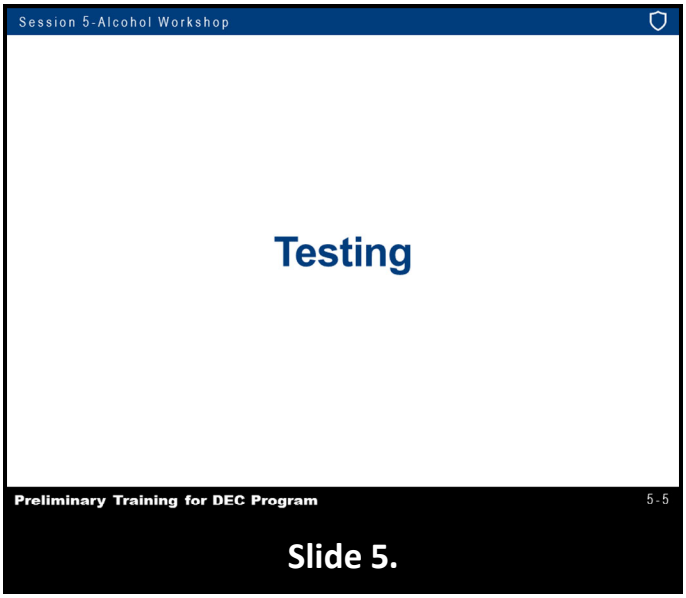
Slide 4.

Each team will conduct the following sequence of tests and examinations on each volunteer:

- Horizontal Gaze Nystagmus (HGN) (record angle of onset in each eye)
- Vertical Gaze Nystagmus (VGN)
- Lack of Convergence (LOC)
- Modified Romberg Balance (MRB)
- Walk and Turn (WAT)
- One Leg Stand (OLS) (standing on left leg)
- OLS (standing on right leg)
- Finger to Nose (FTN)

Upon completing the test and examinations, the team members will record their best estimate as to the volunteer's blood alcohol concentration (BAC).

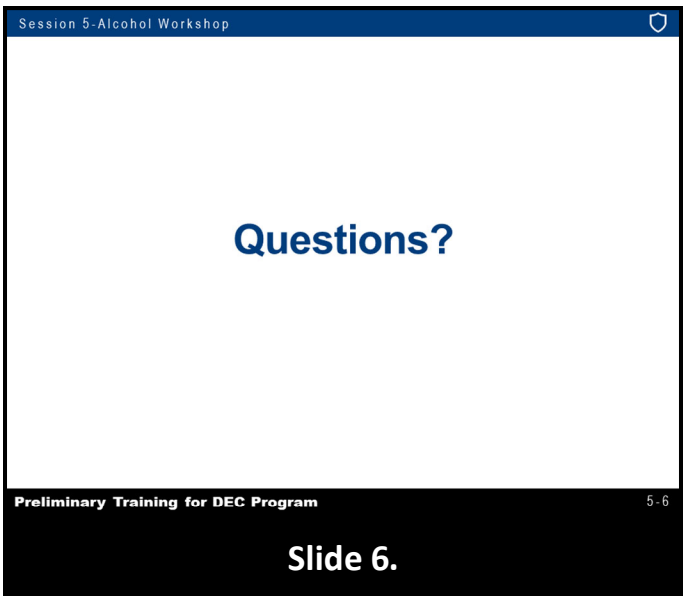
B. Testing



Slide 5.

C. Feedback and Discussion

D. Alcohol Workshop SFST Proficiency Checklist



Slide 6.

PARTICIPANT PROFICIENCY EXAMINATION
STANDARDIZED FIELD SOBRIETY TESTs

Name_____ Date_____/_____/_____

Agency_____

I. HORIZONTAL GAZE NYSTAGMUS

1._ Have subject remove glasses if worn.

2._ Gives proper verbal instructions.

3._____ Stimulus held in proper position (approximately 12”-15” from nose, just slightly above eye level).

4._ Check for equal pupil size and resting nystagmus.

5._ Check for equal tracking.

6._____ Smooth movement from center of nose to maximum deviation in approximately 2 seconds and then back across subject’s face to maximum deviation in right eye, then back to center.
Check left eye, then right eye. (Repeat).

7._____ Eye held at maximum deviation for a minimum of 4 seconds (no white showing). Check left eye, then right eye. (Repeat)

8._____ Eye moved slowly (approximately 4 seconds) from center to 45° angle. Check left eye, then right eye. (Repeat)

9._ Total the clues.

10._____ Check for Vertical Gaze Nystagmus. (Repeat)

II. WALK AND TURN

1._ Instructions given from a safe position.

2._____ Tells subject to place feet on a line in heel-to-toe manner (left foot behind right foot) with arms at sides and gives demonstration.

3._____ Tells subject not to begin test until instructed to do so and asks if subject understands.

4._ Tells subject to take nine heel-to-toe steps on the line and demonstrates.

5._ Explains and demonstrates turning procedure.

6._ Tells subject to return on the line taking nine heel-to-toe steps.

7._ Tells subject to count steps out loud.

8._ Tells subject to look at feet while walking.

9._ Tells subject not to raise arms from sides.

10. _____ Tells subject not to stop walking once they begin.

11. _____ Asks subject if all instructions are understood.

III. ONE LEG STAND

1._ Instructions given from a safe position.

2._ Tells subject to stand straight, place feet together, and hold arms at sides.

3._____ Tells subject not to begin test until instructed to do so and asks if subject understands.

4._____ Tells subject to raise one leg, either leg, approximately 6" from the ground, keeping raised foot parallel to the ground and gives demonstration.

5._ Tells subject to keep both legs straight and to look at elevated foot.

6._____ Tells subject to count out loud in the following manner: one thousand one, one thousand two, one thousand three, and so on until told to stop, and gives demonstration.

7._ Asks subject if all instructions are understood.

8. _ Checks actual time subject holds leg up. (Time for 30 seconds.).

Instructor: _____

Note: In order to pass the proficiency examination, the participant must explain and proficiently complete each of the steps listed.

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Estimated time for session: 30 Minutes

14 DRE

DRE REFERENCE SOURCES

LEARNING OBJECTIVES

- Discuss print resources available to assist Drug Recognition Experts (DREs)
- Learn about other resources available to assist DREs

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations

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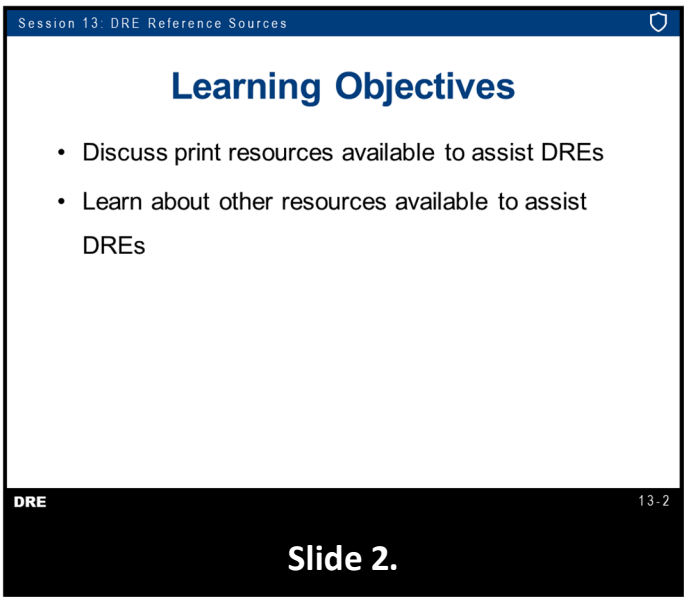
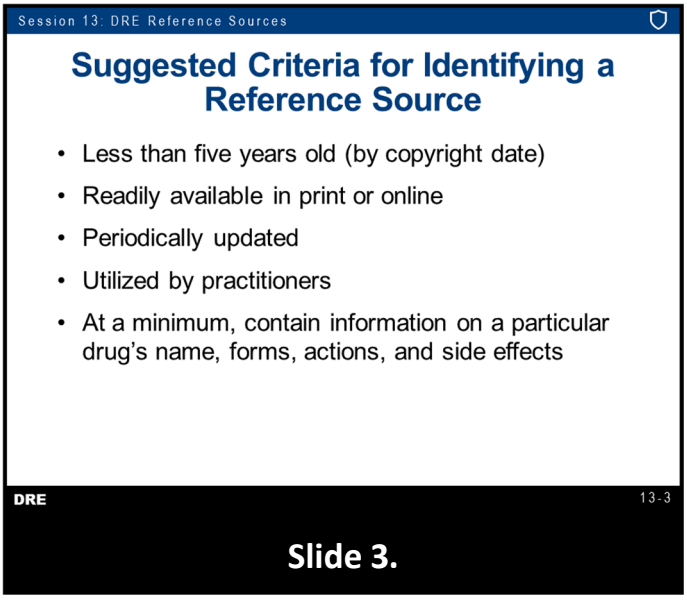

Session 13: DRE Reference Sources
Learning Objectives
• Discuss print resources available to assist DREs
• Learn about other resources available to assist DREs
DRE
13-2

Slide 2.

A. Resources Available



Slide 3.

When selecting an acceptable drug reference, DRE's should consult references that meet the below criteria:

- Be less than five years old (by copyright date)
- Be readily available in print or online
- Be periodically updated
- Be utilized by practitioners in the scientific and healthcare fields
- At a minimum, contain information on a particular drug's:
- Trade (brand), generic, and alternate common names
- Available forms (liquid, pill, injectable, etc.)
- Pharmacologic/therapeutic actions (as used clinically, both "on" and "off" label)
- Adverse reactions and side effects

The reason for this is to keep from consulting outdated and inaccurate references.

Slide 4.

Acceptable resources may be in-print, electronic, or a combination. Acceptable written examples include:

- The Complete Guide to Prescription and Non-prescription Drugs
- The Pill Book
- Nursing Drug Handbook
- Nurse Pocket Drug Guide
- Drug Identification Bible (available at: http://www.drugidbible.com)
- Davis' Drug Guide for Nurses
- Tarascon Pocket Pharmacopoeia (for those with some pharmacology education)
- The Monthly Prescriber's Reference (MPR)
- Disposition of Toxic Drugs and Chemicals in Man
- DEA Intelligence Report – Drug Slang Code Words (www.dea.gov)

Slide 5.

Website Resource

Acceptable electronic examples include:

- www.Drugs.com
- www.RxList.com
- www.WebMD.com/Drugs/Index-drugs.aspx
- www.Eprocrates.com
- iMeds – Medical Reference for Android
- Monthly Prescriber's Reference (MPR)
- www.PDR.net
- www.streetdrugs.org
- info@streetdrugs.org
- United States Drug Enforcement Administration (DEA) – Drug Fact Sheets – https://www.dea.gov/factsheets?field_fact_sheet_category_target_id=All&page-0

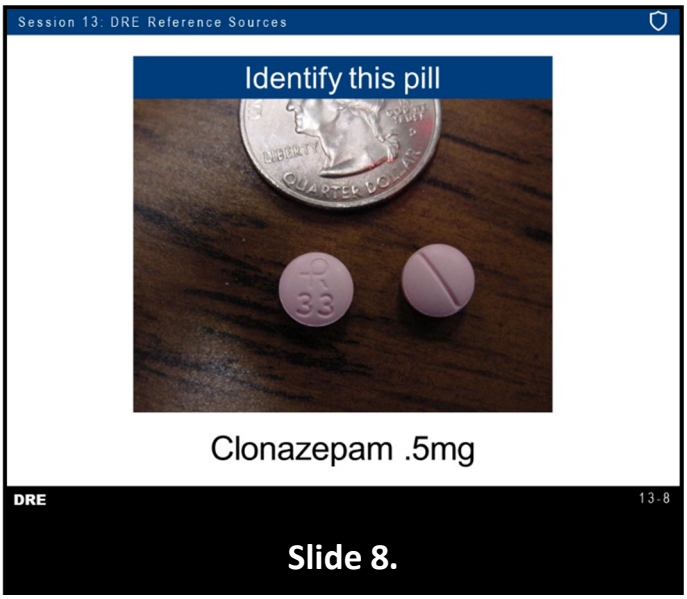
Slide 6.

Examples of other information sources are:

- National Highway Traffic Safety Administration (NHTSA), Enforcement and Justice Services (EJS) Division, Washington, D.C.
- International Association of Chiefs of Police (IACP), DRE Section
- National/Provincial Drug Evaluation and Classification (DEC) Program Coordinator
- Health Canada (HC)
- Provincial Crown Prosecutor's office
- Poison control centres (US : www.aapcc.org, CA : infopoison.ca)
- Medical dictionaries
- Drugs and Human Performance Fact Sheets, NHTSA
- Newspaper and magazine articles on drugs and drug-impaired driving, including counter-culture magazines such as "High Times"
- Software programs such as Pharmacists, Body Works, Mosby's Medical Dictionary and
- other programs are available on disks and CDs
- Various resources are available through online services and the Internet

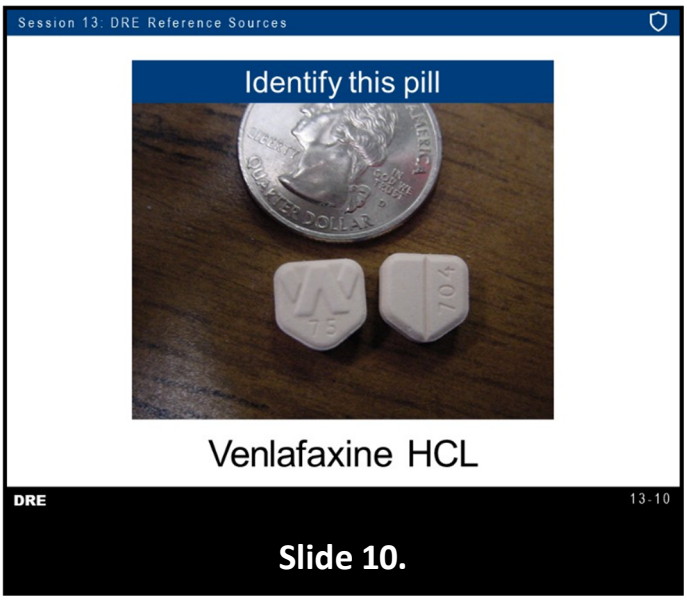
The International Association of Chiefs of Police (IACP) DEC Program website is http://www.decp.org

Slide 7.



Slide 8.

Slide 9.



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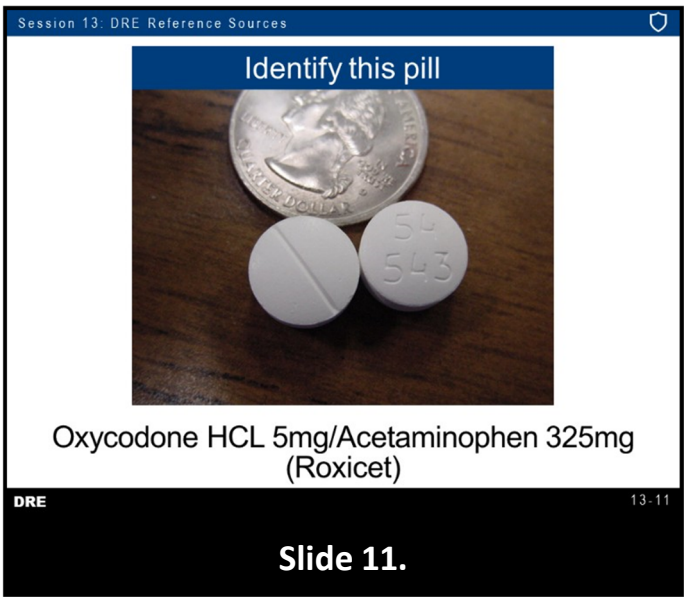

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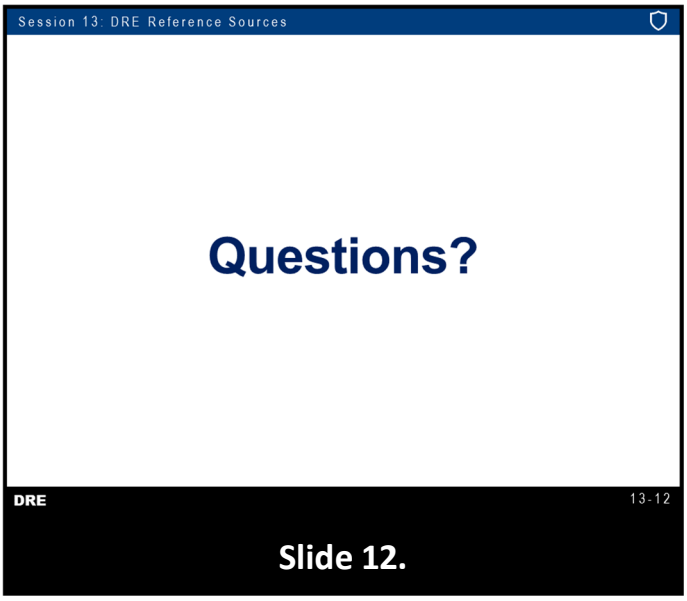

Slide 12.

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, 13th Edition, Gilman, A,; Goodman, I.; MacMillan Publishing Co.:

Nystagmus	Strabismus
Difficulty in visual	Accommodation
Vertigo	Gait ataxia
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, 14th Ed.

Drug and Alcohol Abuse, A Clinical Guide to Diagnosis and Treatment, (6th Ed. , Schuckit, M.D., Mark A. Plenum Medical Book Co, New York 1989.

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	Incoordination
Unsteady gait	Impairment in attention or memory

CNS STIMULANTS:

DRE Symptomatology:

Dilated pupils	Increased pulse rate
Increased temperature	Increased blood pressure
Body tremors	Restlessness
Excited	Euphoric
Talkative	Exaggerated reflexes
Anxiety	Grinding teeth
Redness to nasal area	Runny nose
Loss of appetite	Insomnia
Increased alertness	

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	Hyperreflexia
Restlessness	Talkativeness
Irritability	Insomnia
Tremor	Flushing
Diaphoresis	Combativeness
Nausea	Vomiting
Pallor	Dry mucous membranes

Moderate:

Hyperactivity	Confusion
Hypertension	Tachypnea
Tachycardia	Premature ventricular contraction
Chest discomfort	Vomiting
Abdominal pain	Profuser diaphoresis
Mild temperature	Elevation
Repetitive behavior	Impulsivity
Panic reactions	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
Impaired 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 and Company, New York, 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	Tachycardia
Sweating	Palpitations
Blurring of vision	Tremors
Incoordination	

DISSOCIATIVE ANESTHETICS (PHENCYCLIDINE)

DRE Symptomatology:

Nystagmus	Increased pulse
Increased blood pressure	Increased temperature
Perspiring	Warm to the touch
Blank stare	Early onset of nystagmus
"Moon walking"	Difficulty in speech
Incomplete responses	Repetitive response
Repetitive speech	Increased pain threshold
Cyclic behavior	Confused, agitated
Hallucinations	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 heart rate
Elevated blood pressure	Feeling of intoxication
Staggering gait	Slurred speech
Numbness of extremities	Sweaty
Muscular rigidity	Blank stare
Drowsiness	Hostile behavior
Repetitive movements	

Medical Toxicology-Diagnosis and Treatment of Human Poisoning, Ellenhorn, Matthew J., Barceloux, Donald G. Elsevier Science Pub. Co. 1988, PCP 768-777:

Nystagmus	Miosis
Depressed light reflexes	Blurred vision
Diminished pain	Ataxia
Tremors	Muscle weakness

Slurred speech
Increased pulse rate
Amnesia
Body image distortion
Depersonalization
Hallucinations
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
- HGN, VGN, and Rotary Nystagmus
- Mood swings
- Tremors
- Hyperreflexia
- Tachycardia
- Elevated blood pressure

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.

- VGN or HGN
- Numbness or diminished responsiveness to pain
- Dysarthria (slurred speech)
- Seizures
- Increased blood pressure or heart rate
- Ataxia
- Muscle rigidity
- 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	Reduced heart rate
Analgesia	Depressed appetite
Euphoria	Going "on the nod"

Drug Abuse and Dependence, Grinspoon, Lester, MD; Bakalar, James B., Harvard Medical School Mental Health Review No. 1 (1990), page 14:

Narcotics:

Constricted pupils	"nodding off"
Dreamy state	Pain suppression
Euphoria	

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)	Bradycardia (decreased heart beat)
Hypothermia (decreased temperature)	Euphoria/dysphoria
Drowsiness lethargy	Confusion
Flaccid muscle tone	Depressed respiration
Analgesia	

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)	Low blood pressure
Itching	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	Drowsiness
Slurred speech	Impairment in attention or memory

INHALANTS: (Toluene)

DRE symptomatology:

Nystagmus	Increased pulse rate
Increased blood pressure	Residue around nose
Odour on mouth	Nausea disorientation
Slurred speech	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	Floating sensation
Drowsiness	Light sensitivity
Sneezing runny nose	

Encyclopedia of Drug Abuse, O'Brien, Robert; Cohen, Sydney. M.D. Facts on File, INC New York (1984):

Lowered inhibitions	Restlessness
Incoordination confusion	Disorientation
Nausea	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	Ataxia
Tremors cerebellar	Irritability
Rambling speech	Light headedness
Tremors	CNS depression that mimics ataxia
Narcotic analgesics	Blank stare
Euphoric mood	

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)	Vertigo
Dizziness	

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	Dizziness
Incoordination	Slurred speech
Unsteady gait	Lethargy
Depressed reflexes	Psychomotor retardation
Tremor generalized muscle	Blurred vision or diplopia
Stupor or coma	Weakness
Euphoria	

CANNABIS

DRE Symptomatology:

Dilated pupils	Paranoia
Odour of Cannabis	Debris in mouth
Body tremors	Eyelid tremors
Relaxed inhibitions	Increased appetite
Impaired perception of time and distance	Disorientation

The Pharmacological Basis of Therapeutics, Seventh Edition, Gilman, A,; Goodman, I.; MacMillan Publishing Co. 1985, Cannabis, pages 559-561:

Euphoria	Short term memory impairment
Temporal disintegration	Balance and stance impairment
Information processing impairment	Increased hunger
Dry mouth	Additive to alcohol

Lower doses affects perception, impairing well beyond when subject subjectively feels effects; alters all information processing; relatively simple motor skills unaffected

High doses:

Anxiety	Increased heart rate
Increased systolic blood	Pressure
Hallucinations	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:

Euphoria	Motor coordination impairment
Temporal distortion (time slows)	Relaxation
Loss of short term memory	Systematic thinking impaired
Stimulated appetite	Dry mouth

Impairment of motor tasks and reaction times requires higher dosages

A Primer of Drug Action, Julien, Robert M. W.H. Freeman and Company, New York, 1997, Cannabis

Increased blood pressure	Altered sensory perception
Dry mouth	

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 Eye	Euphoria
Relaxation	Dry mouth
Increased heart rate	Possibly nystagmus
Time distortion	Short term memory
Impairment in ability to do multi-step tasks	Tremors
Decrease level of motor coordination	

Encyclopedia of Drug Abuse, O'Brien, Robert; Cohen, Sydney. M.D. Facts on File, INC New York (1984), pages 100, 120:

Cannabis:

Red eye	Increased heart beat
Time and space distortions	Dryness of mouth and throat
Increased heart rate	Increased pulse rate
Increased appetite	

Drug Abuse and Dependence, Grinspoon, Lester,MD; Bakalar,James B., Harvard Medical School Mental Health Review No. 1 (1990).page 19:

Cannabis:

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 Eye	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 Eye	Increased hunger
Changes in time sense	Short-term memory loss
Memory	Dry mouth
Coordination	Tachycardia (rapid heartbeat)
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, impaired judgment, social withdrawal.

Red Eye	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.

Estimated time for session: 1 Hour 45 Minutes

15 DRE

CENTRAL NERVOUS SYSTEM DEPRESSANTS

LEARNING OBJECTIVES

- Describe a brief overview of the Central Nervous System (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
- Explain the typical time parameters, i.e., onset and duration of effects, associated with this category.
- List the indicators likely to emerge when the drug impairment evaluation is conducted for a person under the influence of this category of drugs

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Review of the DEC Program Exemplars
- Reading Assignments
- Video Presentations
- Slide Presentations

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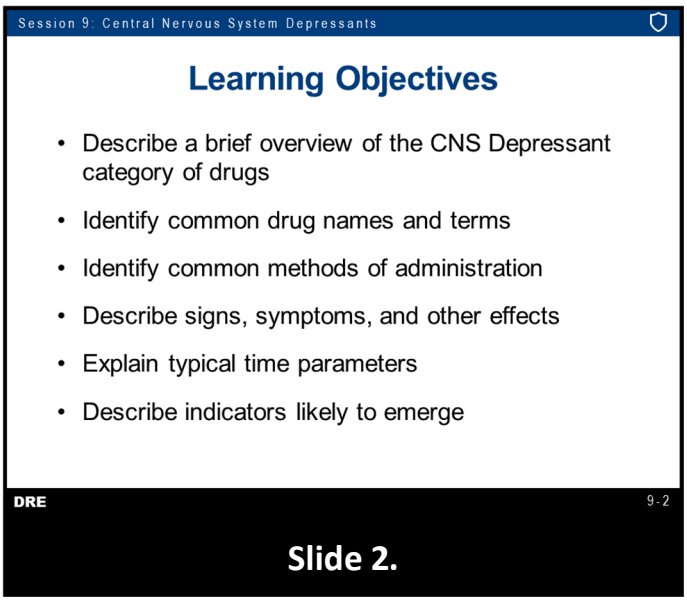

Session 9: Central Nervous System Depressants
Learning Objectives
• Describe a brief overview of the CNS Depressant category of drugs
• Identify common drug names and terms
• Identify common methods of administration
• Describe signs, symptoms, and other effects
• Explain typical time parameters
• Describe indicators likely to emerge
DRE
9-2

Slide 2.

A. Overview of the Category

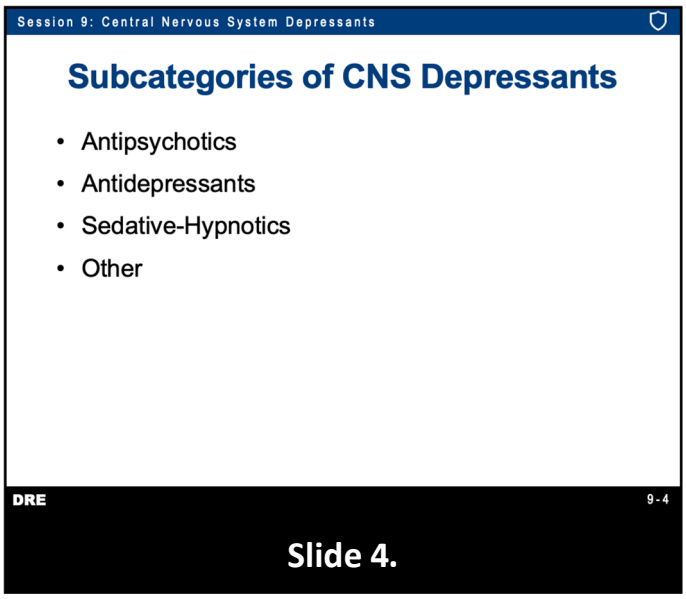
Slide 3.

The CNS Depressant category includes the single most commonly abused drug in America. Alcohol has been used and abused since prehistoric times. Alcohol and its effects are familiar to most people. Alcohol is a model for the CNS Depressant category. With some exceptions, all depressants produce effects quite similar to the effects of alcohol.

Anytime there is a positive BAC reading during an evaluation, the DRE must list alcohol (ETOH) as part of their opinion.

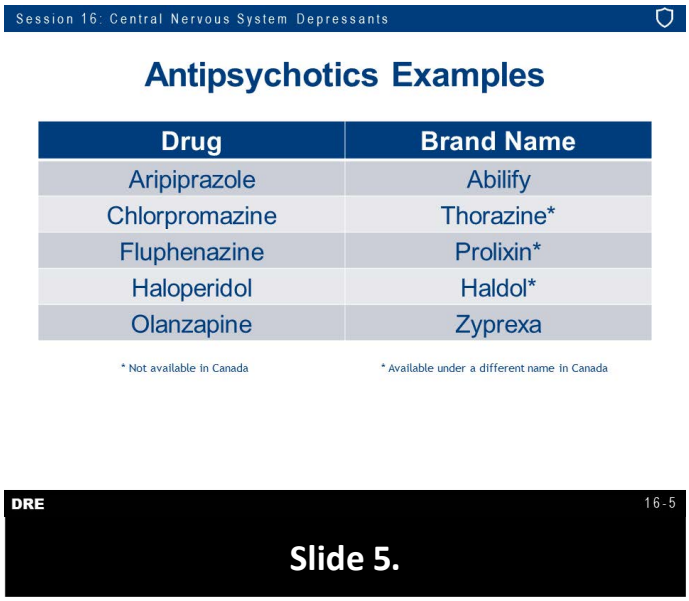
CNS Depressants are generally characterized by effects that "slow down" the central nervous system by increasing or mimicking the activity of sedating (inhibitory) neurotransmitters and/ or decreasing or blocking the activity of excitatory (stimulating) neurotransmitters.

CNS Depressants first affect those areas of the brain that control a person's conscious, voluntary actions such as judgment, inhibitions, and reaction time. As the dose is increased, depressants begin to affect the parts of the brain that control the body's automatic processes, heartbeat, respiration, etc.



Slide 4.

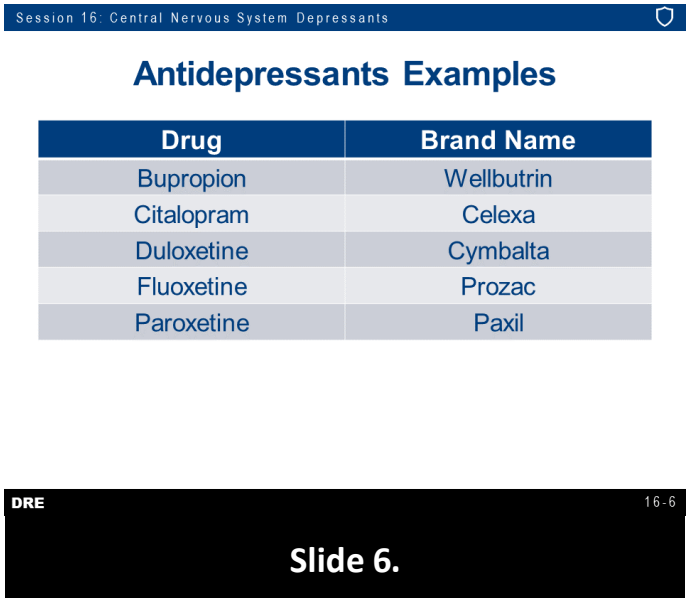
For the purposes of this training, CNS Depressants are subdivided into four major classifications: Antipsychotics, Antidepressants, and Sedative-Hypnotics based upon primary purpose of use and shared mechanisms of action. CNS Depressants that do not belong to one of these three classes, including antihistamines, antiepileptics, and designer CNS Depressants, are characterized as Other.



Antipsychotics are used in psychiatry to manage psychotic symptoms such as delusions, hallucinations, disorganized thinking, and inappropriate emotions that are frequently associated with schizophrenia and bipolar disorder. First introduced in the 1950's, they primarily work by blocking dopamine and serotonin receptors. Some are also used to augment or supplement the effects of other psychotropic medications, such as antidepressants or combined with other drugs to achieve therapeutic goals. Such combinations may also diminish driving ability to an extent not expected from any of the drugs individually.

Antipsychotics

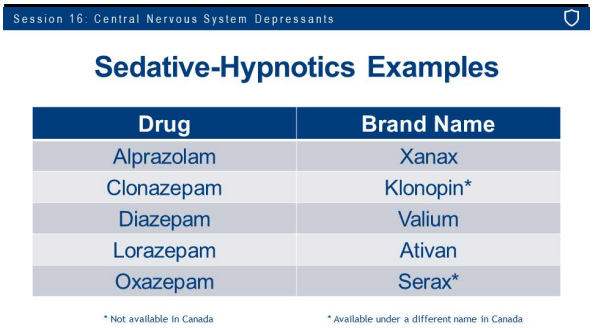
Drug Name	Brand Name
Aripiprazole	Abilify
Chlorpromazine	Thorazine* (in Canada under Teva-chlorpromazine)
Fluphenazine	Prolixin*
Haloperidol	Haldol* (in Canada under Teva-haloperidol)
Olanzapine	Zyprexa

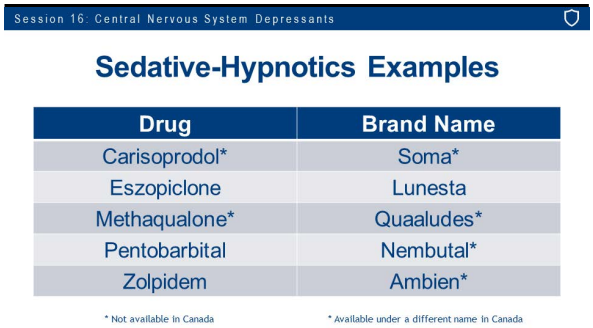


Antidepressants, are used to treat certain mental disorders, including depression, anxiety, obsessive compulsive disorder (OCD), and many others by influencing brain chemistry. The most common classes of these are selective serotonin reuptake inhibitors (SSRIs), serotonin–norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants (TCAs) and monoamine oxidase inhibitors (MAOIs). While these classes of drugs share similar core features, they may have some unique effects and side effects. Some antidepressants, such as SSRIs, SNRIs, and TCAs, may elevate pulse rate, and they usually cause pupil dilation.

Antidepressants

Drug Name	Brand Name
Bupropion	Wellbutrin
Citalopram	Celexa
Duloxetine	Cymbalta
Escitalopram	Lexapro
Fluoxetine	Prozac
Mirtazapine	Remeron
Paroxetine	Paxil
Sertraline	Zoloft
Trazodone	Desyrel
Venlafaxine	Effexor



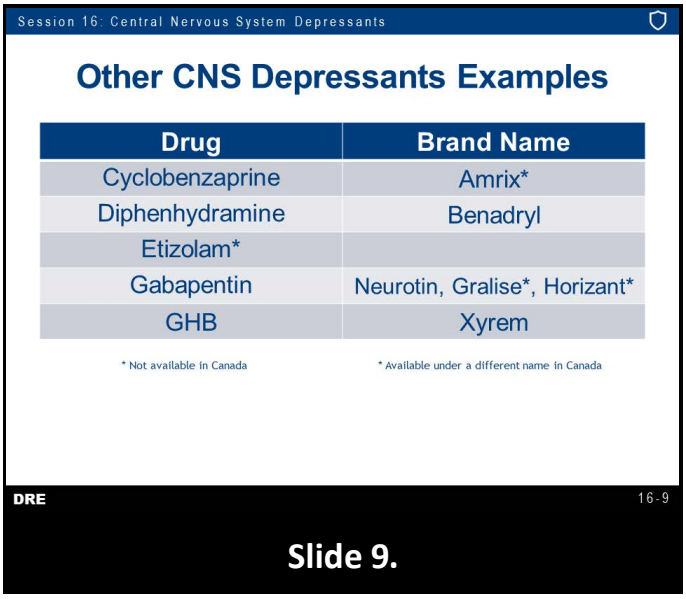


Sedative-Hypnotics are used to reduce tension and anxiety and induce calm (sedative effect) or sleep (hypnotic effect). These drugs may exert a quieting or calming effect at low doses and a sleep-inducing effect in larger doses. Sedative-hypnotic drugs tend to depress the CNS. Since CNS depression and sedation are the main effects of these drugs, they work on pathways other than those affected by the Narcotic Analgesics which also cause sedation. However, symptomatology between these two categories of drugs is quite different.

Types of sedative-hypnotics include benzodiazepines, barbiturates, certain sleep aids, and muscle relaxers. Common benzodiazepines include alprazolam (Xanax), chlordiazepoxide (Librium*), diazepam (Valium), lorazepam (Ativan), and oxazepam (Serax*). Common barbiturates include butalbital (Fioricet*), pentobarbital (Nembutal*), and secobarbital* (Seconal*). Common sleep aids include zolpidem (Ambien*), eszopiclone (Lunesta), and zaleplon* (Sonata*). They are often prescribed for patients with anxiety and sleeping difficulties. Other sedative-hypnotics include carisoprodol* (Soma*), methaqualone* (Quaalude*), and chloral hydrate.

Sedative Hypnotics

Drug Name	Brand Name
Alprazolam	Xanax
Butalbital	Fioricet (in Canada sold as Fiorinal)
Carisoprodol*	Soma*
Chloral Hydrate	
Chlordiazepoxide	Librium*, Librax
Clonazepam	Klonopin* (in Canada under Rivotril)
Diazepam	Valium
EstazolamF	ProSomF
Eszopiclone	Lunesta
Lorazepam	Ativan
MeprobamateF	
Methaqualone*	Quaaludes*
Midazolam	VersedF, NayzilamF, SeizalamF
Oxazepam	Serax* (in Canada under Apo-oxazepam)
Pentobarbital*	Nembutal* (in Canada under Dorminal or Euthanyl)
Phenobarbital	LuminalF
Secobarbital*	Seconal*
Temazepam	Restoril
Triazolam	HalcionF
Zaleplon*	Sonata*
Zolpidem	Ambien* (In Canada under Sublinox)



Slide 9.

CNS Depressants that do not fit neatly into the above three subcategories include antihistamines, antiepileptics, some designer CNS Depressants, and more. Some antihistamines may cause sedation and psychomotor impairment at therapeutic dosing. Antiepileptics are used for their ability to suppress seizures, but some have other applications such as treating neuropathic pain or psychotic/mental disorders. Some designer CNS Depressants are legal pharmaceuticals in other countries, while others are synthesized for illicit use. Many are chemically and functionally similar to benzodiazepines but are significantly more potent than typical benzodiazepines found in the United States. They may be found in counterfeit preparations that appear to be pharmaceuticals, such as Xanax. They may also be found in various preparations on the internet being sold as "research chemicals".

Another example is gamma-hydroxybutyrate (GHB), originally used as an anesthetic and hypnotic agent. The only FDA approved version is sodium oxybate (Xyrem), which is approved for the treatment of narcolepsy.

Drug Name	Brand Name
Clonazolam*	
Cyclobenzaprine	Amrix*
Diphenhydramine	Benadryl
Etizolam*	
Flualprazolam	
Gabapentin	Neurotin, Gralise*, Horizant*
Gamma-Hydroxybutyrate (GHB) or Sodium Oxybate	Xyrem
Lithium	Lithobid* (in Canada under Lithane, Lithmax, Carbolith)
Phenytoin	Dilantin
Promethazine	Promethagan* (in Canada under Histantil)

Slide 10.

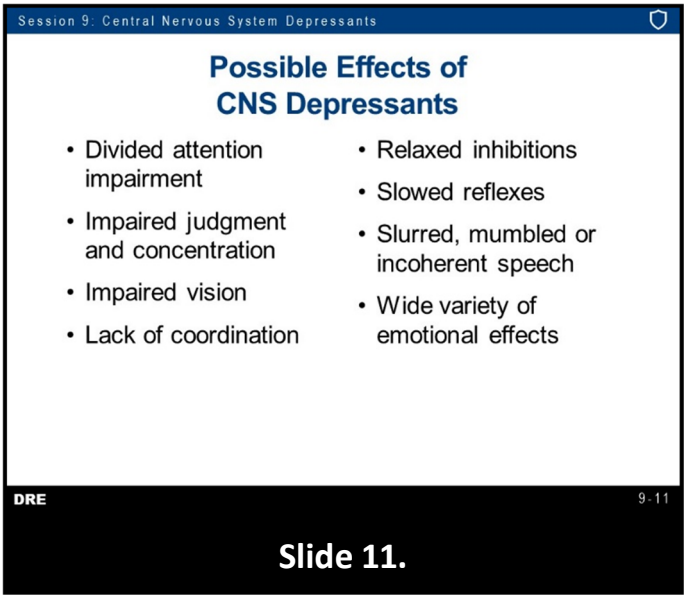
The most common and easiest method of administration is for the drug to be taken orally. This method results in a slower onset and longer duration of effects. For faster and more intense effects, abusers may crush the tablets and snort the powder, or inject the drug. More information on the injection method of administration will be provided in the session on Narcotic Analgesics. Some abusers experience a “flash” or “rush” from intravenous injection of Barbiturates they do not experience from oral administration.

The injection sites on the skin of a Barbiturate abuser appear quite different from those who inject Narcotic Analgesics. For example, large swelling, about the size of a quarter or fifty cent piece, will frequently appear at the Barbiturate injection site.

Necrosis may occur i.e., a decaying of the body’s tissue at the injection site.

The Barbiturate user who injects the drug usually will not display the same type of track marks as the heroin user who uses repeated injections along the same vein.

B. Possible Effects



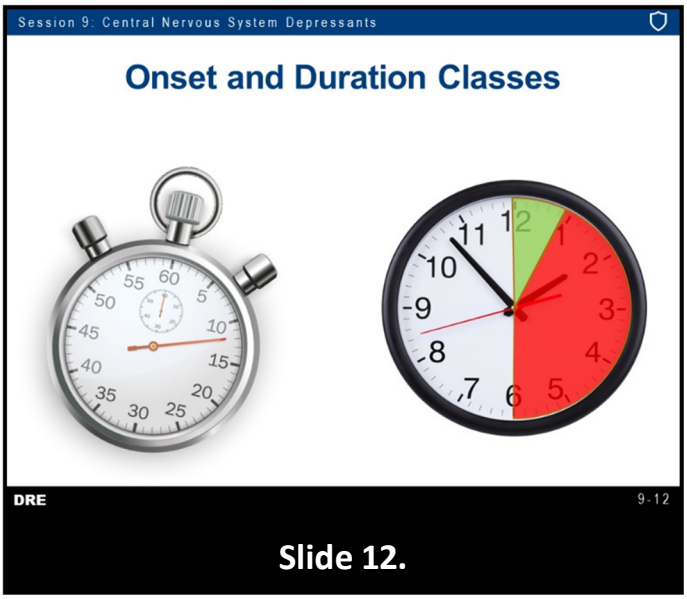
Slide 11.

CNS Depressants produce impairments of the human mind and body that essentially mirror alcohol impairment. These effects will not necessarily appear in a predictable sequence as dose increases.

- Divided attention impairment – Clarification: impede the person's ability to concentrate on more than one thing at a time
- Impaired judgment and concentration
- Impaired vision – Ability to focus eyes may be impaired; "double vision" may develop (Diplopia)
- Lack of coordination
- Relaxed inhibitions
- Slowed reflexes
- Slurred, mumbled, or incoherent speech
- Produce a variety of emotional effects, such as euphoria, depression, suicidal tendencies, laughing or crying without provocation, etc.

The extent to which a CNS Depressant user will exhibit these effects will depend, in part, on the user's tolerance to these drugs. Persons habituated to a drug often won't exhibit its effects as clearly as will a novice user. Generally speaking, a person under the influence of CNS Depressants will look and act drunk.

C. Onset and Duration Effects



Slide 12.

Some CNS Depressants are very fast acting with very brief effects. They take effect in a matter of seconds and the effects last only a few minutes. These are very rarely the "drugs of choice" for drug abusers. These are sometimes used at the beginning of a surgical operation, in conjunction with an inhaled anesthetic.

Other CNS Depressants take effect about one hour after administration and typically last 8 – 14 hours. Again, these are generally not the "drugs of choice" for abusers, however, some people will abuse the long-acting Depressants if others are not readily available. Long-acting Depressants are used medically in the control of epilepsy and of other conditions that can cause convulsions. They can also be used to provide continuing sedation to patients suffering from extreme anxiety.

Most CNS Depressants of abuse fall in between these two extremes. While the duration of effects of these drugs varies widely, the onset is generally within 30 minutes and the effects last between 4 – 8 hours. These drugs are frequently prescribed as a treatment for insomnia or may be used as a pre-anesthetic medication to calm a patient prior to surgery. Fairly often abused, the effects last long enough for users who desire a longer lasting state of intoxication.

Examples of drugs of intermediate duration include alprazolam, carisoprodol, chloral hydrate, chlordiazepoxide, clonazepam, diazepam, and lorazepam. In addition, methaqualone, oxazepam, zolpidem, and gamma hydroxy butyrate also have a similar duration of effect.

Type	Onset	Duration
Ambien	Rapid	4 to 5 hours
Rivotril	1 hour	6 to 12 hours
Soma*	30 minutes	4 to 6 hours
Valium	30 minutes	12 to 24 hours
Xanax	10 to 20 minutes	6 to 8 hours
GHB	10 to 20 minutes	2 to 5 hours

D. Overdose Signs and Symptoms

Slide 13.

Overdoses from CNS Depressants produce symptoms essentially identical to those of alcohol overdoses. The subject may become extremely drowsy and pass out. The heartbeat (pulse) will be rapid and weak. Skin may feel cold and clammy. Subject may lapse into a coma.

Respiration will become shallow. One major danger with CNS Depressant overdoses is death from respiratory failure. A sufficiently high dose of CNS Depressant can suppress the portions of the brain that control respiration.

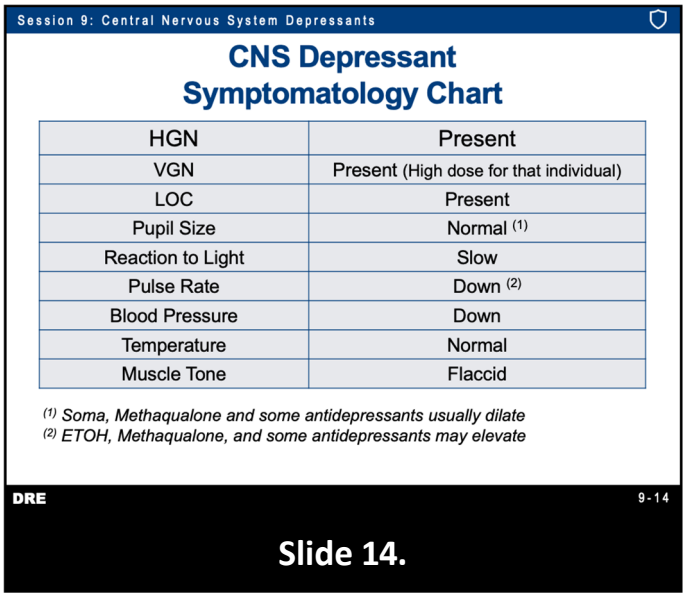
Death can occur from alcohol intoxication. However, a drinker will usually pass out before he or she consumes enough alcohol to suppress respiration completely.

Another major danger with CNS Depressants occurs when they are combined with alcohol. The combination of alcohol and certain other CNS Depressants may produce an effect greater than the sum of the effects of the two drugs independently.

There is at least an additive effect when alcohol and another depressant are taken together. With many CNS Depressants, there may be more than an additive effect. Coroners have reported a number of cases in which neither the alcohol level nor the depressant level independently would have been close to a fatal dose. The additive effect of alcohol and other depressants can be fatal.

It is not possible to predict how great of an effect will occur when alcohol is mixed with another depressant. However, it is clear the combination is always risky.

E. Expected Results of the Evaluation



Slide 14.

Observable Evidence of Impairment: If a person is under the influence of a combination of alcohol and some other CNS Depressant, the onset angle of HGN will not be consistent with the person's BAC; in other words, the eyes will start to jerk earlier than would be expected due to the alcohol alone.

Horizontal Gaze Nystagmus (HGN) will be present with subjects under the influence of CNS Depressants.

Vertical Gaze Nystagmus (VGN) may be present, with high doses, of depressants for that individual.

Lack of Convergence (LOC) will be present with subjects under the influence of CNS Depressants.

Performance on Modified Romberg Balance (MRB), Walk and Turn (WAT), One Leg Stand (OLS), and Finger to Nose (FTN) tests will be similar to that of subjects impaired by alcohol. The subject's estimation of time (on MRB) may be impaired.

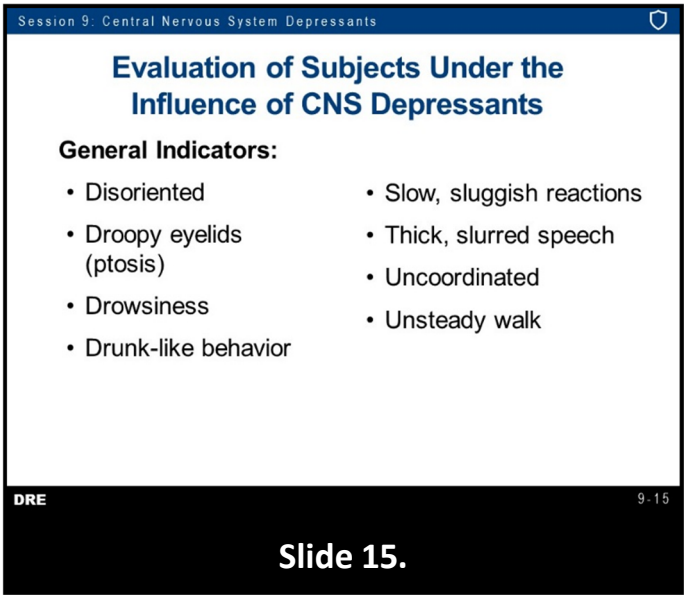
Vital Signs – Pulse will be Down (2).

(2) ETOH, Methaqualone, and some antidepressants may elevate. Blood pressure will be Down. Body temperature generally will be in the normal range.

Dark Room Examinations – Pupil sizes will generally be normal.

(1) Soma, Methaqualone and some antidepressants usually dilate pupils. Pupillary reaction to light will be slowed.

Muscle Tone – Muscle tone will be Flaccid.



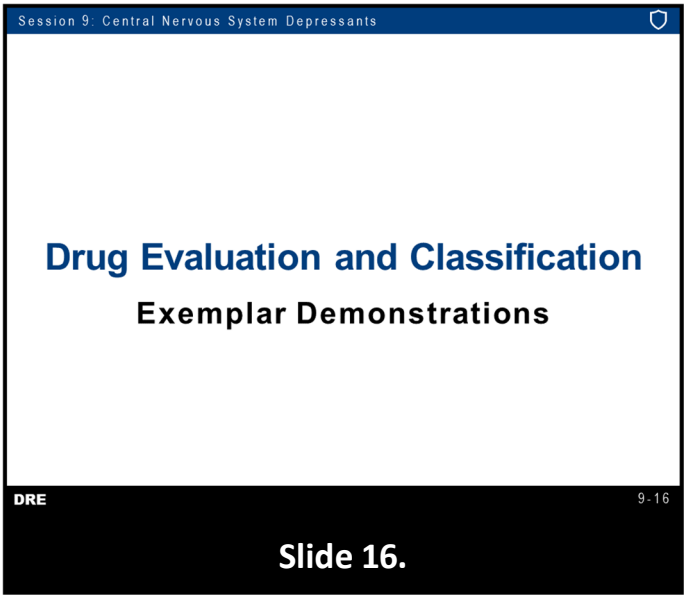
Slide 15.

General Indicators

- Disoriented
- Droopy eyelids (ptosis)
- Drowsiness
- Drunk-like behavior
- Slow, sluggish reactions
- Thick, slurred speech
- Uncoordinated
- Unsteady walk

NOTE: Alcohol, Methaqualone, and some antidepressants may elevate the pulse. Soma, Methaqualone, and some antidepressants usually dilate pupils.

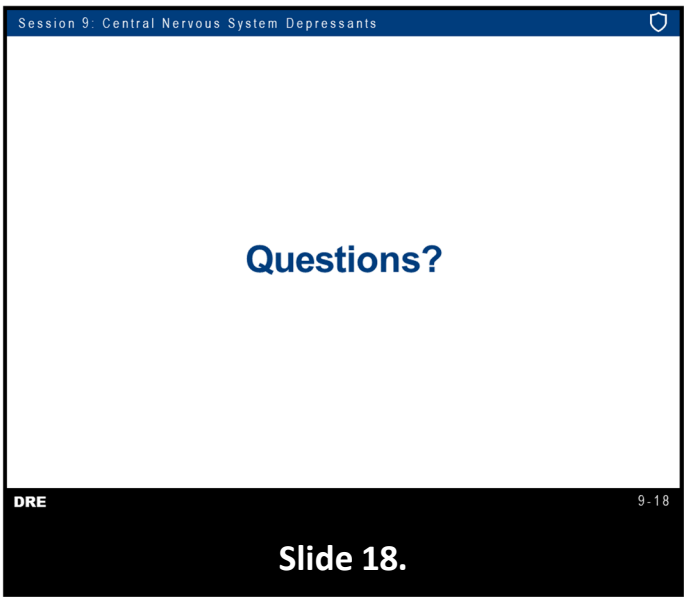
F. Review of the DEC Program Exemplars



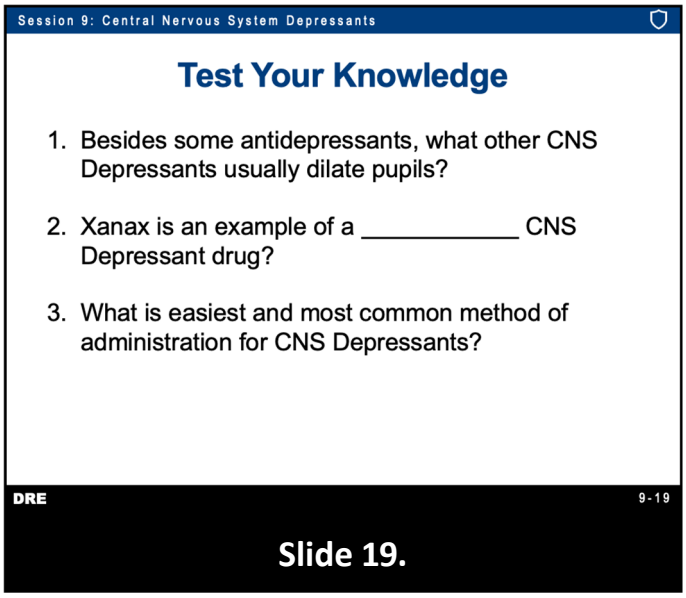
Slide 16.

The DRE narrative report should be detailed and complete, which clearly articulates the opinion of the DRE.

Slide 17.



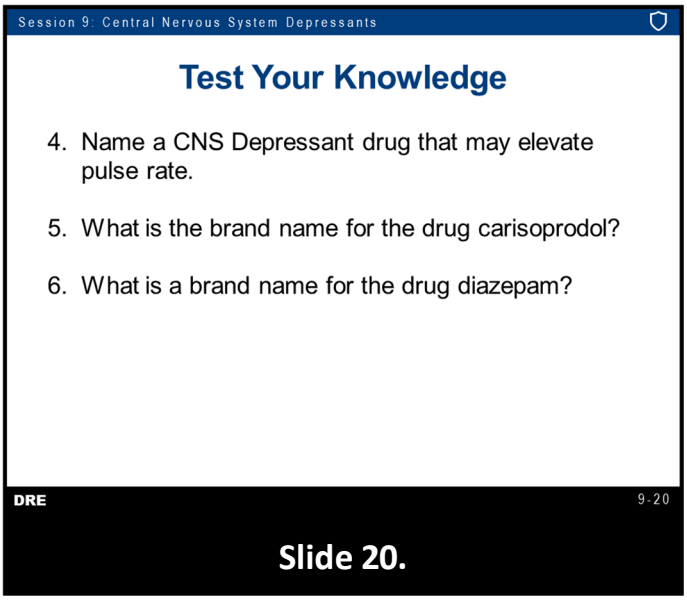
Slide 18.



Slide 19.

Test Your Knowledge

1. Besides some antidepressants, what other CNS Depressants usually dilate pupils?
2. Xanax is an example of a _____ CNS Depressant drug?
3. What is easiest and most common method of administration for CNS Depressants?



Test Your Knowledge

4. Name a CNS Depressant drug that may elevate pulse rate.
5. What is the brand name for the drug carisoprodol?
6. What is the brand name for the drug diazepam?

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #
Cst P Foster	22290	20-015-0158	Saskatoon Police Service	(Session IX-#1)

Arresting Officer (Name, ID#)	SFST Trained	Arresting Officer's Agency	Recorder/Witness
Cst F. Cichra #13886	☑ Yes ☐ Yes (not used) ☐ No	Saskatoon Police Service	N/A

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash	DRE Secondary Caution Time
2020/08/20 @ 0015 hours	Cst F.Cichra	0130 hours	☑ None ☐ Fatal ☐ Injury ☐ Property	☑ Yes ☐ No 0143 hours

Eval. Start time	Breath Test	Subject's Name (Last, First, Middle)	Date of Birth	Gender
0145 hours	☑ No Grounds ☐ Refused Result: Instrument #:	Ludes, Lucy Dunn	1982/04/12	Female

Date Examined / Time / Location	What have you eaten today? When?	What have you been drinking? How much?	Time of last drink?
2020/08/20 @ 0145 hrs @ SPS Det	Soup and a sandwich About 4 pm	Nothing, just some water	N/A

Time now? / Actual	When did you last sleep? How long?	Are you sick or injured?	Are you diabetic or epileptic?
Midnight / 0150 hrs	Last night 6 or 7 hours	☐ Yes ☑ No some anxiety issues	☐ Yes ☑ No

Do you take insulin?	Do you have any physical disabilities?	Are you under the care of a doctor or dentist?
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No

Do you take any medication or drugs?	Attitude	Coordination
☑ Yes ☐ No "some pills from my brother"	Cooperative	Poor, staggering

Speech	Breath Odour	Face
Slurred	Nothing Noted	Nothing Noted

Corrective Lenses	Eyes	Blindness	Tracking
☑ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	☐ Normal ☐ Bloodshot ☑ Watery	☑ None ☐ Left ☐ Right	☑ Equal ☐ Unequal

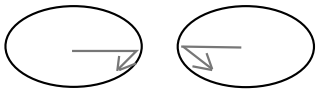
Pupil Sizes	Resting Nystagmus	Vertical Nystagmus	Able to Follow Stimulus	Eyelids
☑ Equal ☐ Unequal (explain)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	☐ Normal ☑ Droopy

Pulse and Time

1. 56 bpm @ 0202hrs
2. 58 bpm @ 0218hrs
3. 58 bpm @ 0240hrs

HGN	Left	Right
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	Yes	Yes
Angle of Onset	35°	35°

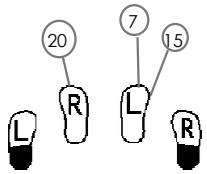
Convergence



Right Eye Left Eye

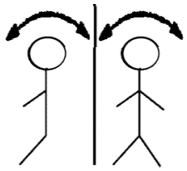
One Leg Stand

22 /30 25 /30



Modified Romberg Balance

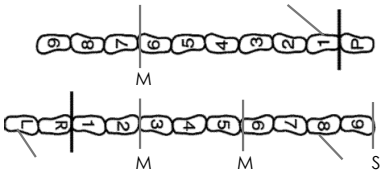
Approx. 2" 2" Approx. 2" 2"



Walk and Turn

Cannot keep balance I (1)

Starts too soon I (1)



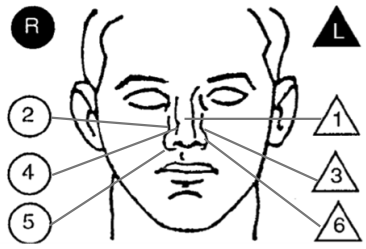
	1st nine	2nd nine
Stops walking	I (1)	Ø
Misses heel-toe	II (2)	I (1)
Steps off line	I (1)	I (1)
Raises arms	II (2)	I (1)
Actual steps taken	9	9

L	R	
Cont	Cont	Sways while balancing
I (1)	II (2)	Uses arms to balance
I (1)	I (1)	Hopping
I (1)	II (2)	Puts foot down

Time estimation & questions (p.2)	Describe turn	Cannot do test (explain)	Type of footwear
46secs estimated as 30 seconds	Stopped, asked for directions.	N/A	Lace up athletic shoes

Finger to nose

(Draw lines to spots touched)



Slow hand and arm movements.

Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye	4.0mm	6.0mm	3.5mm
Right Eye	4.0mm	6.0mm	3.5mm

Rebound dilation ☐ Yes ☑ No

Reaction to light ☐ Normal ☑ Slow ☐ Little to none visible

Nasal area: Nothing Noted

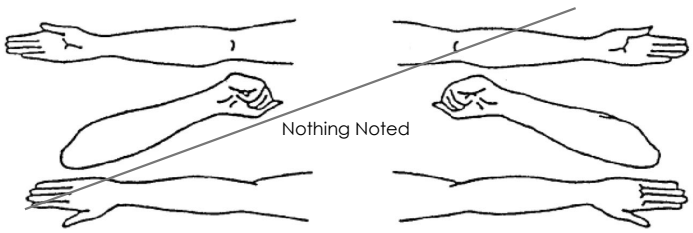
Oral cavity: Nothing Noted

Blood Pressure	Temperature
110 / 66 mmHg	37.0 °C

Muscle tone: ☐ Normal ☑ Flaccid ☐ Rigid

Comments:

Right Arm **Left Arm**



What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?
"Don't know. Something my brother gave me."	"Couple of pills"	About 10 pm	Brothers house

Eval. stop time	Refusal	Toxicological Sample	Reviewed by (instructor name)
0300 hrs	☐ Entirety ☐ Partly ☐ Tox. Sample Comments: N/A	☑ Urine ☐ Blood Demand time: 0301 hrs Sample Time: 0315 hrs	

Evaluator Signature	Approved by (instructor signature)	DRE # Date
P Foster #22290		

Opinion of Evaluator

☐ Not Impaired ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anaesthetic ☐ Inhalants ☑ Operational

☐ Medical ☑ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis ☐ Training

Drug Impairment Evaluation

This is the detailed narrative report of Constable P. Foster, a regular member of the Saskatoon Police Service, Badge Number 657, DRE Number 22290. Constable Foster is currently attached to Traffic Services, Saskatoon, Saskatchewan. Constable Foster is credentialed by the International Association of Chiefs of Police (IACP) as a Drug Recognition Expert (DRE Certification Expiry Date: 2022-10-20).

(1) **Location**: The evaluation of Lucy Ludes was conducted by Constable Foster, at Saskatoon Police Service Detention Facility in Saskatoon on August 20, 2020.

(2) **Witnesses**: There were no witnesses present for the evaluation.

(3) **Source**: The subject evaluated was Lucy Dunn Ludes DOB 1982/04/12.

Interview of the arresting officer Cst F. Cichra #13886: Ludes was observed driving 50km/h on Route 2 in a 100km/h zone. Upon stopping Ludes, she was observed to appear drunk but have no smell of alcohol. Ludes also appeared to be disoriented. Standardized Field Sobriety Tests revealed 6 out of 6 possible clues in the Horizontal Gaze Nystagmus Test and performed poorly on the other two validated tests. Ludes was arrested for impaired driving, provided the DRE demand at 0016 hours and Rights to Counsel at 0015 hours.

(4) First Observations:

A breath test was not taken, as there was no reason to suspect that alcohol had been consumed. Ludes was first observed by Constable Foster in the detention facility of Saskatoon Police Service. Constable Foster read Ludes the secondary police caution at 0143 hours. When asked if she understood, Ludes replied "yes." The following things were observed at that time:

- Ludes eyes were watery;
- She displayed equal tracking;
- Her pupil size appeared to be equal;
- Resting nystagmus was not present;
- Ludes was able to follow the stimulus; &
- Her eyelids were droopy.

Ludes was asked the following questions:

- "What have you eaten today, and when?" Ludes replied with "soup and sandwich" and about "4" pm" referring to the last time she ate.
- "What have you been drinking, how much, and what time was your last drink?" Ludes said "nothing, just some water";
- What time do you think it is now?" Ludes believed it was midnight, the evaluators time was 0150 hours;
- "When did you last sleep, and for how long?" Ludes said she sleep "last night" and for "6 or 7 hours";
- "Are you sick or injured?" Ludes answered no, but mentioned she has "some anxiety issues";
- "Are you diabetic or epileptic?" Ludes answered no;

- "Do you take insulin?" Ludes answered "no";
- "Do you have any physical disabilities?" Ludes said no;
- "Are you under the care of a doctor or dentist?" Ludes said no;
- "Are you taking any prescription medication or drugs?" Ludes stated she took "some pills from her brother".

The following further observations were made:

- Ludes was cooperative;
- Ludes' coordination was poor, staggering and she displayed gait ataxia and used the wall to steady herself on several occasions;
- Ludes' speech was slurred;
- Nothing was noted about her breath odour;
- Ludes' nothing was noted about her face; &
- Ludes eyelids appeared to be normal.

(5) **Psychophysical Signs**:

Modified Romberg Balance Test:

- Ludes swayed forward and backwards approximately 2 inches. She swayed left and right approximately 2 inches;
- Ludes estimated the passage of 30 seconds as 46 seconds. The expected range is 30 seconds plus/minus 5 seconds;
- Ludes was asked how long that was, when Ludes responded "30 seconds"; &
- When asked "how did you arrive at that?" Ludes stated "counted in her head".

Walk and Turn Test

- Ludes was in lace up athletic shoes during the test.

During the instructions stage:

- Ludes was unable to keep her balance 1 time. Her left foot moved to the right to catch her balance and Ludes placed herself back to the instruction stage after stepping off the line.
- Ludes started walking too soon on 1 occasion.

On the first set of nine steps:

- Ludes missed heel to toe 2 times:
    - Between steps 2 & 3;
    - Between steps 5 & 6.

- Ludes stepped off the line 1 time:
    - On step 8 (right foot stepped off to the right).

- Ludes stopped walking one time:
    - Between step 9 & the turn.

- Ludes used her arms for balance 2 times.

The turn was not performed as described: Ludes stopped and asked for directions.

On the second set of 9 steps:

- Ludes raised her arms for balance on 1 occasion;
- Ludes stepped off of line on 1 occasion;
    - On step 1 (with her right foot to the right).

- Ludes missed heel to toe 1 time:
    - Between steps 6 & 7.

One Leg Stand

- While testing Ludes' left leg:
    - Ludes swayed continuously;
    - Used her arms for balance 1 time;
    - Ludes hopped 1 time; &
    - Ludes put her foot down 1 time on count number:
        - 20.

Ludes reached a count of 22 in a timed 30 seconds.

- While testing Ludes' right leg:
    - She swayed continuously;
    - Used her arms for balance 2 times ;
    - Ludes hopped 1 time; &
    - She put her foot down 2 times on count number:
        - 7; &
        - 15.

She reached a count of 25 in a timed 30 seconds.

Finger to Nose Test:

- On the first attempt, Ludes touched the bridge of her nose with the tip of her left index finger;
- On the second attempt, Ludes touched the right side of her nose where the nose meets the cheek with the tip of her right index finger;
- On the third attempt, Ludes touched the left side of her nose where it meets the cheek with the tip of her left index finger;
- On the fourth attempt, Ludes touched above her right nostril with the tip of her right index finger;
- On the fifth attempt, Ludes touched the right edge at the bulbous portion of her nose with the tip of her right index finger; &
- On the sixth attempt, Ludes touched the upper edge of her left nostril with the tip of her left index finger.

Ludes had very slow arm and hand movements throughout.

(6) **Clinical Signs**:

Horizontal Gaze Nystagmus: During the HGN testing, Ludes displayed a lack of smooth pursuit in both eyes. She displayed distinct and sustained nystagmus at maximum deviation in both eyes, and showed an angle of onset of nystagmus at 35 degrees.

Vertical Gaze Nystagmus: Ludes did not display VGN.

Lack of Convergence: Ludes was unable to converge her eyes. Her eyes began to converge then moved down and out.

Ludes advised that she can normally cross her eyes.

Pupil Size:

The DRE average range for pupil size is room light is 2.5 to 5.0 millimeters (mm):

Ludes' left eye was 4.0 mm in room light, which is within the DRE average range. Ludes' right eye was 4.0 mm in room light, which is within the DRE average range.

The DRE average range for pupil size in near total darkness is 5.0 to 8.5 mm:

Ludes' left eye was 6.0 mm, which is within the DRE within the DRE average range. Ludes' right eye was 6.0 mm, which is within the DRE average range.

The DRE average range for pupil size in direct light is 2.0 to 4.5 mm:

Ludes' left eye measured 3.5 mm, which is within the DRE average range. Her right eye measured 3.5 mm, which is within the DRE average range.

Ludes' pupils displayed a slow reaction to light.

Ludes did not display rebound dilation.

A UV light was not used during the eye examinations.

Pulse Measurements:

The DRE average range of the pulse rate is 60 to 90 beats per minute (BPM).

The pulse was taken 3 times:

- 1st pulse was 56 beats per minute (BPM) taken at 0202 hours, which is below the average DRE range;
- 2nd pulse was 58 BPM taken at 0218 hours, which is below the average DRE range;
- 3rd pulse was 58 BPM taken at 0240 hours, which is below the DRE average range.

Blood Pressure: Ludes' blood pressure was 110/66 Millimeters in Mercury (mmHg).

Ludes' systolic blood pressure was 110 mmHg, which is below the DRE average range of 120 - 140 mmHg. Her diastolic blood pressure was 60 mmHg, which is below the DRE average range of 70-90 mmHg.

Temperature: Using an oral thermometer, Cst Foster measured Ludes' body temperature. The DRE average range for body temperature is 37.0 degrees Celsius minus 0.5 degrees Celsius.

Ludes' body temperature was 37.0 degrees Celsius, which is within the DRE average range.

Muscle Tone: Ludes' muscle tone was flaccid.

(1) **Statements:** When Ludes' was asked what she had taken, she stated "Don't know, something my brother gave me" and advised she had taken "a couple of pills" at her brother's house at approximately 10 pm.

(2) **Medical Problems or Treatments:**

Drugs and Medicine: Nothing noted.

(3) **Opinion:** It is the opinion of Constable P Foster, an evaluating officer, that Lucy Ludes' ability to operate a conveyance is impaired by a Central Nervous System Depressant.

(4) **Miscellaneous:**

- There was nothing to note for the nasal area exam;
- There was nothing to note for the oral cavity exam; &
- There was nothing to note by way of puncture or injection marks.

The evaluation began at 0145 hours on August 6, 2020 and was completed at 0300 hours on August 6, 2020.

Ludes provided a sample of urine pursuant to a demand that was read to Ludes by Cst Foster at 0301 hours.

The sample was seized at 0315 hours.

This sample collection was observed by Cst Foster who immediately seized the sample and secured it in the exhibit fridge.

All times in this report unless otherwise indicated noted are that of Cst P Foster

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #
Cst P Foster	22290	20-008-0075	Saskatoon PS	(Session IX - #2)

Arresting Officer (Name, ID#)	SFST Trained	Arresting Officer's Agency	Recorder/Witness
Cst Ellison #22367	☑ Yes ☐ Yes (not used) ☐ No	Saskatoon Police	Sgt Sam Criswell

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash	DRE Secondary Caution Time
2020/03/16 @ 2020 hours	Ellison	2055 hrs	☑ None ☐ Fatal ☐ Injury ☐ Property	☑ Yes ☐ No 2129 hrs

Eval. Start time	Breath Test	Subject's Name (Last, First, Middle)	Date of Birth	Gender
2130 hrs	☐ No Grounds ☐ Refused Result: Instrument #: ASD# 202000 0 mg%	Downers, Dudley Duwin	1986/02/04	Male

Date Examined / Time / Location	What have you eaten today? When?	What have you been drinking? How much?	Time of last drink?
2020/03/16 @ 2130hrs @ SPS Det	Ham sandwich & chips 6 pm	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?
11 pm / 2135 hrs	Last night About 7 hours	☐ Yes ☑ No	☐ Yes ☑ No

Do you take insulin?	Do you have any physical disabilities?	Are you under the care of a doctor or dentist?
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No

Do you take any medication or drugs?	Attitude	Coordination
☑ Yes ☐ No "sleeping pills"	Cooperative	Poor, Unsteady

Speech	Breath Odour	Face
Slurred, Thick	Nothing Noted	Nothing Noted

Corrective Lenses	Eyes	Blindness	Tracking
☑ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	☑ Normal ☐ Bloodshot ☐ Watery	☑ None ☐ Left ☐ Right	☑ Equal ☐ Unequal

Pupil Sizes	Resting Nystagmus	Vertical Nystagmus	Able to Follow Stimulus	Eyelids
☑ Equal ☐ Unequal (explain)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	☑ Normal ☐ Droopy

Pulse and Time

1. 54 bpm @ 2145hrs
2. 52 bpm @ 2155hrs
3. 54 bpm @ 2210hrs

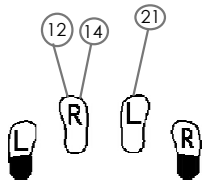
HGN	Left	Right
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	Yes	Yes
Angle of Onset	40°	40°

Convergence

Right Eye Left Eye

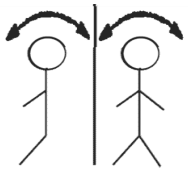
One Leg Stand

25 /30 24 /30



Modified Romberg Balance

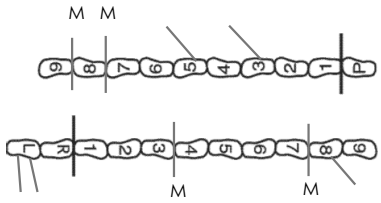
Approx. 3" 3" Approx. 2" 2"



Walk and Turn

Cannot keep balance II (2)

Starts too soon Ø



Slow, deliberate steps.

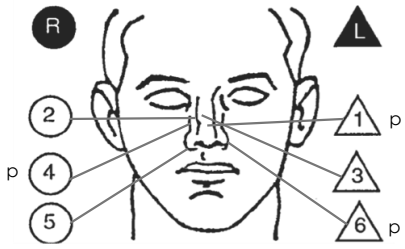
	1st nine	2nd nine
Stops walking	Ø	Ø
Misses heel-toe	II (2)	II (2)
Steps off line	I (1)	II (2)
Raises arms	II (2)	II (2)
Actual steps taken	9	9

L	R	
I (1)	III (3)	Sways while balancing
I (1)	I (1)	Uses arms to balance
Ø	Ø	Hopping
II (2)	I (1)	Puts foot down

Time estimation & questions (p.2)	Describe turn	Cannot do test (explain)	Type of footwear
38 sec estimated as 30 seconds	Lost Balance turning to the right	N/A	Lace up shoes

Finger to nose

(Draw lines to spots touched)



Slow hand & arm movements.

Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye	4.5mm	6.5mm	3.5mm
Right Eye	4.5mm	6.5mm	3.5mm

Rebound dilation ☐ Yes ☑ No

Reaction to light ☐ Normal ☑ Slow ☐ Little to none visible

Nasal area: Clear

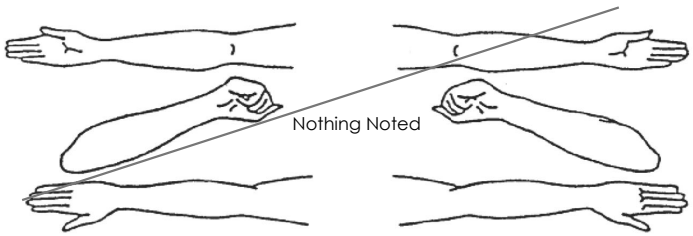
Oral cavity: Clear

Blood Pressure	Temperature
118 / 58 mmHg	37.4 °C

Muscle tone: ☐ Normal ☑ Flaccid ☐ Rigid

Comments:

Right Arm **Left Arm**



What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?
"Some medicine to help me sleep"	1 pill	About 9 pm	At work

Eval. stop time	Refusal	Toxicological Sample	Reviewed by (instructor name)
2230	☐ Entirety ☐ Partly ☐ Tox. Sample Comments: N/A	☑ Urine ☐ Blood Demand time: 2230 hrs Sample Time: 2245 hrs	

Evaluator Signature	Approved by (instructor signature)	DRE # Date
P. Foster #22290		

Opinion of Evaluator

☐ Not Impaired ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anaesthetic ☐ Inhalants ☑ Operational

☐ Medical ☑ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis ☐ Training

Drug Impairment Evaluation

This is the detailed narrative report of Constable P. Foster, a Regular member of the Saskatoon Police Service, Badge. No. 657, DRE Number 22290. Constable Foster is currently attached to Patrol, Saskatoon, Saskatchewan. Constable Foster is credentialed by the International Association of Chiefs of Police (IACP) as a Drug Recognition Expert (DRE Certification Expiry Date: 2023-10-20).

(1) **Location**: The evaluation of Dudley Duwin Downers was conducted by Constable Foster, at Saskatoon Police Service Detention Facility in Saskatoon on March 16, 2020.

(2) **Witnesses**: Sgt Sam Criswell of Saskatoon Police Service witnessed the evaluation.

(3) **Source**: The subject evaluated was Dudley Downers DOB 1986/02/04.

Interview of the arresting officer Cst Ellison #22367: Downers was observed driving under the speed limit on Highway 16 and was unable to maintain a single lane of travel. The suspect appeared to be intoxicated, but no alcoholic beverage was detected on his breath. The subject admitted to taking some medication to help him sleep prior to leaving work. Downers exhibited six clues of Horizontal Gase Nystagmus (HGN), had difficulty performing the Standardized Field Sobriety Tests (SFST) and was arrested for impaired driving, provided the DRE demand at 2055 hours, and rights to counsel at 2020 hours. A roadside breath test from a Mandatory ASD Demand resulted in 0 milligrams % (mg%), and a DRE had been requested.

(4) First Observations:

Downers was first observed by Constable Foster in the detention facility of Saskatoon Police Service. Constable Foster read Downers the secondary police caution 2129 hours. When asked if he understood Downers replied “yes.” The following things were observed at that time:

- Downers displayed equal tracking;
- His pupil size appeared to be equal;
- Resting nystagmus was not present; &
- Downers was able to follow the stimulus.

Downers was asked the following questions:

- “What have you eaten today, and when?” Downers replied with “ham sandwich and chips” and “6 pm” referring to the last time he ate.
- “What have you been drinking, how much, and what time was your last drink?” Downers said “water”;
- What time do you think it is now?” Downers believed it was 1100 pm, the evaluators time was 2135 hours;
- “When did you last sleep, and for how long?” Downers said he slept “last night” and for “about 7 hours”;
- “Are you sick or injured?” Downers answered No;
- “Are you diabetic or epileptic?” Downers answered no;
- “Do you take insulin?” Downers answered no;

- "Do you have any physical disabilities?" Downers said no;
- "Are you under the care of a doctor or dentist?" Downers said no;
- "Are you taking any prescription medication or drugs?" Downers stated he took "sleeping pills."

The following further observations were made:

- Downers was cooperative;
- Downers' coordination was poor & unsteady;
- Downers had thick slurred speech;
- Nothing was noted about his breath odour;
- Nothing was noted about his face; &
- Downers' eyelids appeared normal and not droopy.

(5) **Psychophysical Signs**:

Modified Romberg Balance Test:

- Downers swayed forward and backwards approximately 3 inches. He swayed left and right approximately 2 inches;
- Downers estimated the passage of 30 seconds as 38 seconds. The expected range is 30 seconds plus/minus 5 seconds;
- Downers was asked how long that was, when he responded "30 seconds"; &
- When asked "how did you arrive at that?" Downers stated "counted in my head".

Walk and Turn Test

- Downers was in lace up shoes during the test.

During the instructions stage:

- Downers was unable to keep his balance on 2 occasions. His back foot moved 2 times to the right to catch his balance. Downers was instructed to go back to the Instruction Stage each time he stepped off the line.

On the first set of nine steps:

- Downers missed heel to toe 2 times:
    - Between steps 3 & 4;
    - Between steps 7 & 8.

- He stepped off the line 1 time:
    - On step 8 (right foot stepped off to the right).

- He used his arms for balance 2 times.

The turn was not performed as described and Downers lost his balance turning to the right.

On the second set of 9 steps:

- He raised his arms for balance on 2 occasions;
- Downers stepped off of line on 2 occasions;
    - On step 3 (with his right foot to the right);
    - On step 5 (with his right foot to the right).

- He missed heel to toe 2 times:
    - Between steps 7 & 8; &
    - Between steps 8 & 9.

One Leg Stand

- While testing Downers' left leg:
    - He swayed 1 time;
    - Used his arms for balance 1 time; &
    - Downers put his foot down 2 times on count number:
        - 12: &
        - 14.

Downers reached a count of 25 in a timed 30 seconds.

- While testing Downers' right leg:
    - He swayed 3 times;
    - Used his arms for balance 1 time; &
    - Downers put his foot down 1 time on count number:
        - 21.

He reached a count of 24 in a timed 30 seconds.

Finger to Nose Test:

- On the first attempt, Downers touched the left edge of his nose, where it meets his cheek using the pad of his left index finger.
- On the second attempt, Downers touched the left side on the bridge of his nose using the tip of his right index finger.
- On the third attempt, Downers touched center bridge of his nose using the tip of his left index finger.
- On the fourth attempt, Downers touched to the right side of his nose, where the nose meets the cheek using the pad of his right index finger.
- On the fifth attempt, Downers touched to the right side of his right nostril, where his nose meets the upper lip using the tip of his right index finger.
- On the sixth attempt, Downers touched the left side of his left nostril using the pad of his left index finger.

Downers had very slow arm and hand movements throughout. He used the pad of his finger, and not the tip as directed on touch 1, 4 and 6.

(6) **Clinical Signs**:

Horizontal Gaze Nystagmus: During the HGN testing, Downers displayed a lack of smooth pursuit in both eyes. He displayed distinct and sustained nystagmus at maximum deviation in both eyes, and showed an angle of onset of nystagmus at 40 degrees (°)

Vertical Gaze Nystagmus: Downers did not display VGN.

Lack of Convergence: Downers was unable to converge his eyes. His eyes began to converge, and before fully converging both eyes rebounded out and looked straightforward.

Downers advised that he can normally cross his eyes.

Pupil Size:

The DRE average range for pupil size is room light is 2.5 to 5.0 millimeters (mm):

Downers' left eye was 4.5 mm in room light, which is within the DRE average range. Downers' right eye was 4.5 mm in room light, which is within the DRE average range.

The DRE average range for pupil size in near total darkness is 5.0 to 8.5 mm:

Downers' left eye was 6.5 mm, which is within the DRE within the DRE average range. Downers' right eye was 6.5 mm, which is within the DRE average range.

The DRE average range for pupil size in direct light is 2.0 to 4.5 mm:

Downers' left eye measured 3.5 mm, which is within the DRE average range. His right eye measured 3.5 mm, which is within the DRE average range.

Downers' pupils displayed a slow reaction to light.

He did not display rebound dilation.

A UV light was not used during the eye examinations.

Pulse Measurements:

The DRE average range of the pulse rate is 60 to 90 beats per minute (BPM).

The pulse was taken 3 times:

- 1st pulse was 54 beats per minute (BPM) taken at 2145 hours, which is below the average DRE range;
- 2nd pulse was 52 BPM taken at 2155 hours, which is below the average DRE range;
- 3rd pulse was 54 BPM taken at 2210 hours, which is below the DRE average range.

Blood Pressure: Downers' blood pressure was 120/58 Millimeters in Mercury (mmHg).

Downers' systolic blood pressure was 118 mmHg, which is below the DRE average range of 120 - 140 mmHg. His diastolic blood pressure was 58 mmHg, which is below the DRE average range of 70-90 mmHg.

Temperature: Using an oral thermometer, Cst Foster measured Downers' body temperature. The DRE average range for body temperature is 37.0° Celsius plus or minus 0.5° Celsius.

Downers' body temperature was 37.4° Celsius, which is within the DRE average range.

Muscle Tone: Downers' muscle tone was flaccid.

(1) **Statements:** When Downers' was asked what he had taken, he stated "medicine to help me sleep" and advised he had taken "1 pill" at work at approximately 9 pm.

(2) **Medical Problems or Treatments:**

Drugs and Medicine: Nothing noted.

(3) **Opinion:** It is the opinion of Constable P. Foster, an evaluating officer, that Dudley Downers' ability to operate a conveyance is impaired by: a Central Nervous System Depressant.

(4) **Miscellaneous:**

- There was nothing to note for the nasal area exam;
- There was nothing to note for the oral cavity exam; &
- There was nothing to note by way of puncture or injection marks.

The evaluation began at 2130 hours on March 16, 2020 and was completed at 2230 hours.

Downers provided a sample of urine pursuant to a demand that was read by Cst Foster at 2230 hours.

The sample was seized at 2245 hours.

This sample collection was observed by Cst Foster who immediately seized the sample and secured it in the exhibit fridge.

All times in this report unless otherwise indicated noted are that of Cst P Foster

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #
Cst P Foster	22290	20-007-0062	Saskatoon Police Service	(Session IX - #3)

Arresting Officer (Name, ID#)	SFST Trained	Arresting Officer's Agency	Recorder/Witness
Cst Morgan #588	☑ Yes ☐ Yes (not used) ☐ No	Saskatoon PS	Cst G. Martens

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash	DRE Secondary Caution Time
2020/09/06 @ 1820 hrs	Martens	1845 hrs	☑ None ☐ Fatal ☐ Injury ☐ Property	☑ Yes ☐ No 1908 hrs

Eval. Start time	Breath Test	Subject's Name (Last, First, Middle)	Date of Birth	Gender
1910 hrs	☑ No Grounds ☐ Refused Result: Instrument #:	Flynn, Mickey	1980/03/11	Male

Date Examined / Time / Location	What have you eaten today?	When?	What have you been drinking? How much?	Time of last drink?
2020/09/06 @1910 hrs @ SPS Det	Cheeseburger and fries	6 pm	Diet Coke N/A	N/A

Time now? / Actual	When did you last sleep? How long?	Are you sick or injured?	Are you diabetic or epileptic?
7pm / 1915 hrs	Last night 4-5 hours	☐ Yes ☑ No	☐ Yes ☑ No

Do you take insulin?	Do you have any physical disabilities?	Are you under the care of a doctor or dentist?
☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No Dr. Smith (for stress)

Do you take any medication or drugs?	Attitude	Coordination
☑ Yes ☐ No Xanax	Cooperative	Poor, Slow

Speech	Breath Odour	Face
Slurred, Thick at times	Nothing Noted	Nothing Noted

Corrective Lenses	Eyes	Blindness	Tracking
☑ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	☑ Normal ☐ Bloodshot ☐ Watery	☑ None ☐ Left ☐ Right	☑ Equal ☐ Unequal

Pupil Sizes	Resting Nystagmus	Vertical Nystagmus	Able to Follow Stimulus	Eyelids
☑ Equal ☐ Unequal (explain)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	☐ Normal ☑ Droopy

Pulse and Time

1. 58 bpm @ 1930hrs
2. 58 bpm @ 1942hrs
3. 56 bpm @ 2000hrs

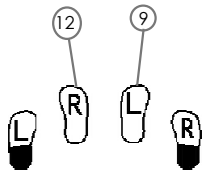
HGN	Left	Right
Lack of Smooth Pursuit	Yes	Yes
Maximum Deviation	Yes	Yes
Angle of Onset	None	None

Convergence

Right Eye Left Eye

One Leg Stand

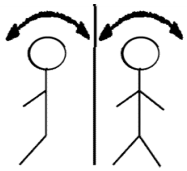
28 /30 28 /30



L	R	
I (1)	Cont	Sways while balancing
I (1)	I (1)	Uses arms to balance
Ø	Ø	Hopping
I (1)	I (1)	Puts foot down

Modified Romberg Balance

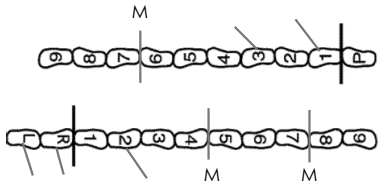
Approx. 3" 3" Approx. 3" 3"



Walk and Turn

Cannot keep balance II (2)

Starts too soon Ø



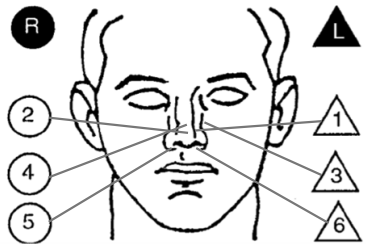
Slow steps throughout.

	1st nine	2nd nine
Stops walking	Ø	Ø
Misses heel-toe	II (2)	I (1)
Steps off line	I (1)	II (2)
Raises arms	III (3)	III (3)
Actual steps taken	9	9

Time estimation & questions (p.2)	Describe turn	Cannot do test (explain)	Type of footwear
50 sec estimated as 30 seconds	Lost balance while turning to the right	N/A	Slip-on Shoes

Finger to nose

(Draw lines to spots touched)



Swayed forward, slow movements.

Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye	4.0 mm	6.5mm	2.5mm
Right Eye	4.0mm	6.5mm	2.5mm

Rebound dilation ☐ Yes ☑ No

Reaction to light ☐ Normal ☑ Slow ☐ Little to none visible

Nasal area: Nothing Noted

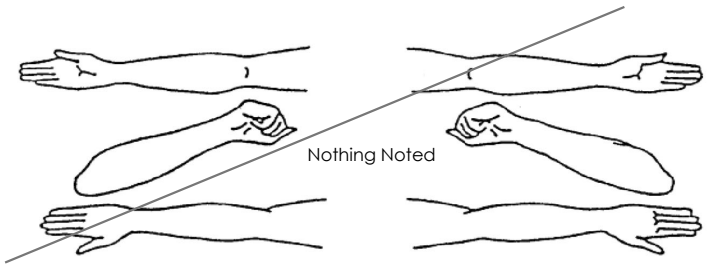
Oral cavity: Nothing Noted

Blood Pressure	Temperature
106 / 68 mmHg	37.5 °C

Muscle tone: ☐ Normal ☑ Flaccid ☐ Rigid

Comments:

Right Arm **Left Arm**



Nothing Noted

What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?
"Just some Xanax"	"A couple today"	12 & 6 pm	McDonald's

Eval. stop time	Refusal	Toxicological Sample	Reviewed by (instructor name)
2020 hrs	☐ Entirety ☐ Partly ☐ Tox. Sample Comments: N/A	☑ Urine ☐ Blood Demand time: 2021 hrs Sample Time: 2030 hrs	

Evaluator Signature	Approved by (instructor signature)	DRE # Date

Opinion of Evaluator

☐ Not Impaired	☐ Alcohol	☐ CNS Stimulant	☐ Dissociative Anaesthetic	☐ Inhalants	☑ Operational
☐ Medical	☑ CNS Depressant	☐ Hallucinogen	☐ Narcotic Analgesic	☐ Cannabis	☐ Training

Drug Impairment Evaluation

This is the detailed narrative report of Constable P. Foster, a Regular member of the Saskatoon Police Service, Reg. No. 657, DRE Number 22290. Constable Foster is currently attached to Patrol, Saskatoon, Saskatchewan. Constable Foster is credentialed by the International Association of Chiefs of Police (IACP) as a Drug Recognition Expert (DRE Certification Expiry Date: 2023-10-20).

(1) **Location**: The evaluation of Mickey D. Flynn was conducted by Constable Foster, at Saskatoon Police Service Detention Facility in Saskatoon on September 6, 2020.

(2) **Witnesses**: Cst. G Martens of Saskatoon Police Service witnessed the evaluation.

(3) **Source**: The subject evaluated was Mickey Flynn DOB 1980/03/11.

Interview of the arresting officer Cst Morgan #588: Officer states the suspect's vehicle was found stopped partially blocking southbound lane of Cedar Avenue. Morgan found the suspect slumped over the steering wheel and he appeared to be sleeping. After waking the suspect, it was determined he was the driver of he vehicle and was not injured or experiencing a medical emergency. When questioned about being stopped partially in the ravel lane, the suspect told Cst Morgan that he was tired and thought he had pulled off the roadway. Cst Morgan had to suspect exit the vehicle and conducted Standardized Field Sobriety Tests (SFST). According to Morgan, he observed 4 clues of Horizontal Gaze Nystagmus (HGN), 3 clues during the Walk and Turn (WAT), and 3 clues during the One Leg Stand (OLS). Cst Morgan did not smell an odour of beverage alcohol. He was asked about using drugs or medication and the suspect said he was taking Xanax for stress because of the closure of his business. Flynn was arrested for impaired driving, provided the DRE demand at 1819 hours and his rights to counsel at 1820 hours.

(4) First Observations:

A breath test was not taken as there was no reason to believe alcohol had been consumed. Flynn was first observed by Constable Foster in the detention facility of Saskatoon Police Service. Constable Foster read Flynn the secondary police caution 1908 hours. When asked if he understood Flynn replied "yes." The following things were observed at that time:

- Flynn displayed equal tracking;
- Flynn's pupil size appeared to be equal;
- Resting nystagmus was not present;
- Flynn was able to follow the stimulus;
- Flynn was slumped over in a chair, was mumbling with thick slurred speech; &
- Flynn was slow to answer questions and had a drunken like appearance.

Flynn was asked the following questions:

- "What have you eaten today, and when?" Flynn replied with "cheeseburger and fries" at 6, referring to the last time he ate.
- "What have you been drinking, how much, and what time was your last drink?" Flynn said "diet coke";

- What time do you think it is now?" Flynn believed it was 7 pm, the evaluators time was 1915 hours;
- "When did you last sleep, and for how long?" he said he slept "last night" and for "4-5 hours";
- "Are you sick or injured?" Flynn answered no;
- "Are you diabetic or epileptic?" Flynn answered no;
- "Do you take insulin?" Flynn answered no;
- "Do you have any physical disabilities?" Flynn said no;
- "Are you under the care of a doctor or dentist?" Flynn said "Dr Smith for stress";
- "Are you taking any prescription medication or drugs?" Flynn stated he took "Xanax".

The following further observations were made:

- Flynn was cooperative;
- Flynn's coordination was poor and slow;
- Flynn had slurred, thick at times speech;
- Nothing was noted about his breath odour;
- Nothing was noted about his face; &
- Flynn's eyelids appeared droopy (ptosis).

(5) **Psychophysical Signs**:

Modified Romberg Balance Test:

- Flynn swayed forward and backwards approximately 3 inches. He swayed left and right approx. 3 inches;
- Flynn estimated the passage of 30 seconds as 50 seconds. The expected range is 30 seconds plus/minus 5 seconds;
- Flynn was asked how long that was, when he responded "30 seconds"; &
- When asked "how did you arrive at that?" Flynn stated "counted in my head".

Walk and Turn Test

- Flynn was in slip on shoes during the test.

During the instructions stage:

- During the instruction stage, Flynn was unable to keep his balance on 2 occasions. Flynn stepped off to the right 1 time with his right foot and stepped off 1 time to the right with his left foot. Flynn placed himself back into the instruction stage after stepping off the line.

On the first set of nine steps:

- Flynn missed heel to toe 2 times:
    - Between steps 4 & 5;
    - Between steps 7 & 8.

- Flynn stepped off the line 1 time:

    - On step 2 (right foot stepped off to the right);

- Flynn used his arms for balance 3 times.

The turn was not performed as described and Flynn lost his balance and staggered to the right.

On the second set of 9 steps:

- Flynn raised his arms for balance on 2 occasions;
- Flynn stepped off of line on 3 occasions;
    - On step 1 (with his right foot to the right);
    - On step 3 (with his right foot to the right).

- He missed heel to toe 1 time:
    - Between steps 6 & 7.

One Leg Stand

- While testing Flynn's left leg:
    - Flynn swayed 1 time;
    - Used his arms for balance 1 time; &
    - Flynn put his foot down 1 time on count number:
        - 12.

Flynn reached a count of 28 in a timed 30 seconds.

- While testing Flynn's right leg:
    - Flynn swayed continuously though the test;
    - Used his arms for balance 1 time; &
    - Flynn put his foot down 1 time on count number:
        - 9.

Flynn reached a count of 28 in a timed 30 seconds.

Finger to Nose Test:

- On the first attempt, Flynn touched the tip of his nose with the tip of his left index finger.
- On the second attempt, Flynn touched the tip of his nose with the tip of his right index finger.
- On the third attempt, Flynn touched the left side of his nose, just under his eye socket with the tip of his left index finger.
- On the fourth attempt, Flynn touched the bridge of his nose with the tip of his right index finger.
- On the fifth attempt, Flynn touched the right nostril with the tip of his right index finger.
- On the sixth attempt, Flynn touched slightly left of center on his upper lip below his left nostril with the tip of his left index finger.

Flynn swayed forward and had slow movements on each attempt.

(6) **Clinical Signs**:

Horizontal Gaze Nystagmus: During the HGN testing, Flynn displayed a lack of smooth pursuit in both eyes. He displayed distinct and sustained nystagmus at maximum deviation in both eyes, and did not show an angle of onset of nystagmus.

Vertical Gaze Nystagmus: Flynn did not display VGN.

Lack of Convergence: Flynn was unable to converge his eyes. His eyes began to converge, and before fully converging both eyes rebounded out and looked straightforward.

Flynn advised that he could normally cross his eyes.

Pupil Size:

The DRE average range for pupil size is room light is 2.5 to 5.0 millimeters (mm):

Flynn' left eye was 4.0 mm in room light, which is within the DRE average range. Flynn' right eye was 4.0 mm in room light, which is within the DRE average range.

The DRE average range for pupil size in near total darkness is 5.0 to 8.5 mm:

Flynn' left eye was 6.5 mm, which is within the DRE within the DRE average range. Flynn' right eye was 6.5 mm, which is within the DRE average range.

The DRE average range for pupil size in direct light is 2.0 to 4.5 mm:

Flynn' left eye measured 2.5 mm, which is within the DRE average range. His right eye measured 2.5 mm, which is within the DRE average range.

Flynn' pupils displayed a slow reaction to light.

Flynn did not display rebound dilation.

A UV light was not used during the eye examinations.

Pulse Measurements:

The DRE average range of the pulse rate is 60 to 90 beats per minute (BPM).

The pulse was taken 3 times:

- 1st pulse was 58 beats per minute (BPM) taken at 1930 hours, which is below the average DRE range;
- 2nd pulse was 58 BPM taken at 1942 hours, which is below the average DRE range;
- 3rd pulse was 56 BPM taken at 2000 hours, which is below the DRE average range.

Blood Pressure: Flynn' blood pressure was 106/68 Millimeters in Mercury (mmHg).

Flynn' systolic blood pressure was 106 mmHg, which is below the DRE average range of 120 - 140 mmHg. His diastolic blood pressure was 68 mmHg, which is below the DRE average range of 70-90 mmHg.

Temperature: Using an oral thermometer, Cst Foster measured Flynn's body temperature. The DRE average range for body temperature is 37.0° Celsius minus 0.5° Celsius.

Flynn's body temperature was 37.5° Celsius, which is within the DRE average range.

Muscle Tone: Flynn's muscle tone was flaccid.

(1) **Statements:** When Flynn was asked what he had taken, he stated "Just some Xanax" and advised he had taken "a couple today" at McDonalds at approximately 12 and 6.

(2) **Medical Problems or Treatments:**

Drugs and Medicine: Sees Dr. Smith for stress and takes Xanax.

(3) **Opinion:** It is the opinion of Constable P. Foster, an evaluating officer, that Mickey Flynn's ability to operate a conveyance is impaired by a Central Nervous System Depressant.

(4) **Miscellaneous:**

- There was nothing to note for the nasal area exam;
- There was nothing to note for the oral cavity exam; &
- There was nothing to note by way of puncture or injection marks.

The evaluation began at 1910 hours on September 6, 2014 and was completed at 2020 hours.

Flynn provided a sample of urine pursuant to a demand that was read by Cst Foster at 2021 hours.

The sample was seized at 2030 hours.

This sample collection was observed by Cst Foster who immediately seized the sample and secured it in the exhibit fridge.

All times in this report unless otherwise indicated noted are that of Cst P Foster

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Estimated time for session: 1 Hour 45 Minutes

16 DRE

CENTRAL NERVOUS SYSTEM STIMULANTS

LEARNING OBJECTIVES

- Describe a brief overview of the Central Nervous System (CNS) Stimulant category of drugs
- Identify common drug names and terms associated with this category
- Identify methods of administration for this category
- Describe the symptoms, observable signs, and other effects associated with this category
- Describe typical time parameters, i.e., onset and duration of effects, associated with this category
- List the indicators likely to emerge when the drug impairment evaluation is conducted for a person under the influence of this category of drugs

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Review of the DEC Program Exemplars
- Reading Assignments
- Video Presentations
- Slide Presentations

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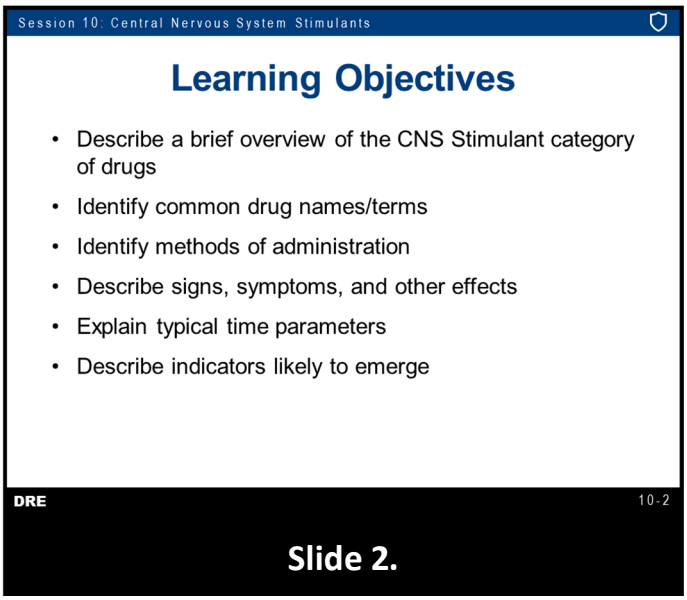
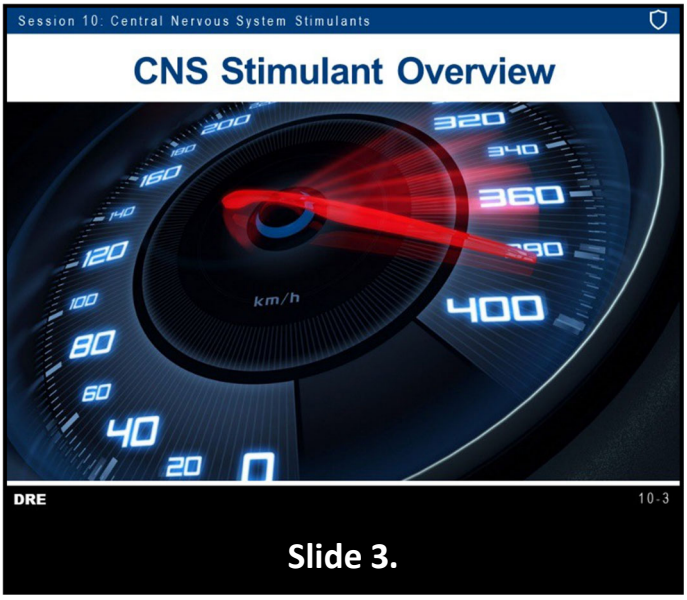

Session 10: Central Nervous System Stimulants
Learning Objectives
• Describe a brief overview of the CNS Stimulant category of drugs
• Identify common drug names/terms
• Identify methods of administration
• Describe signs, symptoms, and other effects
• Explain typical time parameters
• Describe indicators likely to emerge
DRE
10-2

Slide 2.

A. Overview of the Category



Slide 3.

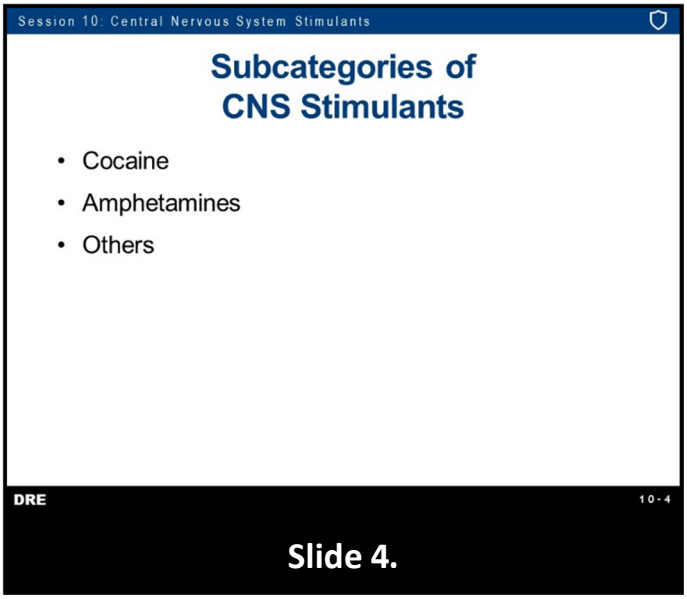
CNS Stimulants speed up the operation of the Central Nervous System. "Speed Up" does not mean "improve". They accelerate the heart rate and many other processes of the body. For that reason, they have also been referred to as "Uppers." Although there is a great difference in strength, all stimulants increase the chemical and electrical activity in the central nervous system. Stimulants boost energy, raise the heart rate and blood pressure, increase respiration, and reduce appetite.

Legal stimulants can be prescribed for Attention Deficit Hyperactivity Disorder (ADHD, weight loss, and narcolepsy.

Some commonly-abused CNS Stimulants include Cocaine (Crack which is naturally derived from the leaves of the coca plant. "Crack" is the street name given to Cocaine that has been processed from Cocaine Hydrochloride. Amphetamines includes many prescription drugs such as Adderall and Dexedrine. Methamphetamine is an illegally-produced drug. The only exception is Desoxyn, which is a prescription methamphetamine used to treat narcolepsy and ADHD *(Desoxyn is not legally prescribed in Canada)*. Caffeine, Herbal Ecstasy, Ephedrine, Pseudoephedrine, and various energy drinks are other examples.

The abuse of CNS Stimulants does not make the brain work "better" or "smarter." Rather, they induce the brain to cause many of the body's organs to work harder, but not better. The "speeding up" results in increased heartbeat, pulse, respiration, blood pressure, and temperature. All of these effects can lead to physical harm to the stimulant user.

The "speeding up" also produces nervousness, irritability, and an inability to concentrate or think clearly. These psychological effects can lead to unpredictable and bizarre behavior by the stimulant user.



Slide 4.

There are three major subcategories of CNS Stimulants.

Cocaine: Cocaine is made from the leaves of the coca plant and is generally found as a white or off-white powder.

Amphetamines: Amphetamines include a large number of pharmaceutical and illegal drugs.

Others: There are many "other" CNS Stimulants including Ritalin and caffeine.

Slide 5.

The scientific name for the Coca plant is Erythroxylon Coca. It is a naturally derived CNS stimulant extracted and refined from the leaves of the coca plant (Erythroxylon coca), grown primarily in the Andean region of South America and to a lesser extent in India, Africa and Indonesia. The picked coca leaves are dried in the open air and then "stomped" as part of the process to extract the alkaloid, resulting in coca paste and eventually cocaine hydrochloride. "Crack" is the street name given to cocaine that has been processed from cocaine hydrochloride. It is prepared by adding baking soda to aqueous cocaine hydrochloride and heating it until the free-base cocaine precipitates into small pellets. The mixture is cooled and filtered, and then the "rocks" are smoked in a crack pipe.

Archaeological evidence indicates natives of Peru chewed coca leaves 5,000 years ago. Sigmund Freud personally experimented with Cocaine for approximately 3 years. Small quantities of Cocaine originally were included in the formula of Coca Cola. Use of Cocaine in products such as Coca Cola was outlawed by the Pure Food and Drug Law of 1906.

Slide 6.

Amphetamines were first synthesized near the end of the 19th Century. The first use of Amphetamines for medical purposes began in the 1920's. Initial medical application was to treat colds. Amphetamines cause the nasal membranes to shrink. This gives temporary relief from stuffy nasal passages.

Amphetamines were prescribed for the treatment of narcolepsy and Attention Deficit Hyperactivity Disorder (ADHD).

Amphetamine use grew rapidly when Amphetamines were distributed to soldiers during World War II.

Present-day medical purposes for Amphetamines include:

Control Appetite: Phentermine* (Adipex-P, Lomaira, Modaimia) and Methamphetamine HCl (Desoxyn). In addition, many over-the-counter (OTC) appetite control products contain CNS Stimulants as their active ingredient.

Control symptoms of narcolepsy and symptoms of attention deficit hyperactive disorder (ADHD): Amphetamines (Adderall), Dextroamphetamine (Dexedrine), or Methylphenidate HCl (Ritalin*, sold in Canada as Biphentin, Concerta and Foquest).

Relieve or prevent fatigue to allow persons to perform essential tasks of long duration: Dexedrine. The U.S. Air Force previously gave pilots Amphetamines to keep them alert on long flights. Amphetamines have also had other short-term military applications. They are also used to treat mild depression.

Antagonize the effects of depressant drugs. Two drugs are antagonistic when the signs and symptoms of one are opposite to the signs and symptoms of the other.

Prevent and treat surgical shock.

Maintain blood pressure during surgery.

Enhance the action of certain analgesic (pain killer) drugs.

D-amphetamine and methylphenidate have enhanced the analgesic effects of opioids along with countering some of the drowsiness associated with opioid medications.

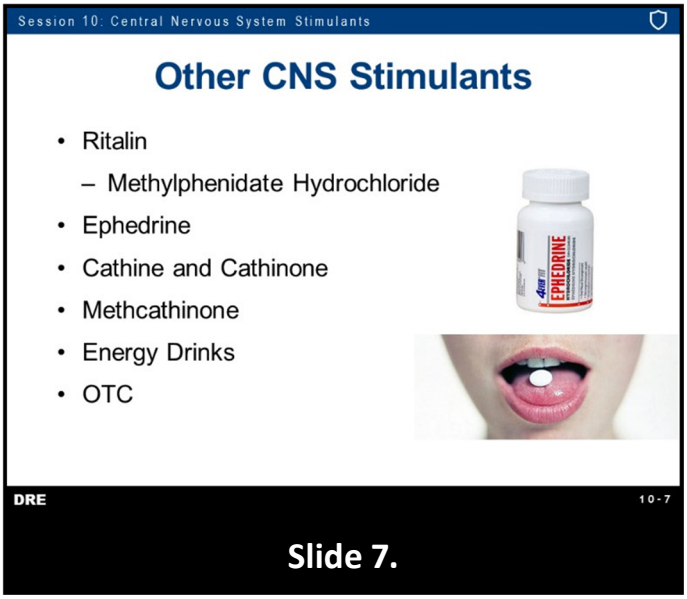
Numerous pharmaceutical companies manufacture Amphetamines for these purposes.

Large quantities of Amphetamines are also illegally manufactured in this country.

The most commonly abused illicit Amphetamine is Methamphetamine. Methamphetamine Hydrochloride is a white to light brown crystalline powder or clear chunky crystals resembling ice. Methamphetamine base is a liquid.

The majority of street methamphetamine is produced in clandestine laboratories. Note: Clandestine production normally involves the reaction of I-Ephedrine or d-Pseudoephedrine over red phosphorus and iodine and is condensed with Hydrochloric Acid or involves the reaction of Sodium or Lithium and is condensed with liquid ammonia.

Illicit Methamphetamine is also known as Methedrine or Methamphetamine Hydrochloride. Its more common street names are “Speed,” “Crank,” “Ice,” “Crystal,” “Meth,” and “Water.”



Slide 7.

There are some other CNS Stimulants, apart from Cocaine or Amphetamines.

Ritalin is a manufactured, non-Amphetamine CNS Stimulant. The generic name Methylphenidate Hydrochloride. *Note that in Canada, Methylphenidate Hydrochloride is not sold under the brand name Ritalin, but most people still call it this, including health professionals (it is sold under the names Biphentin, Concerta or Foquest)*.
Used to treat mild depression, attention deficit disorders, narcolepsy, and drug-induced lethargy produced by CNS Depressants. Example: Ritalin is commonly prescribed for children diagnosed with Attention Deficit Hyperactivity Disorder
(ADHD) or similar disorders. Has many of the basic clinical effects of Amphetamine.

Ephedrine is a licitly-manufactured stimulant primarily used as a nasal decongestant and bronchodilator. It can also be found in herbal preparations and numerous OTC substances.

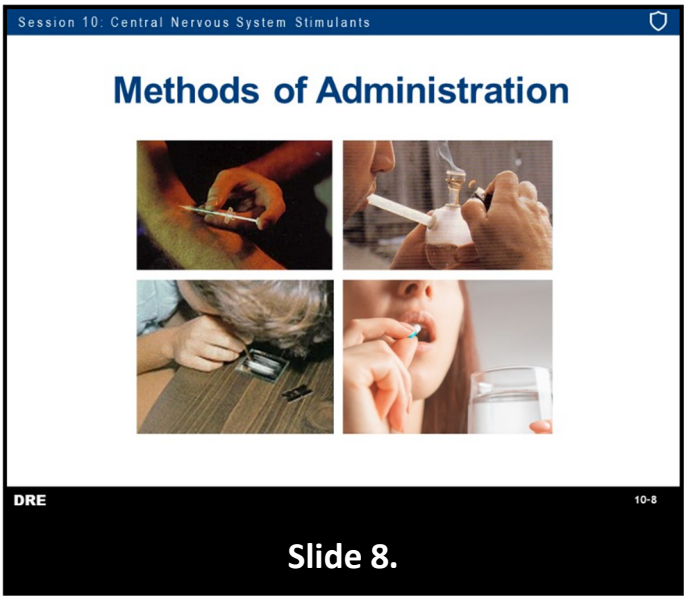
Cathine and Cathinone are the two psychoactive chemicals derived from the Khat plant. It originates from the sub-Sahara regions of Africa. Also known as “Cat.”

Methcathinone is illicitly manufactured from common household chemicals. Effects are very similar to Methamphetamine.

Energy Drink Phenomenon: In the 1980’s, the marketing and use of energy drinks changed dramatically. With 80 mg or more of Caffeine, an energy drink contains more than twice the amount of Caffeine found in a 355 ml can of cola (35 mg), but less than a cup of brewed coffee. In addition to high levels of Caffeine, many energy drinks contain Taurine, Ginseng, Guarana, Glucose, and other Caffeine-like chemicals.

The abuse of energy drinks has been implicated in numerous hospital admissions and impaired-driving cases. In large quantities, the effects can mirror the effects of other CNS Stimulants.

There are many types and brands of energy drinks. Some popular brands contain between 120-180 mg of caffeine.



Slide 8.

There are a variety of ways in which the different CNS Stimulants may be administered.

Cocaine is commonly insufflated (snorted), smoked, injected, and taken orally.

In order to be smoked, a pure form of Cocaine is required.

Much of the Cocaine sold in this country is mixed with other materials or chemically bonded to other elements. Various chemical processes can be used to “free” the Cocaine from other elements and impurities One such process produces pure Cocaine in the form of small chunks. These chunks are known as “Crack” or “Rock Cocaine”. The term “Crack” derives from the cracking sound produced when the chunks are burned for smoking.

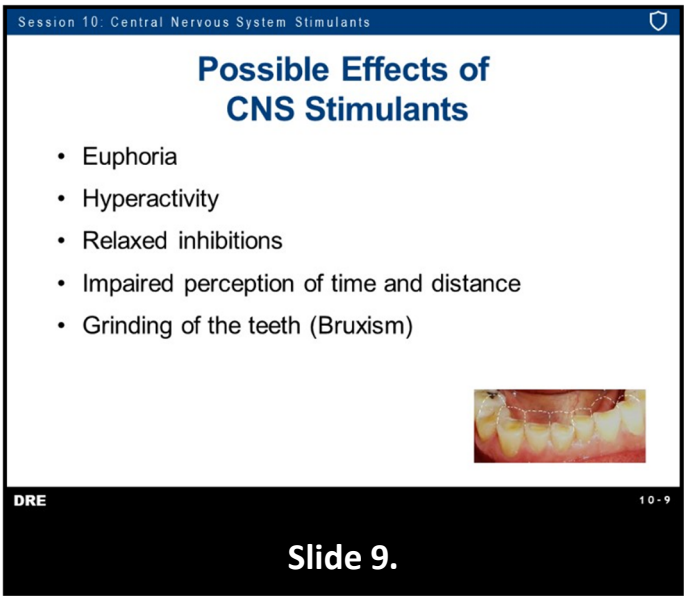
Legally-manufactured Amphetamines are taken orally, in the form of tablets, capsules, and liquid elixirs.

Illicitly-manufactured Methamphetamine most commonly is injected or smoked but sometimes may be snorted or taken orally. Bruising is often seen around a Methamphetamine injection site.

The smokable 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. “Ice” is a clear crystal similar in appearance to rock candy, crushed ice, or broken glass. “Crystal Meth” is generally a colorless form of D-Methamphetamine resembling shiny blue-white rocks or fragments of glass.

Amphetamine Sulfate usually is produced in tablet form (called “Mini Bennies”) and is taken orally.

B. Possible Effects



Slide 9.

Cocaine, Amphetamines, and most stimulants produce euphoria, a feeling or state of intense excitement and happiness. A feeling of super strength and absolute self-confidence may also be present. With Cocaine, but not with Amphetamines, there is an anesthetic effect.

CNS Stimulant users tend to become hyperactive, indicated by nervousness, extreme talkativeness, an inability to sit still, and users may grind their teeth (which is called Bruxism).

CNS Stimulants tend to relax inhibitions allowing users to commit acts they normally would avoid.

CNS Stimulant users misperceive time and distance. Example: to the subject, time seems to be speeded up so two hours may seem like two minutes.

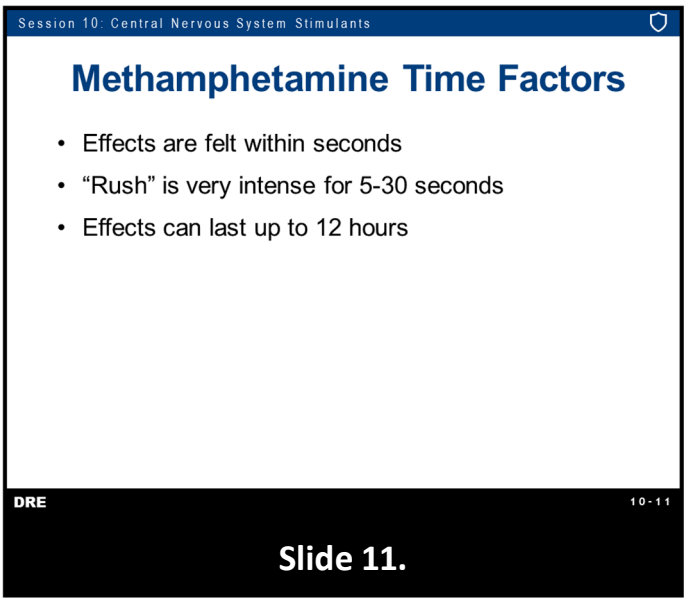
Persons under the influence of CNS Stimulants become easily confused and may have difficulty concentrating. This lack of concentration makes it very difficult for the user to perform divided attention tests successfully.

C. Onset and Duration of Effects

Slide 10.

The faster the absorption the more intense and rapid the high, but the shorter the duration of action. Injecting cocaine produces an effect within 15-30 seconds. A hit of smoked crack produces an almost immediate intense experience and will typically produce effects lasting 5-15 minutes. Similarly, snorting cocaine produces effects almost immediately and the resulting high may last 15-30 minutes. The effects onset more slowly after oral ingestion (approximately one hour). General effects will persist for 1-2 hours depending on the dose and late phase effects following binge use may last several days.

It is very possible a Cocaine user may not be examined by a DRE until at least 30 minutes following the use of the drug. Often, much more time will have elapsed. For this reason, Cocaine use may be difficult to ascertain from the drug evaluation. As the effects wear off, it becomes very difficult to observe evidence of impairment. If the subject is not evaluated by a DRE fairly soon after the subject has been apprehended, the DRE may not uncover evidence of the CNS Stimulant



Slide 11.

Methamphetamine

Injected: When Methamphetamine is injected, the initial effects are very similar to the injection of Cocaine. The user begins to feel a "rush" within seconds. Unlike Cocaine, Methamphetamine's effects are longer and may last 4 – 8 hours with residual effects lasting up to 12 hours after injection.

Smoked: When Methamphetamine is smoked, the rush is also very intense. Like with injection, the effects typically last 4 – 8 hours with residual effects lasting up to 12 hours.

Snorted and Orally: When taken orally the onset of effects is delayed, the rush is much less intense, and the effects last longer.

D. Overdose Signs and Symptoms

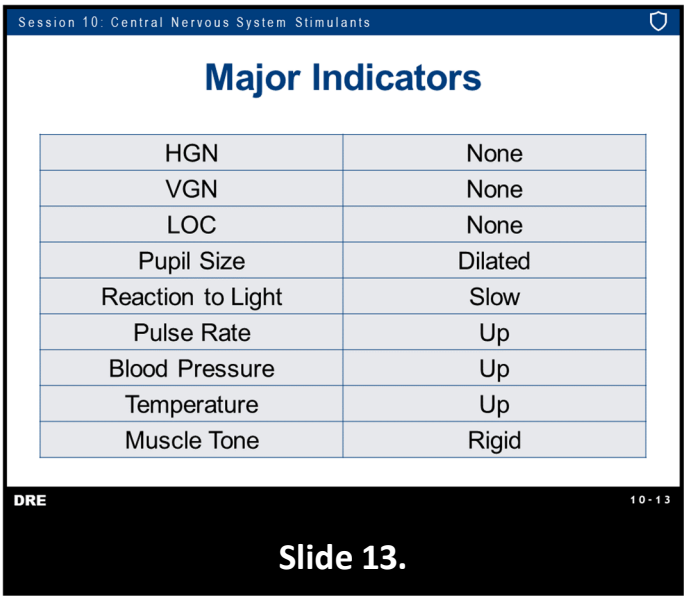
Slide 12.

The overdose of Cocaine, Amphetamines, and Methamphetamine can cause the pleasurable effects to turn into panic and often violent behavior resulting in psychosis. This is commonly referred to as Cocaine Psychosis or Methamphetamine Psychosis. Hallucinations may occur. For example, the feeling that bugs are crawling under the skin is also known as “Coke Bugs”, “Crank Bugs”, “Meth Mites.” The medical term for this condition is formication. Subject may also suffer a stroke, heart attack, or organ damage.

For more information regarding the term “formication”: https://www.merriam-webster.com/medical/formication

Death can occur from sudden respiratory failure, or from heart arrhythmia, leading to cardiac arrest. Another danger is subjects may attempt to treat CNS Stimulant overdoses with Barbiturates, possibly leading to overdose of CNS Depressants.

E. Expected Results of the Evaluation



Slide 13.

Observable Evidence of Impairment: Horizontal Gaze Nystagmus (HGN) will not be present with subjects under the influence of CNS Stimulants.

Vertical Gaze Nystagmus (VGN) will not be present.

Lack of Convergence (LOC) will not be evident.

Performance on Modified Romberg Balance (MRB) should be impaired.

Performance on Walk and Turn (WAT) may be impaired due to the subject's hyperactivity and inability to concentrate. Example: subject may start too soon on the WAT and may tend to walk fast, thus losing balance or missing heel-to-toe.

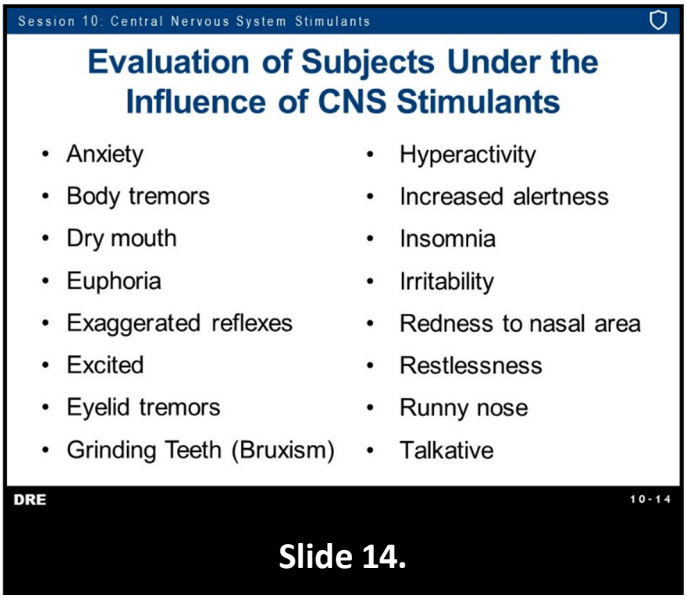
Performance on the One Leg Stand (OLS) may be impaired due to the subject's hyperactivity. Example: subject may also count very rapidly on the OLS test

Performance on the Finger to Nose (FTN) test should be impaired. His or her finger movements may be abrupt, jerky, and inaccurate.

Vital Signs: Pulse generally will be increased. Blood pressure will generally be elevated. Body temperature generally will be elevated.

Dark Room Examinations: Pupils generally will be dilated. The technical term for "dilated pupils" is Mydriasis. Pupil reaction to light generally will be slow. Rebound Dilation may be observed.

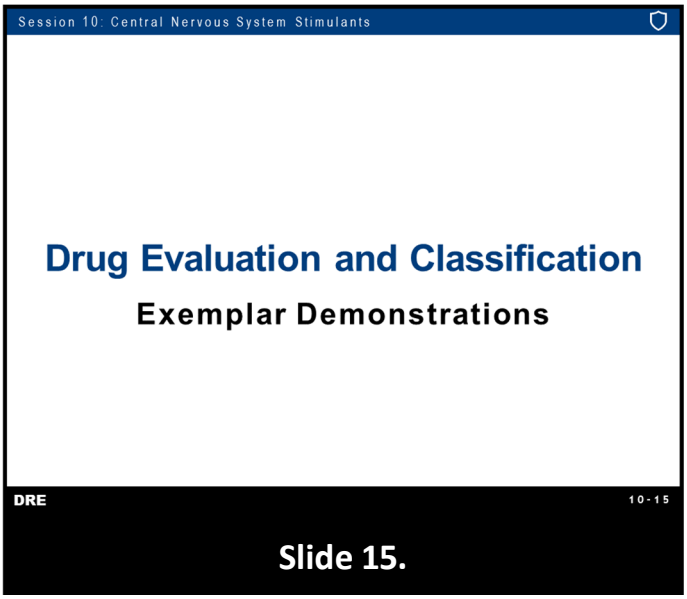
Muscle Tone: Muscle tone will be Rigid.



Slide 14.

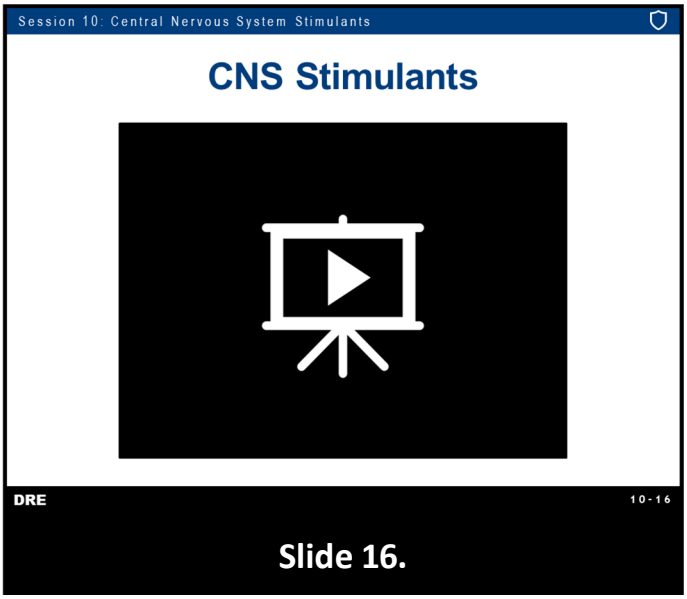
- Anxiety
- Body tremors
- Dry mouth
- Euphoria
- Exaggerated reflexes
- Excited
- Eyelid tremors
- Grinding Teeth (Bruxism)
- Hyperactivity
- Increased alertness
- Insomnia
- Irritability
- Redness to nasal area
- Restlessness
- Runny nose
- Talkative

F. Review of the DEC Program Exemplars



Slide 15.

The DRE narrative report should be detailed and complete, which clearly articulates the opinion of the DRE.



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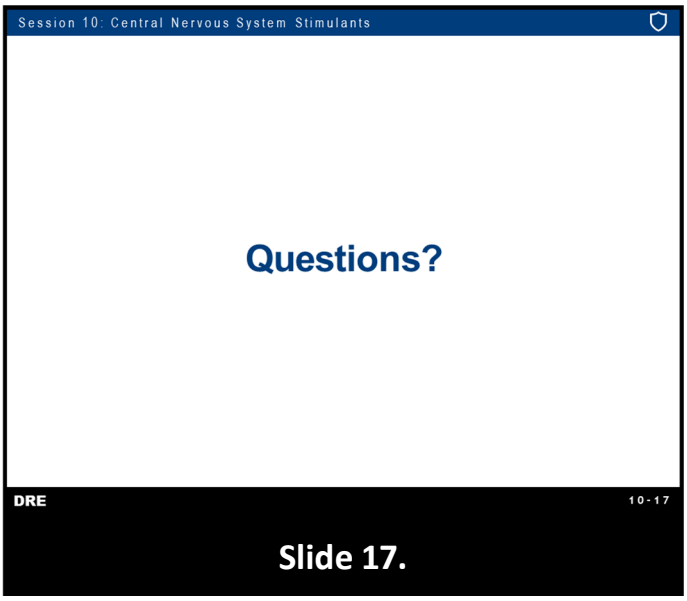

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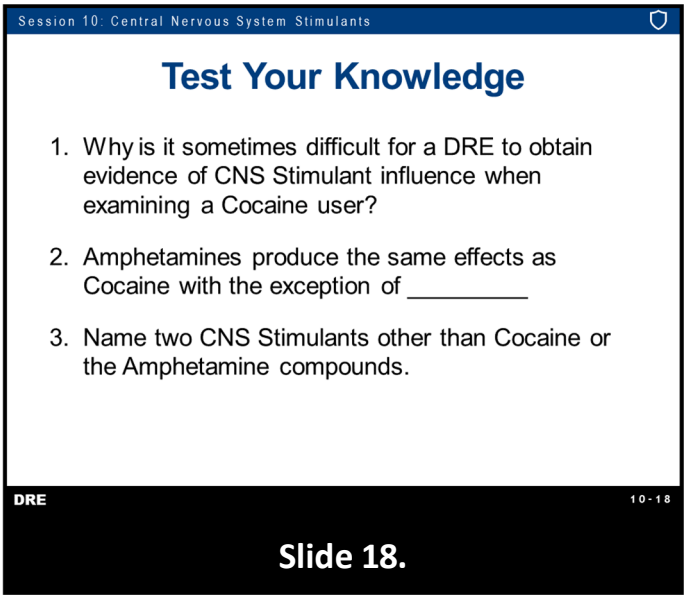
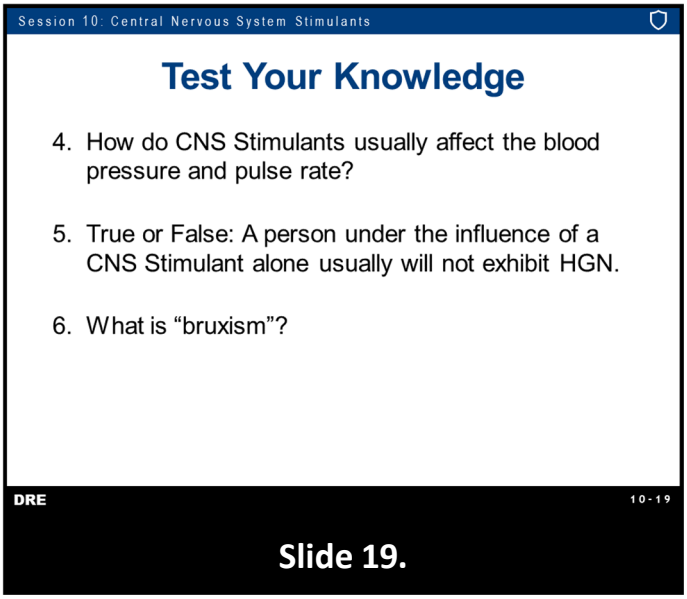


Slide 18.

Test Your Knowledge

1. Why is it sometimes difficult for a DRE to obtain evidence of CNS Stimulant influence when examining a Cocaine user?
2. Amphetamines produce the same effects as Cocaine with the exception of _____
3. Name two CNS Stimulants other than Cocaine or the Amphetamine compounds.



Slide 19.

Test Your Knowledge

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 not exhibit HGN?
6. What is “bruxism”?

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #
Cst P Foster	22290	20-005-0039	Saskatoon Police Service	(Session X - #1)

Arresting Officer (Name, ID#)	SFST Trained	Arresting Officer's Agency	Recorder/Witness
Cpl M Morton #52014	☑ Yes ☐ Yes (not used) ☐ No	RCMP	N/A

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash	DRE Secondary Caution Time
2020/02/08 @2100 hrs	Morton	2140 hrs	☑ None ☐ Fatal ☐ Injury ☐ Property	☑ Yes ☐ No 2214 hrs

Eval. Start time	Breath Test	Subject's Name (Last, First, Middle)	Date of Birth	Gender
2215 hrs	☑ No Grounds ☐ Refused Result: Instrument #:	Rocke, Crystal	1987/07/10	Female

Date Examined / Time / Location	What have you eaten today?	When?	What have you been drinking? How much?	Time of last drink?
2020/02/08 @ 2215 hrs @ SPS Detn	"Couple of candy bars"	About 8 pm	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?
11pm? / 2218 hrs	Yesterday 2 or 3 hours	☐ Yes ☑ No	☐ Yes ☑ No

Do you take insulin?	Do you have any physical disabilities?	Are you under the care of a doctor or dentist?
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No

Do you take any medication or drugs?	Attitude	Coordination
☐ Yes ☑ No Answered "nothing" then laughed	Cooperative, Animated	Jerky movements, exaggerated

Speech	Breath Odour	Face
Talkative, Dry mouth	Rancid	Acne, Open sores, Sweaty

Corrective Lenses	Eyes	Blindness	Tracking
☑ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	☑ Normal ☐ Bloodshot ☐ Watery	☑ None ☐ Left ☐ Right	☑ Equal ☐ Unequal

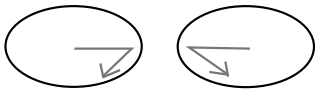
Pupil Sizes	Resting Nystagmus	Vertical Nystagmus	Able to Follow Stimulus	Eyelids
☑ Equal ☐ Unequal (explain)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	☑ Normal ☐ Droopy

Pulse and Time

1. 102 bpm @ 2225hrs
2. 106 bpm @ 2238hrs
3. 104 bpm @ 2250hrs

HGN	Left	Right
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

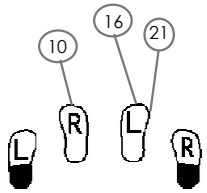
Convergence



Right Eye Left Eye

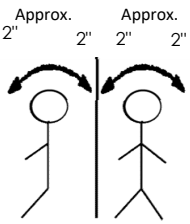
One Leg Stand

40 /30 42 /30



Jerky movements, counted quickly.

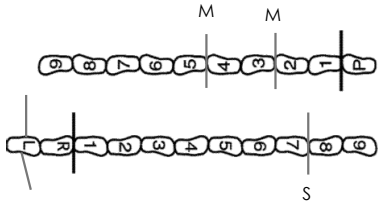
Modified Romberg Balance



Rigid & Eyelid tremors.

Walk and Turn

Cannot keep balance II (2)
Starts too soon II (2)



Quick steps. Rigid movements.

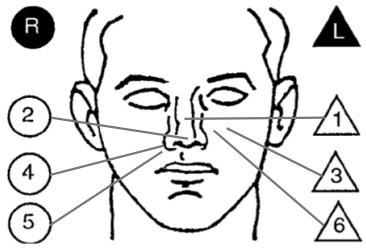
	1st nine	2nd nine
Stops walking	I (1)	Ø
Misses heel-toe	Ø	II (2)
Steps off line	Ø	Ø
Raises arms	II (2)	I (1)
Actual steps taken	9	9

L	R	
Cont	Cont	Sways while balancing
Cont	Cont	Uses arms to balance
Ø	IIIII (5)	Hopping
I (1)	II (2)	Puts foot down

Time estimation & questions (p.2)	Describe turn	Cannot do test (explain)	Type of footwear
22 sec estimated as 30 seconds	Quick, spun around.	N/A	Boots

Finger to nose

(Draw lines to spots touched)



Quick, jerky movements. Eyelid tremors.

Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye	7.5mm	9.0mm	6.0mm
Right Eye	7.5mm	9.0mm	6.0mm

Rebound dilation ☐ Yes ☑ No

Reaction to light ☐ Normal ☑ Slow ☐ Little to none visible

Nasal area: Red

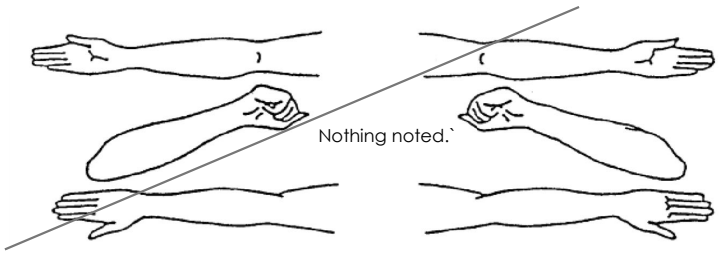
Oral cavity: Nothing Noted

Blood Pressure	Temperature
172 / 102 mmHg	38.0 °C

Muscle tone: ☐ Normal ☐ Flaccid ☑ Rigid

Comments:

Right Arm **Left Arm**



Nothing noted.`

What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?
"Meth"	"I smoked a gram"	"Around 7 pm"	"Friend's house"

Eval. stop time	Refusal	Toxicological Sample	Reviewed by (instructor name)
2315	☐ Entirety ☐ Partly ☐ Tox. Sample Comments: N/A	☑ Urine ☐ Blood Demand time: 2315 hrs Sample Time: 2345 hrs	

Evaluator Signature	Approved by (instructor signature)	DRE # / Date
P. Foster #22290		

Opinion of Evaluator

☐ Not Impaired	☐ Alcohol	☑ CNS Stimulant	☐ Dissociative Anaesthetic	☐ Inhalants	☑ Operational
☐ Medical	☐ CNS Depressant	☐ Hallucinogen	☐ Narcotic Analgesic	☐ Cannabis	☐ Training

Drug Impairment Evaluation

This is the detailed narrative report of Constable P. Foster, a Regular member of the Saskatoon Police Service, Reg. No. 657, DRE Number 22290. Constable Foster is currently attached to Patrol, Saskatoon, Saskatchewan. Constable Foster is credentialed by the International Association of Chiefs of Police (IACP) as a Drug Recognition Expert (DRE Certification Expiry Date: 2023-10-20).

(1) **Location**: The evaluation of Crystal Rocke was conducted by Constable Foster, at the Saskatoon Police Detention Facility on February 8, 2020.

(2) **Witnesses**: Cpl. M. Morton of the RCMP witnessed the evaluation.

(3) **Source**: The subject evaluated was Crystal Rocke DOB 1987/10/07.

Interview of the arresting officer Cpl Morton: Officer stopped this vehicle for exceeding the speed limit on Highway 19 travelling at 160 km/h in a 100 km/h zone. The suspect's vehicle was drifting in and out of the traffic lane. After signaling the vehicle to stop by activating his emergency equipment, it took over a kilometer before the vehicle stopped and when it did, it stopped at an angle to the roadway and almost into a ditch. During personal contact, Morton did not detect an odour of beverage alcohol on the subject's breath. However, he did notice that she had quick and jerky movements, was very animated and restless. It took a couple of minutes for the suspect to find her license and registration, first handing him a credit card and a store receipt. According to Morton, her pupils were dilated and she appeared to have sweating despite the cool weather. He also noticed that her speech was repetitive and rapid. He stated when she exited her vehicle she walked quickly and used the side of her vehicle to steady herself. She performed poorly on the SFST's and was arrested for impaired driving, provided the DRE demand at 2100 hours and her rights to counsel at 2102 hours.

(4) First Observations:

A breath test was not taken as there was no suspicion of beverage alcohol consumed. Rocke was first observed by Constable Foster in the detention facility of Saskatoon Police Service. Constable Foster read Rocke the secondary police caution at 2214 hours. When asked if she understood Rocke replied "yes." The following things were observed at that time:

- Rocke displayed equal tracking;
- Rocke's pupil size appeared to be equal;
- Resting nystagmus was not present;
- Rocke was able to follow the stimulus;
- Rocke was in a chair, rocking back and forth and could not remain still; &
- Rocke's speech was fast and slurred, her reflexes were fast and exaggerated.

Rocke was asked the following questions:

- "What have you eaten today, and when?" Rocke replied with "couple candy bars" and "about 8 pm" referring to the last time she ate.
- "What have you been drinking, how much, and what time was your last drink?" Rocke said "water";

- What time do you think it is now?" Rocke believed it was 11 pm, the evaluators time was 2218 hours;
- "When did you last sleep, and for how long?" she said she slept "yesterday" and for "2 or 3 hours";
- "Are you sick or injured?" Rocke answered no;
- "Are you diabetic or epileptic?" Rocke answered no;
- "Do you take insulin?" Rocke answered no;
- "Do you have any physical disabilities?" Rocke said no;
- "Are you under the care of a doctor or dentist?" Rocke said no;
- "Are you taking any prescription medication or drugs?" Rocke answered "nothing" and then laughed.

The following further observations were made:

- Rocke was cooperative and animated;
- Rocke's coordination was jerky and exaggerated;
- Rocke was talkative and had dry mouth;
- Rocke's breath odour was noted as rancid;
- Rocke's face showed acne with open sores, as well as was sweaty; &
- Rocke's eyelids appeared to be normal.

(5) **Psychophysical Signs**:

Modified Romberg Balance Test:

- Rocke swayed forward and backwards approximately 2 inches. She swayed left and right approximately 2 inches;
- Rocke estimated the passage of 30 seconds in a timed 22 seconds. The expected range is 30 seconds plus/minus 5 seconds;
- Rocke was asked how long that was, when she responded "30 seconds";
- When asked "how did you arrive at that?" she stated "counted in my head"; &
- Rocke was rigid and displayed eyelid tremors.

Walk and Turn Test

- Rocke was wearing boots during the test.

During the instructions stage:

- Rocke was unable to keep her balance on 2 occasions. Her left foot moved 2 times to catch her balance, once to the left and once to the right. Rocke returned to the instruction stage after stepping off the line each time; &
- She started too soon on 2 occasions.

On the first set of nine steps:

- Rocke stopped walking 1 time:
    - between steps 7 & 8.

- She used her arms for balance 2 times.

The turn was not performed as described and Rocke did a quick turn and spun around.

On the second set of 9 steps:

- Rocke missed her heel to toe on 2 occasions:
    - Between steps 2 & 3;
    - Between steps 4 &5.

- She raised her arms for balance 1 time.

One Leg Stand

- While testing Rocke's left leg:
    - She swayed continuously;
    - Used her arms for balance throughout the test; &
    - Rocke put her foot down 1 time on count number:
        - 10.

Rocke had jerky movements and failed to look at her raised foot throughout most of the test.

Rocke reached a count of 40 in a timed 30 seconds.

- While testing Rocke's right leg:
    - Rocke swayed continuously;
    - Used her arms for balance throughout the test; &
    - Rocke put her foot down 2 times on count number:
        - 16; &
        - 21.
    - Rocke hopped while counting from count 1 until count 5, 5 times.

Rocke's counting was quick, she reached a count of 42 in a timed 30 seconds.

Finger to Nose Test:

- On the first attempt, Rocke touched the center of the bridge of her nose with the tip of her index finger;
- On the second attempt, Rocke touched the tip of her nose with the tip of her index finger;
- On the third attempt, Rocke touched her left cheek with the tip of her index finger;
- On the fourth attempt, Rocke touched the right side of her nose where the nose and cheek meet with the tip of her index finger;
- On the fifth attempt, Rocke touched to the right of where the bulbous part of her nose meets her upper lip with the tip of her index finger; &
- On the sixth attempt, Rocke touched her left cheek with the tip of her index finger

Rocke had quick hand movements throughout the test, and displayed eyelid tremors.

(6) **Clinical Signs**:

Horizontal Gaze Nystagmus: During the HGN testing, Rocke did not display HGN.

Vertical Gaze Nystagmus: Rocke did not display VGN.

Lack of Convergence: Rocke displayed Lack of Convergence. Rocke's eyes converged to the stimulus, then moved down and to the side.

Pupil Size:

The DRE average range for pupil size is room light is 2.5 to 5.0 millimeters (mm):

Rocke's left eye was 7.5 mm in room light, which is above the DRE average range. Rocke's right eye was 7.5 mm in room light, which is above the DRE average range.

The DRE average range for pupil size in near total darkness is 5.0 to 8.5 mm:

Rocke's left eye was 9.0 mm, which is above the DRE average range. Rocke's right eye was 9.0 mm, which is above the DRE average range.

The DRE average range for pupil size in direct light is 2.0 to 4.5 mm:

Rocke's left eye measured 6.0 mm, which is above the DRE average range. Her right eye measured 6.0 mm, which is above the DRE average range.

Rocke's pupils displayed a slow reaction to light.

Rocke did not display rebound dilation.

A UV light was not used during the eye examinations.

Pulse Measurements:

The DRE average range of the pulse rate is 60 to 90 beats per minute (BPM).

The pulse was taken 3 times:

- 1st pulse was 102 beats per minute (BPM) taken at 2225 hours, which is above average DRE range;
- 2nd pulse was 106 BPM taken at 2238 hours, which is above the average DRE range;
- 3rd pulse was 104 BPM taken at 2250 hours, which is above the DRE average range.

Blood Pressure: Rocke's blood pressure was 172/102 Millimeters in Mercury (mmHg).

Rocke's systolic blood pressure was 172 mmHg, which is above the DRE average range of 120 - 140 mmHg. Her diastolic blood pressure was 102 mmHg, which is above the DRE average range of 70-90 mmHg.

Temperature: Using an oral thermometer, Cst. Foster measured Rocke's body temperature. The DRE average range for body temperature is 37.0°Celsius minus 0.5°Celsius.

Rocke's body temperature was 38.0° Celsius, which is above the DRE average range.

Muscle Tone: Rocke's muscle tone was rigid.

(1) **Statements:** Rocke admitted to using “meth”, and when asked How Much? - stated: “I smoked a gram”.

(2) **Medical Problems or Treatments:**

Drugs and Medicine: Nothing noted.

(3) **Opinion:** It is the opinion of Constable P. Foster, an evaluating officer, that Crystal Rocke’s ability to operate a conveyance is impaired by a Central Nervous System Stimulant.

(4) **Miscellaneous:**

- On examination of the nasal area, nothing noted;
- The oral cavity appeared to be red in colour; &
- There was nothing to note by way of puncture or injection marks.

The evaluation began at 2215 hours on February 8, 2020 and was completed at 2315 hours.

Rocke provided a sample of urine pursuant to a demand that was read to Foster by Cst. Foster at 2315 hours.

The sample was seized at 2345 hours.

Cst. Foster who immediately seized the sample and secured it in the exhibit fridge observed the sample collection.

All times in this report unless otherwise indicated noted are that of Cst. P. Foster

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #
Cst P Foster	22290	20-006-0088	Saskatoon Police Service	(Session X - #2)

Arresting Officer (Name, ID#)	SFST Trained	Arresting Officer's Agency	Recorder/Witness
Cpl Murphy	☑ Yes ☐ Yes (not used) ☐ No	RCMP	Cst C. Vinson & Cst Norman

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash	DRE Secondary Caution Time
2020/10/23 @2205 hrs	Murphy	2250 hrs	☑ None ☐ Fatal ☐ Injury ☐ Property	☑ Yes ☐ No 2315 hrs

Eval. Start time	Breath Test	Subject's Name (Last, First, Middle)	Date of Birth	Gender
2317 hrs	☑ No Grounds ☐ Refused Result: Instrument #:	Tweeker, Ira	1978/06/24	Male

Date Examined / Time / Location	What have you eaten today?	When?	What have you been drinking? How much?	Time of last drink?
2020/10/23 @ 2317 hrs @ SPS Detn	Waffles	About 6 pm	Coffee 3 or 4 cups	N/A

Time now? / Actual	When did you last sleep? How long?	Are you sick or injured?	Are you diabetic or epileptic?
1 am / 2318 hrs	Two days ago 5 hours	☐ Yes ☑ No	☐ Yes ☑ No

Do you take insulin?	Do you have any physical disabilities?	Are you under the care of a doctor or dentist?
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No

Do you take any medication or drugs?	Attitude	Coordination
☐ Yes ☑ No	Cooperative, restless	Quick, unsteady

Speech	Breath Odour	Face
Talkative, fast	Bad breath	Flushed, sweaty

Corrective Lenses	Eyes	Blindness	Tracking
☑ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	☑ Normal ☐ Bloodshot ☐ Watery	☑ None ☐ Left ☐ Right	☑ Equal ☐ Unequal

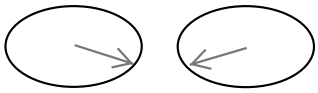
Pupil Sizes	Resting Nystagmus	Vertical Nystagmus	Able to Follow Stimulus	Eyelids
☑ Equal ☐ Unequal (explain)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	☑ Normal ☐ Droopy

Pulse and Time

1. 106 bpm @ 2322hrs
2. 108 bpm @ 2334hrs
3. 108 bpm @ 2349hrs

HGN	Left	Right
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

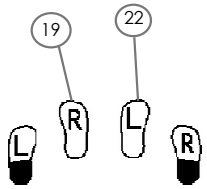
Convergence



Right Eye Left Eye

One Leg Stand

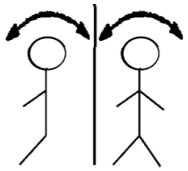
38 /30 41 /30



Jerky movements, fast count.

Modified Romberg Balance

Approx. 3" 3" Approx. 3" 3"

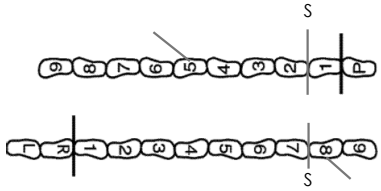


Body tremors.

Walk and Turn

Cannot keep balance Ø

Starts too soon I (1)



Quick choppy steps. Did not look at feet as instructed.

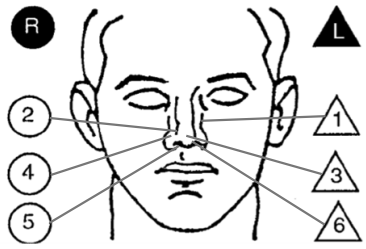
	1st nine	2nd nine
Stops walking	I (1)	I (1)
Misses heel-toe	Ø	Ø
Steps off line	I (1)	I (1)
Raises arms	Cont	Cont
Actual steps taken	9	9

L	R	
Cont	I (1)	Sways while balancing
III (3)	Cont	Uses arms to balance
Ø	Ø	Hopping
I (1)	I (1)	Puts foot down

Time estimation & questions (p.2)	Describe turn	Cannot do test (explain)	Type of footwear
20 sec estimated as 30 seconds	Stiffed Legged, spun around	N/A	Slip on shoes

Finger to nose

(Draw lines to spots touched)



Jerky quick hand movements.

Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye	6.5mm	9.0mm	6.0mm
Right Eye	6.5mm	9.0mm	6.0mm

Nasal area: Red/No nasal hair in the right nostril

Oral cavity: clear

Rebound dilation: ☐ Yes ☑ No

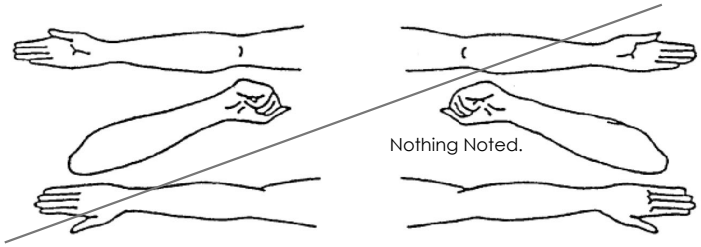
Reaction to light: ☐ Normal ☑ Slow ☐ Little to none visible

Blood Pressure	Temperature
168 / 100 mmHg	37.8 °C

Muscle tone: ☐ Normal ☐ Flaccid ☐ Rigid

Comments:

Right Arm **Left Arm**



What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?
"Nothing for 4 or 5 months"	"Nothing bro"	N/A	N/A

Eval. stop time	Refusal	Toxicological Sample	Reviewed by (instructor name)
0025 hrs	☐ Entirety ☐ Partly ☐ Tox. Sample Comments: N/A	☑ Urine ☐ Blood Demand time: 0027 hrs Sample Time: 0030 hrs	

Evaluator Signature: Cst P Foster # 22290

Approved by (instructor signature) DRE # Date

Opinion of Evaluator

☐ Not Impaired	☐ Alcohol	☑ CNS Stimulant	☐ Dissociative Anaesthetic	☐ Inhalants	☑ Operational
☐ Medical	☐ CNS Depressant	☐ Hallucinogen	☐ Narcotic Analgesic	☐ Cannabis	☐ Training

Drug Impairment Evaluation

This is the detailed narrative report of Constable P Foster, a Regular member of the Saskatoon Police Service, Reg. No. 657, DRE Number 22290. Constable Foster is currently attached to Patrol, Saskatoon, Saskatchewan. Constable Foster is credentialed by the International Association of Chiefs of Police (IACP) as a Drug Recognition Expert (DRE Certification Expiry Date: 2021-10-20).

(1) **Location**: The evaluation of Ira Tweeker was conducted by Constable Foster, at the Saskatoon Police Service Detention facility on October 23, 2020.

(2) **Witnesses**: Cst. C. Vinson and Cst. Norman of the RCMP witnessed the evaluation.

(3) **Source**: The subject evaluated was Ira Tweeker DOB 1978/06/24.

Interview of the arresting officer Corporal Murphy: Tweeker's vehicle was stopped for failure to drive within a single driving lane and failure to signal on Circle Drive exiting to 8th Street East. Murphy stated that during the traffic stop he observed a small plastic baggie with a white powdery substance on the passenger floorboard of the suspect's vehicle. When asked about it, Tweeker stated it was meth and that it belonged to his wife. Murphy reports that his eyes were dilated, and he was very talkative. He described the subject's movements as quick, and said he appeared disoriented and excited. When asked about using meth, the suspect told Murphy that he had not used any meth in the past 4 or 5 months. Cpl Murphy did not detect an odour of beverage alcohol on the subject's breath. He was unable to perform the SFST's as directed and was arrested for impaired driving, provided the DRE demand at 2205 hours and his rights to counsel at 2203 hours.

(4) First Observations:

A breath test sample was not taken as there was zero suspicion of alcohol consumption. Tweeker was standing next to Cst. Murphy, he was very fidgety, and could not stand still. When told to sit down, the suspect would sit for a few seconds and then quickly get back up. Tweeker would talk about his marriage and repeatedly stated he wanted to leave town. He was wearing shorts, a button up short sleeve shirt and slip on brown canvas shoes. His pupils appeared to be dilated. Constable Foster read Tweeker the secondary police caution 2315 hours. When asked if he understood Tweeker replied "yes." The following things were observed at that time:

- Tweeker displayed equal tracking;
- Tweeker's pupil size appeared to be equal;
- Resting nystagmus was not present; &
- Tweeker was able to follow the stimulus.

Tweeker was asked the following questions:

- "What have you eaten today, and when?" Tweeker replied with "waffles" and "about 6 pm" referring to the last time he ate.
- "What have you been drinking, how much, and what time was your last drink?" Tweeker said coffee, 3 or 4 cups.

- What time do you think it is now?" Tweeker believed it was about 1 am, the evaluators time was 2318 hours;
- "When did you last sleep, and for how long?" Tweeker said he slept "2 days ago" and for "5 hours";
- "Are you sick or injured?" Tweeker answered no;
- "Are you diabetic or epileptic?" Tweeker answered no;
- "Do you take insulin?" Tweeker answered no;
- "Do you have any physical disabilities?" Tweeker said no;
- "Are you under the care of a doctor or dentist?" Tweeker said no;
- "Are you taking any prescription medication or drugs?" Tweeker stated no.

The following further observations were made:

- Tweeker was cooperative and restless;
- Tweeker's coordination was poor, and staggered;
- Tweeker was talkative, and had fast speech;
- Tweeker's breath odour was noted as rancid;
- Tweeker had a flushed face; &
- Tweeker's eyelids appeared to be normal.

(5) **Psychophysical Signs**:

Modified Romberg Balance Test:

- Tweeker swayed forward and backwards approximately 3 inches. Tweeker swayed left and right approximately 3 inches;
- Tweeker estimated the passage of 30 seconds in a timed 20 seconds. The expected range is 30 seconds plus/minus 5 seconds;
- Tweeker was asked how long that was, when he responded "30 seconds";
- When asked "how did you arrive at that?" Tweeker stated "counted in my head"; &
- Tweeker displayed body tremors during the test.

Walk and Turn Test

- Tweeker was in slip on brown canvas shoes during the test.

During the instructions stage:

- Tweeker started too soon 1 time.

On the first set of nine steps:

- Tweeker stepped off the line 1 time on step:
    - 8, by stepping with his right foot to the right of the line.
- Tweeker stopped walking 1 time:
    - Between steps 7 & 8..
- Tweeker used his arms for balance continuously.

The turn was not performed as described and Tweeker did a stiff legged, spinning turn.

On the second set of 9 steps:

- Tweeker stepped off the line on step:
    - 5, by stepping with his right foot to the right of the line.
- Tweeker stopped walking 1 time;
    - Between step 1 & 2.
- Tweeker raised his arms for balance through the entire test.

One Leg Stand

- While testing Tweeker's left leg:
    - Tweeker swayed continuously.
- Tweeker used his arms for balance 3 times;
- Tweeker put his foot down 1 time on count:
    - 19.

Tweeker reached a count of 38 in a timed 30 seconds.

- While testing Tweeker's right leg:
    - Tweeker swayed 1 time;
    - Used his arms for balance continuously; &
    - Tweeker put his foot down 1 time on count number:
        - 22.

Tweeker reached a count of 41 in a timed 30 seconds.

Finger to Nose Test:

- On the first attempt, Tweeker touched his left cheek to the left of his nose using the tip of his left index finger.
- On the second attempt, Tweeker touched center on the bridge of his nose using the tip of his right index finger;
- On the third attempt, Tweeker touched the left side near the bridge of his nose using the tip of his left index finger;
- On the fourth attempt, Tweeker touched the right side of his right nostril using the tip of his right index finger;
- On the fifth attempt, Tweeker touched his upper lip under the right nostril using the tip of his right index finger; &
- On the sixth attempt, Tweeker touched the tip of his nose using the tip of his left index finger.

Tweeker had quick hand movements throughout the test.

(6) **Clinical Signs**:

Horizontal Gaze Nystagmus: Tweeker did not display HGN.

Vertical Gaze Nystagmus: Tweeker did not display VGN.

Lack of Convergence: Tweeker was able to converge his eyes.

Pupil Size:

The DRE average range for pupil size is room light is 2.5 to 5.0 millimeters (mm):

Tweeker's left eye was 6.5 mm in room light, which is above the DRE average range. Tweeker's right eye was 6.5 mm in room light, which is above the DRE average range.

The DRE average range for pupil size in near total darkness is 5.0 to 8.5 mm:

Tweeker's left eye was 9.0 mm, which is above the DRE average range. Tweeker's right eye was 9.0 mm, which is above the DRE average range.

The DRE average range for pupil size in direct light is 2.0 to 4.5 mm:

Tweeker's left eye measured 6.0 mm, which is above the DRE average range. His right eye measured 6.0 mm, which is above the DRE average range.

Tweeker's pupils displayed a slow reaction to light.

Tweeker did not display rebound dilation.

A UV light was not used during the eye examinations.

Pulse Measurements:

The DRE average range of the pulse rate is 60 to 90 beats per minute (BPM).

The pulse was taken 3 times:

- 1st pulse was 106 beats per minute (BPM) taken at 2322 hours, which is above average DRE range;
- 2nd pulse was 108 BPM taken at 2334 hours, which is above the average DRE range;
- 3rd pulse was 108 BPM taken at 2349 hours, which is above the DRE average range.

Blood Pressure: Tweeker's blood pressure was 168/100 Millimeters in Mercury (mmHg).

Tweeker's systolic blood pressure was 168 mmHg, which is above the DRE average range of 120 - 140 mmHg. His diastolic blood pressure was 100 mmHg, which is above the DRE average range of 70-90 mmHg.

Temperature: Using an oral thermometer, Cst. Foster measured Tweeker's body temperature. The DRE average range for body temperature is 37.0 ° Celsius minus 0.5 ° Celsius.

Tweeker's body temperature was 37.8 ° Celsius, which is above the DRE average range.

Muscle Tone: Tweeker's muscle tone was rigid.

(1) **Statements:** Tweeker stated he has taken "nothing for 4 or 5 months" and "nothing bro."

(2) **Medical Problems or Treatments:**

Drugs and Medicine: Nothing noted.

(3) **Opinion:** It is the opinion of Constable P. Foster, an evaluating officer, that Ira Tweeker's ability to operate a conveyance is impaired by a Central Nervous System Stimulant.

(4) **Miscellaneous:**

- On examination of the nasal area, there was redness, and no nasal hair in the right nostril;
- There was nothing to note for the oral cavity exam; &
- There was nothing to note by way of puncture or injection marks.

The evaluation began at 2317 hours on October 23, 2020 and was completed October 24, 2020 at 0025 hours.

Tweeker provided a sample of blood pursuant to a demand that was read to Foster by Cst. Foster at 0027 hours.

The sample was seized at 0030 hours on October 24, 2020.

Cst. Foster who immediately seized the sample and secured it in the exhibit fridge observed the sample collection.

All times in this report unless otherwise indicated noted are that of Cst. P. Foster

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #
Cst P. Foster	22290	20-017-0087	Saskatoon Police Service	(Session X - #3)

Arresting Officer (Name, ID#)	SFST Trained	Arresting Officer's Agency	Recorder/Witness
Cst. Meder	☑ Yes ☐ Yes (not used) ☐ No	RCMP	Cst W Evans

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash	DRE Secondary Caution Time
2020/09/20 @ 0015 hrs	Meder	0050 hrs	☑ None ☐ Fatal ☐ Injury ☐ Property	☑ Yes ☐ No 0129 hrs

Eval. Start time	Breath Test	Subject's Name (Last, First, Middle)	Date of Birth	Gender
0130 hrs	☑ No Grounds ☐ Refused Result: Instrument #:	Crank, Christy Dunn	1995/10/09	Female

Date Examined / Time / Location	What have you eaten today?	When?	What have you been drinking? How much?	Time of last drink?
2020/09/29 @ 0130 hrs @ SPS Int Room	Nothing	N/A	Soda A couple cans	N/A

Time now? / Actual	When did you last sleep? How long?	Are you sick or injured?	Are you diabetic or epileptic?
1 am / 0135 hrs	Yesterday Maybe 3 or 4 hours	☐ Yes ☑ No	☐ Yes ☑ No

Do you take insulin?	Do you have any physical disabilities?	Are you under the care of a doctor or dentist?
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No

Do you take any medication or drugs?	Attitude	Coordination
☐ Yes ☑ No (shook her head side to side)	Irritated	Quick, Jerky

Speech	Breath Odour	Face
Rapid	Normal	Sweaty, Red sores on cheeks and forehead

Corrective Lenses	Eyes	Blindness	Tracking
☑ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	☑ Normal ☐ Bloodshot ☐ Watery	☑ None ☐ Left ☐ Right	☑ Equal ☐ Unequal

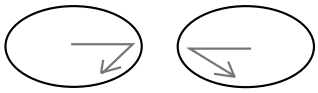
Pupil Sizes	Resting Nystagmus	Vertical Nystagmus	Able to Follow Stimulus	Eyelids
☑ Equal ☐ Unequal (explain)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	☑ Normal ☐ Droopy

Pulse and Time

1. 102 bpm @ 0150hrs
2. 98 bpm @ 0210hrs
3. 98 bpm @ 0230hrs

HGN	Left	Right
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

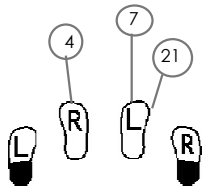
Convergence



Right Eye Left Eye

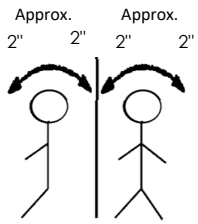
One Leg Stand

36 /30 38 /30



Jerky movements. Leg tremors.

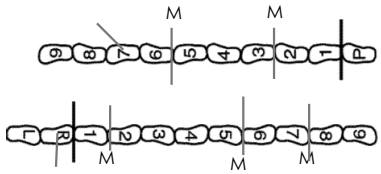
Modified Romberg Balance



Leg tremors. Bruxism

Walk and Turn

Cannot keep balance I (1)
Starts too soon II (2)



	1st nine	2nd nine
Stops walking	0	0
Misses heel-toe	III (3)	II (2)
Steps off line	0	I (1)
Raises arms	Cont	Cont
Actual steps taken	9	9

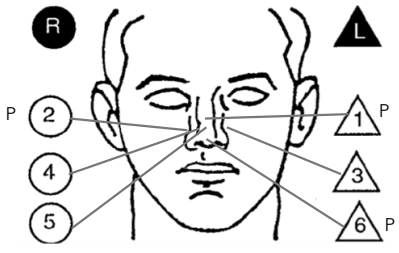
Leg tremors, jerky, fast movements. Failed to look at feet as directed.

L	R	
Cont	Cont	Sways while balancing
Cont	Cont	Uses arms to balance
0	0	Hopping
I (1)	II (2)	Puts foot down

Time estimation & questions (p.2)	Describe turn	Cannot do test (explain)	Type of footwear
18 sec estimated as 30 seconds	Spinning turn to her left	N/A	Flat soled shoes

Finger to nose

(Draw lines to spots touched)



Jerky movements

Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye	7.0mm	9.5mm	6.0mm
Right Eye	7.0mm	9.5mm	6.0mm

Rebound dilation ☐ Yes ☑ No

Reaction to light ☐ Normal ☑ Slow ☐ Little to none visible

Nasal area: Nothing noted.

Oral cavity: Nothing noted.

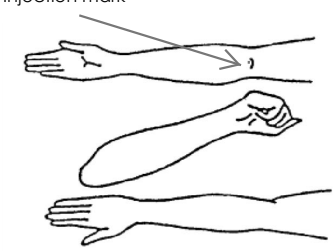
Blood Pressure	Temperature
188 / 96 mmHg	37.8 °C

Muscle tone: ☐ Normal ☐ Flaccid ☐ Rigid

Comments:

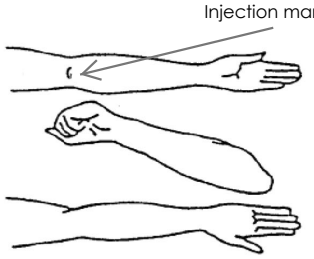
Right Arm

Injection mark



Left Arm

Injection mark



What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?
"Meth and Cocaine"	"Not much today"	Meth last night	Friend's house

Eval. stop time	Refusal	Toxicological Sample	Reviewed by (instructor name)
0245 hrs	☐ Entirety ☐ Partly ☐ Tox. Sample Comments: N/A	☑ Urine ☐ Blood Demand time: 0245 hrs Sample Time: 0300 hrs	

Evaluator Signature	Approved by (instructor signature)	DRE # Date
Cst P. Foster 22290		

Opinion of Evaluator

☐ Not Impaired ☐ Alcohol ☑ CNS Stimulant ☐ Dissociative Anaesthetic ☐ Inhalants ☑ Operational

☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis ☐ Training

Drug Impairment Evaluation

This is the detailed narrative report of Constable P. Foster, a Regular member of the Saskatoon Police Service, Reg. No. 657, DRE Number 22290. Constable Foster is currently attached to Patrol, in Saskatoon, Saskatchewan. Constable Foster is credentialed by the International Association of Chiefs of Police (IACP) as a Drug Recognition Expert (DRE Certification Expiry Date: 2023-10-20).

(1) **Location**: The evaluation of Christy Crank was conducted by Constable Foster, at the Saskatoon PS interview room on September 29, 2020.

(2) **Witnesses**: Cst. Wes Evans of the RCMP witnessed the evaluation.

(3) **Source**: The subject evaluated was Christy Dunn Crank DOB 1995/10/09.

Interview of the arresting officer Cst Meder: He advised me he had stopped the suspect for speeding and failure to drive within a single lane of traffic on Highway 41. During the personal contact, Meder did not detect an odour of beverage alcohol on Crank's breath but did observe she had quick jerky movements when retrieving her drivers license. He also noted that she had facial perspiration and dilated pupils. She was wearing a short-sleeved shirt and had what appeared to be injection marks on her left forearm. According to Cst Meder, she was very animated, and her speech was fast. She had difficulties performing the SFST's and was arrested for impaired driving, provided the DRE demand at 0014 hours and her rights to counsel at 0015 hours.

(4) First Observations:

A breath test was not taken on the Intox EC/IR II as there was no grounds to suspect Crank had consumed alcohol. Crank was standing with Cst. Meder and Evans, she was moving about and could not stand still. Her speech was quick, and she was very talkative. Her hand and arm movements were exaggerated and quick. She appeared to be grinding her teeth at times. Constable Foster read Crank the secondary police caution 0129 hours. When asked if she understood Crank replied "yes." The following things were observed at that time:

- Crank displayed equal tracking;
- Her pupil size appeared to be equal;
- Resting nystagmus was not present; &
- Crank was able to follow the stimulus.

Crank was asked the following questions:

- "What have you eaten today, and when?" Crank replied with "nothing";
- "What have you been drinking, how much, and what time was your last drink?" Crank said "soda" and "couple of cans";
- What time do you think it is now?" Crank believed it was "1 am", the evaluators time was 0135 hours;
- "When did you last sleep, and for how long?" Crank said she slept "yesterday" and for "maybe 3 or 4 hours";
- "Are you sick or injured?" Crank answered no;

- “Are you diabetic or epileptic?” Crank answered no;
- “Do you take insulin?” Crank answered no;
- “Do you have any physical disabilities?” Crank said no;
- “Are you under the care of a doctor or dentist?” Crank said no;
- “Are you taking any prescription medication or drugs?” Crank shook her head from side to side, indicating no.

The following further observations were made:

- Crank seemed irritated;
- Crank’s coordination was quick and jerky;
- Crank had rapid speech;
- Nothing was noted about Crank’s breath odour;
- Crank face was sweaty with red sores on her cheeks and forehead; &
- Crank’s eyelids appeared to be normal.

(5) **Psychophysical Signs**:

Modified Romberg Balance Test:

- Crank swayed forward and backwards approximately 2 inches. She swayed left and right approximately 2 inches;
- Crank estimated the passage of 30 seconds as a timed 18 seconds. The expected range is 30 seconds plus/minus 5 seconds;
- Crank displayed leg tremors and bruxism during the test;
- Crank was asked how long that was, when she responded “30 seconds”; &
- When asked “how did you arrive at that?” Crank stated “counted in my head”.

Walk and Turn Test

- Crank was wearing flat soled shoes during the test.

During the instructions stage:

- Crank was unable to keep her balance 1 time. Her right foot (front foot) moved to the right in an attempt to catch her balance. Crank placed herself back to the instruction stance after losing her balance one time in the instruction stage.

- Crank started too soon 2 times.

On the first set of nine steps:

- Crank missed heel to toe 3 times:
    - Between steps 1 & 2;
    - Between steps 5 & 6; &
    - Between steps 7 & 8.

- Crank used her arms for balance continuously.

The turn was not performed as described, Crank spun around quickly to the left.

On the second set of 9 steps:

- Crank missed heel to toe 2 times:
    - Between steps 2 & 3; &
    - Between steps 5 & 6.

- Crank stepped off the line 1 time on step:
    - 7, with her right foot stepping to the right.

- Crank used her arms for balance continuously.

One Leg Stand

- While testing Crank's left leg:
    - Crank swayed throughout the test;
    - Used her arms throughout the entire test; &
    - Put her foot down 1 time on count number:
        - 4.

Crank reached a count of 36 in a timed 30 seconds. She displayed leg tremors and had jerky movements during the test.

- While testing Crank's right leg:
    - Crank swayed continuously;
    - Used her arms for balance throughout; &
    - Crank put her foot down 2 times on count number:
        - 7; &
        - 21.

She reached a count of 38 in a timed 30 seconds.

Finger to Nose Test:

- On the first attempt, Crank touched the center on the bridge of her nose with the pad of her left index finger.
- On the second attempt, Crank touched the right side of her nose, where it meets with the cheek with the pad of her right index finger.
- On the third attempt, CRANK touched the left side on the bulbous portion of the nose where it meets the cheek with the tip of her left index finger.
- On the fourth attempt, Crank touched above the right nostril with the tip of her right index finger.
- On the fifth attempt, Crank touched the tip of her nose with the tip of her right index finger.
- On the sixth attempt, Crank touched the tip of her nose with the pad of her left index finger.

Crank had jerky movements throughout the test.

(6) **Clinical Signs**:

Horizontal Gaze Nystagmus: Crank did not display HGN.

Vertical Gaze Nystagmus: Crank did not display VGN.

Lack of Convergence: Crank was unable to converge her eyes. CRANK's eyes converged and shot out down and to the side.

CRANK did not know if she could cross her eyes.

Pupil Size:

The DRE average range for pupil size is room light is 2.5 to 5.0 millimeters (mm):

Crank's left eye was 7.0 mm in room light, which is above the DRE average range. Crank's right eye was 7.0 mm in room light, which is above the DRE average range.

The DRE average range for pupil size in near total darkness is 5.0 to 8.5 mm:

Crank's left eye was 9.5 mm, which is above the DRE average range. Crank's right eye was 9.5 mm, which is above the DRE average range.

The DRE average range for pupil size in direct light is 2.0 to 4.5 mm:

Crank's left eye measured 6.0 mm, which is above the DRE average range. Her right eye measured 6.0 mm, which is above the DRE average range.

Crank's pupils displayed a slow reaction to light.

Crank did not display rebound dilation.

A UV light was not used during the eye examinations.

Pulse Measurements:

The DRE average range of the pulse rate is 60 to 90 beats per minute (BPM).

The pulse was taken 3 times:

- 1st pulse was 102 beats per minute (BPM) taken at 0150 hours, which is above average DRE range;
- 2nd pulse was 98 BPM taken at 0210 hours, which is above the average DRE range;
- 3rd pulse was 98 BPM taken at 0230 hours, which is above the DRE average range.

Blood Pressure: Crank's blood pressure was 188/96 Millimeters in Mercury (mmHg).

Crank's systolic blood pressure was 188 mmHg, which is above the DRE average range of 120 - 140 mmHg. Crank's diastolic blood pressure was 96 mmHg, which is above the DRE average range of 70-90 mmHg.

Temperature: Using an oral thermometer, Cst. Foster measured Crank's body temperature. The DRE average range for body temperature is 37.0 ° Celsius minus 0.5 ° Celsius.

Crank's body temperature was 37.8 ° Celsius, which is above the DRE average range.

Muscle Tone: Crank's muscle tone was rigid.

(1) **Statements:** Crank stated "meth and cocaine" when asked what drugs she was taking. She mentioned she hadn't "taken much today" and that she used "meth last night" at a friend's house.

(2) **Medical Problems or Treatments:**

Drugs and Medicine: Nothing noted.

(3) **Opinion:** It is the opinion of Constable P. Foster, an evaluating officer, that Christy Dunn Crank's ability to operate a conveyance is impaired by a Central Nervous System Stimulant.

(4) **Miscellaneous:**

- There was nothing to note in the nasal area;
- There was nothing to note for the oral cavity exam; &
- There were 2 injection mark locations, 1 on each arm at the top area of the forearm below the crook of the arm.

The evaluation began at 0130 hours on September 29, 2020 and was completed at 0245 hours.

Crank provided a sample of urine pursuant to a demand that was read by Cst. Foster at 0245 hours.

The sample was seized at 0300 hours.

Cst. Foster seized the sample and secured it in the exhibit fridge, observed the sample collection.

All times in this report unless otherwise indicated noted are that of Cst. P. Foster

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Estimated time for session: 1 Hour

PRELIMINARY TRAINING
FOR DEC PROGRAM

CONCLUSION OF THE PRELIMINARY TRAINING

LEARNING OBJECTIVES

- Demonstrate his or her knowledge of the concepts covered during the DRE Pre-School
- Offer anonymous comments and criticisms concerning the school

CONTENTS

LEARNING ACTIVITIES

- Written Examination

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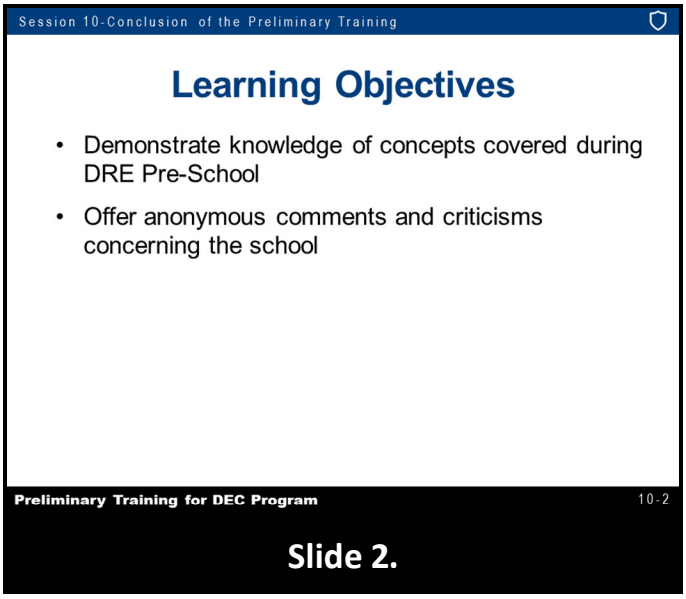
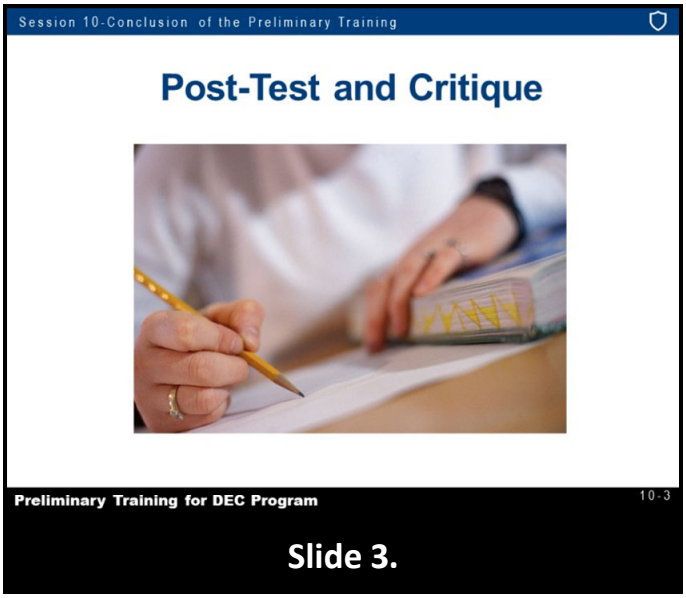


Slide 2.

A. Post Test and Critique

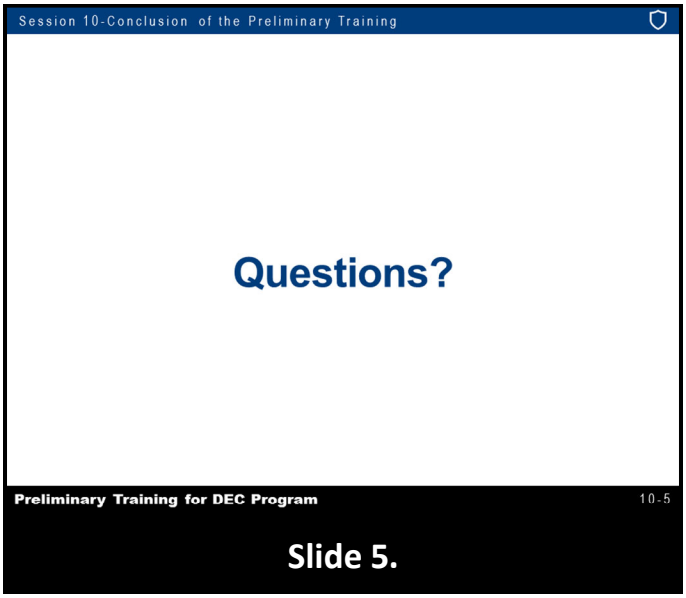


Slide 3.

B Certificate

Slide 4.

C. Session Wrap-Up



Slide 5.

Estimated time for session: 1 Hour 45 Minutes

17 DRE

HALLUCINOGENS

LEARNING OBJECTIVES

- Describe a brief overview 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 typical time parameters, i.e., onset and duration of effects, associated with this category
- List the indicators likely to emerge when the drug impairment evaluation is conducted for a person under the influence of this category of drugs

CONTENTS

LEARNING ACTIVITIES

- Instructor-Led Presentations
- Review of the DEC Program Exemplars
- Reading Assignments
- Video Presentations
- Slide Presentations

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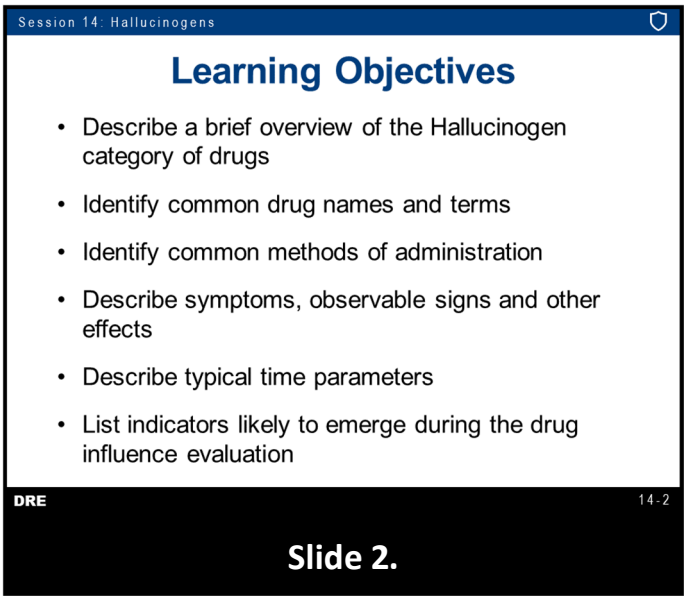

Session 14: Hallucinogens
Learning Objectives
• Describe a brief overview of the Hallucinogen category of drugs
• Identify common drug names and terms
• Identify common methods of administration
• Describe symptoms, observable signs and other effects
• Describe typical time parameters
• List indicators likely to emerge during the drug influence evaluation
DRE
14-2

Slide 2.

A. Overview of the Category

Slide 3.

Hallucinogens are drugs that affect a person's perceptions, sensations, thinking, self-awareness, and emotions. The word "Hallucinogen" means something that causes hallucinations. Definition from The Random House College Dictionary (Revised Edition, 1980).

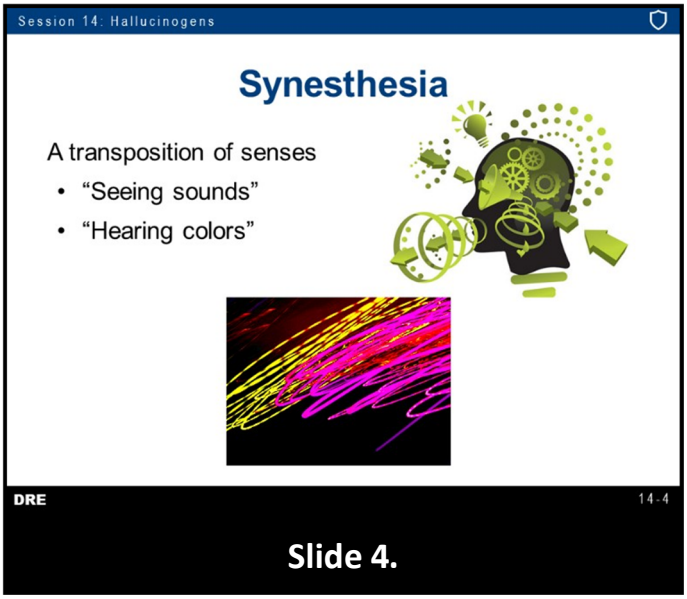
A hallucination is a sensory experience of something that does not exist outside the mind.

Seeing, hearing, smelling, tasting, or feeling something that isn't really there.

Having distorted sensory perceptions so things look, sound, smell, etc. differently than they really are.

Hallucinogenic drugs many times produce what are called pseudo-hallucinations: i.e., the user typically is aware what he or she is seeing, hearing, smelling, etc. isn't real, but is a product of the drug. This is not always the case. However, some users may believe their experience is real.

Because they often make the user appear to be psychotic, Hallucinogens are sometimes called psychotomimetic drugs. "Psychotomimetic" means "something that mimics psychosis." Psychosis is a major mental disorder. It implies a loss of touch with reality.

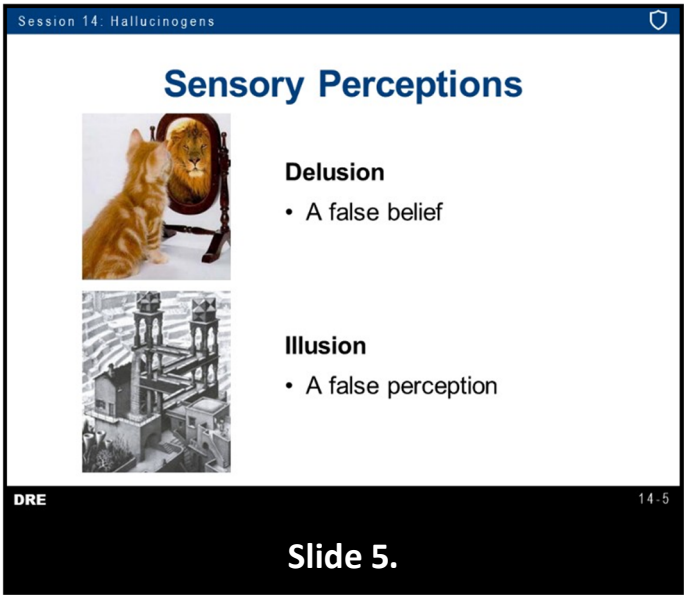


Slide 4.

One common type of hallucination produced by these drugs is called Synesthesia, which is 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.

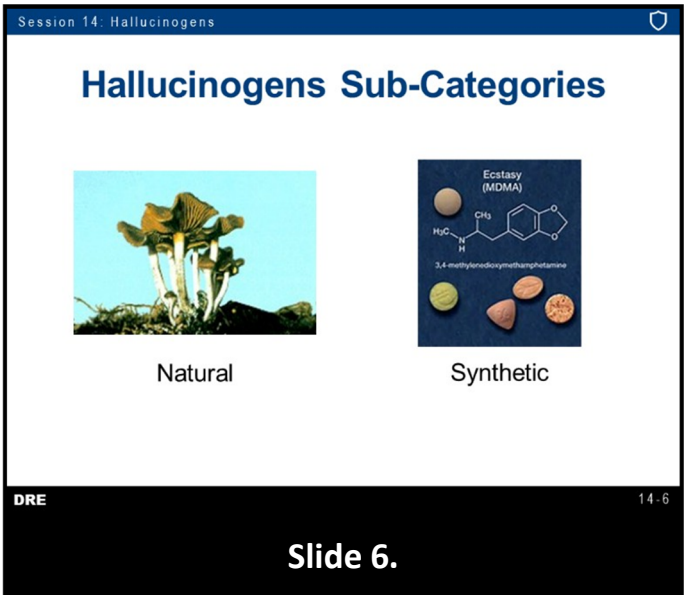
Synesthesia can occur naturally in a small percentage of the population and can differ from drug-induced synesthesia. Examples: The user may "see a flash of color, or some other sight, when the telephone rings." Sounds, for example, may be transposed into sights. Sights may be transposed into odours. The user may "smell" a particular fragrance when he or she looks at something painted yellow. The illusions and distorted perceptions produced by hallucinogenic drugs may be very alarming, even terrifying. They may produce panic and uncontrolled excitement.

The user may be unable to cope with the terror and may attempt to flee wildly. A user who is emotionally or mentally unstable may become psychotic in response to this frightening experience.



Slide 5.

Remember Hallucinogens produce delusions, illusions, or both. A delusion is a false belief, i.e., "I am an elephant." An illusion is a false perception, a misrepresentation of what the senses are receiving, i.e., "I see an elephant."

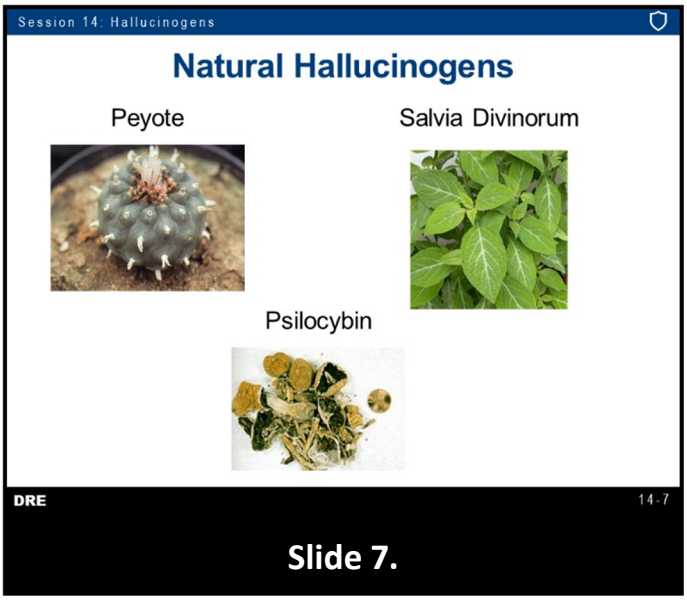


Slide 6.

Some Hallucinogens come from natural sources, while others are synthetically manufactured. Natural – those occurring in nature, such as various plants.

Peyote, Psilocybin, and Salvia Divinorum are examples of naturally-occurring Hallucinogens. Other naturally-occurring Hallucinogens include Nutmeg, Jimson Weed, Morning Glory seeds, and Bufotenine, a substance found in the glands of certain toads.

Synthetic – those made solely in a laboratory. MDMA, LSD, DOM and 2CB are examples of synthetic Hallucinogens.



Slide 7.

Peyote is a small, spineless cactus. The active, hallucinogenic ingredient in peyote is Mescaline. Mescaline is a chemical relative of adrenaline. Effects may be similar to those that would result from a massive rush of adrenaline. Mescaline was first isolated from Peyote in 1856. It was named after the Mescalero Apaches. Peyote is used legally in religious ceremonies of the Native American Church.

Psilocybin is a drug found in a number of different species of mushrooms of the genus Psilocybe. There are over 185 known species of mushrooms that contain Psilocybin and Psilocin.

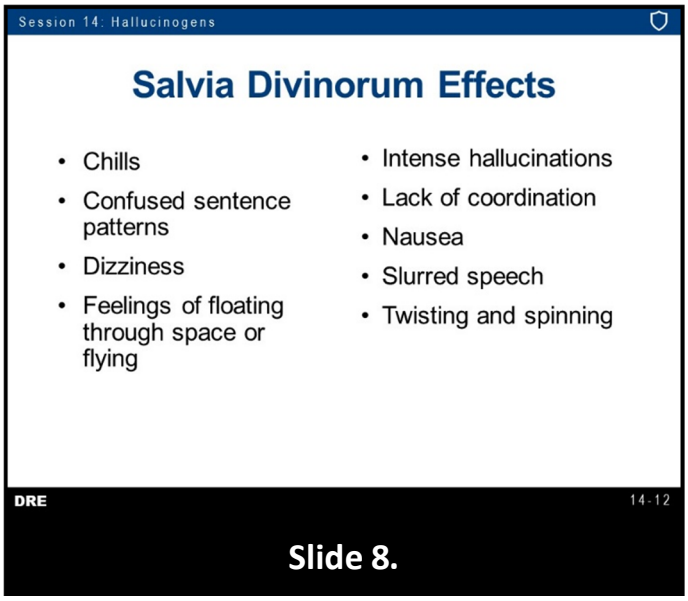
These mushrooms have been used in Native American religious ceremonies for thousands of years. An unstable derivative of Psilocybin, called Psilocin, is also found in these mushrooms, and has hallucinogenic properties. Psilocybin is chemically very similar to Serotonin, a neurotransmitter found in the brain. The effects of Psilocybin may be similar to what would happen if the brain were suddenly flooded with Serotonin.

Salvia Divinorum, also known as S. Divinorum or Salvia, is a naturally occurring Hallucinogen. 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 (tiny spikes) 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. Some common street names for Salvia Divinorum include:

- Salvia
- Sally D
- Magic Mint
- Maria Pastora
- Diviner's Sage

Salvia is listed under the Controlled Drugs Substance Act (CDSA), and it has been banned in many States. It has not been approved for medical use.

There are several methods of administering Salvia with varying durations of hallucinogenic effects. Dried leaves of Salvia can be smoked like cannabis, in a bong, pipe, or as a joint, with the effects lasting up to 15-30 minutes. Fresh leaves can be chewed as a quid. The leaves of Salvia produce extractions of Salvinorin A before the leaves are removed from the mouth. Effects from chewing Salvia can last up to one hour.



Slide 8.

Effects of Salvia Divinorum include: intense hallucinations; feelings of floating through space or flying; twisting and spinning; dizziness; nausea; lack of coordination; slurred speech; confused sentence patterns; and chills.

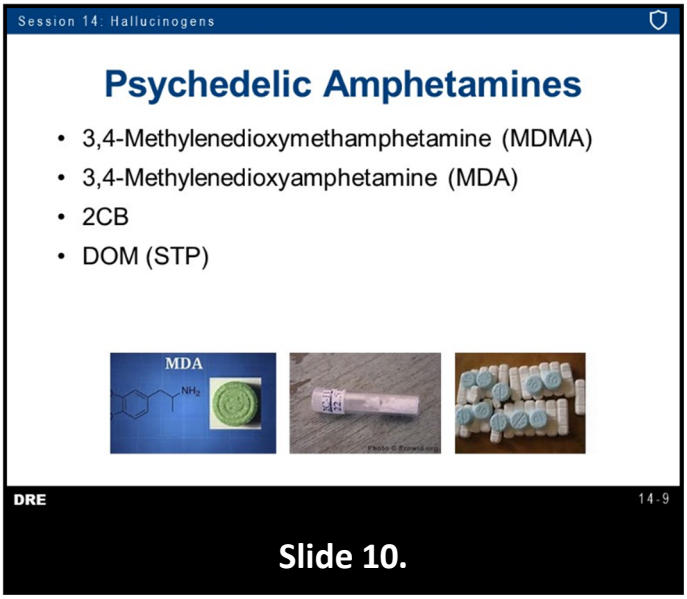
Other naturally-occurring Hallucinogens include Nutmeg. Nutmeg contains Myristicin, a natural compound that has mind-altering effects if administered in large doses. The buzz can last a long time and can be hallucinogenic, much like LSD. Jimson weed is a member of the Belladonna alkaloid family and grows naturally in many parts of the United States. It can be brewed as a tea or chewed and seed pods contain myristicin, a natural compound that has mind-altering effects if administered in large doses. The buzz can last one to two days and can be hallucinogenic, much like LSD. The seeds of several varieties of Morning Glory (Ipomoea violacea) contain a naturally-occurring Tryptamine called Lysergic Acid Amide (LSA), which is closely related to LSD. Seeds are normally administered orally and can be eaten whole or the active alkaloids can be extracted. Like LSD, LSA is a Hallucinogen, which can have strong mental effects. Bufotenine is a Hallucinogen found in frog or toad skins, most notably in the Colorado River Toad (Bufo alvarius).

Slide 9.

Lysergic Acid Diethylamide (LSD), Trimethoxyamphetamine (TMA), Dimethyltryptamine (DMT), MDMA, MDA, and 2CB are examples of synthetically-manufactured Hallucinogens.

LSD is perhaps the most famous of the synthetically-manufactured Hallucinogens.

First produced in 1938, although its hallucinogenic properties were not discovered until 1943. LSD was used in psychotherapy during the 1940's and early 1950's. Example: it was occasionally used in the treatment of alcoholism. Although LSD is a synthetic drug, it was first derived from Ergot, a fungus that grows on rye and other grains. Pharmaceutical companies market a combination of Caffeine and Ergot used medically to treat migraine headaches. Another synthetically manufactured hallucinogen is 25I-NBOMe: 2-(4-iodo-2,5-dimethoxyphenyl)-N-(2-methoxybenzyl)ethanamine, a synthetic drug with effects similar to LSD. It is often referred to as "N-Bomb" or "Smiles".



Slide 10.

MDA, MDMA, DOM, and TMA are synthetically-manufactured hallucinogens sometimes called "Psychedelic Amphetamines." Chemically related to Amphetamines and produce many effects similar to those of CNS Stimulants. Chemically related to Mescaline. Among users, MDA sometimes is referred to as the "Mellow Drug of America."

An important fact about Hallucinogens is they are not addictive, in the sense cessation of use does not produce withdrawal signs or symptoms; however, regular users do develop tolerance to these drugs.

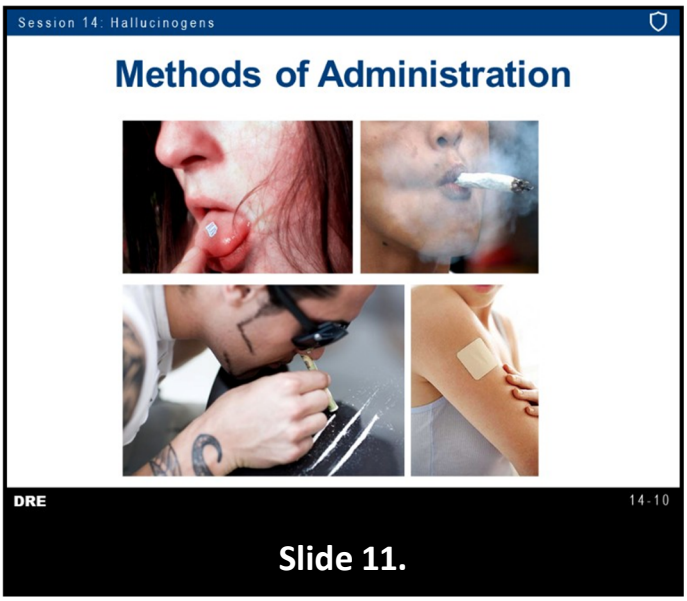
MDMA is an abbreviation for 3,4-Methylenedioxymethamphetamine and is commonly referred to as "Ecstasy". It is a hallucinogen that also acts as a stimulant. It produces an energizing effect as well as distortions in time and perception and enhances enjoyment from tactile experiences.

MDA is an abbreviation for 3,4-Methylenedioxyamphetamine. It is normally produced as a clear liquid or as a white powder in capsule or tablet form.

2CB (4-Bromo-2, 5-Dimethoxyphenethylamine) is a white powder usually found in pressed tablets or gel caps. It is considered a synthetic psychedelic amphetamine.

A popular drug first synthesized in 1974. White powder usually found in pressed tablets or gel caps. Sometimes referred to as "Venus," "Nexus," and "Bromo-Mescaline" 2CB's effects are dose related. Lower doses (5-15mg) produce enhanced sensual sensations and feelings of being "in one's body". At higher doses (15-30mg), it produces intense visual effects that includes moving objects with "trails" behind them and colors appearing from nowhere.

DOM (2, 5-dimethoxy-4-methylamphetamine) is also known as STP. STP is an abbreviation for "Serenity, Tranquility, and Peace."



Slide 11.

The most common method of administering Hallucinogens is orally. Peyote, Psilocybin, and Jimson Weed are often brewed in a tea. Salvinorin A can be ingested by chewing the leaves.

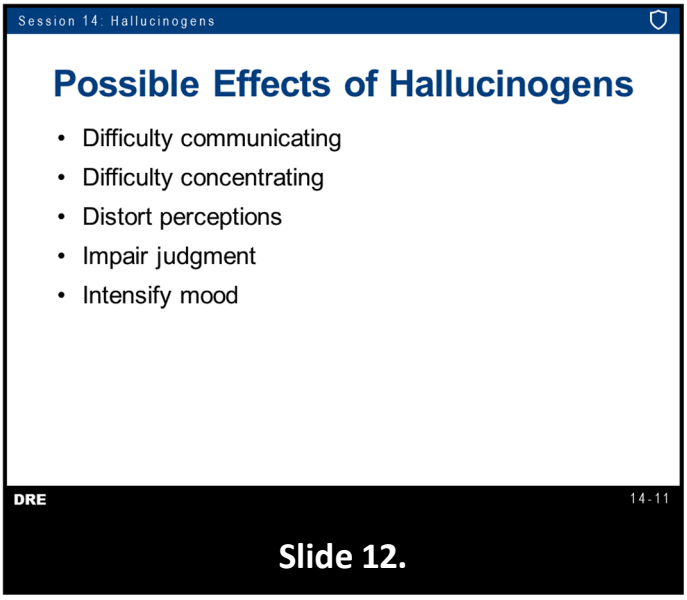
Some Hallucinogens can also be smoked, such as Peyote, Salvinorin A, and DMT. However, LSD cannot be administered by smoking. LSD is usually administered orally, or it can also be absorbed by placing drops in the eye.

MDMA and many other Psychedelic Amphetamines can also be insufflated, or "snorted."

Some Hallucinogens, such as LSD, can be administered and absorbed through the skin.

Officers should make it a practice to wear protective gloves when handling any suspected drugs.

B. Possible Effects



Slide 12.

The effects of Hallucinogens vary widely and are affected by the user's personality, mood, expectations, and by the surroundings in which the drug is taken.

The most common effect of the Hallucinogen is hallucination: the distorted perception of reality, often with a mixing of senses that makes it virtually impossible for the drug-influenced user to function in the real world.

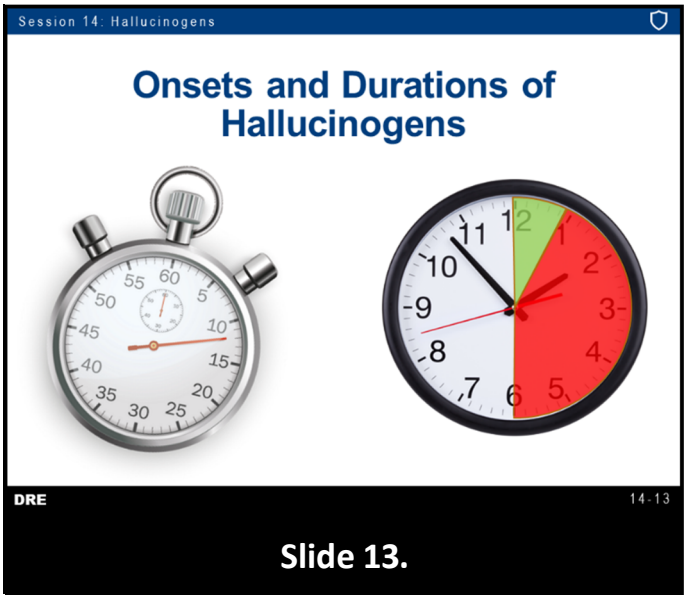
Generally, Hallucinogens intensify whatever mood the user is in at the time the drug is taken. If the user is depressed, the drug will usually deepen the depression. If the user is feeling pleasant, the drug will usually heighten that feeling.

If the user expects the drug will help him or her achieve new insights or an expanded consciousness, the "trip" will seem to have that effect.

However, Hallucinogens also often uncover mental or emotional flaws the user was unaware of possessing. Therefore, many users who expect a positive experience with the drug will encounter instead the panic of a "bad trip."

Hallucinogens may cause difficulty concentrating, communicating clearly, or distinguishing between reality and illusion. They may also distort perceptions, impair judgment, and induce body-wide dissociative or stimulating sensations, which may cause panic reactions or violent defensive behaviors.

C. Onset and Duration of Effects



Slide 13.

The time parameters associated with Hallucinogens vary from drug to drug.

The effects of Peyote (Mescaline) begin to be felt within approximately one-half hour after eating the cactus "buttons." Effects generally last up to 12 hours.

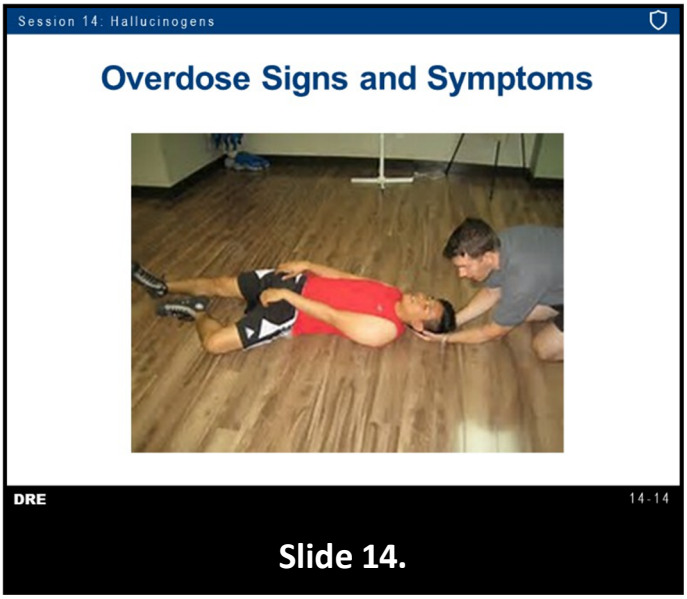
Psilocybin also begins to exert its effects within one-half hour. The effects generally last up to 5 hours.

LSD's effects begin to be felt within 30 – 45 minutes. The effects gradually diminish 6 – 8 hours after administration.

MDMA's effects usually begin within several minutes to a half hour if taken orally. The duration of effects can last from 1 – 3 hours.

Onset and duration of effects of other Hallucinogens vary widely from about 2 hours to about 24 hours.

D. Overdose Signs and Symptoms



Slide 14.

The most common danger of an overdose of Hallucinogen is an intense “bad trip” which can result in severe and sometimes permanent damage. “Bad trips” may consist of severe, terrifying thoughts and feelings, fear of losing control, and despair.

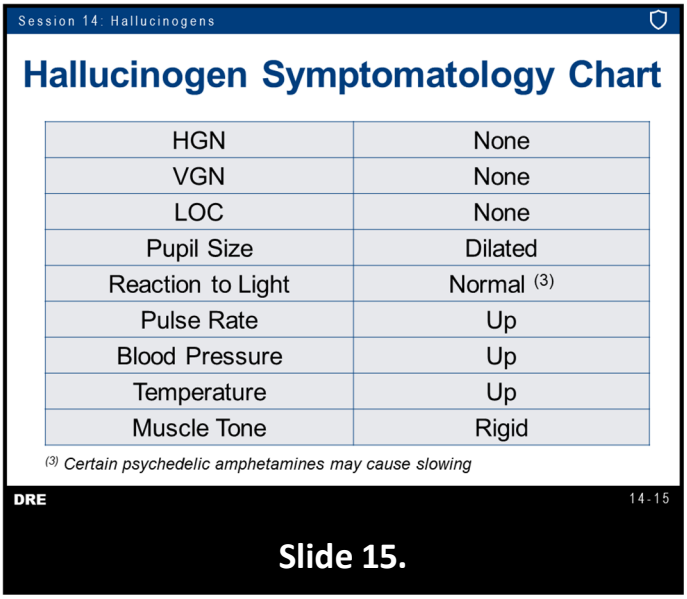
Apart from Psychedelic Amphetamines, it is unlikely other Hallucinogens would directly result in death from overdoses. There have been occasions people have overdosed on Psychedelic Amphetamines, resulting in a condition similar to heat stroke, convulsions, and even death. However, an overdose on other hallucinogens can still be extremely dangerous and indirectly result in death.

The extreme panic and agitation of a “bad trip” have been known to result in suicide or in accidental death as the user attempts to flee the hallucinations.

Sometimes Hallucinogens induce a perception of invulnerability in the user, leading to bizarre and very dangerous behavior and death. For example, at least one LSD user was killed when he attempted to stop a train. Others have died from jumping off buildings believing they can fly.

Some evidence suggests 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



Slide 15.

Eye Exams: Neither Horizontal Gaze Nystagmus (HGN) nor Vertical Gaze Nystagmus (VGN) will be present. Lack of Convergence (LOC) will not be evident.

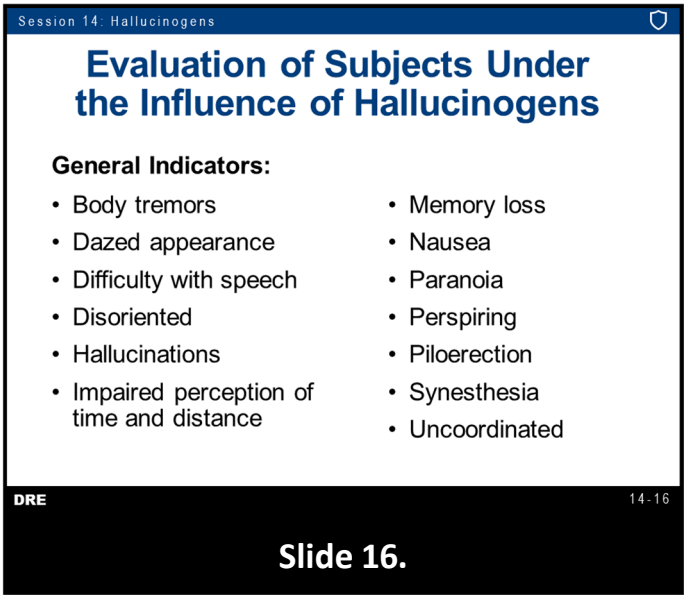
Psychophysical Tests: Performance on the Modified Romberg Balance (MRB) test will generally be impaired, particularly in the subject's estimation of the passage of 30 seconds.

Performance on the Walk and Turn (WAT), One Leg Stand (OLS), and Finger to Nose (FTN) tests will generally be impaired due to the subject's severe visual distortion, impaired perception of distance, and decreased muscle coordination.

Vital Signs: Pulse will generally be elevated. Blood pressure generally will be elevated. Body temperature generally will be elevated.

Dark Room: Pupils generally will be dilated. Reaction to light will usually be normal. Certain Psychedelic Amphetamines may cause slowing of the pupil's Reaction to Light.

Muscle tone generally will be rigid.

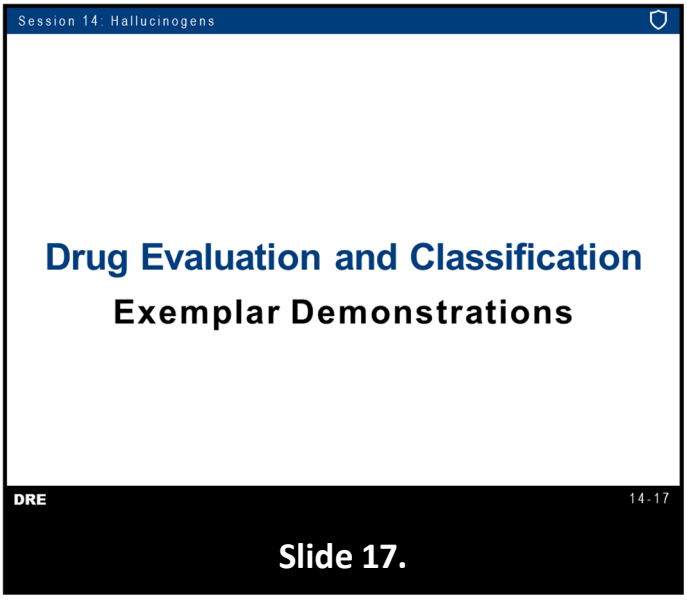


Slide 16.

General Indicators:

- Body tremors
- Dazed appearance
- Difficulty with speech
- Disoriented
- Hallucinations
- Impaired perception of time and distance
- Memory loss
- Nausea
- Paranoia
- Perspiring
- Piloerection (hair standing on end, i.e. goosebumps)
- Synesthesia
- Uncoordinated

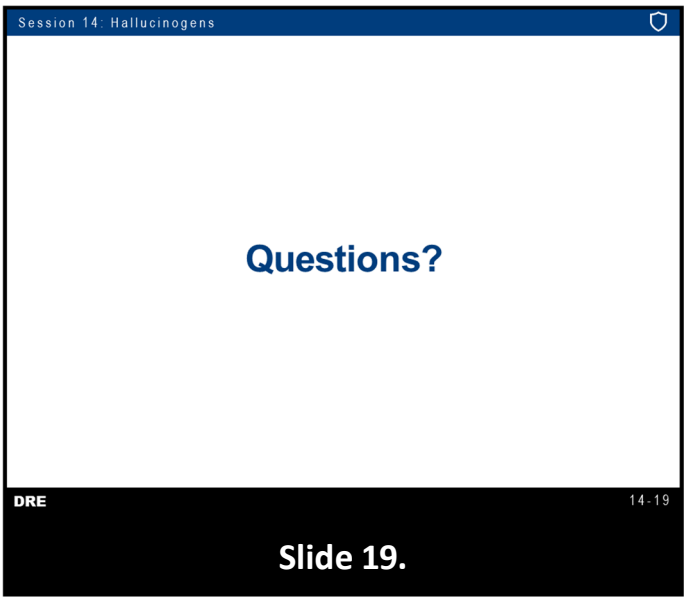
F. Review of the DEC Program Exemplars



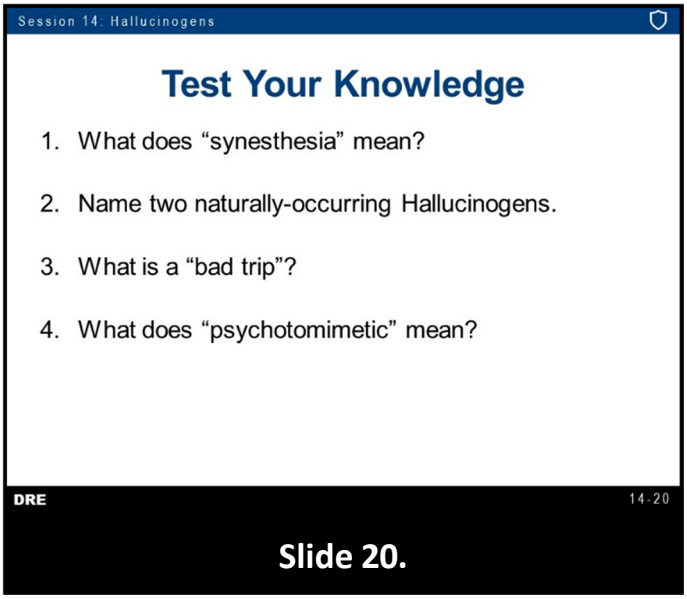
Slide 17.

The DRE narrative report should be detailed and complete, which clearly articulates the opinion of the DRE.

Slide 18.



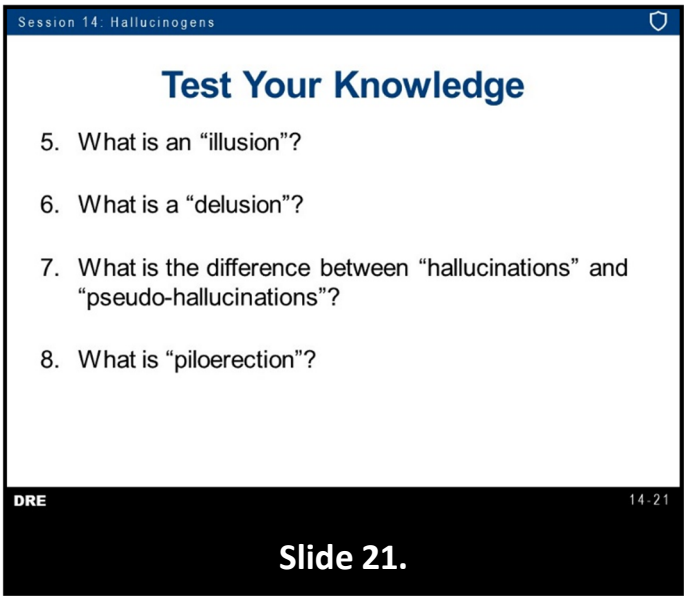
Slide 19.



Slide 20.

Test Your Knowledge

1. What does “synesthesia” mean?
2. Name two naturally occurring Hallucinogens.
3. What is a “bad trip”?
4. What does “psychotomimetic” mean?



Slide 21.

Test Your Knowledge

5. What is an “illusion”?
6. What is a “delusion”?
7. What is the difference between “hallucinations” and “pseudo-hallucinations”?
8. What is “piloerection”?

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #
Cst Gilbert Madsen	29284	20-005-0032	Saskatoon Police Service	(Session XIV - #1)

Arresting Officer (Name, ID#)	SFST Trained	Arresting Officer's Agency	Recorder/Witness
Constable Leidholt	☑ Yes ☐ Yes (not used) ☐ No	Saskatchewan Highway Patrol	Sergeant Isaac Kurtz

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash	DRE Secondary Caution Time
2020/08/10 @ 1325 hours	Cst Leidholt	1350 hrs	☑ None ☐ Fatal ☐ Injury ☐ Property	☑ Yes ☐ No 1408 hrs

Eval. Start time	Breath Test	Subject's Name (Last, First, Middle)	Date of Birth	Gender
1410 hrs	☑ No Grounds ☐ Refused Result: Instrument #:	Flipping, Candi R	1986/06/19	Female

Date Examined / Time / Location	What have you eaten today?	When?	What have you been drinking? How much?	Time of last drink?
2020/08/10 @ 1410 hrs @ SPS Detn	A Muffin, eggs, kale	About noon	Water 4 or 5 bottles	N/A

Time now? / Actual	When did you last sleep? How long?	Are you sick or injured?	Are you diabetic or epileptic?
5 pm / 1415 hrs	Last night 3 or 4 hours	☐ Yes ☑ No	☐ Yes ☑ No

Do you take insulin?	Do you have any physical disabilities?	Are you under the care of a doctor or dentist?
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No

Do you take any medication or drugs?	Attitude	Coordination
☑ Yes ☐ No "a couple of molly's"	cooperative, dazed	poor, staggering

Speech	Breath Odour	Face
rambling, slurred	nothing noted	flushed, sweaty

Corrective Lenses	Eyes	Blindness	Tracking
☑ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	☑ Normal ☐ Bloodshot ☐ Watery	☑ None ☐ Left ☐ Right	☑ Equal ☐ Unequal

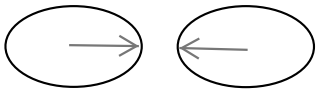
Pupil Sizes	Resting Nystagmus	Vertical Nystagmus	Able to Follow Stimulus	Eyelids
☑ Equal ☐ Unequal (explain)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	☑ Normal ☐ Droopy

Pulse and Time

1. 102 bpm @ 1440hrs
2. 104 bpm @ 1430hrs
3. 102 bpm @ 1450hrs

HGN	Left	Right
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

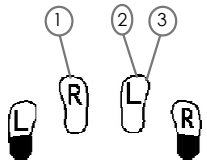
Convergence



Right Eye Left Eye

One Leg Stand

N/A /30 N/A /30

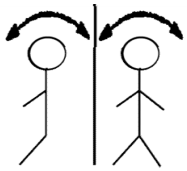


Test stopped after nearly fell.

L	R	
I (1)	I (1)	Sways while balancing
I (1)	I (1)	Uses arms to balance
ø	ø	Hopping
I (1)	II (2)	Puts foot down

Modified Romberg Balance

Approx. 3" 3" Approx. 3" 3"

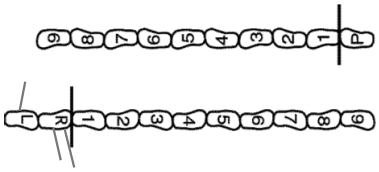


Arm & leg tremors.

Walk and Turn

Cannot keep balance III (3)

Starts too soon ø



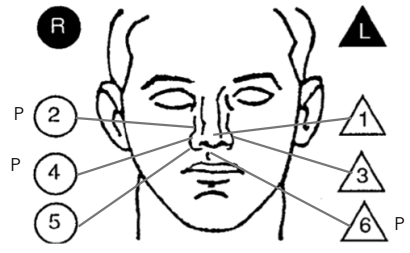
Test stopped for safety.

	1st nine	2nd nine
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms		
Actual steps taken		

Time estimation & questions (p.2)	Describe turn	Cannot do test (explain)	Type of footwear
46 sec estimated as 30 seconds	N/A	Nearly fell 3 times	Bare feet

Finger to nose

(Draw lines to spots touched)



Body tremors

Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye	7.5 mm	9.0 mm	6.0 mm
Right Eye	7.5 mm	9.0 mm	6.0 mm

Rebound dilation ☐ Yes ☑ No

Reaction to light ☐ Normal ☑ Slow ☐ Little to none visible

Nasal area: Nothing noted

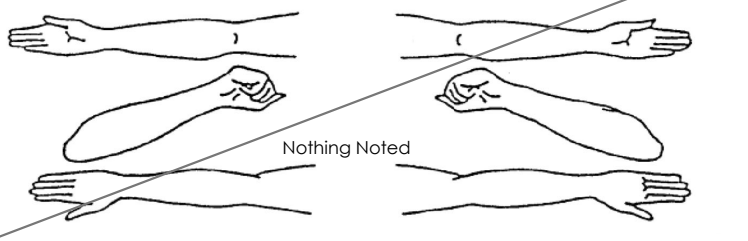
Oral cavity: Nothing noted.

Blood Pressure	Temperature
166 / 98 mmHg	37.7 °C

Muscle tone: ☐ Normal ☐ Flaccid ☐ Rigid

Comments:

Right Arm **Left Arm**



What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?
"Just a couple of molly's"	"just a couple"	don't know	in the park at the concert

Eval. stop time	Refusal	Toxicological Sample	Reviewed by (instructor name)
1520 hrs	☐ Entirety ☐ Partly ☐ Tox. Sample Comments: N/A	☑ Urine ☐ Blood Demand time: 1525 hrs Sample Time: 1651 hrs	

Evaluator Signature	Approved by (instructor signature)	DRE # / Date
Cst G Madsen 849		

Opinion of Evaluator

☐ Not Impaired	☐ Alcohol	☐ CNS Stimulant	☐ Dissociative Anaesthetic	☐ Inhalants	☑ Operational
☐ Medical	☐ CNS Depressant	☑ Hallucinogen	☐ Narcotic Analgesic	☐ Cannabis	☐ Training

This is the detailed narrative report of Constable (Cst) Gilbert MADSEN, a Regular Member of the Saskatoon Police Service, Badge 849, DRE No. 029284. Cst MADSEN is currently attached to Traffic Services at 76 25th St E, Saskatoon, Saskatchewan. Cst MADSEN is credentialed by the International Association of Chiefs of Police (IACP) as a Drug Recognition Expert (DRE Certification Expiry Date: 2023-11-13).

(1) Location: The evaluation of Candi R FLIPPING 1986-06-19 was conducted by Cst MADSEN, at Saskatoon Police Service (SPS) Headquarters located at 76 25th St E, Saskatoon, SK on August 10th, 2020.

(2) Witnesses: This evaluation was witnessed by Sergeant Isaac KURTZ of the Saskatchewan Highway Patrol.

(3) Source: The subject evaluated was Candi R FLIPPING, date of birth 1986-06-19.

Interview of the arresting officer: I was working as part of an Impaired Enforcement Operation and was requested to conduct a drug evaluation for Constable LEIDHOLT of the Saskatchewan Highway Patrol. When contacted, Constable LEIDHOLT advised he had observed the suspect driving her vehicle 20 kilometers per hour under the posted speed limit and weaving within her lane on Highway 115. According to Cst LEIDHOLT, the suspect's tires nearly contacted the gravel shoulder numerous times. After Cst LEIDHOLT activated his emergency lights and siren, the suspect continued her poor driving until eventually stopping over a kilometer later. When contacted, the suspect was extremely disoriented and had difficulty speaking. According to Cst LEIDHOLT, the suspect indicated she was in the area for a motorcycle rally. She indicated she had just left an outdoor concert and was on her way to a friend's campsite near Dundurn. Cst LEIDHOLT suspected the driver may be impaired and attempted to administer SFST's at roadside. However, the suspect was unable to complete the SFST's due to poor balance and lack of coordination. Cst LEIDHOLT attempted to administer the Horizontal Gaze Nystagmus (HGN) test but was unable to do so because the suspect could not focus on his penlight as requested. Cst LEIDHOLT also attempted to administer the Walk & Turn (W&T) test, but the suspect could not maintain her balance in the instruction stage. The One Leg Stand (OLS) was attempted but stopped for safety like the other tests. Cst LEIDHOLT arrested the suspect and transported her to the cells for processing. He then requested the assistance of a DRE.

(4) First Observations:

I first observed FLIPPING in the booking room at the detention facility. FLIPPING was seated on a bench and was perspiring heavily and had a flushed face. FLIPPING appeared dazed and disoriented. I noted she was wearing cut-off jeans, a black tee-shirt, and was bare foot. FLIPPING responded slowly to my greeting, and at times her attention was elsewhere. FLIPPING was cooperative, and for the most part was responsive to my questions. However, some of her responses were not relevant to my questions. When I asked if she was feeling alright, she

stated, “I am, but your shirt is really bright.” At times FLIPPING mumbled to herself and had rambling, slurred speech.

- FLIPPING’s eyes were normal.
- FLIPPING displayed equal tracking.
- FLIPPING’s pupil size was equal.
- FLIPPING did not display Resting Nystagmus.
- FLIPPING was able to follow stimulus.
- FLIPPING’s eyelids were normal.

FLIPPING was asked the following questions:

- "Have you had anything to eat today, and when?" FLIPPING answered: a muffin, eggs, and kale.
- "What have you been drinking, how much, and what time was your last drink?" FLIPPING answered “4 or 5 bottles of water” throughout the day. No time of last drink.
- "What time do you think it is now?" FLIPPING answered: 5:00 pm; the evaluator's time was 1415 hrs.
- "When did you last sleep and for how long?" FLIPPING answered: Last night 3 or 4 hours
- "Are you sick or injured?" FLIPPING answered: No
- "Are you diabetic?" FLIPPING answered: No.
- "Are you epileptic?" FLIPPING answered: No.
- "Do you take insulin?" FLIPPING answered: No
- "Do you have any physical disabilities?" FLIPPING answered: No
- "Are you under the care of a doctor/dentist?" FLIPPING answered: No.
- "Are you taking any prescription medication or drugs?" FLIPPING answered: “A couple of Molly’s”

The following other observations were made:

- FLIPPING’s attitude was: Cooperative, Dazed
- FLIPPING’s coordination was: Poor, Staggering
- FLIPPING’s speech was: Rambling, Slurred
- FLIPPING’s breath odour was: Normal
- FLIPPING’s face was: Flushed, Sweaty

(5) Psychophysical Signs:

Modified Romberg Balance Test:

- FLIPPING had a 3-inch sway front and back. FLIPPING also swayed in a 3-inch pattern to the right and left for the entire test.
- FLIPPING estimated the passage of 30 seconds as 46 seconds. The expected range is 30 seconds ± 5 seconds.
- When asked "How long was that?", No response.

- When asked "How did you arrive at that?", FLIPPING responded "I had a clock in my head".

Walk and Turn Test:

- FLIPPING was bare foot during the test.

During the instructions stage:

- FLIPPING could not keep her balance 3 times. FLIPPING stepped to the right two times with the right foot and one time to the left with the left foot. Each time that FLIPPING was placed in the instructional position she would lose her balance and nearly fall. For this reason, the test was stopped for her safety.

One Leg Stand Test:

- While testing FLIPPING's left leg:
  - FLIPPING put her foot down immediately on count 1.
  - FLIPPING used her arms for balance and swayed trying to stay up.
  - The test was stopped for safety reasons.

- While testing FLIPPING's right leg:
  - FLIPPING put her foot down on counts 2 & 3.
  - FLIPPING used her arms for balance continuously.
  - FLIPPING swayed while trying to keep her balance.
  - The test was stopped for safety reasons.

Finger to Nose Test:

- On the first attempt, FLIPPING touched just above the tip of her nose, but not quite on the bridge, with the tip of her left index finger;
- On the second attempt, FLIPPING touched her right cheek beside her nose with the pad of her right index finger;
- On the third attempt, FLIPPING touched her left cheek right beside her nostril with the tip of her left index finger;
- On the fourth attempt, FLIPPING touched her right cheek just beside her right nostril with the pad of her right index finger;
- On the fifth attempt, FLIPPING touched below her right upper lip just under her right most point of her right nostril with the tip of her right index finger; &
- On the sixth attempt, FLIPPING touched her upper lip just below the center of her nose with the pad of her left index finger.

(6) Clinical Signs:

Horizontal Gaze Nystagmus: FLIPPING did not exhibit Horizontal Gaze Nystagmus.

Vertical Gaze Nystagmus: FLIPPING did not display vertical gaze nystagmus.

Lack of Convergence: FLIPPING was able to converge her eyes.

Pupil Size:

The DRE average range for pupil size in room light is 2.5 to 5.0 millimeters (mm):

- FLIPPING's left eye pupil was 7.5 mm in room light, which is above the DRE average range.
- FLIPPING's right eye pupil was 7.5 mm in room light, which is above the DRE average range.

The DRE average range for pupil size in near total darkness is 5.0 to 8.5 mm:

- FLIPPING's left eye pupil was 9.0 mm in near total darkness, which is above the DRE average range.
- FLIPPING's right eye pupil was 9.0 mm in near total darkness, which is above the DRE average range.

The DRE average range for pupil size in direct light is 2.0 to 4.5 mm:

- FLIPPING's left eye pupil was 6.0 mm in direct light, which is above the DRE average range.
- FLIPPING's right eye pupil was 6.0 mm in direct light, which is above the DRE average range**.**

FLIPPING's pupils displayed a slow reaction to light.

FLIPPING's did not display rebound dilation.

A UV light was not used in the eye examinations

Pulse Measurements:

The DRE average range for pulse in 60 to 90 beats per minute (bpm).

The pulse was taken 3 times:

- First pulse: FLIPPING's pulse was above the DRE average range at 102 bpm at 1420 hrs.

- Second pulse: FLIPPING's pulse was above the DRE average range at 104 bpm at 1430 hrs.

- Third pulse: FLIPPING's pulse was above the DRE average range at 102 bpm at 1450 hrs.

Blood Pressure: FLIPPING's blood pressure was 166 millimeters of Mercury (mmHg)/98 mmHg.

FLIPPING's systolic blood pressure was 166 mmHg, which is above the DRE average range. The DRE average range for systolic blood pressure is 120 to 140 mmHg.

FLIPPING's diastolic blood pressure was 98 mmHg, which is above the DRE average range. The DRE average range for diastolic blood pressure is 70 to 90 mmHg.

Temperature: Using an oral thermometer, Cst Madsen measured FLIPPING's body temperature. The DRE average range for body temperature is 37°C plus or minus 0.5°C.

FLIPPING's body temperature was 37.7°C, which is above the DRE average range.

Muscle Tone: FLIPPING's muscle tone was rigid.

(7) Statements: No extra statements were made.

(8) Medical Problems or Treatments:

Drugs and Medicine: FLIPPING stated that she took "just a couple of Molly's".

(9) Opinion: It is the opinion Constable Gilbert Madsen, an evaluating officer, that Candi R FLIPPINGS (DOB: 1986-06-19) ability to operate a conveyance is impaired by: Hallucinogen.

(10) Miscellaneous:

- During the nasal exam nothing was noted.
- During the oral cavity exam nothing was noted.

The evaluation began at 1410 hrs on 2020-08-10 and was completed at 1520 hrs on 2020-08-10. Cst Madsen read the DRE Urine Demand at 1525 hrs and obtained a urine sample at 1651 hrs.

All times in this report unless otherwise noted are that of Cst Gilbert Madsen

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #
Cpl D. Milette	22273	20-010-0102	RCMP	(Session XIV - #2)

Arresting Officer (Name, ID#)	SFST Trained	Arresting Officer's Agency	Recorder/Witness
Sgt D Botham	☑ Yes ☐ Yes (not used) ☐ No	RCMP	N/A

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash	DRE Secondary Caution Time
2020/05/17 @ 2105 hrs	Sgt Botham	2125 hrs	☑ None ☐ Fatal ☐ Injury ☐ Property	☑ Yes ☐ No 2209 hrs

Eval. Start time	Breath Test	Subject's Name (Last, First, Middle)	Date of Birth	Gender
2210 hrs	☑ No Grounds ☐ Refused Result: Instrument #:	Tripp, Brad	1988/07/18	Male

Date Examined / Time / Location	What have you eaten today?	When?	What have you been drinking? How much?	Time of last drink?
2020/05/17 @ 2210 hrs @ Ottawa Detn	Couple of hot dogs	About 5 pm	Water 3 or 4 bottles	N/A

Time now? / Actual	When did you last sleep? How long?	Are you sick or injured?	Are you diabetic or epileptic?
About 7pm / 2215 hrs	Yesterday About 6 hours	☐ Yes ☑ No	☐ Yes ☑ No

Do you take insulin?	Do you have any physical disabilities?	Are you under the care of a doctor or dentist?
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No

Do you take any medication or drugs?	Attitude	Coordination
☐ Yes ☑ No	Indifferent, Paranoid at times	Poor, Staggering

Speech	Breath Odour	Face
Rambling, Incoherant at times	Nothing noted	Flushed, sweaty

Corrective Lenses	Eyes	Blindness	Tracking
☑ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	☑ Normal ☐ Bloodshot ☐ Watery	☑ None ☐ Left ☐ Right	☑ Equal ☐ Unequal

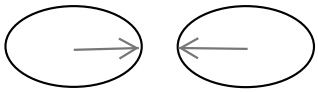
Pupil Sizes	Resting Nystagmus	Vertical Nystagmus	Able to Follow Stimulus	Eyelids
☑ Equal ☐ Unequal (explain)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	☑ Normal ☐ Droopy

Pulse and Time

1. 112 bpm @ 2224hrs
2. 110 bpm @ 2234hrs
3. 112 bpm @ 2248hrs

HGN	Left	Right
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	No	No

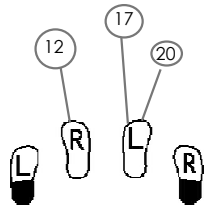
Convergence



Right Eye Left Eye

One Leg Stand

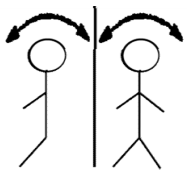
26 /30 32 /30



Body tremors

Modified Romberg Balance

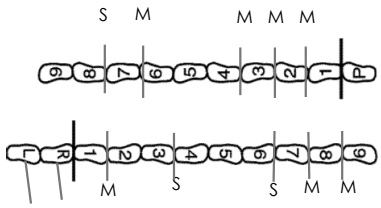
Approx. 2" 2" Approx. 2" 2"



Walk and Turn

Cannot keep balance √√ (2)

Starts too soon √ (1)



Leg tremors throughout

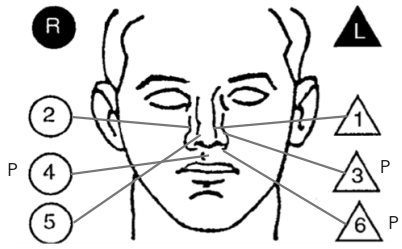
	1st nine	2nd nine
Stops walking	√√ (2)	√ (1)
Misses heel-toe	√√√ 3	√√√ 4
Steps off line	ø	ø
Raises arms	√ (1)	cont
Actual steps taken	9	9

L	R	
√ (1)	√ (1)	Sways while balancing
√ (1)	√ (1)	Uses arms to balance
ø	ø	Hopping
√ (1)	√ (2)	Puts foot down

Time estimation & questions (p.2)	Describe turn	Cannot do test (explain)	Type of footwear
22 sec estimated as 30 seconds	Lost balance, had to regain footing	N/A	Leather sandals (Birkenstocks)

Finger to nose

(Draw lines to spots touched)



Arm tremors. Slow jerky movements.

Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye	6.0mm	9.0mm	5.5mm
Right Eye	6.0mm	9.0mm	5.5mm

Rebound dilation ☐ Yes ☑ No

Reaction to light ☐ Normal ☑ Slow ☐ Little to none visible

Nasal area: Nothing noted

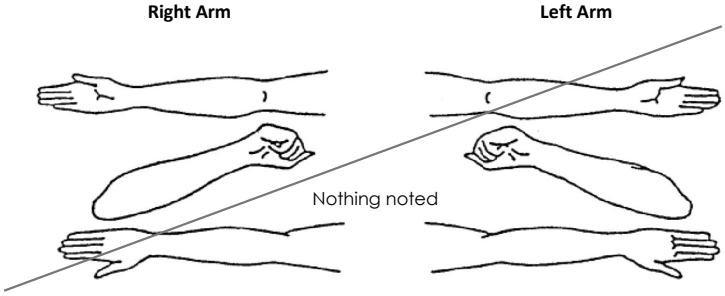
Oral cavity: Nothing noted

Blood Pressure	Temperature
160 / 96 mmHg	37.8 °C

Muscle tone: ☐ Normal ☐ Flaccid ☐ Rigid

Comments:

Right Arm **Left Arm**



Nothing noted

What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?
"Nothing" (Lauged outloud after answering)	N/A	N/A	N/A

Eval. stop time	Refusal	Toxicological Sample	Reviewed by (instructor name)
2305 hrs	☐ Entirety ☐ Partly ☐ Tox. Sample Comments: N/A	☑ Urine ☐ Blood Demand time: 2306 hrs Sample Time: 2330 hrs	

Evaluator Signature	Approved by (instructor signature)	DRE # Date
Cpl D. Milette		

Opinion of Evaluator

☐ Not Impaired ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anaesthetic ☐ Inhalants ☐ Operational

☐ Medical ☐ CNS Depressant ☑ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis ☑ Training

Drug Influence Evaluation

This is the detailed narrative report of Corporal Denis MILETTE, a Regular Member of the Royal Canadian Mounted Police, Reg. No. 51775, DRE No. 22273. Corporal Milette is currently attached to National Traffic Services at 73 Leikin Dr, Ottawa, Ontario. Corporal MILETTE is credentialed by the International Association of Chiefs of Police (IACP) as a Drug Recognition Expert (DRE Certification Expiry Date: 2021-08-01).

(1)Location: The evaluation of Brad Tripp was conducted by Corporal MILETTE, at RCMP National Headquarters located at 73 Leikin Drive, Ottawa, ON on June 14, 2020

(2)Witnesses: This evaluation was witnessed by Sgt. Dave Botham of the Royal Canadian Mounted Police**.**

(3)Source: The subject evaluated was Brad Tripp, date of birth 1999-06-10

There was reports of as a possible impaired driver. Sgt. Botham observed the vehicle traveling northbound on Highway 16 and it was unable to maintain a single lane of travel. When attempting to stop the vehicle, the driver was slow to respond to his emergency lights. During the personal contact with the male driver, Sgt. Botham observed him to be paranoid at times and he could not understand what the driver was saying. Sgt. Botham, conducted SFST testing and the driver performed poorly on the Walk and Turn (W&T) and One Leg Stand (OLS) tests. Sgt. Botham observed four clues on the W&T and three clues on the OLS. He also administered the HGN test observing no clues. Sgt. Botham arrested the driver for impaired operation of a conveyance and transported him to RCMP Headquarters for processing.

(3)First Observations: Mr. Tripp was first observed by Cpl Milette in the Interview room of RCMP National Headquarters at 73 Leikin Drive at 0120 hours. Cpl. Milette read Mr. Tripp the secondary police caution at approximately 2209 hours. When asked if he understood Mr. Tripp stated “Yes”. The following things were observed at that time:

- Mr. Tripp's eyes were normal.
- Mr. Tripp displayed equal tracking.
- Mr. Tripp pupil size was equal.
- Resting nystagmus was not present.
- Mr. Tripp was able to follow stimulus.
- Mr. Tripp eyelids were normal.

Mr. Tripp was asked the following questions:

- "What have you eaten today, and when?" Mr. Tripp answered: couple of hotdogs about 5pm
- "What have you been drinking, how much, and what time was your last drink?" Mr. Tripp answered: 3 or 4 bottles of water
- "What time do you think it is now?" Mr. Tripp answered: about 7pm; the evaluator's time was 2215 hours.
- "When did you last sleep and for how long?" Mr. Tripp answered: yesterday about 6 hours
- "Are you sick or injured?" Mr. Tripp answered: No.
- "Are you diabetic?" Mr. Tripp answered: No.
- "Are you epileptic?" Mr. Tripp answered: No.
- "Do you take insulin?" Mr. Tripp answered: No
- "Do you have any physical disabilities?" Mr. Tripp answered: No
- "Are you under the care of a doctor/dentist?" Mr. Tripp answered: No.
- "Are you taking any prescription medication or drugs?" Mr. Tripp answered no.

The following other observations were made:

- Mr. Tripp's attitude was: Indifferent and paranoid at times
- Mr. Tripp's coordination was": poor, staggering
- Mr. Tripp's speech was: slurred rambling, incoherent at times
- Mr. Tripp's breath odour was: nothing noted
- Mr. Tripp's face was: flushed, sweaty

(5)Psychophysical Signs:

Modified Romberg Balance Test:

- Mr. Tripp swayed in a 2-inch circular pattern for the entire test.
- Mr. Tripp estimated the passage of 30 seconds as 22 seconds. The expected normal range is 30 seconds plus or minus 5 seconds.
- When asked "How long was that?", Mr. Tripp responded "30 seconds".
- When asked "How did you arrive at that?", Mr. Tripp responded "counted to 30" in my head.

Walk and Turn Test:

- Mr. Tripp was wearing Birkenstock sandals during the test

During the instructions stage:

Mr. Tripp was unable to keep his balance 2 times by braking his stance stepping once to the right with both his left and right foot. Mr. Tripp was told to get back to the instruction phase each time he lost balance. Mr. Tripp started too soon once.

On the first set of nine steps:

- Mr. Tripp took 9 steps.
- Mr. Tripp raised his arms 1 time.
- Mr. Tripp stopped walking 2 times on steps 3 and 6
- Mr. Tripp did not step off the line
- Mr. Tripp missed touching heel to toe 3 times between steps 1- 2,7- 8 and 8- 9

Mr. Tripp lost balance on the turn and had to regain footing

On the second set of nine steps:

- Mr. Tripp took 9 steps
- Mr. Tripp raised his arms continuously
- Mr. Tripp stopped walking 1 time on step 7
- Mr. Tripp did not step off line
- Mr. Tripp missed touching heel to toe steps 4 times between steps 1-2, 2- 3, 3- 4, and 6-7

Mr. Tripp displayed leg tremors through the test

One Leg Stand Test:

- While testing Mr. Tripp 's left leg:
  - Mr. Tripp put his right foot down 1 time on his count of 12
  - Mr. Tripp swayed once.
  - Mr. Tripp used arms for balance once.
  - Mr. Tripp did not hop
  - Mr. Tripp reached a count of 26 in a timed 30 seconds.

- While testing Mr. Tripp 's left leg:
  - Mr. Tripp put his right foot down 2 times on his count of 17 and 20
  - Mr. Tripp swayed once.
  - Mr. Tripp used arms for balance once.
  - Mr. Tripp did not hop
  - Mr. Tripp reached a count of 32 in a timed 30 seconds.

Mr. Tripp displayed body tremors through the test

Finger to Nose Test:

- On the first attempt, Mr. Tripp touched the bridge of his nose using the tip of his left index finger

- On the second attempt, Mr. Tripp touched the right side of his nose using the tip of his right index finger.
- On the third attempt, Mr. Tripp touched the left side of his nose with the pad of his left index finger.
- On the fourth attempt, Mr. Tripp touched his upper lip with the pad of his finger right index finger.
- On the fifth attempt, Mr. Tripp touched the tip of his nose using the tip of his right index finger.
- On the sixth attempt, Mr. Tripp touched his lip just below his nose on the left side using the pad of his left index finger.

  During the test Mr. Tripp displayed arm tremors and had slow jerky movement

(6) Clinical Signs:

Horizontal Gaze Nystagmus: Horizontal gaze nystagmus was not present.

Vertical Gaze Nystagmus: Mr. Tripp did not display vertical gaze nystagmus.

Lack of Convergence: Mr. Tripp did not display lack of convergence.

Pupil Size:

The DRE average range for pupil size in room light is 2.5 to 5.0 millimeters (mm):

Mr. Tripp 's left eye pupil was 6.0 mm in room light, which is outside (dilated) the DRE average range.
Mr. Tripp 's right eye pupil was 6.0 mm in room light, which is outside (dilated) the DRE average range.

The DRE average range for pupil size in near total darkness is 5.0 to 8.5 mm:

Mr. Tripp's left eye pupil was 9.0 mm in near total darkness, which is outside (dilated) the DRE average range.
Mr. Tripp’s right eye pupil was 9.0 mm in near total darkness, which is outside (dilated) the DRE average range.

The DRE average range for pupil size in direct light is 2.0 to 4.5 mm:

Mr. Tripp's left eye pupil was 5.5 mm in direct light, which is outside (dilated) the DRE average range.

Mr. Tripp's right eye pupil was 5.5 mm in direct light, which is outside(dilated) the DRE average range**.**

Mr. Tripp’s pupils displayed a slow reaction to light.

Mr. Tripp did not display rebound dilation.

A UV light was not used in the eye examinations

Pulse Measurements:

The pulse was taken 3 times:

The DRE average range is 60 – 90 beats per minute (bpm)

- First pulse: Mr. Tripp 's pulse was above the DRE average range at 112 bpm at 2224 hours.

- Second pulse: Mr. Tripp's pulse was above the DRE average range at 110 bpm at 21234 hours.

- Third pulse: Mr. Tripp 's pulse was outside above the DRE average range at 112 bpm at 2248 hours.

Blood Pressure: Mr. Tripp's blood pressure was measured to be 160/96 millimetres of Mercury (mmHg).

Mr. Tripp's systolic blood pressure was 160 mmHg, which is above the DRE average range. The DRE average range for systolic blood pressure is 120 to 140 mmHg.

Mr. Tripp's diastolic blood pressure was 96 mmHg, which is above the DRE average range. The DRE average range for diastolic blood pressure is 70 to 90 mmHg.

Temperature: Using an oral thermometer, Mr. Tripp's body temperature was measured to be above the DRE average range at 37.8 degrees Celsius. The DRE average range for body temperature is 37 degrees Celsius plus or minus 0.5 degrees Celsius.

Mr. Tripp 's body temperature is above (up) the DRE average range.

Muscle Tone: Mr. Tripp's muscle tone was rigid.

(7) Statements: Mr. Tripp started laughing when asked about drugs and medication saying 'nothing' when asked what he's been using.

(8) Medical Problems or Treatments: Mr. Tripp did not disclose any medical problems

(9) Opinion: It is the opinion of Corporal Denis MILETTE, a Drug Recognition Expert, that Brad Tripp's ability to operate a conveyance is impaired by: Hallucinogen.

(10) Miscellaneous:

- Nothing noted in Mr. Tripp's nasal area
- Nothing noted in Mr. Tripp oral cavity
- There were no puncture marks noted

The evaluation began May 17, 2020 at 2210 hours and was completed at 2305 hours.

Mr. Tripp provided a urine sample pursuant to a demand that was read to him by Cpl. Milette at 2306 hours and the sample collected at 2330 hrs. Cpl. Milette secured the urine in exhibit locker fridge within the RCMP Headquarters.

Evaluator	DRE #	Rolling Log #	Evaluator Agency	Event/Occ. #
Cst P Foster	22290	20-005-0032	Saskatchetoon Police Service	(Session XIV - #3)

Arresting Officer (Name, ID#)	SFST Trained	Arresting Officer's Agency	Recorder/Witness
Cst K Belcher	☑ Yes ☐ Yes (not used) ☐ No	RCMP	Cst D Kisling

Date & Time of Arrest	Charter Rights Given by	Time DRE Notified	Crash	DRE Secondary Caution Time
2020/07/29 @ 1725 hrs	Belcher	1810 hrs	☑ None ☐ Fatal ☐ Injury ☐ Property	☑ Yes ☐ No 1829 hrs

Eval. Start time	Breath Test	Subject's Name (Last, First, Middle)	Date of Birth	Gender
1830 hrs	☑ No Grounds ☐ Refused Result: Instrument #:	Trumpet, Angel	1992/01/23	Female

Date Examined / Time / Location	What have you eaten today?	When?	What have you been drinking? How much?	Time of last drink?
2020/07/29 @ 1830 hrs @ SPS Detn	"Nothing, I'm fasting"	N/A	Water 2 bottles	N/A

Time now? / Actual	When did you last sleep?	How long?	Are you sick or injured?	Are you diabetic or epileptic?
10 pm / 1833 hrs	Last night	About 4 hours	☑ Yes ☐ No Upset stomach	☐ Yes ☑ No

Do you take insulin?	Do you have any physical disabilities?	Are you under the care of a doctor or dentist?
☐ Yes ☑ No	☐ Yes ☑ No	☐ Yes ☑ No

Do you take any medication or drugs?	Attitude	Coordination
☐ Yes ☑ No "I don't do drugs!"	Argumentative, excited	Poor, Staggered at times

Speech	Breath Odour	Face
Rapid, Incoherent at times	Rancid	Flushed, sweaty

Corrective Lenses	Eyes	Blindness	Tracking
☑ None ☐ Glasses ☐ Contacts (if so: ☐ Hard ☐ Soft)	☑ Normal ☐ Bloodshot ☐ Watery	☑ None ☐ Left ☐ Right	☑ Equal ☐ Unequal

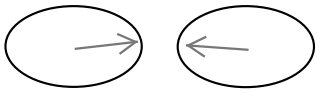
Pupil Sizes	Resting Nystagmus	Vertical Nystagmus	Able to Follow Stimulus	Eyelids
☑ Equal ☐ Unequal (explain)	☐ Yes ☑ No	☐ Yes ☑ No	☑ Yes ☐ No	☑ Normal ☐ Droopy

Pulse and Time

1. 108 bpm @ 1837hrs
2. 106 bpm @ 1858hrs
3. 106 bpm @ 1912hrs

HGN	Left	Right
Lack of Smooth Pursuit	No	No
Maximum Deviation	No	No
Angle of Onset	None	None

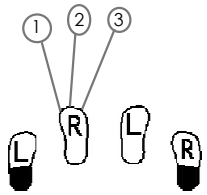
Convergence



Right Eye Left Eye

One Leg Stand

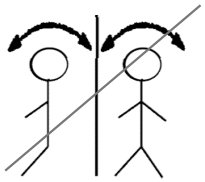
3 /30 N/A /30



Test stopped, nearly fell.

Modified Romberg Balance

Approx. Approx.

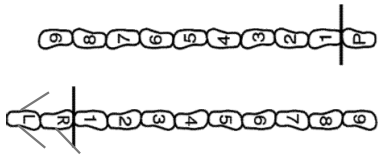


Unable to stand. Test stopped for safety reasons.

Walk and Turn

Cannot keep balance III (3)

Starts too soon Ø



Lost balance, almost falling during instruction stage. Test stopped for safety.

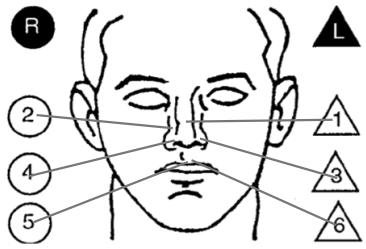
	1st nine	2nd nine
Stops walking		
Misses heel-toe		
Steps off line		
Raises arms		
Actual steps taken		

L	R	
		Sways while balancing
		Uses arms to balance
		Hopping
III (3)		Puts foot down

Time estimation & questions (p.2)	Describe turn	Cannot do test (explain)	Type of footwear
N/A estimated as 30 seconds	N/A	Stopped for safety reasons	Lace up boots

Finger to nose

(Draw lines to spots touched)



Done seated for safety reasons.

Pupil Size	Room Light (2.5-5.0 mm)	Darkness (5.0-8.5 mm)	Direct Light (2.0-4.5 mm)
Left Eye	6.0mm	8.5mm	5.0mm
Right Eye	6.0mm	8.5mm	5.0mm

Rebound dilation ☐ Yes ☑ No

Reaction to light ☐ Normal ☑ Slow ☐ Little to none visible

Nasal area: Nothing noted.

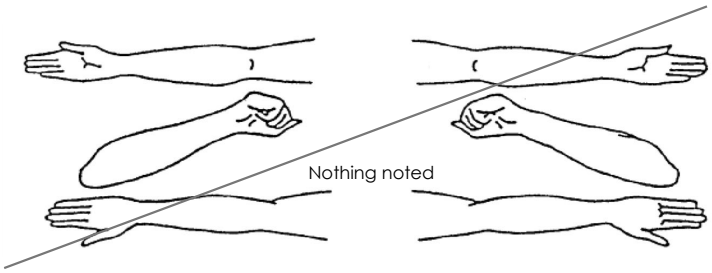
Oral cavity: Brown Coating on tongue, brown matter in teeth.

Blood Pressure	Temperature
172 / 96 mmHg	38.2 °C

Muscle tone: ☐ Normal ☐ Flaccid ☑ Rigid

Comments:

Right Arm **Left Arm**



What drugs or medication have you been using?	How much?	Time of use?	Where were the drugs used?
"Nothing. I told you, I don't do drugs!"	N/A	N/A	N/A

Eval. stop time	Refusal	Toxicological Sample	Reviewed by (instructor name)
1945 hrs	☐ Entirety ☐ Partly ☐ Tox. Sample Comments: N/A	☑ Urine ☐ Blood Demand time: 1946 hrs Sample Time: 2030 hrs	

Evaluator Signature	Approved by (instructor signature)	DRE # / Date
Cst. P. Foster #22290		

Opinion of Evaluator

☐ Not Impaired ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anaesthetic ☐ Inhalants ☑ Operational

☐ Medical ☐ CNS Depressant ☑ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis ☐ Training

Drug Impairment Evaluation

This is the detailed narrative report of Constable P.Foster, a Regular member of the Saskatoon Police Service, Reg. No. 657, DRE Number 22290. Constable Foster is currently attached to Patrol, SPS. Constable Foster is credentialed by the International Association of Chiefs of Police (IACP) as a Drug Recognition Expert (DRE Certification Expiry Date: 2023-10-20).

(1) **Location**: The evaluation of Angel Trumpet was conducted by Constable Foster, at the Saskatoon PS detention facility on July 29, 2020.

(2) **Witnesses**: Cst. D. Kisling of the RCMP witnessed the evaluation.

(3) **Source**: The subject evaluated was Angel Trumpet DOB 1992/01/23.

Interview of the arresting officer Cst Kevin Belcher #12849: Cst Belcher located the suspects' vehicle stopped and partially blocking Main Street East. When speaking with the suspect in the driver's seat, she appeared dazed and disoriented. He stated the suspect repeatedly pointed into the sky and said she had stopped because the lights were so bright. Belcher states there were no lights were Trumpet was pointing. He also mentioned the suspect was incoherent at times and it took some time to understand who he was and why he was asking her to get out of the vehicle. Belcher determined she was not experiencing any emergency life threatening medical issues and suspected that she may be impaired. He indicated that Trumpets pupils were very large for the lighting conditions. Cst. Belcher administered SFST's which she had difficulties performing and the WAT and OLS were stopped for safety reasons. Trumpet told Belcher that there was a spaceship overhead causing her to nearly fall down. She was arrested for impaired driving, provided the DRE demand at 1810 hours and her rights to counsel at 1808 hours.

(4) First Observations:

A breath test was not taken as there were no grounds to suspect Trumpet had consumed alcohol. Trumpet was seated in the interview room and staring straight ahead. When I entered the room she quickly turned and asked "Are you God?" I responded by giving her my name and asking for consent to conduct a drug evaluation. She replied "they sent you, it must be okay." Constable Foster read Trumpet the secondary police caution 1829 hours. When asked if she understood Trumpet replied "yes." The following things were observed at that time:

- Trumpet displayed equal tracking;
- Trumpet's pupil size appeared to be equal;
- Resting nystagmus was not present; &
- Trumpet was able to follow the stimulus.

Trumpet was asked the following questions:

- "What have you eaten today, and when?" Trumpet replied with "nothing, I'm fasting";
- "What have you been drinking, how much, and what time was your last drink?" Trumpet said "2 bottles of water";

- What time do you think it is now?" Trumpet believed it was "10 pm", the evaluators time was 1833 hours;
- "When did you last sleep, and for how long?" Trumpet said she slept "last night" and for "about 4 hours";
- "Are you sick or injured?" Trumpet answered yes, and stated she had an "upset stomach";
- "Are you diabetic or epileptic?" Trumpet answered no;
- "Do you take insulin?" she answered no;
- "Do you have any physical disabilities?" Trumpet said no;
- "Are you under the care of a doctor or dentist?" Trumpet said no;
- "Are you taking any prescription medication or drugs?" Trumpet stated "I don't do drugs!"

The following further observations were made:

- Trumpet was argumentative, and excited;
- Her coordination was poor, she was staggering at times;
- Trumpet had rapid, periodically incoherent speech;
- Her breath odour was rancid;
- Trumpet had a flushed, sweaty face; &
- Her eyelids appeared to be normal.

(5) **Psychophysical Signs**:

Modified Romberg Balance Test:

- The test was stopped for safety reasons as Trumpet had difficulty standing.

Walk and Turn Test

- Trumpet was wearing laced up work boots for the test.

During the instructions stage:

- Trumpet was unable to keep her balance 3 times. Her left foot (rear foot) moved 2 times, once to the right and once to the left. Her right foot (front foot) moved 1 time to the right.
- Trumpet attempted to get back to the instruction stance each time, but was unable to do so.
- The test was stopped for safety reasons.

One Leg Stand

- While testing Trumpet's left leg:
    - Trumpet quickly put her foot down 3 times on count number:
        - 1;
        - 2; &
        - 3.

The test was stopped for safety reasons. Cst Foster attempted to test the right leg with Trumpet, however stopped the test for safety as she was unable to maintain balance during this test. Trumpet said "everything is moving" which made it difficult for her to balance.

Finger to Nose Test:

This test was conducted in a seated position for safety reasons.

- On the first attempt, Trumpet touched the center of the bridge of her nose using the tip of her left index finger;
- On the second attempt, Trumpet touched the right side near the bridge of her nose using the tip of her right index finger;
- On the third attempt, Trumpet touched left bulbous portion of the nose near the left nostril using the tip of her left index finger;
- On the fourth attempt, Trumpet touched the right side on the bulbous portion beside the right nostril using the tip of her right index finger;
- On the fifth attempt, Trumpet touched her upper lip using the tip of her right index finger ; &
- On the sixth attempt, Trumpet touched her upper lip using the tip of her left index finger .

Clinical Signs:

Horizontal Gaze Nystagmus: Trumpet did not display HGN.

Vertical Gaze Nystagmus: Trumpet did not display VGN.

Lack of Convergence: Trumpet was able to converge her eyes.

Pupil Size:

The DRE average range for pupil size is room light is 2.5 to 5.0 millimeters (mm):

Trumpet's left eye was 6.0 mm in room light, which is above the DRE average range. Trumpet's right eye was 6.0 mm in room light, which is above the DRE average range.

The DRE average range for pupil size in near total darkness is 5.0 to 8.5 mm:

Trumpet's left eye was 8.5 mm, which is within the DRE average range. Trumpet's right eye was 8.5 mm, which is within the DRE average range.

The DRE average range for pupil size in direct light is 2.0 to 4.5 mm:

Trumpet's left eye measured 5.0 mm, which is above the DRE average range. Her right eye measured 5.0 mm, which is above the DRE average range.

Trumpet's pupils displayed a slow reaction to light.

Trumpet did not display rebound dilation.

A UV light was not used during the eye examinations.

Pulse Measurements:

The DRE average range of the pulse rate is 60 to 90 beats per minute (BPM).

The pulse was taken 3 times:

- 1st pulse was 108 beats per minute (BPM) taken at 1837 hours, which is above average DRE range;
- 2nd pulse was 106 BPM taken at 1858 hours, which is above the average DRE range;
- 3rd pulse was 106 BPM taken at 1912 hours, which is above the DRE average range.

Blood Pressure: Trumpet's blood pressure was 172/96 Millimeters in Mercury (mmHg).

Trumpet's systolic blood pressure was 172 mmHg, which is above the DRE average range of 120 - 140 mmHg. Her diastolic blood pressure was 96 mmHg, which is above the DRE average range of 70-90 mmHg.

Temperature: Using an oral thermometer, Cst. Foster measured Trumpet's body temperature. The DRE average range for body temperature is 37.0 ° Celsius minus 0.5 ° Celsius.

Trumpet's body temperature was 38.2 ° Celsius, which is above the DRE average range.

Muscle Tone: Trumpet's muscle tone was rigid.

(1) **Statements:** Trumpet stated "I told you, I don't take drugs!" when asked what drugs she was taking.

(2) **Medical Problems or Treatments:**

Drugs and Medicine: Nothing noted.

(3) **Opinion:** It is the opinion of Constable P.Foster, an evaluating officer, that Angel Trumpet's ability to operate a conveyance is impaired by a Hallucinogen.

(4) **Miscellaneous:**

- There was nothing to note for the nasal area exam;
- During the oral cavity exam, it was noted she had a brown coating on her tongue and brown matter in her teeth; &
- There was nothing to note by way of puncture or injection marks.

The evaluation began at 1830 hours on July 29, 2020 and was completed at 1945 hours.

Trumpet provided a sample of urine pursuant to a demand that was read to Trumpet by Cst. Foster at 1946 hours.

The sample was seized at 2030 hours.

Cst. Foster who immediately seized the sample and secured it in the exhibit fridge observed the sample collection.

All times in this report unless otherwise indicated noted are that of Cst. P.Foster